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INDEX AND LIST OF TITLES

Fisheries Research Board of Canada
and Associated Publications

1965-1972

Neal M. Carter



Fisheries Research Board of Canada

MISCELLANEOUS SPECIAL PUBLICATION No. 18



Environment
Canada

Environnement
Canada

ABBREVIATIONS USED IN THE INDEX

- J** – Journal of the Fisheries Research Board of Canada
- B** – Bulletins of the Fisheries Research Board of Canada
- AR** – Annual Reports of the Fisheries Research Board of Canada
- R** – Reviews of the Fisheries Research Board of Canada
- CAG** – Circulars of the Board's Arctic Biological Station
- CAR** – Circular of the Board's Office of the Atlantic Regional Director
- CCG** – Circulars of the Board's Freshwater Institute
- CDG** – Circular of the Board's Marine Ecology Laboratory, Bedford Institute
- CHN** – Circulars of the Board's Halifax Laboratory
- CJG** – Circulars of the Board's Biological Station, St. John's, Newfoundland
- CNG** – Circulars of the Board's Biological Station, Nanaimo, B.C. (general series)
- CNS** – Circulars of the Board's Biological Station, Nanaimo, B.C. (statistical series)
- CPO** – Circulars of the Board's Pacific Oceanographic Group
- CSG** – Circulars of the Board's Biological Station, St. Andrews, N.B. (general series)
- CVG** – Circulars of the Board's Vancouver Laboratory
- T** – Technical Reports of the Board's establishments
- MSP** – Miscellaneous Special Publications of the Board and its establishments
- S** – Studies Series
- A** – Interpretative Articles series

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AND LIST OF TITLES

FISHERIES RESEARCH BOARD OF CANADA

AND ASSOCIATED PUBLICATIONS

1965-1972

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and List of Titles

**Fisheries Research Board of Canada
and associated Publications
1965–1972**

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Neal M. Carter

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Ottawa 1973

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PREFACE

This Miscellaneous Special Publication is a subject-author index and list of titles of the Fisheries Research Board of Canada's own publications and of contributions to non-Board publications from members of its staff and other authors associated with the Board or granted use of its facilities. It is an amalgamation of the indexes and lists of titles provided annually during 1965-71 in the December issues of the Board's Journal and also incorporates the indexing and listing of titles for 1972, which, in view of the availability of this present publication in 1973, were not included in the December 1972 issue of the Journal. It continues the purpose of Bulletin No. 164, published in 1968, which comprises a subject-author index and list of titles of corresponding publications for the period 1900-1964.

The following sections of this Preface further describe the contents of this present publication.

I. BOARD PUBLICATIONS LISTED AND INDEXED IN THIS PUBLICATION

1. Journal of the Fisheries Research Board of Canada (Volumes 22-29)

Volume 22 consists of six approximately bimonthly issues; Volumes 23-29 each comprises 12 monthly issues, with format slightly enlarged commencing with Volume 28. Each December issue includes a list of titles in the volume for volume-binding purposes; as mentioned above, the December issues for Volumes 22-28 also include a subject-author index not only to the contents of the volume, but also to the contents of certain other publications that are listed.

The Journal is a continuing series, available by purchase or subscription from Information Canada, Ottawa, Canada.

2. Bulletins of the Fisheries Research Board of Canada (Numbers 149-180)

These are published at irregular intervals. A number of them originally appearing in English have been published later in French without change of issue number. The French editions are listed herein, but are not indexed separately because their subject matter corresponds to that of the English editions, though where reference to a specific page number in the English edition is given the page number in the French edition may be slightly different.

Bulletin No. 155, "Fishes of the Atlantic Coast of Canada", though not published until 1966, was available in page-proof form early enough to include its common and scientific names of fishes in the index portion of Bulletin No. 164 for the purpose of referring earlier nomenclature to the most recent names. Consequently, although the listing and general indexing of Bulletin No. 155 are repeated in this present index, the indexing of the names of the species described is not repeated herein except where required for later references.

For analogous reasons Bulletin No. 180, "Pacific Fishes of Canada", though not published until 1973, was also made available in page-proof early enough to allow its listing and indexing in this present publication in order that the latest nomenclature for the fishes described therein could be used in this index.

The series of Bulletins is continuing, available by purchase from Information Canada, Ottawa, Canada, and from Information Canada bookstores in several Canadian cities.

3. Circulars of the Fisheries Research Board of Canada Establishments

The several series of Circulars published and distributed directly from the various Board establishments at irregular intervals during 1965-1972 are adequately described in their listings on pages 537-541, where their indexing abbreviations, the source from which issues of the different series may be obtained (free), and whether or not they are continuing series, are indicated.

4. Technical Reports of the Fisheries Research Board of Canada Establishments (Numbers 1-336)

The Reports, a new series commenced in 1967, are not strictly considered as "publications", though they may be cited in publications providing their manuscript status is indicated. They are processed and distributed directly from the various Board establishments at irregular intervals for presenting results and data that may eventually appear in published form. Some of the establishments indicate on the title page a subnumbering for their own Reports, but in the present listing and indexing only the consecutive numbering shown on the covers and assigned by the Board's Office of the Editor is used.

The sources from which issues of this continuing series may be obtained (free) are indicated in their listing herein.

5. Miscellaneous Special Publications of the Fisheries Research Board of Canada or its Establishments (Numbers 8-17)

These are occasional leaflets, brochures, or other items of general interest, printed or otherwise processed. Their nature is best indicated by reference to the list of their titles herein. This is a continuing series, available as indicated in their listing.

II. BOARD PUBLICATIONS LISTED BUT NOT INDEXED IN THIS PUBLICATION

6. Annual Reports of the Fisheries Research Board of Canada (1964-1971)

These Reports, each in English and French, vary somewhat from year to year in the extent of their coverage of the Board's organization and activities. That for 1971 includes a list of Members of the Board, the Chairman's Remarks on program goals, some project highlights, changes in organization and facilities, Management Personnel, and a list of establishments and their directors.

Though listed herein, the brevity of their mentions of investigations did not warrant more than a very few references to these Reports in this index.

Copies of this continuing series are available (free) from the Board's Office of the Editor, Ottawa, Canada.

7. Reviews of the Fisheries Research Board of Canada (1964; 1965-1970 biennially)

Following a Review for 1964, subsequent issues have each covered a two-year period (1965-66; 1967-68; 1969-70). The nature of their coverage has varied somewhat from issue to issue. That for 1969-70 includes a synoptic review of the Board's activities during the period, followed by a brief description of many of the investigations conducted by each of its establishments; a list of Board Members and of the professional staff of each establishment; a note on publications and reports; a list of various series of staff publications, and of articles published in the Board's Journal by other than its staff, both arranged alphabetically by name of senior author; and index to the professional staff with indication of the establishment with which they are connected.

Though listed herein, there are few references to these Reviews in the index because by the time these Reviews appear most investigations reviewed have already been reported or published more fully in other publications that are more completely indexed herein.

Copies of this continuing series are available (free) from the Board's Office of the Editor, Ottawa, Canada.

III. NON-BOARD PUBLICATIONS LISTED AND INDEXED IN THIS PUBLICATION

8. Studies (Numbers 886-1729)

These are chiefly accounts of investigations by Board staffs (or investigations financed to some extent by the Board) published in recognized scientific media other than the Board's own publications.

Numbers 886-927 were made available for free distribution as photo-offset reproductions bound as Part 2 of a binding for 1966; reproductions of Numbers 928-1355 were bound semiannually in two parts per year to the end of 1969. Those bindings for Numbers 886-1019 each contain a list of the included numbered articles but leave the reader to find a desired article by its number shown only at the bottom left of the first page of the article; in the bindings for Numbers 1020-1355 the introduction of consecutive pagination at the bottom of the pages greatly facilitates the location of a desired article from the list of contents.

Following discontinuation of the binding for free distribution with Number 1355 in Part 2 for 1969, commencing with the January 1970 issue of the Journal the titles of recently issued Studies in this continuing series are listed immediately following the last article in each Journal issue, with an indication of where a copy of a desired Study may be obtained.

9. Interpretative Articles (Numbers 1-272)

This new series commenced in 1966. The articles are principally by Board scientists and interpret work already published in primary journals. They appear at irregular intervals in various technical publications, and the listing herein shows by key numbers the name and address from which a copy of a desired article in this continuing series may be obtained. Frequently an article essentially duplicates, condenses, or is based on an article in another series; in many such cases this is indicated in the present index references.

(NOTE: There are two series of Board Reports that are neither listed nor indexed in this publication. They are the Manuscript Reports of the Fisheries Research Board of Canada establishments, and the Canadian Oceanographic Data Centre Data Records. The Manuscript Reports are intended primarily for the Board's internal use, are not available for general distribution though they may be consulted at the various establishments, and should not be quoted without permission from the issuing establishment. If cited, their manuscript status must be emphasized. Issue No. 900, dated 1969, is a 255-page index and list of titles of those Manuscript Reports appearing to the end of 1966. The series continues, with listings in the Board's biennial Reviews. The Canadian Oceanographic Data Centre series is also subject to the above restrictions. They are also listed in the biennial Reviews.)

IV. COMPILATION OF THE INDEX IN THIS PUBLICATION

In general, the plan of this index follows that of Bulletin 164 and many of the explanations under the above heading on page xii in the Preface to that Bulletin apply here also. The remarks in the sections below may be helpful in the use of this index.

(a) **Headings.** In amalgamating the seven annual indexes for 1965-1971 and adding thereto the indexing of the 1972 series of publications, it frequently became necessary to revise many of the subject headings because of changes in the nature, scope, or emphasis occurring in investigations during the 8-year period. For example, the references to pollution and its effects became so numerous that the heading "Pollution" is herein reserved for general references but now also indicates various other headings, some new, under which references to causes, effects, etc. of certain types of pollution are collected for convenience. Notes have been added to many headings for explanatory purposes or to indicate other cognate headings.

Author headings show the full name if available; otherwise, the fullest name used in the authorship.

As in Bulletin No. 164, references to fishes having generally recognized common names in English are indexed under those names, followed by the scientific name in parentheses. Headings for the scientific names are also included, referring the reader to the common names. For Canadian Atlantic coast marine fishes the names used are those in Board Bulletin No. 155 unless superseded by newer nomenclature given in the 1970 third edition of the American Fisheries Society's Special Publications No. 6, "A List of Common and Scientific Names of Fishes from the United States and Canada". For Canadian Pacific coast marine fishes the names used are those in Board Bulletin No. 180. For Canadian and American freshwater fishes the names used are those in the above-mentioned American Fisheries Society's publication, or in some cases those in Board Bulletin No. 173 or other recent authoritative publications. In many headings for fishes there is a second parenthesis giving recently obsolete scientific names and/or obsolete or local common names sometimes still used by authors. A Board Bulletin that will be published in 1973 extensively describes 181 species of freshwater fishes occurring in Canada. Its nomenclature for these fishes will be used in the 1973 annual index of Board publications, but this information was not available in time for use in this present amalgamated index.

Other aquatic animals such as clams, shrimps, and marine mammals having generally recognized common names in English are similarly indexed unless the common name varies so with locality that it is preferable to index the references under headings for the scientific names or still broader classifications. This is particularly the case with many invertebrates, especially molluscs.

Some common names officially include a geographical adjective such as "Pacific" or "Atlantic" shown in headings such as "Halibut, Pacific" and "Halibut, Atlantic"; but sometimes different species indigenous to different regions have the same common name without any official geographical adjective to distinguish them. In such cases the author has indicated their habitat by showing it in the headings thus: "Clam, razor (Pacific)" and "Clam, razor (Atlantic)".

References to many kinds of aquatic invertebrates having no generally recognized common name in English were adequately indexed in each annual index under a general heading, e.g. Copepoda. However, in this amalgamation of those indexes so many references accumulated under some headings that it was found desirable to reserve such a heading for references of a general nature and to indicate in the heading that subclassifications are indexed under new separate headings.

(b) Punctuation used in publication indication for combined references. Combined references are indicated thus:

- J 27(8): 1712, 1819 (two articles, both in the same volume issue)
J 27(9): 1850, (10): 1907 (two articles, in two issues of same volume)
J 27(9): 1872; 28(5): 792 (two articles, in two different volumes)
B 155: 161, 172 (two references to the subject in the same Bulletin)
B 155; 161; 172 (three references to the subject in those three Bulletins)

(c) Wording in parentheses after publication indication in references. For brevity, many ungrammatical or laconic expressions are used, some of which require the subject heading being mentally read into them. Author references in the 1965-71 annual indexes were not prepared by the present author, who considered some of the expressions to be almost cryptic; he has in many such cases somewhat amplified them.

(d) Nomenclature used in indexing fauna and flora. The choice of nomenclature used for fishes and other aquatic animals is described in subsection IV(a) above. For aquatic flora a few species are indexed under their generally recognized common English names, e.g. Dulse; Eelgrass; Irish moss; but most are indexed under either the scientific names used by the author or under wider classifications, e.g. Chlorophyta; Rhodophyta.

(e) Degree of detail in indexing fauna and flora. For publications dealing principally with a *single* organism it is indexed under its name and as many other subject headings as may be appropriate to cover the objects of the investigation. For publications dealing with comparisons of the biology or utilizations of a *few* organisms, or where a few organisms from among many others mentioned are singled out for particular discussion, those few may also be indexed separately by name, also under other subject headings appropriate for the objects of the investigation as a whole.

Where *many* species are mentioned in long checklists or general surveys of a region's fauna or flora having no generally recognized common names and often involving much synonymy of scientific names, the numerous species may not be indexed individually, but references to the publications will be found under some more or less general headings such as Checklists; Surveys; Fauna; Flora; Fishes, lists of; Fisheries; Flatfishes; Birds; Clams; Invertebrates, lists of; Insects; Phytoplankton; Zooplankton; Algae; Benthos; Feed; Distribution; or under names of the pertinent regions, bodies of water, or nature of the investigation. Exceptions to this generalized indexing are several publications describing in detail and illustrating each species known in a given region, e.g. Board Bulletins 155; 171; 173; 179; 180; each species so described is individually indexed.

The references shown under the heading for a given species are not necessarily all the references to that species; there may be mention of the species in articles indexed under more general headings, particularly taxonomic subclassifications that include that species, as well as under certain headings for the plural of the common name for that group of species, e.g. Whales; Flatfishes; Clams. Such plural-name headings are also used for indexing closely related species not mentioned in a publication by their individual names.

New species described for the first time are individually indexed with an indication that they are new. For convenience they are also referenced under the heading Species, new.

Species mentioned in an author's discussion or review of investigations other than his own are not included in the indexing of that author's publication.

(f) Geographical regions and place names. Only geographical localities and places where considerable or special investigation has been conducted are accorded a subject heading. Even so, the references under most such headings are not necessarily all the references thereto; additional references may be found associated in a general way with references under other cognate subject headings and in some cases under author headings.

(g) Corrections. Corrections to which attention has been drawn after publication of the series covered in this publication are from time to time published in the Journal, usually toward the end of the August issues. These corrections are indicated in the affected index references herein by giving the reference to the Journal issue in which the correction appeared. Corrections in the form of errata notices included or inserted in the publication itself are not indicated in this index.

ACKNOWLEDGMENTS

I gratefully acknowledge the advice of Dr J. C. Stevenson, the Board Editor, in the planning of this publication to serve as an adjunct to my Bulletin No. 164 that indexed and listed Board and associated publications for the period 1900-1964, also the assistance of his staff and the various Board establishments in supplying me with copies of the necessary publications for this compilation while at home during my retirement. Also acknowledged is the author indexing prepared in the Office of the Editor for the 1965-1971 annual indexes and which has been incorporated herein with some alterations.

Thanks are also expressed to several Board Directors and members of their staffs to whom I frequently appealed for additional information concerning names of authors, adjudications on nomenclature of organisms, and other details. Dr J. L. Hart, author of Bulletin 180, "Pacific Fishes of Canada", kindly provided an advance list of the nomenclature he would be using for those fishes.

I greatly regret that my wife, who cheerfully assisted me in the compilation, almost to the final stages, did not live to see this work published.

ABBREVIATIONS USED IN THE INDEX

- J** — Journal of the Fisheries Research Board of Canada
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- T** — Technical Reports of the Board's establishments
- MSP** — Miscellaneous Special Publications of the Board and its establishments
- S** — Studies Series
- A** — Interpretative Articles series

The Provinces and Territories of Canada are abbreviated to:

Alta. (Alberta)	N.W.T. (Northwest Territories)
B.C. (British Columbia)	Ont. (Ontario)
Man. (Manitoba)	P.E.I. (Prince Edward Island)
N.B. (New Brunswick)	Que. (Quebec)
Nfld. (Newfoundland)	Sask. (Saskatchewan)
N.S. (Nova Scotia)	Yuk. (Yukon Territory)

Major areas of certain geographical regions (including oceans) are designated by **N** (north, northern), **S** (south, southern), **E** (east, eastern), **W** (west, western), **NE** (northeast, northeastern), etc. Other geographical abbreviations are: **L.** (Lake), **R.** (River), **Atl.** (Atlantic, also frequently used to indicate the Canadian Maritime Provinces plus Newfoundland with Labrador, eastern Quebec, and their coasts; also the United States Atlantic seaboard), **Pac.** (Pacific, also frequently used to indicate British Columbia and its coast, also the United States Pacific seaboard).

Certain other abbreviations often used in references (e.g. DDT, GLC, ICNAF, INPFC, NTA, PCB, TMA) are either explained therein or are shown as headings referring to the complete-wording headings.

In the index references "re" is very frequently used to imply "in relation to", "in connection with", and similar meanings; "vs." to imply such meanings as "in contrast to", "as opposed to", and "as compared with".

KEY TO FISHERIES RESEARCH BOARD OF CANADA ESTABLISHMENTS

The numeral in front of each address corresponds to the numeral shown at the end of titles in some of the listed series of publications in order to indicate from which of the following establishments the publication or report originated, or may be obtained.

- (1) Department of the Environment
Fisheries and Marine Service
Pacific Biological Station
P.O. Box 100
Nanaimo, British Columbia
- (2) Department of the Environment
Fisheries and Marine Service
Vancouver Laboratory
6640 N.W. Marine Drive
Vancouver 8, British Columbia
- (3) Department of the Environment
Fisheries and Marine Service
Pacific Environment Institute
4160 Marine Drive
West Vancouver, British Columbia
- (4) Department of the Environment
Fisheries and Marine Service
Freshwater Institute (att'n Library)
501 University Crescent
Winnipeg, Manitoba R3T 2N6
- (5) Department of the Environment
Fisheries and Marine Service
Arctic Biological Station
P.O. Box 400
Ste. Anne de Bellevue, Quebec
- (6) Department of the Environment
Fisheries and Marine Service
Biological Station
St. Andrews, New Brunswick
- (7) Department of the Environment
Fisheries and Marine Service
Marine Ecology Laboratory
Bedford Institute of Oceanography
P.O. Box 1006
Dartmouth, Nova Scotia
- (8) Department of the Environment
Fisheries and Marine Service
Halifax Laboratory
1707 Lower Water Street
Halifax, Nova Scotia
- (9) Department of the Environment
Fisheries and Marine Service
Newfoundland Biological Station
Water Street East
St. John's, Newfoundland.
- (10) Department of the Environment
Fisheries and Marine Service
Office of the Editor
116 Lisgar Street
Ottawa, Ontario
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 CJG 17 (*Echinorhynchus* in Nfld. Salmonidae: key)
 T 48 (parasitic to lampreys)
 134 (*Pomphorhynchus laevis* re indicator for Atl. salmon stocks)
 160 (*Echinorhynchus gadi* in *Lepidion eques* morid fish)
- 185 (bibliography re Canada fishes parasitization by)
 S 1681 (revised annotated list of, from W coast N America marine mammals)
- Acanthochondria holocephalarum*
 J 25(2): 321 (new copepod species, parasitic to *Lepidion schmidti*)
- Acanthocybium solanderi* (see Wahoo)
- Acanthohaustorius* (see Amphipoda)
- Acanthosentis* (see Acanthocephala)
- Acara, Altan Hüseyin
 J 28(4): 573 (enumerating kokanee fry)
- Acari
 J 26(12): 3101 (of Crecy L., N.B.)
 28(6): 849 (samplings from shallow stream bed)
- Acarina (mites)
 J 26(4): 833 (*Hydrachna* larvae on yellow perch gills)
 27(2): 221 (Oribatoidea of a reservoir benthos)
 (6): 1045 (*Hydrozetes* on perch gills)
 28(11): 1683 (in L. Ontario & Bay of Quinte benthos)
 S 1532 (of a high Colorado mountain creek)
 1681 (annotated list of, from W coast N America marine mammals)
- Acartia tonsa* (see Calanoida; Copepoda)
- Acclimation; Adaptation (see also Oxygen, dissolved; Physiology; Pollution; Salinity, reactions to; Temperature, reactions to)
 J 22(6): 1455 (thermal, of goldfish)
 23(1): 1 (seasonal temperature: effect on brook trout blood respiratory function)
 (8): 1187, (10): 1581 (seasonal temperature: effect on Atl. salmon blood respiratory function)
 24(6): 1403 (newly hatched lobster larvae to salinity)
 (7): 1507 (Atl. salmon and rainbow trout to temperature)
 (8): 1823 (hypophysectomized American eels to freshwater)
 (11): 2267 (hematological aspects of thermal, in rainbow trout)
 25(8): 1689 (re respiratory quotient determinations on fishes)
 (12): 2717 (upper lethal temperatures at various salinities for mummichog & banded killifish after)
 29(2): 202 (change in body weight of *Tilapia mossambica* caused by handling & exercise after freshwater vs. saltwater)
 (3): 251 (temperature, re juvenile coho salmon swimming speed)
 S 1259 (re NW Atl. decapod crustaceans)
 1725 (marine poikilotherms to environmental factors: review)

- Acerina cernus* (see Ruff)
- Acetate
S 1236 (metabolism by *Atl. salmon* sperm)
- Acetic acid
J 27(4): 731 (effect on lobster behavior re kraft mill effluent)
A 151 (production from bacterial fermentation of pulpmill sulfite liquor, instead of pollution therefrom)
- Acetone (see Ketones)
- Acetylcholine (see Choline)
- Acetylcholinesterase (see Choline; Enzymes)
- Achnanthes minutissima* (see also Bacillariophyta)
J 28(2): 215 (most abundant diatom in 4 small NW Ont. lakes)
- Achromobacter* (see also Bacteria; also following heading)
J 23(9): 1451 (*A. superficialis* in lobster)
24(1): 9 (in fresh lake whitefish)
26(10): 2651 (population on vacuum- vs. air-packaged EDTA-treated fish fillets)
(10): 2760 (in culturing algal feed for rearing bivalve larvae)
29(3): 333 (in bluefish intestine)
S 1460 (re irradiated haddock spoilage)
- Achromobacter cholinophagum* (see also Bacteria)
S 933; 936 (new species that ferments choline)
1042; 1229 (oxidation of betaine)
1152 (as substrate in betaine, dimethylglycine, and sarcosine oxidation)
1178 (utilization of choline or betaine in phospholipid synthesis)
1312 (choline or betaine as substrate for fatty acid synthesis by)
1460 (re spoilage of irradiated haddock fillets)
- Achtheres* (see also Lernaeopodidae)
J 26(11): 2987 (re revision of *Salmincola* genus)
- Acids (see following types, also names of acids)
- Acids, amino (see also Betaines; Octopine; Proteins; Proteolysis)
J 23(1): 27 (effect of added, on *Atl. cod* muscle rancidity)
(3): 408 (determining limiting types in fishmeals)
(11): 1653 (of American crayfish meat)
24(6): 1291 (of freshwater fishmeals)
(7): 1607 (of rainbow trout muscle myogen)
25(5): 935 (changes in free, of gillnetted *Atl. cod* skeletal muscle)
(6): 1247 (re transaminases distribution & activity in *Pac. salmon*s tissues)
26(5): 1347 (re culture of calanoid copepods)
(9): 2299 (effect on hemoglobin-catalyzed lipid rancidity)
(10): 2659 (oligochaetes uptake of free, from Toronto harbour sediments)
(11): 2969 (of *Parapenaeus* *Atl.* shrimps)
27(4): 701 (effect of added, on muscle protein extractability & added metal ions, in various *Atl.* marine fishes & shellfishes)
(8): 1371 (olfactory responses of lobsters to individual)
28(4): 565 (effect on *Atl. salmon* olfactory epithelium electrical response)
(8): 1191 (of Dungeness crab tissues)
(12): 1837 (of rainbow trout white skeletal muscle)
29(9): 1351 (sockeye & coho salmon & rainbow trout olfactory bulb electrical response to several kinds)
B 125R: 83; 167; 81, 131 (methods for determining in sea water)
T 114 (content of individual, in Canadian *Atl.* herring meals)
S 929 (lysine in fish protein concentrates)
1042 (oxidation by *Achromobacter cholinophagum*)
1110 (re photosynthesis in algae)
1119 (lobster hemolymph)
1152 (formaldehyde formation in oxidation of derivatives by marine bacterium)
1198 (re *Hemiselmis virescens* alga phototrophic growth)
1237 (re metabolism by *Atl. cod* sperm)
1253 (re structure of plant viruses)
1314 (methionine reaction with malonaldehyde)
1342 (alanine & aspartate aminotransferases in *Atl.* fishes eggs & sperm)
1347 (composition re proteins secondary structure)
1377 (of *Atl.* herring meals)
1440 (pyrolysis effects on, of modern & fossil northern quahaug shells)
1491 (ability of some unicellular marine algae to cleave aromatic ring)
1519 (nondestructive determination of total, in marine sediments)
1720 (role in *Aeromonas salmonicida* nutrition re furunculosis)
A 85 (of freshwater fish meals)
125: 60 (lysine in fish protein concentrates)
- Acids, fatty (see also Chromatography; Composition, chemical; Esters; Glycerides; Lipids; Oils and fats; also other cognate subjects) (Note: GLC = gas-liquid chromatography)
J 22(1): 131 (of *Nfld.* squid lipids)
(5): 1107 (of lipids from various B.C. & Washington marine organisms)
23(1): 21 (free, of *Atl. cod* liver oil from decomposed livers)
(5): 681 (esters: pilot plant fractionation of, from *Pac.* herring oil)
(7): 991 (composition in commercial *Atl.* herring oils)
(7): 1077 (free, in thawed *Atl. cod* fillets)
(9): 1385 (effect on copper-induced *Atl. cod* fillets rancidity)

- (11): 1809 (unusual composition in lipids of an Atl. cod)
- (12): 1835 (selective separation from ingested fat during cod digestive metabolism)
- 24(2): 467 (of pink shrimp vs. a euphausiid)
- (3): 613 (seasonal composition changes in Atl. cod liver, flesh, roe, and milt lipids)
- (3): 635 (structure in marine animal lipids by GLC; particularly pristanic and phytanic acids)
- (5): 1101 (composition of some marine animals from various depths off California)
- (6): 1219 (of sheepshead, tullibee, burbot, and alewife oils)
- (12): 2563 (of low iodine value from Greenland halibut, sablefish, and Atl. herring)
- 25(4): 733 (of trap-caught Atl. cod fillets after freezing)
- (5): 921 (free: re nonbacterial trimethylamine formation in frozen Atl. cod & scallop muscle)
- (5): 1061 (composition of redfish liver oil & Atl. "flounder liver oil")
- (8): 1555 (free: starvation effect on rainbow trout blood plasma & muscle tissue)
- (8): 1603 (of marine phytoplankters re taxonomy, etc.)
- (10): 2059 (re protein extractability in iced Atl. cod muscle)
- (10): 2083 (distribution in Atl. cod flesh & liver lipids)
- (11): 2419 (of seals depot fat & milk lipids, also commercial seal oil)
- 26(6): 1577 (origin of free, in Atl. herring commercial oils)
- (8): 2030, 2037 (content & composition in Nfld. capelin lipid)
- (8): 2237 (inhibitory agents for liberation from trout muscle lipids during cold storage)
- (9): 2229 (re rancidity in marine flesh lipids)
- (10): 2727 (reaction with Atl. cod muscle protein iced then frozen)
- 27(2): 251 (of Chlorophyta re taxonomy)
- (3): 513 (of *Meganactiphanes norvegica* & *Thysanoessa inermis* euphausiids re role as whale feed)
- (5): 857 (oxidation by trout tissues mitochondria as affected by coenzyme A & carnitine)
- (10): 1669 (levels of free, in commercial Atl. herring oils, re season & biological implications)
- 28(4): 601 (of sand lance oils & lipids)
- (8): 1191 (composition of Dungeness crab tissues)
- 29(1): 113 (of channel catfish muscle tissues)
- (4): 407 (of queen crab muscle & viscera lipids)
- (10): 1482 (in surface particulate matter from N Atl. Ocean)
- (12): 1786 (representation of lower molecular weight acids in the organic solvent phase by the Bligh & Dyer lipids extraction method)
- T 187 (seasonal variations in levels of free, in commercial Atl. herring oils)
- 198 (of queen crab lipid fat in tissues & meal products)
- 249 (re detection & estimation of marine oil adulteration of all-vegetable margarines & cooking fats)
- 334 (effects of feeding 3 unicellular algal species on oyster lipids fatty acids)
- S 921 (and esters: flame ionization detector re carbonyl carbon)
- 932 (of blubber from lactating gray seal)
- 942 (GLC of ester mixtures)
- 944 (stereospecific distribution in triglycerides)
- 945 (cod liver oil and leatherback turtle dermal oil)
- 972 (normal & branched types in various Atl. marine organisms)
- 975; 976 (whole blubber & blubber section oils types in fin whale)
- 984 (concentration re retention times during GLC of esters)
- 985 (positional distribution in human depot fat triglycerides)
- 987 (rapid concentration method for highly unsaturated methyl esters from marine lipids)
- 1009 (occurrence of odd-numbered in striped mullet oil)
- 1028; 1080 (positional distribution in various animal fat triglycerides)
- 1029 (positional distribution in various vegetable fat triglycerides)
- 1045 (empirical relations re iodine value of polyunsaturated, in various marine animal oils and lipids)
- 1047 (unsolved problem in triglyceride positional analysis)
- 1048 (simplified GLC of esters)
- 1065 (distribution determination in triglycerides by Grignard reagent deacetylation)
- 1068 (isometric monoethylenic in B.C. herring oil)
- 1074 (rapeseed oil monoethylenic)
- 1111 (fin whale oil re zooplankton feed of whale)
- 1118 (positional distribution in fats of polar bear and harbour seal blubbers)
- 1136 (storage of oxidizable esters in glass capillaries)
- 1151 (esterification of ozonides products)
- 1163 (calculating equivalent-chain-length values in GLC of multiple-branched)
- 1177 (quantitation problem in GLC of cod liver esters)
- 1184 (of coho salmon fingerlings fat)
- 1186 (of depot vs. dietary fats in Atl. salmon, trout, and lobster)
- 1192; 1638 (GLC resolution of Atl. herring oil & other monoethylenic)
- 1193 (phytanic & pristanic acid diastereomers from various fats as determined by GLC)
- 1203 (positional distribution of monoenoic, in animal glycerolipids)
- 1225 (chain-length overlap problem in GLC)
- 1226 (positional distribution in aquatic animals depot fat)
- 1227 (composition of fin whale milk lipids)
- 1228 (isoprenoid, phytanic, & pristanic acids of fish, whale, & seal oils, re feed)

- 1233 (incorporation of marine into mink & rat fatty tissues)
 1238 (retention-times prediction in GLC of diastereoisomeric)
 1250 (pancreatic enzyme substrate specificity re oleates)
 1254 (stereoisomerism of present vs. geologically ancient shale isoprenoid)
 1265 (flame ionization detector re GLC of)
 1312 (betaine or choline used by *Achromobacter cholinophagum* for syntheses of; also component fatty acids synthesized)
 1323 (diastereoisomeric composition of pristanic acids of marine and terrestrial origin)
 1330 (separation from triglycerides by suitable chromatographic procedure)
 1331 (esters of multiple branched: GLC separation)
 1350 (composition of Atl. herring lipids)
 1351; 1638 (*cis* & *trans* isomerism effect in separating monoethylenic fatty acid isomers by GLC)
 1373 (of echinoderms re metabolism: review)
 1395 (branched-chain of 4 freshwater fish oils)
 1396 (GLC techniques for fatty acids & esters)
 1405 (lipoxidase reaction with polyenoic, of various marine oils)
 1423 (composition of Nfld. copepods lipids, arachidic acid in seawater lipid material)
 1425 (*trans*-6-hexadecenoic, in marine turtles depot fat)
 1449 (GLC retention time re carbon chain length of acid & alcohol in esters)
 1455 (deficiency effects on rat intestinal mucosa lipids)
 1462 (structure: influence on pancreatic lipase activity)
 1474 (exceptional occurrence of C₁₅, C₁₇, & C₁₉, also composition of triglycerides, cephalins, & lecithins, in rainbow smelts)
 1475 (confusion between C₁₈ & C₂₀, in gas chromatographic analysis of water-plant seed lipids)
 1481 (minor, of *Euphoria longana* seed oil)
 1514 (of Amazon R. dolphin jaw & blubber wax esters, triglycerides, & diacyl glyceryl ethers)
 1528 (isoprenoid as breakdown product of chlorophyll in ancient lake deposit shale)
 1564 (*trans*-6-hexadecenoic acid & corresponding alcohol in sea anemone *Metridium dianthus* lipids; also fatty acid composition of lipids)
 1572 (saturated & isoprenoid in periwinkle, Atl. oyster, & quahaug lipids)
 1596 (of bottlenose dolphin milk triglycerides)
 1608 (isovaleroyl triglycerides in beluga whale oils)
 1622 (& lipids of Atl. mackerel)
 1625 (depot fat fatty acids of 3 marine & 6 freshwater turtle species)
 1638 (monoethylenic, of partially hydrogenated Atl. herring oil)
 1664 (analysis by GLC: review)
 1673; 1715 (methyl position influence on GLC retention time of monomethylbranched esters)
 1674 (of Atl. cod erythrocyte lipids)
 1694 (blubber, fin whale vs. harp seal)
 1700 (white barracudina lipids, glycerides, & wax esters)
 1712 (preparation & properties of tetramethyl hepta- & octa-decanic acid stereoisomers)
 1714 (isomer effects in identifying monoethylene, of margarine)
 1717 (harbour seal lung & heart phospholipids & triglycerides)
 1721 (distribution in leatherback turtle tissues & organs fats)
- Acids, nucleic (*see also* Enzymes; Nucleosides)
 J 26(3): 543 (DNA re chromosome size difference in polytenic *Pseudocalanus*)
 27(1): 117 (DNA biosynthesis by rainbow trout liver nuclei polymerase)
 (3): 606 (RNA in invertebrates re growth rate)
 27(11): 1917 (DNA as index of primary production in NW Atl. surface waters)
 (12): 2343 (RNA-DNA ratios as indicators of fish recent growth rates)
 B 167: 241 (DNA determination method for sea water)
 S 895 (DNA of Copepoda)
 1036 (biochemistry of, in fishes)
 1112 (derivatives formed by salmon and trout testes)
 1418 (RNA synthesis by rainbow trout liver nuclei)
 1560 (DNA polymerase from sockeye salmon testes)
- Acids, polyfunctional metabolic (*see also* Acids, amino; Acids, fatty)
 S 1222 (flame ionization detector molar responses for methyl esters of)
- Acinetobacter* (*see also* Bacteria)
 J 28(10): 1511 (associated with surfaces of hatching Pac. salmon eggs)
- Acipenser* (in addition to below *see also* Sturgeons)
baeri (*see* Sturgeon, Siberian)
fulvescens (*see* Sturgeon, lake)
medirostris (*see* Sturgeon, green)
oxyrhynchus (*see* Sturgeon, Atlantic)
sturio (*see* Sturgeon, Atlantic; *also* Sturgeons)
transmontanus (*see* Sturgeon, white)
- Ackerman, Benjamin Franklin
 J 24(12): 2637 (portable recompression chamber)
- Ackman, Robert George
 J 22(1): 131 (lipids of squid)
 (4): 875; 23(3): 357, (4):487; 24(2): 457; 25(2): 267; 29(7): 1085 (dimethyl- β -propiothetin & dimethyl sulfide as cause of unusual odor in Atl. fish flesh)
 23(1): 155 (free fatty acid formation in cod livers)
 (7): 991 (Atl. herring oils)
 (11): 1809 (fatty acid composition of cod lipids)
 24(2): 357 (α -tocopherol in some Atl. fish and shellfish)

- (2): 467 (fatty acid composition of the decapod shrimp)
 (3): 613 (seasonal changes in cod fatty acid composition)
 (3): 635 (marine fatty acids)
 (6): 1219 (freshwater fish oils)
 (7): 1521 (isopropyl alcohol in fish protein)
 (12): 2563 (Canadian marine oils)
 25(4): 805 (isopropyl alcohol retention in fish protein concentrate)
 (5): 1061 (redfish & flatfish oils re fatty acid composition)
 (8): 1561 (jellyfish fatty acids)
 (8): 1603 (phytoplankter fatty acids)
 (10): 2083 (cod flesh & liver lipid fatty acids)
 26(5): 1385 (lobster gaffkemia)
 (6): 1577 (herring oils free fatty acids)
 (8): 2027 (Nfld. capelin composition)
 (8): 2037 (Nfld. capelin lipids)
 27(2): 251 (fatty acid in *Halosphaera viridis* alga)
 (3): 513 (krill lipids & fatty acids)
 (6): 1131 (elemental phosphorus in cod)
 (10): 1669 (seasonal trends in herring oils)
 28(4): 601 (investigation re commercial oil from sand lance)
 29(4): 349 (DDT, dieldrin, & polychlorinated biphenyls residues in commercial Canadian marine oils)
 (4): 407 (queen crab lipid composition)
 (7): 1053 (elemental phosphorus stability in edible muscle during Atl. cod processings)
 CHN 25 ("blackberry" odor problem)
 37 (recognition of bunker oils by thin-layer chromatography)
 T 187 (iodine values & fatty acid levels of Atl. herring oils)
 198 (lipid content & composition of queen crab tissue & products)
 208 (assimilation of elemental phosphorus by Nfld. marine organisms)
 233 (possible toxic materials in Nfld. bottom deposits)
 249 (methodology for identification of marine oils in edible oil products)
 254; 303 (phosphorus levels in Nfld. water samples)
 334 (unicellular algal lipids effect on Atl. oyster lipids & fatty acids)
 S 921 (response of fatty acids and esters in gas-liquid chromatography (GLC))
 932 (gray seal blubber fatty acids)
 942 (GLC of minor components of mixtures)
 945 (cod liver oil fatty acids)
 971 (GLC analysis of fatty acid esters)
 972 (isolation of saturated fatty acids of marine lipids)
 984 (concentration effects on GLC retention times of mixture components)
 995 (aliphatic hydrocarbons)
 1009 (fatty acids in mullet)
 1034; 1044; 1159 (origin & effects of dimethyl- β -propiethetin re undesirable odor in Atl. fish flesh)
 1045 (marine oils and lipids)
 1048 (GLC analysis of marine oils)
 1068 (isometric monoethylenic fatty acids in herring oil)
 1074 (monoethylenic fatty acids)
 1110 (photosynthesis in green algae)
 1111 (lipids of fin whale)
 1136 (fatty acid methyl esters storage)
 1151 (unsaturated fatty acids ozonolysis)
 1163 (fatty acids equivalent chain length values)
 1175 (lipids and fish quality)
 1177 (cod liver lipids fatty acid esters)
 1183 (photosynthesis in algae)
 1184 (coho salmon fingerling fatty acids)
 1189 (freshwater fish oils)
 1192 (fatty acids GLC)
 1193 (diastereomerism in fatty acids)
 1203 (isomer distribution of monoenoic fatty acids)
 1222 (flame ionization detector molar responses)
 1225 (chain-length overlap problem)
 1227 (fin whale milk lipids)
 1228 (isoprenoid fatty acids re whale oils)
 1238 (GLC retention times of methylbranched fatty acids diastereoisomers)
 1254 (stereoisomerism in fatty acids)
 1265 (flame ionization detector)
 1266 (diastereoisomers of phytanic acid)
 1286 (occurrence of squalene in fish)
 1323 (composition of pristanic acids)
 1330 (separation of triglycerides and free fatty acids)
 1331 (calculation of equivalent chain length values for fatty acid esters and ketones)
 1350 (production of fish protein concentrate from herring)
 1351 (load effect in open-tubular GLC)
 1385 (phytanic acid methyl esters)
 1395 (fish oils branched-chain fatty acids)
 1396 (fatty acids & esters GLC)
 1405 (lipoxidase in marine oils)
 1423 (fatty acids from Nfld. copepods)
 1424 (elemental phosphorus determination by GLC)
 1425 (*trans*-6-hexadecenoic acid in Atl. leatherback turtle)
 1449 (GLC retention times of long-chain compounds)
 1474 (occurrence of odd-chain fatty acids in smelt)
 1475 (confusion between C₁₈ & C₂₀ fatty acids in analysis of seed lipids)
 1481 (fatty acids from *Euphoria longana*)
 1514 (lipids of Amazon R. dolphins)
 1528 (geological fate of chlorophyll)
 1564 (*trans*-6-hexadecenoic acid and alcohol in sea anemone lipids)
 1572 (distribution of fatty acids in lipids of 3 species of molluscs)
 1591 (pristane and other hydrocarbons in fish oils)
 1596 (bottle-nosed dolphin milk triglycerides fatty acid composition)
 1608 (isovaleroyl triglycerides from beluga whale blubber & head oils)
 1622 (mackerel lipids & fatty acids)
 1625 (depot fat fatty acids of freshwater vs. marine turtles)

- 1638 (monoethylenic fatty acids of partially hydrogenated Atl. herring oil)
- 1664 (analysis of fatty acids & related materials by GLC)
- 1673 (GLC of higher monomethylbranched fatty acid esters & hydrocarbons)
- 1674 (Atl. cod erythrocyte lipids)
- 1694 (fatty acids compositions of blubber fats from NW Atl. fin whales vs. harp seals)
- 1700 (barracudina lipid wax esters as potential replacement for sperm whale oil)
- 1712 (preparation & characterization of a stereoisomer of 2 tetramethyl fatty acids)
- 1714 (isomer subfractionation effects in study of monoethylene fatty acids of hydrogenated oils)
- 1715 (GLC anomaly with methylbranched ketones & fatty acids)
- 1717 (harbour seal fatty acids in lung & heart phospholipids & triglycerides)
- 1721 (fatty acids distribution in Atl. leatherback turtle tissues & organs)
- 1722; 1723 (diagenesis & maturation of phytol from an ancient sediment)
- A 40 (dimethyl- β -propiothetin occurrence in algae & determination by GLC)
- 101 (re stability of "Carbowaxes" in GLC)
- 170 (bunker oil recognition by thin-layer chromatography)
- Acmaea testudinalis* (see Limpet, tortoiseshell)
- Acoustics (see Sound and Sounding headings)
- Acrocheilus alutaceus* (see Chiselmouth)
- Acrocirridae (Polychaeta Sedentaria)
- J 26(10): 2595 (new family, formerly Cirratulidae; new species *Acrocirrus trisetus*; description of other *Acrocirrus* species)
- Acrotus willoughbyi* (see Ragfish)
- ACTH (see Hormones)
- Actin (see Myosin)
- Actiniaria (see Sea anemones)
- Actiniscus canadensis*; *A. pentasterias* (see Dinophyceae)
- Activity; Exercise; Fatigue (see also Stress; Swimming)
- J 22(4): 891 (re acetone bodies and lactic acid in salmonids blood)
- (6): 1397 (carp muscle effort metabolism)
- 23(1): 65, (4): 471, (6): 783, (9): 1461 (effect on rainbow trout metabolism)
- (10): 1507 (re otter-trawled haddock mortality from fatigue)
- (12): 1821 (effect on nucleotide degradation of swordfish muscle quality)
- 24(5): 1117, (8): 1731 (swimming stamina of sockeye salmon fry)
- (8): 1701; 25(3): 603 (effects of disturbance on rainbow trout physiology)
- 25(5): 837 (effects on glycogen & lactic acid in Atl. cod muscle & blood)
- (6): 1285 (effect of light on brown trout)
- (12): 2603 (swimming: effect on goldeye respiration)
- 26(1): 63 (coho salmon fry activity & aggression diel cycles)
- (1): 93 (temperatures changes effects on acclimated Atl. salmon)
- (8): 2165 (brown trout seasonal, re feed availability in a British stream)
- (9): 2517 (of Atl. halibut vs. rabbit re temperature, as caused by temperature effect on dehydrogenase enzyme activity)
- (12): 3266 (periods of northern pike, whitefish, wall-eye, & white sucker, Heming L., Man.)
- 28(4): 587 (factors influencing scope for activity & active & standard metabolism in rainbow trout)
- (6): 801, 809, 815 (re fish growth efficiency from rations)
- (7): 1062 (sensor apparatus for detecting lobster, in a burrow)
- 29(2): 202 (effect on body weight of *Tilapia* after freshwater vs. saltwater acclimation)
- (8): 1217 (influence on Atl. salmon plasma osmolality & ionic concentration)
- B 162 80 (fatigue in spawning migratory sockeye salmon)
- T 116 (*Cylmenella torquata* polychaete in aquarium)
- S 1043 (re postmortem Atl. cod muscle glycolytic metabolites)
- 1402 (fish muscle glycogen phosphorylase re)
- 1413 (decompression effect on deepsea bacterial)
- 1415 (the energy cost of living, for fishes)
- 1590 548 (of fishes re temperature)
- A 212 (energy cost of living, for fish: review)
- Activity, coefficient of
- J 22(1): 113 (of seawater Mg ion)
- (4): 885 (of seawater Na ion)
- S 1162 (of sodium sulfate in sea water)
- 1234; 1515 (isopiestic measurements on H₂O-NaCl-Na₂SO₄ system at 25 C, re sea water)
- 1512 (as above, for H₂O-NaCl-MgCl₂ system)
- A 108 17 (of NaCl & MgSO₄ ions in sea water)
- Actomyosin (see also Muscle; Myosin)
- J 27(9): 1589 (values of frozen redfish fillets)
- Adams, D.
- J 26(8): 2027 (Nfld. capelin composition)
- (8): 2037 (Nfld. capelin lipids)
- Adams, James Russell
- J 23(12): 1965 (records of *Cryptobia salmositica* from sockeye salmon)
- 26(4): 941 (migration of *Philonema* in salmon)
- Adams River, B.C.
- J 28(10): 1493 (sockeye salmon abundance since 1938 re year-classes dominance)

- Adaptation (see Acclimation)
- Addison, Richard Frédéric
 J 25(10): 2083 (Atl. cod flesh lipid fatty acids)
 26(6): 1577 (Atl. herring oils free fatty acids)
 27(2): 251 (*Halosphaera viridis* alga fatty acids)
 29(4): 349 (DDT, dieldrin, & polychlorinated biphenyls residues in commercial Canadian marine oils)
 (4): 407 (queen crab lipid composition)
 (5): 592 (Aroclor 1221 polychlorinated biphenyl mixture components)
 (7): 1053 (elemental phosphorus stability in edible muscle during Atl. cod processing)
- CHN 37 (recognition of bunker oils by thin-layer chromatography)
- T 198 (lipid content & composition of queen crab tissue & products)
 208 (assimilation of elemental phosphorus by Nfld. marine organisms)
 233 (possible toxic materials in bottom deposits, Long Harbour, Nfld.)
 254 (phosphorus levels in Nfld. marine waters)
 293 (analysis of N.B. mine waste waters for ore-floatation agents)
 303 (elemental phosphorus monitoring program results, Long Harbour, 1970-71)
 S 1222 (flame ionization detector molar responses)
 1286 (squalene occurrence in fish)
 1330 (separation of triglycerides & free fatty acids)
 1424 (elemental phosphorus determination by gas-liquid chromatography)
 1474 (odd-chain fatty acids occurrence in smelt)
 1674 (Atl. cod erythrocyte lipids)
 1678 (toxicity & chemistry of some iron-ore floatation agents re brook trout)
 1716 (analysis of a chlorinated terphenyl & its deposition in Atl. cod tissues)
- A 170 (bunker oils recognition by thin-layer chromatography)
- Adductor muscle (see Muscle; also Clam; Oyster; Scallop; etc.)
- Adelman, Ira Robert
 J 29(9): 1309 (factors influencing hydrogen sulfide toxicity to goldfish)
- Adenosine; Adenine; and derivatives (see also Nucleosides; Purines)
 J 22(2): 307 (in pink shrimp)
 24(8): 1701 (phosphate in disturbed rainbow trout muscle)
 (8): 1717 (monophosphate aminohydrolase of Atl. cod prerigor and postrigor muscle)
 26(3): 704 (in canned Arabian Sea shrimp)
 (10): 2621 (phosphate changes in critical freezing zone of Atl. cod muscle)
 27(1): 83 (nucleotide degradation route in giant scallop adductor muscle during iced storage)
 (11): 1917 (adenosine triphosphate as index of primary production, NW Atl. surface waters)
 28(8): 1125 (phosphate changes in Atl. fish post-mortem skeletal muscle)
 B 167: 245 (determination of triphosphate in sea water)
 S 1648 (re degradation of fish products quality)
 A 30 (enzymic degradation in fish muscle)
- Adrenal cortical cells
 J 28(4): 505 (histology of, in wild vs. hatchery land-locked Atl. salmon)
 29(3): 311 (morphological reversible changes during freshwater spawning journey of Atl. salmon)
- Adrenal gland (see also Adrenaline; Interrenal tissue; Hormones)
 J 25(2): 431 (sterone biosynthesis by herring)
 (7): 1465 (metopirone effect on salmon & trout pituitary-interrenal function)
 (12): 2549 (interrenalectomy & stress re blood components)
 S 1244 (corticosteroid 1 α -hydroxylase in clasmo-branch)
 1337 (adrenalectomy effect on American eel cortisol, etc.)
- Adrenaline and derivatives
 J 24(8): 1701; 25(3): 603 (disturbance effects on concentration in rainbow trout)
 S 1337 (adrenalectomy effect on American eel plasma cortisol, etc.)
- Aequipecten irradians sablensis* (see Scallop, bay)
- Aeration (see Anoxia; Aquaria; Oxygen, dissolved; Respiration)
- Aeromonas* (for *A. salmonicida* see Furunculosis; see also Bacteria)
 J 23(10): 1487, (12): 1957 (rainbow trout response to *A. hydrophila* antigens)
 25(7): 1521 (Great Lakes lampreys infection by)
 26(1): 115 (endotoxin effects on coho salmon & rainbow trout metabolism)
 (9): 2311 (disinfectants re trout eggs transmission of *A. liquefaciens*)
 27(1): 191 (*A. liquefaciens* re American shad inflammatory lesion)
 28(3): 335 (surviving ingestion by tubificids)
 (10): 1511 (strains associated with surfaces of Pac. salmon eggs)
 29(2): 211 (detection of fish antibodies to, by indirect fluorescence)
 29(5): 567 (*A. hydrophila* population of hatchery coho & chum salmon eggs)
 (9): 1359 (effect of 2 iodophor disinfectants on *A. salmonicida* & *liquefaciens*)
 (10): 1425 (inadequacy of some aquarium antibacterial formulations against *A. salmonicida* & *liquefaciens*)
 T 226 (*A. liquefaciens* cause of epizootic fish mortalities in NW Miramichi R., N.B.; shiners as possibly immune carriers)

- S 1406 (*A. liquefaciens* infection of salmon & white suckers in mine-effluent polluted Miramichi R., N.B.)
- Aëropsis fulva* (sea urchin)
J 24(6): 1385 (off Oregon coast)
- Africa
J 25(12): 2527 (brown trout distribution)
- Agarum* (see Phaeophyta)
- Agassiz, Lake (North America prehistoric)
A 100 (possible role in Man. fishes distribution)
- Age; Age composition; Age-groups (see also Age determination; Growth; Length; Longevity; Size; Weight)
J 22(1): 465 (trends in Nfld. longlined cod)
(2): 568 (American plaice, from otoliths)
(2): 605 (composition re size of Nfld. salmon)
(3): 673 (Nicola L., B.C., kokanee)
(6): 1477 (sockeye and chum salmon by scales)
(6): 1565 (new record for witch flounder)
23(2): 252 (composition, of lake whitefish, Georgian Bay, Ont.)
(3): 459 (lacustrine, of Asian vs. Bristol Bay, Alaska, sockeye salmon)
(6): 797 (southern Nfld. herring population)
(7): 947 (salmon parr in Nabisipi R., Que.)
24(5): 1035 (of blue pike in L. Erie commercial fishery)
(5): 1077 (American plaice in Nfld. area)
(5): 1165 (re shell weight of several British Isles aquatic molluscs)
(6): 1209 (hypothetical, and growth of Nfld. bait squid)
(6): 1253 (of zebrafish re resistance to zinc sulfate)
(7): 1531 (vs. fecundity, Atl. cod)
(12): 2573 (& growth of Atl. cod in Ogac L., Baffin Is.)
25(1): 157 (*Mesidotea entomon* isopod in Chignik Lakes, Alaska)
(4): 657 (& growth of Ungava round whitefish; correction on J 26(8): 2263)
(7): 1511 (& growth of Saskatchewan R. delta lake sturgeon)
(9): 1831 (F) (& growth of 4 Que. lakes maskinonge)
(9): 1993 (another 3rd-year pink salmon)
(12): 2589 (of Fraser R. white sturgeon)
26(3): 687 (as rainbow trout bottom color selection factor)
(5): 1289 (W L. Superior longnose suckers)
(8): 2252 (& growth of N.W.T. broad whitefish)
(9): 2339 (& size of shiner perch re embryo number & size)
(9): 2403 (& growth, blackbelly eelpout, Burrard Inlet, B.C.)
(10): 2754 (& size of steelhead trout, Babine R., B.C.)
(11): 3073 (derivation of average lengths of different fish age-groups)
(12): 3133 (& age distribution, cod off SW Nfld.)
27(1): 105 (glacier lanternfish in NW Atl.)
(1): 135 (re length of lake trout, L. Opeongo, Ont.)
(2): 393 (record for Atl. capelin)
(3): 413 (re length of brook trout, Matamek L., Que.)
(3): 613 (rainbow trout re extended spawning season in L. Huron)
(5): 909 (re length of Hecate Strait Pac. cod)
(6): 991 (Dolly Varden smolts, SE Alaska)
(6): 1087 (brown & brook trout, Sydenham R., Ont.)
(7): 1265 (smallfin lanternfish)
(8): 1475 (L. Erie walleye, 1943-62)
(10): 1781 (Pac. ocean perch in NE Pac. surveys, 1963-66)
(12): 2155 (shorthorn sculpin, Nfld. waters)
28(4): 513 (age alternation of successive sockeye salmon spawning generations)
(5): 771 (rainbow trout, Batchawana Bay, L. Superior)
(6): 821 (Skeena R. sockeye & pink salmon, re gillnet selectivity)
(7): 1009 (re S Gulf of St. Lawrence seasonal herring stocks discreteness)
(8): 1153 (winter flounder, Long Pond, Nfld.)
(9): 1335 (& growth of weathervane scallop, Washington coast)
(10): 1493 (Adams R., B.C., sockeye salmon year cycle dominances re abundance fluctuations)
(10): 1573 (re animal production-biomass ratio)
(10): 1621 (re length, northern rockfish)
(11): 1739 (young rainbow trout & chinook salmon re columnaris disease susceptibility)
29(5): 477 (structure, L. Michigan alewives)
(5): 535 (distribution of L. Ontario American eels)
(7): 1061 (re different aggregations of Pac. ocean perch, Queen Charlotte Sound, B.C.)
B 153: 79, 116 (composition, & at maturity, of B.C. petrale sole stocks)
157: 14 (lobsters)
161: 5, 24 (goldeye from scales; age re fish size)
162: 261, 353, 362, 381 (lacustrine & marine, re sockeye salmon life history)
165: 12 (carp)
CNG 80 (Pac. herring re abundance, stocks, & mortality)
91 (steelhead trout, in Vancouver Is. stream-anglers' catches)
CNS 16; 27 (composition, of 1964 & 1965 B.C. sockeye, chum, & pink salmon catches)
17 (composition, of petrale sole off Vancouver Is.)
18 (composition, of Hecate Strait rock sole)
25 (composition of B.C. sockeye salmon 1912-63 catches)
26 (B.C. chum salmon catches, 1957-63)
T 10 (composition of 1965 & 1966 sockeye salmon spawning run on escapement to Lakelse L., B.C.)
31 (Atl. mackerel)
57 (& length distribution, Bay of Fundy herring)
74 (sablefish)

- 94-97 (frequency data for Nfld. herring, 1964-65 to 1967-68)
- 105 (B.C. commercial groundfishes)
- 108 (rock sole, N Hecate Strait, B.C.)
- 109 (yellowfin sole, Hecate Strait, B.C.)
- 137 (composition of Nfld. herring seine catches & weights at ages)
- 139 (& age-length ratios, Gulf of St. Lawrence herring)
- 140; 174; 177; 183; 190 (& length composition, B.C. herring)
- 167 (maternal influences on age at maturity, Skeena R. sockeye salmon)
- 168 (composition, Bay of Fundy sea scallop)
- 170 (composition of haddock landings from Nfld. area, 1953-64)
- 179 (& length composition, Greenland turbot in Nfld. area)
- 213 (distribution, B.C. offshore herring)
- 224 (ringed seal population data analysis)
- 259 (re length, B.C. rock sole)
- S 925; 926 (re maturity of NE Pacific salmon)
- 940 (composition in landed N.S. haddock)
- 1019 (random vs. stratified sampling methods for Atl. cod)
- 1038 (high-seas Pac. salmon, 1964)
- 1050 (computer technique for distribution of)
- 1158 (heterogeneity in Atl. cod & haddock commercial landings)
- 1206 (of salmon from Labrador Sea & off W Greenland)
- 1255 (NW Atl. capelin)
- 1302 (composition of chum salmon in open N Pac. Ocean)
- 1316 (& size & recruitment comparisons for Scotian Shelf haddock)
- 1317 (salmon from banks & deeps off Nfld.)
- 1318 (determination, validation, & composition, W Nfld. cod stock)
- 1382 (& length re growth rate, Nfld. redfish)
- 1390 (re maturity of N Pac. offshore chum salmon)
- 1494 (behavior of growth & mortality estimates based on age-length keys)
- 1687 (re postembryonic growth & molting of *Orchestia* amphipods)
- A 99 (& size composition of Atl. cod)
- 108 (1966 Canadian ICNAF studies on age, age-groups, year-classes, etc., of various Atl. fishes)
- 138; 256; 263 (queen crab)
- 159 (re length studies of Atl. cod by various countries)
- 184 (Canadian Arctic harp seal)
- 190 (Greenland turbot)
- 193 (Atl. capelin)
- 207 (composition, N.B. & N.S. herring)
- 249 (age-group data for Atl. cod catches)
- 259 (at maturity of Pac. salmon)
- Age determination (*see also* Bone; Fins; Marking; Otoliths; Scales, fish; Shells; Tagging; Teeth)
- J 28(10): 1583 (possibilities of radioisotope X-ray fluorescence spectrometry: review)
- (10): 1666 (re population biostatistical analysis)
- Aggregation (*see also* Schooling)
- J 28(7): 999 (spacing & density as criteria for distinguishing from schooling of fish)
- 29(3): 265 (cutthroat re brook trout in small N Idaho streams)
- (7): 1061 (of Pac. ocean perch with different biological characteristics, Queen Charlotte Sound, B.C.)
- Aggression (*see also* Behavior; Mating; Spawning; Symptatry; Territorialism)
- 24(9): 1955 (sockeye salmon during spawning)
- 28(7): 1019 (behavior of introduced rainbow trout)
- 29(5): 598 (group housing tank effects on lobster)
- (9): 1356 (re resistance of bluegill to lethal zinc concentration)
- T 235 (lobster agonistic behavior)
- S 1465 (in crayfish copulatory behavior)
- A 212 (energy cost, in fish: review)
- Aglantha* (*see* Hydrzoa)
- Agmenellum quadruplicatum* (*see* Cyanophyta)
- Agonidae (*see also* Alligatorfish; Poacher; Poachers)
- J 26(6): 1467 (standardization of bony plate terminology)
- 27(5): 981, (6): 1109 (notes on, & key to, *Ocella* & *Stellerina*)
- Agonism (*see* Aggression)
- Agonopsis emmelane* (*see* Poacher, northern spearnose)
- Agonus acipenserinus* (*see* Poacher, sturgeon)
- decaonus* (*see* Poacher, Atlantic)
- Agris, Paul Francis
- J 24(8): 1819 (lampricide and anoxia effects on sea lamprey)
- Ahmed, Muzzamil
- J 24(10): 2155 (*Ostrea lurida* & *Crassostrea* chromosomes)
- Aholehole, Hawaiian (*Kuhlia scandircensis*) (*K sandvicensis*)
- J 25(8): 1651 (plasma protein-bound inorganic iodide)
- 29(1): 67 (oxygen consumption re salinity, swimming, & feed consumption)
- S 1409 (gill blood pathways)
- Aiken, David Edwin
- J 27(1): 21 (toxicity of yellow phosphorus)
- S 1557 (ovarian maturation and egg laying in crayfish)
- 1706 (histological changes in lobsters exposed to yellow phosphorus)
- A 135 (crustacean molt cycle)
- Ainslie, Lake, N.S.

- J 23(7): 1101 (eel behavior observations)
- Airbladder (*see* Swimbladder)
- Airplane (*see* Census)
- Alanine (*see* Acids, amino)
- Alaska (*see also* Alaska, Gulf of; Bristol Bay; Kodiak Island) (some other localities are under separate headings)
- J 22(4): 919 (sedimentation rate in a salmon stream)
- 24(1): 1 (redescription of N Pacific prickleback; correction on J 24(12): 2641)
- (1): 209 (adipose fin pigmentation of juvenile chinook vs. coho salmon)
- (3): 687 (pot for experimental shrimp fishing)
- (4): 893 (*Trianaephorus crassus* in sockeye salmon smolts)
- (7): 1475 (oceanography of larger SE inlets)
- (9): 1861 (phytoplankton dynamics in arctic Imikpuk L.)
- (10): 2069, (12): 2613 (sockeye salmon fry & smolt migratory behavior)
- (11): 2207 (annual oceanographic changes, SE coast)
- 25(1): 157 (*Mesidotea entomon* biology in Chignik Lakes)
- (3): 485 (spawning sockeye salmon behavior in Iliamna L.)
- (12): 2575 (physics & chemistry of 58 lakes & rivers)
- 27(4): 669 (pink shrimp diel vertical migration, Kachemak Bay)
- (6): 991 (Dolly Varden smolts age, feed, & migration in SE)
- (10): 1811 (standing stocks, etc., of eelgrass populations)
- (11): 2112 (commercially harvested weathervane scallops biological conditions)
- 28(1): 98 (female maturity determination in shrimps)
- (1): 115 (meristic differences between anadromous & freshwater-resident Arctic char)
- 29(3): 229 (volcanic ashfall effects on chemistry & sedimentation of 2 Afognak Is. lakes)
- B 156 (Dixon Entrance physical oceanography)
- 173 (full descriptions, etc., of freshwater fishes from NW)
- S 1061 (Pac. salmon as a resource, Cape Thompson region)
- Alaska, Gulf of (*see also* Alaska; Bristol Bay; Oceanography, North Pacific)
- J 22(3): 683 (surface drift followed by transponding buoys)
- 23(9): 1403 (times of scale annulus formation in salmon)
- 26(8): 1985 (demersal fishes exploratory survey)
- T 18 (shrimp explorations, 1957-63)
- S 1390 (origin of chum salmon from scale studies)
- 160 (brine-spray freezing at sea)
- 180: 376 (full description, etc., B.C.)
- S 956 (Canadian research in Caribbean Sea)
- 1204 (population units study by serum transferrin polymorphism)
- A 44 (description; catches; B.C. coast)
- 54(F) (description of Atlantic type; B.C. fishery)
- 90; 103 (fishery trend along N America Pac. coast)
- 182 (ICNAF Canadian 1969 research summary)
- Albani Inlet, B.C.
- J 24(10): 2137 (kraft mill effluent pollution distribution)
- T 307 (numerical model for effect of pulpmill effluent on oxygen levels)
- 308 (observations on young chinook salmon)
- 316 (effects of pulpmill effluent on dissolved oxygen)
- A 241 (oceanography re pulpmill effluent disposal)
- Alberta (*see also* Banff National Park; Beaver Lake; Jasper National Park; Lakes; Waterton Lakes National Park; *also* other localities and bodies of water)
- J 26(2): 325 (fishes distribution in southern)
- (6): 1439 (fishes distribution re Missouri-Saskatchewan R. divide)
- B 151; 151(F) (special products from freshwater fishes)
- 173 (full descriptions, etc., of fishes from arctic drainage system)
- S 1718 (organochlorine pesticide levels in commercially caught fishes from several waters)
- Albinism
- J 25(7): 1323 (muscle enzyme comparison of normal vs. albino brook trout)
- 27(8): 1389 (furunculosis antibody in albino rainbow trout serum)
- Alburnus alburnus* (*see* Bleak)
- Alcohols (*see also* Esters; Ethers; Glycol, etc.)
- J 24(7): 1521; 25(4): 805 (isopropanol extraction solvent residues determination in fish protein concentrates (FPC))
- 26(7): 1919, 1923 (isopropanol-water mixtures for lipids extraction in preparing FPC)
- (11): 2959 (cyclohexanetetrol in *Monochrysis* flagellate)
- 29(8): 1125 (various, developed in ice-stored canary rockfish muscle)
- (9): 1303 (methanol effect on marine lipids fatty acids of zooplankton stored in)
- CHN 39 (extraction & determination of isopropanol residues in FPC)
- S 1564 (*trans*-6-hexadecenol in sea anemone wax)
- 1700 (of white barracudina lipid wax esters, also sperm whale body & head oil waxes)
- 1722; 1723 (diagenesis & maturation of phytol re geochemistry)
- Alcyonaria (*see* Corals)
- Aldehydes (*see also* Formaldehyde; Malonaldehyde)
- Albacore (Atlantic and Pacific) (*Thunnus alalunga*)
- B 150 (flesh "greening" during precooking before canning)

- J 22(1): 17, 27 (identification re salted cod flavor)
 29(8): 1125 (various, developed in ice-stored canary rockfish muscle)
- Alderdice, Donald Francis
 J 23(3): 319 (Pac. cod)
 (9): 1447 (holding tank for fish)
 24(5): 1173 (insecticide effect on coho)
 25(3): 495 (salinity & temperature effects on English sole; correction on J 27(8): 1499)
 (3): 585 (fish egg incubator)
 27(4): 765 (nonlinear response surface)
 28(5): 727 (salinity & temperature effects on petrale sole)
 (6): 883 (environment re Pac. cod eggs)
 (10): 1545 (salinity & temperature re Pac. herring)
 29(3): 251 (acclimation & temperature experience effects on young coho salmon swimming speed) (petrale sole embryonic development)
 T 41
 45 (extended tables of the transformation $\phi = 2 \arcsin \sqrt{X}$)
 100 (flathead sole embryonic development)
 S 964 (determination of safe levels of toxicants)
 1725 (marine poikilotherms responses to environmental factors acting in concert)
 A 87 (water pollution detection & measurement, biological assays)
- Aldolase (*see also* Enzymes)
 S 1171; 1197 (nature of activity in unicellular algae re their phylogeny & evolution)
- Aldrich, Frederick Allen
 S 1520 (food of giant squid)
- Aldrin (*see* Insecticides)
- Alectrias* species
 J 24(1): 1 (distinction from *Alectridium* & *Pseudoalectrias* pricklebacks)
- Alectridium aurantiacum* (*see* Prickleback, lesser)
- Alepidosaurus aesculapius* (*see* Lancetfish, longnose)
- Alepisaurus borealis* (*see* Lancetfish, longnose)
ferox (*see* Lancetfish, longnose)
- Alepocephalidae (*see also* next heading)
 J 22(5): 1151 (description of *Talismania bifurcata* as taken off Oregon coast; taxonomy of *Talismania* re *Alepocephalus*)
- Alepocephalus agassizi* J 27(2): 391 (caligoid copepod parasites on)
convexifrons (*see* Slickhead, California)
tenebrosus (*see* Slickhead, California)
- Alevins (*see* names of adult fish, e.g. Salmon; Trout)
- Alewife (*Alosa pseudoharengus*) (gaspereau)
 J 23(1): 149 (alkaline phosphatase in scales)
- 24(6): 1219 (oil yield & composition on reduction)
 (6): 1291 (composition & nutritive value of meal)
 25(1): 169 (pesticide residues in meals & oils)
 (4): 667 (re Great Lakes species succession & exploitation)
 26(3): 597 (F) (retinal structure re activity, etc.)
 27(4): 677 (7 trace elements in whole fish, Great Lakes)
 (9): 1656 (seasonal depth distribution of landlocked, in a small lake)
 (10): 1842 (taken during L. Erie smelt surveys, 1962-63)
 28(7): 935 (summer periodic component of Passamaquoddy Bay fish communities, N.B., & length frequencies)
 (7): 1057 (effect of warm water of nuclear power plant discharge canal)
 (8): 1215 (changes in blood lactic acid concentrations during passage through a pool & weir fishway)
 (9): 1285 (methylmercury in, N.S. banks)
 29(5): 477 (population biology, L. Michigan)
 B 151; 151(F) (freshwater: canned smoked dressed & canned smoked filets)
 T 164 (extensive length-weight data)
 261 (bibliography for Gulf of St. Lawrence)
 MSP 14 (popular description (English & French))
 S 1128 (in a L. Superior bay)
 1189 (oil fatty acids composition)
 1395 (branched-chain fatty acids of oils)
 1409 (gill blood pathways)
 1591 (pristane & other hydrocarbons in commercial Canadian oil)
 1718 (organochlorine pesticide residues in Canadian commercially caught)
 A 85 (nutrient composition of meal as poultry feed)
- Alexander, Gaylord Ray
 J 24(7): 1425 (*Salvelinus fontinalis* numerical changes and population regulation; correction on J 25(8): 1760)
- Algae (*see also* classifications of; *also* Bacillariophyta; Benthos; Eelgrass; Flora, aquatic; Phytoplankton; Plankton; Seaweeds)
 J 22(6): 1425 (distribution of intertidal re salinity and tides)
 25(6): 1229; 27(5): 847 (re ecology of an Ont. reservoir and a lake)
 (6): 1269 (benthic, as starch source in marine waters)
 (10): 2037 (growth re primary production in a thermal stream; correction on J 26(8): 2263)
 (10): 2101 (re nitrogen utilization in subarctic lake)
 26(8): 2003 (production & community respiration in Marion L. sediments, B.C.)
 (10): 2760 (bacterial flora of 6 genera for feeding quahaug & Atl. oyster larvae)
 (12): 3101 (blooms after each fertilization of a lake)
 27(1): 13 (as copepod feed, Marion L., B.C.)
 (8): 1405 (phytoplankton re chemical composition of S Ont. lakes)

- 28(2): 192, 215 (of several small NW Ont. lakes re primary production)
 (11): 1783 (⁶⁵Zn vs. Zn distribution in experimental marine ecosystem)
- 29(1): 31 (features of, on L. Winnipeg artificial & natural substrates)
 (2): 195 (algal assay method for freshwater nutrient parameters)
- T 158 (settling periodicity as fouling organisms, Bideford R., P.E.I.)
- S 923; 924 (chlorophylls and carotenoid pigment determination)
 1113; 1194 (antibacterial activity of various species extracts)
 1155 (Coulter electronic counter for quantitative estimation of suspended)
 1159; 1183 (photosynthetic thetin in various unicellular)
 1171; 1197 (aldolase activity in marine planktonic)
 1392 (production in Fraser R. plume, Strait of Georgia)
 1626 (threonine dehydratase activity & protein content of various unicellular)
 A 40 (same as S 1159 above)
 244 (coastal waters humic substances effects on growth of planktonic)
 266 (bibliography on physiology & biochemistry; photosynthesis)
- Alginate
 S 1365 (use in glazing frozen fish or fillets)
- Algonquin Park, Ont.
 J 22(4): 969 (distribution of some crustaceans and fishes)
 24(5): 965 (pyloric caeca & gill raker development in lake trout)
 26(4): 871 (*Diphyllbothrium* cestode transmission to lake trout)
 29(2): 129 (recovery of planted brook trout, splake, & rainbow trout from selected lakes, re competitive other species)
- Ali, Mohamed Ather
 J 22(1): 221 (retina of Arctic char)
 25(9): 2001 (F) (eye structure and habitat of yellow walleye & sauger)
- Ali, Mohammed Youssouf
 J 28(9): 1235 (medaka vertebral count re egg size)
- Aliasing effect
 J 24(8): 1827 (on long-term oceanic variability studies off Canada's coasts)
- Alimentary tract (*see also* Digestion)
 J 22(2): 289 (intraperitoneal, comparison of Great Lakes lampreys)
- Alkalinity (*see also* Carbonate; Hardness of natural waters; pH)
 J 24(5): 899 (of subarctic Pac. Ocean)
- 28(11): 1811 (classification index for degree of, in lakes)
 T 314 (Petpeswick Inlet, N.S.)
- Alleles (*see* Genes; Heredity; Phenotypes; Transferrins)
- Allen, George Herbert
 J 23(7): 1043 (fin-marked coho salmon)
- Allen, Ian V. Foster
 J 24(2): 261 (marine-borer attack on wooden surfaces)
- Allen, John Anthony
 J 22(4): 977 (NW Atl. Mollusca)
- Allen, Kenneth Radway
 J 23(2): 163 (von Bertalanffy growth curves; corrections on J 26(8): 2263)
 (4): 511 (size limit of sole)
 (10): 1553 (estimating populations)
 24(12): 2595 (Atl. salmon tagging and fin-clipping)
 25(12): 2701 (computing recruitment rates)
 26(1): 179 (exploited populations estimation)
 (6): 1429 (ecology of stream fishes: a review)
 (9): 2267 (application of Bertalanffy growth equation)
 28(10): 1573 (production and biomass)
 29(10): 1373 (marine growth of NW Atl. salmon)
 T 20 (St. Andrews biological station computer programs)
 29 (Atl. provinces Atl. salmon catches, 1949-65)
 S 1050 (age determination using computers)
 1126 (Greenland salmon fishery in Miramichi R., N.B.)
 1217 (salmon growth rate)
 1218 (Maritime Provinces Atl. salmon tagging results)
 1235 (estimating effect on catch of size limit changes)
 1334 (salmonid populations in streams)
 A 270 (book review: Biological Studies of the English Lakes)
- Allen, Richard Lee
 J 25(11): 2467 (chinook salmon mortality re *Dermocystidium*)
- Allen, Theresa Mary
 S 1073 (enzymes in Atl. herring)
 1370 (lactate dehydrogenase in Atl. cod)
- Allen, William Vail
 J 28(8): 1191 (tissue components in Dungeness crab)
- Allergy
 B 168 4 (man, to shellfish)
- Alligatorfish (*Aspidophoroides monopterygius*)
 J 26(3): 597(F) (retinal structure re activity, etc.)
 28(7): 935 (regular component of Passamaquoddy Bay fish communities, N.B., & length frequencies)

- T 225 (associated with Bay of Fundy scallop beds)
261 (bibliography for Gulf of St. Lawrence)
- Alligatorfish, smooth (*Anoplagonus inermis*) (smooth poacher; smooth sea-poacher)
B 180: 552 (full description, etc., B.C.)
- Allocentrotus fragilis* (sea urchin)
J 24(6): 1385 (off Oregon coast)
- Alloctytus* sp. (see Oreo)
verrucosus (see Oreo)
- Allolumpenus hypochromus* (see Prickleback, Y-)
- Allopatry (see also Sympatry)
J 27(5): 923 (re walleye muscle myogen polymorphism origin)
28(9): 1259 (vs. sympatry re feed & habits of Dolly Varden & cutthroat trouts in 3 B.C. lakes)
B 173 (of various NW Canada & Alaska freshwater fishes)
- Allosmerus elongatus* (see Smelt, whitebait)
- Almécida, Leslie Joseph
J 25(1): 197 (tropical fish disease microorganisms)
- Alopias superciliosus* (see Thresher, bigeye)
vulpinus (see Shark, thresher)
- Alosa aestivalis* (see Herring, blueback)
pseudoharengus (see Alcwife)
sapidissima (see Shad, American)
- Alsea River, Oregon
J 24(5): 917 (steelhead trout fecundity)
- Alton, Miles Samuel
J 22(6): 1407 (brittlestar distribution)
23(11): 1673 (distribution of sea stars)
- Aluminium derivatives
J 28(2): 277 (in sediments of 16 small NW Ont. lakes)
29(12): 1691 (chloride, re toxicity to *Daphnia magna*)
S 957 (in St. Lawrence R. and Gulf sediments)
A 85 (in freshwater fishmeals)
- Alverson, Dayton Lee
J 26(8): 1985 (exploratory fishing methods)
- Amberjack, greater (*Seriola dumerili*)
S 956 (Canadian research in Caribbean Sea)
- Ambloplites rupestris* (see Bass, rock)
- Ambystoma gracile* (see Salamanders)
- Ameiurus* (see Ictalurus)
- Amend, Donald Ford
J 27(2): 265 (control of infectious hematopoietic necrosis by elevating water temperature)
(7): 1285 (hematopoietic necrosis in salmonids)
(8): 1385 (infectious hematopoietic necrosis virus)
29(1): 61 (virucidal activity of 2 iodophors to salmonid viruses)
- Ames, Warren Elby
J 26(1): 15 (isozymes in sockeye salmon sera)
27(12): 2371 (coho salmon transferrin polymorphism)
- Amia calva* (see Bowfin)
- Amines (see also Ammonia; Dimethylamine; Hydroxylamine; Trimethylamine)
J 23(7): 1025 (of fresh vs. frozen Atl. cod muscle)
24(8): 1701 (catecholamine concentrations in disturbed rainbow trout)
28(1): 1 (production and differentiation in stored frozen muscle of various Atl. coast fishes)
(8): 1173 (hexosamine levels in salmon, trout, & bovine blood sera)
(8): 1191 (glucosamine content of Dungeness crab exoskeleton)
(12): 1841 (chloramine toxicity to amphipod & fathead minnow)
S 1497; 1498 (metabolism of putrescine by fish mycobacteria)
- Amino acids (see Acids, amino; also Proteins)
- Aminotransferases (see Enzymes; Transferrins)
- Ammocoete (see Lamprey)
- Ammodytes americanus* (see Sand lance, American)
dubius (see Sand lance, northern)
hexapterus (see Sand lance, Pacific)
tobianus personatus (see Sand lance, Pacific)
- Ammonia; Ammonium ion
J 24(6): 1419 (estimation method for freshwater fish excreta)
25(10): 2101 (utilization in subarctic lake)
27(4): 653 (ammonium ion transfer in lake muds)
(4): 731 (ammonium hydroxide effect on lobster behavior re kraft mill effluent)
(5): 837 (as criterion of pollution in natural waters)
(11): 2022 (in inflow, rain, & snow, Clear L., Ont.)
28(5): 759 (rapid method for determination in water with univalent cation glass electrode)
(5): 788 (analysis technique for ammonium-nitrogen in artificial seawater aquaria)
29(10): 1505 (tables of % un-ionized NH₃ in aqueous ammonia solutions at different pH & temperature levels, re ammonia toxicity to fish)
B 125R: 83; 167; 87, 131 (determination in sea water)
T 77; 327 (re primary productivity, St. Margaret's Bay, N.S.)
247 (re primary productivity, Bedford Basin, N.S.)
255 (ammonium chloride toxicity tests on brook trout)

- 314 (re primary productivity, Petpeswick Inlet, N.S.)
- S 1341 (re eutrophication of inlet extension of Victoria harbour, B.C.)
- 1437 (ammonium ion in Green L., N.Y.)
- 1519 (nondestructive determination in marine sediments)
- Amoebophyra ceratii* (endoparasitic dinoflagellate)
J 25(10): 2241 (parasitic on *Gonyaulax catenella* dinoflagellate)
- Ampelisca vadorum*; *A. abdita* (see Amphipoda)
- Amphibians (see also Frog; Mudpuppy; Newt; Salamanders)
S 1665 (some aspects of corticosteroid metabolism: review)
- Amphidinium carteri* (see Dinophyceae)
- Amphigonopterus aurora* (see Perch, reef)
- Amphineura (chitons) (see also subclassifications; also Mollusca)
J 22(4): 978 (records from NW Atl. Ocean, 1946-61)
29(4): 385 (review of sterols identified in)
T 2 (distributional checklist & bibliography of B.C. marine)
25; 35; 59; 60; 73 (in Strait of Georgia benthos biomass)
S 1470 (B.C. coast checklist)
1679 (*Chaetopleura apiculata* sterols)
- Amphipoda (see also Crustacea)
J 22(4): 969 (*Pontoporeia affinis* distribution, Algonquin Park, Ont.)
(4): 1103 (*Anonyx* predation on lobsters)
23(1): 85 (in feed of NE Pac. Ocean salmon & steelhead trout)
24(1): 215 (*Eurythenes gryllus* preying on living long-lined fish)
(2): 305 (*Ampelisca vadorum* & *A. abdita* biology)
(3): 687 (bioluminescence in pelagic *Paraproneo crustulum* & *Cyphocaris challengeri*)
25(5): 943 (*Anonyx* species of Atl. & Arctic coasts of N America)
(8): 1637 (habitat of 9 pelagic species in NE Greenland slope waters)
(9): 1803 (caloric & sulfur content)
(11): 2461 (distribution of natural ^{65}Zn in *Anonyx* tissues)
(11): 2515 (*Hyalella azteca* caloric content)
26(2): 361 (study of *Haustorius canadensis*, *Neohaustorius biarticulatus*, & *Acanthohaustorius millsi* from Cape Cod, Mass.)
(3): 683 (Arctic & Atl. N America *Anonyx* taxonomy)
(4): 909 (*Gammarus* as intermediate host of *Pomphorhynchus laevis* parasitic acanthocephalan)
(4): 975 (biology of *Bothrimonus cestode* in *Gammarus oceanicus*, *Marinogammarus finmarchicus*, & *M. pirloti*)
(5): 1321 (study of *A. millsi*, *Parahaustorius longimerus*, & *Protohaustorius deichmannae* from Cape Cod)
(6): 1415 (*Ampelisca abdita* re community concept)
(8): 2016 (partitioning community respiration in a lake sediment)
(9): 2283 (physiological tolerances & behavior responses of *H. canadensis*, *N. biarticulatus*, *A. millsi*, *Pr. deichmannae*, & *Pa. longimerus* to 5 environmental factors)
(9): 2403 (as blackbelly celpout feed)
27(1): 21 (yellow phosphorus toxicity to *Gammarus oceanicus*)
(4): 621 (group analysis of communities distribution, Washington coast)
(4): 685 (*Hyalella azteca* distribution, growth, & abundance re sediment microflora feed, Marion L., B.C.)
(7): 1277 (effects of copper in soft water on *Gammarus pseudolimnaeus*)
(10): 1864 (*Pontoporeia affinis* an infective carrier of *Echinorhynchus salmonis* acanthocephalan to lake trout)
(12): 2273 (in benthic fauna off Washington coast)
28(2): 257 (*Pontoporeia affinis* dominant in many small NW Ont. lakes zoobenthos)
(5): 705 (biological magnification & degradation of insecticides by fresh water)
(5): 711 (*Hyalella azteca* & *Crangonyx richmondensis occidentalis* energy flow & secondary production, Marion L., B.C.)
(5): 776 (*P. affinis* lipid & caloric content, Cayuga L., N.Y.)
(6): 928 (in feed of tidepool & fluffy sculpins)
(9): 1331 (zoogeographic problem of presence of relict *P. affinis*, L. Washington, USA)
(11): 1699, 1715 (*P. affinis* dominant macroinvertebrate in Bay of Quinte)
(12): 1841 (chloramine toxicity to *Gammarus pseudolimnaeus*)
29(2): 187 (*Corophium volutator* caloric content)
(8): 1234 (upward-swimming activity in river estuarial benthos)
(9): 1337, 1340 (*Gammarellus angulosus* & *homari* biology in NW Atl.)
(10): 1381 (role of gammarids as host of *Bothrimonus cestoda*)
B 176 (synopsis of Canadian zooplanktonic)
CNG 84 (popular description of some NE Pac. Ocean)
CNS 15; 20; 21; 22; 23 (in NE Pac. Ocean salmonids stomachs)
T 25; 35; 59; 60; 73 (in Strait of Georgia benthos biomass)
43 (on Irish moss)
47 (collections of *Anonyx* species from N American Atl. & Arctic coasts)
55 103 (identification of, B.C.)
158 (settlement periodicity of *Corophium insidiosum* as fouling organism, Bideford R., P.E.I.)
165; 165(F) (*Gammarus lacustris* re rainbow trout farming)

- 196 (in bottom fauna of Okanagan Valley lakes, B.C.)
- 258 (toxicity tests of trisodium nitrilotriacetate detergent on, re pollution)
- 266 (Frobisher Bay, Baffin Is., N.W.T.)
- 333 (gammarid biomass measurements, St. Margaret's Bay, N.S.)
- S 1004 (*Gammaracanthus* & *Pontoporeia affinis* re Canadian Arctic marine-glacial relicts)
- 1128 (in benthos of 4 L. Superior bays)
- 1558; 1570; 1662 (toxicity & uptake of polychlorinated biphenyl pesticides from sea water re *G. oceanicus*)
- 1634 (adaptive significance of biased sex ratio in *Orchestia*)
- 1681 (revised annotated list of, from W coast N America marine mammals)
- 1687 (*Orchestia* spp. postembryonic growth & age)
- 1710 (toxicity of polyoxyethylene ester & ether oil dispersants to *Gammarus oceanicus*)
- A 14 (Great Bear L., N.W.T.)
- 133 (general caloric value)
- Amphistichus argenteus* (see Surfperch, barred)
- koelzi* (see Surfperch, calico)
- rhodoteris* (see Surfperch, redtail)
- Amylopectin
- S 1270 (possible significance of accumulation in *Clostridium botulinum* cytoplasm)
- 1585 (accumulation in *C. botulinum*)
- Anabaena* (see Cyanophyta)
- Anabiosis (see Revival)
- Anabolism (see also Metabolism)
- J 24(11): 2355 (re mathematical model for fish growth)
- Anaemia (see Anemia)
- Anaesthesia (see Anesthesia)
- Analysis, canonical. (see Computer programming; Mathematical treatment of data)
- Analysis, chemical (see Analysis methods (chemical); Bioassay; Composition, chemical; Limnology; Nutrients, aquatic; Oceanography; etc.)
- Analysis, discriminant (see also Mathematical treatment of data)
- T 40 (computer program for)
- Analysis, mathematical (see Computer programming; Mathematical treatment of data; Multivariate analysis)
- Analysis, multivariate (see Multivariate analysis)
- Analysis, proximate (see Composition, chemical)
- Analysis methods (chemical) (see also Apparatus; Bioassay; Chromatography; Composition, chemical; Electrophoresis; Enzymes; Pollution; etc.; also chemical entities, e.g. names of elements)
- J 23(5): 737, (10): 1587 (Fe effect on thiobarbituric acid values for tissue lipid oxidation)
- 24(6): 1419 (ammonia in freshwater fish excreta)
- (7): 1521 (isopropyl alcohol residues in protein concentrates)
- (12): 2555 (phospholipase A assay)
- 25(1): 71 (fluorimetry for salmonid plasma cortisol)
- (8): 1525 (quantitative glycogen & $\Delta 7P$ extraction from frozen muscle)
- (11): 2505 (self-absorption of ^{14}C in samples)
- 26(6): 1664 (carbon estimation dichromate reagent instability)
- (7): 1823 (1α -hydroxycorticosterone)
- (7): 1959 (caloric content of marine sediments)
- (9): 2345 (formula for calculating caloric content of zooplankton biomass)
- (9): 2394 (dry extraction of fat from fresh fish)
- (9): 2449 (copper in fresh waters of varying hardness)
- (11): 3055 (toxic pollutants in kraft mill effluents)
- 27(3): 591 (bone material in fish protein concentrate by differential density)
- (3): 596 (cortisol & cortisone simultaneously in salmonid plasma)
- (4): 805 (mercury in fish)
- (10): 1685 (dimethylamine in cold-stored Atl. cod filets)
- 28(5): 759 (rapid method for determining ammonium ion in water with univalent cation glass electrode)
- (5): 769 (liquid scintillation method for ^{14}C -labelled benthic microflora)
- (5): 788 (ammonium-nitrogen in artificial seawater aquaria)
- (7): 1043 (nitrilotriacetic acid in inland waters)
- (7): 1055 (fluoride in soil or mud by nonfusion distillation *pF* method)
- (9): 1225 (methylmercury)
- (10): 1583 (by radioisotope X-ray fluorescence spectrometry; review)
- 29(5): 592 (identification & estimation of major components in polychlorinated biphenyl mixture Aroclor 1221)
- B 125R; 167 (seawater analysis methods manuals)
- CHN 36 (total carotenoid pigments in salmon & trout flesh)
- 38 (dimethylamine vs. trimethylamine as quality index for marine fish flesh)
- 39 (isopropanol residues in fish protein concentrates)
- T 67 (volumetric, of noncomplexed ethylenediaminetetraacetic acid (EDTA) salts residues in fish-dipping solutions)
- 68 (colorimetric, of noncomplexed, & complexed EDTA residues)
- 217 (determining origin of petroleum oil spills causing aquatic pollution)
- 249 (detection & estimation of marine oil adulteration of all-vegetable margarines & cooking fats)

- 272 (polychlorinated biphenyls & other industrial halogenated hydrocarbons)
- 293 (for xanthate & other types of flotation agent residues in mine wastes)
- S 1170; 1637 (alternative method for stereospecific, of triglycerides)
- 1251 (recovery of microquantities of steroids after thin-layer chromatography)
- 1265 (flame ionization detector, for organic compounds)
- 1339 (for fluoride determination in biological samples, e.g. fish protein concentrate)
- 1371; 1374 (various esters as substrates for assaying pancreatic lipase activity)
- 1385 (gas-liquid chromatography separation of diastereoisomeric optically active menthyl esters)
- 1411 (gas-liquid chromatography quantitative estimation of neutral sugars)
- 1424 (elemental phosphorus by gas-liquid chromatography, re pollution)
- 1456 (mass spectrometry of sterol menthyl esters)
- 1463 (mass spectrometric identification of insecticides)
- 1467; 1609 (automated measurement of seawater dissolved nutrients)
- 1471 (colorimetric assay for pancreatic lipase, based on acetaldehyde liberation from vinyl oleate substrate)
- 1472 (phenosafranin as improved indicator for seawater chlorinity titrations)
- 1505 (fluoride in sea water by potentiometry)
- 1519 (nondestructive, for marine sediments protein, total amino acids, & ammonia)
- 1534; 1614; 1685 (flameless atomic absorption spectrophotometry procedure for mercury detection)
- 1569 (spectrofluorometric for fuel oil residual contamination in aquatic animals)
- 1595; 1661 (hexane impurity effects on silicic acid chromatography of organochlorine pesticides)
- 1637 (review of triglycerides stereospecific analysis)
- 1661 (problems in polychlorinated biphenyls determination)
- 1663 (sterols separation & identification facilitated by silver-ion chromatography of steryl acetates)
- 1683 (phosphorus compounds in natural waters)
- 1684 (extraction of organochlorine pesticides from water, for assay)
- 1685 (total & organic mercury levels in fish tissue)
- 1701 (ecdysterone estimation by sulfuric acid induced fluorescence)
- 1703 (manual on primary production measuring methods for aquatic environments)
- 1705 (check sample study of determining mercury traces in fish tissues)
- 1714 (isomer effects in subfractionating margarine monoethylenic fatty acids)
- 1715 (GLC of methylbranched ketones & fatty acids)
- 1716 (chlorinated terphenyl pesticide)
- 1728 (rapid semimicro, for methylmercury in fish tissue)
- A 81; 87 (for water pollutants)
- 101 ("Carbowax" types for gas-liquid chromatography)
- 210 (sea water: book review)
- Anand, Tek Chand
S 1593; 1630; 1670 (Pac. salmon gonadotropin effects on gonad functions of hypophysectomized catfish)
- Anarhichas denticulatus* (see Wolffish, northern)
lupus (see Wolffish, Atlantic)
minor (see Wolffish, spotted)
orientalis (see Wolffish, Bering)
- Anarrhichthys ocellatus* (see Wolf-eel)
- Anas* (see Birds; Ducks)
- Anastassiadis, Phoebus Anastassios
J 28(8): 1173 (Pac. salmon glycoprotein constituents)
- Anatomy (see also Abnormality; Histology; Morphology; also names of anatomical structures)
J 22(2): 259 (body proportions of rare Nfld. skates)
23(12): 1845 (body proportions re mouth shape & feeding ecology of 14 freshwater fish species)
24(2): 305 (*Ampelisca* amphipods sibling species pairs)
(2): 447 (trouts urinary & genital systems)
(3): 537 (review of fishes bioluminescent organs)
(9): 1911 (26 species of parasites from freshwater Salmonidae & Coregonidae)
28(10): 1595 (of chondrophore vs. sessile hydroid)
(11): 1789 (shellfish, re association of melanin pigment with presence of paralytic toxin)
B 177 (re paralytic toxin in E Canada shellfishes)
179: 2 (B.C. clams)
S 1691 (*Thyasira* bivalves)
- Anchoa (see Anchovy (South American))
- Anchovy (South American) (*Anchoa*)
J 23(3): 395 (protein nutrient quality of fishmeal)
- Anchovy (tropical)
J 25(1): 197 (microorganisms isolated from diseased *Coila dussumieri*)
- Anchovy, northern (*Engraulis mordax mordax*)
J 24(5): 1101 (fatty acids composition)
26(3): 557 (particulate & filter feeding)
(11): 2843 (role in Pac. sardine ecology: mathematical treatment)
27(7): 1225 (some aspects of schooling)
29(3): 285 (biting & filtering interrelation in feeding)
(12): 1792 (as Pac. hake feed)
B 180: 104 (full description, etc., B.C.)
T 22; 181; 257; 317 (taken in B.C. trawl fishery)
A 70; 71(F) (brief description)
90; 103 (increasing abundance off N America Pac. coast)

- Anchovy, silver (*Engraulis eurystole*)
 J 29(11): 1605 (voltage & pulse rates for inducing electrotoxis in)
- Anctil, Michel
 J 25(9): 2001 (F) (eye structure and habitat of yellow walleye and sauger)
 26(3): 597 (F) (retinal structure of teleosteans)
 27(4): 826 (bioluminescence in lanternfishes)
- Anderson, Bruce Curon
 J 24(9): 1999 (sockeye salmon gill rakers)
- Anderson, Douglas Poolé
 J 27(8): 1389 (rainbow trout precipitins)
 29(2): 204 (virulence & persistence of *Aeromonas salmonicida* forms inoculated into coho salmon)
- Anderson, George Cameron
 S 1355 (NE Pac. Ocean nitrate)
 1466 (primary production studies in N Pac. Ocean)
- Anderson, George Geoffréy
 J 28(12): 1905 (obituary of Maurice Aloysius Foley)
- Anderson, John Murray
 J 22(2): 503 (DDT effect on young Atl. salmon temperature selection)
 24(7): 1507 (*Salmo salar* and *S. gairdneri* temperature selection)
 (7): 1515 (starvation re salmonid selected temperature)
 25(12): 2677 (sublethal DDT re brook trout lateral line)
 26(1): 93 (Atl. salmon activity)
 27(1): 21 (toxicity of yellow phosphorus)
 (2): 331 (sublethal effect of DDT in brook trout)
 28(9): 1285 (methylmercury in fish)
 29(1): 27 (insecticides effects on Atl. salmon parr predation by brook trout)
 S 1324 (DDT effects on brook trout)
 1556 (temperature effects on brain oxygen in salmonid fishes)
 A 222 (pollutants effect on physiology and behavior)
- Anderson, Margaret Lillian
 J 25(10): 2059 (protein extractability & free fatty acid in Atl. cod)
 26(10): 2727 (protein in frozen cod muscle re free fatty acids)
- Anderson, Richard Brewster
 J 27(1): 1 (salmon insecticide residues)
- Anderson, Robert Stewart
 J 24(11): 2461 (plastic-bag water sampler)
 27(2): 233 (limnology of Canadian alpine lakes)
 (8): 1335 (effects of rotenone on zooplankton)
 28(3): 311 (alpine and subalpine zooplankton)
- Anderson, Roy Clayton
 J 26(4): 849 (*Cystidicola* revision)
- Andrews, Cater William
 J 22(2): 369 (Atl. salmon behavior)
- Androgens (*see* Hormones)
- Andrusak, Harvey
 J 28(9): 1259 (cutthroat trout & Dolly Varden segregation)
- Anemia (*see also* Blood)
 J 23(1): 45 (laboratory-produced, in mountain whitefish)
 26(1): 111 (from folic acid deficiency in coho salmon feed)
- Anemone, deepsea (*see* Sea anemones)
- Anenterotrema* (*see* Trematoda)
- Anesthesia; Anesthetics; Anesthetization
 J 24(7): 1579 (techniques for Pac. salmon)
 25(1): 25 (M.S. 222 excretion in rainbow trout urine)
 27(4): 715 (re tracked homing cutthroat trout)
 (5): 909 (stress in rainbow trout by M.S. 222 & benzocaine)
 28(1): 113 (sampling fish muscle for residual M.S. 222 & quinaldine)
 (5): 625, 635 (physiological effects of tricaine methane sulfonate on brook trout)
 29(9): 1344 (blood concentration of tricaine methane sulfonate in brook trout during branchial irrigation)
- B 148 (guide to properties, characteristics, & uses, for fish)
 S 1030 (general, for lobsters)
- Angiography (*see also* Blood)
 S 934 (Pac. salmon cardiovascular system radiography)
- Anglemouth, veiled (*Cyathone microdon*) (*C. pacifica*)
 J 26(10): 2692 (S of La Have Bank, N.S.)
 B 180: 161 (full description, etc., B.C.)
 T 11 (in B.C. experimental midwater trawling)
 261 (bibliography for Gulf of St. Lawrence)
- Angler (*see* Goosefish; Scaddevil)
- Anglerfish (*see* Dreamer)
- Angling (*see also* names of sport fishes, e.g. Trout; Salmon)
 J 25(2): 209 (detailed data re stream ponding effect on brook trout)
 (6): 1145 (harvest re mortality of maskinonge in 2 Ont. lakes)
 (10): 2011 (fertilizing lake to increase trout growth & yield)
 26(10): 2754 (sex ratio of angled steelhead trout, Babine R., B.C.)

- 27(2): 393 (smallmouth bass yields, Tadanac L., Ont., 1896-1966)
 (6): 1017 (catch of splake, L. Huron)
 (6): 1087 (re exploitation of brown & brook trout populations in self-sustaining stream)
 (12): 2356 (rainbow trout feeding habits re abundance of drifting invertebrates)
- 28(3): 351 (relative utilization rates of Miramichi R., N.B., Atl. salmon by local angling vs. Atl. provinces commercial fisheries)
- 29(2): 129 (yields of brook trout, rainbow trout, & splake planted in selected Ont. lakes)
 (3): 265 (vulnerability to, re cutthroat & brook trout aggressive behavior)
 (5): 469 (vulnerability of tagged northern pike)
- B 158: 57 (re economics of N.W.T. commercial fisheries)
 161: 37 (for goldeye)
- CNG 91 (steelhead trout age & size in Vancouver Is. stream catches)
- T 130 (catches & weights of Atl. salmon in Nfld. streams)
 270 (Canadian Atl. salmon catches by provinces, 1952-70)
- S 920 (forest spraying re Atl. salmon)
- A 14 (Great Bear L., N.W.T., grayling, yellow pickerel, etc.)
 16 (summary of symposium on sport fishing economics)
- Anguilla* (general) (see Eels)
anguilla (see Eel, European)
japonica (see Eel, Japanese)
rostrata (see Eel, American)
- Animal feed (see Feed; Feedstuff; Fishmeal; Rations)
- Animals (see Fauna)
- Anisakis* (see Indicator species; Nematoda)
- Anisotremus davidsoni* (see Sargo)
- Annelida (see also Echiuroidea; Hirudinea; Oligochaeta; Polychaeta)
 J 25(9): 1803 (caloric & sulfur content of several species)
 26(5): 1273 (in Atl. cod & haddock feed)
 28(6): 928 (feed of fluffy & tidepool sculpins)
 CNG 84 (popular description of some NE Pac. Ocean)
 T 158 (settling periodicity, as fouling organisms)
- Anodonta anatina* (*anatina*) (see Mussels, freshwater)
californiensis (see Mussels, freshwater)
grandis (see Mussels, freshwater)
- Anolis carolinensis* (see Lizard)
- Anomalies (see Abnormalities)
- Anomalocera* (see Calanoida)
- Anomolodesmata (see also Clams (Pacific); Pelecypoda)
- J 26(8): 2230 (5 new septibranch species from E Pac.)
- Anomura (see Crab, sand; Crabs, hermit; Shrimp, ghost)
- Anonyx* (see Amphipoda)
- Anoplagonus inermis* (see Alligatorfish, smooth)
- Anoplarchus insignis* (see Cockscomb, slender)
purpurescens (see Cockscomb, high)
- Anopleura
 S 1681 (annotated list of, from W coast N America marine mammals)
- Anoplogaster cornuta* (see Fangtooth)
- Anoplopoma fimbria* (see Sablefish)
- Anostraca
 J 28(3): 311 (of several W Canadian alpine & subalpine ponds)
- Anotopterus pharao* (see Daggertooth)
- Anoxia (see also Oxygen, dissolved; Respiration)
 J 24(8): 1819 (re lampricide effectiveness on sea lamprey)
 (10): 2169 (effect on rainbow trout blood serum proteins)
 25(1): 15 (re blood lactic acidosis of channel catfish in anoxia)
- Antarctica
 A 257 (oceanography, fauna, etc.: book review)
- Anthozoa (see also Corals; Sea Anemones; also Coelenterata)
 T 25; 35; 59; 60; 73 (in Strait of Georgia benthos biomass)
 43 (on Irish moss)
 255 (Bay of Fundy)
- Antia, Navall Jamshedji
 J 22(3): 793 (phytoplankter enzymes)
 24(1): 201 (enzymes in algae)
 26(5): 1185 (salmon skin purines & pteridines)
 27(2): 335 (glycerol stimulation of marine phytoplankton growth)
 S 1040 (algae enolase)
 1113 (marine planktonic algae antibacterial activity)
 1145 (fucoxanthin optical activity)
 1171 (unicellular red algae aldolase activity)
 1194 (two *Isochrysis galbana* antibacterial products)
 1197 (aldolase activity comparative studies)
 1198 (growth of *Hemiselmis virescens*)
 1248 (algal phospholipase C properties)
 1403 (heterotrophic growth of *Chroomonas*)
 1427 (phospholipase D in red algae)
 1448 (darkness survival of marine microalgae)
 1480 (composition of a unicellular red algae)
 1491 (fission of phenylalanine by marine algae)

- 1626 (L-threonine dehydratase of 7 kinds of unicellular marine algae)
- Antibacterial agents (*see* Antibiotics; Bactericides; Disinfectants; Preservatives)
- Antibiotics (*see also* Bactericides; Disinfectants; Preservatives)
- J 22(1): 117 (in shrimp preservation)
- (1): 243 (effect on piscine bacteria)
- 23(4): 601 (vs. gamma irradiation for sardine preservation)
- 24(4): 849; 26(5): 1263 (tetracycline marking of sockeye salmon fingerlings)
- (12): 2623 (effects in combating gaffkemia disease of lobsters)
- 25(8): 1753 (CTC as bactericide & bacteriostat)
- 28(4): 521 (sensitivity of pathogenic vibriosis bacteria to various)
- 29(10): 1425 (inadequacy of some commercial, for inhibiting potential aquarium fish pathogens)
- (11): 1513 (toxicity & efficacy towards furunculosis & bacterial kidney disease in adult chinook salmon; teratogenic effect on progeny)
- CNG 37 (for preserving herring on vessel prior to reduction)
- S 889 (for fish preservation)
- 1031 (for fish products preservation; residues, regulations)
- 1389 (chloramphenicol for combating disease in hatchery salmon, & retention levels in tissues)
- A 12(F); 65 (as fillet preservative rendered ineffective by polyphosphate dips)
- 26 (review of use for fish & shellfish quality preservation)
- 160 (preservation of fish at sea)
- 203 (recommended as fish products preservative)
- 258: 34 (possibilities of sea water & marine organisms)
- Antibodies (*see* Antigens)
- Anticholinesterase (*see* Choline; Enzymes)
- Anticoagulant
- J 24(7): 1579 (for salmonid blood during surgery)
- Antifouling treatments (*see also* Fouling organisms)
- CSG 52; 53 (for boat hulls)
- T 21; 119 (for boat hulls)
- A 88; 114; 121 (same as CSG 52 and 53 above)
- Antigens; Antibodies (*see also* Disease; Furunculosis; Immunology)
- J 23(10): 1487; (12): 1957 (rainbow trout response to bacterial)
- 24(2): 443 (re serology of 2 Atl. oyster populations)
- 28(9): 1253 (production & immune responses of coho salmon & rainbow trout re *Chondrocyclus columnaris* disease)
- 29(2): 173 (re testing 13 Columbia R. fish species for *C. columnaris* disease)
- (2): 211 (detection of fish antibodies to *Aeromonas liquefaciens* by indirect fluorescence)
- Antimony derivatives
- J 27(4): 677 (traces in Great Lakes fishes & their livers)
- 28(5): 786 (in dressed Canadian fishes from industrial area lakes)
- Antimora microlepis* (*see* Flatnose, Pacific)
- rostrata* (*see* *Antimora*, blue)
- Antimora*, blue (*Antimora rostrata*)
- J 27(2): 391 (caligoid copepod parasitic on)
- Antimora*, Pacific (*see* Flatnose, Pacific)
- Antioxidants (*see also* Pro-oxidants; Rancidity)
- J 22(1): 53 (salt vs. polyphosphate, for frozen fish)
- (4): 929 (effects of metal salts on lean Atl. cod muscle, and estimation of)
- 23(1): 27 (effect of various on cod muscle rancidity)
- 25(4): 639 (α -tocopherol re metal-induced marine flesh oxidative rancidity)
- 26(9): 2299 (re marine muscle lipids oxidation)
- CVG 34 (effect in improving Pac. herring meal nutritive value)
- 35; 36; 40 (for control of herring meal spontaneous heating)
- S 969 (effect in improving herring meal nutritive value)
- A 41 (review of research on)
- 80 (general summary re effect on nutritive value)
- Antipollution measures (*see also* Pollution and other topics listed under that heading)
- J 27(4): 653 (plastic layer over lake sediments to lessen release of phosphates, etc.)
- (8): 1493 (benefits of sewage treatment for phosphate removal)
- 28(12): 1912 (combating fuel oil marine spills)
- CAR 1 (ponding of phosphorus plant effluents)
- CVG 46 (fishmeal plant deodorizer)
- T 201 (bunker fuel oil dispersal)
- 217 (tracing origin of fuel oil spills)
- 250 (computer programming)
- 254 (elemental phosphorus release, Nfld.)
- S 1291 (nitritotriacetic acid (NTA) for protecting fish from zinc & copper in waters)
- 1407 (sewage disposal, B.C. coast: review)
- 1476 (re implementing of Canadian ocean studies)
- 1500; 1504 (re pulpmill effluents)
- 1531 (flocculating reaction, re pollutants removal)
- 1539 (capacity of marine estuaries to flush away pollutants)
- A 148 (re phosphorus production effluents)
- 151 (bacterial fermentation of pulpmill effluents)
- 183 (re oceanography & ocean resources management)
- 187 (sewage removal in confined waters)
- 201; 230 (re environment effects on human food production)

- 203 (by protein recovery from fish processing wastes)
- 216 (re detergents)
- 223 (combating fuel oil, elemental phosphorus, sewage, & pulpmill pollution, Canadian Atl. coast)
- Anus (*see* Rectum)
- Aorta (*see* Heart)
- Apeltes quadracus* (*see* Stickleback, fourspine)
- Aphanizomenon flos-aquae* (*see also* Phytoplankton)
 J 25(6): 1229 (in phytoplankton ecology of an Ont. reservoir)
- Aphanopus carbo* (*see* Scabbardfish, black)
- Aplodinotus grunniens* (*see* Drum, freshwater)
- Apodichthys flavidus* (*see* Gunnel, penpoint)
- Apollonio, Spencer
 J 26(8): 1969 (glass shrimp breeding & fecundity)
- Aporocotyle margolisi*
 J 24(8): 1763 (new parasitic trematode species)
- Apostle Islands region (Lake Superior, Wis.)
 J 25(7): 1377 (lake trout rehabilitation)
- Appetite (*see* Feed; Starvation)
- Apparatus; Equipment (when shown in illustrations) (*Note*: Utilizations are also indexed under appropriate headings. In addition to the following, *see* Gear, fishing; Marking; Tagging)
 J 22(1): 173, (4): 1035 (for observing young salmonid behavior in simulated stream channels)
 (1): 247 (centrifugal sorting of fish eggs for fecundity)
 (2): 335 (determining salmonids buoyancy adjustment by swimbladder volume)
 (2): 369 (photoperiod effects on young Atl. salmon)
 (2): 421 (Atl. salmon & lobster tagging)
 (3): 689 (transponding oceanographic buoy for current measurement)
 (4): 875 (thetin & derivatives determination in marine organisms & products)
 (4): 1025 (time-lapse photography of echo soundings of migrating fish)
 (5): 1309 (rapid measuring of large samples of fish)
 (6): 1491 (tunnel respirometer for salmon sustained swimming speed)
 23(1): 65 (physical conditioning of trout)
 (2): 293 (testing chum salmon fry schooling)
 (3): 341 (for fish swimming endurance)
 (4): 611 (side-trawl for research vessel)
 (6): 813 (testing toxicity of pulpmill effluent to fish)
 (6): 929 (micro starch-gel electrophoresis)
 (7): 983 (for illumination effect on rainbow trout)
- (7): 1025 (for gradient elution chromatography)
 (7): 1089 (portable press for salmon scale impressions)
 (8): 1271 (aquarium for photography at sea)
 (9): 1411 (electrical analog model for wind-driven currents)
 (9): 1477 (small holding tank for fish)
 (11): 1805 (speed calibration curves for histogram sea current meter)
 24(1): 9 (gamma irradiation of flesh)
 (1): 77 (hatchery release tank for pink salmon fry)
 (2): 357 (chromatographic eluent collection)
 (2): 463 (gear for transporting *Mysis relicta* to lakes)
 (3): 475 (determining oxygen influence on largemouth bass growth)
 (3): 689 (shrimp pot for experimental fishing)
 (4): 709, 731, 769, 823 (for determining effects of forest insecticide sprays on Atl. salmon, trout, & aquatic insects)
 (4): 883 (for sampling planktonic oyster larvae)
 (5): 1033 (for measurement of small volumes)
 (5): 1117 (flume for testing sockeye salmon fry swimming stamina)
 (6): 1241 (for measuring maximum swimming speed of small fishes)
 (7): 1461 (for freeze-drying Atl. cod steaks)
 (7): 1579 (for Pac. salmon anesthetic & surgical techniques)
 (7): 1629 (for determining location of redds excavations by pink salmon)
 (8): 1775 (chamber for cardiovascular dynamics of swimming adult sockeye salmon)
 (8): 1811 (pumping system for sampling small marine plankton)
 (10): 2137 (for pulpmill effluent concentration determination)
 (11): 2309 (for Atl. cod audiogram)
 (11): 2321 (determining orientation of pink salmon fry early marine migration)
 (11): 2461 (new plastic-bag water sampler)
 (11): 2473 (simple lake model for instructional use)
 (12): 2637 (decompression chamber for diving accidents)
 25(1): 26 (fish urine collection)
 (1): 49 (fish swimming speed)
 (1): 112 (hatching of sucker hybrids)
 (1): 177 (harpoon adapter for tagging surface-swimming fish)
 (2): 393 (effect of light on schooling & feeding of fish)
 (3): 579 (measuring fish growth re dissolved O₂ levels)
 (3): 585 (incubator for small marine fish eggs)
 (5): 837 (swimming stress effects on Atl. cod blood & muscle)
 (6): 1115 (inducing sounding response in salmon)
 (6): 1155 (Atl. cod auditory thresholds)
 (6): 1161 (tidewater Atl. herring larvae sampling nets)
 (6): 1285 (effect of light on brown trout activity)

- (7): 1441 (fish attraction with pulsed low-frequency sound)
- (7): 1453 (stream aquarium)
- (7): 1485 (swimbladder volume determination)
- (8): 1591 (testing rheotaxis of American eel)
- (8): 1741 (water core plankton sampler)
- (9): 1987 (red & white muscle temperature of recently caught fishes)
- (10): 2040 (thermal stream water characteristics)
- (10): 2123 (re underwater observation of scallop behavior)
- (11): 2453 (determining volatile sulfur compounds in soft-shell clams)
- (11): 2519 (marking fish by high-frequency electric sparks)
- 26(1): 21 (for response of smallmouth bass to shade)
- (1): 63 (for inducing hypoxial stress in coho salmon embryos and fry)
- (1): 93, (11): 2807 (fish respirometer)
- (1): 133 (fry trap for estimating salmonid survival)
- (1): 154 (for precise temperature control of fish refrigeration)
- (2): 279 (trap for river benthic invertebrates)
- (2): 361 (sand sampler)
- (2): 389 (for Dungeness crab larvae culture)
- (3): 583 (for Atl. cod odor perception re feeding)
- (3): 687 (for testing rainbow trout bottom color selection)
- (4): 741 (for laboratory maintenance of cestode-infected sticklebacks)
- (5): 1199 (holder for examining fin rays for aging)
- (6): 1378 (spinner culturer for cells to detect water pollution)
- (6): 1647 (for measuring fish larvae sustained swimming ability)
- (6): 1685 (emergence trap for stream insects collection)
- (7): 1847 (for aortic catheterization of trout)
- (7): 1948 (vertical plankton & water sampling)
- (7): 1956 (experimental tank to simulate reservoir conditions)
- (8): 2005 (lake sediment sampler)
- (8): 2227 (simple stream tank simulating a rapids environment)
- (8): 2240 (new type of zooplankton & ichthyoplankton sampling net)
- (8): 2257 (hand shears for heading & gutting capelin)
- (9): 2363 (for bioenergetics experiments)
- (9): 2523 (refrigerating sea water for improving scallop meats keepability)
- (9): 2527 (hooks for deep-sea line fishing)
- (10): 2581 (bottom corer for sampling benthos & sediments)
- (10): 2751 (bottom sediment sampler attached to trawl board)
- (10): 2765 (liquid-nitrogen-cooled die for branding salmon & trout)
- (11): 3083 (detector for magnetized wire salmon tags)
- 27(1): 39 (testing hybrid trout for swimbladder gas
- (1): 74 (oxygen combustion & radiometry of macrophytes)
- (1): 167 (proportional controlling of water temperatures)
- (1): 185 (self-contained integrating radiometer for underwater measurement of light energy in absolute units)
- (1): 196 (concentric ring traps re salmon egg development in spawning channel)
- (2): 317 (decoding encapsulated metal oxide tags in animals by X-ray fluorescence spectroscopy)
- (2): 331 (conditioning brook trout for propeller-tail reflex)
- (2): 401 (including surf effects in submersion-emersion sensor for intertidal biological studies)
- (3): 535 (ancillary to cubmarine survey of Atl. scallop beds)
- (3): 551 (measuring dogfish respiration re blood circulation)
- (4): 653 (coring lake muds)
- (4): 715, (6): 1147, (11): 2071 (ultrasonic tracking of tagged aquatic organisms)
- (4): 731 (testing effects of bleached kraft mill effluent on lobsters)
- (4): 749 (photoperiodism effects on threespine stickleback sexual maturation)
- (4): 793 (salinity preference development in presmolt coho salmon)
- (4): 805 (mercury determination in fish)
- (5): 947 (large floating structure for Pac. salmon behavior studies)
- (5): 963 (locating nematodes in marine fish flesh by ultraviolet fluorescence)
- (6): 1033 (high-speed Miller towed net for fry sampling; also electric shocker)
- (6): 1059 (visually observing fish under ice by periscope)
- (6): 1172 (oxygenating device for live-bait wells & holding tanks)
- (7): 1201 (controlled smoking of lake whitefish)
- (7): 1321 (improved respirometer for swimming fish)
- (8): 1371 (testing lobster olfactory reactions)
- (9): 1579 (determining bacteria depuration rate of quahaug & clam)
- (9): 1627 (sampling water expired by fish)
- (10): 1691, 1867 (efficiencies of various grabs & corers for sampling benthos)
- (11): 1971 (tubificid oligochaetes defecation rate determination)
- 28(1): 73 (measuring insect larval respiration rates)
- (1): 100 (rapid removal of embryos from fish eggs)
- (2): 189 (incubation bottles holder for in situ phytoplankton production determinations)
- (2): 215 (lake periphyton sampler)
- (3): 305 (re detection of bacterial production of trimethylamine)
- (3): 335 (oligochaete worm feces collector)
- (3): 365 (corer for sampling shallow-water benthos)
- (3): 379 (measuring dissolved oxygen requirements of embryonic & larval quahaug)

- (4): 491 (blood perfusion for fish hypoxia studies)
 (4): 559 (modified bomb calorimeter for small plankton samples)
 (5): 643 (smokehouse)
 (5): 655 (toxicity tests of copper sulfate towards brook trout eggs & fry)
 (5): 781 (vascular catheterization procedure improvement for teleost fishes)
 (6): 849 (sampling benthos & substrate materials in shallow streams)
 (7): 1043 (glass ampoule for nitrilotriacetic acid assay)
 (7): 1049 (mud interstitial water sampling receptacle)
 (7): 1061 (practical small-scale commercial dryer for fish fillets & steaks)
 (7): 1062 (sensor for detecting presence of lobster in a burrow)
 (8): 1196 (digital recorder monitoring of dissolved oxygen in fish tanks)
 (8): 1203 (modified biopsy needle for sampling muscle from living fish)
 (8): 1205 (simple durable epifaunal collectors)
 (9): 1269, 1275, 1293 (echo voltage integrator re fish density in echo sounding)
 (9): 1319 (testing yearling sockeye salmon reaction to polarized light)
 (9): 1322 (aquatic phytomacrobenthos quantitative sampler)
 (9): 1352 (studying predation of torrent sculpin on salmon fry, re moonlight effect)
 (10): 1511 (incubating Pac. salmon eggs for examining bacterial flora of their surfaces)
 (10): 1583 (radioisotope X-ray fluorescence spectrometry)
 (11): 1699 (container for determining lake benthos instantaneous growth rate)
 (11): 1715 (lake sediment collector)
 (11): 1763 (large polyethylene tubes for lake enrichment eutrophication experiments)
 (11): 1805 (photographic, for estimating distances between fish schooling in aquaria)
 (11): 1807 (re mobilization of mercury from sediments by fish)
 (11): 1815 (reagent dispenser for Winkler dissolved oxygen tests)
 29 (1): 45 (testing goldfish response to copper vs. chloride ion gradients)
 (3): 251 (water tunnel for testing temperature effect on swimming speed of fish)
 (3): 341 (diver-operated underwater plankton collector)
 (4): 413 (laboratory rearing of shrimp larvae)
 (6): 819 (perch trap for experimental fishing)
 (7): 1071, 1082 (compact temperature-controlled recirculation unit for rearing fish)
 (7): 1075 (optoelectronic automatic counter-sizer for plankton)
 (8): 1234 (trap for upward-swimming benthos)
 (10): 1397 (louver deflectors for guiding Atl. salmon smolts from power turbines)
 (10): 1503 (improved type of "arctic dredge" for sampling deepwater benthos from rough sea bottoms)
 (11): 1627 (for acidification & bubbling during phytoplankton production determination)
 (11): 1641 (plastic nozzle for venturi aeration oxygenation of aquaria)
 (12): 1767 (automatic recording of electrical conductivity profiles in inlets)
 (12): 1784 (for rapidly measuring fish girth & length)
 B 125R: 7 (for seawater analyses)
 151; 151(F) (for freshwater fishes speciality products production)
 159 (automatic underwater photography)
 160 (chilling & freezing fish in refrigerated sea water)
 162: 164, 219, 220 (tow & plankton nets)
 163 (instrumentation for engineering study of otter trawls)
 166 (eel pots, nets, traps, weirs, spears, etc.)
 169 (B.C. oyster culture)
 178 (re raft-culturing of Pac. oyster in B.C.)
 179 (harvesting B.C. clams)
 CCG 7: 16 (for freshwater fishes electropherograms)
 7: 27 (for chilling bulk quantities of freshwater smelt)
 7: 33 (freshwater fish air-blast freezers)
 CHN 21 (holding & displaying live lobsters)
 34 (shrimp peeler)
 CNG 81 (hydraulic butter clam digger)
 82 (otter trawl boards; bobbin groundline)
 85 (trawl for B.C. shrimp exploration)
 87 (experimental prawn traps)
 89 (artificially rearing sockeye salmon by environmental control)
 CPO 1965-1 (modified salinometers for oceanography)
 CSG 57 (otter-trawl appurtenances)
 CVG 37 (preserving herring aboard vessel before reduction)
 38 (salmon-canning wastewater clarification)
 39 (fishmeal pilot plant for research)
 40 (adding antioxidants to bulk herring meals)
 42 (salmon-canning & herring-pump wastewater clarification & solids recovery)
 46 (compact deodorizer for fishmeal plant flame driers)
 T 13 (types of B.C. trawling gear)
 15 (fork vs. hydraulic rake for digging B.C. clams)
 17 (micromagnetic tags for pink salmon fry)
 38 (estuarine net counting fence for trapping Atl. salmon)
 44 (lobster transplant shipment)
 61 (exploratory shrimp trawling)
 69 (mechanical unloading of fish from fishing vessel)
 78 (octagonal pound for holding live fish)
 85 (free-floating current followers)
 102 (used in submarine)
 141 (electronic measuring & recording digital calipers)
 162 (vacuum unloading system for trawlers)
 172 (optoelectronic plankton sizer)

- 195 (water tunnel design for fish experiments, also for calibrations)
- 197; 286 (demonstration plant for treating fish processing plant waste water)
- 214 (spray applicator for treating fillets with ethylenediaminetetraacetic acid)
- 215 (photoelectric fish counter)
- 232 (sampling razor clam beds)
- 236 (culturing mud dab eggs & larvae)
- 249 (aspirating thin-layer chromatography material)
- 252 (modified Icelandic high-speed plankton sampler)
- 255 (testing yellow phosphorus production wastes toxicity toward fish)
- 263 (illuminated free-floating drogue for following sea currents)
- 264 (fluid mechanics of netting & low-solidity screens)
- 280 (shipboard, for holding Atl. fish in refrigerated sea water)
- 283 (environmental-control tank for synchronous study of young Pac. salmon growth & metabolism)
- 289 (cage, traps, tags, etc., for lobster studies)
- 292; 310 (towed underwater automatic camera sled)
- 294 (design of model aerated sewage lagoon)
- 295 (diver-controlled towed underwater research plane)
- 305 (trapnet for sampling shallow-water habitats)
- MSP 10 (fish-scale reader; swimming speed respirometer)
- S 891 (recording lamellibranchs water-pumping mechanism)
- 896 (swimming energy of young salmon vs. drag force on a dead fish)
- 909 (new hydraulic rake for soft-shell clams)
- 912 (for seawater aquaria systems)
- 931; 960 (studying pollutant avoidance by young Atl. salmon)
- 939(F) (seabed drifters)
- 959 (re pulp mill waste disposal problems)
- 978; 998 (respirometer)
- 980 (smokehouse for freshwater fishes)
- 999 (for testing toxicant avoidance by young salmon)
- 1006 (air-lift pump for fish unloading)
- 1077 (eutectic brine freezer for Eskimo fishermen)
- 1087 (underwater photography of otter-trawl operation)
- 1134 (Atl. oyster hatching)
- 1136 (capillary glass tubing for storing oxidizable fatty acid esters)
- 1154 (for sampling gases in bottom sediments)
- 1155 (Coulter electronic counter for aquatic particulate matter)
- 1157 (for measuring hydrogen sulfide oxidation kinetics)
- 1162 (for measuring activity coefficient of seawater sulfate)
- 1166 (for testing orientation of seaward-migrating young sockeye salmon)
- 1176 (3 types of scallop drags)
- 1257 (estuarine net counting fence for trapping Atl. salmon)
- 1262 (electrofishing for coho salmon underyearlings)
- 1269 (ultrasound production for parasite detection in fish)
- 1274 (mercury dispenser)
- 1296 (for tagging salmon smolts with aluminum staples)
- 1321 (trap for collecting marine sediment-forming materials)
- 1381 (snella gear for Atl. cod)
- 1396 (gas-liquid chromatography of fatty acids & esters)
- 1400 (collection syringe for gas-liquid chromatography of volatile compounds)
- 1438 (re pH determination, submerged filtration, & trap, re calcium carbonate sedimentation in a lake)
- 1461 (thermistor readout monitor for cold storage temperatures)
- 1473 (portable refrigerated unit for holding iced freshwater fish)
- 1502 (automatic wet-feed dispenser for fish culture)
- 1518 (prawn traps)
- 1522 (pressure-jump bomb with optical detection)
- 1534 (syringe procedure re flameless atomic absorption spectrophotometric detection of mercury)
- 1554 (recording pressure changes & oxygen consumption in fish respiratory cavities)
- 1565 (removal of nematodes cephalic sections)
- 1614 (semiautomated, for mercury in animal tissue)
- 1686 (commercial water thawing of fish)
- 1688 (review of fine-grained suspended-sediments analysis)
- 1697 (freezing & canning of N.W.T. fish & marine animal products)
- 1711 (artificial stream channels for Atl. salmon feed behavior studies)
- 1724 (traps for collecting emerging aquatic insects)
- A 5(F) (for clamping lobster claws)
- 31 (quality tests with Teletron Fish Tester)
- 34 (pumps for unloading fish from vessels)
- 42 (for fish freezing by Mackenzie R. delta Eskimos)
- 74 (same as CNG 82 above)
- 112 (same as CVG 39 above)
- 116 (fish respirometer for salmon metabolism studies)
- 125 (economics of, for fish protein concentrate manufacture)
- 128; 128(F) (condensation of CNG 87 above)
- 138 (for catching, handling, & processing queen crab)
- 139 (re improving methodology evaluation of pollutants effects on marine organisms: review)
- 164 (automated techniques for detection & characterization of marine particulate matter: review)
- 168 (review of book on primary productivity determining)
- 178 (details of assay procedure for fish by flameless atomic absorption spectrophotometry)

- 225 (resume of S 1473 above)
243 (for ultrasonic inspection of parasitized whole fish)
- Appendicularia (see Larvacea)
- Appleby, Alan Gordon
J 27(11): 1971 (defecation rate of tubificid oligochaetes in Toronto harbour)
- Applegarth, D. A.
S 1624 (human urine sorbitol & mannitol)
- Applegate, Vernon Calvert
J 22(3): 695 (migrating sea lampreys)
25(8): 1741 (water core plankton sampler)
29(6): 683 (history of management approach to exploitation & introduction of salmonids in oligotrophic lakes)
S 1484 (molecular structure & biological activity among mononitrophenols containing halogens)
- Apristurus brunneus* (see Shark, brown cat)
- Aprodon corteziensis* (see Eelpout, bigfin)
- Aptocyclus ventricosus* (see Lump sucker, smooth)
- Aquaria (see also Tanks)
J 23(8): 1271 (for photography at sea)
(9): 1447 (small holding tank for fish)
25(1): 1 (behavior of hatchery vs. wild Atl. salmon parr in)
27(1): 167 (proportional controlling of water temperatures in)
28(5): 788 (analysis method for ammonium-nitrogen in artificial sea water)
(11): 1805 (photographic estimation of distances between schooling fish in)
29(4): 429 (bacterial population of diets for fishes; correction on J 30(8): 1257)
(10): 1425 (inadequacy of some bactericides against potential aquarium fish pathogens)
(11): 1641 (comparative efficacy of aeration oxygenation devices)
CHN 21 (for holding and displaying live lobsters)
S 912 (seawater system for experimental tanks)
913 (a cause of alkalinity in freshwater supply for)
A 267 (demand for killer whales, re conservation)
- Aquiculture (see Culture; Feed; Hatcheries; Ponds; Rations)
- Aquiferous system
J 25(3): 541 (for podium expansion in *Polinices*)
- Aquipecten* (see *Aequipecten*)
- Arachidic acid (see also Acids, fatty)
S 1423 (unexpectedly high proportion in seawater lipid material)
- Arai, Hisao Philip
J 24(10): 2161 (parasite ecological specificity)
26(4): 799 (new trematode from a cottid fish)
(9): 2319 (parasites of B.C. marine fishes)
28(5): 767 (new species of helminth parasites from California embiotocid fishes)
(10): 1645 (N and Central American species of *Rhabdochona*)
S 1010 (parasitic copepod *Parabomolochus cuneatus*)
- Arai, Mary Needler
J 28(10): 1365 (publications by Edith and/or Cyril Berkeley)
(10): 1677 (*Pachycerianthus* from B.C. and Washington)
S 1181 (ceriantharian nervous system)
- Araphidineae (see also Bacillariophyta)
J 28(2): 265 (dominant in many small NW Ont. lakes)
- Architeuthis dux* (see Squid, giant)
- Archoplites interruptus* (see Perch, Sacramento)
- Arctic (see also Alaska; Arctic Ocean; Oceanography, arctic; Northwest Territories; Yukon Territory; also names of localities, islands, lakes, and other bodies of water, organisms)
J 24(3): 555 (Tanquary Fjord, Ellesmere Is., zooplankton)
(5): 975, 981 (Ogac L., Baffin Is., hydrography & biology)
(12): 2573 (Ogac L. cod biology)
25(2): 347 (hippolytid & crangonid shrimps, Queen Elizabeth Is.)
(5): 943 (*Anonyx* species off coasts)
(7): 1501 (F) (range extensions of lake trout in marine or saline regions of eastern)
(11): 2269 (description & distribution of 93 Bryozoa species)
(12): 2575 (physics & chemistry of some fresh waters)
26(7): 1899 (Decapoda of Beaufort Sea E to Cambridge Bay)
(8): 2201 (white whale tagging, Hudson Bay)
27(9): 1501 (descriptions of thecate hydroids)
29(3): 217 (athecate hydroids, including some new records)
B 173 (full description, etc., of freshwater fishes from NW Canada & Alaska)
176 (synopsis of Canadian marine zooplankton; see its index)
T 47 (collections of *Anonyx* amphipods)
159 (Canada Archipelago oceanographic & biological observations, Project "Icepack," 1968)
231 (potential Arctic char production in Keyhole L., Victoria Is.)
MSP 11; 11(F) (scope of FRB investigations of northern Canada aquatic forms (fisheries, marine mammals, invertebrates) & biological oceanography, undertaken from its Arctic Biological Station, Ste. Anne de Bellevue, Que.)

- 13; 13(F) (history & nature of FRB & other arctic investigations, with short bibliography)
- S 988 (Eskimo commercial Arctic char cannery)
- 1004 (marine-glacial relicts of islands)
- 1013 (zooplankton of L. Hazen, Ellesmere Is.)
- 1077 (brine freezer for Eskimo fishermen)
- 1078 (walrus biology & economics)
- 1488 (new genus & species of dinoflagellates as marine relicts in Canadian Arctic lakes)
- A 42 (fish freezer for Eskimos)
- 75 (Fisheries Research Board 1965 field activities)
- 220 (re C.S.S. *Hudson* circumnavigation of N & S America)
- 231 (FRB studies in Canada's arctic)
- Arctic Ocean (see also Arctic; Alaska; Beaufort Sea; Oceanography, arctic)
- J 22(2): 543 (zooplankton, especially *Calanus* & *Microcalanus*)
- 26(2): 305 (zooplankton biomass)
- B 152 (sea stars)
- Arctica islandica* (see Quahaug, ocean)
- Arctogadus borisovi* (see Cod, toothed)
- glacialis* (see Cod, polar)
- Argentina, South America
- J 26(4): 753 (Digenea trematodes from fishes)
- Argentine, Atlantic (*Argentina silus*)
- J 23(8): 1145 (biology on Scotian Shelf)
- 26(4): 879 (trematodes in; correction on J 27(8): 1499)
- 28(9): 1285 (methylmercury in, N.S. Banks)
- B 154: 115 (as Nfld. resource)
- CSG 54 (underexploited on N.S. banks)
- T 103 (in experimental otter-trawling)
- 164 (extensive length-weight data)
- 260 (standing crop, availability, weights, lengths, etc., from Scotian Shelf surveys, 1958-68)
- S 1024 (ICNAF Canadian research report)
- 1287 (*Lampritrema nipponicum* trematode parasite in)
- 1483 (morphometric variation in trematode parasite)
- A 43; 108; 119; 153; 182 (ICNAF Canadian researches: catches, ages, etc.)
- 143(F) (French version of CSG 54 above)
- 156 (icing & freezing effects on biological length-weight measurements)
- 175 (same as CSG 54 above)
- Argentine, bluelthroat (*Nansenia candida*)
- J 24(10): 2101 (second record off B.C.)
- B 180: 151 (full description, etc., B.C.)
- T 11 (in B.C. experimental midwater trawling)
- Argentina silus* (see Argentine, Atlantic)
- Argis dentata* (see Shrimps)
- Argulus* (see Branchiura)
- Argyopelecus lynchus lynchus* (see Hatchetfish, silvery; also Lightfishes)
- olfersii* (see Hatchetfish, silvery)
- sladeni* (see Hatchetfish, silvery)
- Aria, Benzion
- J 29(4): 439 (temperature, feed, & starvation effects on lobster physiological parameters)
- (11): 461 (feed & starvation re *Gaffkya homari* infection effecting lobster death)
- S 1344 (gaffkemia of lobsters)
- Ariomma bondi* (see Silver-rag)
- Aristostomias scintillans* (see Loosejaw, shining)
- Arita, George Shiro
- J 26(12): 3262 (*Eumicrotremus orbis* sexual dimorphism)
- Armorhead, pelagic (*Pentaceros richardsoni*) (*Pseudopentaceros richardsoni*; boarfish)
- B 180: 297 (full description, etc., B.C.)
- Armour, Carl Lee
- J 28(5): 788 (analysis of ammonium-nitrogen in artificial seawater aquaria)
- Armstrong, Francis Adolph John
- J 27(4): 805 (mercury determination in fish samples)
- 28(2): 171 (chemical characterization of FRB Experimental Lakes waters, NW Ont.)
- (2): 215 (periphyton of FRB Experimental Lakes, NW Ont.)
- (11): 1763 (eutrophication of an FRB Experimental Lake, NW Ont.; correction on J29(8): 1241)
- 29(12): 1685 (mercury concentration re size in several Man. & NW Ont. freshwater fishes; corrections on J30(8): 1257)
- S 1614 (self-automated mercury assay of animal tissue)
- 1655 (snow contribution to nutrient budget of small NW Ont. lakes)
- 1683 (phosphorus compounds in natural waters)
- 1705 (check sample study of determining mercury in fish tissues)
- A 178 (determination of residual mercury in fish tissue)
- Armstrong, Milton Connor
- T 215 (photoelectric fish counter)
- Armstrong, Robert Howard
- J 27(6): 991 (SE Alaska Dolly Varden smolts)
- Arnold, David Charles
- J 27(4): 743 (effect of light on oyster spat settlement)
- Arnold, Peter William
- J 29(8): 1213 (white shark predation on harbour porpoise)

- (10): 1477 (sightings of right & finback whales in lower Bay of Fundy)
- Aro, Kosta Victor
S 1230 (spawning populations of N Pac. salmon)
- Aroclor (*see* Polychlorinated biphenyls)
- Arrow worms (*see* Chaetognatha)
- Arsenic derivatives
J 27(4): 677 (in whole fish or livers of 13 Great Lakes species)
28(5): 786 (in dressed Canadian fishes from industrial area lakes)
29(12): 1691 (sodium arsenate, re toxicity to *Daphnia magna*)
- Artedius fenestralis* (*see* Sculpin, padded)
harringtoni (*see* Sculpin, scalyhead)
lateralis (*see* Sculpin, smoothhead)
meanyi (*see* Sculpin, Puget Sound)
- Artemia salina* (*see* Shrimp, brine)
- Arteriosclerosis
J 26(9): 2425 (in carp)
- Arthropoda (*see* general classifications, e.g. Crustacea; Insects; *also* various subclassifications including certain species)
- Arthur, John Wentworth
J 27(7): 1277 (copper toxicity to scuds & snails)
28(12): 1841 (chloramine toxicity to amphipod & minnow)
- Artsob, Harvey
J 26(12): 3259 (infectious pancreatic necrosis in salmonids)
- Arurkar, Suresh Krishnaji
J 25(7): 1517 (fish brain esterases)
- Ascelichthys rhodorus* (*see* Sculpin, rosytip)
- Aschelminthes (*see* Nematoda; Rotifera)
- Ascidians (*see* Tunicata)
- Ascopyllum* (*see* Phaeophyta)
- Ascorbic acid; Ascorbate
J 27(6): 1162 (in rainbow trout kidney tissue)
B 150: 15 (as inhibitor of albacore & tuna flesh "greening")
- Asemichthys taylori* (*see* Sculpin, spinynose)
- Ash, volcanic
J 29(3): 229 (effects on chemistry & sedimentation of 2 Alaskan lakes)
- Ash content (*see* Composition, chemical; Mineral content)
- Ashley, L. E.
J 26(8): 2215 (infection of English sole)
- Asia
J 25(12): 2527; 26(7): 1699; 27(4): 811; 28(3): 452, (5): 663; 29(12): 1788 (brook, brown, & speckled trouts distribution)
- Aspartate (*see* Acids, amino)
- Aspidophoroides monoptyerygius* (*see* Alligatorfish)
- Aspinwall, Nevin
J 25(7): 1317 (hybrid fish protein)
27(6): 1154 (largescale sucker spawning habits)
- Asplanchna* (*see* Rotifera)
- Assay methods (*see* Analysis methods (chemical); Bioassays)
- Assemblages
J 25(7): 1405 (recurrent group analysis of Gulf of Guinea demersal species)
- Assimilation ratios (*see also* Metabolism)
J 28(5): 790 (effect on phytoplankton, by enrichment of N Pac. sea waters)
- Associations (biological) (*see also* Communities)
J 26(10): 2703 (between seaweeds, Halifax Co., N.S.)
28(11): 1683 (benthic macroinvertebrates in L. Ontario bays)
B 169: 168 (invertebrates & algae re Pac. oyster beds, B.C.)
T 225 (invertebrates on Bay of Fundy scallop beds)
S 1580 (classification & ordination of many shallow-water benthic samples, P.E.I.)
- Astacene; Astaxanthin (*see* Pigments)
- Astacus astacus*; *A. leptodactylus* (*see* Crayfishes)
- Asterias* (*see* Starfishes; *also* Brittle stars)
- Asterionella* (*see* Bacillariophyta)
- Asteroidea (*see* Starfishes)
- Asterotheca alascana* (*see* Starsnout, gray)
infraspinata (*see* Starsnout, spinycheek)
pentacantha (*see* Poacher, bigeye)
- Astoria Canyon (off mouth of Columbia River)
J 26(8): 2211 (ecology of yellowtail rockfish in)
- Athabasca River and Lake, Alta. and Sask.
B 173 (descriptions of fishes in drainage system)
S 900 (availability of fishes)
908 (limnology)

Atheresthes evermanni (see Flounder, Kamchatka)
stomias (see Flounder, arrowtooth)

Atherinops affinis affinis (see Topsmelt)

Atherinopsis californiensis (see Jacksmelt)

Atlantic Ocean, northeastern

T 71; 72 (Norwegian Sea seawater mass transport computations, 1950-60)

Atlantic Ocean, northwestern (see also Fisheries; Hydrography; International Commission for the Northwest Atlantic Fisheries; Oceanography; Surveys; also names of organisms and coastal bodies of water)

J 22(1): 1 (new *Calocaris* species)

(2): 433 (harp seal migrations)

(2): 543 (zooplankton)

(2): 621 (Canadian inshore monkfish seasonal distribution)

(4): 977 (list of Mollusca from, 1946-61)

(5): 1313 (sand lance postlarval stages)

23(1): 109 (demersal fish vertical migration)

27(2): 391 (23 deepwater fishes from New York Bight)

(11): 1917 (production & standing stock of particulate matter in surface waters)

29(10): 1373 (Atl. salmon size increase rate)

(10): 1482 (fatty acids in surface particulate matter from N Atlantic)

B 155 (fishes of Canadian coast)

176 (zooplankton species)

CAG 9 (populations of large whale species)

T 103; 122; 199 (numbers of 6 invertebrate species & over 100 fish species taken during FRB experimental trawling for shortfinned squid between Cape Sable, N.S., & off Fort Pierce, Florida, 1967-69) (not individually entered in this index)

S 938 (sealing industry)

Atlantic Ocean, southern

S 1629 (dissolved oxygen distribution)

Atnarko River, B.C. (see Bella Coola River system)

Atrahantseff, Sergi

J 22(6): 1407 (brittlestar distribution)

Atresia

J 27(3): 587 (of northern pike ova in Missouri R. impoundments)

(4): 749 (of threespine stickleback ova)

Atton, Fredrick Mervyn

J 25(7): 1511 (Sask. R. lake sturgeon age & growth)

27(4): 830 (mercury concentrations in fish tissues)

Audiogram (see Sound, reactions to)

Aulichthys japonicus (see Tube-snouts)

Aulorhynchus flavidus (see Tube-snout)

Aulstad, Dag

J 28(12): 1918 (abnormalities in trout)

29(3): 237 (genetic & environmental sources of rainbow trout length & weight variations)

Aurelia (see Jellyfishes)

Australasia

J 25(12): 2527; 26(7): 1699; 27(4): 811; 28(3): 452, (5): 663; 29(12): 1788 (brook, brown, & speckled trouts distribution)

Australia

J 26(4): 787 (3 new hemiurid trematode genera from fishes)

S 1306; 1307; 1358 (copepod parasites on some fishes)

Autolysis (see Proteolysis)

Autoradiography (see Radioactivity)

Auxis rochei (see Mackerel, frigate)

thazard (see Mackerel, frigate)

Availability (see also Abundance; Catchability; Catches; Fisheries)

T 260 (groundfish species, Scotian Shelf, from 1958-68 surveys)

S 900 (of Canadian fishes)

1370 (diurnal variations in, of different redfish sizes)

Averruncus emmelane (see Poacher, northern spearnose)

Avocettina bowersi (see Snipe eels)

gilli (see Snipe eel, spaced)

infans (see Snipe eel, closespine)

Avoidance reaction

J 27(2): 331; 29(1): 27 (insecticides effects on Atl. salmon & trout learning ability)

28(8): 1167 (American shad re nets)

29(5): 601 (thermal stress effect on young coho salmon predator avoidance)

S 1397 (salmonids, to representative pollutants)

A 222 (salmonids, re zinc & copper vs. DDT, at sublethal levels)

Axelson, Fritz

J 24(3): 683 (dolphin and tuna feed)

Azeotrope

J 26(7): 1923 (isopropanol-water, for lipids extraction in preparing fish protein concentrates)

B

Babienko, Diane

S 1698 (appraising smoked whitefish with sensory panels)

- Babine Lake and River, B.C. (*see also* Skeena River system)
 J 22(4): 1025 (tracing sockeye salmon smolt movements by sonar plus photography)
 24(2): 299 (Catostomidae speciation in lake)
 (2): 375 (sockeye fry river ecology & behavior)
 (9): 1955 (mate selection in mixed age-groups sockeye population)
 (10): 2045, 2189 (primary production in lake system)
 26(2): 229 (sockeye fry distribution, growth, & survival, from natural vs. artificial stream rearing)
 (10): 2754 (steelhead trout age & size)
 27(2): 281 (diel vertical movements & feeding of young sockeye & limnetic zooplankton; correction on J 27(8): 1499)
 28(3): 369 (identification of sockeye populations by X-ray spectrometry & multivariate analysis)
 29(2): 151 (observations on sockeye fry migration, up lower river into lake)
 B 162: 89, 131, 158 (re B.C. sockeye studies)
 T 24 (1961-66 enumeration & sampling data for salmon)
 331 (summary of salmon counts & observations from river counting fence, 1967-71)
 335 (analysis of ultrasonic tracking of adult sockeye migration into lake)
- Bacciger* (*see also* Trematoda)
 S 937 (review of genus)
- Bacillariophyta; Bacillariophyceae (*see also* Algae; Chrysophyta; Phytoplankton; Plankton)
 J 22(3): 793 (phosphatase activity of 3 species)
 (4): 1083 (carbon balance of photosynthesis in 4 species)
 (5): 1107 (*Phaeodactylum tricorutum* lipid fatty acids)
 23(3): 357 (thetin as dimethyl sulfide precursor in)
 (8): 1285 (dry weight, ash, & volume data for various)
 (11): 1715 (of L. Ontario surface waters)
 24(5): 909 (in Saanich Inlet, B.C., particulate matter)
 (8): 1811 (recoveries by two plankton sampling methods)
 25(8): 1603 (fatty acids)
 26(6): 1625 (*P. tricorutum* chlorophylls extraction procedure; correction on J 26(8): 2264)
 27(1): 13 (as copepod feed, Marion L., B.C.)
 (2): 335 (glycerol enhancement of phototrophic growth)
 (3): 436 (occurrence in 3 adjoining lakes affected or not affected by uranium ore milling wastes)
 (8): 1405 (re chemical composition of S Ont. lakes)
 (11): 2018 (of Clear L., Ont.)
 (11): 2081 (re turbulence & nutrient renewal in a bay)
 28(2): 194, 215, 265 (of several small NW Ont. lakes)
 (2): 265, 295 (of sediments in 16 small NW Ont. lakes as indicators of meteorological & limnological history of the lakes)
 (11): 1763 (effect of phosphate & nitrate lake enrichment on)
- 29(1): 31 (on artificial & natural L. Winnipeg substrates)
 T 120 (numbers in Bedford Basin, N.S.)
 158 (settling periodicity as fouling organisms, Bedford R., P.E.I.)
 202(F) (169 species from NW Miramichi R., N.B., including many new Atl. provinces records; also their use as indicators of heavy-metal water pollution)
 248 (as culture feed for *Calanus pacificus* in grazing experiments)
 267 (Frobisher Bay, Baffin Is., N.W.T.)
 319 (bloom & oxygen depletion as cause of sudden fish & shellfish mortality, Nanoose Harbour, B.C.)
 S 916 (of "red water" on west coast of India)
 972 (*Skeletonema costatum* oil fatty acids separation & types)
 989 (determination technique for growth rate of chain-forming *Coscinodiscus* & *Skeletonema*)
 1040 (enolase activity)
 1113 (extracts as bactericide)
 1159 (photosynthetic thetin from several species)
 1172 (size, re availability as zooplankton feed)
 1197 (aldolase activity re phylogeny)
 1387 (*Asterionella japonica* bloom causing water discoloration in Bay of Bengal)
 1448 (axenic cultures survival re prolonged exposure to darkness)
 1491 (ability to cleave phenylalanine aromatic ring)
 1513 (as culture feed for *Calanus* in grazing experiments)
 1626 (*Cyclotella nana* protein content & L-threonine dehydratase activity)
 1704 (light intensity & DDT concentration re *Nitzschia delicatissima* photosynthesis)
 A 40 (same as S 1159 above)
- Bacillus* (*see* Bacteria)
- Backbone (*see* Bone; Skeleton; Vertebrae)
- Bacon
 S 1203 (nature of fatty acids in fat)
- Bacteria; Bacterial action (*Note*: A number of pertinent references to certain bacteria are indexed under separate headings and are not included below, e.g. *Achromobacter*; *Aeromonas*; *Chondrococcus*; *Clostridium botulinum* (including botulism); *Cytophaga*; *Furunculosis* (caused by *Aeromonas salmonicida*); *Gaffkya homari* (for gaffkemia disease of lobster, *see* Lobster, American); *Micrococcus*; *Pseudomonas*; *Salmonella*; *Vibriosis*; although some of the references below also include information concerning these bacteria without naming them specifically) (*see also* Antibiotics; Bactericides; Disease; Disinfectants; Preservatives; Quality of fishery products; *also* other cognate subjects)
 J 22(1): 117 (reaction towards antibiotics & magnesium ion)
 (1): 243 (reaction towards tetracycline & other chemotherapeutic antibiotics)

- 23(8): 1281 (thermal resistance of *Corynebacterium* & a coccoid, from fish delicatessen)
 (9): 1451 (identification of nonpathogens in lobsters)
 (11): 1635 (in water & mud of P.E.I. oyster-bed area)
- 24(1): 9 (in fresh lake whitefish)
 (2): 221 (in irradiated cooked lobster meat)
 (5): 1179 (bacteriostatic effect of acetylated monoglycerides as dip for frozen Atl. cod)
 (7): 1589 (role in *Gonyaulax* production of toxicity in shellfish)
- 25(1): 197 (isolated from 12 diseased species of tropical fishes)
 (2): 423 (*Nocardia asteroides* causing brook trout nocardiosis)
 (4): 625 (marine heterotropic, re production of organic matter)
 (4): 700 (bactericidal activity of lobster hemolymph serum)
- 26(1): 47 (Atl. salmon intestinal, re DDT insecticide degradation)
 (1): 115 (coho salmon & rainbow trout resistance to *Escherichia coli* & *Aeromonas salmonicida* endotoxins)
 (2): 299 (bacteriivorous Protozoa, Puget Sound, Wash.)
 (7): 1763 (*Thiocapsa* hydrogen sulfide-producing in B.C. meromictic lakes)
 (8): 2003 (respiration in benthic sediments, Marion L., B.C.)
 (9): 2535 (re Atl. salmon kidney disease & distinguishing between E & W Atl. Ocean salmon populations)
 (10): 2581 (bottom corer for sampling aquatic sedimentary)
 (10): 2651 (flora of vacuum- vs. air-packaged fillets treated with EDTA preservatives)
 (10): 2659; 28(3): 335 (surviving ingestion by oligochaetes in Toronto harbour sediments)
 (10): 2760 (in culturing algal feed for rearing bivalve larvae)
 (12): 3165 (as zooplankton winter feed, Strait of Georgia, B.C.)
 (12): 3217 (coliform counts re Nfld. cod & flounder commercial fillet production from fish variously handled at sea)
- 27(9): 1569, 1579 (factors affecting elimination of test bacteria *Escherichia coli* by quahaug & soft-shell clam)
 (11): 1983 (counts of water used for thawing plaice, & of fillets therefrom)
- 28(1): 104 (morphology of *Pseudomonas*-like proteolytic pseudomonad causing rainbow trout skin lesions)
 (3): 305 (bacteria producing trimethylamine from trimethylamine oxide in chilled haddock fillets)
 (4): 517 (morphology & taxonomy of *Vibrio anguillarum* re first records of vibriosis in Pac. salmon cultured in Canada; correction on J 28(8): 1219)
 (5): 643 (gamma irradiation effects on *Salmonella* spp.)
- (5): 783 (beneficial effect of washing off slime as bacterial medium on freshwater fish keeping quality)
 (8): 1185 (counts in commercial fish diets)
 (10): 1511 (characterization, identification, & ecology of bacterial flora associated with surface of hatching Pac. salmon eggs, re egg mortality)
- 29(3): 333 (of bluefish intestine)
 (4): 429 (population of diets for aquarium fishes; correction on J 30(8): 1257)
 (5): 567 (population of *Cytophaga*, etc., on hatchery chum & coho salmon eggs)
 (9): 1359 (effect of 2 iodophor disinfectants on various fish pathogens)
 (10): 1425 (inadequacy of several aquarium antibacterial formulations against several potential fish pathogens)
 (11): 1633 (*Vibrio parahaemolyticus* in Canadian Atl. coast shellfish)
 (12): 1769 (salmon-canning waste water as culture media; possibility of useful products therefrom)
- B 162 (causing sockeye salmon diseases)
 CCG 7 (re keepability of fish sausage & wieners)
 T 185 (bibliography re Canada fishes infection by)
 218 (antibacterial effects of sea water, particularly re *E. coli*)
- MSP 16 (control of bacterial fish diseases in Canada)
 S 889 (control of bacterial spoilage in fish)
 933; 936 (new species that ferments choline)
 1113; 1194 (inhibition of various marine & terrestrial, by marine algal extracts)
 1161 (living carboniferous, in N.S. rock salt)
 1165 (flora of stream-incubated pink salmon eggs)
 1258 (causing trout skin lesions)
 1303 (role in primary production from marine sedimentary organic debris)
 1305 (biomass re marine feed of young Pac. salmon & trout)
 1326 (heterotrophic: role in converting organic particulate matter for primary productivity)
 1367 (growth in Atl. cod fillets from fish stored in ice vs. air)
 1413 (decompression effects on glucose metabolism in, from deep-sea water)
 1421 (spoilage & sanitary quality of sea-frozen Atl. cod & American plaice)
 1428 (chitinoclastic & other, re Atl. lobsters, Fatty Basin, B.C.)
 1485 (role of marine, as zooplankton feed)
 1497; 1498 (metabolism of putrescine by mycobacteria isolated from fish)
 1500 (*Desulfovibrio desulfuricans* production of hydrogen sulfide in marine sediments from pulp mills)
 1503 (role in formation of small suspended seawater particles)
 1559 (ingestion by *Uronema* marine ciliate)
 1635 (salmonid kidney disease immunological response in sockeye salmon)
 1686 (re fillet quality from industrial water-thawing of fish)

- 1726 (vaccine from lobster intestinal bacteria inactive against gaffkemia in lobster)
 A 77 (bacterial spoilage & its control)
 151 (*Propionibacterium arabinosum* for fermenting pulpmill sulfite liquor wastes to useful products)
 167 (biomass in subarctic N Pac. euphotic zone)
 203 (*Clostridium botulinum* & *C. perfringens* re fish spoilage)
- Bactericides (see Antibiotics; Bacteria; Bacteriophages; Disinfectants; Preservatives)
- Bacteriophages
 J 26(3): 629 (of *Aeromonas salmonicida*)
- Bacteriophyta
 J 28(2): 192 (of several small NW Ont. lakes)
- Baer, Jean Georges
 J 26(4): 717 (*Diphyllobothrium pacificum* in Peru)
- Baffin Island, N.W.T. (see also Cumberland Sound; Fro-bisher Bay; Ogac Lake)
 J 26(1): 143 (observations on Greenland sharks)
- Bagshaw, John Wyn
 J 26(6): 1451 (*Polinices lewisi* boring organ)
 S 1297 (salmon egg structure & enzymatic degradation)
- Bailey, Merryll Marvin
 J 26(5): 1289 (age & growth of longnose sucker)
- Bailey, Reeve Maclaren
 J 27(5): 981 (*Occella* to supersede *Occa* for a genus of agonid fishes)
- Bairdiella (*Bairdiella icistia*)
 J 29(4): 399 (physiological response to various salinities)
- Bait (see also Lures; Traps)
 J 27(6): 1172 (oxygenating device for live-bait wells & holding tanks)
 CJG 14: 30 (Nfld. landings of capelin for)
 A 138 (for queen crab)
- Bajacalifornia burraei* (see Slickhead)
- Baker, Craig Steven
 J 26(5): 1371 (range of ocean whitefish & California halibut)
- Baker, Dwight Lynds
 J 26(9): 2517 (temperature effect on glyceraldehyde-3-phosphate dehydrogenase activity)
- Baker, Edgar George
 J 26(2): 357 (salmon & trout pigmentation)
- Baker, Jeremy Thomas Paine
 J 26(11): 2785 (copper poisoning in winter flounder)
- Baker Lake, N.W.T.
 J 22(1): 239 (deepwater salinity)
- Bakken, Erling
 J 27(4): 737 (two sonic measuring systems)
- Balaena glacialis* (see Whale, black right)
mysticetus (see Whale, bowhead)
- Balaenoptera acutorostrata* (see Whale, minke)
borealis (see Whale, sei)
musculus (see Whale, blue)
physalus (see Whale, fin)
- Balanus* (see Cirripedia)
- Baldwin, Wayne Jex
 J 27(6): 1172 (live-bait wells oxygenating device)
- Ball, David Stephen
 J 25(12): 2739 (NE Pac. phosphate & silicate distribution)
- Ball, Edward Arthur Robert
 J 24(3): 695 (low mobility proteins in fish blood)
 CNS 25 (B.C. sockeye salmon catches, 1912-63)
 26 (1957-63 B.C. chum salmon catches)
- Ball, Ian Raymond
 J 26(2): 221 (*Dugesia lugubris* in N American fresh waters)
- Ball, Robert Cragin
 J 25(7): 1323 (lactate dehydrogenase in trouts)
- Balloonfish (*Diodon halocanthus*) (spiny puffer)
 J 28(11): 1809 (new record of lymphocystis viral infection in, E Pac.)
- Bams, Robert Abraham
 J 24(5): 1117 (tests for differences in naturally and artificially propagated sockeye salmon fry)
 27(8): 1429 (pink & chum salmon hatchery method)
 29(8): 1151 (pink salmon survival evaluation from a revised hatchery method)
 S 1333 (sockeye salmon adaptations re incubation in stream gravels)
- Banerjee, Tapan
 J 28(7): 1051 (California seaperch maturity and fecundity)
- Banff National Park, Alta.
 J 27(2): 233 (physical & chemical limnology of Herbert & Snowflake L.)
 28(3): 311 (crustacean plankton of 49 alpine & subalpine lakes and ponds)
- Bangiophyceae (see *Porphyridium*)
- Bankia setacea* (see Shipworms)

- Banks Island, N.W.T.
 J 25(12): 2575 (physics & chemistry of some fresh waters)
- Banse, Karl
 J 26(10): 2595 (Acrocirridae, new family)
 28(10): 1469 (new species and revised descriptions of Polychaeta)
- Baptist, John Paul
 J 28(11): 1783 (distribution of ^{65}Zn in marine ecosystem)
- Barb, Schuberti (*Barbus sachsii*) (tropical cyprinid)
 J 26(8): 2250 (laboratory host for cestode culture)
- Barbados, West Indies
 J 24(3): 683 (dolphin & yellowfin tuna feed)
- Barber, Frederick George
 J 22(1): 225 (current observations)
- Barbus sachsii* (see Barb, Schuberti)
- Barica, Jan
 J 28(5): 759 (rapid ammonia determination in water)
 S 1655 (snow contribution to nutrient budget of small NW Ont. lakes)
 1729 (salinization of groundwater in arid zones)
- Barium and derivatives
 J 22(4): 929 (re oxidative rancidity promotion in cod flesh)
 27(2): 317 (oxide for coding embedded encapsulated tags in animals)
 (4): 677 (traces in Great Lakes fishes & livers)
 29(12): 1691 (chloride, re toxicity to *Daphnia magna*)
 S 1437 (in Green L., N.Y.)
 A 85 (in freshwater fishmeals)
- Barker, Allan Mosley
 J 24(6): 1413 (freeze-drying shellfish for solids)
- Barkley Sound, B.C.
 S 1096 (lobsters transplanted to)
- Barlow, John
 J 26(8): 2101 (lobster molt serum protein)
 28(1): 15 (isozyme polymorphisms in American lobster)
- Barnacles (see Cirripedia)
- Barner, Leonard Walter
 T 177; 183; 190; 213 (FRB offshore herring surveys)
- Barr, Louis Marvin
 J 24(3): 689 (experimental fishing shrimp pot)
 27(4): 669 (*Pandalus borealis* diel vertical migration)
- Barraclough, William Edward
 J 22(5): 1305 (dusky sculpin, first record in B.C. waters)
- 24(11): 2455 (Strait of Georgia herring)
 27(7): 1251 (Strait of Georgia productivity)
 28(9): 1345 (anomalous occurrence of carp in marine environment)
 (10): 1681 (whitebait smelt recorded in B.C. waters)
 (12): 1922 (new sculpin in B.C. coastal waters)
 S 1386 (shallow scattering layer: detection by high-frequency echo sounder)
 1394 (production studies in the Strait of Georgia)
 1653 (fertilization of Great Central L. effect on juvenile sockeye salmon)
- Barracuda (Mexican) (*Sphyræna ensis*)
 J 25(9): 1987 (red & white muscle temperature of recently caught)
- Barracuda, great (*Sphyræna barracuda*)
 S 956 (Canadian research in Caribbean Sea)
- Barracuda, Pacific (*Sphyræna argentea*)
 B 180: 314 (full description, etc., of B.C.)
- Barracudina, ribbon (*Notolepis rissoi rissoi*) (*N. coruscans*)
 J 24(10): 2101 (first record off B.C.)
 B 180: 182 (full description, etc., of B.C.)
 T 11 (in B.C. experimental midwater trawling)
- Barracudina, slender (*Lestidium ringens*)
 B 180: 181 (full description, etc., of B.C.)
 T 11; 81 (in B.C. experimental trawling)
- Barracudina, white (*Notolepis rissoi krøyeri*)
 J 26(10): 2691 (recent catches off N.S.; diurnal depth distribution)
 T 261 (bibliography for Gulf of St. Lawrence)
 S 1700 (lipid wax esters as potential replacement for sperm whale oil)
- Barreleye (*Macropinna microstoma*)
 B 180: 159 (full description, etc., B.C.)
 T 11 (in B.C. experimental trawling)
- Barrett, Burdette Eugene
 J 24(5): 1177 (*Nealotus tripes* in Canadian Atl.)
 25(12): 2721 (Greenland halibut in Bay of Fundy)
- Barrett, Izadore
 S 1204 (scombroid fishes serum transferrin polymorphism)
- Barrow Lake, Alta.
 J 26(7): 1934 (differentiation between *Coregonus artedii* & *C. zenithicus*)
- Barsdate, Robert J.
 J 29(3): 229 (volcanic ashfalls effects on chemical & sediment characters of 2 Alaskan lakes)
- Bartlett, Martin R.
 J 24(9): 1991 (transatlantic tuna migrations)
- Bartnik, Victor George

- J 26(8): 2227 (simulating rapids environment)
 27(12): 2125 (reproductive isolation between sympatric dace; correction on J 28(8): 1219)
- Bary, Brian McKenzie
 J 22(3): 823 (ostracod distribution)
- Baslow, Morris Henry
 J 26(8): 2208 (Pac. marine toxins: ciguatera toxin not in vivo anticholinesterase)
- Bass (in addition to the following headings, *see* Seabass)
- Bass, black (*see* Bass, largemouth)
- Bass, black sea (*Centropristis striata*)
 J 25(8): 1739 (spinal ganglia position re taxonomy)
- Bass, largemouth (*Micropterus salmoides*) (black bass)
 J 23(12): 1845 (mouth & body form re feeding ecology)
 24(3): 475 (oxygen concentration influence on juvenile growth)
 (3): 695 (blood low-mobility proteins)
 (6): 1241 (maximum swimming speed & conditioning to increased metabolism)
 25(1): 49 (dissolved O₂ & CO₂ re juvenile swimming performance)
 (2): 294 (gill-raker counts re feed habits)
 (6): 1199 (low temperature effects on feeding in 3 Ont. localities)
 (12): 2711 (muscle creatine kinase localization)
 26(10): 2643 (oxygen metabolism re body weight)
 28(1): 113 (sampling flesh for anesthetic residues)
 (7): 957 (vulnerability to northern pike predation)
 (11): 1811 (suitable for introduction into alkaline eutrophic lakes)
 29(2): 173 (*Chondrooccus columnaris* disease seasonal distribution, Columbia R.)
 (2): 199 (necessary times to eliminate by antimycin & rotenone)
 (3): 339 (simple tag for long-term experiments)
 (4): 455 (marking larvae with radiostrontium)
 (5): 531 (liver morphology & enzyme histochemistry)
 29(9): 1283 (cadmium content, in New York State waters)
- Bass, rock (*Ambloplites rupestris*)
 J 23(1): 149 (alkaline phosphatase in scales)
 (12): 1845 (mouth & body form re feeding ecology)
 24(3): 695 (blood low-mobility proteins)
 (5): 927 (limnetic larvae in N Wisconsin lakes)
 25(2): 294 (gill-raker counts re feed habits)
 (6): 1133 (diel feeding habits)
 (6): 1199 (low temperature effects on feeding in 3 Ont. localities)
 (8): 1739 (spinal ganglia position re taxonomy)
 28(1): 45 (populations upstream & downstream of a dammed Ont. lake)
 (11): 1811 (suitable for introduction into alkaline eutrophic lakes)
 29(3): 275 (19 parasites of, Lake of the Woods, Ont.)
- (9): 1283 (cadmium content, New York State waters)
 S 1128 (in 2 L. Superior bays)
 1718 (pesticide residues in Canadian commercially caught)
 A 201 (mercury contamination, Great Lakes)
- Bass, smallmouth (*Micropterus dolomieu*)
 J 22(3): 732 (in Bow River system, Alta.)
 23(1): 149 (alkaline phosphatase in scales)
 (6): 941 (feeding re indigenous walleye in a Man. lake)
 (11): 1663 (muscle myogens & blood hemoglobins electropherograms)
 24(1): 87 (temperature re adult total annual growth)
 (3): 695 (blood low-mobility proteins)
 25(6): 1199 (low temperature effects on feeding in 3 Ont. localities)
 26(1): 21 (response to shade)
 27(2): 395 (reproduction & growth in an Ont. Precambrian lake)
 28(7): 957 (vulnerability to northern pike predation)
 (9): 1285 (methylmercury in N.B.)
 (11): 1811 (suitable for introduction into alkaline eutrophic lakes)
 29(2): 173 (*Chondrooccus columnaris* disease seasonal distribution, Columbia R.)
 (3): 275 (22 parasites of, Lake of the Woods, Ont.)
 (3): 339 (simple tag for long-term experiments)
 (9): 1283 (cadmium content, in New York State waters)
 CCG 7: 16 (protein electropherogram)
 S 1128 (in 2 L. Superior bays)
 A 201 (mercury contamination, Great Lakes)
- Bass, striped (*Roccus saxatilis*) (*Morone saxatilis*)
 J 28(12): 1823 (handling & salinity effects on oxygen requirements)
 29(3): 337 (first records in B.C. waters; description)
 (9): 1283 (cadmium content, in New York State waters)
 B 180: 280 (full description, etc., B.C.)
 T 261 (bibliography for Gulf of St. Lawrence)
 MSP 14 (popular description (English & French))
- Bass, white (*Morone chrysops*) (*Roccus chrysops*; *Lepibema chrysops*)
 J 23(1): 149 (alkaline phosphatase in scales)
 26(8): 2173 (open-water orientation re homing, as determined by ultrasonic tracking methods)
 27(4): 677 (8 trace elements in livers, Great Lakes)
 (10): 1842 (taken in L. Erie smelt surveys, 1962-63)
 28(11): 1811 (suitable for introduction into alkaline eutrophic lakes)
 29(9): 1283 (cadmium content, in New York State waters)
 B 149: 20, 123 (Great Lakes, catches)
 CCG 7: 16 (protein electropherogram)
 T 261 (bibliography for Gulf of St. Lawrence)
 A 100 (recent range extension into Man.)
 201 (mercury contamination, Great Lakes)

- Batchawana Bay, Lake Superior
J 28(5): 771 (rainbow trout life history)
- Bathophilus flemingi* (see Dragonfish, highfin)
- Bathylagus alascanus* (see Blacksmelt, stout)
euryops (see Blacksmelt, goitre)
milleri (see Blacksmelt, stout)
ochotensis (see Blacksmelt, eared)
pacificus (see Blacksmelt, slender)
- Bathymaster leurolepis* (see Ronquil, smallmouth)
signatus (see Searcher)
- Bathymetry (see Hydrography; Limnology; Oceanography; Sounding, echo)
- Bathypterois dubius* (see Feelerfish, notch)
- Bathyraja trachura* (see Skate, roughtail)
- Bathysaurus mollis* (deep-sea fish)
J 29(7): 1093 (first NE Pac. Ocean record)
- Bathythermograph (see also Hydrography; Limnology; Oceanography; Temperature)
J 24(5): 1155 (digitizing system for aperture cards)
28(1): 102 (plotting transect data on computer printer)
29(3): 323 (characteristics & processing of data from continuous-recording)
T 152 (on-line digitizing of data with shipboard computer)
207 (shipboard computer programming of data)
- Batoosingh, Edward
J 26(10): 2581 (modified bottom sampler corer)
- Battle, Helen Irene
J 22(2): 289 (lamprey alimentary tract)
- Bay of (see name of bay)
- Bayliff, William Henry
J 24(2): 249 (computer program for yield per recruitment)
- Beak
J 28(4): 620 (shape as identification of *Abraliopsis felix* squid re N Pac. coast range extension)
- Beamish, Frederick William Henry
J 23(1): 109 (vertical migrations by demersal fish)
3(3): 341 (swimming endurance of fish)
10(10): 1507 (haddock fatigue and mortality)
25(5): 837 (cod glycogen & lactic acid re exercise)
26(11): 2807 (oxygen consumption of *Tilapia nilotica* re swimming speed & salinity)
27(7): 1209 (temperature preferenda of *Tilapia nilotica*)
29(8): 1217 (factors affecting Atl. salmon plasma osmolality & ionic concentration)
- (9): 1277 (timing of blood, morphology, & behavior changes during sea lamprey metamorphosis)
S 1087 (fish reaction to otter trawls)
A 61(F) (underwater camera)
197 (metabolism and biological production in fish)
- Beamish, Peter Charles
S 1594 (quantitative measurements of acoustic scattering from zooplanktonic organisms)
1599 (recording blue whale ultrasonic sounds)
- Beamish, Richard James
J 26(3): 633 (white sucker age)
28(11): 1745 (biochemical and cytological study of suckers)
29(3): 339 (simple fish tag for long-term marking experiments)
(8): 1131 (fish mortalities from increased acidification of lakes)
T 305 (trapnet design for sampling shallow-water habitats)
- Bear, polar (*Ursus arctos*) (see also Bears)
S 1118 (fatty acids positional distribution in fat)
- "Beard" (of mussels) (see Byssus)
- Beardfish (*Polymixia lowei*)
J 26(10): 2697 (first Canadian record extends range to NE)
- Beare-Rogers, Joyce Louise
S 1405 (lipoxidase in marine oils)
- Bears (see also Bear, polar)
B 162: 84 (as sockeye salmon predators)
- Beaton, Barbara
S 898 (blood of aquatic vertebrates)
- Beaufort Sea
J 22(2): 543 (zooplankton)
26(7): 1899 (Decapoda)
- Beaver Lake, Alta.
J 26(6): 1672 (aggregations of spottail shiners & yellow perch)
- Beck, Brian
J 26(1): 143 (Greenland shark observations)
27(11): 1903 (E Canada inshore cetacean records)
S 1084 (seal net fisheries)
1573 (harbour seal in Thlewiaza R., N.W.T.)
- Becker, Clarence Dale
J 22(5): 1175 (salmonid *Piscicola* leech)
23(12): 1965 (records of *Cryptobia salmositica* from sockeye salmon)
27(7): 1313 (*Tilapia lindbergi* from white sturgeon)
- Beckett, James Stafford

- J 24(5): 1177 (*Nealotus tripes* in Canadian Atl.)
 (9): 1991 (transatlantic tuna migrations)
 25(1): 177 (harpoon adapter)
 (12): 2707 (*Conchoderma virgatum* in NW Atl.)
 T 193 (swordfish, shark, & tuna tagging)
 S 1282 (swordfish catches size composition changes)
 1660 (warm-bodied fishes)
 A 120 (longline lures for swordfish)
- Beckford, Mascell Leonard
 B 158 (fisheries of Canada District of Mackenzie)
- Bedeque Bay, P.E.I.
 S 1620 (classification & ordination of benthic samples)
- Bedford Basin, N.S.
 J 29(7): 987 (*Sagitta elegans* yearly respiration rate & energy budget)
 T 120 (physical & chemical oceanography; marine life)
 247 (phytoplankton production & nutrients, 1969-70)
 282 (macrozooplankton biomass measurements, 1969-71)
 299 (mapping chlorophyll concentrations)
 S 1231 (current transport & deposition of sediment-forming materials)
 1482 (eutrophication study)
 1586 (phytoplankton production, export, & grazing, during a 25-hr period)
- Beef
 J 25(3): 605 (ultrasonic effects as test for fresh & frozen flesh quality)
 S 1028 (fatty acids positional distribution in subcutaneous fat triglycerides)
- Beers, John Rudolph
 J 24(8): 1811 (pumping system for plankton)
 (10): 2053 (microzooplankton in euphotic zone across California Current)
- Beetles (*see* Coleoptera)
- Beeton, Alfred Merle
 J 29(6): 673 (Great Lakes eutrophication problem)
- Behavior (*Note*: The following references are only indicative of the scope of this complex subject. *See also* Activity; Avoidance reaction; Currents, reaction to; Diel habits; Environment; Feed; Habitat; Light, reactions to; Mating; Migration; Odor, reactions to; Pollution; Reproduction; Salinity, reactions to; Schooling; Sound, reactions to; Spawning; Swimming; Taste, reactions to; Temperature, reactions to; Territorialism; *also* other cognate headings)
 J 22(1): 173 (environmental, of coho fry)
 (2): 369 (young Atl. salmon to light gradients)
 (4): 1035 (re ecology and interaction of young coho salmon and trout)
 23(1): 153 (of fish towards otter trawl)
 (7): 1101 (of L. Ainslie eels, N.S.)
 (9): 1319 (mating, of Dungeness crab)
 24(1): 77 (pink salmon fry in & after release from hatchery tank)
 (2): 375 (& ecology, Babine R. sockeye salmon fry)
 (3): 537 (re bioluminescence in fishes)
 (6): 1403 (newly hatched lobster larvae to low salinity)
 (8): 1743 (brook trout re artificial pond en route to sea)
 (9): 1955 (sockeye spawning & aggression)
 (10): 2069 (migration, of sockeye fry & smolts)
 (10): 2117 (L. Huron white sucker population)
 25(1): 1 (competitive & feeding, of hatchery vs. wild Atl. salmon parr in aquaria)
 (3): 485 (spawning, of sockeye salmon on Alaska lake beaches)
 (3): 589 (of Pac. herring schools towards midwater trawl)
 (6): 1115 (sounding reaction of kokanee & sockeye salmon)
 (7): 1453 (station permanence in juvenile chinook salmon & steelhead trout)
 (9): 2005 (social, among juvenile chinook salmon)
 (10): 2123 (underwater observation of scallop)
 (11): 2387 (aggression & social hierarchy in starved young Atl. salmon)
 (12): 2677 (brook trout lateral line response re DDT)
 (12): 2703 (blackspotted stickleback reproductive isolating mechanisms)
 26(1): 63 (hypoxial effect on coho salmon fry territoriality & size hierarchy)
 (2): 361 (3 Haustoriidae amphipod species)
 (3): 695 (brook trout & young Atl. salmon towards pesticides pollution)
 (5): 1243 (cutthroat trout movements & homing)
 (7): 1867 (stream dispersal of wild vs. hatchery-reared young Atl. salmon)
 (8): 2061 (reproductive, of blackspotted stickleback)
 (9): 2283 (responses of 5 haustoriid amphipod species to 5 environmental factors)
 (12): 3252 (spawning, western brook lamprey)
 27(3): 331 (sublethal DDT exposure effects on brook trout conditioned reflex, & recovery time)
 (4): 731 (lobsters exposed to bleached kraft mill effluent)
 (5): 947 (large floating pond for observing Pac. salmon)
 (6): 1005 (lake chub courtship & spawning)
 (6): 1059 (northern pike, yellow perch, & bluegill under ice in shallow lake)
 (6): 1154 (largescale sucker courtship & spawning)
 (7): 1215 (coho & chinook salmon cohabiting underyearlings re stream habitat utilization)
 (7): 1225 (some aspects of Pac. pelagic fishes schooling)
 (9): 1653 (solitude effect on lobster larval molting)
 (10): 1872 (spawning, of chestnut lamprey)
 (11): 2037 (reproductive, of shorthorn sculpin)
 (11): 2071 (skipjack tuna nightly migrations re sense of time and navigation)
 28(7): 1019 (role of social, in dispersal of introduced rainbow trout)

- (8): 1167 (net avoidance, of American shad)
 (9): 1309 (white whale, Cumberland Sound, Baffin Is., N.W.T.)
 (10): 1595 ("concert" of *Vellela*, re chondrophore evolution)
 (12): 1847 (effect of experience in predation by rainbow trout)
 29(3): 315 (4 insecticides effects on Atl. salmon parr ability to learn & retain simple conditioned response)
 (9): 1277 (timing of changes in, during landlocked sea lamprey metamorphosis)
 (9): 1356 (possible effect of fish dominance-submissive behavior on results of bioassays)
 (12): 1737 (coho vs. chinook salmon in a trough & in an Oregon river)
- B** 157 15 (lobster)
 162 (many aspects of sockeye salmon)
 173 (of NW Canada & Alaska freshwater fishes)
- T** 182 (computer programs for summarizing data on ethological)
 206 (social, etc., re Atl. salmon parr-smolt stages)
 235 (agonistic, of lobsters)
 297 (individual & group, also hierarchy, of young sockeye salmon in tank)
- S** 1054 (cod & haddock, re feed)
 1115 (killer whales unusual group)
 1150 (Bay of Fundy herring re light)
 1252 (rainbow trout avoidance reactions to zinc sulfate solutions)
 1397 (avoidance reactions of salmonids to representative pollutants)
 1465; 1468; 1486 (copulatory; egg-laying; maternal-offspring; of the crayfish *Pacifastacus trowbridgii*)
 1535 (sexual, of hypophysectomized & gonadectomized female guppies after treatment with chinook salmon gonadotropin)
 1551 (feeding & locomotion of postlarval *Macoma balthica* clam)
 1555 (during attempted mating between male green shore crabs)
 1711 (adjustment of young Atl. salmon population density to available feed)
 1725 (marine poikilotherms responses to environmental factors acting in concert: review)
- A** 61(F) (underwater photography for observing fish, re approach of fishing gear)
 67 (bluefin tuna)
 136 (of fishes as observed from "cubmarine")
 222 (assessment of pollutants effects on fish)
- Behnke, Robert John**
 J 28(7): 987 (Kern R. trouts)
 29(6): 639 (systematics of salmonid fishes of northern hemisphere recently glaciated lakes)
- Bell, Gordon Russell**
 J 24(7): 1579 (Pac. salmon anesthetic and surgical techniques)
 25(6): 1247 (transamination in salmon tissues)
 (11): 2505 (¹⁴C in *Daphnia pulex*)
- 28(10): 1511 (identification of bacterial flora in salmon streams)
B 148 (general anesthetics for fish)
T 245 (B.C. wild fish mortalities)
S 934 (*in vivo* angiography)
 1165 (salmon stream-incubated eggs microbial flora)
 1297 (salmon egg structure & enzymatic degradation)
- Bell, William Harold**
 J 29(1): 19 (empirical wave force coefficients spectra determination)
T 172 (opto-electronic plankton sizer)
 195 (water-tunnel design for fisheries research)
 215 (photoelectric fish counter)
 262 (review of possible physical & biological effects of thermal effluents from electrical power generation, also possible uses of discharges)
- Bella Coola area and river system, B.C.**
 J 22(6): 1523 (pink salmon sea mortality rate estimation)
 24(11): 2321 (orientation in early marine migration of pink salmon from)
 25(4): 757 (marine mortality schedules of pink salmon)
 26(4): 813 (parasites of early sea pink salmon from)
- Belle Isle, Strait of**
 J 22(2): 433 (harp seal migration)
 25(12): 2749 (possible effect of harbour seal bounty re Atl. cod codworm infestation)
T 27 (summer cod fishery biological data)
- Bellingham Bay, Washington, USA**
 J 28(9): 1241 (incidence of skin tumors on flounder species)
- "Belly-burn"
 J 22(4): 955 (re canning partially frozen salmon)
- Belonje, Bartholomeus**
 J 28(6): 843 (zinc retention in young rats fed increasing levels of high-zinc oysters)
- Beluga (see Whale, white)**
- Belwood, Lake (reservoir), Ont. (see also Grand River, Ont.)**
 J 25(6): 1229 (phytoplankton ecology)
- Ben Hassine, Oum Kalthoum**
 S 1610(F) (a copepod parasitic on Tunisian mullet)
- Bengal, Bay of**
 S 1387 (diatom bloom & water discoloration)
- Benoit, Duane Awve**
 J 28(5): 655 (trout re toxicity of copper)
- Benthalbella dentata (see Pearleye, northern)**

- Benthodesmus atlanticus* (see Frostfish)
simonyi (see Frostfish)
- Benthos (see also Epibenthos; Fauna; also types of)
 J 23(12): 1875 (of 9 Rocky Mtn. Trench SE B.C. lakes)
 24(5): 1017 (profundal fauna of some Man. lakes)
 (6): 1310 (of a guanotrophic small British lake)
 25(6): 1181 (upper Great Lakes benthic environment subdivisions)
 (8): 1737 (computer programs for summarizing quantitative data)
 (9): 1803 (caloric content of standing crop)
 (12): 2665 (species associations of Oregon coast fishes)
 (12): 2683 (development on an artificial marine reef)
 26(1): 55 (infauna standing crop composition, Puget Sound & outer coast of Wash.)
 (2): 279 (benthic invertebrates upstream river movements)
 (2): 299 (bacterivorous Protozoa, Puget Sound, Wash.)
 (3): 701 (estuarine, killed by abnormally low salinity)
 (6): 1540 (planktonic larvae ecology, Ogac L., Baffin Is.)
 (8): 2003 (community respiration in Marion L. sediments, B.C.)
 (10): 2581 (corer for sampling sedimentary)
 (12): 3101 (in a lake after several fertilizations)
 27(2): 213 (Chironomidae re benthic fauna colonization of a reservoir)
 (4): 621 (identification & distribution of benthic infaunal communities, Washington coast)
 (4): 685 (epibenthic algae as amphipod feed, Marion L., B.C.)
 (10): 1691, 1867 (efficiencies of various grabs & corers for sampling)
 (12): 2273 (species composition & structure of infauna communities off Washington coast)
 28(1): 35 (differences upstream & downstream of a dammed Ont. lake)
 (2): 257 (zoobenthos of 15 small NW Ont. Lakes)
 (3): 365 (sampling by simple corer vs. Ekman grab)
 (5): 769 (assay method for ¹⁴C-labelled benthic microflora)
 (6): 849 (sampling minute, in shallow streams)
 (11): 1683 (macroinvertebrates associations & species diversity in L. Ontario bays)
 (11): 1699 (macroinvertebrates production in L. Ontario bays)
 (11): 1715 (macroinvertebrate community metabolism in L. Ontario bays)
 29(8): 1234 (trap for collecting upward-swimming, & classification of, in Bideford R. estuary, P.E.I.)
 (9): 1319 (depth distribution of polychaetes in 2 Canadian Arctic fiords)
 (9): 1329 (thermal regime changes in river below a dam as cause of reduction of insect fauna)
 (10): 1503 (sampling from deep arctic waters with rough bottom by improved dredge)
 T 3 (Oozy Creek, P.E.I.)
 25; 35; 59; 60; 73 (quantitative investigations, Strait of Georgia)
 76 (tidal Ostra Lake, N.S.)
 159 (in Canada Arctic Archipelago)
 225 (distribution, Bay of Fundy)
 S 1128 (of 4 Lake Superior bays)
 1223 (seasonal variability of food in coastal environment)
 1428 (Fatty Basin, B.C., re introduced lobsters microbiology)
 1543 (Oligochaeta, Sphaeriidae, & Chironomidae of Georgian Bay, L. Ontario & L. Erie)
 1580; 1620 (classification & ordination of many shallow marine species, P.E.I.)
 A 108 (1966 Canadian ICNAF studies on Atl.)
- Bentosema glaciale* (see Lanternfish, glacial)
- Bentley, Robert John
 J 25(9): 1803 (invertebrate caloric content)
- Benville, Pete Edward, Jr.
 J 26(12): 3209 (DDT on activity of glucose 6-P dehydrogenase in fish)
- Berardius bairdi* (see Whale, Baird's beaked)
- Bering Sea (see also Bristol Bay; Oceanography, North Pacific)
 J 24(3): 581 (Ekman transport re zooplankton concentration)
 26(8): 1985 (demersal fishes exploratory survey)
 T 18 (shrimp explorations, 1957-63)
 75 (winter oceanographic conditions, 1966)
- Berkeley, Cyril (see also following heading)
 J 25(1): 205 (Vancouver, B.C., earthworms)
 S 1067; 1138 (B.C. Polychaeta)
 1219 (Polychaeta checklist (Errantia) from B.C. since 1923)
 1243 (Polychaeta (Sedentaria) checklist)
 1677 (further records of Polychaeta new to B.C., with comments on some others)
- Berkley, Edith and Cyril (Note: For new Polychaeta genus and several new Polychaeta species recently named after them, see Genera; Species new)
 J 28(10): 1360 (an appreciation of: entire issue is dedicated to them)
 (10): 1365 (list of their publications)
 S 1123 (list of polychaete type-specimens described by these authors, 1923-64)
- Bernard, Frank Reinhold
 J 24(12): 2629 (new mollusc *Cuspidaria cowani*)
 (12): 2637 (portable recompression chamber)
 25(3): 541 (*Polinices lewisi* aquiferous system)
 (7): 1509 (new species: *Cyclopecten carlottensis*)
 26(1): 190 (*Mytilicola orientalis* in bivalves)
 (6): 1451 (*Polinices lewisi* boring organ)
 (8): 2230 (new septibranch species from E Pac.)

- T 2 (W Canada recent marine Mollusca checklist & bibliography)
 42 (naticid clam drill biology)
 218 (evaluation of shellfish growing areas)
 268 (survey report on B.C. Brachiopoda)
 S 1315 (*Polinices lewisi* sexual dimorphism)
 1469 (occurrence of spirochaete *Cristispira* in marine bivalves)
 1470 (checklist of marine molluscs of B.C.)
 1618 (occurrence & function of lip hypertrophy in Anisomyaria)
 1691 (4 species of *Thyasira* bivalves systematics & anatomy)
- Beroe* species (see Ctenophora)
- Berry, Richard James
 J 22(4): 945 (winter flounder biomass required for a fishery)
- Berst, Alfred Hewitt
 J 23(2): 275 (comparative limnology)
 24(4): 887 (rainbow trout phenotypic characteristics)
 (12): 2539 (lamprey parasitism of trout)
 25(12): 2643 (furunculosis-infected brook trout)
 26(2): 456 (Great Lakes rainbow trout)
 (10): 2681 (fish shape & structure re selectivity of gillnets)
 27(6): 1017 (F_1 hybrid splake in L. Huron)
 29(6): 877 (exploitation, introductions, & eutrophication effects on salmonid community, L. Huron)
- Bertalanffy growth equation or curve
 J 26(1): 161 (comparison with Gompertz growth equation)
 (9): 2267 (review of application to fisheries management problems)
 (11): 3069 (formulation of, when growth rate is roughly constant)
- Beryllium derivatives
 27(2): 383 (toxicity to 5 liver enzymes of mummichog)
- Besch, Karl Wulf Theodor
 27(1): 21 (toxicity of yellow phosphorus to Atl. salmon, herring, lobster, & an amphipod)
 T 202(F) (diatoms as indicators of mine pollution)
 S 1553 (effects of mining pollution on Miramichi R. plants)
- Best, Edgar Allan
 J 26(7): 1955 (flag rockfish range extension)
 (9): 2351 (halibut transferrin systems)
- Betaine (see also Acids, amino)
 J 22(2): 307 (homarine in pink shrimp)
 27(3): 604 (trigonelline & homarine in scallop adductor muscle)
 S 1152 (oxidation by marine bacteria)
 1178 (utilization in aerobic marine microbe phospholipid synthesis)
 1229 (enzymic oxidation by *Achromobacter*)
- 1312 (used in fatty acid synthesis by a bacterium)
- Betts, John Le Roi
 J 23(6): 813 (toxicity of kraft mill wastes)
 26(11): 3055 (tetrachloro-*o*-benzoquinone toxic to young salmon)
- Bianchin, Donald Miles
 T 132 (experimental trawling cruise, B.C.)
- Bibliographies (see also Review papers)
 J 25(5): 1039 (re *Anonyx*, particularly *A. nugax*, amphipods)
 28(10): 1365 (of publications by Edith & Cyril Berkeley)
 (10): 1407 (abyssmal polychaetous annelids)
 B 162: 405 (sockeye salmon studies)
 173: 360 (re NW Canada & Alaska freshwater fishes)
 T 1 (131 references, for Dungeness crab)
 2 (B.C. marine Mollusca)
 28 (*Anguilla* eel species)
 55 (re identification of B.C. marine zooplankton)
 83 (parasites & diseases of Atl. salmon)
 151 (coregonid fishes)
 161 (pikeperches of *Stizostedion* & *Lucioperca* genera)
 176 (lake trout, 1929-69)
 185 (parasites & diseases of fishes of Canada, 1879-1969)
 209 (storage & retrieval of indexed & annotated bibliographical references)
 232 (Arctic char)
 241 (pandalid shrimps, with emphasis on economically important *Pandalus* species)
 246 (N America Pac. coast trawl fishery & groundfish)
 261 (for 145 Gulf of St. Lawrence fishes)
 262 38 (thermal effluents from electric power generation, re pollution)
 272 (halogenated hydrocarbons industrial uses, re detection & effects on environment)
 306 (annotated, of Canadian freshwater leeches)
 313 (B.C. marine copepoda)
 MSP 13; 13(F) (Canadian Arctic fisheries publications)
 S 1590 (environmental temperature effects on fishes: review)
 A 239 (list of research groups, projects, & organisms re underwater telemetry)
 266 (algal physiology & biochemistry)
- Bicarbonate (see Carbonates; Hardness of natural waters)
- Bideford River (estuary), P.E.I.
 J 22(3): 851 (manganese deposits on mud-snail shells)
 25(12): 2725 (lobsters overwintering in burrows)
 26(3): 701 (estuarine fauna mass mortality re low salinity)
 29(8): 1234 (trapping & classification of upward-swimming benthos)
 T 155 (subtidal shore biota zonation)

- 158 (fouling organisms & their settlement periodicity)
 S 1580 (classification & ordination of shallow-water estuarial benthos)
- Bidgood, Bryant Frederick
 J 24(4): 887 (rainbow trout phenotypic characteristics)
 26(2): 456 (Great Lakes rainbow trout)
- Bielsersee, Switzerland
 J 29(6): 755 (exploitation & eutrophication effects on salmonid communities)
- Biely, Jacob
 J 23(3): 395 (nutritive value of fish meals)
 24(6): 1291 (freshwater fish meals)
 CVG 34 (effect of antioxidants on herring meal)
 T 114 (Atl. coast herring meals)
 S 969 (antioxidant treatment of herring meal)
 1221 (fishmeal supplementation of chicken breeder rations on hatchability)
 1377 (nutrient content Atl. coast herring fish meals)
 A 85 (freshwater fishmeals nutrient composition)
- Biesinger, Kenneth E.
 J 29(12): 1691 (various metal ions effects on *Daphnia magna* survival, growth, reproduction, & metabolism)
- Big Garlic River, Michigan
 J 26(11): 3077 (sea lamprey larvicides tests)
- Big Qualicum River, B.C.
 J 27(7): 1215 (stream habitat utilization by cohabiting coho & chinook salmon underyearlings)
- Big Trout Lake, Ont.
 J 29(6): 617 (limnology & fishes)
- Bigeye (see Pollock, walleye)
- Bigg, Michael Andrew
 J 26(2): 449 (clines in harbour seal)
 B 172 (B.C. harbour seal life history)
 A 267 (killer whale study)
- Biggs, Robert Bruce
 J 28(6): 911 (carbon : nitrogen relations in Chesapeake Bay)
- Bile (see also Gallbladder)
 S 1601 (salts function as lipase cofactors)
- Bile duct (see Gallbladder)
- Bilinski, Edward
 J 22(4): 891 (acetone in fish blood)
 23(2): 207 (lecithinase activity)
 (6): 917 (salmon oil binding)
 24(1): 201 (enzymes in algae)
 (2): 273 (compounds in rainbow trout muscle)
 (6): 1203 (binding of oil in canned salmon)
 (12): 2555 (trout muscle phospholipase A activity)
- 25(8): 1555 (starvation re rainbow trout free fatty acids)
 26(7): 1857 (trout muscle lipase)
 27(5): 857 (fatty acid oxidation by trout mitochondria)
 28(7): 1015 (trout lysosomal lipase)
 29(10): 1467 (lactate oxidation to carbon dioxide by rainbow trout tissues)
- S 1248 (algal phospholipase C properties)
 1427 (phospholipase D in red alga)
 A 146 (lipid catabolism in fish muscle)
- Billaud, Vera Alexander
 J 25(10): 2101 (nitrogen fixation and sources in subarctic lake)
- Billi, James Lynn
 J 26(6): 1459 (infectious pancreatic necrosis detection methods)
- Bilton, Hebert Thomas
 J 22(6): 1477 (salmon scale annuli)
 23(6): 939 (pink salmon scales characteristics)
 (9): 1403 (annulus formation)
 25(5): 1067 (aging salmon by otoliths & scales)
 (9): 1971 (aging chinook salmon from scales)
 (9): 1993 (3rd-year pink salmon)
 26(5): 1199 (pectoral fin rays re salmon age)
 28(4): 513 (alternation of age of return in sockeye salmon successive generations)
 (6): 861 (effects of feeding level on scales of young salmon)
 (11): 1749 (effect of starvation on scales of salmon)
 (11): 1757 (response of young salmon to starvation periods)
 29(3): 295 (even- & odd-year B.C. & Alaska pink salmon runs identification from scale characters)
- CNS 16 (age composition of Pacific salmon)
 25 (B.C. sockeye catches, 1912-63)
 26 (1957-63 B.C. chum salmon catches)
 27 (age composition of 1965 B.C. sockeye, chum, & pink salmon)
- T 10 (1965 & 1966 Schulbuckhand & Williams creeks, B.C., sockeye)
 133 (sockeye scale characteristics)
 167 (maternal influences on sockeye)
 223 (data and computations used in racial analyses of sockeye)
 234 (data and computations in racial analyses of N American pink salmon)
 330 (young sockeye growth under 2 light periods & in darkness)
- S 1390 (N Pac. chum salmon origin)
 A 204 (INPFC Canadian report on Pac. salmon & steelhead trout research, 1965)
- Bioassays (*Note:* Toxicity levels of pollutants and other substances as determined by their effects on fish or other living organisms, also use of radioactive isotopes as tracers of metabolic functions, are not included here. See Analysis

- methods, chemical; Biosynthesis; Isotopes; Photosynthesis; Pollution; Toxicity, etc., also purpose of bioassay)
- J 26(5): 1378 (mouse spinner-cell culture to detect water pollution)
- 29(2): 195 (algal assay method for freshwater nutrient parameters)
- (5): 501 (mouse-cell tissue culture to detect mercuric chloride water pollution)
- (9): 1356 (possible effect of fish dominance-submissive relations on)
- B 168: 5; 177: 51 (for paralytic shellfish toxicity, using mice)
- S 1249 (goldfish spermiation as bioassay for salmon gonadotropin activity)
- 1703 (manual on primary production measuring methods)
- Biochemistry** (*see* classifications and names of organisms, their organs and functions; types of chemicals and elements; *also* Bioenergetics; Biosynthesis)
- Biodegradation** (*see* Pollution; Sewage treatment)
- Bioenergetics** (*see also* Activity; Caloric content; Dynamics; Metabolism; Stress; Swimming)
- J 26(9): 2363 (young sockeye salmon)
- 28(1): 73 (& natural history of a thermal spring dip-teran herbivore)
- (5): 711 (energy flow re secondary production of 2 amphipod species, Marion L., B.C.)
- (6): 801, 809, 815 (fish growth efficiency re rations & activity)
- (8): 1113 (re brook trout rations calorie-protein ratio)
- (11): 1715 (Bay of Quinte & L. Ontario benthos)
- (11): 1733 (seaweed-lobster community)
- 29(2): 187 (of sand goby (*Gobius minutus*), Scotland)
- (7): 987 (*Sagitta elegans* yearly energy budget re respiration rate)
- (8): 1181 (of walleye re size, diet, & temperature)
- (11): 1555 (kraft mill effluent effects on young sock-eye salmon)
- (12): 1701 (*Mysis relicta* in an arctic vs. a temperate lake)
- (12): 1749 (summer storage & winter use of energy by American plaice)
- CVG 34 (metabolizable energy of B.C. herring meal)
- T 301 (re sockeye salmon mariculture)
- S 1310 (changes in cortisol dynamics in sockeye salmon re sexual maturity)
- 1388 (re aquatic ecosystems dynamics)
- 1415 (the energy cost of living, for fishes: review)
- 1538 (energy flow & species diversity in marine plankton bloom)
- 1579 (of annual phytoplankton production, St. Margaret's Bay, N.S.)
- 1590: 534 (of fishes re environmental temperature & acclimation: review)
- 1619; 1708 (seaweed zone of St. Margaret's Bay, N.S.)
- 1636 (re sockeye freshwater thermal regime)
- A 197 (biological production in freshwater fishes re their metabolism: review)
- 211 (re feed availability to different trophic levels in marine feed chain)
- 212 (same as S 1415 above)
- 233 (sun as primary energy source of ecosystems)
- Biographies** (*see also* Obituaries)
- J 22(2): 255 (A. G. Huntsman)
- 26(4): 713 (T. W. M. Cameron)
- 28(10): 1360 (Edith and Cyril Berkeley)
- Bioluminescence**
- J 24(3): 537 (review of organs in fishes; significance of ventral)
- (3): 687 (in two pelagic amphipod species)
- 27(4): 826 (stimulation & photography, in lanternfishes)
- 28(10): 1487 (in pelagic polychaetes)
- Biomass** (*see also* Benthos; Matter, particulate; Phytoplankton; Plankton; Productivity; Zooplankton)
- J 22(4): 945 (estimating theoretical, for winter flounder fishery)
- 24(5): 1017 (profundal benthic fauna of some Man. lakes)
- 26(2): 305 (zooplankton re Arctic Basin & East Greenland Current hydrography)
- (9): 2345 (caloric & carbon equivalents of zooplankton)
- (12): 3165 (of winter zooplankton & feed, Strait of Georgia, B.C.)
- 27(1): 71 (macrophyte productivity in Marion L., B.C.)
- (4): 685 (*Hyaella azteca* amphipod & its feed, Marion L., B.C.)
- (7): 1251 (commercial fishes resident in Strait of Georgia)
- (12): 2143 (*Pectinaria hyperborea* polychaete, St. Margaret's Bay, N.S.)
- 28(2): 189, 245, 257 (of several small NW Ont. lakes)
- (2): 295 (re differences & similarities among small NW Ont. lakes)
- (9): 1269, 1275, 1293 (estimating fish abundance by voltage-integrating echo sounding)
- (10): 1573 (mathematical models of animal production-biomass ratio)
- 29(1): 31 (algae on buoys & rocks, L. Winnipeg)
- (7): 1043 (of an unexploited walleye population)
- (10): 1419 (sound-scattering layer in NE Pac. Ocean)
- (11): 1651 (population biomass re linear surplus-production model)
- T 252 (ecology of macrozooplankton, Scotian Shelf)
- 260 (groundfish, Scotian Shelf)
- 282 (macrozooplankton, Bedford Basin, N.S., 1969-71)
- 333 (macrozooplankton, St. Margaret's Bay, N.S., 1967-70)
- S 1305 (of marine microorganisms re young Pac. salmon & trout feed)
- 1386 (zooplankton in shallow sound-scattering layers of N Pac.)

- 1435 (mathematical treatment of estimating production)
 1446 (budget model for lakes)
 1482 (zooplankton, Bedford Basin & St. Margaret's Bay, N.S.)
 1586 (zooplankton, re phytoplanktonic chlorophyll budget)
 1619; 1708 (various seaweeds, St. Margaret's Bay, N.S.)
 1699 (re food chain & fish production, N. Atl. Ocean)
 A 167 (microbial, in N Pac. subarctic euphotic zone)
 188 (Saanich Inlet, B.C., primary & secondary)
 211 (re feed availability to different trophic levels in marine feed chain)
 235 (estimates of Strait of Georgia principal commercial fishes)
- Biosynthesis (*see also* Bioassays; Enzymes; Photosynthesis; Productivity, primary)
 J 23(2): 207 (¹⁴C for tracing lecithinase activity)
 (9): 1291 (use of ¹⁴C in algae for determining *Euphausia pacifica* carbon utilization)
 25(2): 431 (of sterones by Alt. herring interrenal tissue)
 (4): 625 (production & mineralization of marine organic matter)
 (6): 1247 (transaminases distribution in Pac. salmon tissues)
 27(1): 71 (macrophytes & plankton, Marion L., B.C.)
 (1): 117 (DNA by rainbow trout liver nuclei polymerase)
 28(5): 769 (assay method for ¹⁴C-labelled benthic microflora)
 29(4): 385 (of sterols in molluscs: review)
 S 1036 (¹⁴C in synthesis & degradation studies with fishes)
 1236 (of lipids from added substrates by Atl. salmon sperm)
 1245 (of protamine during salmonid spermatogenesis)
 1272 (scallop phospholipids)
 1286 (eulachon squalene)
 1289 (salmon & trout inosinic & uridylic acids)
 1312 (choline or betaine for fatty acid, in a bacterium)
 1325 (of 1 α -hydroxycorticosterone by elasmobranchs)
 1346 (phospholipids by lobster)
 1404; 1432 (cortisol by ratfish interrenal tissue)
 1418 (RNA synthesis by rainbow trout liver nuclei)
 1602 (glycerides by lobster)
- Biota (*see* Fauna; Flora; *also* forms and types of)
- Biotin (*see* Vitamin B group)
- Birds (*see also* Chicken; Ducks; Gulls; Predation; Turkey; *also* names of other species)
 J 24(6): 1299 (causing guanotrophy of a small lake)
 26(4): 1103 (nematodes and other helminths from Australian gulls & terns)
 28(12): 1877 (DDT accumulation & persistence in fish-eating)
- B 177 (susceptibility to paralytic shellfish poisoning, E Canada)
 T 122 (observed during experimental NW Atl. otter trawling)
 210 (observed during trawl survey off SW coast of Vancouver Is.)
 272 (halogenated hydrocarbons detected in eggs of aquatic)
 S 1132 (predatory on Atl. salmon & trouts)
 1201 (ptarmigan off N Labrador)
 1203 (positional distribution of monoenoic fatty acids in duck triglycerides)
 1226 (fatty acids positional distribution in gull & cormorant triglycerides)
 1633; 1696 (Bay of Fundy aquatic: insecticide residues in eggs)
 1659 (polychlorinated terphenyls in herring gull eggs)
 1665 (some comparative aspects of corticosteroid metabolism: review)
 1680 (metabolic oxygen demand, re other vertebrates: review)
- Bishop, Carol Marianne
 J 23(10): 1607 (digestive tract of Atl. cod)
 (12): 1841 (epithelial border of cod)
 24(11): 2339 (lobster muscle weight)
 (12): 2549 (cod myotomal muscle)
- Bishop, Daniel Magnus
 J 22(4): 919 (sediment in streams)
- Bishop, Doris Mae (*see also* Spears, Doris Mae)
 J 25(5): 921 (frozen Atl. cod muscle trimethylamine)
 26(9): 2299 (hematin compounds re marine flesh rancidity)
- Bishop, John Edward
 J 26(2): 279 (benthic invertebrates)
- Bivalvia (*see* Pelecypoda)
- Black, Edgar Clark
 J 23(1): 1 (blood of brook trout)
 (4): 471 (metabolism in trout)
 (6): 783 (effects of exercise on trout)
 (8): 1187 (oxygen dissociation curves, Atl. salmon)
 (9): 1461 (glycogen reserves of trout)
 (10): 1575 (effect of hemolysis)
 (10): 1581 (oxygen dissociation curves, Atl. landlocked salmon)
 24(5): 939 (scale loss in rainbow trout)
 (9): 1979 (obituary of)
- "Blackberry" condition (in stomach content of certain commercial fishes) (*see* Thetin derivative)
- Blackbourn, David John
 J 28(3): 391 (red-water ciliate *Mesodinium rubrum*)
 S 1294 (*M. rubrum* ciliate pigments)
- Blackbourn, Janice

- J 28(3): 391 (red-water ciliate *Mesodinium rubrum*) 319 (sudden mortality from phytoplankton bloom & oxygen depletion, Nanoose Harbour, B.C.)
- Blackcod (*see* Sablefish)
- Blackfish (*see* Ruff, black; Whale, pilot)
- Blackfish, Alaska (*Dallia pectoralis*)
B 173: 212 (full description, etc., of Yukon & Alaska)
- Blackfish, Cornish (*Centrolophus britannicus*)
J 23(8): 1161 (first western Atl. records; description & morphometry)
- Blackflies (*see* Diptera; Simuliidae)
- Blackford, Bradford Lloyd
J 23(9): 1411 (water circulation model)
T 26 (S Gulf St. Lawrence oceanographic observations)
- Blacksmelt, big-scaled (*see* Blacksmelt, stout)
- Blacksmelt, eared (*Bathylagus ochotensis*)
J 24(10): 2101 (second record off B.C.)
B 180: 154 (full description, etc., B.C.)
T 11; 175 (in B.C. experimental midwater trawling)
- Blacksmelt, goitre (*Bathylagus euryops*)
J 26(10): 2692 (S of La Have Bank, N.S.)
- Blacksmelt, slender (*Bathylagus pacificus*)
B 180: 155 (full description, etc., B.C.)
T 11; 175 (in B.C. experimental midwater trawling)
- Blacksmelt, stout (*Bathylagus milleri*) (*B. alascanus*; big-scaled blacksmelt)
B 180: 153 (full description, etc., B.C.)
T 11 (in B.C. experimental midwater trawling)
- Blackwood, Chesley MacKenzie
J 26(9): 2523 (scallop meat landed quality)
- Bladder, gall (*see* Gallbladder)
- Bladder, swim (*see* Swimbladder)
- Blair, Arthur Avery
J 22(2): 599 (Nfld. salmon investigations)
A 113 (pink salmon in Nfld.)
- Blaxland, Martin
A 115 (sea's food chain)
134 (work of FRB Marine Ecology Laboratory)
- Bleak (*Alburnus alburnus*)
J 26(11): 2795 (fecundity in River Thames, England)
- Blease, John Aiden
J 28(12): 1877 (DDT in lotic ecosystem)
- Blennies (*see also* following headings)
T 22; 30; 46; 62; 290 (in B.C. experimental trawling)
- Blenny, belted (*see* Prickleback, ribbon)
black (*see* Prickleback, black)
bracketed (*see* Gunnel, crescent)
burrowing (*see* Graveldiver)
crested (*see* Cockscomb, high)
decorated (*see* Warbonnet, decorated)
fucus (*see* Gunnel, rockweed)
long-snouted (*see* Prickleback, longsnout)
ornamented (*see* Warbonnet, mosshead)
pen-point (*see* Gunnel, penpoint)
rock (*see* Prickleback, rock)
saddled (*see* Gunnel, saddleback)
snake (*see* Snakeblenny)
whitebarred (*see* Prickleback, whitebarred)
Yarrel's (*see* Warbonnet, Atlantic)
- Blepsias bilobus* (*see* Sculpin, crested)
cirrhosus (*see* Sculpin, silverspotted)
- Bligh, Emerson Graham
J 22(3): 861 (colored scallop meats)
23(7): 1025 (cod muscle lipids)
(10): 1629 (blood lipids of lobster)
24(6): 1219 (freshwater fish oils)
(6): 1291 (freshwater fish meals)
28(5): 786 (heavy-metal contamination of freshwater fish)
29(11): 1625 (obituary of Andrew William Lantz)
S 904 (research on quality processing and products)
1668 (mercury in Canadian fish)
A 85 (freshwater fishmeals nutrient composition)
141 (consumption of fish & fish products)
169 (mercury in freshwater fish)
200 (mercury contamination in fish)
201 (contamination of Great Lakes fish)
- Blindness (*see* Vision)
- Bloater (*Coregonus hoyi*) (*Leucichthys hoyi*)
J 25(4): 667 (re Great Lakes species succession & exploitation)
(8): 1667 (cytotaxonomic relation to other Great Lakes coregonids)
(10): 2111 (scales annulus formation in artificially reared, also in hybrid with lake herring)
26(4): 849 (*Cystidicola* nematodes in swimbladder)
27(4): 677 (8 trace elements in livers, Great Lakes)
(11): 2047 (upper temperature tolerance of juvenile & young)
29(5): 525 (dressing & cooking effects on DDT residues in, L. Michigan)
- Blood; Blood constituents (*see also* Enzymes; Heart; Hematin; Hemoglobin; Proteins; Respiration; Serum; Serology)
J 22(3): 767 (electropherograms re salmonids and their hybrids for biochemical systematics)
(4): 891 (acetone bodies in salmonids)
(5): 1229 (clotting time of Atl. cod)

- (6): 1455 (plasma composition re goldfish thermal acclimation)
- 23(1): 1 (respiratory function after brook trout seasonal temperature acclimation)
- (1): 65, (4): 471, (6): 783 (plasma activity effect on metabolism in rainbow trout)
- (1): 101 (plasma proteins of *Oncorhynchus* re inter-species relationships)
- (4): 487 (thetin in Atl. cod)
- (4): 615 (new adrenal steroid from skates)
- (7): 975 (starvation and refeeding of Atl. cod: effects on constituents)
- (8): 1109 (iron content in goldfish)
- (8): 1187, (10): 1581 (respiratory function after Atl. salmon seasonal temperature acclimation)
- (9): 1325 (disease bacteria in lobster hemolymph)
- (9): 1439 (plasma volume in salmonids blood)
- (9): 1451 (nonpathogenic bacteria in lobster hemolymph)
- (10): 1575 (oxygenation in Atl. salmon)
- (10): 1599 (protein electropherograms of Salmonidae)
- (10): 1629 (lipids of lobster)
- 24(1): 205 (mineralocorticoid activity, of skate)
- (2): 429 (lethal endrin concentration, in gizzard shad)
- (3): 695 (distribution of low-mobility proteins, in freshwater fishes)
- (5): 939 (effect of partial descaling & desliming on rainbow trout)
- (6): 1269 (protein electropherograms of lampreys)
- (7): 1579 (anticoagulant for salmonid surgery)
- (8): 1701 (rainbow trout disturbance effects on)
- (8): 1775 (cardiovascular dynamics of swimming sockeye salmon adults)
- (9): 1945 (hemoglobin protein electropherograms of *Sebastes* species)
- (10): 2169 (serum protein of rainbow trout after various stresses)
- (11): 2267 (hematology of rainbow trout thermoacclimation)
- (11): 2339 (hemocytes re serum proteins & muscle weight in lobsters)
- 25(1): 15 (pH & lactic acidosis of channel catfish in anoxia)
- (1): 25 (M.S. 222 anesthetic concentration in rainbow trout)
- (1): 71 (fluorimetric determination of cortisol in salmonid)
- (1): 151 (hematological changes in coho salmon deficient in folic acid)
- (1): 173 (hematological correlations in rainbow trout)
- (3): 473 (lactate re exercised salmon mortality)
- (3): 541 (role in *Polinices* podium expansion)
- (3): 603 (rainbow trout disturbance effects on)
- (3): 607, (4): 695, 795 (*Gaffkya homari* pathogenic effects on lobster & crabs)
- (4): 695 (bactericidal activity of lobster hemolymph serum)
- (5): 837 (glycogen of Atl. cod after exercise)
- (7): 1465 (metopirone effect on cortisol concentration in salmon & trout plasma)
- (7): 1497 (prolactin effects on osmolarity of hypophysectomized goldfish plasma)
- (8): 1555 (starvation effect on free fatty acids of rainbow trout plasma)
- (8): 1651 (inorganic iodide binding in plasma proteins)
- (9): 1797 (dielidrin accumulation in goldfish, after aldrin ingestion)
- (11): 2477 (hemoglobin electrophoresis of 28 rockfish species re systematics)
- (12): 2549 (skate interrenalectomy & stress re some components of)
- (12): 2651 (Atl. salmon: hemoglobin multiplicity increase re fish length)
- 26(1): 111 (coho salmon anemia from folic acid deficiency in feed)
- (2): 433 (morphology of 3 estuarine cyprinodontiform fishes)
- (4): 1075 (hematazoic protozoan parasites of N.B. & New England marine fishes)
- (5): 1392 (lobster hemolymph disposal of foreign proteins)
- (5): 1397 (protein polymorphism in harp seals)
- (7): 1823 (mineralocorticoid activity assay method for plasma steroids in skate)
- (7): 1847 (aortic catheterization effects on brook trout hematology)
- (8): 2101 (protein serum changes in molting & reproducing lobster)
- (9): 2299 (hematin as catalyst of marine flesh lipids oxidation)
- (11): 2881 (constituents of largemouth & smallmouth buffalofish)
- 27(1): 193 (chloride regulation in burrowing worm eel)
- (2): 404 (temperature effects on mummichog serum protein constituents)
- (3): 551 (perfusion re ventilation in Pac. dogfish gills)
- (3): 601 (scallop sterols vs. cholesterol re hypocholesterolemia in chick)
- (5): 909 (changes in trout anesthetized with M.S. 222 & benzocaine)
- (5): 951 (plasma protein variations in winter flounder population)
- (6): 1051 (ingested ⁶⁵Zn in euphausiid & shrimp)
- (6): 1115 (role in lobster osmoregulation)
- (6): 1162 (chemistry of rainbow trout)
- (6): 1169 (cortisol in sockeye salmon after ACTH intra-arterial injection)
- (9): 1637 (circulation re fish gills respiration)
- (10): 1860 (circulation time in rainbow trout)
- (10): 1883 (effects of copper on lake trout)
- (12): 2167 (components electrophoresis re *Tilapia* hybrids)
- (12): 2371 (transferrin polymorphism re potential use in identifying coho salmon stocks)
- 28(1): 47 (hemosiderin re erythropoiesis in blue gourami spleen, kidney, & liver tissues)

- (1): 112 (leukemic condition in a cutthroat trout with sarcomas)
- (4): 491 (cardiac responses to hypoxia in sea raven)
- (4): 606 (chemical values for juvenile coho salmon)
- (4): 610 (dieldrin insecticide residues in green sunfish)
- (4): 613 (blood plasma esterase properties of channel catfish, also esterase activity of some other fish blood plasmas)
- (5): 625, 635 (physiological & chemical changes in brook trout by handling, anesthetization, & surgery)
- (5): 781 (improved vascular catheterization procedure for teleost fish aorta)
- (6): 843 (re regulation of zinc retention by rat, when fed P.E.I. oysters)
- (6): 903 (habitat of two fluke species in N Pac. rockfishes, re habitat of those fishes)
- (7): 947 (pathway effects on pressure drop in teleost gills)
- (7): 1053 (genic polymorphism of tetrazolium oxidase in bluefin tuna)
- (8): 1173 (glycoproteins constituents levels in Pac. salmon, trouts, & bovine sera)
- (8): 1191 (hemolymph amino acids of Dungeness crab)
- (8): 1208 ("hemagglutinogens" re mummichog & striped killifish erythrocytes)
- (8): 1215 (changes in lactic acid concentrations of stressed alewives)
- (10): 1609 (effects on circulation, from artificial manipulation of rainbow trout gills)
- (12): 1831 (stresses caused by formalin disinfection of young salmonids)
- (12): 1853 (proteins in coho salmon)
- 29(1): 61 (effectiveness of two iodophor disinfectants against 2 viral infections in rainbow trout)
- (3): 328 (formalin effects on rainbow trout)
- (8): 1217 (plasma osmolality & ionic concentration in Atl. salmon as affected by salinity, temperature, & exercise)
- (9): 1277 (timing of changes in, during landlocked sea lamprey metamorphosis)
- (9): 1344 (concentration of tricaine anesthetic in, during brook trout branchial irrigation)
- CAR 1 (elemental phosphorus effects on Atl. herring)
- T 255 (effects of yellow phosphorus production wastes on several fish species)
- S 898 (total volume in Atl. cod)
- 934 (angiography of Pac. salmon)
- 978 (rainbow trout dorsal aortic pressure)
- 1114; 1141; 1167; 1168 (hormones in skates plasma & tissues)
- 1116 (transcortin binding of cortisol in female Atl. salmon plasma)
- 1119; 1144 (lobster hemolymph constituents)
- 1153 (plasma cortisol re Pac. salmon stresses)
- 1214 (Atl. oyster hemolymph hemagglutinins)
- 1300 (nematode parasite feeding on coho salmon swimbladder)
- 1308 (steroids binding by Atl. salmon & cod plasma proteins)
- 1344 (*Gaffkya homari* effects on lobster)
- 1356 (skate testosterone production & clearance rates)
- 1357; 1362 (skate blood serum protein as testosterone & other sex hormone binding protein)
- 1360 (volumes & electrolytes of various fishes: review)
- 1409 (pathways in teleost fishes gills)
- 1410 (re presence of corticosteroids in Atl. hagfish & sea lamprey)
- 1432 (plasma binding property for cortisol in various fishes)
- 1489 (proteins binding affinities for sex hormones & corticosteroids in 3 Atl. fishes)
- 1562 (major androgens in sexually maturing Atl. salmon plasma)
- 1576 (corticosteroids & testosterone in Atl. sturgeon plasma)
- 1660 (ability of many fishes, particularly tunas & sharks, to elevate blood temperature re swimming speed)
- 1666 (are corticosteroids present in the blood of all fish?)
- 1674 (lipids & fatty acids of Atl. cod erythrocytes)
- 1726; 1727 (*G. homari* & other bacterial effects on lobster hemolymph)
- A 11(F) (hormones isolated from skates plasma)
- Bloom (*see* Phytoplankton)
- Blubber and blubber oils
- J 24(3): 635 (fatty acids structure in oil from gray seal)
- 25(11): 2419 (harp & hooded seal depot fat & commercial seal oils fatty acids composition)
- 26(10): 2561 (weight in white whales)
- S 932 (fatty acid composition of lactating grey seal)
- 938 (NW Atl. seal industry)
- 972 (oil fatty types in gray seal & finback whale)
- 975; 976 (oil fatty acid types in finback whale)
- 1080 (fatty acid distribution in whale & seals)
- 1111 (fatty acids in oil from fin whale)
- 1118 (fatty acids positional distribution in oil from polar bear & harbour seal)
- 1193 (pristanic & phytanic fatty acids of fin whale oil)
- 1226 (positional distribution of fatty acids in triglycerides of seals and sei whale)
- 1228 (isoprenoid fatty acids of whale & seal fats, re feed)
- 1514 (fat composition of Amazon R. dolphin blubber & jaw oil re echolocation ability)
- 1608 (isovalcroyl triglycerides in oil from beluga whale)
- 1668 (mercury contamination in muktuk from)
- 1694 (fatty acids of fin whale vs. harp seal)
- 1697 (freezing & canning muktuk from white whale skin &)
- 1718 (organochlorine pesticides residues in muktuk)
- Bluefish (*Pomatomus saltatrix*)
- J 29(3): 333 (aerobic intestinal microflora)
- T 272 (halogenated hydrocarbon residues detected in)

- S 1409 (gill blood pathways)
- Bluegill (*Lepomis macrochirus*) (bluegill sunfish)
- J 23(11): 1663 (muscle myogens & blood hemoglobins electropherograms; also of hybrid with pumpkinseed)
- (12): 1845 (mouth & body form re feeding ecology)
- (12): 1923 (annual growth cycle, potential, & compensation)
- 24(3): 495 (reproductive isolation from pumpkinseed)
- (3): 695 (blood low-mobility proteins)
- (5): 927 (limnetic larvae in N Wisconsin lakes)
- 25(2): 294 (gill-raker counts re feed habits)
- (2): 373 (retinomotor rhythms)
- (4): 615 (enzymatic properties of brain acetylcholinesterase)
- (6): 1133 (diel feeding habits)
- (6): 1199 (low temperature effects on feeding in 3 Ont. localities)
- (7): 1517 (electrophoretic separation of brain esterases)
- (8): 1571 (liver phosphatases degrade organophosphate insecticides)
- 26(7): 1813 (temperature & body weight effects on endogenous nitrogen secretion)
- 27(6): 1059 (observing behavior under ice by periscope)
- 28(1): 113 (sampling flesh for anesthetic residues)
- (3): 449 (nitrogen excretion & protein consumption)
- (7): 957 (vulnerability to northern pike predation)
- (11): 1811 (suitable for introduction into alkaline eutrophic lakes)
- 29(5): 576 (failure to habituate to handling)
- (9): 1356 (shelters effect on resistance to lethal zinc concentration)
- Boarfish (*see* Armorhead, pelagic)
- Boat (*see* Vessels)
- Bocaccio (*Sebastes (Sebastodes) paucispinis*) (salmon rockfish)
- J 23(9): 1469 (range extension in N Pac.)
- (12): 1981 (color variant of B.C.)
- 25(11): 2477 (proteins electropherograms re rockfishes systematics)
- 27(10): 1781 (taken in Pac. ocean perch surveys, NE Pac.)
- 28(6): 903 (habitat of a blood fluke species in)
- B 180: 435 (full description, etc., B.C.)
- T 7; 11; 16; 22; 30; 46; 56; 62; 81; 144; 181; 205; 221; 257; 269; 290; 317; 328 (taken during FRB experimental or B.C. commercial trawling)
- 246 (bibliography)
- Boddington, Martin John
- J 28(1): 7 (chemical composition of *Dugesia tigrina*)
- (8): 1198 (abnormal sexual organs in fish)
- Bodensee (Austria, Germany, and Switzerland)
- J 29(6): 629, 833, 931, 975 (various factors affecting fish communities, particularly salmonid)
- Body compartments
- S 1360 (re blood & other body fluids electrolytes of various marine fishes: review)
- Body proportions (*see* Anatomy; Growth; Length; Morphology; Size; Weight)
- Boese, Helen
- J 28(9): 1325 (postmortem changes in fish muscle)
- Bogges, Thomas Shelton, Jr.
- J 29(1): 113 (channel catfish fatty acids)
- Bogoslawski, Anthony Steven
- CCG 7 (keeping qualities of fish sausages and wieners)
- Bohn, Arne
- J 27(6): 1151 (marine borers in Canada Atl. waters)
- Boilard, L.
- T 154 (Pac. Ocean Station P oceanographic observations)
- Bolton, Reginald Spence
- J 24(7): 1613 (color in grading canned salmon)
- Bomolochus cuneatus* (parasitic copepod)
- J 28(10): 1563 (threespine stickleback & pile perch as new hosts)
- Bonavista, Nfld.
- J 22(2): 465 (catch, age, and size trends in cod longlining)
- T 289 (lobster biology, tagging, fishery, etc., 1966-70)
- Bone (*see also* Cranium; Jaw; Osteology; Vertebrae)
- J 27(3): 591 (material estimation method for fish protein concentrate)
- 28(6): 843 (zinc retention in rat, when fed P.E.I. oysters)
- S 1412 (fluoride content of several Atl. commercial fishes)
- A 229 (aging whales & other mammals by layered structure of: book review)
- Bonito, Atlantic (*Sarda sarda*)
- T 189 (1961-69 tagging)
- 261 (bibliography for Gulf of St. Lawrence)
- S 1409 (gill blood pathways)
- Bonito, Pacific (*Sarda chiliensis (S. lineolata)*)
- J 22(3): 853 (in Strait of Georgia, B.C.)
- 26(4): 713 (*Diphyllobothrium* parasite in Peruvian)
- B 180: 373 (full description, etc., B.C.)
- S 1204 (population units study by serum transferrin polymorphism)
- A 90; 103 (fishery trend along N America Pac. coast)

- Book reviews (*see* Reviews of books)
- Booke, Henry Edward
J 25(8): 1667 (Great Lakes coregonine fishes cytotaxonomy)
- Boops boops*
J 25(7): 1405 (Gulf of Guinea)
- Boothby, Granville Forsyth
J 24(1): 211 (desiccation of frozen fish)
- Bordeléau, Michel André
J 22(1): 27 (carbonyl compounds in cod)
23(9): 1465 (salinity tolerance levels)
- Borden, Robert Keith
S 1246; 1247 (nucleotide derivatives synthesis)
- Boreogadus saida* (*see* Cod, Arctic)
- Borers, marine (*see* Gribbles; Shipworms)
- Borodinula infans* (*see* Snipe eel, close-spine)
- Boron derivatives
S 1437 (in Green L., N.Y.)
1549 (tropylium ion origin in arylboronic acid esters mass spectra)
A 85 (in freshwater fishmeals)
- Bos taurus* (*see* Steer)
- typicus primigenius* (*see* Cattle)
- Bose, Robert John
J 27(12): 2179 (canned salmon direct pigmentation)
S 1531 (casein and polyethylenimine)
1549 (occurrence and origin of tropylium ion in mass spectra of arylboronic acid esters)
1621 (malondialdehyde reactions with hydrazones)
- Bosmina* (*see* Cladocera)
- Bosomworth, Neil John
J 23(9): 1461 (glycogen reserves of trout)
- Boston, Noel Edward James
S 977 (isothermal surface layer of water)
- Bothern, C. R.
J 25(6): 1115 (kokanee & sockeye salmon sounding response)
- Bothidae (lefteye flounders) (*see also* names of species)
J 26(1): 191 (S to N percentage increase in sinistrality of B.C. starry flounders)
T 246 (bibliography of Pac. N America coast)
- Bothragonus swani* (*see* Rockhead)
- Bothrimonus (Diplocotyle)* (*see also* Cestoda)
J 26(4): 975 (history, descriptions, synonymy, systematics)
29(10): 1381 (ecology, life cycle, evolution, & hosts in N hemisphere)
- Bothrocara brunneum* (*see* Eelpout, twoline)
molle (*see* Eelpout, soft)
pusillum (*see* Eelpout, Alaska)
remigera (*see* Eelpout, longfin)
remigerum (*see* Eelpout, longsnout)
- Botryococcus* (*see* Xanthophyceae)
- Bottles, drift (*see* Drift (determination of))
- Bottom organisms (*see* Benthos; *also* names of species)
- Bottom sediments (*see* Sediments)
- Botulism (*see* *Clostridium botulinum*)
- Bouck, Gerald Ray
J 24(3): 695 (low-mobility proteins in fish blood)
25(7): 1323 (trout lactate dehydrogenase)
- Boulder Creek, Colorado (*see* North Boulder Creek, Colorado)
- Boulva, Jean
J 25(7): 1501 (F) (*Salvelinus namaycush* in marine waters)
28(5): 755 (seal whelping observations, Sable Is.)
29(3): 243 (morphometrics of 3 sympatric arctic cod-fish species)
- Bounty
J 25(12): 2749 (on harbour seals: possible effect on Atl. cod codworm infestation)
- Bourget, Edwin
J 28(8): 1205 (epifaunal collectors)
- Bourne, Neil
J 22(2): 313 (scallop drags)
(3): 861 (colored scallop meats)
(5): 1137 (paralytic shellfish poison)
26(9): 2527 (line fishing off B.C.)
(12): 3246 (*Eptatretus deani* from B.C.)
B 179 (B.C. clam fisheries)
CNG 81 (new method of digging butter clams)
T 15 (hydraulic clam rake digging efficiency trials)
104 (scallop resources of B.C.)
118 (Masset, B.C., razor clam)
232 (breeding and growth of razor clams in B.C.)
S 910 (*Placopecten magellanicus*)
1176 (scallop drags)
- Bowfin (*Amia calva*)
J 24(3): 695 (blood low-mobility proteins)
25(6): 1199 (low-temperature effects on feeding in 3 Ont. localities)

- 29(9): 1283 (cadmium content, in New York State waters)
- CCG 7: 16 (protein electropherogram)
7: 33 (latent heat of freezing)
S 1666 (blood plasma cortisol)
- Bowie Seamount (west of Queen Charlotte Is., B.C.)
T 273 (oceanographic & biological observations at)
- Bowman, Thomas Elliot
J 24(3): 687 (amphipod bioluminescence)
- Boyce, Farrell MacKenzie
S 977 (isothermal surface layer of water)
- Boyce, Gordon Alexander
J 23(10): 1587 (thiobarbituric acid values)
- Boyce, Norbert Patrick Joseph
J 26(4): 813 (parasites of juvenile pink salmon)
(4): 893 (two hemiurid trematodes)
S 1565 (dissecting instrument with increased accuracy & cutting efficiency)
1658 (new nematode genus & species from Japan freshwater fishes)
- Boyd, John William
J 22(1): 53 (drip loss of frozen fish)
(1): 117 (tetracycline antibiotics)
(3): 849 (myxosporidian parasite)
23(8): 1281 (thermal resistance of bacteria)
24(1): 211 (desiccation of frozen fish)
(3): 527 (quality of dogfish during frozen storage)
25(8): 1745 (fish homogenates as substrates)
(8): 1753 (ethylenediaminetetraacetic acid & chlortetracycline in fish preservation)
28(8): 1071 (salt tolerance of type E *Clostridium botulinum*)
T 336 (B.C. herring roe retrieval & processing)
- Braaten, Duane Ole
J 26(2): 339 (robustness of DeLury estimator)
- Brachiella* (see Caligoida)
- Brachiochondrites longicollis* (see Cyclopoida)
- Brachiopoda (lamp shells)
J 28(10): 1675; 29(4): 385 (*Terebratalia transversa* sterols)
T 225 (*T. septentrionalis* associated with Bay of Fundy scallop beds)
268 (12 species data from B.C. coast surveys since 1960)
S 1679 (*T. transversa* sterols)
- Brachydanio albolineatus* (see Danio, pearl)
nigrofasciatus (see Danio, spotted)
rerio (see Zebrafish)
- Brachyistius aletes* (see Surferperches)
brevispinis (see Perch, kelp)
- frenatus* (see Perch, kelp)
- Brachyura (see Crab; Crabs)
- Bradyidius saanichi* (calanoid copepod)
J 23(6): 805 (new species, B.C.)
- Brain
J 25(4): 615 (acetylcholinesterase properties of fish)
(6): 1247 (tissues of Pac. salmon re transaminases activity)
(7): 1517 (electrophoretic separation of esterases)
(9): 1797 (dieldrin accumulation in goldfish, after aldrin ingestion)
28(4): 610 (dieldrin insecticide residues in green sunfish)
(12): 1837 (lysolecithin solubilizing effect on extractability of tissues, in rainbow trout)
S 1073 (enzymes of Atl. herring)
1401 (cyclic nucleotide phosphodiesterase in rainbow trout)
1556 (temperature effects on Atl. salmon & brook trout oxygen consumption of)
- Brama japonica* (see Pomfret (Pacific))
rail (see Pomfret (Pacific))
- Branchiopoda (see Cladocera; Crustacea)
- Branchiura (see also Crustacea)
J 24(9): 1911 (descriptions; parasitic on Nfld. trout & salmon)
29(3): 275 (4 *Argulus* species parasitic to Lake of the Woods fishes, Ont.)
B 176 (synopsis of Canadian zooplanktonic)
T 185 (bibliography re Canada fishes parasitized by)
S 1450 (as coregonid fishes parasites)
- Branding (see Marking)
- Branion, Richard Michael Robert
A 151 (fermenting spent sulfite liquor to produce acid)
- Bras d'Or Lake area, N.S.
J 24(2): 443 (serology of disease-susceptible oyster stock)
27(8): 1395 (effects of 4 copepod species grazing on phytoplankton therein & in Morrison's Pond)
S 911 (limnology of barachois ponds)
- Brawn, Vivien Mavis (see also Srivastava, Vivien Mavis)
J 22(6): 1555 (swimbladder volume of physoclist fishes)
25(9): 1803 (invertebrate caloric content)
26(3): 583 (Atl. cod feeding behavior)
(8): 2077 (buoyancy of herring)
(9): 2345 (zooplankton biomass equivalents)
A 133 (Atl. cod feed)
- Bream (*Abramis brama*)
S 1442 (*Triaenophorus* parasite, L. Mälaren, Sweden)

- Bream, white (silver) (*Abramis blicca*)**
 J 26(9): 2532 (polymorphic serum esterases suited for population analysis)
 S 1442 (*Triaenophorus* parasite, L. Mälaren, Sweden)
- Breeding (see Culture; Hatcheries; Reproduction; Spawning)**
- Breen, Paul Allan**
 J 29(5): 603 (interrelation of lobster & sea urchins re kelp abundance)
- Brett, John Roland**
 J 22(2): 405 (pumpkinseed respiration)
 (6): 1491 (relation of salmon weight to metabolism)
 23(9): 1447 (holding tank for fish)
 24(8): 1731 (sockeye salmon fatigue)
 (8): 1775 (sockeye cardiovascular dynamics)
 26(9): 2363 (sockeye growth & composition)
 27(10): 1767 (temperature re fingerling sockeye gastric digestion)
 28(3): 409 (sockeye satiation time, appetite, & maximum food intake)
 (10): 1635 (diet-growth responses of salmon)
 29(11): 1525, 1543 (respiratory characteristics of young within ovary of viviparous pile perch & striped seaperch)
 (11): 1555 (kraft mill effluent effects on young sockeye growth & feed conversion efficiency)
- CNS 89** (sockeye artificial rearing)
T 283 (environmental control tank for synchronous growth & metabolism study of young salmon)
 301 (a brief on B.C. mariculture)
S 896 (young sockeye swimming energy requirements)
 978 (dorsal aortic pressures in trout)
 998 (salmon swimming energetics)
 1415 (energy cost of living fishes)
 1430; 1590 (temperature re fishes)
 1636 (sockeye physiological responses to freshwater temperature relations)
 1680 (metabolic oxygen demand in fish, particularly salmonids, re that of other vertebrates)
- A 116** (fish respirometer)
 118 (Pac. salmon: review)
 212 (metabolism in fish)
- Brevibacterium incertum***
 J 23(9): 1451 (in lobster)
- Bevoortia tyrannus* (see Menhaden, Atlantic)**
- Briarosaccus callosus* (see Cirripedia)**
- Brienzensee, Switzerland**
 J 29(6): 755 (exploitation & eutrophication effects on salmonid communities)
- Brill (Atlantic) (see Windowpane)**
- Brill (Pacific) (see Sole, petrale)**
- Brines; Brining (see also Marinating; Salting; Smoking)**
 J 24(8): 1693 (to produce light-salted Atl. cod)
 B 151; 151(F) (freshwater fishes for smoking)
 CHN 27 (to reduce water loss from Atl. cod filets)
 T 336 (Pac. herring roe)
 S 1366 (vs. polyphosphate dip re drip, yield, & quality of frozen Atl. trawled fishes)
 A 12(F); 65 (same as CHN 27 above)
- Brinkhurst, Ralph Owen**
 J 24(6): 1299 (guanotrophy in Rostherne Mere)
 26(10): 2581 (modified bottom sampler corer)
 (10): 2659 (some tubificid-sediment interactions)
 27(11): 1961 (tubificid distribution and abundance in Toronto harbour)
 (11): 1971 (defecation rate of tubificid oligochaetes in Toronto harbour)
 28(3): 335 (tubificid oligochaetes & bacteria)
 (11): 1683 (Bay of Quinte & L. Ontario benthos. I. Species diversity)
 (11): 1699 (Bay of Quinte & L. Ontario benthos. II. Production of macroinvertebrates)
 (11): 1715 (Bay of Quinte & L. Ontario benthos. III. Community metabolism)
 S 1543 (Great Lakes bottom fauna components)
- Brisaster latifrons* (see Heart urchins)**
***townsendi* (see Heart urchins)**
- Bristol Bay, Alaska (see also Alaska; Alaska, Gulf of)**
 J 23(3): 459 (sockeye salmon scale characteristics)
 25(6): 1219 (oceanic mortality estimation of sockeye from)
 26(3): 655 (variance components in estimating sockeye egg deposition potential)
- British Columbia (see also appropriate Oceanography headings; names of marine bodies of water, e.g. Georgia, Strait of; names of localities, lakes, and rivers; Yoho National Park; also Catches; Fisheries; Flatfishes (Pacific); Groundfishes (Canadian Pacific); names of commercial NE Pacific fishery species; NW America freshwater species; etc.)**
 J 23(12): 1875 (limnology of 9 lakes in SE Rocky Mountain Trench)
 24(6): 1203, (7): 1613 (grading canned salmon)
 (6): 1421 (exotic earthworm species)
 25(1): 33 (juvenile steelhead & cutthroat trout distribution within SW streams)
 (1): 81 (limnology of 3 SW lakes re trout mortality)
 26(7): 1727 (synopsis & key to Ophiuroidea of S)
 (7): 1763 (limnology of 4 meromictic small lakes)
 (8): 1985 (demersal fishes exploratory survey)
 (9): 2319 (parasites of various marine fishes)
- B 162** (biology, fishery, etc., of sockeye salmon)
168 (paralytic shellfish poisoning in)
B 169; 178 (Pac. oyster culture)
 171 (marine mammals)
 173 (full descriptions, etc., of fishes of arctic drainage system)
 179 (clam fisheries)
 180 (full descriptions of marine fishes)
 CNG 85 (shrimp exploration)

- 86; 88 (herring spawning)
 92 (research needs for intensive steelhead trout management)
 T 2 (distributional checklist & bibliography of marine Mollusca)
 13 (trawlers & trawling gear)
 104 (scallop resources)
 246 (bibliography of trawl fishery & fishes)
 326 (1970 status of Pac. ocean perch stocks off)
 S 892; 907; 959 (pulpmill wastes disposal problems)
 1219 (Polychaeta (Errantia) checklist from 1923)
 1243 (Polychaeta (Sedentaria) checklist from 1923)
 1328 (shrimp industry)
 1668 (mercury contamination of crabs & several commercial fishes)
 A 122 (whaling industry)
 200 (mercury contamination of fishes & crabs)
- Brittle stars (Ophiuroidea, including basket stars and serpent stars) (*see also* Echinodermata)
 J 22(6): 1407 (bathymetric distribution off Oregon coast)
 24(4): 833 (8 species from a drifting ice island off E Greenland)
 26(1): 55; 27(4): 621, (12): 2273 (in Washington coast benthic fauna)
 (7): 1727 (synopsis & key to Washington & southern B.C. species)
 28(11): 1733 (respiration rate)
 T 25; 35; 59; 60; 73 (in Strait of Georgia benthos biomass)
 43 (on Irish moss)
 225 (associated with Bay of Fundy scallop beds)
- Brockerhoff, Hans
 J 22(3): 643 (Atl. cod lysolecithinase)
 23(12): 1835 (fat digestion by cod)
 24(3): 607 (seasonal changes in cod condition & lipid content)
 27(8): 1357 (lobster digestive enzymes)
 28(11): 1793 (Atl. herring oil effects on rat cardiac functions)
 T 229 (herring oil effects on rat organs)
 S 944; 985 (stereospecific analysis of triglycerides)
 967 (hydrolysis of triglycerides)
 986 (preparation of L- α -glyceryl phosphoryl choline)
 1028 (fatty acid distribution in triglycerides)
 1029 (stereospecific analysis of vegetable fats)
 1047; 1170; 1637 (triglyceride analysis)
 1065 (determining glycerides fatty acids distribution)
 1080 (fatty acid distribution in animal depot fats)
 1118 (polar bear and seal fatty acids)
 1125 (lobster triglyceride digestion)
 1186 (dietary triglyceride conversion)
 1203 (isomer distribution of monoeonic fatty acids)
 1226 (fatty acids positional distribution)
 1233 (fatty acids incorporation into mammals triglycerides & phospholipids)
 1250 (pancreatic lipase substrate specificity)
 1371 (substrates for pancreatic lipase)
- 1374 (pancreatic lipase action on emulsions of water-soluble esters)
 1462 (substrate specificity of pancreatic lipase)
 1471 (lipase assay based on acetaldehyde liberation from vinyl oleate)
 1601 (bile salts & proteins as lipase cofactors)
- Brocksen, Robert Wilbur
 J 29(4): 399 (physiological effects of varying salinity on 3 Salton Sea fishes, California)
- Brodie, Paul Frederick
 J 26(8): 2201 (tagging white whales)
 (10): 2561 (body size in white whales)
 28(9): 1309 (white whale life history)
- Bromine derivatives
 J 27(4): 677 (in livers of 8 Great Lakes fishes)
 S 1437; 1439 (bromine ion in Green L., N.Y.)
- Brooke, Richard O.
 J 25(11): 2453 (dimethyl sulfide re clam odor)
- Brosme brosme* (*see* Cusk)
- Brotula (*Cataetys rubrirostris*)
 J 25(12): 2665 (associations with other fishes off Oregon coast)
- Brotula, red (*Brosmophycis marginata*)
 B 180: 230 (full description, etc., B.C.)
- Broughton, Eric
 J 28(3): 448 (subcutaneous fibroma in lake trout in Quebec)
- Brown, Carolyn
 J 26(10): 2760 (bacterial flora of algal feed used for rearing bivalve larvae)
- Brown, Clinton Eugene
 J 27(9): 1637 (fish gill ventilation)
 28(7): 947 (blood pathway and pressure drop in fish gills)
- Brown, Edward Herriot, Jr.
 J 27(11): 2047 (temperature tolerance of bloaters)
 29(5): 477 (L. Michigan alewife population biology, 1949-70)
- Brown, Joseph Harry
 J 27(6): 1005 (breeding biology of lake chub)
- Brown, Penelope Louise
 J 28(10): 1433 (relation between tube-building and feeding in Polychaeta)
- Brown, Ralph B.
 J 29(4): 423 (male Alaska tanner crab size at sexual maturity, re commercial fishery)
- Brown, Seward Ralph

- J 25(3): 523 (chlorophyll derivatives)
- Brownell, Robert Leo, Jr.
J 25(12): 2561 (fish otoliths in cetacean stomachs)
- Brownell, Willard Northrop
J 27(10): 1864 (*Mysis relicta* & *Pontoporeia affinis* as intermediate hosts for *Echinorhynchus salmonis*)
- Browning, of flesh (Maillard browning)
J 22(3): 755 (after freeze-drying lingcod and sole)
S 1117; 1124 (role of sugars & sugar phosphates in post-mortem fish)
A 30; 32 (enzymic removal of fish flesh carbohydrates to inhibit)
79 (cause & avoidance)
80 (re nutritive value of fish flesh)
130 (recent advances in overcoming)
- Bruce, David Lorne
S 1113 (marine planktonic algae antibacterial activity)
1194 (two *Isochrysis galbana* antibacterial products)
- Brunel, Pierre
J 25(5): 943 (N America Atl. & Arctic coast Amphipoda)
T 47 (tabular data from *Anonyx* species)
- Brungs, William Aloysius
J 24(2): 429 (lethal endrin in blood of gizzard shad)
28(8): 1119 (low oxygen effects on minnows)
- Brunskill, Gregg John
J 28(2): 139 (geography and bathymetry of selected basins of FRB Experimental Lakes, NW Ont.)
(2): 277 (surface sediment chemistry of FRB Experimental Lakes, NW Ont.)
(11): 1763 (eutrophication of an FRB Experimental Lake, NW Ont.; correction on J 29(8): 1241)
S 1436 (comparative study of meromixis)
1437 (Green L., N.Y., limnology)
1438 (sedimentation in Green L., N.Y.)
1439 (Green L., N.Y., interstitial water chemistry)
- Bryan, James E.
J 29(11): 1615 (food specialization by individual brook, cutthroat, & rainbow trouts; corrections on J 30(8): 1257)
- Brynildson, Oscar Mariaus
J 29(4): 458 (Floy anchor tag effects on brook trout growth & survival)
- Bryocampus* (see Harpacticoida)
- Bryozoa
J 24(9): 1905 (*Cribrilina annulata* sexual dwarfism)
(9): 2003 (*Figularia quaylei* new species from NE Pac.)
25(11): 2269 (description & distribution of 93 species, arctic Canada)
- 27(10): 1847 (*Schizoporella unicornis* introduced into Strait of Georgia)
(11): 2095 (hyperplasia in estuarine *S. unicornis* from coal-tar derivatives pollution)
T 43 (on Irish moss)
158 (settling periodicity, as fouling organisms)
225 (associated with Bay of Fundy scallop beds)
- Bryozoichthys marjorius* (see Prickleback, pearly)
- Bubbles (see also "Gas bubble" disease; Gases)
J 29(11): 1627 (bubbling vs. membrane filtration for phytoplankton production determination by ¹⁴C method)
S 1500 (mathematical physics of formation in bottom sediments)
- Buccinum undatum* (see Whelk, rough)
- Buchanan, David Vardyn
J 27(1): 93 (effects of Sevin insecticide on crabs)
- Buchwald, David Glen
J 26(8): 2260 (*Trialephorus crassus* in arctic lampreys)
- Buck, John David
J 29(3): 333 (bluefish intestine aerobic microflora)
- Buckley, Dale Eliot
S 1627 (calcium carbonate monohydrate in sea water)
- Budd, J. C.
J 25(11): 2257 (L. Manitou marked lake trout survival)
26(9): 2413 (survival of planted lake trout)
- Budde, W.
J 22(3): 865 (detection of *Trialephorus* cysts in whitefish flesh)
- Budlong, John Perry
S 1516 (bridge and amplifier monitor)
1517 (frequency divider immunity)
- Budworm, spruce (*Choristoneura fumiferana*)
J 24(4): 701, 709, 731, 769, 807, 823 (re spraying of N.B. forests with insecticides to combat infestation; effects on salmon, trout, & aquatic insects)
- Buerkle, Udo
J 24(11): 2309 (Atl. cod audiogram)
25(6): 1155 (cod auditory thresholds)
26(5): 1113 (auditory masking in cod)
T 102: 2 (sound studies with a submersible "cubmarine")
- Buffalofish, bigmouth (*Ictiobus cyprinellus*) (mullet)
J 26(11): 2881 (hematology)
28(7): 957 (vulnerability to northern pike predation)
- Buffalo, smallmouth (*Ictiobus bubalus*)
J 24(2): 299 (muscle myogen electropherograms re speciation)

- 26(11): 2881 (hematology)
- Buffers**
J 29(8): 1169 (amine-citrate, for starch-gel electrophoresis pH control)
- Bufo marinus* (see Toad)
- Bugs** (see Hemiptera)
- Buhler, Donald Raymond**
J 26(12): 3209 (DDT effect on activity of glucose 6-P dehydrogenase in fish)
27(2): 347 (body weight vs. DDT salmon toxicity)
- Bulb-fish** (see Dreamer, bulbous)
- Bulkley, Ross Vivian**
J 24(5): 917 (fecundity of steelhead trout)
- Bullhead** (*Ictalurus* sp.) (see also following headings)
J 29(9): 1283 (cadmium content, from New York State waters)
- Bullhead** (shorthorn sculpin?) (*Cottus scorpius*) (*Myoxocephalus scorpius*?)
J 25(12): 2711 (muscle creatine kinase localization)
- Bullhead, black** (*Ictalurus melas*)
J 24(3): 695 (blood low-mobility proteins)
27(1): 170 (in Hudson Bay drainage system, Man.)
28(4): 613 (blood plasma esterase activity)
(7): 957 (vulnerability to northern pike predation)
(11): 1811 (alkali tolerance in Nebraska eutrophic lakes & ponds)
29(2): 199 (necessary exposure times to eliminate, by antimycin & rotenone)
- Bullhead, brown** (*Ictalurus nebulosus*) (*Ameiurus nebulosus*)
J 23(12): 1845 (mouth & body form re feeding ecology)
24(3): 695 (blood low-mobility proteins)
25(6): 1199 (low temperature effects on feeding in 3 Ont. localities)
(7): 1521 (infection by *Aeromonas*)
(8): 1739 (spinal ganglia position re taxonomy)
26(10): 2643 (oxygen metabolism re body weight)
27(1): 170 (in Hudson Bay drainage system, Man.)
28(9): 1285 (methylmercury in N.B.)
29(3): 275 (22 parasites of, Lake of the Woods, Ont.)
B 151; 151(F) (wiener-type sausage from)
CCG 7: 16 (protein electropherogram)
S 1128 (in a L. Superior bay)
- Bullhead, yellow** (*Ictalurus natalis*)
J 24(3): 695 (blood low-mobility proteins)
28(4): 613 (blood plasma esterase activity)
- Bullock, Graham Lambert**
J 25(2): 383 (infectious pancreatic necrosis: virus-free trout selection)
- Bullock, Wilbur Lewis**
J 26(4): 1075 (marine fish hematozoa)
- Bulow, Frank Joseph**
J 27(12): 2343 (RNA-DNA as indicators of growth rates of fishes)
- Bumper, Atlantic** (*Chloroscombrus chrysurus*)
J 29(11): 1605 (voltage & pulse rates for inducing electro taxis)
- Bumpus, Dean Franklin**
S 939 (seabed drifters)
1109 (continental shelf water circulation)
- Buoyancy** (of organisms) (see also Swimbladder; Swimming)
J 23(10): 1617 (adjustment of Atl. salmon parr to water velocity)
26(8): 2077 (Atl. & Pac. herring adjustment mechanism)
(8): 2093 (seasonal changes in Atl. salmon parr & smolt)
27(10): 1669 (of Atl. herring, re its oil characteristics)
- Buoys** (see also Currents; Drift)
J 22(3): 689 (first transponding oceanographic buoys in the Pac.)
29(1): 31 (algae attached to, in L. Winnipeg)
- Burbot** (*Lota lota*) (freshwater cod; ling; maria)
J 22(3): 744 (in Bow R. system, Alta.)
24(5): 927 (limnetic larvae in N Wisconsin lakes)
(6): 1219 (oil yield & composition on reduction)
(6): 1291 (composition & nutritive value of meal)
(6): 1315 (cranial osteology)
25(1): 169 (pesticide residues in oils & meals)
(4): 667 (re Great Lakes species succession & exploitation)
(8): 1651 (plasma protein-bound inorganic iodide)
(11): 2523 (*Triacnophorus nodulosus* parasite in)
26(2): 325 (S Alta. distribution)
(6): 1439 (distribution in Canadian Missouri R. headwaters)
(7): 1927 (purine sources of skin silvering)
27(1): 125 (re lake trout feed, L. Opeongo, Ont.)
(1): 170 (in Hudson Bay drainage system, Man.)
(4): 830 (mercury contamination in organs, Saskatchewan R.)
(10): 1757 (morphological variation, re recognition of the subspecies *L. l. lota*, *L. l. lacustris*: review)
28(1): 105 (DDT residues in muscle of, Saskatchewan R.)
(7): 1061 (practical drying equipment for fillets & steaks)
29(3): 275 (19 parasites of, Lake of the Woods, Ont.)
(9): 1283 (cadmium content, in New York State waters)
(12): 1685 (mercury concentration re size, in 4 Man. lakes; corrections on J 30(8): 1257)
(12): 1709 (male gonad morphology re 11 other Gadidae species)
B 151; 151(F) (smoked & canned flesh & liver)

- 173: 296 (full description, etc., of NW Canada & Alaska)
- CCG 7: 16 (protein electropherogram)
- 7: 33 (latent heat of freezing)
- T 33 (in Great Slave L. fishery)
- 180 (Lac la Martre, N.W.T.)
- S 1081 (sweet-cured smoked sliced products; recipe)
- 1128 (in a L. Superior bay)
- 1189; 1226; 1395 (oil fatty acids composition & structure)
- 1442 (*Trienophorus* in L. Mälaren, Sweden)
- 1591 (pristane & other hydrocarbons in commercial Canadian oil)
- 1668 (mercury content, L. Winnipeg)
- 1718 (organochlorine pesticide levels in Canadian commercially caught)
- A 6(F) (marinated fillets & similar products)
- 14 (Great Bear L., N.W.T.)
- 85 (nutrient composition of meal as poultry feed)
- 200 (mercury contamination in various Canadian waters)
- Burdick, George E.
J 29(9): 1283 (total cadmium content survey of New York State freshwater fishes)
- Burgher, Robert Douglas
J 24(3): 607 (seasonal changes in Atl. cod condition and lipid content)
- S 945 (cod liver oil fatty acids)
- Burgner, R. L.
J 29(6): 699 (limnology & fish ecology of world sockeye salmon nursery lakes)
- Burnett, Carienne Doris
T 57 (Bay of Fundy herring length & age distribution)
- 139 (Gulf of St. Lawrence herring catch statistics)
- Burrard Inlet (outer), B.C.
J 26(9): 2403 (blackbelly eelpout biology)
- Burridge, Edward William
J 29(1): 101 (obituary of Andrew Lyle Pritchard)
- Burrowing (*see also* Clam; Clams)
J 26(2): 361 (habits of 3 Haustoriidae amphipod species)
- Bursa, Adam Stanislaw
J 25(6): 1269 (starch in oceans)
- T 267 (Frobisher Bay 1967 phytoplankton tables)
- S 1003 (*Kofoidinium arcticum*, new dinoflagellate)
- 1139 (*Discoasteromonas calciferus* n.sp.)
- 1191 (Great Bear L. nanoplankton)
- 1488 (marine relicts in Canadian Arctic lakes)
- 1577 (new organisms discovered in Como Creek, Colorado)
- 1578 (rare plankton species discovered on Ellesmere Is., N.W.T.)
- 1589 (morphogenesis and taxonomy of fossil and contemporary dinophyta secreting discoasters) (scientific career)
- A 68
- Burt, James Robertson
J 23(4): 527 (Atl. cod muscle enzymes)
- (11): 1795 (Atl. salmon muscle hypoxanthine)
- Burt, Michael David Brunskill
J 25(11): 2521 (microturbellarian in oysters off P.E.I.)
- 26(4): 975; 29(10): 1381 (*Bothrimonus* cestode biology)
- Burton, Dennis Thorpe
J 29(10): 1463 (tissue hypoxia re zinc toxicity fatal to rainbow trout)
- Burton, William
J 27(10): 1867 (sampling profundal benthos)
- Buss, Keen
J 22(5): 1261 (Esocidae hybrids)
- Busycon canaliculatum* (*see* Whelk, channelled)
- Butler, David Gordon
J 24(8): 1823 (prolactin and eel electrolytes)
- 26(3): 639 (eel renal physiology)
- 29(9): 1362 (failure to observe metabolites changes following Stannius corpuscles removal from freshwater American eel)
- S 1337 (adrenalectomy of eel)
- 1526 (feedback mechanism in eels)
- Butler, Jerry Allan
J 25(8): 1621 (Sevin insecticide effects on clams)
- Butler, John Lawton
J 28(9): 1349 (notacanthid collected off Oregon coast)
- 29(7): 1093 (first *Bathysaurus mollis* records from NE Pac. Ocean)
- (8): 1145 (myctophids swimbladder morphology & specific gravity)
- Butler, Robert Lee
J 26(1): 21 (bass response to shelter)
- Butler, Terrance Henry
J 22(5): 1305 (first B.C. dusky sculpin record)
- 26(10): 2751 (trawl-board sediment sampler)
- 28(10): 1615 (records of B.C. shrimp)
- CNG 76 (Hecate Strait and Queen Charlotte Sound shrimp)
- 85 (1967 B.C. coast shrimp exploration)
- T 1 (Dungeness crab bibliography)
- 18 (Gulf of Alaska & Bering Sea shrimp exploration & fishing)
- 61 (shrimp sampling & temperature data off B.C., 1966, 1967)
- 241 (bibliography of economically important shrimps)
- S 1328 (B.C. shrimp fishery)

- 1518 (biological data on prawn)
A 104 (good shrimping areas discovered)
- Butterfish (*Peprilus (Poronotus) triacanthus*)
J 28(7): 935 (occasional component of Passamaquoddy Bay fish communities, N.B.)
29(11): 1605 (voltage & pulse rates for inducing electrotaxis in)
T 261 (bibliography for Gulf of St. Lawrence)
- Butterfish, spotted (*Scatophagus argus*)
J 25(1): 197 (microorganisms isolated from diseased)
- Buttkus, Hans
J 23(4): 563 (trout myosin)
24(7): 1607 (amino acids in trout muscle myosin)
S 1195 (myosin reaction with malonaldehyde)
1314 (cysteine & methionine reaction)
1509 (accelerated denaturation of myosin)
1561 (sulfhydryl content of rabbit and trout myosins in relation to protein stability)
1621 (malondialdehyde reactions with hydrazones)
- Buttle Lake, B.C.
J 25(9): 1997 (planktonic prickly sculpin diel limnetic occurrence)
- Byard, Edward Harry
S 1706 (histological changes in lobsters exposed to yellow phosphorus)
- By-products, fishery (see also Crab meal; Fishmeal; Fish protein concentrate; Oils and fats; Shrimpmeal; etc.; also types of processing)
A 215 (technology of: book review)
- Byrne, John Murray
J 29(8): 1217 (factors influencing plasma osmolality & ionic concentration in Atl. salmon)
- Byssus ("beard") (of mussels)
B 177: 28 (re paralytic shellfish toxin in E Canada mussels)
- C**
- Caballero R., Guillermina
J 26(4): 957(F) (trematodes of Pac. fishes)
- Caballero y C., Eduardo
J 26(4): 957(F) (trematodes of Pac. fishes)
- Cabelli, Victor Jack
J 27(9): 1569 (quahaug bacterial elimination)
(9): 1579 (clam bacterial elimination)
- Cabezón (*Scorpaenichthys marmoratus*) (giant marbled sculpin) (see also Sculpin, Pacific staghorn)
J 22(1): 203 (biochemical systematics)
25(2): 332 (host to parasitic chondracanthid copepod)
28(10): 1563 (host of a new copepod species)
B 180: 540 (full description, etc., B.C.)
- T 181; 257; 317 (taken in B.C. trawl fishery)
246 (bibliography)
- Cabot Strait (see St. Lawrence, Gulf of; also Oceanography, Northwest Atlantic coastal)
- Cacao butter
S 1029 (fatty acids positional distribution in triglycerides)
- Caddisflies (see Trichoptera)
- Caddy, John Frederick
J 25(10): 2123 (underwater observations of scallops)
27(3): 535 (submersible survey method)
T 102: 4 ("submarine" operations over scallop beds)
168 (1966 & 1967 scallop surveys, Bay of Fundy)
225 (fauna in Bay of Fundy scallop dredge hauls)
256 (Georges Bank scallop meat sizes)
310 (collapsible underwater camera sled for seabed photography)
S 1256 (paralytic shellfish poison in *Buccinum*)
1284 (Georges Bank scallop fishery)
1551 (study of developments in postlarval *Macoma balthica*)
A 136 (submersibles for fisheries research)
236 (high price of Atl. scallop landings conceals decline in offshore stocks)
251 (recent scallop recruitment & apparent cull size reduction, Georges Bank)
- Cadmium derivatives
J 22(4): 929 (re oxidative rancidity promotion in cod flesh)
25(4): 639 (catalyzing fatty fish flesh oxidative rancidity)
27(2): 383 (toxicity to 5 liver enzymes of mummichog)
(4): 677 (in whole fish or livers of 13 Great Lakes fishes)
(4): 701 (ion effects on marine muscles extractable protein)
(12): 2185 (cadmium chloride effects on mummichog histology & hematology)
28(5): 786 (in dressed Canadian fishes from industrial area lakes)
(6): 843 (level in P.E.I. oysters)
(9): 1225 (toxicity tests on mummichogs & various marine organisms)
29(8): 1099 (sulfate acute & chronic toxicity to fathead minnow)
(9): 1283 (survey of total content in 29 New York State freshwater fish species)
(9): 1367 (uptake by Atl. oyster, scallop, lobster, & mummichog)
(12): 1691 (chloride, re toxicity to *Daphnia magna*)
S 1529 (distribution in L. Ontario)
- Caeca, pyloric
J 23(10): 1607, (12): 1841 (Atl. cod histology & morphology)
24(5): 965 (development in lake trout)

- 28(1): 115 (count, re anadromous vs. freshwater-resident Arctic char)
 (7): 987 (counts re systematics & evolution of western N America *Salmo* species & subspecies)
 (7): 1064 (vs. feces re presence of pancreatic necrosis virus in brook trout)
- Caecum
 J 25(5): 853; 27(6): 1141 (glucose metabolism in *Bankia setacea*)
- Caillouet, Charles Wax, Jr.
 J 25(1): 15 (channel catfish lactic acidosis)
- Cairns, Alan Andrew
 J 24(3): 555 (zooplankton of Tanquary Fjord)
- Cairns, John, Jr.
 J 28(8): 1107 (computer simulation of pollution minnow deaths)
 29(9): 1356 (effect of shelters on resistance of dominant & submissive bluegills to lethal zinc concentration)
 (10): 1463 (tissue hypoxia re zinc toxicity fatal to rainbow trout)
- Calanoida (see also Copepoda; Crustacea; Plankton; Zooplankton)
 J 22(2): 543 (development rate, Canadian Arctic Ocean)
 (4): 969 (*Limnocalanus macrurus* & *Senecella calanoides* distribution, Algonquin Park, Ont)
 23(2): 189, (3): 415 (identification, key, etc., of free-swimming nauplii)
 (3): 415 (seasonal occurrence & abundance of nauplii, Narragansett Bay, R.I.)
 (6): 805 (new species: *Bradyidius saanichti*)
 24(2): 231 (*Gaidius columbiae* & *Tharybis fultoni*, new species from Strait of Georgia, B.C.)
 (3): 555 (*Calanus glacialis*, *C. hyperboreus*, & *Pseudocalanus* in Tanquary Fiord, Ellesmere Is., zooplankton)
 (9): 1911 (*Lepeophtheirus salmonis* on Atl. salmon)
 26(1): 150 (*Acartia tonsa* & *Eurytemora affinis* culture in synthetic sea water)
 (3): 543 (polyteny & size variation of *Pseudocalanus* in Baffin Is. landlocked fiords)
 (5): 1347 (chemical factors affecting *Euchaeta japonica* culture)
 (6): 1485 (*Pseudocalanus minutus*, *Eurytemora americana*, & *C. glacialis* re production ecology of Ogac L., Baffin Is.)
 (6): 1631 (*P. minutus* & *C. plumchrus* as feed for young chum salmon)
 26(8): 2135 (*Diaptomus minutus*, *D. oregonensis*, *Eurytemora affinis*, & *D. sicilis* horizontal distribution in L. Ontario)
 (10): 2543 (*D. ashlandi*, *D. minutus*, *D. oregonensis*, *D. sicilis*, *Eptischura lacustris*, *Eu. affinis*, *Li. macrurus*, & *Senecella calanoides* vertical distribution & seasonal abundance, Parry Sound, Ont.)
- 27(1): 13 (*D. oregonensis* grazing rates & selection of phytoplankton, Marion L., B.C.)
 (2): 281 (*Hetercope septentrionalis* diel vertical movements, Babine L., B.C.)
 (7): 1239 (*D. ashlandi* re long-term zooplankton changes in Kootenay L., B.C.)
 (7): 1251 (*Calanus* & *Pseudocalanus* monthly variations, Strait of Georgia, B.C.)
 (8): 1395 (effects of *P. minutus*, *Temora longicornis*, & *Acartia tonsa* grazing on phytoplankton in saline lakes, N.S.)
 (12): 2297 (99 species from N Pac. Ocean midwater trawling; descriptions of 14 species, including new records)
- 28(1): 23 (*C. finmarchicus* re *C. glacialis* adult male taxonomy)
 (2): 231, 245 (communities of, & *D. minutus* vertical distribution & abundance, in some small NW Ont. lakes)
 (3): 311 (of many W Canada alpine & subalpine lakes & ponds; *D. arcticus* dominance)
 (9): 1327 (tolerance of *C. finmarchicus* & *T. longicornis* to fuel oil, & their fecal sedimentation of oil)
 29(1): 79 (13 species abundance & distribution, Georgian Bay, L. Huron)
 (4): 363 (review of feed & feeding habits of several USSR freshwater genera)
 (10): 1451 (abundance re Great Lakes eutrophication)
- B 176 (synopsis of Canadian marine planktonic)
 CNG 84 (popular description of some NE Pac. Ocean)
 T 55; 313 (identification & key of B.C. marine)
 248 (*C. pacificus* culture & grazing re marine productivity)
 252 (biomass off N.S. coast)
 266 (Frobisher Bay, Baffin Is., N.W.T.)
 282 (*Centropages*, *Calanus*, *Pseudocalanus*, *Acartia*, *Temora*, & *Eurytemora* biomass measurements, Bedford Basin, N.S.)
- S 895 (*C. finmarchicus* deoxyribonucleic acids)
 1004 (*L. macrurus* re Canadian Arctic Islands marine-glacial relicts)
 1369 (Strait of Georgia *C. plumchrus* infection by *Metschnikowia krissii* yeast)
 1386 (*C. cristatus* predominant in shallow sound-scattering layer of N Pac.)
 1393; 1394 (*Calanus*, *Pseudocalanus*, & *Microcalanus* abundance, grazing, & as fish feed, Strait of Georgia)
 1423 (lipids fatty acids composition of Nfld. *Calanus* & *Temora*)
 1485 (importance & general implications of organic matter in aquatic environments re filter-feeding of *C. finmarchicus*)
 1513 (*Calanus* grazing re marine productivity)
- A 108: 17 (*Anomalocera patersoni* habitat)
 211 (*C. plumchrus* & *P. minutus* re juvenile Pac. salmon feed)

Calanus Expeditions

- J 24(9): 1873 (decapod Crustacea collections, 1953, 1954, 1958-61)
- Calanus* species (see Calanoida)
- Calaprice, Frank Paul
J 27(2): 317 (marking animals with microtags)
- Calaprice, John Robert
J 27(2): 317 (marking animals with microtags)
28(3): 369 (X-ray fluorescence analysis of sockeye salmon)
(10): 1583 (X-ray spectrometry)
T 141 (digital calipers: measuring & recording device)
200 (discrimination of salmonids by X-ray analysis)
212 (IBM programs for X-ray data)
222 (genetics & mariculture)
301 (a brief on B.C. mariculture)
S 1335 (managed salmonid populations genetic & production factors)
- Calastacus quinqueseriatus* (see Shrimp, ghost)
- Calcium derivatives (see also Carbonate; Hardness of natural waters)
J 22(4): 929 (re oxidative rancidity promotion in cod flesh)
26(2): 413 (cation concentration in Atl. salmon semen)
27(8): 1405 (ion concentrations & ratios in 70 S Ont. lakes)
(11): 2022 (in inflow, outflow, rain, & snow, Clear L., Ont.)
28(2): 171, 203 (in waters of many small NW Ont. lakes)
(2): 277 (in sediments of 16 small NW Ont. lakes)
(5): 625, 635 (level changes in brook trout after handling, anesthetization, & surgery)
29(12): 1691 (chloride, re toxicity to *Daphnia magna*)
T 114 (content of Atl. & Pac. herring meals)
S 957 (in St. Lawrence R. and Gulf sediments)
1273 (partial molal volume of chloride, sulfate, bicarbonate, & nitrate in sea water)
1377 (content of Atl. & Pac. herring meals)
1437; 1438; 1439 (carbonate in water, & sedimentation as calcite, Green L., N.Y.)
1438 (mathematical treatment of carbonate equilibria in a lake)
1627 (carbonate monohydrate in sea water)
1707 (carbonate partial molal volume in sea water)
A 85 (in freshwater fishmeals)
- Calder, Dale Ralph
J 27(9): 1501 (thecate hydroids from N Canada)
29(3): 217 (some athecate hydroids from N Canadian shelf waters)
- Callianassa californiensis* (see Shrimp, ghost)
gigas (see Shrimp, ghost)
- California
- J 24(5): 1101 (fatty acids composition of some marine animals)
(10): 2053 (Current: microzooplankton in euphotic zone)
(12): 2503 (description of stranded Cuvier's beaked whale)
- Caligoida (see also *Caligus*; Lernaeoceridae; Lernaeopodidae; also Copepoda)
J 22(2): 421 (*Sphyrion lumpi* head shape as inspiration for fish tag shape)
23(4): 521 (*S. lumpi* morphology & histology, & reproduction in redbfish)
24(6): 1275 (*S. lumpi* in & on pelagic redbfish)
(9): 1985 (*Cardiodectes medusaeus* parasitized by a hydroid parasite on a lanternfish)
26(6): 1407 (first Canadian record of *Tanypleuris alcornis*, & assignment to new family Tanypleuridae)
27(2): 391 (unidentified species on a morid fish)
(5): 865 (detailed description of *Brachiella robusta* parasitic on B.C. *Sebastes*)
(12): 2159 (first record of *B. lageniformis* in B.C. coast waters, & significance to *Merluccius* phylogeny)
28(3): 323 (taxonomy, morphology, & nomenclature re *Lepeophtheirus* vs. *Dentigryps*; world distribution of *L. nordmanni* & *L. hastatus*)
(8): 1143 (*L. salmonis* locomotory mechanisms)
B 176 (synopsis of Canadian zooplanktonic)
S 1206 (*L. salmonis* Atl. salmon-lice)
1307 (*B. magna* & *B. tetrici*, new species from Australian fishes)
1566 (new species *Lernanthropus togatus*, parasitic to gills of marine Kenyan fish *Gasterin*)
1568 (Eudactylinidae & Pseudocycnidae parasitic on Australian fishes)
- Caligus* species (see also Copepoda)
J 25(9): 1923 (review & description of *Caligus curtus*; correction on J 26(8): 2263)
26(4): 1013 (distribution, morphology, hosts, & taxonomy of *C. rapax* vs. *C. elongatus*)
28(8): 1143 (*C. clemensi* locomotory mechanisms)
29(11): 1571 (*C. clemensi* developmental stages)
T 55; 313 (identification & key, of B.C. marine)
S 951 (*C. gurnardi* redescription & review)
1164 (nomenclatural confusion re *C. vicarius*)
1179 (synonymy of *C. japonicus* with *C. orientalis*)
1263 (*Caligus* taxonomy; *C. longicaudatus* morphology)
1293 (*C. lacustris* (*C. appendiculatus*): application to adopt *lacustris*)
1499 (redescription of *C. rapax*, re misuse of nomenclature since 1850)
- Calipers
T 141 (electronic measuring & recording digital)
- Callianassa californiensis* (see Shrimp, ghost)
gigas (see Shrimp, ghost)

- Callorhinus ursinus* (see Seal, northern fur)
- Calocaris (see Shrimps)
- Caloric content (see also Bioenergetics; Metabolism)
- J 25(9): 1803 (of marine benthic & epibenthic invertebrates)
- (11): 2515 (of some invertebrates in L. Mendota)
- 26(7): 1959 (chemical method for marine sediments)
- (9): 2345 (formula for calculating from carbon & ash content of zooplankton biomass)
- (9): 2363 (of young sockeye salmon re feed conversion efficiency)
- 27(5): 887 (phytoplankton, St. Margaret's Bay, N.S.)
- (10): 1811 (eelgrass leaves, Alaska coast)
- (12): 2143 (trumpet worm, St. Margaret's Bay, N.S.)
- 28(1): 73 (thermal spring biota)
- (4): 559 (seasonal, of freshwater zooplankton in 3 small E Ont. lakes, by modified bomb calorimeter)
- (5): 711 (2 amphipod species, re bioenergetics, Marion L., B.C.)
- (5): 776 (*Pontoporeia affinis* amphipod, Cayuga L., N.Y.)
- (7): 971 (*Sagitta elegans* chaetognath, St. Margaret's Bay, N.S.)
- (8): 1113 (calorie-protein ratio re brook trout rations)
- T 114 (Canadian Atl. herring meals)
- 288 (various invertebrates preyed upon by commercial Atl. fishes)
- S 1618 (various seaweeds, St. Margaret's Bay, N.S.)
- A 133 (of marine invertebrates fed on by Atl. cod)
- Calorimeter
- J 28(4): 559 (modified Phillipson bomb, for small zooplankton samples)
- Calyropsis nematophora* (see Hydrasozoa)
- Cambarus* (see Crayfishes)
- Camera (see Photography)
- Cameron, James Nicolas
- J 27(6): 1069 (gas exchange in rainbow trout)
- Cameron, Malcolm Laurence
- S 1422 (periodicities in filaments of Atl. oyster)
- Cameron, Thomas Wright Moir
- J 26(4): 713 (an appreciation of)
- Camp, Bennie Joe
- J 28(5): 788 (analysis of ammonium-nitrogen in artificial seawater aquaria)
- Campbell, Gordon
- J 25(2): 423 (brook trout nocardia infection)
- Campbell, James Scott
- J 26(7): 1699; 28(3): 452 (world distribution of brook trout)
- Campbell, Neil John
- S 888 (ICNAF Canadian research report, 1962)
- Campbell, Robert Seymour
- J 28(5): 705 (pesticide accumulation in invertebrates)
- Campbell Lake, B.C.
- J 25(9): 1997 (planktonic prickly sculpin diel limnetic occurrence)
- Campelema decisum* (see Snails, freshwater)
- Canadian Committee on Fish Diseases
- MSP 16 (considerations & recommendations for control of fish diseases in Canada (1972))
- Cancer antennarius* (see Crabs (Pacific))
- borealis* (see Crab, Jonah)
- gracilis* (see Crab, graceful)
- irroratus* (see Crab, rock (Atlantic))
- magister* (see Crab, Dungeness)
- oregonensis* (see Crabs (Pacific))
- productus* (see Crab, rock (Pacific))
- Candling
- J 22(3): 865 (trials for whitefish fillet tapeworm cysts)
- Cannibalism (see also Predation)
- J 26(6): 1605 (*Cyclops bicuspidatus thomasi* copepodids)
- (6): 1619 (coho salmon on their fry)
- 27(1): 135 (lake trout in L. Opeongo, Ont.)
- 28(7): 957 (northern pike)
- B 162: 154 (Pac. salmon on their fry)
- S 1486 (of young, by adult *Pacifastacus trowbridgii* crayfish)
- Canning: Canned products
- J 22(4): 955 (partially frozen Pac. salmon)
- 23(6): 917 (effect on oil of sockeye salmon previously iced or partially frozen)
- 24(6): 1203 (binding of oil in stored canned sockeye salmon)
- (7): 1613 (standard colors for grading Pac. salmon)
- 26(2): 357 (enhancing flesh color of trouts & pink salmon)
- (3): 704 (nucleotides & related compounds in Arabian shrimp)
- (8): 2234 (color of canned Pac. salmon flesh vs. Atl. salmon flesh)
- 27(7): 1201 (lake whitefish smoked with different woods)
- (12): 2179 (direct pigmentation of)
- 29(12): 1769 (salmon-canning waste water as bacterial culture media, & possibility of useful products therefrom)
- B 150 (nature of flesh "greening" discoloration during precooking of tuna)

- 151: 5, 29; 151(F) (freshwater fish steaks, fillets, livers, etc.)
- 162: 43 (history of sockeye salmon)
- 168: 50 (B.C. shellfishes: toxicity control)
- 169: 138 (Pac. oyster products: fresh, smoked, stew)
- 177 (effects on paralytic shellfish toxin)
- 179 (B.C. clams)
- CHN 22 (nature and control of sulfide discoloration)
- CVG 38 (salmon: clarifying waste water for solids and oil recovery re pollution minimization)
- 42 (solids, oil, etc., recovery from salmon-canning waste waters)
- 43; 44 (chilling of salmon catch re quality of canned product)
- T 14 (clarification of waste water other than stick-water, from B.C. fish plants)
- 101 (experimental, of ocean quahaug)
- 197; 286 (demonstration plant for treating cannery waste waters & recovering solids)
- 220 (effects of storing sockeye salmon in ice vs. refrigerated sea water, on quality of canned product)
- 242 (as for T 220 above, using salt-fortified sea water; also effect of mishandling)
- S 988 (Arctic char in N.W.T.; operated by Eskimos)
- 991 (small-scale practical method for freshwater fishes)
- 1309 (color sorting of raw coho & sockeye salmon re subsequent color of canned)
- 1368 (commercial aspects & marketing of, from sea-frozen Atl. trawled fishes)
- 1416 (chilling Pac. salmon for holding until canned)
- 1697 (N.W.T. fish & marine mammal products: steaks, fillets, delicatessen, beluga whale muk-tuk, etc.; recipes)
- A 138 (queen crab)
- 141; 141(F) (total & per capita consumption, Canada re USA & world, 1948-68)
- 203 (color enhancement for salmon)
- Canonical analysis (*see* Mathematical treatment of data)
- Canthaxanthin (*see* Pigments)
- Cantin, Ruth
T 202(F) (diatoms as indicators of mine pollution)
- Cape Cod, Massachusetts
J 26(2): 361; (5): 1321 (study of 5 sand-burrowing amphipod species)
- Capelin (*Mallotus villosus*) (*Note*: References are to Atlantic, unless otherwise indicated)
J 23(3): 463 (unusual occurrence in Bay of Fundy)
(7): 1099 (anal fin development)
26(3): 597(F) (retinal structure re activity, etc.)
(8): 2027, 2037 (chemical analyses, sizes, & lengths, of spawning Nfld., re commercial fishery potential)
(8): 2257 (special hand shears for heading & gutting)
27(2): 393 (record size & age)
- (12): 2215 (biological aspects of possible Nfld. commercial fishery)
- 28(7): 935 (winter periodic component of Passamaquoddy Bay fish communities, N.B., & length frequencies)
- (7): 1029 (fecundity of right vs. left ovary)
- B 151: 30; 151(F) (canned smoked, Hudson Bay)
154 (as Nfld. resource)
180: 141 (full description, etc., B.C.)
- CJG 14; 15 (Nfld. surveys, 1966, 1967; landings, 1957-65)
- 16 (migrations of coastal, Trinity Bay, Nfld.)
- T 261 (bibliography for Gulf of St. Lawrence)
282 (larval biomass, Bedford Basin, N.S.)
315 (larval distribution & size, S Gulf of St. Lawrence & SW Nfld. waters)
- 333 (larval biomass, St. Margaret's Bay, N.S.)
- S 937 (*Pentagramma petrowi* trematode parasitism of Pac.)
- 1053 (mass mortality re low sea temperatures)
- 1228 (isoprenoid fatty acids of oil, re feed)
- 1255 (biology review in Canadian NW Atl.)
- 1412 (fluoride content of whole, bones, & fish protein concentrate)
- A 13(F) (description; value; distinction from similar fishes)
- 108; 119; 152; 181 (ICNAF Canadian research summaries; catches, ages, stocks)
- 185 (as latent resource for Nfld.)
- 193 (biology, distribution, fisheries; Atl. & Pac.)
- 194 (Nfld. fishery)
- 200 (mercury contamination, Hudson Bay)
- Capillaria thomascameroni* (*see* Nematoda)
- Caprella*
J 28(6): 928 (in feed of fluffy & tidepool sculpins)
- Caranx crysos* (*see* Runner, blue)
- Carapace (*see also* Chitin; Molting)
J 25(11): 2461; 27(6): 1051 (accumulation of natural ⁶⁵Zn in crustaceans)
(6): 1185 (gauge for measuring crab, etc.)
27(9): 1607; 29(4): 447 (condition of queen crab, re mating)
- 28(8): 1191 (fatty & amino acids of Dungeness crab exoskeleton)
- 29(4): 464 (length re egg number, in sidestripe shrimp)
- T 198 (lipids & tocopherol content of queen crab)
- S 1428 (bacterial attack on lobster)
- Carbaryl (*see* Insecticides)
- Carbohydrates (*see also* Glucose; Glycogen; Saccharides; Sugars)
J 25(4): 625 (re marine heterotrophic bacteria activity)
- B 125R: 151; 167: 173, 231, 235 (determination in sea water)
- S 1040 (metabolism of marine planktonic algae)
1613 (of bottlenose dolphin milk)

Carbon (*Note:* Because of the diversity of investigations concerning carbon and its compounds in life processes, the results of which are often reported on the basis of the element, the following references are merely representative of others given under other headings such as Biosynthesis; Matter, particulate; Photosynthesis; Phytoplankton; Production, primary; Respiration; names of organisms. *See also* Carbon dioxide; Carbonates. Only a few references to ¹⁴C are included under this and other headings because of its very frequent use in biochemical investigations.)

- J 22(4): 1083 (carbon balance in marine phytoplankton)
 23(9): 1291 (carbon utilization by a zooplankter)
 24(5): 909 (carbon content of particulate matter, Saanich Inlet, B.C.)
 25(6): 1181 (carbon content of benthic sediments, upper Great Lakes)
 (11): 2505 (liquid scintillation counter for measuring ¹⁴C self-absorption in *Daphnia*)
 (9): 2345 (organic carbon re calculating zooplankton biomass caloric content)
 26(6): 1664 (instability of dichromate reagent for estimating particulate C)
 29(2): 195 (algal bioassay method for, as freshwater nutrient)
 (4): 357 (role in water nutrients, St. Margaret's Bay, N.S.)
 B 125R: 171; 167: 153, 207, 267 (determination methods for various forms of carbon in sea water re availability for primary production, including use of ¹⁴C)
 T 77; 327 (re primary productivity, St. Margaret's Bay, N.S.)
 314 (re primary productivity, Petpeswick Inlet, N.S.)

Carbon dioxide (*see also* Carbonates; Respiration)

- J 25(1): 49 (effect of dissolved, on juvenile largemouth bass & coho salmon swimming speed)
 (4): 625 (uptake & release re production & mineralization of marine organic matter)
 (12): 2603 (re goldeye respiration)
 28(9): 1303 (effect of accumulation on walleye photic behavior)
 (9): 1342 (measuring production in tilapia)
 B 125R: 37; 167: 27, 35 (determination method for sea water)
 S 1237 (fixation by Atl. cod sperm)
 1646 (uptake from atmosphere by lakes)
 1650 (fixation by rabbit & Atl. cod testes)
 1713 (partial pressures in N Pac. Ocean surface waters variance with time)

Carbonates; Bicarbonates (*see also* Hardness of natural waters)

- J 27(8): 1405 (HCO₃ ion concentration & ratios in 70 S Ont. lakes)
 28(1): 73 (thermal springs, Mt. Rainier National Park, USA)
 (2): 171, 189, 203 (in waters of many small NW Ont. lakes)

- (11): 1811 (tolerance of freshwater fishes to alkalinity in eutrophic Nebraska lakes & ponds)
 B 125R: 29; 167: 27 (determination methods for sea water)
 S 1437; 1438; 1439 (in Green L., N.Y., waters)
 1438 (mathematical treatment of carbonate equilibria in a lake)
 1627 (calcium carbonate monohydrate in sea water)
 1646 (re primary production in lakes)
 1707 (calcium carbonate partial molal volume in sea water)
 A 199 (calcium carbonate re Gulf of St. Lawrence marine sediment geology)

Carbonyl compounds (*see also* Acids; Aldehydes; Carbohydrates; Ketones; Sugars)
 S 921 (flame ionization detector response for carbonyl carbon)

Carcharhinus falciformis (*see* Shark, silky)
longimanus (*see* Shark, oceanic whitetip)
milberti (*see* Shark, sandbar)
obscurus (*see* Shark, dusky)
springeri (?) (*see* Shark, reef)

Carcharodon carcharius (*see* Shark, white)

Carcinides maenas (*see* Crab, green)

Cardiodectes medusaeus (parasitic copepod)
 J 24(9): 1985 (on lanternfishes)

Cardiomya isolirata (septibranchid bivalve)
 J 26(8): 2230 (new NE Pac. Ocean species)

Cardium corbis (*see* Cockle, basket)
edule (*see* Cockle)

Careproctus gilberti (*see* Snailfish, small disk)
longipinnis (*see* Snailfish, longfin)
melanurus (*see* Snailfish, blacktail)
ovigerum (*see* Snailfish, abyssal)
reinhardi (*see* Sea tadpole)

Caretta caretta caretta (*see* Turtle, loggerhead)

Carey, Andrew Galbraith, Jr.
 J 24(6): 1385 (Echinodera of Oregon)

Carey, Francis Gerald
 S 1660 (warm-bodied fishes)

Caribbean Sea (*see also* Oceanography, North Atlantic)
 J 26(12): 3248 (FRB biological & oceanographical cruise from off Florida to off Puerto Rico, 1965)

T 136 (similar to above)
 S 956 (similar to above)

Caristius groenlandicus (*see* Manefish (Atlantic))
macropus (*see* Manefish (Pacific))

Carlinc, Robert Frank

- J 29(4): 458 (Floy anchor tag effects on brook trout growth & survival)
- Carlson, Anthony Ronald
J 29(5): 583 (carbaryl insecticide effects on fathead minnow)
- Carlson, Charles Philip
J 25(2): 383 (infectious pancreatic necrosis: virus-free trout selection)
29(2): 149 (channel catfish virus disease histopathology)
- Carlson, Clarence Albert, Jr.
J 29(4): 455 (larval largemouth bass radiostromium marking)
- Carlson, Harry Richard
J 29(7): 1011 (home site & homing of adult yellowtail rockfish)
- Carnitine
J 27(5): 857 (effect on fatty acid oxidation by trout mitochondria)
- Carotene; Carotenoid pigments (*see* Chlorophylls; Fucoxanthin; Pigments; Xanthophylls)
- Carp (European)
J 22(6): 1397 (effort metabolism of lateral muscle)
- Carp (*Cyprinus carpio*)
J 23(1): 149 (alkaline phosphatase in scales)
24(1): 47 (scale formation re growth in young)
(3): 695 (blood low-mobility proteins)
25(4): 667 (re Great Lakes species succession & exploitation)
(8): 1651 (plasma protein-bound inorganic iodide)
(12): 2711, 2715 (muscle creatine kinase)
26(6): 1439 (distribution in Canadian Missouri R. headwaters)
(9): 2425 (progressive changes in ventral aorta)
(10): 2643 (oxygen metabolism re body weight)
27(1): 170 (in Hudson Bay drainage system, Man.)
28(7): 957 (vulnerability to northern pike predation)
(7): 1057 (effect of warm water of nuclear power plant discharge canal)
(7): 1061 (practical drying apparatus for fillets & steaks)
(9): 1345 (migration through brackish coastal waters, B.C.)
(11): 1811 (suitable for introduction into alkaline eutrophic lakes)
29(2): 173 (*Chondrococcus columnaris* disease seasonal distribution, Columbia R.)
(2): 199 (necessary exposure times to eliminate by antimycin & rotenone)
(9): 1283 (cadmium content, from New York State waters)
B 149: 22, 120 (Great Lakes, catches)
151; 151(F) (smoked, sausage, wiener, & fishball products)
- 165 (biology, distribution, commercial fishery, sport fishery, regulations, etc.)
180: 204 (full description, etc., in brackish B.C. coastal waters)
T 261 (bibliography for Gulf of St. Lawrence)
S 1081 (sweet-cured smoked sliced products; recipe)
1668 (mercury contamination, L. Winnipeg)
1718 (organochlorine pesticide residues in Canadian commercially caught)
A 6(F) (marinated fillets & similar products)
100 (recent range extension into Man.)
200 (mercury contamination in Red R., Sask.)
201 (mercury contamination in Great Lakes)
- Carpenter, Stanley John
J 29(3): 311 (reversible hormonal changes in Atl. salmon during freshwater spawning journey)
- Carpoides cyprinus* (*see* Quillback)
- Carrothers, Percival John Godber
J 23(11): 1805 (current speed calibration curves)
B 159 (underwater photographic equipment for fisheries research)
163 (instrumentation for engineering study of otter trawls)
CSG 57 (mechanics & performance of Canadian E coast otter trawls)
T 102: 12 ("submarine" trials for otter trawl engineering research)
125 (otter trawl performance)
264 (fluid mechanics of netting and low solidity screens. 1. Apparatus, experimental method, & basic data)
S 1281 (fish nets synthetic fibers)
A 129 (synthetic fibers used in fishing)
- Carson, William George
T 201 (oil dispersant toxicity tests at Chedabucto Bay, N.S.)
- Carson, William Victor
T 217 (petroleum oils in aquatic environment)
- Carter, John Charteris Haig
J 26(10): 2543 (*Limnocalanus macrurus* & *Senecella calanoides* life cycles, & planktonic copepods in Parry Sound)
27(5): 847 (meromixis of Sunfish L., Ont.)
29(1): 79 (planktonic Crustacea distribution & abundance in 2 Georgian Bay areas, Ont.)
- Carter, Neal Marshall
B 164 (index & list of FRB publications 1901-64)
- Carvey, Forrest Elwood, Jr.
J 26(8): 2211 (yellowtail rockfish feeding)
- Casco Bay, Maine
J 27(11): 2081, (12): 2255 (turbulence, nutrient renewal, & heat budget re phytoplankton)

- Case, Brian
J 27(10): 1872 (chestnut lamprey spawning behavior)
- Casein
S 1531 (interaction with polyethylenimine, re flocculating power & removal of pollutants)
- Caspiomyzon*
J 24(5): 1067 (in key to holarctic lamprey genera)
- Casselman, John Malcolm
J 26(1): 175 (pike & muskellunge identification)
- Castell, Charles Howell
J 22(4): 929 (salt-induced rancidity in Atl. coast lean fishes muscle)
23(1): 27 (rancidity in lean fish muscle)
(5): 737 (TBA values from cod muscle)
(9): 1385 (rancidity in cod fillets)
(10): 1587 (thiobarbituric acid values)
24(2): 221 (radiation-effect on storage of cooked lobster)
25(4): 639 (heavy metal ions & fish muscle rancidity)
(5): 921 (frozen cod muscle trimethylamine)
26(9): 2299 (hematin compounds re rancidity)
27(4): 701 (fish muscle protein)
(10): 1685 (frozen fish dimethylamine)
28(1): 1 (DMA in muscle of gadoid fish)
CHN 27 (weight of fillets during processing & storage)
38 (status of TMA test as measure of spoilage in fish)
S 1068 (isometric monoethylenic fatty acids in herring oil)
1639 (metal-catalyzed lipid oxidation & protein changes in Atl. commercial marine fishes)
A 12(F) (fillet weight loss during storage)
28 (groundfish rancidity)
31 (Intelectron Fish Tester)
65 (fillet weight loss during storage)
73 (current technological research)
162 (same as CHN 38 above)
- Castell, John Daniel
J 27(3): 513 (krill lipids & fatty acids)
S 1151 (unsaturated fatty acids ozonolysis)
1192 (gas chromatography of fatty acids)
- Cat
S 1028; 1080 (fatty acids positional distribution in mesenteric fat triglycerides)
- Catabolism (*see also* Metabolism)
J 24(11): 2355 (re mathematical model for fish growth)
S 146 (of lipids in fish muscle: review)
1491 (fission of phenylalanine aromatic ring by several classifications of algae)
- Cataetix rubrirostris* (*see* Brotula)
- Catalase (*see* Enzymes)
- Catalysis (*see also* Enzymes; *also* reactions subject to catalysis)
J 27(4): 701 (of lipid oxidation by transition metal ions, in some marine fishes, lobster, crab, & scallop)
- Cataraqui Creek (Little), Ont.
J 25(6): 1199 (water temperature effects on fish feeding)
- Catchability (*see also* Abundance; Availability; Catches; Fisheries)
J 26(2): 339 (DeLury population estimator robustness)
(12): 3266 (diel activity judged by, for freshwater fishes)
- Catches; Catch effort; Landings (*see also* Abundance; Angling; Availability; Catchability; Fisheries; Yield; *also* names of fishery methods and fishery species; names of international commissions; for groundfishes, *see* the two Groundfishes headings)
J 22(1): 191 (solution of catch equation)
(2): 313 (scallops, by two drag-ring sizes)
(2): 465 (trends in Nfld. longlined cod)
24(5): 1035 (L. Erie commercial blue pike)
(6): 1187 (sampling of research trawl, at sea)
(12): 2527 (equilibrium, by rate of exploitation)
25(2): 209 (brook trout as affected by stream ponding)
(3): 457 (B.C. coast midwater trawl, re sound-scattering layers)
(4): 667 (re Great Lakes species succession & exploitation)
(10): 2183 (commercial, of Nfld. & Labrador salmon)
26(10): 2715 (check for maximum equilibrium, using catch statistics)
(11): 2843 (forecasting of Pac. sardine, re predator & prey ecology: mathematical model)
(12): 3133 (& catch per unit effort, of SW Nfld. cod)
27(4): 821 (generalization of the Murphy catch equation)
(10): 1747 (sablefish in modified king crab type traps)
(12): 2261 (research & commercial, yellowtail flounder in Nfld. waters)
28(3): 351 (sport vs. maritime commercial fisheries utilization rates of Miramichi R., N.B., salmon)
(3): 417 (1956-65 commercial, of Pac. ocean perch by Oregon, Washington, & B.C. trawlers)
(8): 1211 (advantages & limitations of fishery catch & effort mathematical models)
29(4): 357 (carbon & nitrogen nutrients in St. Margaret's Bay, N.S., re lobster, halibut, haddock, & clam catches)
B 149: 15, 111 (Great Lakes commercial)
153: 43 (& catch per unit effort, B.C. petrale sole)
154 (Nfld. marine fishes)
158 (Mackenzie District, N.W.T., commercial freshwater fishes)
161: 33 (goldeye)
162: 43 (sockeye salmon, B.C. & USA, 1905-61, also USSR & Japan)

- 165: 39 (carp in Canadian provinces since 1908)
 166: 42, 68 (eels in E Canada)
 171: 50 (B.C. whales, 1905-67)
 175 (commercial, of oysters in Atl. provinces & USA)
 179: 19 (B.C. clams)
 180 (of various B.C. commercial fishes)
 CJK 12; 13; 14; 15; 16: 25, 27 (groundfish off Nfld. & Labrador)
 18: 1 (Nfld. herring purse seining, 1965-70)
 CNG 91 (steelhead trout age & size, in Vancouver Is. stream angling)
 CNS 14; 19 (& catch efforts, B.C. groundfish by areas and months, 1964, 1965)
 16; 27 (age & length composition of B.C. sockeye, pink, & chum salmon, 1964-67)
 24 (sampling of B.C. commercial flatfishes by areas, 1946-65)
 25 (age, size, & sex composition of B.C. sockeye salmon, 1912-63)
 26 (age, size, & sex ratios in B.C. chum salmon 1957-63)
 28 (Canadian & American trawling, from grounds off B.C., 1954-65)
 CPO 1965-6 (NW Strait of Georgia coho commercial troll)
 CSG 44 (cod: distribution in Gulf of St. Lawrence)
 55 (NW Atl. herring)
 T 11; 140; 174; 177; 183; 190; 213 (B.C. experimental midwater trawling for herring)
 16; etc. (see T references under Perch, Pacific Ocean)
 23 (length composition of B.C. commercial trawled Pac. cod, 1951-66)
 29 (commercial Canadian, of Atl. salmon 1949-65)
 39 (computer tape system for processing data)
 58 (of Nfld. herring re stocks distribution & abundance)
 86; 157; 170 (Canadian Atl. cod & haddock)
 108 (B.C. rock sole, 1945-64)
 137 (& catch per unit effort, 1964-65 & 1967-68 Nfld. herring seining)
 139 (Gulf of St. Lawrence herring, 1933-68)
 166 (computer programming of Nfld. herring catches & fishing effort)
 168 (Bay of Fundy sea scallop, 1920-67)
 179 (Greenland turbot in Nfld. area)
 180 (Lac la Martre, N.W.T., survey & commercial fishing)
 246 (bibliography of N America Pac. coast trawling)
 250 (computer programming fish catch data)
 270 (various breakdowns of Canadian Atl. salmon)
 326 (Pac. ocean perch catches & catch per unit effort, by various countries, in NE Pac. Ocean)
 S 922 (abundance measures from mixed)
 994 (catch equation re abundance & fishing success)
 1089 (Atl. fishes in ICNAF areas)
 1137 (salmons in N Pac. Ocean by research longlining)
 1148 (haddock, ICNAF areas by landings, 1921-62 re sea temperatures)
 1158 (length & age compositions heterogeneity in Atl. cod & haddock commercial landings)
 1160 (trend-interpreting difficulties in Atl. cod & haddock landings from E Scotian Shelf)
 1207 (American plaice diurnal variation of, off Grand Bank)
 1209 (offshore fishing effect on inshore Labrador cod fishery)
 1235 (mathematics of quick methods for estimating size limits changes effect on)
 1492 (per unit effort, of haddock off Digby, N.S.)
 1493 (commercial landings by countries, re Atl. cod trawl mesh size)
 1540 (per unit effort assessments for ICNAF Subareas 2 & 3 major cod stocks)
 1541 (American plaice fishery trends in ICNAF Subarea 3)
 1642 (recent, haddock on E Scotian Shelf by Canada & USSR)
 A 37 (B.C. & US trawl-caught groundfish, 1956-63, off B.C.)
 43 (commercial, in ICNAF Subareas 1-5, in 1965)
 86 (of Pac. salmon & steelhead trout during INPFC 1966 research)
 90; 103 (of various fishes in E Pac.)
 91 (of B.C. bottom fishes for mink feed 1951-66)
 105 (of B.C. herring re miles of spawn, 1955-67)
 108 (commercial & research, re 1966 Canadian ICNAF studies)
 123 (Nfld. salmon)
 138 (queen crab, on Canadian Atl. coast)
 140 (Nfld. herring, 1967-68)
 152; 153 (Canadian Atl. fisheries, summaries for ICNAF 1969 report)
 163; 163 (F) (same as CSG 55 above)
 192 (N Atl. salmon by countries, 1961-67)
 204 (experimental, of salmon & steelhead trout during INPFC studies, 1965)
 207 (Atl. herring, N.B. & N.S., 1961-69)
 Catecholamine
 J 24(8): 1701 (concentrations in disturbed rainbow trout)
 Catfish (*see also* following headings)
 J 29(9): 1283 (cadmium content of *Ictalurus* sp., New York State waters)
 Catfish (*Heteropneustes fossilis*)
 J 29(4): 435 (salmon gonadotropin effect on in vitro maturation of oocytes)
 S 1593; 1630 (salmon hormones effects on testes & seminal vesicles of hypophysectomized)
 1670 (salmon gonadotropin effects on restoring ovulation, etc., in hypophysectomized)
 Catfish, channel (*Ictalurus punctatus*)
 J 24(3): 695 (blood low-mobility proteins)
 25(1): 15 (blood lactic acidosis)
 (4): 615 (enzymatic properties of brain acetylcholinesterase)

- (7): 1517 (electrophoretic separation of brain esterases)
 (8): 1571 (liver phosphatases degrade organophosphate insecticides)
 26(6): 1439 (distribution in Canadian Missouri R. headwaters)
 (7): 1927 (purine sources of skin silvering & swim bladder silvery layer)
 27(1): 170 (in Hudson Bay drainage system, Man.)
 28(1): 113 (sampling muscle for anesthetic residues)
 (4): 613 (esterase properties of blood plasma)
 (5): 783 (slime as bacterial medium re keeping quality)
 (7): 957 (vulnerability to northern pike predation)
 (11): 1811 (suitable for introduction into alkaline eutrophic lakes)
 29(1): 113 (fatty acids of muscle tissue)
 (2): 149 (tissue histopathology re channel catfish hemorrhagic virus disease)
 (2): 173 (*Chondrococcus columnaris* disease seasonal distribution, Columbia R.)
 - B 149: 22 (Great Lakes, catches)
 S 1718 (organochlorine pesticide residues in Canadian commercially caught)
 A 201 (mercury contamination in Great Lakes)
- Catfish, sea (see J 23(10): 1587 entry under Wolffish, Atlantic)
- Catfish, striped (see Eel, barbel)
- Catfish, white (*Ictalurus catus*)
 J 28(7): 1507 (effect of warm water of nuclear power plant discharge canal)
- Cathepsin (see Enzymes)
- Catheterization
 J 28(5): 781 (improved vascular procedure for Salmonidae)
- Catostomidae
 J 24(2): 299 (speciation by muscle myogen electropherograms)
- Catostomus catostomus* (see Sucker, longnose)
commersoni (see Sucker, white)
macrocheilus (see Sucker, largescale)
platyrhynchus (see Sucker, mountain)
- Cattle (see also Beef)
 J 28(8): 1173 (glycoproteins constituents levels of *Bos typicus primigenius* blood sera re those of Pac. salmon & trouts)
- Caulfield, William
 J 25(4): 823 (coho fry counting in small streams)
- Caulolatilus princeps* (see Whitefish, ocean)
- Cayuga Lake, New York
 J 28(5): 776 (*Pontoporeia affinis* amphipod caloric & lipid content)
- 29(6): 617, 787, 975 (various factors affecting fish communities, particularly salmonid)
- Cedar Lake, Man.
 J 22(5): 1123 (limnological features)
- Celestine Lake (see Jasper National Park, Alta.)
- Cellulose (see also Carbohydrates)
 J 25(5): 853 (digestion metabolism in marine wood borer)
- Census (see also Abundance; Populations; for creel census, see Angling)
 J 23(5): 769 (analysis of aerial, for ringed seals)
 28(5): 755 (whelping harbour seals, Sable Is., N.S.)
 29(12): 1764 (sea lions wintering along W coast Vancouver Is.)
 T 224 (computer programming ringed seal population data)
 A 247 (aerial, for NW Atl. harp seals)
- Centrales (see also Bacillariophyta)
 J 28(2): 265 (dominant diatom group in many small NW Ont. lakes)
- Centrarchidae
 J 23(11): 1663 (muscle myogen & blood hemaglobin electropherograms re other fish families)
- Centrolophus britannicus* (see Blackfish, Cornish)
niger (see Ruff, black)
- Centropages* (see Calanoida)
- Centropristis striata* (see Bass, black sea)
- Centroscyllum fabricii* (see Dogfish, black)
- Cephalins
 T 198 (content of queen crab muscle & viscera lipids)
 S 1474 (fatty acid composition, in rainbow smelt)
- Cephalopoda (see also Octopus; Octopuses; Squid; Squids)
 CNG 84 (popular description of some NE Pac. Ocean)
 T 2 (checklist & bibliography of B.C.)
 S 1327 (Canadian, with synopsis)
 1470 (checklist of B.C. coastal)
 1546 (NW Atl. resources & fisheries possibilities)
- Cephalorhynchus* (dolphins)
 S 1454 (skin pigmentation pattern)
- Ceramium* (see Rhodophyta)
- Ceratium* (see Dinophyceae)
- Ceratus holboelli* (see Seadevil (a deepsea))
- Ceratophysa rosea* (sea urchin)
 J 24(6): 1385 (off Oregon coast)

- Ceratoscopelus maderensis* (see Lanternfish, horned)
townsendi (see Lampfish, dogtooth)
- Cercariae (see Trematoda)
- Ceriantharia* (see Sea anemones)
- Ceriodaphnia* (see Cladocera)
- Cerium compounds
 J 25(4): 639 (re marine flesh oxidative rancidity)
 27(1): 317 (oxide for coding embedded encapsulated tags in animals)
 (4): 701 (ion effects on marine muscles extractable protein)
- Cesium derivatives
 J 27(2): 317 (oxide for coding embedded encapsulated tags in animals)
 (4): 677 (traces in Great Lakes fishes & livers)
 S 941 (radioactive ¹³⁷Cs sea water contamination)
 A 232 (¹³⁷Cs as radioactive marine pollutant)
- Cestoda (tapeworms) (see also Helminths; Parasites)
 J 22(3): 865 (candling for *Triaenophorus crassus* cysts in whitefish)
 (6): 1335 (*Triaenophorus* proceroids infections of cyclopoid copepods)
 (6): 1387 (*Triaenophorus*, *Diphyllobothrium*, etc., re Pacific salmon biological information)
 24(4): 893 (*T. crassus* plerocercoids in Alaska sockeye salmon smolts)
 (9): 1911 (descriptions, parasitic on Nfld. freshwater fishes)
 (10): 2161 (*Eubothrium* parasitic on surfperches)
 25(11): 2365 (2 new species of *Gyrocotyle* (Monogenea))
 (11): 2523 (*T. nodulosus* in burbot)
 26(4): 717 (*D. pacificus* in sea lions & man, Peru)
 (4): 741 (*Schistocephalus solidus* culture & growth rate)
 (4): 805 (various, in Nfld. fishes)
 (4): 813 (*Phyllobothrium* sp. of pink salmon early sea life)
 (4): 821, 833 (*T. nodulosus* biology & infection dynamics in yellow perch)
 (4): 833 (of yellow perch, Bay of Quinte, L. Ontario)
 (4): 871 (*Diphyllobothrium* transmission to lake trout)
 (4): 947 (histology of 3 *Diphyllobothrium* species, including *D. cameroni* new species)
 (4): 975 (*Bothrinoncus* history, description, synonymy, & systematics)
 (4): 1037(F) (4 tetrarhynchian (1 new genus) from US Atl. coast sharks)
 (8): 2250 (maintenance of *Ligula intestinalis* life cycle in laboratory)
 (8): 2260 (*T. crassus* in Arctic lampreys, Great Slave L., N.W.T.)
 (9): 2319 (list of species found in B.C. marine fishes)
- 27(2): 271 (*T. crassus* distribution in whitefish flesh re ultrasonic detection)
 (7): 1317 (in longnose & white suckers in Labrador)
 (10): 1894 (parasite of Nfld. salmonids & coregonids)
 28(1): 31 (*Fistulicola plicatus* in N Atl. swordfish)
 (10): 1385 (various Polychaeta as intermediate hosts of)
 29(2): 179 (*E. crassum* as indicator re possible *Salmo salar* subspeciation)
 (3): 275 (parasites of Lake of the Woods fishes, Ont.)
- B 162: 94, 378 (*T. crassus* & *E. salvelini* re sockeye salmon stocks identification)
- CCG 7: 9 (re whitefish improvement through pike & *Triaenophorus* control; *T. crassus* life history)
- T 48 (parasitic to lampreys)
 103 (*Phyllobothrium* infection in squid)
 134 (as indicator species for distinguishing Atl. salmon stocks)
 160 (*Scolex pleuronectes* in *Lepidion eques* morid fish)
 185 (bibliography re Canada fishes parasitization by)
- S 1206 (*E. crassum* in Atl. salmon)
 1354 (rostellar hooks development in *Paricterotaenia paradoxa*)
 1391 (new genus & species, *Plicobothrium globicephalae*, from pilot whale; taxonomy of diphyllobothriid)
 1442 (*T. crassus* & *T. nodulosus* infection of several L. Mälaren fish species, Sweden)
 1450 (parasitic to northern world coregonid fishes: review)
 1520 (*Hepatoxylon trichiuri* from giant squid, Nfld., as clue to squid's feed)
 1681 (revised annotated list of, from W coast N American sea mammals)
- A 181 (*E. crassum* as parasitic indicator of geographical origin of Atl. salmon stocks)
 224 (*T. crassus* incidence in northern pike, whitefish, & cisco, Heming L., Man.; also incidence of other Cestoda in N American, USSR, & European coregonids; *Diphyllobothrium* as harmful to man)
- Cestodaria
 T 185 (bibliography re Canada fishes parasitization by)
- Cetacea (see also Dolphin; Porpoise; Whale)
 J 25(12): 2561 (feeding habits from fish otoliths in stomach)
 27(11): 1903 (inshore records of, Canadian Atl. coast, 1949-68)
 (of B.C.)
 B 171 (of B.C.)
 S 1681 (revised list of parasites from W coast N America)
- Cetorhinus maximus* (see Shark, basking)

- Chaenophryne parviconus* (see Dreamer, smooth)
 T 101 (uses of ocean quahaugs)
 168 (1966 & 1967 scallop surveys, Bay of Fundy)
- Chaetoceros* (see also Bacillariophyta; Phytoplankton)
 J 26(6): 1625 (*C. curvisetus* chlorophylls extraction procedure)
 S 1256 (paralytic shellfish poison in *Buccinum*)
 A 144 (ancient shark teeth)
 221 (20-million-year-old geological "catch")
- Chaetognatha (arrow worms) (see also Zooplankton)
 J 26(6): 1485 (*Sagitta elegans* ecology, etc., Ogac L., Baffin Is.)
 (7): 1743 (experiments re *S. elegans* feeding habits)
 27(7): 1251 (*S. elegans* seasonal variation, Strait of Georgia)
 28(7): 971 (*S. elegans* life history, ecology, & mathematical model of population, St. Margaret's Bay, N.S.)
 29(2): 213 (*Eukrohnia bathypelagica* occurrence in Canadian Atl. waters)
 (7): 987 (*S. elegans* yearly respiration rate & energy budget)
 B 176 (Canadian Arctic, Atl., & Pac. marine)
 CNG 84 (popular description of some NE Pac. Ocean)
 T 55: 129 (identification of B.C.)
 266 (Frobisher Bay, Baffin Is.)
 282 (*S. elegans* biomass measurements, Bedford Basin, N.S.)
 333 (*S. elegans* biomass measurements, St. Margaret's Bay, N.S.)
 A 108: 17 (Canadian ICNAF studies on parasites of)
- Chaetopleura apiculata* (see Amphineura)
- Chaleur, Bay of (see St. Lawrence, Gulf of)
- Chalinura filifera* (see Rattail, filamented)
- Chalker, Dorothy Ann
 J 22(2): 411 (quality of frozen Atl. cod)
 (3): 783 (thaw-drip in cod)
 24(1): 127 (thawing processes effects on cod and redfish)
 S 1363 (Nfld. offshore fish & influence on quality after freezing)
 A 27 (Nfld. trap cod)
- Chalkiness of fish flesh
 J 22(3): 653 (Pac. halibut)
 23(5): 673 (re flesh pH & free drip, in Pac. halibut)
 (6): 925 (influence of fishing method on incidence in Pac. halibut)
- Chambers, Velma Catherine
 J 27(7): 1285 (hematopoietic necrosis in salmonids)
 (8): 1385 (infectious hematopoietic necrosis virus)
- Chamut, Patrick Stephen
 T 303 (elemental phosphorus monitoring program results, Long Harbour, Nfld., 1970-71)
- Chan, Kai Sun
 J 23(4): 575 (iron in natural waters)
- Chandler, Ross Allan
- Chaoboridae (see also Diptera; Insects, aquatic)
 B 174 (biology & taxonomy of Nearctic & Palaearctic, particularly of *Chaoborus* species)
- Chaoborinae (see also Diptera; Insects, aquatic)
 J 24(5): 1017 (of Man. lakes profundal benthos)
 28(2): 257 (in zoobenthos of 15 small NW Ont. lakes)
 B 174: 50 (relation to Chaoboridae)
- Chapman, Donald Wallace
 J 22(1): 173 (coho behavior)
 25(7): 1453 (salmon & trout permanence of station)
 29(1): 91 (young chinook salmon & steelhead trout habitat behavior in 2 Idaho streams)
- Chapman, Lyman John
 J 22(4): 969 (Ont. crustaceans)
- Chapman, Martin John
 J 28(6): 879 (enolase from lobster)
- Chapman, Wilbert McLeod
 J 27(12): 2333 (obituary of)
- Char (in addition to following headings, see Trout, lake)
- Char, Arctic (*Salvelinus alpinus*) (*Cristovomer alpinus*) (alpine trout)
 J 22(1): 211 (retinal structure)
 (3): 767 (& hybrids biochemical differentiation)
 23(10): 1599 (electropherograms of muscle myogen & hemoglobin)
 26(4): 975 (*Bothrimonus* cestode biology in)
 27(5): 963 (locating parasitic nematodes by ultraviolet fluorescence)
 B 154: 103 (as Nfld. resource)
 173: 142 (full description, etc.)
 T 231 (N America distribution of anadromous & landlocked forms; taxonomy; biology; test production in Keyhole L., Canadian Arctic)
 261 (bibliography for Gulf of St. Lawrence)
 MSP. 13; 13(F) (actual & potential Canadian Arctic fishery)
 S 988 (commercial canning by N.W.T. Eskimos)
 1090 (description; biology; production)
 1077 (eutectic brine freezer for Eskimo use)
 1612 (serum esterase molecular weight heterogeneity re that of 3 other salmonids)
 1697 (canned products; recipes)
 1718 (organochlorine pesticide trace in Canadian commercially caught)
 A 75 (possible yield in Keyhole L., Canadian Arctic)
- Char, Dolly Varden (see Dolly Varden)
- Char, lake (see Char, lean lake; Siscowet; Trout, lake)

- Char, lean lake (*Salvelinus (Cristivomer) namaycush namaycush*) (see also Siscowet; Trout, lake)
 J 27(1): 161 (as claimed subspecies of *C. namaycush* in L. Superior)
- Char, Windermere (*Salvelinus alpinus willughbii*)
 J 22(4): 913 (temperature re egg development and mortality rate)
- Chars (*Salvelinus* (= *Cristivomer*)) (see also Salmonidae)
 B 173: 43 (family key), 129 (definition), 131, 133 (key to NW America species), 136-157 (full descriptions of NW America species)
- Chaston, Ian
 J 25(6): 1285 (light re brown trout activity)
 26(8): 2165 (brown trout feeding pattern)
- Chatham Sound, B.C.
 J 26(8): 2219 (juvenile Pac. salmon feed)
- Chatterton, Katherine
 J 27(6): 1162 (rainbow trout blood chemistry values)
 28(4): 606 (blood chemistry values for juvenile coho salmon)
- Chau, Yiu Kee
 S 1529 (trace elements and chlorophyll in L. Ontario)
- Chauliodus macouni* (see Viperfish, Pacific)
sloani (see Viperfish)
- Chaulk, Raymond
 T 58 (Nfld. herring catches & landings)
 96; 97 (Nfld. herring sampling data, 1966-68)
 170 (length & age composition, haddock landings from Nfld.)
- Chawla, Vinod Kumar
 S 1529 (trace elements & chlorophyll in L. Ontario)
- Checklists (see also subjects suggested in heading Lists)
 J 26(4): 793 (nematodes from Sabah fishes, amphibians, & reptiles)
 28(10): 1407 (compendium of 504 species in 242 genera & 52 families of abyssmal polychaetous annelids)
 B 176 (synopsis of Canadian Arctic, Pac., & Atl. marine zooplankton)
 T 2 (B.C. marine Mollusca)
 306 (Canadian freshwater leeches)
 S 1219 (Polychaeta (Errantia) recorded from B.C. since 1923)
 1243 (Polychaeta (Sedentaria) recorded from B.C. since 1923)
 1470 (distributional, of B.C. marine molluscs, from surveys since 1950)
- Chedabucto Bay, N.S. (re 1969 Bunker C fuel oil spill)
 J 28(9): 1327 (copepods tolerance to spill residues)
 (12): 1912 (residues concentration in waters, Apr. 1971)
- 29(9): 1347 (residues in sediments & 5 macrobenthic animals, Apr. 1972)
- CHN 37 (identification tests on oil)
 T 201 (toxicity tests of dispersants for)
 217 (nature of spill constituents)
 S 1569 (contamination of aquatic animals)
 A 223 (study of, & combating spill)
- Chef Creek, Vancouver Island, B.C.
 J 27(11): 2063 (cutthroat trout growth re scale analysis)
- Chelae (see Claws)
- Chelating agents (see also Ethylenediaminetetraacetic acid; Nitrilotriacetates)
 J 28(2): 209 (effects on photosynthesis when used with nutrients added to samples of lake waters)
 A 203 (not recommended as suppressor of fish odors)
- Chemical analysis methods (see Analysis methods (chemical))
- Chemical composition (see Composition, chemical)
- Chemoheterotrophy (see Productivity, primary)
- Chemotherapeutics (see also Disease)
 S 1389 (chloramphenicol for combating diseases of hatchery salmon, & retention levels in tissues)
- Chen, Foo Yan
 J 27(12): 2167 (zone electrophoretic studies on proteins of *Tilapia mossambica* & *T. hornorum*)
- Chen, Maynard Yingnan
 J 26(9): 2521 (hermaphroditism in lake whitefish)
- Chen, Tchaw-Ren
 J 27(1): 158 (fish chromosome preparation: displays of ovarian cells)
- Cheng, Joseph Yim-hung
 J 27(2): 335 (glycerol stimulation of marine phytoplankton growth)
 S 1403 (heterotrophic growth of *Chroomonas*)
 1448 (darkness survival of marine microalgae)
 1491 (fission of phenylalanine by marine algae)
- Chenoweth, Stanley Bruce
 J 27(10): 1875 (larval herring condition)
- Cherrington, Alan Douglas
 J 26(1): 47 (DDT degradation by salmon)
- Chesapeake Bay, Maryland
 J 28(6): 911 (particulate carbon-nitrogen relations)
- Chesterman, William Deryck
 S 1426 (sedimentary environments on Magdalen Shelf)
- Cheticamp River, N.S.

- T 115 (physical oceanography of estuary) 1367 (fillet quality from Atl. cod chilled at sea in ice vs. air)
- Chew, Kenneth Kendall 1417 (Pac. salmon for holding before canning)
- J 22(4): 1009 (*Mytilicola orientalis* seasonal size distribution re effect on Pac. oyster condition) A 26 (fish & shellfish with antibiotic ice)
- 26(8): 2245 (*M. orientalis* fecundity) 203 (resume of T 220 & T 242 above)
- 29(4): 413 (stages of spot shrimp larvae development in laboratory) Chilling (biological effects of) (see Temperature, reaction to)
- (4): 464 (sidestripe shrimp egg number re carapace length, Dabob Bay, Wash.) Chilton, Doris Elizabeth
- Chicken (*Gallus domesticus*) (see also Feedstuff) T 259 (commercial landings of W Canadian rock sole)
- 25(8): 1651 (plasma protein-bound inorganic iodide) Chimera (a deepwater Atlantic) (*Hydrolagus affinis*)
- S 1028; 1080 (fatty acids positional distribution in pygostyle fat triglycerides) J 25(11): 2365 (2 new species of tapeworms from)
- 1221 (fishmeal in breeder ration effect on hatchability) 26(2): 311 (parasitic copepod on cornea)
- 1233 (fatty acids incorporation, through feed, into mink tissues) Chin, Christopher
- A 15 (nature of flesh flavors) J 28(6): 879 (enolase from lobster)
- 85 (nutrient composition of freshwater fishmeals as feed for) *Chionoecetes bairdi* (see Crab, tanner)
- Chignik Lakes, Alaska *japonicus* (see Crabs (Pacific))
- J 25(1): 157 (*Mesidotea entomon* isopod biology) *opilio* (see Crab, queen)
- 26(2): 405 (4 threespine stickleback phenotypes) *opilio elongatus* (see Crabs (Pacific))
- Chile *tanneri* (see Crab, tanner)
- J 28(8): 1077 (physical oceanographic features of 32 fiords & inlets, also of some adjacent waters) *Chirolophis ascanii* (see Warbonnet, Atlantic)
- A 220 (condensation of above) *decoratus* (see Warbonnet, decorated)
- Chilipepper (*Sebastes goodei*) *nugator* (see Warbonnet, mosshead)
- J 22(1): 231 (first B.C. record) *polyactocephalus* (see Warbonnet, decorated)
- 25(11): 2477 (proteins electropherograms re rockfishes systematics)
- 27(10): 1781 (taken in Pac. ocean perch surveys, NE Pac.)
- B 180: 420 (full description, etc., B.C.)
- T 46 (in B.C. experimental trawling)
- 246 (bibliography)
- Chilko Lake, B.C. B 162: 318 (re sockeye salmon studies)
- Chilling (see also Ice; Refrigeration; Sea water, refrigerated; Superchilling)
- J 25(4): 817 (rapid hypoxanthine accumulation in iced redfish fillets)
- 27(11): 2101 (& storage, then thawing, re malic enzyme activation in haddock flesh & consequent quality drop)
- B 160 (or partially freezing salmon & tuna in refrigerated sea water)
- CCG 7: 27 (bulk quantities of freshwater smelt to 32 F)
- T 220 (effects of storing sockeye salmon in refrigerated sea water vs. ice on quality of canned product)
- 242 (as for T 220 above, using salt-fortified refrigerated sea water)
- S 935 (fish on board vessels)
- Chironomidae (midges) (see also Diptera; Insects; Insecticides; Invertebrates)
- J 24(4): 769, 807, 823 (affected by N.B. forest insecticide sprays, re their role as salmon & trout feed)
- (5): 1017 (in profundal benthic fauna of some Man. lakes)
- 25(11): 2515 (caloric content of *Glyptotendipes* larvae & pupae)
- 26(2): 279 (upstream movements of river larvae)
- (5): 1157 (re insect communities in a small Que. stream)
- (8): 2016 (partitioning community respiration in a lake sediment)
- (10): 2581 (bottom corer for sampling)
- 27(2): 213 (larvae in benthic colonization of a reservoir)
- 28(1): 35 (differences upstream & downstream of a dammed Ont. lake)
- (2): 257 (of zoobenthos in 15 small NW Ont. lakes)
- (5): 705 (biological magnification & degradation of insecticides by)
- (6): 849 (samplings from a shallow stream)
- (6): 928 (in fluffy & tidepool sculpins feed)
- (11): 1683, 1699, 1715 (associations, species diversity, metabolism, caloric content, etc., in L. Ontario bays)
- 29(4): 363 (feed & feeding habits of 16 USSR freshwater species)
- (10): 1472 (shift in predominance with water-level change below a river dam)

- B 170 (description, morphology, taxonomy, distribution, etc., of nearctic N American Podonominae, Diamesinae & Orthocladiinae, including 33 new species)
- T 43 (larvae on Irish moss)
- 124 (classification of nearctic)
- 196 (larvae in bottom fauna of Okanagan Valley lakes, B.C.)
- 258 (toxicity tests of trisodium nitrilotriacetate detergent on, re pollution)
- S 966 (effect of DDT forest spraying on, in N.B.)
- 1532; 1533 (distribution in high mountain North Boulder Creek, Colorado)
- 1536 (deformed larvae of several species in L. Erie & Okanagan R. lakes, B.C., possibly a result of herbicide, insecticide, or detergent pollution)
- 1543 (of Georgian Bay, L. Erie, & L. Ontario)
- 1588 (nomenclature & phylogeny of *Harnischia*)
- 1605 (diel drift in artificial stream, re coho salmon fry diet)
- 1615 (general morphology & terminology)
- 1617 (new genus *Phycoidella*, & 4 new species: *P. dentolatens*, *Cricotopus macraei*, *C. flannagani*, *Lenziella cruscula* morphology)
- A 272 (book review of B 170 above)
- Chirophis decagrammus* (see Greenling, kelp)
- Chiselmouth (*Acrocheilus alutaceus*)
- J 29(2): 173 (*Chondrococcus columnaris* disease seasonal distribution, Columbia R.)
- Chiszar, David
- J 29(5): 576 (bluegill sunfish reaction to handling)
- Chitin (see also Glucosamine)
- B 125R: 157; 167: 237 (determination of particulate, in sea water)
- S 1428 (cycle, re chitinoclastic bacteria in Fatty Basin, B.C., & Atl. lobster transplants)
- Chitonotus pugetensis* (see Sculpin, roughback)
- Chitons (see Amphincura)
- Chittenden, Mark Eustace, Jr.
- J 28(12): 1823 (oxygen requirements of striped bass)
- Chlamys hastata hericia* (see Scallop, spiny or rough)
- islandicus* (see Scallop, Iceland)
- rubida* (see Scallop, pink)
- Chlebeck, Anne Marie
- J 26(11): 2881 (hematological studies of 2 buffalofishes)
- Chloëia entypa* (see Polychaeta)
- Chloramine
- J 28(12): 1841 (toxicity to amphipod & fathead minnow)
- Chloramphenicol (see Chemotherapeutics)
- Chloride (for general data re natural waters, see Limnology; Oceanography; Waters, natural; see also Salt)
- J 27(1): 193 (regulation in burrowing worm eel blood)
- (5): 837 (as pollution criterion of natural waters)
- (6): 1162 (content of rainbow trout blood)
- (8): 1405 (ion concentration & ratios in 70 S Ont. lakes)
- 28(5): 625, 635 (level changes in brook trout after handling, anesthetization, & surgery)
- S 1234; 1512; 1515 (isopiestic measurements on ternary system solutions re NaCl & MgCl₂ activity coefficients)
- 1437; 1439 (in Green L., N.Y.)
- Chlorinity (of sea water) (see also Chlorosity; Oceanography; Salinity)
- S 1472 (phenosafranin indicator for titrations)
- Chlorophyceae (see Chlorophyta)
- Chlorophylls (see also Algae; Photosynthesis; Phytoplankton; Pigments; Plankton; Production, primary)
- J 22(6): 1575 (*a*, *b*, *c*: nomographs for plankton pigment spectrophotometry)
- 25(3): 523 (absorption coefficients of *a*, *b*, & 12 derivatives)
- (10): 2101 (re algal bloom in subarctic lake)
- 26(6): 1625 (optimal extraction conditions from 5 marine phytoplankton species; correction on J 26(8): 2264)
- (11): 2959 (salinity & illumination effects on, in *Monochrysis lutheri* flagellate)
- 27(5): 887 (*a* & *b* re phytoplankton blooms)
- (7): 1251 (*a* monthly variations, Strait of Georgia)
- (8): 1453 (*a* re phytoplankton spatial heterogeneity in a nearshore marine environment)
- (10): 1811 (*a* concentration in eelgrass populations)
- (11): 1917 (*a* as index of primary production in NW Atl. surface waters)
- 28(2): 171, 189, 203 (*a* in waters of many small NW Ont. lakes)
- (2): 203 (re photosynthesis as affected by added nutrients to samples of water from small NW Ont. lakes)
- (2): 215 (*a* content of periphyton in 4 small NW Ont. lakes)
- (2): 295 (re differences & similarities among small NW Ont. lakes)
- (5): 790 (re photosynthesis as affected by nitrogen, phosphorus, & iron enrichment of N Pac. sea waters)
- 29(9): 1253, 1261, 1269 (*a* production re solar radiation, upwelling, & primary production off Oregon coast)
- B 125R: 125; 167: 185 (determination method for sea water)
- T 77; 203; 327 (data re primary production, St. Margaret's Bay, N.S.)
- 110 (Strait of Georgia: seasonal variations of *a*, 1965-67)
- 186 (*a* content of L. Ontario surface waters, 1967)

- 247; 229 (data re primary production, Bedford Basin, N.S.)
- 265 (*a, b, & c* in waters & ice, re primary production, Frobisher Bay, Baffin Is., N.W.T.)
- 314 (data re primary production, Petpeswick Inlet, N.S.)
- 332 (feasibility of fluorimetric mapping of distribution in Gulf of St. Lawrence)
- S 923; 924 (re marine-plant pigment determination)
- 1223 (*a*, re seasonal variations in marine benthos feed availability)
- 1254 (phytoplanktonic, as possible precursor of shale isoprenoid fatty acids)
- 1294 (*a & c* in *Mesodinium rubrum* ciliate)
- 1295 (*a* as index of oceanic primary & secondary production)
- 1341 (*a* re eutrophication of inlet extension of Victoria harbour, B.C.)
- 1392; 1399 (re energy utilization in primary productivity)
- 1466 (re large-scale primary productivity studies in N Pac. Ocean)
- 1528 (chemical fate in 50-million-year-old shale from lake sediments)
- 1529 (distribution of *a* in L. Ontario, re distribution of trace elements)
- 1586 (25-hr budget of production, export, & grazing, Bedford Basin, N.S.)
- Chlorophyta (including Chlorophyceae and Prasinophyceae) (see also Algae; Phytoplankton; Plankton)
- J 22(3): 793 (*Dunaliella tertiolecta* phosphatase activity)
- (4): 1083 (*D. tertiolecta* carbon balance)
- (5): 1107 (*D. salina* lipid fatty acids)
- (6): 1425 (distribution of 15 species re salinity & tidal factors, S end of Vancouver Is.)
- 23(3): 357 (thetin as dimethyl sulfide precursor)
- (8): 1285 (dry weight, ash, & volume data for 16 freshwater species)
- (11): 1715 (species composition in L. Ontario surface waters)
- 24(1): 33 (*Ulva, Enteromorpha, & Monostroma* vertical distribution, Indian Arm, B.C.)
- 25(8): 1603 (*D. tertiolecta & Tetraselmis* fatty acids re taxonomy)
- 26(6): 1625 (chlorophylls extraction procedure)
- (10): 2703 (26 species in sublittoral flora, Halifax Co., N.S.)
- 27(2): 251 (*Halosphaera viridis* fatty acids re Chlorophyceae-Prasinophyceae taxonomy)
- (2): 335 (glycerol enhancement of 4 species phototrophic growth)
- (3): 436 (uranium ore milling wastes effects on 57 species in 3 NW Ont. lakes)
- (8): 1405 (re chemical composition of S Ont. lakes)
- (11): 2018 (of Clear L., Ont.)
- 28(2): 192, 215 (of several small NW Ont. lakes)
- (11): 1763 (effect of nitrate & phosphate addition on abundance in small NW Ont. lake)
- 29(1): 31 (on artificial & natural L. Winnipeg substrates)
- (10): 1413 (dieldrin insecticide accumulation in; corrections on J 30(8): 1257)
- (11): 1595 (artificial fertilization effects on, Marion Lake, B.C.)
- T 158 (4 genera as fouling organisms, Bidford R. estuary, P.E.I.)
- 159 (*Ulothrix & Ulva* in Canadian Arctic archipelago)
- 334 (*D. tertiolecta* feed effect on oyster lipids & fatty acids)
- S 1040 (enolase activity)
- 1044 (thetin as dimethyl sulfide precursor in *Ulva lactuca*)
- 1110 (photosynthesis re Chlorophyceae-Prasinophyceae taxonomy)
- 1113 (*D. tertiolecta & Tetraselmis maculata* extracts as bactericides)
- 1159 (thetin derivatives determination & implication in fisheries)
- 1183 (carbohydrates & thetin derivatives in 5 genera)
- 1197 (aldose activity of *D. tertiolecta & T. maculata* re evolutionary significance)
- 1448 (*Nannochloris oculata & T. maculata* axenic cultures survival re prolonged exposure to darkness)
- 1626 (*T. maculata* protein content & L-threonine dehydratase activity)
- A 40 (similar to S 1159 above)
- Chloroscombrus chrysurus* (see Bumper, Atlantic)
- Chlorosity (see also Chlorinity; Salinity)
- B 125R: 11, 183; 167: 11, 283 (definition & table for converting chlorosity to chlorinity)
- Choi, Paul Mun Keung
- T 272 (PCB and other industrial halogenated hydrocarbons in the environment)
- S 1633 (pesticide residues found in marine birds eggs)
- 1659 (polychlorinated terphenyls in the environment)
- 1696 (PCB & other pesticides in Bay of Fundy & Gulf of Maine waters)
- Cholesterol (see also Sterols)
- S 1679 (content of *Nucula pelceypod*)
- Cholesterol (see also Sterols)
- S 1679 (*Solemya velum* unique among bivalves for sterols containing exclusively)
- Choline and derivatives
- J 23(7): 1025 (phosphatidyl, of fresh vs. frozen Atl. cod muscle)
- 24(2): 273 (in rainbow trout muscle stored at -4 C)
- 25(4): 615 (fish brain acetylcholinesterase enzymatic properties)
- (7): 1517 (electrophoretic separation of brain esterases)
- (10): 2083 (fatty acids distribution in Atl. cod flesh)

- 26(8): 2195 (acetylcholinesterase activity of insecticide-treated rainbow trout larvae)
 (8): 2208 (anticholinesterase activity of toxin from moray eel)
 28(4): 613 (acetylcholinesterase activity of various fish plasmas; anticholinesterase activity of various pesticides)
 S 933; 936 (fermentation by marine *Achromobacter*)
 986 (simplified preparation of glyceryl phosphoryl)
 1178 (choline utilization in aerobic marine microbe phospholipid synthesis)
 1312 (used in fatty acid synthesis by a bacterium)
- Chondracanthus* (see Cyclopoida)
- Chondrococcus* (see Bacteria; Columnaris disease)
- Chondrophora (see also Hydrozoa; *Veleva*)
 B 176 (of Canadian marine zooplankton)
- Chondrus crispus* (see Irish moss)
- Choquette, Laurent Paul Emile
 J 26(4): 713 (T. W. M. Cameron appreciation)
 28(3): 448 (subcutaneous fibroma in lake trout in Que.)
- Chorda* (see Phaeophyta)
- Chorilia longipes* (see Crabs, spider)
- Choristoneura fumiferana* (see Budworm, spruce)
- Chorney, Victoria
 S 1171 (unicellular red alga aldolase activity)
 1198 (growth of *Hemiselelmis virescens*)
- Choroszuca, Czeslawa
 J 23(11): 1653 (chemical composition of crayfish)
- Chowder
 S 1697 (canned fish)
- Christensen, Glenn Marvin
 J 27(10): 1883 (brook trout blood changes)
 29(12): 1691 (various metal ion effects on *Daphnia magna* survival, growth, reproduction, & metabolism)
- Christie, Alan Erdmann
 J 27(3): 425 (mine-waste effects on phytoplankton)
- Christie, William John
 J 29(6): 913 (exploitation, introductions, & eutrophication effects on salmonid community, L. Ontario)
 (6): 969 (species introductions effects on oligotrophic lakes salmonid communities)
- Chromatography (Note: Not all references to this widely used procedure are indexed; the following references are mainly to applications of gas-liquid, column, or thin-layer chromatographic methods for separation of other than fatty acids and their esters. Additional references to gas-liquid chromatography (GLC) are under Acids, fatty)
 J 24(7): 1521 (GLC, for isopropyl alcohol residues assay in protein concentrates)
 (8): 1701 (paper, for rainbow trout catecholamine)
 (8): 1837 (thin-layer, for monitoring nucleotide degradation)
 (10): 2195 (column, of sockeye salmon skin pigments)
 CHN 37 (thin-layer, for recognition of bunker fuel oil as pollutant)
 S 1121 (steroids destruction during silica-gel thin-layer)
 1159 (thetins in algae, by GLC)
 1251 (recovery of microquantities of steroids after thin-layer)
 1265 (flame ionization detector use with GLC)
 1330 (column, for separating triglycerides from fatty acids)
 1385 (GLC separation of optically active diastereoisomers of phytanic acid esters)
 1400 (GLC collection syringe for volatile compounds)
 1441 (GLC quantitative estimation of neutral sugars)
 1424 (GLC assay method for elemental phosphorus, re pollution)
 1595; 1661 (hexane impurity effects in silicic acid chromatography of organochlorine pesticides)
 1663 (steryl acetates separation & identification facilitated by silver-ion)
 1664 (analysis of fatty acids & related materials by GLC: review)
 1673 (methyl position influence on GLC retention times of methylbranched fatty acid esters & hydrocarbons)
 A 40 (same as S 1159 above)
 101 (relative merits of different "Carbowax" types for GLC)
- Chromium derivatives
 J 25(4): 639 (re marine flesh oxidative rancidity)
 26(6): 1664 (carbon estimation dichromate reagent instability)
 27(4): 677 (in Great Lakes alewife, spottail shiner, & trout-perch)
 (4): 701 (ion effects on marine muscles extractable protein)
 28(2): 277 (in sediments of 4 small NW Ont. lakes)
 (5): 786 (in dressed Canadian fishes from industrial area lakes)
 29(12): 1691 (CrCl₃, re toxicity to *Daphnia magna*)
 S 1529 (distribution in L. Ontario)
 A 85 (in freshwater fishmeals)
- Chromobacterium* (see also Bacteria)
 J 26(10): 2659 (ingested by oligochaetes in Toronto harbour sediments)
 28(10): 1511 (isolates associated with surfaces of hatching Pac. salmon eggs)
- Chromosomes (see also Cytology; Genetics; Heredity)

- J 24(10): 2155 (of Atl. & Pac. oyster)
 25(5): 1091 (method for preparing dry mounted, from teleost fishes)
 25(8): 1667 (cytotaxonomic relations in Great Lakes coregonids)
 26(3): 543 (re *Pseudocalanus* size variation & polyteny, Ogac L., N.W.T.)
 27(1): 159 (preparation methodology from mummichog & striped killifish cultured ovarian cells)
 28(11): 1745 (diploid components of large & dwarf white suckers & of longnose sucker)
 29(5): 579 (karyotypes of pikes, pickerels, muskellunge, & certain hybrids)

Chroomonas (see Pyrrophyta)

Chrosomus eos (see Dace, northern redbelly)
neogaeus (see Dace, finescale)

Chrysemys picta (see Turtle, painted)

Chrysophyta; Chrysophyceae (see also Algae; Phytoplankton; Plankton; Xanthophyceae; for some other diatoms see also Bacillariophyta)

- J 22(3): 793 (*Monochrysis lutheri* phosphatase activity)
 (4): 1083 (carbon balance in photosynthesis)
 (5): 1107 (*M. lutheri* & *Syracosphaera carteri* lipid fatty acids)
 23(3): 357 (thetin derivative as dimethyl sulfide precursor)
 (11): 1715 (*Dinobryon sociale* of L. Ontario surface waters)
 24(1): 201 (*M. lutheri* bacterial-toxin lecithinase C activity)
 25(8): 1603 (*M. lutheri* fatty acids)
 26(10): 2703 (*Phaeosaccion collinsii*, Halifax Co., N.S.)
 27(2): 335 (glycerol enhancement of phototrophic growth)
 (3): 436 (occurrence in 3 adjoining lakes affected or not affected by uranium ore milling wastes)
 (8): 1405 (*Dinobryon* re chemical composition of S Ont. lakes)
 (11): 2018 (of Clear L., Ont.)
 28(2): 194, 215 (of several small NW Ont. lakes; dominance of *Melosira*)
 (11): 1763 (nitrate & phosphate addition effect on abundance in small NW Ont. lake)
 T 158 (settling periodicity of *Melosira* & *Schizonema* as fouling organisms)
 334 (*Isochrysis galbana* & *Dicrateria inornata* feed effect on oyster lipids & fatty acids composition)
 S 1040 (enolase activity)
 1044 (dimethyl- β -propiothetin in *Syracosphaera carteri*)
 1113 (*Coccolithus*, *Isochrysis*, & *Monochrysis* extracts as bactericides)
 1159 (thetins from photosynthesis)
 1194 (2 antibacterial products from *Isochrysis galbana*)
 1197 (aldolase activity re phylogeny)

- 1248 (characterization of phospholipase from *M. lutheri*)
 1448 (axenic cultures survival re prolonged exposure to darkness)
 1491 (ability to cleave phenylalanine aromatic ring)
 A 40 (same as S 1159 above)
 211 (*M. lutheri* for zooplankton grazing experiments)

Chua, Kian Eng

- J 26(10): 2581 (modified bottom sampler corer)
 (10): 2659 (some tubificid-sediment interactions)

Chub (see Cisco; Mullet, striped; also following species and Chubs)

Chub, Columbia River (see Peamouth)

Chub, creek (*Semotilus atromaculatus*)

- J 23(5): 623 (association with brook trout in Pennsylvania streams)
 25(6): 1199 (low-temperature effect on feeding in 3 Ont. localities)
 27(12): 2365 (kidney infection of furunculosis bacteria)
 28(1): 45 (populations upstream & downstream of a dammed Ont. lake)
 (9): 1285 (methylmercury in N.B.)
 (12): 1877 (DDT accumulation & persistence in)

Chub, flathead (*Hybopsis (Platygobio) gracilis*)

- J 26(2): 325 (S Alta. distribution)
 (6): 1439 (distribution in Canadian Missouri R. headwaters)
 28(10): 1645 (host to new trematode species, Alta.)
 B 173: 236 (full description, etc., NW Canada)

Chub, lake (*Couesius plumbeus*) (*Hybopsis plumbea*)

- J 22(3): 742 (in Kananaskis R. system, Alta.)
 26(2): 325 (S Alta. distribution)
 (6): 1439 (distribution in Canadian Missouri R. headwaters)
 27(6): 1005 (breeding biology, Lac la Ronge, Sask.)
 28(10): 1645 (host to new trematode species, Alta.)
 29(3): 275 (4 parasites of, Lakes of the Woods, Ont.)
 (8): 1131 (mortality from sulfur dioxide lowering of lake pH)
 B 149: 21, 119 (Great Lakes, catches)
 151; 151(F) (smoking; canning)
 173: 242 (full description, etc., of NW Canada & Alaska)

Chub, hornyhead (*Nocomis (Hybopsis) biguttatus*)

- J 28(1): 45 (populations upstream & downstream of a dammed Ont. lake)

Chub, peamouth (see Peamouth)

Chub, river (*Nocomis (Hybopsis) micropogon*)

- J 28(1): 45 (populations upstream & downstream of a dammed Ont. lake)

Chub Lake, B.C.

- J 24(10): 2189 (primary productivity)
- Chuba, Joseph V.
J 28(8): 1208 (killifish "hemagglutinogens")
- Chubs
J 28(12): 1879 (occurrence & persistence of DDT in)
- Chubsucker, lake (*Erimyzon sucetta*)
J 24(3): 695 (blood low-mobility proteins)
- Churchill, David Nelson
J 24(3): 651 (postmortem changes in cod)
25(4): 733 (Nfld. trap-caught cod quality after single & double freezing)
- Cichlidae (*see also* Tilapia)
J 25(8): 1739 (spinal ganglia position re teleost taxonomy (*Pterophyllum eimekei*))
- Ciguatoxin (*see* Toxicants)
- Ciliata (*see also* Protozoa)
J 24(9): 1911 (parasitic on Nfld. brook trout)
25(8): 1749 (*Cyclotrichium meunieri* cause of red water in Gulf of Maine)
26(6): 1534 (*Ptychocylis obtusa* tintinnid, Ogac L., Baffin Is.)
(10): 2669 (*Entodiscus borealis* in intestine of sea urchin)
28(3): 391 (ultrastructural & incomplete symbionts, taxonomy, & key, of red-water ciliate *Mesodinium*: review)
29(4): 363 (*Paramecium caudatum* feed & feeding habits, USSR)
T 267 (Frobisher Bay, Baffin (s., N.W.T.))
S 1294 (*Mesodinium rubrum* pigments)
1444 (culture characteristic of a pelagic marine hymenostome, *Uronema* sp.)
1559 (culture characteristics & feed of *Uronema*)
- Ciliophora (*see* Ciliata; Suctorina)
- Circulation (of blood) (*see* Blood; Gills; Heart; Hemoglobin; Respiration)
- Circulation (of water) (*see* Currents; Drift; Eutrophication; Hydrography; Limnology; Meromixis; Oceanography; Tides; Transport, mass)
- Cirratulidae (Polychaeta Sedentaria)
J 26(10): 2595 (*Acrocirrus* & *Macrochaeta* removed to new family Acrocirridae)
- Cirripedia (barnacles) (*see also* Crustacea)
J 24(1): 33 (*Balanus glandulus* vertical distribution, Indian Arm, B.C.)
25(6): 1161 (*B. balanoides* susceptibility to parasitic isopod *Hemioniscus balani* infection)
(12): 2633 (differences resulting from *B. balanoides* transplantation)
- (12): 2707 (new records of *Conchoderma virgatum* in NW Atl.)
27(4): 818 (*Briarosaccus callosus* parasitic on deep-water king crab)
B 168: 30 (*Balanus cariosus* occasional toxicity in B.C.)
176 (synopsis of Canadian zooplanktonic)
T 158 (*Ba. improvisus* as fouling organism, Bideford R., P.E.I.)
225 (associated with Bay of Fundy scallop beds)
266 (Frobisher Bay, Baffin Is., N.W.T.)
S 895 (*Ba. nubilis* deoxyribonucleic acids)
1041 (*Ba. nubilis* embryos guanosine derivatives)
- Cirratulidae (*see* Polychaeta)
- Cisco (*Coregonus artedii*) (= *Leucichthys artedii*) (*Note*: The cisco is often called lake cisco, lake herring, or tullibee; the latter name, also "chub", is frequently used in commerce. Authors' references to all three names are included under this heading. For discussion of the "Coregonus artedii complex" *see* B 149: 20, 21 and B 173: 91)
J 22(3): 732 (in Bow River system, Alta.)
23(1): 149 (alkaline phosphatase in scales)
24(6): 1219 (oil yield & composition on reduction)
(6): 1291 (composition & nutritive value of meal)
25(1): 169 (pesticide residues in oils & meals)
(4): 667 (re Great Lakes species succession & exploitation)
(8): 1667 (cytotaxonomic relation to other Great Lakes coregonids)
(10): 2111 (scales annulus formation in hybrid with bloater)
26(4): 849 (*Cystidicola* nematodes in swimbladder)
(7): 1934 (distinction from *C. zenithicus*, Barrow L., Alta.)
(10): 2681 (shape & structure re gillnet selectivity)
27(1): 125 (re lake trout feed, L. Opeongo, Ont.)
(4): 677 (8 trace elements in livers, Great Lakes)
28(6): 924 (larval growth & survival temperature requirements)
29(3): 275 (16 parasites of, Lake of the Woods, Ont.)
29(8): 1131 (mortality from sulfur dioxide lowering of lake pH)
(9): 1283 (cadmium content, in New York State waters)
(12): 1685 (mercury concentration re size, in 4 Man. lakes; corrections on J 30(8): 1257)
B 149: 20, 21 (Great Lakes catches; nomenclature)
151; 151(F) (canned steak, filets; smoked; sausage; weiner)
173: 91 (full description; taxonomy & nomenclature of "Coregonus artedii complex")
CCG 7: 33 (latent heat of freezing)
T 261 (bibliography for Gulf of St. Lawrence)
S 980 (brining time before smoking)
1189; 1395 (oil fatty acids composition)
1405 (lipoxidase reaction with polyenoic fatty acids of oil)
1591 (pristane & other hydrocarbons in commercial Canadian oil)
1668 (mercury contamination, Great Lakes)

- 1718 (organochlorine pesticide levels in Canadian commercially caught)
- A 14 (Great Bear L., N.W.T.)
- 85 (nutrient composition of meal as poultry feed)
- 200; 201 (mercury contamination in various Canadian waters)
- 224 (parasites)
- Cisco, Arctic (*Coregonus autumnalis*)
- J 23(1): 141 (distinction from *C. laurettae*; distribution; origin)
- B 173: 102 (full description, etc.)
- Cisco, Bering (*Coregonus laurettae*)
- J 23(1): 141 (probable origin; distinction from Arctic cisco)
- B 173: 106 (full description, etc.)
- Cisco, blackfin (*Coregonus nigripinnis*)
- J 25(4): 667 (re Great Lakes species succession & exploitation)
- Cisco, deepwater (*Coregonus johanna*)
- J 25(4): 667 (re Great Lakes species succession & exploitation)
- Cisco, lake (see Cisco)
- Cisco, least (*Coregonus sardinella*)
- B 173: 97 (full description; taxonomy and nomenclature of "Coregonus sardinella complex")
- A 14 (Great Bear L., N.W.T.)
- Cisco, longjaw (*Coregonus alpenae*)
- J 25(4): 667 (re Great Lakes species succession & exploitation)
- 26(4): 849 (*Cystidicola* nematodes in swimbladder)
- Cisco, shortjaw (*Coregonus zenithicus*)
- J 22(4): 969 (Algonquin Park, Ont., distribution)
- 25(4): 667 (re Great Lakes species succession & exploitation)
- (8): 1667 (cytotaxonomic relation to other Great Lakes coregonids)
- 26(7): 1934 (differentiation from *C. artedii*, Barrow L., Alta.)
- Cisco, shortnose (*Coregonus reighardi*)
- J 25(4): 667 (re Great Lakes species succession & exploitation)
- (8): 1667 (cytotaxonomic relation to other Great Lakes coregonids)
- 26(4): 849 (*Cystidicola* nematodes in swimbladder)
- Ciscoes (general, or incompletely identified)
- B 149: 20-22 (synonymy of vernacular names for species (as *Leucichthys*) in Great Lakes fisheries of Ont. — lake herring, cisco, tullibee, chubs, bloats)
- 173: 70 (taxonomy & key), 91 (*Coregonus artedii* complex, including *C. tullibee*), 97 (*Coregonus sardinella* complex)
- S 1442 (*Triaenophorus* in *Coregonus albula*, L. Mälaren, Sweden)
- 1450 (incidence of *Triaenophorus* infection, Heming L., Man.)
- Citharichthys sordidus* (see Sanddab, Pacific)
- stigmaeus* (see Sanddab, speckled)
- Citric acid and citrates
- J 22(1): 53 (for inhibiting drip loss)
- (4): 929 (re oxidative rancidity in Atl. cod flesh)
- CVG 35 (acid, as antioxidant supplement)
- Cladocera (see also Crustacea)
- J 25(11): 2505 (*Daphnia pulex* used in testing measurement of ¹⁴C incorporation)
- (11): 2515 (*Daphnia* caloric value)
- 26(8): 2135 (*Bosmina*, *Ceriodaphnia*, *Daphnia*, & *Leptodora* horizontal distribution in L. Ontario)
- (9): 2459 (seasonal composition, distribution, & abundance, L. Erie)
- (12): 3101 (of Crecy L., N.B.)
- 27(2): 281 (diel vertical movements, Babine L., B.C.)
- (7): 1239 (long-term changes in *Daphnia*, *Diaphanosoma*, & *Bosmina* species composition in Kootenay L., B.C.)
- 28(2): 231, 245 (*Bosmina*, *Holopedium*, *Daphnia*, etc., common to many small NW Ont. lakes)
- (2): 245 (vertical distribution & seasonal abundance in 2 small shallow NW Ont. lakes)
- (3): 311 (of 146 W Canada alpine & subalpine lakes & ponds)
- (4): 559 (seasonal caloric values, from 3 small E Ont. lakes)
- (5): 705 (biological magnification & degradation of insecticides by)
- 29(1): 79 (distribution & abundance of 14 species, Georgian Bay, L. Huron)
- (4): 363 (review of feed & feeding habits of several USSR freshwater)
- (8): 1203 (*Daphnia* as bacterial predator enhances nitrotriacetate biodegradation)
- (10): 1413 (dieldrin insecticide accumulation in *Daphnia magna*; corrections on J 30(8): 1257)
- (10): 1451 (abundance, re Great Lakes eutrophication)
- (12): 1691 (effect of 21 metal ions on survival, growth, reproduction, & metabolism of *Daphnia magna*)
- (12): 1761 (age of immature yellow perch re mouth gape & size selection of *Daphnia pulex* as feed)
- B 176 (synopsis of Canadian marine planktonic)
- T 55: 27 (identification of B.C.)
- 294 (*Daphnia* re action of model aerated sewage lagoon)
- S 1041 (nucleotides of encysted *D. magna* embryos)
- 1652 (as affected by enrichment of Great Central L., B.C.)

Claggett, Freddy Gene

- CVG 34 (effect of antioxidants on B.C. herring meal)
 35; 36 (spontaneous heating in herring meal)
 37 (summer herring preservation)
 38; 42 (salmon-canning wastewater clarification)
 39 (fishmeal pilot plant)
 40 (antioxidants re herring meal)
 46 (deodorizer for fishmeal plant flame driers)
 T 14 (B.C. fishing plant wastewater clarification)
 197 (treating fish processing plant waste water)
 286 (data re salmon canning wastewater treatment unit)
 S 969 (antioxidant treatment of herring meal)
 A 112 (fishmeal pilot plant)
- Clam (in addition to the following headings, *see* Clams; Cockle; Drills, clam; Geoduck; Mollusca; Pelecypoda)
- Clam, Arctic wedge (*Mesodesma arctatum*)
 B 177 (re paralytic shellfish poisoning, E Canada)
- Clam, Atlantic surf (*Spisula solidissima*)
 J 24(6): 1413 (freeze-drying for total solids assay re condition)
 S 1679 (sterols)
- Clam, bar (*Spisula (Mactra) solidissima*)
 B 177 (re paralytic shellfish poisoning, E Canada)
- Clam, bent-nose (*Macoma nasuta*)
 B 168: 30 (negative toxicity in B.C.)
- Clam, black (*see* Quahaug, ocean)
- Clam, butter (*Saxidomus giganteus*)
 J 23(8): 1265 (occasional toxicity in Strait of Georgia)
 28(11): 1789; 29(11): 1657, 1659 (melanin distribution in, re retention of paralytic shellfish toxin, B.C.)
 CNG 75 (prevalance & duration of toxicity, B.C. coast, & precautions for use)
 81 (new digging method)
 B 168: 21 (anatomy and toxicity tests, re paralytic shellfish poisoning in B.C.)
 179: 27 (biology, production, utilization, etc., B.C.)
 T 15 (fork vs. hydraulic rake digging efficiency)
 42 (clam drill predation on)
 S 1095 (brief description; biology; B.C. production)
 A 20 (description & biology, B.C.)
- Clam, cockle (*see* Cockle, basket)
- Clam, geoduck (*see* Geoduck)
- Clam, hard (*see* Quahaug, northern)
- Clam, hardshell (*see* Quahaug, northern)
- Clam, hooked surf (*Spisula falcata*)
 B 168: 29 (no record of toxicity in B.C.)
- Clam, horse (*Tresus capax*) (*Schizothaerus capax*) (*see also* next heading)
- J 23(8): 1265 (occasional toxicity in Strait of Georgia, B.C.)
 B 168: 33 (toxicity tests, B.C.)
 179: 58 (biology & use, B.C.)
 T 15 (fork vs. hydraulic rake digging efficiency)
- Clam, horse (*Tresus nuttalli*) (*Schizothaerus nuttalli*; gaper)
 B 179: 58 (biology & use, B.C.)
 T 42 (clam drill predation on)
- Clam, Japanese littleneck (*see* Clam, Manila)
- Clam, littleneck (Atlantic) (*see* Quahaug, northern)
- Clam, littleneck (Pacific) (*Protothaca staminea*)
 J 23(8): 1265 (occasional toxicity in Strait of Georgia)
 B 168: 33 (toxicity tests, B.C.)
 179: 42 (biology, production, utilization, etc., B.C.)
 T 15 (fork vs. hydraulic rake digging efficiency)
 42 (clam drill predation on)
 S 1095 (brief description; biology, B.C. production)
 A 20 (description & biology, B.C.)
- Clam, Manila (*Venerupis japonica*) (Japanese littleneck clam)
 J 23(8): 1265 (occasional toxicity in Strait of Georgia)
 B 168: 33 (toxicity tests, B.C.)
 179: 47 (biology, production, utilization, etc., B.C.)
 T 42 (clam drill predation on)
 S 1095 (brief description; biology; B.C. production)
 A 20 (description & biology, B.C.)
- Clam, milky venus (*Compsomyx subdiaphana*)
 B 168: 30 (negative toxicity in B.C.)
- Clam, mud (*Mya arenaria*) (soft-shell clam)
 J 23(8): 1265 (occasional toxicity in Strait of Georgia)
 B 168: 33 (toxicity tests, B.C.)
 179: 60 (little used in B.C.)
- Clam, ocean (*see* Quahaug, ocean)
- Clam, Pacific surf (*Spisula polynyma*)
 B 179: 60 (in Hecate Strait clam survey, B.C.)
- Clam, razor (Atlantic) (*Ensis directus*)
 B 177 (re paralytic shellfish poisoning, E Canada)
- Clam, razor (Pacific) (*Siliqua patula*)
 B 179: 48 (biology, production, utilization, etc., B.C.)
 T 118 (population studies, Masset, B.C.)
 232 (breeding & growth, Queen Charlotte Is. & coast Vancouver Is.)
 S 1095 (brief description; biology; B.C. production)
 A 20 (description & biology, B.C.)
- Clam, ringed lucina (*Lucinoma annulata*)
 B 168: 31 (negative toxicity acquisition from *Gonyaulax*)
- Clam, soft-shell (Atlantic) (*Mya arenaria*)

- J 25(2): 267 (occurrence & retention of thetin derivative from feed)
 (11): 2453 (significance of dimethyl sulfide odor)
 26(3): 701 (resistance to abnormally low estuarine salinity, P.E.I.)
 27(9): 1579 (factors affecting elimination of bacteria)
 (10): 1898 (2 digestive tract enzymes)
 28(1): 59 (DDT residues in N.B. & P.E.I.)
 (5): 793 (yellow phosphorus concentration in body, N.S.)
 (9): 1225 (cadmium toxicity tests)
- B 154: 127 (possible Nfld. resource)
 177 (re paralytic shellfish poisoning, E Canada)
- T 155 (zonation in Bideford R. tidal zones, P.E.I.)
 158 (settlement periodicity as fouling organism, Bideford R. estuary, P.E.I.)
 201 (for testing toxicity of dispersants for fuel oil spills)
 217 (pollution from petroleum oil spills)
- S 909 (new hydraulic harvesting rake)
 1182 (fishing efficiency of hacks & mortality)
 1569 (determination of residual fuel oil contamination in)
 1654 (aqueous extract protects fathead minnow against amphibian virus infection)
 1679 (sterols)
- A 84 (effect of various pollutants on production)
- Clam, soft-shell (Pacific) (*see* Clam, mud)
- Clam, surf (*see* Clam, Atlantic surf; Clam, Pacific surf)
- Clam drills (*see* Drills, clam)
- Clam-digger's itch
 A 58; 58(F) (cause, control, & treatment)
- Clams (Atlantic and Eastern Canadian Arctic) (collectively, or common name uncertain; *see also* preceding Clam headings, *also* Pelecypoda)
- J 25(9): 1803 (caloric & sulfur content)
 26(3): 701 (*Macoma balthica*, *Tellina agilis*, & *Yoldia limatula* mass mortality from estuarine low salinity, P.E.I.)
 29(4): 385 (review of sterols identified in)
 (11): 1633 (*Vibrio parahaemolyticus* in some species)
- T 159 (various, observed from a submersible in E Canadian Arctic Archipelago)
- S 1551 (development of postlarval *Macoma balthica* mantle organs, feeding, & locomotion)
 1668 (mercury contamination)
- A 221 (ancient, forming core of rock secretions, found later as "holed stones")
- Clams (freshwater) (*see also* preceding Clam headings, *also* Pelecypoda)
- J 27(6): 1045 (*Lampsilis radiata* glochidia parasitic on yellow perch gills)
 28(2): 257 (*Pisidium conventus* & *P. casertanum* common in many small NW Ont. lakes)
 (11): 1683 (Sphaeriidae associations & species diversification, Bay of Quinte, Lake Ontario)
 29(4): 363 (feed & feeding habits of several USSR genera)
 (11): 1565 (distribution & morphological variation of *L. radiata* in some central Canadian lakes by multivariate statistical analysis)
- T 196 (*Pisidium* spp. in Okanagan Valley lakes, B.C.)
 S 1543 (Georgian Bay; L. Erie; L. Ontario)
- Clams (Pacific) (collectively, or common name uncertain; *see also* preceding Clam headings; *also* Pelecypoda)
- J 24(12): 2629 (*Cuspidaria cowani*, new species, off Queen Charlotte Is., B.C.)
 26(8): 2230 (6 new septibranchid species, B.C. coast; *Cuspidaria parapodema*, etc.)
 27(9): 1661 (as flathead sole feed)
 29(4): 385 (review of sterols identified in)
- B 168: 30 (susceptibility to acquisition of toxicity from *Gonyaulax*, in B.C. waters)
 179 (B.C. fishery: description, harvesting, management, etc.; *also*, *Compsomyx subdiaphana* taken frequently in clam surveys)
- T 2 (checklist & bibliography of B.C. marine)
 S 1095 (brief descriptions, biology, & production, of B.C.)
 1470 (checklist & bibliography of B.C. marine)
 1691 (systematics & anatomy of 4 *Thyasira* species, B.C.)
- Clam worm (*Nereis*) (*see* Polychaeta)
- Clarification
 CVG 38; 42 (of salmon-canning & herring-pumping waste waters)
- Clark, A. S.
 J 28(4): 559 (freshwater zooplankton calorific values)
- Clark, Francis William
 J 24(3): 495 (sunfish reproductive isolation)
- Clarke, Arthur Hadleton, Jr.
 J 22(2): 631 (ancient sea shells)
 S 1199 (ancient oyster & bay scallop shells from Sable Is.)
- Clarke, Austin Hobart
 J 29(10): 1503 ("arctic dredge" benthic biological sampler for mixed boulder & mud substrates)
- Clarke, Livingston Wilberforce
 J 23(10): 1599 (muscle myogen patterns)

- (11): 1663 (comparative electropherograms)
 24(2): 299 (Catostomidae electropherograms)
- Clarke, William Craig
 J 25(7): 1497 (sockeye salmon pituitary "prolactin")
 29(2): 151 (sockeye fry migration, Lower Babine R., B.C.)
 S 1337 (adrenalectomy of eel)
 1526 (feedback mechanism in eels)
- Classification (*see also* Genera; Keys; Nomenclature; Phylogeny; Speciation; Species; Taxonomy)
 B 173: 26, 42, 48, etc. (families, genera, species, subspecies, & hybrids, of NW Canada & Alaska freshwater fishes)
 176 (Canadian marine zooplankton)
 180 (B.C. marine fishes)
 T 55 (B.C. marine zooplankton)
 124 (nearctic Chironomidae)
 S 1647 (*Allocapnia* winter stoneflies)
- Classification (cluster analysis) (*see also* Associations; Communities)
 S 1580; 1620 (& ordination of many shallow-water benthic species, P.E.I.)
- Clavella* (*see also* Lernaepodidae)
 S 1429 (possible new species)
- Clavellodes pterobranchiata* (*see also* Lernaepodidae)
 S 1307 (new species, from Australian fishes)
- Claws (chelae)
 J 29(4): 423 (re determining tanner crab mature size)
 S 1465 (role in crayfish mating)
 1555 (shuddering behavior during green shore crab attempted male-male mating)
 T 235 (role in lobster aggressiveness)
- Clayton, James Wallace
 J 26(11): 3049 (longnose & blacknose dace & hybrid isozymes)
 27(6): 1115 (whitefish lactate dehydrogenase)
 28(7): 1005 (walleye malate dehydrogenase isozymes)
 29(8): 1169 (amine-citrate buffers for starch-gel electrophoresis)
 S 1451 (*Coregonus clupeaformis* species complex)
- Cleaning and dressing fish (*see also* Quality of fishery products)
 S 992 (practical method for fresh water fishes)
- Cleansing (*see* Depuration; Disinfection; Washing)
- Clear Lake, Ont.
 J 27(11): 2009 (nutrient supply & primary production)
- Cleaver, Frederick Charles
 S 1129 (sockeye salmon in offshore Pac. Ocean waters)
- Clement, Philip Bruce
 J 24(6): 1203 (binding of oil in canned salmon)
- Cleugh, Thomas Reginald
 J 28(2): 129 (initial survey of FRB Experimental Lakes, NW Ont.)
 S 1164 (*Caligus vicarius*: an invalid name)
- Clevelandia ios* (*see* Goby, arrow)
- Clidoderma asperrimum* (*see* Sole, roughscale)
- Clifford, Hugh Fleming
 J 29(7): 1091 (white sucker fry downstream movements in Alta. brown-water stream)
- Climate (*see also* Glaciation; Precipitation; Storms; Wind)
 (Note: For general data re ocean water "climate", *see* Oceanography headings)
 J 23(2): 276 (re lake whitefish year-class strength)
 27(11): 2009 (re chemical nutrient supply to Clear L., Ont.)
 (12): 2255 (re heat budget, Casco Bay, Maine)
 28(2): 142, 265 (of FRB Experimental Lakes Area, NW Ont.)
 B 173 (re dispersal & distribution of freshwater fishes in NW Canada & Alaska)
 T 98 (Little Codroy R., Nfld.)
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 S 1476 (implementation of Canadian ocean engineering, chemical oceanography, & geochemistry re climatology)
- Clingfish, flathead (*see* Clingfish, northern)
- Clingfish, kelp (*Rimicola muscarum*) (slender clingfish)
 J 23(8): 1277 (B.C. range extension)
 B 180: 212 (full description, etc., B.C.)
- Clingfish, northern (*Gobiesox maeandricus*) (*Sicyogaster maeandricus*; flathead clingfish)
 B 180: 210 (full description, etc., B.C.)
- Clingfish, slender (*see* Clingfish, kelp)
- Clinocardium corbis* (*see* Cockle, basket)
nuttalli (*see* Cockle, basket)
ciliatum (*see* Cockle)

- Clinocottus acuticeps* (see Sculpin, sharpnose)
analis (see Sculpin, wooly)
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globiceps (see Sculpin, mosshead)
- Cliona celata* (see Sponge, boring)
- Clione limacina* (see Pteropoda)
- Clostridium botulinum*; Botulism (see also Bacteria)
 J 24(3): 595 (spores rapid germination)
 (8): 1833 (spore germination in fish & shellfish extracts)
 25(3): 547 (growth & spore production)
 (8): 1745 (fish homogenates as substrate for investigations on Type E)
 28(8): 1071 (sodium chloride effects on toxin production in Pac. cod flesh homogenates)
 (11): 1817 (acid phosphatase activity in vegetative cells & spores)
 29(4): 443 (in sediments off Canadian Atl. coast)
 S 1270; 1585 (amylopectin accumulation in cytoplasm of)
 1657 (intracellular glucan role in fermentation & spore formation)
 1693 (distribution re physical environment, Gulf of St. Lawrence)
 A 201 (re wildlife consumption of Great Lakes fishes)
 203 (sources of bacterium if found in fishery products)
- Cluett, Lorne Nauss
 T 170 (length & age composition, haddock landings from Nfld.)
- Clupea harengus* (see Herring, Atlantic (two headings))
harengus harengus (see Herring, Atlantic)
harengus pallasii (see Herring, Pacific (two headings))
pallasii (see Herring, Pacific)
- Clymenella torquata* (polychaete)
 T 116 (observations, particularly on egg production)
- Cnidaria (see Coelenterata)
- Cnidospores (see also Microsporidia; Myxosporidia)
 J 26(4): 725 (review of fish parasitization, re Sporozoa)
- Cobalamins (see Vitamin B group)
- Cobalt and derivatives (see also Vitamin B group)
 J 22(4): 929 (re oxidative rancidity promotion in cod flesh)
 25(4): 639 (catalyzing fatty fish flesh oxidative rancidity)
 26(5): 1347 (re calanoid copepods culture)
 27(4): 677 (in whole fish or livers of 12 Great Lakes species)
 (4): 701 (ion effects on marine muscles extractable protein)
 28(2): 277 (in sediments of 4 small NW Ont. lakes)
- (5): 643 (⁶⁰Co for irradiation of bacteria in smoked fish)
 29(12): 1691 (CoCl₂, re toxicity to *Daphnia magna*)
 T 114 (cobalt content of Atl. & Pac. herring meals)
 S 941 (radioactive ⁶⁰Co seawater contamination)
 1377 (content of Atl. & Pac. herring meals)
 1529 (distribution in L. Ontario)
 A 232 (⁶⁰Co as marine radioactive pollutant)
- Cobb, John Stanley
 J 25(10): 2251 (lobster larvae molt delay)
 27(9): 1653 (larval molts in American lobster)
- Coble, Daniel W.
 J 23(1): 15 (yellow perch growth re temperature)
 (1): 149 (alkaline phosphatase in fish scales)
 24(1): 87 (smallmouth bass growth re temperature)
 (10): 2117 (sea lamprey effects on South Bay white sucker population)
 28(7): 957 (northern pike predation)
- Coburn, Arthur Stephen
 J 24(1): 77 (hatchery release tank for salmon fry)
 T 10 (Schulbuckhand & Williams creeks, B.C., sockeye salmon)
- Coccolithus* (see Chrysophyta)
- Cocking, Anthony William
 J 24(6): 1419 (indophenol method for freshwater fish ammonia estimation)
- Cockle (see also Cockle, basket; Pelecypoda)
 J 24(5): 1165 (shell weight re age of *Cardium edule* in Wales)
 25(9): 1803 (caloric & sulfur content of *Clinocardium ciliatum*)
- Cockle, basket (*Clinocardium nuttalli*) (*Cardium corbis*; cockle; cockle clam)
 J 23(8): 1265 (occasional toxicity in Strait of Georgia)
 25(8): 1621 (Sevin insecticide effect on survival & growth)
 B 168: 33 (toxicity tests, B.C.)
 179: 56 (biology & use, B.C.)
 T 42 (clam drill predation on)
 A 20 (in B.C.)
- Cockroaches
 J 25(8): 1651 (plasma protein-bound inorganic iodide in *Periplaneta americana*)
 S 1146 (oxidase-peroxidase system in *P. fuliginosa*)
- Cockscomb, high (*Anoplarchus purpurescens*) (cockscomb prickleback; crested blenny)
 J 24(1): 1 (distinction from lesser prickleback)
 26(9): 2319 (parasites, B.C.)
 B 180: 329 (full description, B.C.)
- Cockscomb, slender (*Anoplarchus insignis*)
 J 24(1): 1 (distinction from lesser prickleback)
 B 180: 328 (full description, B.C.)

- T 59 (in Strait of Georgia, B.C.)
- Cod (European) (*Gadus callarias*) (codling)
- J 23(4): 527 (glycogenolytic enzymes of muscle)
25(12): 2711 (muscle creatine kinase localization)
- Cod, Arctic (*Boreogadus saida*)
- J 29(12): 1709 (male gonad morphology re 11 other Gadidae species)
- B 173: 295 (mention in key to NW America fresh-water cods)
- T 261 (bibliography for Gulf of St. Lawrence)
266 (Frobisher Bay, Baffin Is., N.W.T.)
- Cod, Atlantic (biology) (*Gadus morhua*) (see also next heading)
- J 22(2): 421 ("sphyryion" type tag for)
(2): 465 (catch, age, & size trends in Bonavista longlining)
(3): 643 (lengths, weights, liver and gonad weights)
(5): 1229 (blood-clotting time)
- 23(1): 109 (vertical migration in NW Atl. Ocean)
(3): 341 (swimming endurance re speed & temperature)
(4): 487 (incorporation of a thetin from zooplankton feed)
(6): 909 (exophthalmia mechanism of eye)
(7): 975 (starvation & refeeding effect on liver & blood constituents)
(8): 1249 (steroid transformations by Stannius corpuscles)
(9): 1465 (tolerance levels to low salinity)
(10): 1607 (digestive tract morphology)
(12): 1835 (degradation of ingested fats during digestion)
(12): 1841 (epithelial border histology of ileum, pyloric caeca, & rectum)
- 24(1): 145 (population dynamics of Arcto-Norwegian)
(2): 357 (α -tocopherol & lipids in tissues of unfed held)
(6): 1315 (cranial osteology)
(7): 1531 (fecundity in Nfld. & Labrador waters)
(11): 2309 (audiogram re cardiogram)
(11): 2398 (oxygen consumption mathematics)
(12): 2549 (white striated myotomal muscle ultrastructure)
(12): 2573 (biology in Ogac L., Baffin Is.)
- 25(3): 555 (analysis of S Gulf of St. Lawrence population)
(5): 837 (muscle glycogen & blood lactic acid re exercise)
(6): 1155 (tonic reaction to sound)
(12): 2623 (cryogenic preservation of sperm)
(12): 2749 (possible effects of harbour seal bounty on Atl. cod infestation by codworm)
- 26(3): 583 (feeding behavior)
(5): 1113 (auditory masking & the critical sound band)
(5): 1273 (feed, Gulf of St. Lawrence & N.S. Banks)
- (12): 3133 (fishery & biology off SW Nfld.)
(12): 3242 (fibrous & cystic lesions in ovaries of aged)
- 27(4): 737 (comparison of 2 sonic methods for estimating spawning stocks)
(5): 963 (locating nematode parasites by ultraviolet fluorescence)
(6): 1131 (in vivo assimilation by muscle & liver of elemental phosphorus from polluted water)
(7): 1177 (digestion rate re temperature & meal size)
(12): 2337 (thyroxine effect on swimming)
- 28(7): 935 (regular component of Passamaquoddy Bay fish communities, N.B.; length frequencies)
(7): 947 (blood pathways effects on blood-pressure drop in gills)
(11): 1727 (movements of young in & out of intertidal zone, Passamaquoddy Bay, N.B.)
- 29(1): 85 (muscle catheptic activity)
(7): 997 (feed resource division, Passamaquoddy Bay, N.B.)
(9): 1295 (acute toxicity of elemental yellow phosphorus to)
(12): 1709 (male gonad morphology re 11 other Gadidae species)
(12): 1776 (first record of *Ichthyophonus hoferi* fungus infection in NW Atl. waters)
- B 154: 1, 27, 154 (as Nfld. resource)
- CAR 1 (toxicity of elemental phosphorus to)
- CJG 13: 1; 14; 15; 16: 25, 27 (Nfld. & Labrador surveys, catches, landings)
- CSG 44 (catches distribution in Gulf of St. Lawrence)
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- T 27 (Strait of Belle Isle summer fishery biological data)
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157 (catches by Maritimes otter trawlers, 1967)
164 (extensive length-weight data)
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225 (associated with Bay of Fundy scallop beds)
260 (standing crop, availability, lengths, weights, etc., from Scotian Shelf surveys, 1958-68)
261 (bibliography for Gulf of St. Lawrence)
333 (larvae & eggs biomass, St. Margaret's Bay, N.S.)
- MSP 14 (popular description (English & French))
- S 886; 887; 890; 928; 930; 949; 955; 1023; 1024; 1025; 1089; 1540 (ICNAF Canadian research reports & summaries)
928 (catch size effect on otter trawl selectivity)
898 (total blood volume)
958 (impaired hormone metabolism in moribund)
970 (new fishing grounds off Labrador & NE Nfld.)
997 (international otolith exchange for comparing age determinations)
1019 (random vs. stratified sampling for age & growth of inshore)

- 1020 (otter-trawl selectivity & girth-length relations)
- 1021; 1208 (age validity from otoliths)
- 1022 (trends in fishery off E Nfld. & Labrador)
- 1052; 1053; 1059; 1060 (behavior, catches, etc., re low sea temperatures in Nfld. & Grand Bank areas)
- 1054 (behavior & concentrations re feed in Nfld. & Labrador areas)
- 1075 (evolution of southern Gulf of St. Lawrence fishery)
- 1087 (behavior towards otter trawl, observed photographically)
- 1135 (metabolism of glyoxalate & pyruvate by sperm)
- 1158 (heterogeneity in length & age compositions of commercial landings)
- 1160 (trend-interpreting difficulties in landings from E Scotian Shelf)
- 1173; 1174 (pyruvate metabolism in testes; ovarian tissue)
- 1209 (offshore fishing effect on inshore Labrador fishery)
- 1231 (uricolytic enzymes in sperm)
- 1237 (CO₂ fixation by sperm)
- 1308 (blood plasma proteins binding of steroids)
- 1318 (biology & fishery of W Nfld. stock)
- 1342 (aminotransferases in eggs & sperm)
- 1349 (muscle tropomyosin isolation by heat treatment)
- 1352 (encyclopedia article on biology, fishery, catches, processing, products, etc.)
- 1370 (tissues lactate dehydrogenase multiple forms)
- 1381 (experimental comparison of fishing with snella hook gear vs. trawl)
- 1409 (gill blood pathways)
- 1489 (binding affinities of blood proteins for sex hormones & corticosteroids in)
- 1493 (assessment of effects of trawl mesh size increases)
- 1540 (catch-effort assessments for ICNAF Subareas 2 & 3 major stocks)
- 1650 (carbon dioxide fixation by testes)
- 1668 (mercury contamination)
- 1674 (erythrocyte lipids)
- 1696 (chlorinated pesticide contamination, Bay of Fundy & Gulf of Maine)
- 1716 (chlorinated terphenyl pesticide deposition in various tissues)
- A 43; 99; 108; 119; 152; 153; 181; 182; 240; 241 (ICNAF Canadian research reports and summaries)
- 133 (feed)
- 136 (underwater behavior observations from "submarine")
- 157 (conversion factors for standard re extreme total re fork lengths)
- 158 (age re length studies by various countries)
- 181 (parasite indicators of geographical origin of stocks)
- 194; 195 (Nfld. & Labrador)
- 240; 248 (comparisons of abundance indices)
- 249 (virtual population assessment in ICNAF Division 2J)
- Cod, Atlantic (composition, products, and quality) (see also preceding heading)
- J 22(1): 13 (salting and smoking effects on protein quality)
- (1): 17, 27 (carbonyl compounds re flavor of salted)
- (1): 83 (glycolytic changes in muscle)
- (2): 411 (quality re freezing rate of frozen stored trap cod)
- (3): 643 (lysolecithinase in muscle)
- (3): 783 (thaw-drip quality of treated and untreated fillets)
- (4): 929 (pro- and antioxidant effects of various metal salts on lean muscle)
- (11): 1809 (unusual fatty acids composition in lipids of one specimen)
- 23(1): 21 (liver decomposition effect on liver oil free fatty acids)
- (1): 27 (amino acids, antioxidants, & pro-oxidants effect on muscle rancidity)
- (1): 155 (irradiation effect on liver re liver oil free fatty acids)
- (3): 357, (4): 487; 24(2): 457; 25(2): 267 (re dimethyl sulfide odor in flesh arising from cod's ingestion of *Limacina helicina* & other planktonic feed)
- (5): 737, (10): 1587 (iron salts effect on test for muscle rancidity)
- (5): 775 (equilibrium moisture values of fresh & salt)
- (6): 921 (nucleotide interference with glycogen determination in red & white muscle)
- (7): 1025 (muscle lipids of fresh vs. cold-stored)
- (7): 1063 (palatability of fillets after single & double freezing)
- (7): 1083 (deck sampling of research vessel catches)
- (9): 1385 (oxidative rancidity in frozen stored fillets)
- 24(1): 127 (shelf life of water- vs. dielectric-thawed fillets)
- (3): 607 (condition & lipid content seasonal changes in flesh & liver)
- (3): 635 (structure details of liver oil)
- (3): 651 (postmortem physicochemical changes in unfrozen)
- (4): 895 (preservation of scrap as raw material for fish protein concentrate)
- (5): 1179 (acetylated monoglycerides as bacteriostatic dip for frozen)
- (7): 1461 (freeze-drying steaks)
- (8): 1693 (light-salted preparation by brining)
- (8): 1717 (adenosine monophosphate aminohydrolyase in prerigor and postrigor muscle)
- (8): 1837 (nucleotide degradation re postmortem changes in relaxed muscle)
- 25(2): 299 (rigor & freezing-thawing processes effect on quality of refrozen)
- (4): 639 (catalysis of flesh oxidative rancidity by metal ions)
- (4): 733 (condition of trap-caught, re quality after freezing)
- (5): 921 (nonbacterial trimethylamine production in frozen muscle)

- (5): 935 (muscle free amino acid changes in gillnetted)
- (7): 1475 (effect on Na tripolyphosphate dip to avoid drip loss in stored unfrozen flesh)
- (8): 1525 (quantitative glycogen & Δ 7P from frozen muscle)
- (10): 2059 (protein extractability re free fatty acids in iced muscle)
- (10): 2083 (fatty acids distribution in flesh lipids)
- 26(9): 2299 (promoters & inhibitors of muscle lipids oxidation)
- (10): 2621 (glycolytic & nucleotide changes in critical freezing zone of prerigor muscle)
- (10): 2727 (free fatty acids reaction with muscle protein iced then frozen)
- (12): 3217 (bacteriology of commercial fillets from fish frozen at sea & thawed in water)
- (12): 3271 (quality evaluation of frozen vs. freeze-dried steaks)
- 27(3): 591 (estimating bone material content in protein concentrate)
- (4): 701 (transition metals ion effects on muscle extractable protein & lipids oxidation catalysis)
- (5): (locating nematode parasites by ultraviolet fluorescence)
- (10): 1685 (dimethylamine vs. trimethylamine formation as index of frozen-storage fillet deterioration)
- 28(1): 1 (dimethylamine production in dark muscle during frozen storage)
- (1): 59 (DDT residues in N.B.)
- (8): 1125 (purines changes in iced fillets)
- (9): 1285 (methylmercury in Bay of Fundy & N.S. Banks)
- 29(7): 1053 (stability of elemental yellow phosphorus in edible muscle during icing, freezing & thawing, frozen storage, salting, cooking)
- B 154 1, 27 (as Nfld. resource)
- CHN 20 (identification of fillets by protein electrophoresis)
- 23 (holding partially frozen, between 25 & 30 F)
- 24 (acceptability of freeze-dried steaks)
- 38 (popular version of J 27(10): 1685 reference above)
- T 68 (fillet analysis for EDTA preservative content)
- 272 (halogenated hydrocarbon residues detected in)
- 280 (effects of shipboard transportation in refrigerated sea water on whole fish & fillets therefrom)
- 288 (monthly changes in stomach contents, Passamaquoddy Bay, N.B.)
- S 929 (protein concentrate processing and characteristics)
- 935 (chilling and freezing on board vessels)
- 945 (liver oil fatty acids as gas chromatography reference standards)
- 972 (fatty acids types in liver & flesh oil)
- 1034 (dimethyl sulfide odor from ingested zooplankton)
- 1043 (antemortem effects of activity on postmortem quality of muscle)
- 1080 (fatty acids positional distribution in triglycerides)
- 1175 (review of lipids changes effects on quality of frozen)
- 1186 (biosynthesis of depot fat from dietary triglycerides)
- 1189 (liver oil fatty acids composition & structure)
- 1193 (pristanic & phytanic fatty acids of liver oil)
- 1203 (positional distribution of monoenoic fatty acids in liver triglycerides)
- 1226 (fatty acids positional distribution in liver triglycerides)
- 1228 (isoprenoid fatty acids of liver oil, re feed)
- 1290 (deterioration & storage life of frozen fish & fillets)
- 1352 (encyclopedia article on processing and products)
- 1363; 1364 (quality re freezing & thawing of fish, then freezing & frozen storage of fillets therefrom)
- 1367 (chemical & physical properties of fish stored chilled & of fillets therefrom)
- 1368 (commercial aspects of reprocessing & marketing sea-frozen)
- 1370 (lactate dehydrogenase multiple forms in tissues)
- 1405 (lipoxidase reaction with polyenoic fatty acids of liver oil)
- 1412 (fluoride content of frames, viscera, bone, fillets, & fish protein concentrate)
- 1420 (handling aboard chill-freezer trawlers)
- 1421 (sea-frozen: bacterial & sanitary quality of products)
- 1453 (urea effect on muscle cathepsin activity determination)
- 1591 (pristane & other hydrocarbons in commercial Canadian liver oil)
- 1604; 1696 (chlorinated pesticide residues in, N.S. banks)
- 1639 (dimethylamine & formaldehyde formation, re changes in frozen stored muscle)
- 1674 (erythrocyte lipids)
- A 12(F); 65 (fillet weight gains & losses when dipped in tap water or brines)
- 27 (environmental & physiological effects on quality of Nfld. trap-caught)
- 28 (metal-catalyzed rancidity in frozen)
- 30 (enzymic degradation of muscle glycogen & adenosine phosphate)
- 31 (quality assessment by Intellectron Fish Tester)
- 98 (composition of protein concentrate from fillets)
- 124-126 (use for fish protein concentrate)
- 156 (effects of icing & freezing on biological length-weight measurements)
- 173 (economics of electronic vs. water immersion thawing)
- 200 (mercury contamination)
- Cod, black (*see* Sablefish)
- Cod, freshwater (*see* Burbot)

- Cod, gray (*see* Cod, Pacific) 34 (distribution, stocks, populations, synonymy, systematics)
- Cod, Greenland (*Gadus ogac*) 62 (tumors)
 J 29(3): 243 (comparisons with polar & toothed cods)
 (12): 1709 (male gonad morphology re 11 other Gadidae species) 89: 26 (depth distribution)
 A 75 (population studies in central Canadian Arctic, 1965) 105 (life history, feed, etc.)
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 S 1416 (sea-freezing in prerigor, rigor, & postrigor, re products quality)
 1419 (5'-nucleotidase in muscle)
- Cod, longfin (*see* Antimora, Pacific)
- Cod, northern (*see* Cod, saffron)
- Cod, Pacific (*Gadus macrocephalus*) (gray cod)
 J 22(1): 53 (drip and rancidity inhibitors)
 (1): 203 (biochemical systematics)
 23(3): 319 (salinity & temperature re embryonic development)
 (5): 701 (partial freezing for preservation)
 24(3): 691 (shrinkage factor in measuring lengths)
 25(8): 1539 (postmortem muscle glycogen & starch degradation)
 (8): 1745 (muscle hydrogenate as substrate for experimental *Clostridium botulinum* growth)
 (8): 1753 (preservatives effects on flesh)
 26(8): 1985 (stock & yield forecast, N Pac. Ocean)
 (9): 2319 (parasites, B.C.)
 27(4): 785 (mathematical analysis of egg hatch percentage)
 (5): 915 (scale reading for aging Hecate Strait is valid)
 28(6): 883 (salinity, temperature, & dissolved oxygen effects on egg development re geographical distribution)
 (8): 1071 (sodium chloride effects on *Clostridium botulinum* growth & toxin production in flesh homogenates)
 B 173: 295 (mention in key to NW America fresh-water cods)
 180: 222 (full description, etc., B.C.)
 CHN 32 (used for Japanese fish paste)
 CNG 73; 82 (in Hecate Strait exploratory fishing)
 78 (review of B.C. trawl fishery & 1967 forecast)
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 24 (sampling of B.C. commercial catches by areas, 1946-65)
 28 (Canadian & U.S. trawl catches off B.C., 1954-65)
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 12 (catch statistics of 1935-65 Canadian & U.S. trawl fishery)
 19: 27 (experiments on embryonic development)
 23 (length composition of 1951-66 B.C. trawled)
- Cod, polar (*Arctogadus glacialis*)
 J 29(3): 243 (morphometrics)
 29(12): 1709 (male gonad morphology re 11 other Gadidae species)
- Cod, saffron (*Eleginus gracilis*) (*E. navaga*)
 J 29(12): 1709 (male gonad morphology re 11 other Gadidae species)
 B 173: 295 (mention in key to NW America fresh-water cods)
- Cod, toothed (*Arctogadus borisovi*)
 J 29(3): 243 (morphometrics)
 29(12): 1709 (male gonad morphology re 11 other Gadidae species)
- Codfishes (*see also* Burbot; Cod; Cusk; Haddock; Hake; Pollock; Rockling; Tomcod)
 J 24(6): 1315 (cranial osteology re specialization development)
 26(2): 421 (comparative cranial osteology)
 (4): 1063 (speciation, as hosts of *Diclidophora* trematode on gills)
 29(12): 1709 (morphological differences in male gonads among 9 Gadidae genera)
 B 155: 185 (descriptions, illustrations, key, etc., Canadian Atl. coast)
 173: 44 (family key), 295 (general description & key to arctic drainage species in NW America)
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- Coding (*see* Marking)
- Codling (*see* Cod (European))
- Codworm (*see* *Phocanema* entries under Nematoda)
- Coelenterata (Cnidaria) (*see also* Invertebrates; *also* classifications of, and common names of certain kinds, e.g. Corals; Jellyfishes; Sea anemones)
 J 25(9): 1803 (caloric content of *Duva multiflora*)
 B 176 (synopsis of Canadian marine)
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- T 55: 11 (identification of B.C.)
225 (associated with Bay of Fundy scallop beds)
- Cohorts (*see also* Populations)
J 28(10): 1573 (mathematical models re animal production-biomass ratio)
- Coila dussumieri* (*see* Anchovy (tropical))
- Colby, Peter James
J 27(4): 677 (trace elements in Great Lakes fishes)
29(6): 975 (eutrophication effects on oligotrophic lakes salmonid communities)
- Cold storage (*see also* Chilling; Freezing; Quality of fishery products; Refrigeration)
S 1461 (thermistor readout monitoring system for temperatures)
- Cole, Charles Franklin
J 27(12): 2374 (chlorinated hydrocarbon residues in winter flounder)
- Cole, Ronald Everett
J 29(4): 399 (physiological effects of varying salinity on 3 Salton Sea fishes, California)
- Coleoptera (beetles) (*see also* Insects, aquatic)
J 24(4): 823 (effect of phosphamidon insecticide on)
26(2): 279 (upstream movements of river larvae)
(5): 1157 (feed, habits, ecology, in small Que. stream)
(12): 3101 (of Crecy L., N.B.)
27(1): 125 (re lake trout feed, L. Opeongo, Ont.)
28(6): 849 (samplings from shallow stream bed)
S 1028; 1080 (fat triglycerides fatty acids of mealworm (larva of *Tenebrio molitor*))
- Collecting, of specimens (*see also* Sampling; Trap)
J 28(8): 1209 (2 simple durable epifaunal collectors)
29(3): 341 (diver-operated underwater plankton collector)
B 173: 1, 356 (fishes from NW Canada & Alaska for identification)
- Collembola (springtails) (*see also* Insects; Insecticides)
A 1532 (*Podura aquatica* in a high Colorado mountain creek)
- Collette, Bruce B.
J 26(5): 1375 (Arctic shanny record, Massachusetts Bay)
- Collins, Curtis Allan
J 29(3): 323 (continuous recording salinity-temperature-pressure instrumentation at Pac. Ocean Station P)
T 106 (Ocean Station P oceanographic data time distribution)
152 (digitizing of salinity-temperature-pressure with shipboard computer)
154; 194 (Ocean Station P oceanographic observations)
- 207 (digitizing expendable bathythermograph data)
- Collins, Gerald Bradford
J 25(5): 867 (olfaction/vision in spawning site choice)
- Collins, John Joseph
J 28(12): 1857 (transfer of kokanee eggs)
- Colobomatus kyphosus* (copepod)
J 27(11): 1943 (new species, parasitic to Pac. ocean perch)
- Cololabis saira* (*see* Saury, Pacific)
- Color (*see also* Pigments; Vision, reactions to)
J 24(7): 1613 (standard surfaces for grading canned Pac. salmon for color; color theory)
28(2): 171, 295 (of waters of small NW Ont. lakes, re similarities & differences among the lakes)
- Colton, John Bowne, Jr.
J 25(11): 2427; 26(10): 2746 (Gulf of Maine temperatures)
- Columbia River
J 22(6): 1407 (brittlestars bathymetric distribution off mouth of)
28(4): 533, (9): 1253, (11): 1739; 29(2): 173 (*Chondrococcus columnaris* disease of salmonids, etc.)
- Columnaris disease (*see also* Bacteria; Disease; *Cytophaga*)
J 28(4): 533, (9): 1253, (11): 1739; 29(2): 173 (*Chondrococcus columnaris* bacteria effects on Pac. salmonids & their eggs)
29(9): 1359 (effect of 2 iodophore disinfectants on *C. columnaris*)
(10): 1425 (inadequacy of several aquarium antibacterial agents against *C. columnaris*)
B 162: 92 (as "high-temperature disease" of sockeye salmon)
MSP 16 (re recommendations for control of fish diseases in Canada)
- Colus stimpsoni* (*see* Whelk, Stimpson's)
- Combfish, longspine (*Zaniolepis latipinnis*) (long-spined greenling)
B 180: 471 (full description, etc., B.C.)
- Comer, Alan George
J 22(2): 307 (shrimp nucleotides)
S 894 (lingcod muscle enzymes)
- Commensalism
J 25(11): 2521 (a microturbellarian with Atl. oyster)
28(10): 1527 (new B.C. records for commensal crabs)
B 179: 12 (*Pinnixa* & *Fabia* pea crabs, also *Malacobdella grossa* nemertean worm, with B.C. clams)
- Commissions (*see* International)

- Communication
A 254 (between scientists through primary journals)
- Communities (*see also* Associations; Populations)
J 26(5): 1157 (aquatic insect, in small Que. stream)
(6): 1415 (concept in marine zoology)
27(4): 621, (12): 2273 (species composition & structure of benthic infaunal, off Washington coast)
28(2): 215 (epilithic diatoms in 4 small NW Ont. lakes)
(2): 231 (crustacean plankton in 45 small NW Ont. lakes)
(2): 311 (planktonic Crustacea in 146 W Canadian alpine & subalpine lakes & ponds)
(7): 935 (fish: seasonal components in Passamaquoddy Bay, N.B., re communities in warmer waters)
(11): 1683 (benthic macroinvertebrates, L. Ontario bays)
(11): 1715 (metabolism of benthic macroinvertebrates, L. Ontario bays)
(11): 1733 (production potential of seaweed-lobster community, St. Margaret's Bay, N.S.)
29(6): entire issue (proceedings of international symposium on Salmonid Communities in Oligotrophic Lakes (N America & Europe))
T 298 (information supplementary to that in J 29(6): 741 reference above)
S 1532 (invertebrates in high mountain North Boulder Creek, Colorado)
1580 (& classification of many shallow-water benthic species, P.E.I.)
- Como Creek, Colorado
S 1577 (2 new dinoflagellate species & associated microflora)
- Compartments, body (*see* Body compartments)
- Compendium (*see* Checklists)
- Competition (*see also* Aggression; Behavior; Feed; Territorialism)
J 26(1): 63 (coho salmon fry, re earlier hypoxial stress)
29(12): 1737 (between juvenile coho & fall chinook salmon in Sixes R., Oregon)
B 162: 231 (re feed in sockeye salmon lakes)
S 1025 (re feed & predator control, ICNAF area)
- Composition (biological)
J 23(11): 1715 (L. Ontario surface waters phytoplankton)
S 952 (of Fraser R. odd-year pink salmon run)
1690 (L. Ontario surface waters phytoplankton)
- Composition, chemical (*see also* Acids, amino; Acids, fatty; Analysis methods (chemical); Limnology; Mineral content; Nutrients, aquatic; Oceanography; Oils and fats; Pollution; Proteins; Waters, natural; etc.; *also* names of elements and of organisms)
J 23(8): 1285 (28 phytoplankton species)
(9): 1353 (changes in pink salmon at sea)
- (11): 1653 (re nutrition value of American crayfish meat)
24(4): 895 (protein concentrate from Atl. cod scrap)
(6): 1291 (freshwater fishmeals)
(6): 1413 (freeze-drying shellfish for total solids assay)
25(11): 2403 (changes during coho salmon parr-smolt transformation)
26(8): 2027, 2037 (beach-spawning capelin, Nfld.)
(8): 2234 (lipids & carotenoids content of Atl. & Pac. salmon)
(9): 2363 (fingerling sockeye salmon re temperature & rations)
(10): 2669 (*Syndesmis franciscana* turbellarian)
(11): 2823 (changes in steelhead trout during parr-smolt transformation)
(11): 2969 (*Parapenaeus* Atl. shrimps)
27(2): 371 (coho & sockeye salmon fry from spawning channel vs. natural environments)
(3): 591 (bone, protein, & ash in herring protein concentrate)
(5): 929 (changes during freshwater growth of sockeye salmon, re length & weight)
28(1): 7 (seasonal changes in freshwater triclad flatworm *Dugesia tigrina*)
(2): 129, 171, 203 (many small NW Ont. lakes water)
(2): 215 (periphyton in 4 small NW Ont. lakes)
(2): 277 (sediments in 16 small NW Ont. lakes)
(3): 369 (sockeye salmon by X-ray spectrometric & multivariate analysis as indicator of geographic sources)
(4): 587 (of water in rainbow trout acclimation tanks)
(4): 606 (juvenile coho salmon blood)
B 151; 151(F) (proximate, of Central Canada freshwater fishes)
T 114 (Canadian Atl. herring meals)
130: 217 (of many Nfld. streams)
198 (queen crab meal products proximate analysis)
200 (multiple discrimination analysis of data from J 28(3): 369 reference above)
217 (petroleum oils re determining origin of polluting spills)
246: 89 (N America Pac. coast trawled fishes: bibliography)
S 1004 (waters of 6 Canadian Arctic lakes)
1273 (partial molal volumes of 16 salts in sea water)
1377 (proximate analysis & amino acids of Atl. herring meals)
1619 (various seaweeds, St. Margaret's Bay, N.S.)
1683 (phosphorus compounds in natural waters)
A 80 (re fish nutritive values)
85 (of freshwater fishmeal, B.C. herring meal)
97; 98 (of herring & Atl. cod products & by-products)
124; 125 (fish protein concentrates)
- Compsomyx subdiaphana* (*see* Clam, milky venus, and Clams, Pacific)
- Computer programming (*see also* Mathematical treatment of data; Models, mathematical)

- J 24(11): 2491 (computer vs. manual calculation of ocean temperature & depth data)
- 25(3): 1731 (summarizing quantitative benthic data)
- 26(1): 131 (allometric weight-length relations)
- (1): 179 (estimating exploited populations)
- 27(1): 156 (program availability for fish lengths re scale measurements; fish condition factors; fish stomach content composition)
- (4): 821 (generalization of the Murphy catch equation)
- 28(1): 102 (plotting bathythermograph transect data on a printer)
- (3): 443 (migration capture-recapture stochastic model)
- (3): 446 (electronic processing of fishery research acoustical data)
- (4): 573 (fry enumeration in streams)
- T 20 (facilities available at St. Andrews Biological Station)
- 39 (tape system for processing fisheries data)
- 40; 112 (multiple discriminant analysis)
- 87 (nonlinear response surfaces analysis; superseded by T 173 & T 311 below)
- 92 (equilibrium yield per recruitment of a fish stock)
- 121 (analysis of feeding heterogeneities re predator body size)
- 129 (statistical analysis of fish length-frequency data)
- 152 (oceanographic salinity-temperature-pressure data)
- 156 (tidal model, Georgia & Juan de Fuca straits)
- 166 (processing Nfld. herring data)
- 173 (nonlinear response surfaces analysis) (supersedes T 87; includes correction sheet; superseded by T 311 below)
- 182 (summarizing ethological data)
- 207 (shipboard digitizing of bathythermograph data)
- 209 (storage & retrieval of indexed & annotated bibliographical references)
- 212 (multiple discrimination analysis of X-ray spectroscopic data)
- 224 (analysis of ringed seal population data)
- 235 (agonistic behavior of lobsters)
- 244 (multivariate analysis for fisheries biology)
- 250 (principle & operation of fish catch & pollution information system)
- 275 (non-normal data analysis)
- 276 (multiple regression & covariance analysis)
- 307 (numerical model for effect of pulp mill effluent on oxygen levels in stratified estuary)
- 311 (nonlinear response surfaces analysis (supersedes T 87 & T 173 above))
- 312 (orientation data analysis)
- 321 (effect of coho salmon predation on pink salmon fry population growth)
- 335 (analysis of ultrasonic tracking records of homing sockeye salmon)
- S 1050 (age distribution from age-length keys & length distributions)
- 1070 (calculating Kendall's *tau*)
- Concertinafish (*see* Sickleafish)
- Conchoderma virgatum* (*see* Cirripedia)
- Conchoecia* (*see* Ostracoda)
- Condition
- J 22(4): 1099 (*Mytilicola* parasite effect on Pac. oyster)
- 23(6): 797 (fatness in S Nfld. herring)
- 24(3): 607 (seasonal changes in Atl. cod flesh & livers)
- (6): 1413 (freeze-drying oysters & clams for total solids assay)
- 26(6): 1473 (re wild brook trout fingerlings overwinter survival)
- (8): 2003 (beach-spawning capelin, Nfld.)
- (8): 2077 (Atl. & Pac. herring re buoyancy)
- (8): 2093 (Atl. salmon parr & smolt re buoyancy)
- (11): 2823 (steelhead trout during parr-smolt transformation)
- 27(1): 156 (computer program availability for fish condition factors)
- (7): 1295 (factor of Atl. salmon smolts re photoperiod regime)
- (10): 1875 (seasonal variations in herring larvae, Maine coast)
- 29(5): 469 (effects from tagging northern pike)
- (5): 507 (factor, herring larvae along S coast of N.S.)
- B 169: 115 (Pac. oyster, B.C.)
- 178 (raft-cultured Pac. oyster in B.C.)
- T 5 (Atl. herring)
- 79 (re Atl. herring fat content & season)
- 147 (Atl. salmon parr re salinity)
- 188 (P.E.I. oysters transplanted to W Nfld.)
- S 1288 (serum protein concentration of hemolymph as index of lobster)
- A 66 (lobsters)
- 98 (fat content of Atl. herring by months for 2 years)
- Conditioned responses (*see* Avoidance reaction; Behavior *and* note to that heading)
- Conductivity, electrical
- J 28(2): 129, 183 (of waters of many small NW Ont. lakes)
- 29(12): 1767 (recording instrument for measuring profiles in inlets)
- Conger conger* (*see* Eel, conger)
- Connecticut River, USA
- J 29(10): 1445 (ultrasonic tracking of adult American shad during migration from sea into)
- (10): 1472 (macroinvertebrate changes with water-level changes below hydroelectric dam)
- (10): 1495 (young American shad feed availability & habits)
- Connolly, G. F.
- J 28(11): 1815 (dispenser for oxygen reagents)

- Connors, Mary Patricia
T 125 (otter trawl performance)
- Conover, Robert James
J 28(9): 1327 (relation of zooplankton & oil following wreck of tanker *Arrow*)
S 1482 (study of eutrophicated marine basin)
1586 (effect of plankton grazing in small marine basin)
- Conroy, David Andrew
J 22(1): 243 (acid-fast bacteria)
(3): 869 (haematology of hake)
- Conservation (*see also* Ecology; Management; Pollution; Rehabilitation; *also* names of international commissions)
B 161: 39 (goldeye)
162 (sockeye salmon)
S 899 (salmons in N. Pacific)
1008 (harp & hood seals)
1018 (review of possible actions for ICNAF area)
A 63 (Atl. herring)
237 (overfishing the sea)
258 (conserving the ocean as a source of natural resources)
- Constantinea* (*see* Rhodophyta)
- Consumption of fish & fish products as food for man (*see* Food)
- Contamination (*see* Bacteria; Pollution; Radioactivity)
- Continental shelf (*see also* Oceanography)
J 24(9): 1845 (bottom residual drift, Canadian Atl. coast)
29(3): 217 (athecate hydroids new records from N Canadian)
S 1109 (surface circulation, Nfld. to Florida)
- Contracecum* (*see* Nematoda)
- Control (*see* Management; Paralytic shellfish poisoning; Pollution; Quality of fishery products)
- Convict fish (*see* Sergeant major)
- Cooke, Ronald Arthur
T 172 (optoelectric plankton sizer)
- Cooking; Precooking (*see also* Canning; Quality of fishery products)
J 29(5): 525 (effect on DDT residues in 4 L. Michigan commercial fishes)
(7): 1053 (yellow elemental phosphorus stability in Atl. cod edible muscle during)
B 151; 151(F) (of various freshwater fish products)
168: 44 (effects on paralytic shellfish toxin in B.C. shellfish)
177: 58 (effects on paralytic shellfish toxin in Canadian Atl. shellfish)
CHN 33; 34 (shrimps for fresh use, freezing, or canning)
- T 249 (detecting marine oil adulteration of "all-vegetable" margarine & cooking fats)
A 89 (same as CHN 33 above)
203 (precooking fish in batter)
- Cooling (*see* Chilling; Ice; Refrigeration; Seawater, refrigerated)
- Coombs, J. F.
J 28(12): 1883 (Manitoulin Is. lakes limnology, Ont.)
- Cooper, Edwin Lavern
J 23(5): 623 (fecundity of brook trout)
(5): 775 (equilibrium values of cod)
27(11): 2063 (cutthroat trout growth in Chef Creek)
- Coote, Arthur Renton
J 28(11): 1815 (dispenser for oxygen reagents)
S 1609 (automatic oceanographic analysis at sea)
1629 (dissolved oxygen distribution in S Atl. Ocean)
1692 (dissolved oxygen distribution in Pac. Ocean)
- Copelata (*see also* Tunicata)
B 176: 82, 178, 225 (synopsis of Canadian zooplanktonic)
T 266 (Frobisher Bay, Baffin Is., N.W.T.)
- Copepoda (*see also* Calanoida; Caligoida; Cyclopoida; Harpacticoida; Lernaecoceridae; Lernaepodidae; Monstriloida; Phyllichthyidea; *also* subclassifications named in those headings; *also* Crustacea; Plankton; Zooplankton)
J 22(2): 558 (development in Arctic Ocean)
23(1): 85 (in feed of NE Pac. Ocean salmon & steelhead trout)
(2): 189, (3): 415 (descriptions, key, etc., of nauplii of free-swimming)
(4): 539 (re spring primary productivity in E subarctic Pacific)
26(1): 143 (*Ommatokoita elongata* on Greenland shark cornea)
(8): 2016 (partitioning community respiration in a lake sediment)
(8): 2135 (composition & horizontal distribution, L. Ontario)
(8): 2221 (in juvenile Pac. salmon feed)
(9): 2319 (list of species parasitic to B.C. fishes)
(9): 2459 (seasonal distribution, composition, & abundance, L. Erie)
(12): 3101 (of Crecy L., N.B.)
27(8): 1335 (effect of rotenone on, in 2 mountain lakes)
(11): 1943 (parasitic, including 2 new species, on Pac. ocean perch)
28(2): 245 (vertical distribution & seasonal abundance in 2 small shallow NW Ont. lakes)
(3): 311 (of 146 W Canadian alpine & subalpine lakes & ponds)
(4): 559 (seasonal calorific content, from 3 small E Ont. lakes)
(6): 928 (differential consumption of, by tide-pool vs. fluffy sculpins cohabiting in tide pools)
B 176 (synopsis of Canadian marine planktonic)

- CNG 84 (popular description of some NE Pac. Ocean)
 CNS 15; 20; 21; 22; 23 (in NE Pac. Ocean salmonids stomachs)
 T 55: 33 (identification of B.C.)
 73 (in Strait of Georgia benthos biomass)
 160 (parasitic to *Lepidion* fishes)
 185 (bibliography re Canada fishes parasitized by)
 313 (keys and references to B.C. marine)
 333 (biomass measurements, St. Margaret's Bay, N.S.)
 S 1206 (parasitic on Atl. salmon)
 1295 (re critical indices of oceanic primary & secondary production)
 1306 (*Shitnoa occlusa* (n.sp.) parasitic on Australian fish)
 1307 (Neobranchiidae parasitic on Australian fishes)
 1568 (Eudactylinidae & Pseudocycnidae from Australian fishes)
 1652 (as affected by enrichment of Great Central L., B.C.)
 1681 (revised annotated list of, from W coast N America marine mammals)
 A 14 (Great Bear L., N.W.T.)
- Copper and derivatives
 J 22(2): 425 (Cu-Zn pollutants lethal levels to young Atl. salmon)
 (4): 929 (inducing oxidative rancidity in cod muscle)
 23(1): 27, (9): 1385 (pro-oxidant effect on Atl. cod muscle)
 24(10): 2169 (sulfate effect on rainbow trout blood serum proteins)
 25(4): 639 (catalyzing marine flesh oxidative rancidity)
 26(9): 2299 (sulfate effect on marine muscle lipids oxidation)
 (9): 2449 (chronic toxicity of fathead minnow to)
 (11): 2785 (detailed tissues study of winter flounder subjected to sulfate)
 27(2): 383 (toxicity to 5 liver enzymes of mummichog)
 (4): 677 (in Great Lakes alewife, spottail shiner, & trout-perch)
 (4): 701 (ion effects on marine muscles extractable protein)
 (5): 847 (concentration in Sunfish L., Ont.)
 (7): 1277 (effect on *Gammarus* amphipod & 2 snail species, in soft water, re pollution)
 (10): 1883 (effect on brook trout blood, re pollution)
 28(5): 655 (long-term effects of sulfate concentrations on brook trout adults, spawning, eggs, & fry)
 (5): 786 (in dressed Canadian fishes from industrial area lakes)
 (6): 843 (level in P.E.I. oysters)
 29(1): 45 (goldfish response to shallow gradient of $CuCl_2$)
 (4): 450 (amount in Atl. oyster soft tissue)
 (9): 1351 ($CuSO_4$ effect on salmonid olfactory bulb electrical responses)
 (10): 1500 (chelating effect of spent sulfite liquor on dissolved copper affects prediction of mine effluent copper toxicity to fish)
 (12): 1691 ($CuCl_2$, re toxicity to *Daphnia magna*)
 B 125R: 113; 167: 115 (determination in sea water)
 169: 145 (in Pac. oyster)
 CSG 52 (in antifouling coatings for boats)
 T 114 (content of Atl. & Pac. herring meals)
 119 (oxide in antifouling paints for ships hulls)
 120 (in Bedford Basin waters, N.S.)
 202(F) (diatoms as indicators of, and effects of, in NW Miramichi R. basin, N.B.)
 S 931; 961; 1007; 1085 (toxicity towards Atl. salmon)
 999 (sublethal Cu-Zn pollution re young Atl. salmon & insect larvae)
 1196 (re mining pollution effects on spawning Atl. salmon)
 1291 (antipollutant agent for protecting fish from)
 1377 (content of Atl. & Pac. herring meals)
 1406 (re bacterial disease of salmon & suckers, NW Miramichi R., N.B.)
 1529 (distribution in L. Ontario)
 1553 (re mining effluent effects on NW Miramichi R. vascular plants)
 A 28; 73 (in catalyzing rancidity for experiments on fish quality changes)
 58 (sulfate as molluscicide)
 85 (in freshwater fishmeals)
 88 (same as CSG 52 above)
 111 (NTA sequestering agent to combat pollution from)
 222 (avoidance reaction sensitivity to sublethal levels by Atl. salmon & brook trout)
- Coppermine River, N.W.T.
 J 26(8): 2252 (broad whitefish age & growth)
- Copulation (see Mating; Reproduction)
- Corals
 T 159 (*Eunephthya* in Canadian Arctic Archipelago)
 225 (associated with Bay of Fundy scallop beds)
- Corbett Lake, B.C.
 J 25(1): 81 (limnology re trout mortality)
- Cordova Bay, Victoria, B.C.
 S 1120 (tracing currents by aerial photography, re coastal pollution)
- Coregonidae (see also Cisco species; Ciscoes; Inconnu; Whitefish species; Whitefishes)
 J 25(8): 1667 (cytotaxonomic studies of Great Lakes)
 29(6): 639, 717, 765, 787, & some other papers in this special issue (re salmonid communities in oligotrophic lakes of N America & Europe)
 (6): 639 (systematics of, in recently glaciated lakes)
 S 1450 (review of northern world parasites of)
- Coregonus* (= *Leucichthys*)
albula (see Ciscoes)
alpenae (see Cisco, longjaw)
artedii (see Cisco)

artedii complex (see Ciscoes)
autumnalis (see Cisco, Arctic)
clupeiformis (see Whitefish, lake)
clupeiformis complex (see Whitefish, lake)
hoi (see Bloater)
johanna (see Cisco, deepwater)
kiyi (see Kiyi)
laurettae (see Cisco, Bering)
nasus (see Whitefish, broad)
nelsoni (see Whitefish, humpback)
nigripinnis (see Cisco, blackfin)
pidschian (see Whitefish, humpback)
reighardi (see Cisco, shortnose)
sardinella (see Cisco, least)
sardinella complex (see Cisco, least)
tullibee (see Ciscoes)
zenithicus (see Cisco, shortjaw)

Corers

J 27(10): 1691 (efficiencies of various, for sampling fresh-water benthos)
 (10): 1867 (multiple corer for sampling profundal benthos)
 28(3): 365 (simple corer vs. Ekman grab for sampling shallow-water benthos)

Cormier, Maurice George

J 24(2): 357 (α -tocopherol in some Atl. fish and shellfish)

Cormorant, common (*Phalacrocorax carbo*), and double crested (*P. auritus*)

T 272 (halogenated hydrocarbon residues detected in body)
 S 1633; 1696 (halogenated hydrocarbon residues detected in eggs & tissues, Bay of Fundy)

Corn oil

S 1170 (stereospecific analysis of triglycerides)

Cornea (see Eye)

Cornick, John Walter

J 23(9): 1325 (incidence of *Gaffkya homari* as cause of gaffkemia disease in lobster)
 (9): 1451 (lobster hemolymph)
 24(11): 2339 (lobster muscle weight)
 (12): 2623 (lobster susceptibility to gaffkemia)
 25(4): 695 (*G. homari* interaction with lobster defense mechanism)
 (4): 795 (*G. homari* pathogenicity for Atl. rock crab)
 26(1): 1 (lobster defenses against gaffkemia)
 (9): 2503 (temperature effects on gaffkemia)
 CHN 40 (gaffkemia & storage temperatures re red crab)
 41 (gaffkemia among stored lobsters)
 42 (gaffkemia control in lobster storage facilities)
 S 1144 (lobster hemocytes)
 1727 (*G. homari* effects on lobster hemolymph constituents)

Corophium (see Amphipoda)

Corrections, lists of (*Note*: These references, but not the actual corrections, are shown after the affected entries under author and subject headings)
 J 25(8): 1759; 26(8): 2263; 27(8): 1499; 28(8): 1219; 29(8): 1241 (to recent FRB publications)

Corticosterone and derivatives (see Cortisol; Hormones; Steroids)

Cortisol; Cortisone (see also Hormones; Steroids)

J 25(1): 71 (fluorimetric determination in salmonid plasma)
 (7): 1465 (metopirone effect on concentration of, in salmon & trout plasma)
 26(7): 1789 (injection effects on secretion rate of gonadectomized female sockeye salmon)
 27(3): 596 (simultaneous determination in salmonid plasma)
 (6): 1162 (rainbow trout blood cortisol content)
 (6): 1169 (in sockeye salmon blood after ACTH intra-arterial injection)
 (12): 2286, 2323 (gonadectomy effects on secretion rates in male & female sockeye salmon)
 28(4): 477, 485 (histological effects on various tissues of gonadectomized sockeye salmon)
 S 1116 (transcortin binding in Atl. salmon plasma)
 1153 (of sockeye plasma re stress)
 1250 (sockeye sexual maturation effects on injected radioactive)
 1308 (binding by fish plasma proteins)
 1310; 1338 (changes in dynamics of, re sockeye sexual maturation)
 1337 (adrenalectomy effect on American eel plasma cortisol, etc.)
 1372 (cortisol injection effects on skate liver glycogen levels)
 1403; 1432 (cortisol biosynthesis by ratfish interrenal tissue)
 1410 (re presence of cortisol in Atl. hagfish & sea lamprey blood)
 1628 (cortisol & cortisone re corticosteroids in Atl. halibut)
 1665 (some comparative aspects of corticosteroid metabolism in fishes, birds, reptiles, amphibians, & mammals; also protein binding of corticosteroids: review)
 1666 (are corticosteroids present in the blood of all fish?)

Corvina, orangemouth (*Cynoscion xanthulus*)

J 29(4): 399 (physiological responses to various salinities)

Corwin, Nathaniel

J 27(11): 2081 (phytoplankton relation to turbulence & nutrient renewal)

Corynebacterium (see also Bacteria; also references to disease under Kidney)

J 23(8): 1281 (heat resistance of)
 24(1): 9 (in fresh lake whitefish)

- 26(10): 2659; 28(3): 335 (ingested by oligochaetes in Toronto harbour sediments)
 (10): 2760 (in culturing algal feed for rearing bivalve larvae)
 29(11): 1513 (toxicity & efficacy of antibiotics against chinook salmon kidney disease)
- Coryphaena hippurus* (see Dolphin)
- Coryphaenoides acrolepis* (see Rattail, roughscale)
cyclolepis (see Rattail, smoothscale)
filifera (see Rattail, filamented)
liocephalus (see Rattail, bearded)
pectoralis (see Rattail, pectoral)
rupestris (see Grenadier)
- Coryphopterus nicholsi* (see Goby, blackeye)
- Coscinodiscus concinnus* (see also Bacillariophyta)
 S 989 (growth-rate determination technique)
- Cosenza, Benjamin John
 J 29(3): 333 (bluefish intestine aerobic microflora)
- Costaria* (see Phaeophyta)
- Cottus aleuticus* (see Sculpin, coastrange)
asper (see Sculpin, prickly)
hairdi (see Sculpin, mottled)
cognatus (see Sculpin, slimy)
pollux (see Sculpins)
rhotheus (see Sculpin, torrent)
ricei (see Sculpin, spoonhead)
scorpius (see Bullhead)
- Couesius plumbeus* (see Chub, lake)
- Counting; Enumeration (see also Census)
 J 25(4): 823 (method for coho salmon fry in small streams)
 28(4): 573 (technique for stream-migrating kokanee fry; also computer programming of data)
 (7): 1035 (quick statistical methods for analyzing digital echo fish count sequences)
 29(7): 1075 (photoelectric automatic counter-sizer for plankton)
 T 215 (photoelectric fish counter)
 331 (summary of salmon counts from Babine R. counting fence, B.C., 1967-71)
 S 1503; 1688 (suspended particles in sea water with Coulter counter)
 1688 (review of several methods for fine-grained suspended-sediments analysis)
- Courtney Lake, B.C.
 J 25(1): 81 (limnology re trout mortality)
- Courtship (see also Mating; Reproduction; Spawning)
 S 1535 (chinook salmon gonadotropin effect on sexual behavior of hypophysectomized & gonadectomized female guppies)
- Cousens, Norman Bruce Forrest
 J 29(7): 1015 (structure of Lernaeopodidae attachment organ)
 Cow (see Beef; Cattle)
 Cowichan River, B.C.
 J 25(3): 599 (chum salmon fry feeding in)
 Cowley, Leonard Joseph
 T 254 (phosphorus levels in Nfld. water)
 Cox, Allan Clayton
 J 27(7): 1329 (cholesterol in the chick)
 Cox, Edward Thomas
 J 27(5): 976 (swimming speed in rainbow trout)
 Cox, Robert Edwin
 S 1528 (geological fate of chlorophyll)
 1722; 1723 (diagenesis & maturation of phytol from an ancient sediment)
 Crab (in addition to the following headings, see the several Crabs headings)
 Crab, blue king (*Paralithodes platypus*)
 J 25(3): 439 (description of laboratory-reared larvae)
 Crab, box
 J 28(10): 1543 (first *Lithodes couesi* & *Paralomis verrilli* records for B.C.)
 T 30; 210 (taken in FRB experimental trawl surveys, B.C.)
 Crab, deep-sea red (*Geryon quinquedens*)
 J 27(6): 1158 (gauge for measuring carapace)
 CHN 40 (recommended live storage temperatures; resistance to gaffkemia lobster disease)
 CSG 50 (description)
 T 103; 122 (catches in NW Atl. experimental otter trawling, 1968)
 S 1527 (muscle sterols)
 Crab, deepwater king (*Lithodes aequispina*)
 J 27(4): 818 (parasitism by *Briarosaccus callosus* barnacle)
 Crab, Dungeness (*Cancer magister*) (Pacific edible crab) (see also Crabs)
 J 23(9): 1319 (premating & mating behavior)
 24(8): 1833 (*Clostridium botulinum* spore germination in tissue extracts)
 26(2): 389 (culturing larvae)
 27(1): 93 (effect of Sevin insecticide on various stages)
 28(8): 1191 (amino acid & fatty acid composition of tissues)
 B 169: 157 (predator on Pac. oyster, B.C.)
 T 1 (131 references, bibliography)
 7; 56; 181; 257; 317 (catches in B.C. commercial groundfish trawling)
 S 895 (deoxyribonucleic acids of)
 1041 (embryo guanosine derivatives)
 A 200 (mercury contamination, B.C.)

- Crab, fiddler (*Uca pugilator*)
 J 29(10): 1491 (temperature-stress effect of mercury uptake by)
- Crab, graceful (*Cancer gracilis*)
 B 169: 157 (predator on Pac. oyster, B.C.)
 S 895 (deoxyribonucleic acids of)
- Crab, green (*Carcinides maenas*)
 J 27(10): 1898 (2 digestive tract enzymes)
 28(9): 1225 (cadmium toxicity tests)
 S 1527 (muscle sterols)
- Crab, green shore (*Hemigrapsus oregonensis*) (see also Crabs, shore)
 S 1555 (claw-shuddering behavior during attempted male-male mating)
- Crab, Jonah (*Cancer borealis*)
 J 25(3): 607 (lobster pathogen *Gaffkya homari* effect on hemolymph of)
 CSG 50 (description; potential Atl. fishery)
 T 103; 122 (catches in experimental otter trawling, NW Atl., 1968)
 S 1527 (muscle sterols)
- Crab, king (*Paralithodes camtschatica*)
 J 22(1): 101 (reproduction)
 23(5): 729 (fishery effect on populations size-class structure)
 24(12): 2627 (breeding in ocean environment)
 26(10): 2737 (delayed mating effects on reproduction)
 27(4): 818 (parasitism by barnacle)
 S 895 (deoxyribonucleic acids of)
 1264 (desmosterol & 6 other sterols in)
 A 90; 103 (fishery increase along B.C. & Alaska coast)
- Crab, northern stone (*Lithodes maia*)
 CSG 50 (description)
- Crab, Pacific edible (see Crab, Dungeness)
- Crab, porcelain (*Petrolisthes cinctipes*)
 J 28(10): 1543 (northern range extension in B.C.)
- Crab, queen (*Chionoecetes opilio*) (snow crab; spider crab)
 J 25(8): 1729 (oxygen consumption at low temperature)
 (8): 1733 (temperature resistance)
 26(7): 1899 (in W Canadian Arctic)
 27(4): 701 (transition metals ion effects on muscle extractable protein & lipids oxidation catalysis)
 (6): 1158 (gauge for measuring carapace)
 (9): 1607 (maturity, mating, & egg laying)
 28(4): 509 (wastes carotenoids; also as feed to improve brook trout pigmentation)
 29(1): 85 (muscle catheptic activity)
 (4): 407 (lipids composition & fatty acids)
 (4): 447 (mating behavior)
 B 154: 122 (as Nfld. resource)
 CSG 50 (description, life history, distribution, abundance, size, fishery, meat yield, potential)
- T 102 (underwater observations from "cubmarine")
 198 (lipid content & composition of tissues & meal products)
 204 (tag recaptures & movements of male, Gaspé region of Gulf of St. Lawrence)
 292 (observation from towed underwater automatic camera sled)
 S 895 (deoxyribonucleic acids of)
 1264 (desmosterol & 3 other sterols in)
 1527 (muscle sterols)
 1676 (ecdysis behavior)
 A 132 (FRB research on)
 136 (underwater observations from cubmarine)
 138 (distribution, biology, fishery, processing, etc.)
 176(F) (Canadian Atl. fishery & tagging)
 217(F) (synopsis of biology & fishery)
 255 (circumpolar distribution)
 256 (biology, tagging, fishery, etc., Canadian Atl. coast)
 263 (biology, fishery, & marketing, Canadian Atl. coast)
- Crab, red (see Crab, rock (Pacific))
- Crab, rock (Atlantic) (*Cancer irroratus*)
 J 25(3): 607, (4): 795 (lobster pathogen *Gaffkya homari* effect on hemolymph of)
 27(3): 535 (distribution density on scallop beds)
 (6): 1158 (gauge for measuring carapace)
 (10): 1898 (2 digestive tract enzymes)
 28(9): 1285 (methylmercury in, off N.S.)
 29(2): 161 (biology & fishery, Northumberland Strait)
 (9): 1347 (fuel oil residues in, 26 months after oil spill in Chedabucto Bay, N.S.)
 (10): 1479 (some life history aspects of, Gulf of Maine)
 B 154: 122 (as Nfld. resource)
 CSG 50 (description, distribution, abundance, size, fishery, meat yield, potential)
 T 103; 122 (catches in experimental otter trawling, NW Atl., 1968)
 217 (pollution from petroleum oil spills)
 S 1527 (muscle & egg sterols)
 1569 (determination of residual fuel oil contamination in)
- Crab, rock (Pacific) (*Cancer productus*) (red crab)
 B 169: 157 (predator on Pac. oyster, B.C.)
 T 319 (mortality from phytoplankton bloom causing oxygen depletion)
- Crab, snow (see Crab, queen)
- Crab, spider (see Crab, queen; Crab, toad; Crabs, spider)
- Crab, tanner (*Chionoecetes bairdi* and *C. tanneri*)
 J 28(10): 1527 (new distribution record, B.C.)
 29(4): 423 (size at maturity determination, re legal size)
 T 257; 317 (taken in B.C. trawl fishery)
 A 255 (Pac. distribution)

- Crab, toad (*Hyas araneus*) (see also next heading)
 J 27(6): 1158 (gauge for measuring carapace)
 CSG 50 (description)
 S 895 (deoxyribonucleic acids of)
 1527 (muscle & egg sterols of)
- Crab, toad (*Hyas coarctatus*) (spider crab)
 J 25(3): 607 (lobster pathogen *Gaffkya homari* effect on hemolymph of)
 26(7): 1899 (W Canadian Arctic)
 27(6): 1158 (gauge for measuring carapace)
- Crabmeal (see also Fishmeal)
 J 28(4): 509 (for feeding brook trout to improve pigmentation)
 T 198 (lipid content & fatty acids, tocopherol, & proximate analysis, of queen crab)
- Crabs (Atlantic) (see also Decapoda; also names of species)
 J 24(9): 1873 (list of, collected in Hudson Bay)
 CSG 50 (descriptions, life history, size, distribution, abundance, & as resource, fresh & canned)
 T 208 (bioassays re elemental phosphorus assimilation, Nfld.)
 255 (associated with Bay of Fundy scallop beds)
 S 1668 (mercury contamination)
 A 200 (mercury contamination, Canadian Atl. coast)
- Crabs (Pacific) (see also Decapoda; also names of species)
 J 28(10): 1527 (several new records & range extensions, B.C. coast)
 B 179: 12 (commensal or parasitic, re B.C. clams)
 CNG 84 (popular description of some NE Pac. Ocean)
 CNS 14; 19 (B.C. trawl-caught landings, 1964, 1965)
 15 (in NE Pac. Ocean salmonids stomachs)
 T 30 (*Cancer oregonensis*, etc., in experimental trawling, B.C.)
 S 898 (deoxyribonucleic acids of *C. oregonensis* & *C. antennarius*)
 1527 (*Erimacrus isenbeckii* (Japanese) muscle sterols)
 1668 (mercury content, B.C.)
 A 200 (mercury contamination, B.C.)
 255 (*Chionoecetes opilio elongatus, japonicus, bairdii, & tanneri* circumpolar distribution; fisheries)
- Crabs, commensal
 J 28(10): 1527 (new B.C. records & range extensions for *Scleroplax granulata, Pinnotheres pugettensis, & P. taylori*)
 B 179: 12 (*Pinnixa faba, Pinnixa littoralis, & Fabia subquadrata* in B.C. clams)
- Crabs, hermit (Anomura)
 J 26(7): 1899 (*Pagurus* in W Canadian Arctic)
 28(9): 1225 (cadmium toxicity tests)
 (9): 1285 (methylmercury in *Pagurus* off N.S.)
 (10): 1527 (new records & range extensions in or to B.C. coast, including *Orthopagurus minimus, Parapagurus pilosimanus, & several Pagurus* species including 3 new: *P. caurinus, P. quaylei, & P. stevensae*)
 CNS 15 (in NE Pac. Ocean salmonids stomachs)
 T 30 (*Pagurus* in B.C. experimental groundfish trawling)
 S 1527 (*Pagurus longicarpus* & *P. bernhardus* muscle & egg sterols)
 1569 (determination of residual fuel oil contamination in)
- Crabs, shore (see also Crab, green shore)
 B 169: 158 (*Hemigrapsus* predator on B.C. oyster beds)
- Crabs, spider (see also Crab, queen; Crab, toad)
 T 30 (*Oregonia gracilis* & *Chorilia longipes* in B.C. experimental trawling)
 A 255 (circumpolar distribution)
- Craig, Peter C.
 J 28(1): 115 (meristic differences in *Salvelinus alpinus*)
- Craigie, James Smith
 J 26(10): 2703 (sublittoral flora of Halifax Co., N.S.)
 (11): 2959 (*Monochrysis lutheri* salinity-induced changes)
 S 10; 1183 (photosynthesis in algae)
- Craneflies (see Tipulidae)
- Crangon (see Shrimp, sand; Shrimps)
- Crangonidae (see Shrimp, sand; Shrimps)
- Crangonyx richmondensis occidentalis* (see Amphipoda)
- Crania californica* (Brachiopoda)
 T 268 (in B.C. faunistic surveys since 1960)
- Cranium (see also Jaw; Osteology; Otoliths; Teeth)
 J 24(6): 1315 (osteology of Gadidae)
 (7): 1623 (California sea lion found off Nfld.)
 (12): 2503 (stranded Cuvier's beaked whale)
 25(9): 1843 (of new genus & species of fossil sea lion)
 B 171 (identifying B.C. marine mammals from skull remains)
 S 1240 (measurements of stranded Cuvier's beaked whales)
 A 158 (haddock head girth re fork length)
- Crappie, black (*Pomoxis nigromaculatus*)
 J 23(12): 1845 (mouth & body form re feeding ecology)
 24(3): 695 (blood low-mobility proteins)
 (5): 927 (limnetic larvae in N Wisconsin lakes)
 25(2): 285 (feeding biology)
 (6): 1199 (low temperature effects on feeding in 3 Ont. localities)
 (8): 1651 (plasma protein-bound inorganic iodide)
 28(7): 957 (vulnerability to northern pike predation)
 (11): 1811 (suitable for introduction into alkaline eutrophic lakes)
 29(3): 275 (14 parasites of, Lake of the Woods, Ont.)

- (9): 1283 (cadmium content, from N.Y. State waters)
 S 1718 (organochlorine pesticide residues in Canadian commercially caught)
- Crappie, white (*Pomoxis annularis*)
 J 28(7): 957 (vulnerability to northern pike predation)
 29(2): 173 (*Chondrococcus columnaris* disease seasonal distribution, Columbia R.)
- Crassostrea gigas* (see Oyster, Pacific)
virginica (see Oyster, Atlantic)
- Crayfishes
 J 23(11): 1658 (chemical composition re nutritive value of meat of *Astacus astacus*, *A. leptodactylus*, & *Orconectes limosus*, as reared in Poland)
 25(8): 1651 (plasma protein-bound inorganic iodide of *Cambarus*)
 27(1): 125 (re lake trout feed, L. Opeongo, Ont.)
 (6): 1165 (*O. propinquus* mortality from coldwater seiche, Georgian Bay, Ont.)
 S 1128 (sex ratio of L. Superior *Orconectes*; occurrence of *C. bartoni*)
 1465; 1468; 1486 (*Pacifastacus trowbridgii* copulatory, egg-laying, & maternal-offspring behavior)
 1527 (muscle sterols)
 1557 (temperature & photoperiod effects on *O. virilis* ovarian maturation & egg-laying)
 A 135 (endocrine levels effect on *O. virilis* molting photoperiod)
- Crean, Patrick Bernard
 B 156 (physical oceanography of Dixon Entrance, B.C.)
 T 156 (tidal model of Georgia-Juan de Fuca straits system)
- Creaser, Edwin Philip, Jr.
 J 28(7): 1049 (water-sampling receptacle for mud flats)
- Creatine
 J 25(12): 2711, 2715 (kinase localization & polymorphism in fish muscle)
 26(10): 2621 (re critical freezing zone of Atl. cod muscle)
- Crey Lake, N.B.
 J 23(11): 1799 (eels, re trout production)
 25(10): 2011 (steps to increase trout growth rate & yield)
 26(12): 3101 (environment & biota changes after fertilization)
 S 1132 (bird predation on salmon & trouts)
 1133 (movement of planted hatchery-reared trouts from)
- Crepidula fornicata* (a colonial gastropod)
 J 24(5): 1165 (shell-weight re age in British waters)
 S 1679 (sterols)
- Cressoniella montana* (see Diptera)
- Crewe, J. S.
 S 1420 (handling fish aboard chill-freezer trawlers)
- Cribrilina annulata* (see Bryozoa)
- Cricotopus* (see Chironomidae)
- Crinoids
 J 24(4): 833 (2 species from a drifting ice island off E Greenland)
 T 159 (in Canadian Arctic Archipelago)
- Crisp, Dennis John
 J 25(6): 1161 (N American E coast *Hemioniscus balani* & distribution)
 (12): 2633 (transplantation of *Balanus balanoides*)
- Cristispira* (spirochaete)
 B 169: 21 (associated with Pac. oyster crystalline style)
 S 1469 (occurrence in 12 of 62 W Canadian marine bivalve species)
- Cristivomer* (see also *Salvelinus*)
 J 22(3): 767 (electrophoretic patterns of *Salvelinus* vs. *Cristivomer* myogen & blood protein)
- Croaker, Atlantic (*Micropogon undulatus*)
 J 29(11): 1605 (voltage & pulse rates for inducing electroaxis in)
- Croaker, white (*Genyonemus lineatus*) (kingfish)
 B 180: 294 (full description, etc., B.C.)
- Crop, standing
 J 22(2): 399 (brook trout re Ellerslie Brook siltiness, P.E.I.)
 23(2): 263 (lake whitefish, Georgian Bay, Ont.)
 27(6): 1087 (harvestable brown and brook trout in an Ont. stream)
 (11): 2009 (phytoplankton, Clear L., Ont.)
 28(5): 711 (of 2 amphipod species, Marion L., B.C., re bioenergetics & secondary production)
 T 260 (Scotian Shelf groundfishes)
- Cross, Ford A.
 J 25(11): 2461 (⁶⁵Zn in marine crustaceans)
 28(11): 1783 (distribution of ⁶⁵Zn in marine ecosystem)
- Crossman, Edwin John
 J 22(5): 1261 (Esocidae hybrids)
 26(1): 175 (pike & muskellunge identification)
- Crouch, River (England)
 J 24(3): 569 (feeding & migration of pink shrimp)
- Crowding
 J 29(2): 207 (re sablefish culture in tanks)
- Crozier, George Frederick
 J 27(5): 973 (tissue carotenoids in prespawning & spawning sockeye salmon)

- Crustacea (general) (see also Anostraca; Branchiopoda; Branchiura; Cirripedia; Copepoda; Malacostraca; Ostracoda; Plankton; Zooplankton; also subclassifications named in those headings)
- J 24(7): 1553 (of Penobscot R. estuary, Maine; correction on J25(8): 1760)
- 25(7): 1311 (pressure effect on respiration of vertically migrating)
- 26(1): 55 (in Wash. coast benthic infauna standing crop)
- (5): 1273 (in Atl. cod & haddock feed)
- 27(4): 621 (identification & distribution of benthic infaunal communities, Washington coast)
- (6): 1147 (sonic tag for large)
- (8): 1335 (lethal effects of rotenone on planktonic, in 2 mountain lakes)
- 28(1): 35 (differences upstream & downstream of a dammed Ont. lake)
- (2): 231 (communities in plankton of 45 small NW Ont. lakes)
- (2): 245 (vertical distribution & seasonal abundance in 2 shallow NW Ont. lakes)
- (6): 928 (in feed of fluffly & tidepool sculpins)
- (11): 1683 (benthic macroinvertebrates associations & species diversity, L. Ontario bays)
- 29(8): 1234 (upward-swimming activity from river estuarial benthos)
- (10): 1451 (abundance re Great Lakes eutrophication)
- B 176 (synopsis of, in Canadian marine zooplankton)
- CNG 84 (popular description of some NE Pac. Ocean)
- T 55 (identification manual for B.C. marine)
- 76 (in tidal Ostrea Lake, N.S.)
- S 1107 (distribution of decapods in NW Atl.)
- 1450 (parasitic to northern world coregonid fishes: review)
- 1527 (flesh sterols of 14 species; egg sterols of 3 species)
- 1567 (as enemies of fishes, re diseases)
- 1672 (summary of planktonic communities, in 264 N America lakes)
- A 224 (parasitic to N American, USSR, & European coregonid fishes)
- Cryopreservation (see Superchilling; Refrigeration; Sperm)
- Cryptacanthodes maculatus* (see Wrymouth)
- Cryptobia* (flagellates)
- J 23(12): 1965 (first record of *C. salmositica* in sockeye salmon)
- 26(4): 1075 (*C. bullocki* in fishes blood)
- 29(9): 1291 (*C. dahli* taxonomy, prevalence, & specificity in lumpfish)
- Cryptochironomus*; *Cryptocladopelma* (Chironomidae)
- S 1588 (re synonymy with *Harnischia*)
- Cryptomonas* (see Cryptophyceae; Pyrrophyta; also Algae; Phytoplankton)
- Cryptophyceae (see also Pyrrophyta; also Algae; Phytoplankton)
- J 23(3): 357 (thetin derivative as dimethyl sulfide precursor)
- 25(6): 1229 (*Cryptomonas curvata* & *C. erosa* in phytoplankton ecology of an Ont. reservoir)
- (8): 1603 (fatty acids)
- 27(2): 335 (glycerol enhancement of phototropic growth)
- (11): 2018 (of Clear L., Ont.)
- 28(2): 195 (of several small NW Ont. lakes)
- (11): 1763 (effect of phosphate & nitrate lake enrichment on)
- 29(11): 1595 (artificial fertilization effects on, Marion L., B.C.)
- S 1040 (enolase activity)
- 1113 (extracts as bactericides)
- 1159 (photosynthetic thetin in)
- 1197 (aldolase activity re phylogeny)
- 1198 (*Hemiselmis virescens* phototrophic growth)
- 1448 (axenic cultures survival re prolonged exposure to darkness)
- 1491 (ability to cleave phenylalanine aromatic ring)
- 1626 (*Chroomonas salina* & *Hemiselmis virescens* protein content & threonine dehydratase activity)
- A 40 (same as S 1159 above)
- CTC (see Antibiotics)
- Ctenophora
- J 26(6): 1535 (*Berøe* in Ogac L., Baffin Is., N.W.T.)
- B 176 (in Canadian marine zooplankton)
- CNG 84 (popular description of some NE Pac. Ocean)
- T 55: 20 (identification of B.C.)
- 266 (Frobisher Bay, Baffin Is.)
- 282 (*Pleurobrachia pileus* biomass measurements, Bedford Basin, N.S.)
- 333 (*P. pileus* biomass measurements, St. Margaret's Bay, N.S.)
- "Cubmarine" (see Submersibles)
- Cucin, Daniel
- J 23(2): 221 (lake whitefish exploitation, Georgian Bay, Ont.)
- Cuerrier, J.-P.
- J 25(7): 1511 (Saskatchewan R. lake sturgeon age & growth)
- Culea inconstans* (see Stickleback, brook)
- Culex pipiens* (see Culicidae)
- Culicidae (mosquitoes; gnats) (see also Diptera; Insects; Insecticides; Invertebrates)
- J 28(5): 705 (biological magnification & degradation of insecticides by *Culex pipiens*)
- B 174 (nearctic & palaearctic *Chaoborus*)
- S 1146 (oxidase-peroxidase system in *Aedes aegypti*)
- 1532 (*Aedes* of a high Colorado mountain stream)

- Culley, Dudley D., Jr.
J 26(9): 2395 (resistance patterns in mosquitofish)
- Cullimore, Denis Roy
J 29(2): 195 (algal assay method for nutrient parameters in water)
- Cultch (*see* Culture; Oyster)
- Culture (*see also* Bacteria; Hatcheries; Feed; Rations)
J 23(4): 595 (Atl. oyster cardiac tissue)
25(8): 1745 (fish muscle homogenate for experimental growth of *Clostridium botulinum* bacteria)
26(1): 150 (calanoid copepods in synthetic sea water)
(2): 229 (natural vs. artificial stream rearing of sockeye salmon fry)
(2): 299 (bacteriovorous Protozoa)
(2): 389 (Dungeness crab larvae)
(2): 461 (factors affecting rainbow trout ovary cells in vitro)
(4): 741 (*Schistocephalus solidus* cestode)
(4): 935 (*Phocanema decipiens* nematode)
(5): 1133 (experimental nutrient enrichment of sea water for phytoplankton)
(5): 1347 (chemical factors affecting calanoid copepod)
(5): 1378 (mouse fibroblast cells for detecting water pollution)
(5): 1385 (*Gaffkya homari* bacteria)
(6): 1605 (*Cyclops bicuspidatus thomasi* copepod)
(8): 2250 (*Ligula intestinalis* cestode in laboratory)
(10): 2760 (bacterial flora of algal feeds for Atl. clam & oyster larvae)
27(5): 887 (vs. natural conditions re photoplankton studies)
28(4): 517 (first vibriosis records in Canadian cultured Pac. salmon; correction on J28(8): 1219)
(8): 1113 (calorie-protein ratio for brook trout rations)
29(2): 207 (sablefish culture a potential new industry)
(4): 413 (laboratory, of prawn larvae)
(5): 501 (mouse-cell, for mercuric chloride pollution bioassay)
(7): 1071, 1082 (compact temperature-controlled recirculating unit for fish)
(12): 1769 (salmon-canning waste water as bacterial culture media, & possibility of useful products therefrom)
B 131(F) (French edition of 1961 original English edition on oyster culture in Canadian Maritime Provinces. *See* Bulletin 164 for complete indexing)
169: 48, 57, 65 (Pac. oyster, B.C.)
177 (*Gonyaulax tamarensis* flagellate re paralytic shellfish poisoning)
178 (re raft culture of Pac. oysters in B.C.)
179: 68 (of B.C. clams not yet economical)
CHN 26 (summary of non-Canadian practices for marine fish-farming)
CJG 14 35 (Nfld. lobsters)
T 78; 107; 189; 243; 309 (sablefish, in tanks)
- 120 (fish & invertebrates, in tanks of Bedford Basin sea water, N.S.)
165; 165(F) (rainbow trout farming in central Canada)
222 (mariculture re genetics)
236 (mud dab eggs & larvae)
248 (*Calanus pacificus* copepod fed diatoms)
262 (utilizing warm effluent from steamelectric power plants)
301 (a brief on mariculture)
320 (factors affecting captive lobster growth)
MSP 16 (considerations & recommendations for control of fish diseases in Canada)
S 943 (effect of serum on trout gonadal cells)
1285 (axenic, of *Hexamita inflata* protozoan from Atl. oyster)
1398 (L-cells for testing toxicity of elemental phosphorus to reproduction)
1403 (of photosynthetic cryptomonad alga in the dark enhanced by glycerol)
1440 (*Uronema* ciliate)
1502 (automatic wet-feed dispenser for salmonids)
1559 (characteristics of *Uronema* ciliate)
1607 (re fisheries as food for man)
A 211 (re primary & secondary biomass feed production; Pac. salmon eggs)
213; 213(F) (artificial rearing of lobsters)
214 (fish farming; sex hormones to delay or accelerate maturation)
- Cultus Lake, B.C.
B 162: 180, 240, 255, 314, 387, 400 (re B.C. sockeye salmon studies)
- Cumacea (*see also* Malacostraca)
J 26(1): 55; 27(4): 621, (12): 2273 (in benthic infauna off Washington coast)
B 176 (in Canadian zooplankton)
T 25; 35; 59; 60; 73 (in Strait of Georgia benthos biomass)
55: 99 (identification of B.C.)
282 (*Diastylis* biomass measurements, Bedford Basin, N.S.)
- Cumberland Sound, Baffin Island, N.W.T.
J 28(9): 1309 (white whale growth, reproduction, & behavior)
- Cunner (*Tautoglabrus adspersus*)
J 26(3): 597(F) (retinal structure re activity, etc.)
(3): 701 (susceptibility to abnormally low estuarial salinity)
29(1): 111 (distinguishing eggs from tautog eggs, by immunodiffusion)
T 255 (yellow phosphorus toxicity tests)
261 (bibliography for Gulf of St. Lawrence)
- Cunningham, Carl Cleveland
S 1473 (phenosafranin indicator for chlorinity titrations)
- Curd, in canned fish
J 22(4): 955 (salmon and trout, partially frozen before canning)

- T 220 (effects of storing sockeye salmon in ice vs. refrigerated sea water, on incidence of)
- Cured fish products (*see also* Delicatessen; Drying; Smoking)
- S 1081 (sweet-cured smoked sliced products from freshwater fishes)
- A 141; 141(F) (total & per capita consumption, Canada re USA & world, 1948-68)
- Curl, Herbert, Jr.
- J 28(5): 790 (influence of nutrient enrichment on N Pac. phytoplankton)
- 29(9): 1253 (chlorophyll *a* concentration diel periodicity in Oregon coastal waters)
- (9): 1261 (chlorophyll-light estimates of primary production off Oregon)
- (9): 1269 (solar radiation & upwelling effects on daily primary production off Oregon)
- Currents (*see also* Drift; Hydrodynamics; Hydrography; Oceanography; Tides; Transport, mass; *also next heading*)
- J 22(1): 225 (Fury and Hecla Strait, N.W.T.)
- (2): 353 (Northumberland Strait drift)
- (3): 689 (NE Pac. Ocean)
- (3): 801 (surface and tidal, re pollution removal)
- 23(6): 825 (re dynamics of NE Pac. Ocean water masses)
- (9): 1411 (electrical analog model for Gulf of St. Lawrence wind-driven)
- (11): 1805 (speed calibration curves for histogram sea current meter)
- 24(9): 1845 (bottom residual, on Canadian Atl. coast continental shelf area)
- (10): 2053 (microzooplankton in California Current euphotic zone)
- 25(5): 1079 (inertial oscillation in NW Atl. at 42 N)
- 27(2): 359 (theory re distance travelled by animals entering stream drift)
- (9): 1569, 1579 (flow rate re bacteria depuration rate of quahaug & clam)
- (11): 2081, (12): 2255 (sea turbulence re nutrients renewal, Casco Bay, Maine)
- 28(10): 1403 (re amphipacific distribution of polychaetes)
- 29(5): 595 (winter geostrophic circulation, Gulf of St. Lawrence surface waters)
- (10): 1405 (controlled flow reduction effects on a trout stream)
- B 156: 33, 59 (Dixon Entrance & Hecate Strait, B.C.)
- 163: 24 (metering instrumentation)
- T 26 (summer, in S Gulf of St. Lawrence)
- 70 (central B.C. coast)
- 75 (central subarctic Pac. Ocean region)
- 85 (free-floating followers)
- 99 (over sill of Saanich Inlet, B.C.)
- 115 (dye-tracing of, Margaree & Cheticamp R. estuaries, N.S.)
- 163 (surface flow measurements by free-floating current followers)
- 169; 178; 191 (velocity measurements, Strait of Georgia, 1967, 1968, 1969)
- 195 (re water tunnel design)
- 219 (St. Margaret's Bay, N.S.)
- 253 (velocity program & examples of records, from moored meters in Strait of Georgia, 1968-70)
- 263 (tracking by meters, drogues, & aerial photography of dyes, off sewage plant outfall at mouth of Fraser R., B.C.)
- 271 (Gulf of St. Lawrence circulation patterns, June 1968 & Sept. 1969)
- 273 (above Bowie Seamount off Queen Charlotte Is., B.C.)
- 300 (Saanich Inlet, B.C., May-June 1968)
- S 1109 (surface on Continental Shelf from Nfld. to Florida)
- 1120 (traced by aerial photography re coastal pollution)
- 1539 (re capacity of marine estuaries to accept pollutants; use of dyes to follow flushing action)
- A 108 (Canadian 1966 ICNAF studies on Atl.)
- Currents, reaction of organisms to (*see also* Migration; Spawning)
- J 25(7): 1485 (longnose dace buoyancy adjustment to velocity)
- (8): 1591 (selectivity for different stream waters by American eel)
- 26(1): 21 (young smallmouth bass re shade)
- (1): 33 (lakeward migrating young rainbow trout)
- (2): 279 (benthic invertebrates upstream river movements)
- (6): 1429 (re stream fish ecology)
- (8): 2227 (simple tank for simulating rapids environment)
- 27(2): 359 (theory re distance travelled by animals entering stream drift)
- (3): 445 (effect on walleye distribution, Oneida L., N.Y.)
- (3): 565 (re homing instinct of Pac. salmon)
- (7): 1215 (current strength preference development by young coho & chinook salmon)
- (9): 1569, 1579 (flow rate re bacteria depuration rate of quahaug & clam)
- (12): 2125 (velocity differences as deterrent to hybridization of 2 sympatric dace species during spawning)
- T 136 (re swordfish spawning in W Atl. Ocean)
- S 1605 (chironomidae diel drift in artificial stream, re coho salmon fry diet)
- Curtis, Mark Andrews
- J 26(12): 3279 (*Scoloplos acutus* synonymy with *S. armiger*)
- 29(9): 1319 (benthic polychaetes depth distributions in 2 Ellesmere Is. fiords, N.W.T.)
- Cushing, David Henry
- J 25(11): 2349 (acoustical estimation of a fish population)
- Cusk (*Brosme brosme*)
- J 26(2): 421 (cranial osteology re other Gadidae genera)

- 28(1): 1 (dimethylamine formation in dark muscle during frozen storage)
- CSG 54 (underexploited on N.S. banks)
- T 80 (stocks, Gulf of St. Lawrence & N.S. banks)
- 225 (associated with Bay of Fundy scallop beds)
- 260 (standing crop, availability, lengths, weights, etc., from Scotian Shelf surveys, 1958-68)
- 261 (bibliography for Gulf of St. Lawrence)
- S 1616 (lactate dehydrogenase polymorphism in heart muscle)
- 1639 (dimethylamine & formaldehyde formation, re changes in frozen stored muscle)
- A 43 (1965 Canadian ICNAF studies)
- 143(F) (French version of CSG 54 above)
- 175 (same as CSG 54 above)
- Cusk-eel (a deep-sea) (*Parabassogagus grandis*)
- J 26(6): 1680 (new N Pac. range extension; morphometry)
- Cusk-eel, fawn (*Lepophidium cervinum*)
- J 24(1): 213 (range extension N to southern N.S.)
- Cuskpout (*Derepodichthys alepidotus*)
- B 180: 248 (full description, etc., B.C.)
- Cuspidaria* (see Clams (Pacific))
- Cuthbert, Robert Major
- S 1309 (raw salmon color sorting)
- Cyanea capillata* (see also Jellyfishes)
- J 26(6): 1745 (feeding habits; growth rate; % solid matter, etc.)
- Cyanide
- T 255 (toxicity tests in brook trout)
- A 222 (re young Atl. salmon temperature selection)
- Cyanocobalamin (see Vitamin B group)
- Cyanophyta; Myxophyceae (see also Algae; Phytoplankton; Plankton)
- J 22(5): 1107 (lipid fatty acids of *Agmenellum quadruplicatum*)
- 23(8): 1285 (dry weight, ash, & volume data for *Oscillatoria*)
- (11): 1715 (of L. Ontario surface waters)
- 25(10): 2037 (growth in a thermal stream)
- (10): 2101; 26(12): 3101 (*Anabaena flos-aquae* blooms after fertilization of a lake)
- 27(2): 335 (glycerol enhancement of phototropic growth)
- (3): 436 (occurrence in 3 adjoining lakes affected or not affected by uranium ore milling wastes)
- (8): 1405 (re chemical composition of S Ont. lakes)
- (11): 2018 (of Clear L., Ont.)
- 28(2): 192, 215 (of several small NW Ont. lakes)
- (11): 1763 (effects of phosphate & nitrate lake enrichment on)
- 29(1): 31 (on artificial & natural L. Winnipeg substrates)
- (11): 1595 (artificial fertilization effects on, Marion L., B.C.)
- T 158 (settling periodicity as fouling organism)
- S 1040 (enolase activity)
- 1113 (extracts as bactericides)
- 1197 (aldolase activity re phylogeny)
- 1448 (axenic cultures survival re prolonged exposure to darkness)
- 1491 (ability to cleave phenylalanine aromatic ring)
- 1626 (*Agmenellum quadruplicatum* & *Anacystis marina* protein content & L-threonine dehydratase activity)
- Cyclohexanetetrol
- J 26(11): 2959 (salinity-induced changes of content in *Monochrysis lutheri* flagellate)
- Cyclopecten carlottensis* (see Scallops)
- Cyclopoida (see also Cyclops; Ergasilus; also Copepoda)
- J 22(2): 543 (*Oithona* & *Oncaea* development in Arctic Ocean)
- (4): 1099; 26(1): 190; 26(8): 2245 (*Mytilicola orientalis* predation on Pac. coast oysters & mussels)
- 23(2): 189, (3): 415 (identification, key, etc., of free-swimming nauplii)
- (3): 415 (seasonal occurrence & abundance, Narragansett Bay, Rhode Is.)
- 24(10): 2161 (*Parabomolochus cuneatus* on B.C. shiner perch)
- 25(2): 321 (Chondracanthidae from B.C. fishes, including 2 new species: *Chondracanthus pusillus* & *Acanthochondria holocephalarum*)
- 26(4): 741 (as hosts for culturing a trematode proceroid)
- (6): 1485 (*Oi. similis* ecology, etc., in Ogac L., Baffin Is., N.W.T.)
- (8): 2135, (10): 2543 (*Tropocyclops prasinus* horizontal & vertical distribution, L. Ontario & Georgian Bay, L. Huron)
- (11): 3043 (new species, *C. narium*, parasitic to lingcod nasal cavity)
- 27(2): 281 (diel vertical movements, Babine L., B.C.)
- (5): 901 (*Thersitina gasterostei* parasitic to Nfld. stickleback)
- (8): 1395 (*Oi. similis* grazing effects on N.S. saline lakes plankton)
- (11): 1943 (*Ch. triventricosus* new species, parasitic on Pac. ocean perch)
- 28(2): 231, 245 (*Tropocyclops* & *Mesocyclops* common in many small NW Ont. lakes)
- (10): 1563 (2 new species & a new record of *Holo-bomolochus*; 2 new hosts of *Bomolochus cuneatus*)
- 29(4): 363 (review of feed & feeding habits of several USSR freshwater genera)
- (10): 1451 (abundance re Great Lakes eutrophication)
- B 169 (*M. orientalis* predation on Pac. oyster in B.C.)
- 176 (synopsis of Canadian zooplanktonic)
- 179: 10 (*M. orientalis* predation on B.C. clams)

- T 55; 313 (identification & key for B.C. marine)
282 (*Oithona* biomass measurements, Bedford Basin, N.S.)
- S 1010 (*P. cuneatus* on shiner seaperch gills)
1301 (*Praeacidochondria galathea* new genus & species, parasitic on a Malayan fish)
1306 (*Shilnoa oclusa* new genus & species, parasitic on Australian fishes)
1358 (*Neobranchiochondria quadrata* new genus & species, also *Pseudoblias lyrifera*, parasitic on Australian fishes)
1429 (*C. lepidionis*, n.sp., also *Brachiochondrites longicollis*, parasitic on *Lepidion* fishes)
1450 (as coregonid fishes parasites)
- Cyclops* (see also Cyclopoida; also Copepoda)
J 22(6): 1335 (infections by *Triaenophorus* procercoids)
26(4): 741 (various *Cyclops* & closely related genera as hosts for culturing a trematode procercoid)
(6): 1605 (*C. bicuspidatus thomasi* predation on zooplankton standing stocks)
(8): 2145 (*C. b. thomasi*, etc., horizontal distribution in L. Ontario)
(10): 2543 (*C. b. thomasi*, *C. vernalis*, *Tropocyclops prasinus*, & *Mesocyclops edax* seasonal & vertical distribution & abundance, Parry Sound, Ont.)
27(7): 1239 (*C. b. thomasi* re long-term zooplankton changes in Kootenay L., B.C.)
28(2): 231, 245 (in NW Ont. lakes)
S 1013 (*C. scutifer*, L. Hazen, N.W.T.)
- Cyclopterus lumpus* (see Lumpfish)
- Cyclotella*
J 28(2): 265 (dominant diatom in many small NW Ont. lakes)
- Cyclothone microdon* (see Anglemouth, veiled)
pacifica (see Anglemouth, veiled)
- Cyclotrichium* (a ciliate) (see also *Mesodinium*)
J 25(8): 1749 (cause of red water in Gulf of Maine)
28(3): 391 (proposed change to genus *Mesodinium*)
- Cyema atrum* (see Snipe-eel, bobtail)
- Cymatogaster aggregata* (see Perch, shiner)
- Cynoscion nobilis* (see Seabass, white)
xanthulus (see Corvina, orangemouth)
- Cyphocaris challengeri* (see Amphipoda)
- Cyprina islandica* (see Quahaug, ocean)
- Cyprinidae (see also Carp; Chub; Dace; Minnow; Peamouth; *Rivulus*; Shiner; Squawfish)
J 29(6): 755, 819 (re salmonid communities in some European lakes)
B 173: 44 ((family key), 216 (definition), 217 (species key), 220-273 (full descriptions, etc.), of NW Canada & Alaska species)
- Cyprinodon variegatus* (see Minnow, sheepshead)
- Cyprinus carpio* (see Carp)
- Cysteine (see also Acids, amino)
S 1314 (reaction with malonaldehyde)
- Cystidicola* (see Nematoda)
- Cystophora cristata* (see Seal, hooded)
- Cysts (see also Disease)
J 22(3): 865 (candling whitefish filets for tapeworm)
(6): 1345 (lymphocystis disease of American plaice)
25(3): 597; 29(12): 1776 (in yellowtail flounder, caused by fungus)
26(8): 2213 (microsporidial in English sole)
(12): 3242 (cystic lesions in ovaries of aged Atl. cod)
27(2): 271 (detecting *Triaenophorus*, in whitefish flesh)
29(11): 1639 (growing incidence of microsporidial, in L. Erie rainbow smelt)
(12): 1776 (histology of *Ichthyophonus hoferi* fungal, in 3 NW Atl. fishes; corrections on J 30(8): 1257)
- Cytology (see also Chromosomes; Eggs, fish; Genetics; Histology)
J 23(4): 521 (*Sphyrion lumpi* ova)
(5): 767 (simple technique for obtaining chromosomes)
24(10): 2155 (chromosomes of Atl. & Pac. oyster)
25(1): 151 (blood cells of folic acid-deficient coho salmon)
(3): 547 (*Clostridium botulinum* cells & spores)
(7): 1339 (scallop muscle cells)
(10): 2241 (*Amoebophyra* dinoflagellate parasitism of *Gonyaulax* dinoflagellate)
(11): 2269 (arctic Canada bryozoans)
26(1): 111 (anemic coho salmon erythrocytes)
(2): 433 (blood cells of 3 estuarine cyprinodontiform fishes)
(3): 461 (rainbow trout ovary cells cultured in vitro)
(4): 845 (*Aenenterotrema* trematode spp. parenchymal cells, re feeding mode)
(4): 965 (*Acanthosentis cameroni* acanthocephalan)
(4): 975 (*Bothrimonas* cestodes)
(4): 1075 (haematozoan protozoan parasitization of marine N.B. & New England fishes blood)
(5): 1147 (adult sockeye salmon pituitary after gonadectomy)
(7): 1837 (immunohistochemical localization of ACTH & prolactin in sockeye salmon pituitary)
(7): 1847 (brook trout aortic catheterization effects on blood)
(7): 1943 (winter flounder oocyte maturation duration)
(8): 2247 (infectious pancreatic necrosis virus in trouts pancreatic tissue)

- (11): 2785 (effects of copper sulfate poisoning on winter flounder)
 (11): 2881 (largemouth & smallmouth buffalo fishes hematology)
 (11): 2975 (interrenal tissue of normal vs. gonadectomized sockeye salmon)
- 27(1): 117 (DNA polymerase isolation from rainbow trout liver nuclei)
 (2): 335 (glycerol-induced changes of some marine phytoplankters)
 (3): 587 (atresia of northern pike ova)
 (4): 749 (threespine stickleback maturing ova re photoperiod effects)
 (5): 857 (mitochondria re coenzyme A in lipids utilization by fish)
 (7): 1285, (8): 1385 (of salmonid necrosis-causing virus)
- 28(1): 104 (proteolytic pseudomonad causing rainbow trout skin lesions)
 (10): 1511 (of bacteria associated with surfaces of hatching Pac. salmon eggs, re egg mortality)
 (11): 1745 (diploid components of chromosomes; karyotypes; of dwarf & large white suckers & of longnose sucker)
 (11): 1793 (heart & liver tissue of rats fed raw herring oil)
 (11): 1809 (lymphocystis disease cells in semitropical fishes)
 (11): 1817 (acid phosphatase activity in *Clostridium botulinum* vegetative cells & spores)
- 29(3): 311 (adrenocortical cell morphological reversible changes during Atl. salmon freshwater spawning journey)
 (3): 328 (formalin effects on rainbow trout tissues in vivo)
- B 177 (*Gonyaulax tamarensis* dinoflagellate re paralytic shellfish toxicity)
 S 943 (rainbow trout gonadal cells)
 1139 (*Discoasteromonas calciferus*, new relict flagellate)
 1249 (re goldfish spermiation as bioassay for salmon gonadotropin)
 1270 (amylopectin accumulation in cytoplasm of *Clostridium botulinum*)
 1297 (enzyme degradation of hatching chum salmon egg capsule)
 1398 (reproduction & morphology of cultured L-cells as affected by elemental phosphorus)
 1403 (heterotrophic growth of cryptomonad alga in darkness)
 1418 (ribonucleic acid synthesis by rainbow trout liver nuclei)
 1443 (rainbow trout ovaries, infected by amphibian virus)
 1559 (*Uronema* marine ciliate)
 1589 (*Dinoasteromonas* flagellates re discoasters)
- Cytophaga (see also Bacteria; Columnaris disease)
 J 28(10): 1511; 29(5): 567 (associated with surfaces of hatching Pac. salmon eggs)
 29(9): 1359 (effect of 2 iodophore disinfectants on *Cytophaga psychrophilia*)
- Cytotaxonomy
 S 1589 (*Dinoasteromonadacea* flagellates)
- D**
- 2, 4-D (see Herbicides)
- Dab, mud (*Limanda yokohamae*)
 T 236 (egg & larvae culture, development, growth, etc.)
- Dab, sand (see Sanddab)
- Dabrowski, Teofil
 J 23(1): 1653 (chemical composition of crayfish)
 26(11): 2969 (chemical composition & nutritive value of shrimp flesh)
- Dace, blacknose (*Rhinichthys atratulus*) (*R. atronasus*)
 J 22(3): 744 (in Bow R. system, Alta.)
 23(5): 623 (association with brook trout in Pennsylvania streams)
 25(8): 1739 (spinal ganglia position re taxonomy)
 (10): 2011 (re trout population, Crecy L., N.B.)
 26(11): 3049 (5 lactate dehydrogenase isozymes in tissues, & in tissues of hybrid with longnose dace)
 27(10): 1855 (buoyancy adjustment rate by swimbladder)
 (12): 2125 (spawning behavior differences as deterrent to hybridization with sympatric longnose dace; correction on J28(8): 1219)
 28(1): 45 (populations upstream & downstream of a dammed Ont. lake)
 29(2): 119 (swimbladder length & volume adaptive variation)
 (3): 275 (3 parasites of, Lake of the Woods, Ont.)
 (9): 1245 (ecological segregation, Mink R., Man.)
 S 1132 (predation by birds, Crecy L., N.B.)
- Dace, finescale (*Phoxinus neogaeus*) (*Chrosomus neogaeus*; *Pfrille neogaea*)
 J 26(6): 1439 (distribution in Canadian Missouri R. headwaters)
 29(3): 275 (7 parasites of, Lake of the Woods, Ont.)
 B 173: 250 (full description, etc., of NW Canada)
- Dace, leopard (*Rhinichthys osculus*)
 J 29(2): 119 (swimbladder length & volume adaptive variation)
- Dace, longnose (*Rhinichthys cataractae*)
 J 22(3): 744 (in Kananaskis R. system, Alta.)
 23(5): 623 (association with brook trout in Pennsylvania streams)
 25(7): 1485 (buoyancy adjustment re water velocity)
 26(2): 325 (S Alta. distribution)
 (6): 1439 (distribution in Canadian Missouri R. headwaters)
 (11): 3049 (5 lactate dehydrogenase isozymes in tissues, & in tissues of hybrid with blacknose dace)

- 27(12): 2125 (spawning behavior differences as deterrent to hybridization with sympatric blacknose dace; correction on J28 (8): 1219)
- 28(1): 45 (populations upstream & downstream of a dammed Ont. lake)
- (10): 1645 (host to new trematode species, Alta.)
- 29(2): 119 (swimbladder length & volume adaptive variation)
- (3): 275 (8 parasites of, Lake of the Woods, Ont.)
- 29(3): 330 (ecological notes, L. Winnipeg)
- (9): 1245 (ecological segregation, Mink R., Man.)
- B 173: 246 (full description, etc., of NW Canada)
- S 1128 (in 3 Lake Superior bays)
- Dace, (northern) pearl (*Semotilus margarita (nachtriebi)*)
- J 26(2): 325 (S Alta. distribution)
- (6): 1439 (distribution in Canadian Missouri R. headwaters)
- 29(3): 275 (2 parasites of, Lake of the Woods, Ont.)
- B 173: 228 (full description of NW Canada)
- Dace, northern redbelly (*Phoxinus (Chrosomus) eos*)
- J 25(6): 1199 (low temperature effects on feeding in 3 Ont. localities)
- (10): 2011 (re trout population, Crecy L., N.B.)
- 26(2): 325 (S Alta. distribution)
- (3): 709 (first P.E.I. record)
- (6): 1439 (distribution in Canadian Missouri R. headwaters)
- 27(12): 2365 (furunculosis)
- 28(1): 45 (populations upstream & downstream of a dammed Ont. lake)
- B 173: 254 (full description, etc., of NW Canada)
- S 1132 (predation by birds, Crecy L., N.B.)
- Dace, pearl (see Dace, (northern) pearl)
- Dace, Umpqua (*Rhinichthys evermanni*)
- J 23(5): 767 (simple technique for obtaining chromosomes)
- Dace, speckled (*Rhinichthys osculus*)
- J 29(2): 119 (swimbladder length & volume adaptive variation)
- Dacnitis truttiae* (see Nematoda)
- Dadswell, Michael John
- J 29(5): 545 (postglacial dispersion of 2 sculpin, a stickleback, & a trout-perch species, on basis of new SE Ont. & SW Que. distribution records)
- Dafoe, Thomas
- S 1162 (sodium sulfate in sea water)
- Daggertooth (*Anotopterus pharao*)
- J 27(3): 499 (distribution in N & NW Atl., re other areas)
- B 180: 177 (description, etc., B.C.)
- T 11 (in experimental B.C. midwater trawling)
- Dahlberg, Michael Lee
- J 24(1): 209 (fin pigmentation to distinguish Alaska chinook & coho salmon)
- 25(1): 49 (dissolved O₂ & CO₂ on bass & salmon swimming)
- (1): 203 (surf smelt W range extension)
- 28(8): 1107 (computer simulation of pollution minnow deaths)
- Dailey, Murray Duane
- S 1681 (revised annotated list of parasites from E. Pac. Ocean marine mammals)
- Dale, Jacqueline
- J 22(4): 875 (dimethyl-β-propiethetin)
- 23(4): 487 (dimethyl-β-propiethetin in cod)
- Dales, Rodney Phillips
- J 28(10): 1487 (bioluminescence in pelagic polychaetes)
- Dall, William
- J 27(6): 1123 (osmoregulation in lobster)
- Dallia pectoralis* (see Blackfish, Alaska)
- Damalichthys vacca* (see Perch, pile)
- Damberg, Nikolajs
- J 24(4): 895 (isopropanol preservation of fish protein concentrate raw material)
- 25(5): 935 (cod skeletal muscle free amino acids re gillnet fishing)
- 26(7): 1919 (isopropanol-water mixtures for fish protein concentrate from Atl. herring)
- (7): 1923 (isopropanol-water azeotrope as fish protein concentrate solvent)
- 27(3): 591 (bone material in fish protein concentrates)
- CHN 39 (extraction of isopropanol in fish protein concentrates)
- Dams
- J 28(1): 35, 45 (differences in benthos & fish populations upstream & downstream of a dammed Ont. lake)
- 29(9): 1329 (thermal regime changes in South Saskatchewan R. below a dam as cause of decrease in insect fauna)
- (10): 1472 (macroinvertebrate changes below a Connecticut R. hydroelectric dam from fluctuating water levels)
- A 142 (as threat to Canadian Atl. salmon)
- Damselflies (see Odonata)
- Danielson, Jakob
- A 228 (Greenlandic painter: book review)
- Danio, giant (*Danio malabaricus*) (tropical cyprinid)
- J 26(8): 2250 (laboratory host for cestode culture)
- Danio, pearl (*Brachydanio albolineatus*)
- J 25(8): 1739 (spinal ganglia position re taxonomy)

- Danio, spotted (*Brachydanio nigrofasciatus*)
 J 25(8): 1739 (spinal ganglia position re taxonomy)
- Daphnia* (see Cladocera)
- Darkness (see also Light, reactions to)
 J 29(2): 151 (effect on migrating sockeye salmon fry, lower Babine R., B.C.)
 T 330 (effect on body re scale growth of young sockeye)
 S 1448 (survival of marine planktonic algae axenic cultures from prolonged exposure to darkness, re ecology in oceanic depths)
 1557 (effect on crayfish ovarian maturation & subsequent egg-laying ability)
- Darter, Iowa (*Etheostoma exile*)
 J 25(6): 1199 (low temperature effects on feeding in 3 Ont. localities)
 26(2): 325 (S Alta. distribution)
 (6): 1439 (distribution in Canadian Missouri R. headwaters)
 29(3): 275 (14 parasites of, Lake of the Woods, Ont.)
 B 173: 350 (full description, etc., of N Sask.)
 S 1128 (in 2 L. Superior bays)
- Darter, johnny (*Etheostoma nigrum*)
 J 28(7): 1507 (effect of warm water of nuclear power plant discharge canal)
 29(3): 275 (11 parasites of, Lake of the Woods, Ont.)
 (8): 1173 (morphological & myogen comparison with tessellated darter & their hybrids)
 S 1128 (in 4 L. Superior bays)
- Darter, tessellated (*Etheostoma olmstedi*)
 J 29(8): (morphological & myogen comparisons with johnny darter & their hybrids)
- Darters (*Etheostoma* species)
 J 24(5): 927 (limnetic larvae in N Wisconsin lakes)
- Dartmoor, England
 J 26(8): 2165 (brown trout seasonal activity & feeding pattern)
- Dartmouth Marine Ecology Laboratory, N.S.
 A 134 (function)
- Das, Bejoy Sanker
 J 26(11): 3055 (tetrachloro-*o*-benzoquinone toxic to young salmon)
- Das, Naresh
 J 29(5): 573 (larval herring growth in Bay of Fundy & Gulf of Maine)
 T 88 (larval herring spawning, distribution, survival, & growth)
- DaSilva, Edgar Joseph
 J 25(1): 197 (tropical fish disease microorganisms)
- Dasyatis centroura* (see Stingray, rougtail)
- dipterura* (see Stingray, diamond)
violacea (see Stingray, pelagic)
- Dasycottus setiger* (see Sculpin, spinyhead)
- Davenport, Douglas
 J 22(5): 1309 (fish measurement)
 23(12): 1981 (bocaccio color variant)
 T 22; 46; 81; 113; 132; 144; 205; 221; 269; 290; 328 (FRB experimental groundfish cruises, B.C. coast & NE Pac. Ocean)
- Davey, Kenneth George
 J 26(4): 935 (feeding in *Phocanema*)
- Davies, Gordon Stanley
 J 27(1): 71 (macrophyte productivity in Marion L., B.C.)
- Davies, Ronald Wallace
 J 28(4): 543 (freshwater Hirudinoidea key)
 T 306 (annotated bibliography to Canadian freshwater leeches)
- Davis, Charles Carroll
 J 26(9): 2459 (L. Erie zooplankton)
- Davis, John Christopher
 J 24(8): 1775 (sockeye salmon cardiovascular dynamics)
 27(6): 1069 (gas exchange in rainbow trout)
 (9): 1627 (expired water sampling in fish)
 (10): 1860 (circulation time in rainbow trout)
 28(10): 1609 (circulatory and ventilatory responses of trout)
 29(1): 109 (infrared photographing of fish gills vascularization)
- Davis, Robert Maurice
 J 28(4): 505 (Atl. salmon histological comparisons)
- Davisson, Muriel Trask
 J 29(5): 579 (karyotypes of 5 *Esox* species & 2 of their hybrids)
- Davy, Frederick Brian
 J 29(9): 1333 (DDT effects on goldfish locomotor behavior)
- Day, Donald Stewart
 J 25(12): 2665 (species associations off Oregon)
- Day, Dwane
 T 246 (Pac. trawl fishery & ground fish bibliography)
- Day, Lewis Rodman
 J 22(2): 635 (arc killifish poisonous?)
 S 912 (salt-water system at St. Andrews Biological Station)
- Daykin, Philip Norman
 J 22(1): 159 (environment of fish eggs)

- DDT; DDD; DDE (*see* Insecticides; Pesticides)
- Deaminase (*see* Enzymes)
- Dean, John Mark
J 25(11): 2461; 27(6): 1051 (ingested ⁶⁵Zn in marine crustaceans)
- Dean, Margaret Diana
J 25(9): 1923 (*Caligus curtus* review & description; correction on J 26(8): 2263)
- Decapoda (*see also* Crab; Crabs; Crayfishes; Crustacea; Lobster; Prawn; Shrimp; Shrimps; Zooplankton)
J 24(9): 1873 (list of, collected in Hudson Bay)
26(7): 1899 (of Beaufort Sea & E to Cambridge Bay)
(8): 2219 (in feed of juvenile Pac. salmon)
28(5): 705 (biological magnification & degradation of insecticides by fresh water)
(6): 928 (in feed of fluffy & tidepool sculpins)
B 176 (in Canadian marine zooplankton)
CNG 84 (popular description of some NE Pac. Ocean)
T 25; 35; 59; 60; 73 (in Strait of Georgia benthos biomass)
43 (on Irish moss)
55: 125 (identification of B.C.)
266 (Frobisher Bay, Baffin Is., N.W.T.)
S 1107; 1311 (distribution in NW Atl.)
1527 (sterols of several types of)
- Decapterus macarellus* (*see* Scad, mackerel)
polyaspis (*see* Mackerel, jack)
punctatus (*see* Scad, round)
- DeCew, Mark Gordon
J 29(11): 1513 (antibiotic toxicity, efficacy, & teratogenicity in chinook salmon)
- Dechtiar, Alex O.
J 26(4): 865 (2 new trematodes from catostomids; corrections on J 28(8): 1219)
29(3): 275 (fish parasites, Lake of the Woods, Ont.)
(11): 1639 (*Glugea hertwigi* microsporidian parasite occurrence re associated mortality of L. Erie smelt)
- Decomposition (*see* Bacteria; Quality of fishery products)
- Decompression (*see* Pressure, hydrostatic; Swimbladder)
- Defecation (*see also* Excretion)
J 27(11): 1971 (rates of 3 tubificid oligochaete species)
- Defense mechanisms (*see also* Disease; Immunology)
J 26(1): 1 (lobster, against gaffkemia infection)
(1): 47 (Atl. salmon, against DDT insecticide toxicity)
(1): 115 (coho salmon, against bacterial endotoxins)
- Deforestation
J 26(2): 399 (effects on stream temperature)
- Deformity (*see* Abnormality)
- Dehadrai, Padmakar Vishvanath
J 23(6): 909 (exophthalmia in cod)
- Dehydration (*see also* Desiccation; Freeze-drying)
J 26(12): 3271 (quality evaluation of freeze-dried vs. frozen Atl. cod steaks)
B 151; 151(F) (freshwater fish products)
- Dehydrogenases (*see* Enzymes)
- DeJong, Cornelis
T 154 (Pac. Ocean Station P oceanographic observations)
207 (digitizing expendable bathythermograph data)
- DeLacy, Allan Clark
J 24(3): 629 (parasites among surf smelts)
- De Lange Boom, Bodo Rudolf
T 253 (velocity and water temperature records, Strait of Georgia)
- Deleu, Siegfried Desideer
J 26(1): 171 (Malpeque Bay, P.E.I., physiographic changes 1845-1955 re oyster production)
- Delicatessen (*see also* Fishballs; Sausage, fish; *also* Curing; Marinating; Salting; Smoking)
J 23(8): 1281 (thermal resistance of bacteria from processed fish spread)
B 151; 151(F) (from freshwater fishes)
S 1081 (sweet-cured smoked sliced products from freshwater fishes)
1697 (recipes for canned, from fishes & white whale, at Eskimo processing plant, N.W.T.)
- Delisle, Claude Etienne
J 25(9): 1813 (F) (spawning of "giant" smelts, Ottawa Valley)
(12): 2733 (first records of sculpins from Ottawa Valley)
- Delolepis gigantea* (*see* Wrymouth, giant)
- Delphinapterus leucas* (*see* Whale, white)
- Delphinidae (*see also* Dolphin; Porpoise, bottlenose; Whale, false killer; Whale, killer; Whale, pilot)
S 1454 (skin pigmentation pattern evolution re adaptive coloration)
- Delphinus delphis* (*see* Dolphin, common (Pacific and Atlantic))
- DeLury population estimator
J 26(2): 339 (applicability robustness)
29(11): 1636 (application to estimating gillnet selectivity)

- Demory, Robert Leroy
J 29(11): 1647 (aging Dover sole from scales)
- Denaturation (*see also* Drip; Flesh; Muscle; Protein)
S 1509 (accelerated, of rabbit & trout myosin in frozen solution)
A 79 (re freezing & cold storage of fish)
203 (free fatty acids role re frozen fish)
- Dendraster excentricus* (*see also* Sea urchins)
J 24(6): 1385 (off Oregon coast)
- Density; Specific gravity (*Note*: For general data re natural waters, *see* Hydrography; Limnology; Oceanography; *see also* Buoyancy)
J 26(8): 2077 (of Atl. & Pac. herring components, re buoyancy)
(8): 2093 (of Atl. salmon parr & smolt components, re buoyancy)
27(3): 591 (in estimating bone material content of fish protein concentrate)
(10): 1669 (of commercial Atl. herring oils re fish buoyancy)
29(8): 1145 (re swimbladder & lipids content of 8 myctophid fishes)
T 120 (Bedford Basin waters, N.S.)
- Denticles
J 22(4): 899 (use in identifying Atl. skates)
- Dentigryps* (*see* Caligoida)
- Deoxyribonuclease (*see* Enzymes)
- Deoxyribonucleic acid (DNA) (*see* Acids, nucleic; Desoxyribose; Nucleosides)
- Departure Bay, B.C.
S 1223 (seasonal variations in marine benthos feed availability)
- Depth (*Note*: for distribution of organisms, *see* Distribution; *also* name of organism; for depths and effects of, *see* Hydrodynamics; Hydrography; Limnology; Oceanography; Pressure, hydrostatic; Swimbladder; etc.)
J 24(11): 2491 (computer vs. manual calculations, for oceanic)
S 908 (re size of lakes)
- Depuration
J 27(9): 1569, 1579 (quahaug & clam mechanism for ridding of contaminating bacteria)
B 169: 147 (B.C. Pac. oyster)
177 (of E. Canada shellfish re paralytic shellfish toxicity)
179: 68 (B.C. clams, re pollution & paralytic shellfish toxicity)
- Derepodichthys alepidotus* (*see* Cuskpout)
- Derksen, Arthur John
J 28(8): 1133 (migrations of walleyes)
- Dermasterias imbricata* (*see* Starfish, leather)
- Dermatitis, schistosome
A 58; 58(F) (cause, control, & treatment of human "swimmers'itch" & "clam diggers'itch")
- Dermatomyia canadensis* (*see* *Poromyia canadensis*)
- Dermochelys coriacea coriacea* (*see* Turtle, leatherback)
- Dermocystidium* (*see* Fungi)
- Derris root (*see* Piscicide)
- Derzhavin's biostatistical method of population analysis
J 28(10): 1666 (examples)
1582 (population dynamics)
- Desai, Indrajit Dayalji
S 1480 (composition of a unicellular red alga)
1626 (L-threonine dehydratase of 7 kinds of unicellular marine algae)
- Deshmukh, Diwakar Shankarrao
J 28(6): 843 (zinc retention in young rats fed increasing levels of high-zinc oysters)
- Desiccation (*see also* Dehydration; Freeze-drying)
J 24(1): 211 (of stored cartoned frozen sole fillets)
26(9): 2283 (tolerance of 5 haustoriid amphipod species)
29(8): 1119 (from intertidal exposure: effect on Pac. herring spawn survival)
- Desmosterol (*see* Sterols)
- Desoxyribose
B 167: 241 (determination in sea water)
- Desulfovibrio desulfuricans* (*see* Bacteria)
- Detector, tag (*see* Tagging)
- Detergents (*see* Nitrilotriacetates; Phosphates; Pollution)
- Detoxification (*see* Depuration)
- Detritus (*see* Matter, particulate; Sediments)
- Development (*see also* Eggs; Growth; Life history; Maturation; Metamorphosis; Size)
J 22(2): 558 (Copepoda in Arctic Ocean)
(4): 913 (temperature effect on Windermere char eggs)
(6): 1567 (precocious sexual, in male Atl. salmon)
23(3): 319 (rate of Pac. cod eggs & larvae)
(8): 1121 (brook & rainbow trout embryos re oxygen & temperature)
(10): 1537 (rate of trouts re vertebral number)
24(1): 47 (young carp)
(5): 955 (purines in Atl. salmon integument during parr-smolt transformation)

- (5): 965 (pyloric caeca & gill rakers in lake trout)
 (12): 2573 (of Atl. cod in Ogac L., Baffin Is.)
 25(3): 495 (salinity & temperature effects on English sole early; correction on J 27(8): 1499)
 26(6): 1485 (zooplankton, Ogac L., Baffin Is.)
 27(7): 1295 (photoperiod effect on Atl. salmon smolt)
 (8): 1429 (of pink & chum salmon eggs & fry in revised hatchery method)
 (10): 2037 (egg to young, of shorthorn sculpin)
 (12): 2197 (eggs & embryos from crosses between pink, chum, & sockeye salmon)
 (12): 2215 (stages, Nfld. capelin)
 28(1): 95 (tail length re respiration mode in big skate larvae)
 (3): 379 (dissolved oxygen requirements for embryonic & larval northern quahaug)
 (5): 727 (salinity & temperature effects on embryonic petrale sole)
 (6): 883 (environmental effects on Pac. cod eggs, re geographical distribution)
 (7): 1051 (white seaperch, Tomales Bay, Calif.)
 (10): 1545 (salinity & temperature effects on Pac. herring early)
 29(8): 1119 (intertidal exposure effect on Pac. herring spawn)
 (11): 1571 (stages of *Caligus clemensi*)
 (12): 1667 (sand lance larvae, Scotian Shelf)
 T 41 (petrale sole embryonic)
 100 (flathead sole embryonic)
 105 (B.C. commercial groundfishes)
 236 (mud dab eggs & larvae)
 S 1486 (behavior of female crayfish towards newly hatched young)
 1590: 552 (of fishes re temperature)
 1631 (seasonal emergence dates of various mayflies & caddisflies, Heming L., Man.)
 A 256; 263 (queen crab)
- Devil, red (*see* Wrymouth, dwarf)
- Devilfish (*see* Octopus; Octopuses)
- Devlin, Douglas Gerald
 T 263 (current velocities near a Vancouver, B.C., sewage & drainage outfall)
- DeWilde, Mary Anne
 J 24(11): 2267 (trout hematology)
 25(1): 173 (rainbow trout hematological correlations)
 26(7): 1847 (aortic catheterization re trout)
- Dexamethasone (*see* Steroids)
- Djaciuc, Ion Victor
 J 22(6): 1397 (carp metabolism)
- Diagramma griseum* (*see* Grayskin)
- Diamesinae (*see* Chironomidae)
- Diaphanosoma* (*see* Cladocera)
- Diaphus dumerili* (*see* Lanternfishes)
rafinesquii (*see* Headlightfish, California)
termophilus (*see* Lanternfishes)
theta (*see* Headlightfish, California)
- Diaptomus* (*see* Calanoida)
- Diastylis* (*see* Cumacea)
- Diatoms (*see* Bacillariophyta; Chrysophyta; Plankton; Phytoplankton)
- Dickie, Lloyd Merlin
 J 22(2): 521 (growth of fishes)
 23(6): 869, (8): 1209 (food & growth of fishes)
 27(8): 1453 (phytoplankton heterogeneity)
 S 994 (abundance & fishing success)
 1158 (groundfish heterogeneity)
 1160 (Scotian Shelf cod and haddock trends)
 1445 (production & food supply of fishes)
 1476 (marine science & technology)
 1699 (food chains & fish production)
 A 150 (strategy of fishing)
 196 (review of book on fisheries population dynamics)
 197 (metabolism and biological production in fish)
- Dickman, Mike
 J 29(11): 1595 (artificial fertilization effects on enclosed plankton populations in Marion L., B.C.)
- Dickson, Ian William
 J 28(4): 587 (factors influencing rainbow trout metabolism)
- Dickson Lake, B.C.
 J 28(9): 1259 (segregation between adult cutthroat & Dolly Varden trouts)
- Dicrateria* (*see* Chrysophyta)
- Diel habits (*see also* Behavior; Light, reactions to; Salinity, reactions to; Temperature, reactions to)
 J 23(4): 499 (yellow perch activity under ice)
 (8): 1259 (changes in adult Nicola L. kokanee, B.C.)
 (11): 1761 (longnose & white suckers, Sixteenmile L., B.C.)
 24(2): 375 (Babine R. sockeye salmon fry)
 (10): 2069 (sockeye fry & smolts migratory behavior)
 (12): 2515 (starry flounder & sand sole feeding)
 25(6): 1133 (of feeding for 5 freshwater fishes)
 (9): 1997 (young prickly sculpin limnetic occurrence)
 (10): 2143 (illumination re orientation of eels toward spawning area)
 26(1): 33 (lakeward migrating young rainbow trout)
 (1): 63 (coho salmon fry activity & aggression cycles)
 (2): 463 (light intensity periodicity in plankton photosynthesis)

- (12): 3266 (4 fish species, Heming L., Man.)
 27(2): 281 (vertical movements & feeding of young sockeye & limnetic zooplankton; correction on J 27(8): 1499)
 (4): 669 (pink shrimp vertical migration)
 (11): 2071 (ultrasonic tracking of skipjack tuna nightly wanderings)
 (12): 2356 (re rainbow trout feed availability)
 28(4): 573 (stream-migrating kokanee fry)
 (9): 1259 (Dolly Varden & cutthroat trouts in 3 B.C. lakes)
 29(7): 1025 (adult migratory sockeye, Queen Charlotte Sound, B.C.)
 (7): 1091 (downstream migration of white sucker in brown-water stream)
 (10): 1419 (depth changes of sound-scattering layer in NE Pac. Ocean)
- T 248 (*Calanus pacificus* grazing habits re marine productivity)
 S 1166 (re orientation of seaward-migrating sockeye)
 1513 (*Calanus* grazing habits re marine productivity)
 1605 (chironomidae stream-drift, re coho salmon fry diet)
- Dieldrin (*see* Insecticides; Pesticides)
- Diostothyris frontalis* (*see* Brachiopoda)
- Diet (*see* Culture; Feed; Feedstuff; Hatcheries; Predation; Rations)
- Digenea (*see also* Trematoda)
 J 24(10): 2161 (*Telolecithus* & *Neozoogonus* parasitic on surfperches)
 26(9): 2319 (list of species found in B.C. marine fishes)
- Digestion; Digestive tract (*see also* Bioenergetics; Excretion; Feed; Intestinal tract; Metabolism; Rations)
 J 22(6): 1563 (degradation rate of feed organisms in, re interpretation of stomach contents of predator)
 23(10): 1607 (Atl. cod morphology)
 26(7): 1801 (of pellet diets by rainbow trout)
 (10): 2669 (of *Syndesmis* turbellarians)
 27(7): 1177 (rate in young Atl. cod re temperature & meal size; corrections on J 28(8): 1219)
 (8): 1357 (lobster digestive enzymes)
 (10): 1767 (rate in fingerling sockeye salmon re temperature)
 (10): 1898 (digestive tract enzymes of some Atl. coast invertebrates)
 (12): 2185 (histology of mummichog exposed to cadmium chloride)
 28(1): 110 (rate of sockeye salmon alevins in mountain whitefish stomach, & temperature effect on rate)
 (3): 335 (vs. survival of sedimentary bacteria after ingestion by tubificid oligochaetes)
 (10): 1635 (by young sockeye salmon re nature of diet)
 B 169: 18 (system of Pac. oyster)
- T 114 (digestibility of Atl. herring meals)
 S 1377 (protein digestibility of herring meals)
- Digging
 B 179: 65 (manual hydraulic B.C. clam digger)
 CNG 81 (new hydraulic method for butter clams)
 T 15 (fork vs. hydraulic rake for clam)
 S 1182 (efficiency of forking soft-shell clams; mortalities)
 A 58 (human dermatitis from clam digging)
- Dill, Laurence Michael
 J 27(1): 196 (survival, condition, & timing of emergence of chum salmon fry)
 (7): 1191 (coho salmon alevins)
- Dill, Peter Arnott
 J 28(9): 1319 (perception of light by young salmon)
- Dilution effect (*see also* Estuary; Oceanography; Salinity)
 J 24(11): 2283 (of rainfall on phytoplankton productivity in a lake)
 B 156: 9, 47 (of rivers runoff, on Dixon Entrance oceanography, B.C.)
- Dilworth, Carole Lola Ryan
 J 23(10): 1617 (buoyancy in salmon)
- Diment, W. H.
 S 1436 (comparative study of meromixis)
- Dimethyl sulfide
 J 22(4): 875, (5): 1311; 23(3): 357, (4): 487; 24(2): 457; 25(2): 267; 29(7): 1085 (re cause of sweetish petroleum-like odor in flesh of certain marine commercial fishes (e.g. Atl. cod), arising from breakdown of dimethyl- β -propiethetin in the "blackberry" stomach contents caused by the fish feeding on the pteropod *Spiratella* (*Limacina*) *helicina* &/ or *S. retroversa*)
 25(2): 267, (11): 2453 (significance to odor of that of soft-shell Atl. clam)
 CHN 25 (same subject as first group of references above)
 S 1009; 1034; 1044; 1110; 1159 (same subject as first group of references above)
- Dimethyl sulfoxide
 J 26(12): 3254 (suitable extender for freezing salmon sperm)
- Dimethylamine (DMA) (*see also* Amines; Trimethylamine)
 J 27(10): 1685 (relative validity of DMA test vs. trimethylamine test as measure of quality for marine flesh, especially for Gadidae)
 28(1): 1 (formation vs. nonformation in stored frozen dark muscle of gadoid vs. nongadoid Atl. coast fishes)
 29(8): 1125 (development in ice-stored canary rockfish muscle)
 CHN 38 (popular version of J 27(10): 1685 above)
 S 1639 (similar to J 28(1): 1 above)

- 1678 (nontoxic to brook trout)
A 162 (same as CHN 38 above)
- Dimond, John Barnet
J 28(12): 1877 (DDT in a lotic system)
- Dimorphism, sexual (*see also* names of organisms)
J 22(3): 695 (in immature sea lampreys)
25(4): 813 (sex determination of brown & related trouts by anal fin dimorphism)
26(12): 3262 (in Pac. spiny lumpsucker)
27(6): 1005 (of lake chub, Lac la Ronge, Sask.)
B 155 (of many species of Canadian Atl. marine fishes)
162 (of sockeye salmon)
173 (description, for most NW Canada & Alaska freshwater fishes)
180 (of many species of B.C. marine fishes)
S 1315 (in *Polinices lewisi* drill)
- Dinamoebidium* (*see* Dinophyceae)
- Dingle, John Reginald
J 24(4): 873 (scallop muscle protein)
(8): 1717 (cod muscle enzyme)
(8): 1837 (postmortem cod muscle)
25(3): 607 (hemolymph characteristics of *Cancer irroratus*, *C. borealis*, & *Hyas coarctatus*)
28(8): 1125 (inosine phosphate breakdown in fishes)
S 1043 (glycolytic metabolites in cod muscle)
1119 (lobster hemolymph constituents)
1144 (lobster hemocytes)
1261 (degradation of adenine nucleotides)
1344 (gaffkemia in lobsters)
1349 (isolation of tropomyosin)
1648 (variation of biochemical quality indices by biological & technological factors)
- Dinoasteromonadaceae (*see* Dinophyceae)
- Dinoflagellates (*see* Dinophyceae; Pyrrophyta)
- Dinophyceae; Dinophyta (*see also* Algae; Phytoplankton; Plankton; Pyrrophyta; for *Gonyaulax* species *see* Paralytic shellfish poisoning)
J 22(4): 1083 (carbon balance re photosynthesis in "red tide" species)
(5): 1107 (*Amphidinium carteri* lipid fatty acids)
23(3): 357 (thetin as dimethyl sulfide precursor in *A. carteri*)
(11): 1715 (*Ceratium hirundinella* of L. Ontario surface waters)
24(8): 1811 (*Ceratium*, *Peridinium*, & *Noctiluca* recoveries by 2 plankton sampling methods)
25(8): 1603 (*A. carteri* fatty acids)
27(2): 335 (*A. carteri* phototrophic growth enhanced by glycerol)
(3): 436 (occurrence in 3 adjoining lakes affected or not affected by uranium ore milling wastes)
(11): 2018 (of Clear L., Ont.)
T 120 (numbers in Bedford Basin, N.S.)
267 (Frobisher Bay, Baffin Is., N.W.T.)
- S 916 (species causing "red water" blooms off west coast of India)
923 (pigment isolation from *A. carteri*)
1003 (new species: *Kofoidinium arcticum*)
1040 (*Amphidinium carteri* enolase activity)
1113 (*A. carteri* extracts as bactericides)
1139 (*Discoasteromonas calciferus*, new arctic relict species)
1159 (photosynthetic thetin in)
1191 (*Gymnaster pentasterias* in Great Bear L., N.W.T.)
1197 (*A. carteri* aldolase activity re Pyrrophyta phylogeny)
1448 (*A. carteri* axenic culture survival re prolonged exposure to darkness)
1488 (*Actiniscus canadensis* (n.sp.), *A. pentasterias arcticus* (new variety), & *Pseudoactiniscus apentasterias* (new genus & species): marine relicts in Canadian arctic lakes)
1491 (*A. carteri* ability to cleave phenylalanine aromatic ring)
1577 (*Dinamoebidium coloradense* & *Katodinium auratum* (2 new species) from Como Creek, Colorado)
1578 (*Dinamoebidium hyperboreum* (n.sp.) from Ellesmere Is. coastal waters, N.W.T.)
1589 (taxonomy, cytotoxicity, & morphogenesis of new family Dinoasteromonadaceae; new genus *Dinoasteromonas*; new species *D. tribra-chiatus*, *D. pentaradiatus*, *D. deflandrei*, *D. brouweri*; discoasters re morphology & taxonomy of fossil & recent Dinophyta)
A 40 (same as S 1159 above)
- Diodon holocanthus* (*see* Balloonfish)
hystrix (*see* Porcupinefish)
- Diphyllbothrium* (*see* Cestoda)
- Diplocotyle* (*see* *Bothrimonas*; Cestoda)
- Dips for preserving fish quality
J 25(10): 2071 (tetracycline & ethylenediaminetetraacetic acid (EDTA) salts)
T 67; 68 (analysis for EDTA residues in)
S 1031 (containing antibiotic for fish & fillets)
A 12(F); 65 (for retarding water losses in fillets)
26 (antibiotic)
- Diptera (*see also* Chaoboridae; Chironomidae; Culicidae; Muscidae; Simuliidae; Tipulidae; *also* Insects; Insecticides; Invertebrates)
J 24(4): 769, 807, 823 (affected by N.B. forest insecticide sprays, re their role as salmon & trout feed)
26(2): 279 (upstream movements of river larvae)
(5): 1157 (feed, habits, ecology, in a small Que. stream)
27(1): 125 (re lake trout feed, L. Opeongo, Ont.)
(12): 2356 (abundance re rainbow trout feeding)
28(1): 35 (differences upstream & downstream of a dammed Ont. lake)

- (1): 73 (ecological energetics & natural history of *Hedriodiscus truquii* in thermal springs)
 (2): 257 (in zoobenthos of 15 small NW Ont. lakes)
 (5): 705 (biological magnification & degradation of insecticides by)
 (6): 849 (samplings from shallow stream beds)
 29(4): 363 (*Nematocera* feed & feeding habit, USSR)
 S 963 (new genus of Nymphomyiidae found in N.B.)
 1532; 1533 (of a high Colorado mountain creek, including a new genus & species, *Cressoniella montana*)
- Discarding fish at sea
 J 26(5): 1222 (American plaice)
- Discinisca lamellosa* (Brachiopoda)
 T 268 (in B.C. faunistic surveys since 1960)
- Discoasteromonas calciferus* (see Dinophyceae)
- Discoasters
 S 1139; 1589 (re morphology & taxonomy of fossil & contemporary Dinophyta)
- Discoloration (see also Browning of flesh; Pigments)
 B 160 (reddening of salmon flesh held in refrigerated sea water)
 CHN 30 (gillnetted Greenland halibut flesh)
 CVG 43 (of sockeye & pink salmon during chilling on vessel)
 S 1180 (removal of fish tank brown stain by sulfur dioxide)
- Discriminant analysis
 T 40 (computer program for)
 112 (FORTRAN 1130 computer program for)
- Disease (for "high-temperature" disease of salmon, see *Chondrocyclus columnaris*; for gaffkemia disease of lobsters, see *Gaffkyi homari* and Lobster, American; for *Aeromonas salmonicida* disease of salmon and trout see Furunculosis; see also *Aeromonas*; Bacteria; Cytology; Defense mechanism; Fungi; Histology; Immunology; Lesions; Parasites; Pathology; Tumors; Vibriosis; Viruses; etc.)
 J 22(3): 713 ("redmouth": oral immunization of trout)
 (6): 1345 (lymphocystis of American plaice)
 23(10): 1487 (antigens for treating trout "redmouth")
 24(2): 443 (serology of 2 Atl. oyster populations)
 (3): 679 (tumor-like growth on freshwater mussel foot)
 (4): 843 (fungus on chinook salmon)
 (4): 867 (histopathology of "gas bubble" disease in salmon)
 (9): 2007 (neurofibroma in snake prickleback)
 25(1): 197 (microorganisms isolated from 12 species of diseased tropical fishes)
 (2): 383 (infectious pancreatic necrosis in young trout)
 (2): 423 (nocardiosis in brook trout)
 (3): 597 (*Ichthyophonus* fungus infection of yellow-tail flounder)
 (6): 1247 (kidney-diseased vs. normal sockeye salmon re transaminase activity)
 (7): 1521 (*Aeromonas* infection of lamprey & trout)
 (11): 2467 (of fungus attack on chinook salmon)
 26(3): 629 (bacteriophages re trout furunculosis)
 (6): 1459, (8): 2247, (9): 2511, (12): 3259 (infectious pancreatic necrosis virus in trouts & Atl. salmon)
 (8): 2213 (microsporidial infection cysts of English sole)
 (9): 2311 (disinfectants against *Aeromonas liquefaciens* in trout)
 (9): 2535 (bacterial of feral vs. hatchery Atl. salmon kidney)
 (12): 3242 (fibrous & cystic lesions in ovaries of aged Atl. cod)
 27(2): 265, (7): 1285, (8): 1385 (control of infectious hematopoietic necrosis virus in Pac. salmon, & its morphology)
 (5): 951 (effects on winter flounder blood plasma protein)
 (5): 955 (whirling, occurrence in W USA trout hatcheries)
 28(1): 112 (leukemic condition in cutthroat trout)
 (4): 517 (first records of vibriosis in Pac. salmon cultured in Canada; correction on J28(8): 1219)
 (7): 1064 (infectious pancreatic necrosis virus in brook trout feces & organs; effect of stress on detecting masked viral & bacterial infections in fishes)
 (9): 1350 (infectious pancreatic necrosis virus found in brook trout in 2 Ont. hatcheries)
 (11): 1809 (new lymphocystis viral infection records in gobiid fishes & balloonfish, E Pac. coast)
 29(2): 149 (histopathology of channel catfish hemorrhagic virus disease)
 (9): 1359 (effect of 2 iodophor disinfectants on various bacterial & 2 fungal fish pathogens)
 (10): 1425 (inadequacy of some aquarium disinfectants against potential fish pathogens)
 (11): 1513 (antibiotics effectiveness against furunculosis & kidney disease in adult chinook salmon)
 B 162: 91 (of sockeye salmon)
 169: 164 (in Pac. oyster culture, B.C.)
 T 83 (bibliography of Atl. salmon diseases)
 185 (of Canada fishes: bibliography, 1879-1969)
 226 (*Aeromonas liquefaciens* bacteria cause of epizootic fish mortalities in NW Miramichi R., N.B.; possibility of shiners as immune carriers)
 245 (uncertain, possibly fungal, of mountain whitefish & rainbow trout, Kootenay L., B.C.)
 246 (bibliography of N America Pac. coast trawled fishes)
 MSP 16 (1972 report on considerations & recommendations for control of fish diseases in Canada)
 S 1002 (virus tumors in Pac. flatfishes skin)
 1140 (bacterial skin lesions on rainbow trout)
 1258 (rainbow trout skin lesions)
 1266 (Refsum's, in man)
 1285 (*Hexamita inflata* protozoan re Atl. oyster)
 1369 (Strait of Georgia *Calanus* copepods infected by a yeast)
 1406 (from *Aeromonas liquefaciens* in salmon &

- suckers in mine-effluent polluted NW Miramichi R., N.B.)
- 1487 (from effects of nematode parasitization on fishes)
- 1567 (re Crustacea as enemies of fish)
- 1635 (sockeye salmon immunological response to salmonid kidney disease bacterium preparation)
- A 58; 58(F) (human dermatitis from fluke larvae)
- 186 (infectious, of USSR fishes; immunity & control: book review)
- Disinfectants; Disinfection (see also Bacteria)**
- J 24(12): 2623 (for combating gaffkemia disease of lobsters)
- 26(9): 2311 (re trout eggs transmission of *Aeromonas liquefaciens*)
- 28(12): 1899 (rainbow trout & coho salmon fry resultant stress from formalin treatment)
- 29(1): 61 (effectiveness of 2 iodophors, against salmonid viral infections)
- (9): 1359 (effectiveness of 2 iodophors against various bacterial & 2 fungal fish pathogens)
- (10): 1425 (inadequacy of some, for inhibiting potential aquarium fish pathogens)
- B 160 (for holds or tanks for chilling or freezing fish aboard vessels)
- 169: 147 (re Pac. oyster culture and handling)
- CHN 42 (of lobster tanks & pounds against gaffkemia disease bacteria)
- A 58; 58(F) (against swimmers' & clam-diggers' dermatitis itch)
- 203 (of refrigerated seawater equipment for holding fish)
- Disney, John George**
- J 27(4): 801 (*Tilapia* muscle glucose levels)
- Dispersal (see also Dispersants; Distribution; Migration; Movement)**
- J 26(7): 1867 (behavior of young wild vs. hatchery-reared Atl. salmon in streams)
- 28(7): 1019 (role of social behavior in introduced rainbow trout dispersal)
- 29(5): 469 (tagging effects on northern pike)
- (5): 545 (postglacial, of 2 sculpin, a stickleback, & a trout-perch species in E Ont. & W Que.; also new distribution records)
- B 173 (glaciation effects on freshwater fishes of NW Canada & Alaska)
- S 1647 (*Allocapnia* stoneflies)
- A 258 (fundamental principles re dilution & dispersal of wastes in coastal areas)
- Dispersants**
- T 201 (toxicity tests on various, used for combating fuel oil spills)
- S 1476 (combating fuel oil spills)
- 1710 (toxicity of polyoxyethylene esters & ethers to Atl. salmon & *Gammarus* amphipod)
- A 233 (combating fuel oil spills)
- Distephanus speculum* (a silicoflagellate)
- S 1191 (in Great Bear L., N.W.T.)
- Distribution (biological) (see also Age; Dispersal; Indicator species; Marking; Migration; Movements; Species, new records or range extensions; Tagging; also other cognate subjects)**
- J 22(1): 139 (western brook lamprey)
- (2): 259 (rare Nfld. skates)
- (2): 621 (seasonal, monkfish)
- (3): 721 (fishes in Kananaskis R. system, Alta.)
- (3): 823 (factors affecting diurnal and seasonal of two planktonic ostracods)
- (3): 841 (and morphology of a NE Pac. Medusa)
- (4): 969 (some Algonquin Park crustaceans and fishes)
- (5): 1151 (two species of NE Pac. Alepocephalidae)
- (5): 1175 (freshwater leech parasitic on salmonids)
- (6): 1391 (oceanic, of Pac. salmon traceable by parasites)
- (6): 1407 (bathymetric, of Oregon coast brittlestars)
- (6): 1425 (of intertidal algae re salinity and tides)
- 23(1): 141 (Arctic ciscoes)
- (4): 499 (vertical, of yellow perch under ice)
- (7): 1043 (oceanic, of fin-marked pink salmon)
- (8): 1135 (vertical, of NE Pac. oceanic shrimps)
- (11): 1673 (bathymetric, of Oregon sea stars)
- (12): 1977 (factors, re brook trout associated with young Atl. salmon)
- 24(1): 33 (vertical, of benthic marine algae, Indian Arm, B.C.)
- (2): 451 (of E Pac. harbour seals re pelage patterns)
- (6): 1385 (vertical, of Oregon echinoids)
- (7): 1629 (randomness in pink salmon redds)
- 25(1): 33 (of juvenile steelhead vs. cutthroat trouts in SW B.C. streams)
- (1): 101 (of white & largescale suckers re hybridization)
- (1): 157 (*Mesidotea entomon* in Chignik Lakes, Alaska)
- (2): 409, 415 (N American kokanee)
- (2): 427 (lobster larvae off Pictou, N.S.)
- (3): 457 (vertical, of sound-scattering layer fishes)
- (3): 485 (of spawning sockeye salmon on Alaska lake beaches)
- (5): 943 (*Anonyx* species in N American Atl. & Arctic coasts)
- (6): 1161 (parasitic copepod *Hemioniscus balani*, E coast of N America)
- (6): 1181 (upper Great Lakes benthic environment)
- (7): 1423 (E N American *Taeniopteryx* stoneflies)
- (9): 1775 (N.S. offshore sand lance)
- (11): 2269 (& description of 93 arctic Canada, Bryozoa species)
- (12): 2527; 27(4): 811 (brown trout world distribution)
- (12): 2665 (depth, of fishes off Oregon coast)
- 26(2): 221 (triclad tubellarians in E Ont.)
- (2): 325 (southern Alta. fishes)
- (2): 361 (areal & vertical, of 3 sand-burrowing amphipod species)

- (4): 909 (*Pomphorhynchus* acanthocephalan parasite of Atl. salmon, & of intermediate hosts)
- (4): 947 (helminth parasites in pinnipeds)
- (4): 1013 (*Caligus elongatus* parasitic copepod)
- (5): 1121 (oyster drill, Canadian Atl. coast)
- (5): 1157 (linear, of aquatic insects in a small Que. stream)
- (5): 1390 (of 4 insular fish species, Sable Is., N.S.)
- (6): 1439 (fishes of Missouri R. drainage in Canada)
- (6): 1485 (vertical, of zooplankton, Ogac L., Baffin Is.)
- (6): 1689 (grubby in Nfld. waters)
- (7): 1699; 28(3): 452 (world distribution of native or introduced brook trout)
- (7): 1727 (Wash. & S.B.C. Ophiuroidea)
- (8): 2135 (horizontal, of L. Ontario crustacean plankton)
- (9): 2431 (brook stickleback, Canada & USA)
- (10): 2543 (vertical, of various planktonic copepods, Parry Sound, Ont.)
- (10): 2581 (bottom corer for sampling vertical, of sedimentary benthos)
- (10): 2691 (35 mesopelagic & other fishes, Gulf of St. Lawrence & N.S. banks)
- (10): 2703 (vertical, of seaweeds, Halifax Co., N.S.)
- (11): 2987 (*Salmincola* parasitic copepods)
- 27(1): 105 (glacier lanternfish in NW Atl.)
- (3): 445 (walleye larvae re water currents, Oneida L., N.Y.)
- (3): 486 (genus *Lepidion* fishes, N Atl. & Mediterranean)
- (3): 499 (daggertooth in N Atl.)
- (3): 535 (sea scallop on Atl. beds, observed from submersible)
- (4): 621 (benthic infauna communities, Washington coast)
- (4): 685 (of amphipod *Hyaella azteca* re sediment microflora feed)
- (6): 1059 (vertical, of northern pike, bluegill, & yellow perch under ice in shallow lake)
- (6): 1151 (*Teredo navalis* & *Limnoria lignorum* marine borers in Canadian Atl. waters)
- (7): 1239 (long-term changes in macrozooplankton, Kootenay L., B.C.)
- (8): 1335 (vertical, of copepods in 2 mountain lakes)
- (8): 1453 (phytoplankton spatial heterogeneity in a nearshore marine environment)
- (9): 1501 (thecate hydroids in N Canada & other N coldwater regions)
- (9): 1656 (seasonal depth, of landlocked Atl. salmon, brook trout, landlocked alewives, & American smelt, in a small lake)
- (10): 1781 (Pac. ocean perch & other rockfishes in NE Pac., 1963-66 surveys)
- (10): 1823 (L. Erie smelt, early 1960s)
- (10): 1847 (of bryozoan introduced into Strait of Georgia)
- (11): 1961 (oligochaetes in Toronto harbour, L. Ontario)
- (11): 2053 (depth & areal, of various stages of witch flounder, Gulf of St. Lawrence & off N.S.)
- (12): 2261 (yellowtail flounder, waters off Nfld.)
- 28(1): 49 (of populations of 2 salamander species, Marion L., B.C.)
- (2): 245 (vertical, of zooplankton in 2 shallow small NW Ont. lakes)
- (3): 311 (of planktonic Crustacea in 146 W Canadian alpine & subalpine lakes & ponds)
- (3): 323 (*Lepeophtheirus nordmanni* & *L. hastatus* parasitic copepods world distribution)
- (3): 369 (salmonid elemental composition re geographical origins; see also T 200 below)
- (3): 391 (of red-water ciliate *Mesodinium rubrum*)
- (3): 417 (bathymetric, re Pac. ocean perch reproductive patterns)
- (3): 427 (tubenout & prickleback species)
- (4): 465 (N American, re intraspecific variations of lake char)
- (5): 663; 29(12): 1788 (world, of rainbow trout)
- (5): 749 (Arctic grayling geographical origin)
- (6): 883 (Pac. cod, re environmental effects on egg development)
- (6): 911 (particulate carbon & nitrogen re primary production, Chesapeake Bay, Md.)
- (9): 1259 (Dolly Varden & cutthroat trouts re feed in 3 B.C. lakes)
- (10): 1403 (amphipacific, of some 25 polychaete species)
- (10): 1621 (northern rockfish)
- (10): 1663 (Pac. herring offshore, on basis of fur seal stomach contents; also of fur seals off B.C.)
- (12): 1873 (bowhead whale in Canadian Arctic)
- 29(1): 1 (of rare eel *Xenomystax atrarius* in E. Pac. Ocean)
- (1): 79 (& abundance of planktonic crustacea, Georgian Bay, L. Huron)
- (5): 507 (herring larvae along S coast of N.S.)
- (5): 535 (American eel in L. Ontario & Ottawa R.)
- (5): 545 (130 new locality records for 2 sculpin, a stickleback, & a trout-perch species in E Ont. & W Que.)
- (5): 590 (likelihood analysis of 3-way contingency tables, re variables in data)
- (9): 1319 (depth, of benthic polychaetes in 2 Canadian Arctic fiords)
- (10): 1381 (*Bothrimonus* cestodes in N hemisphere)
- (11): 1565 (*Lampsilis radiata* clam in 19 central Canadian lakes)
- (12): 1772 (postglacial, of pygmy whitefish)
- B 152 (Canadian arctic & subarctic sea stars)
- 155 (Canadian Atl. coast fishes)
- 157: 14 (lobster)
- 161: 3 (goldeye)
- 162: 6, 161, 329, 373 (sockeye salmon)
- 1665: 23 (carp in Canadian waters)
- 166: 1, 42 (eels in E Canada), 6 (world distribution of *Anguilla*)
- 168: 18 (of temporarily toxic shellfishes in B.C.)
- 170 (N American Chironomidae, including 33 new species)

- 173: 11, 15, 23 (factors affecting freshwater fishes in NW Canada & Alaska)
- 177 (paralytic shellfish poison in E Canada shellfishes; geographical & anatomical)
- 180 (B.C. marine fishes)
- CJG 15 (Nfld. herring)
- 16 (Nfld. herring catches, 1967-68)
- 18: 25 (seasonal, of NE Nfld. & Labrador herring)
- CSG 44 (Gulf of St. Lawrence cod catches)
- T 2 (B.C. marine Mollusca)
- 31 (Atl. mackerel off Canada)
- 34 (arrowtooth & spinycheek flounder; rock & flathead sole; Pac. cod)
- 58 (of Nfld. herring stocks)
- 74 (vertical & horizontal, of sablefish)
- 88 (Atl. herring larvae re Bay of Fundy hydrography)
- 105 (depth, of B.C. commercial groundfish)
- 136 (& origin, of W Atl. larval swordfish)
- 140; 174; 177; 183; 190 (lateral & depth, of B.C. offshore herring)
- 155 (lateral & depth, of subtidal biota, Bideford R., P.E.I.)
- 168 (Bay of Fundy sea scallop)
- 200 (multiple discrimination analysis of data from J 28(3): 369 reference above)
- 213 (lateral & depth, of B.C. offshore herring)
- 221 (Pac. ocean perch as taken in B.C. groundfish surveys)
- 225 (Bay of Fundy benthos associated with sea scallop)
- 252; 277 (herring larvae off S N.S. coast)
- 260 (depth, of Scotian Shelf groundfishes)
- 274 (depth & temperature, Greenland halibut in Nfld.-Labrador area)
- 315 (area & size, larval herring & capelin, S Gulf of St. Lawrence & SW Nfld.)
- 318 (larval herring, S Gulf of St. Lawrence)
- 332 (feasibility of fluorimetric mapping of chlorophyll, Gulf of St. Lawrence)
- S 925; 926 (NE Pac. salmon)
- 968 (Canadian stoneflies)
- 973; 1302; 1390 (NE Pac. Ocean offshore coho salmon)
- 974; 1137 (Pac. salmon across NE Pac.)
- 1008 (harp & hood seals)
- 1057; 1058 (haddock, re depth, season, & temperature)
- 1059 (Atl. cod, re depth & temperature)
- 1067 (range extensions of B.C. Polychaeta)
- 1107 (decapod Crustacea in NW Atl.)
- 1108 (N American arctic & subarctic sea stars)
- 1147 (haddock re season, depth, & bottom temperature)
- 1188 (harbour seal in Canadian Arctic)
- 1240 (of NE Pac. stranded Cuvier's beaked whales)
- 1268 (Que. stoneflies)
- 1311 (decapod crustaceans in NW Atl.)
- 1375 (*Zealeuctra* stoneflies)
- 1384 (blue ling, W Greenland & Nfld. areas)
- 1470 (latitudinal & depth, in checklist of B.C. marine molluscs)
- 1529 (trace elements & chlorophyll *a* in L. Ontario)
- 1532 (invertebrates in high mountain North Boulder Creek, Colorado)
- 1580 (shallow-water marine benthos, Bideford R. estuary, P.E.I.)
- 1590: 558 (of various fishes re temperature)
- 1690 (horizontal, of L. Ontario phytoplankton, 1970)
- 1692 (horizontal & vertical, oxygen in N & S Pac. Ocean)
- 1693 (*Clostridium botulinum* in Gulf of St. Lawrence re environment)
- A 36 (B.C. herring populations)
- 43 (swordfish catches off Canadian Atl. coast, 1965)
- 67 (bluefin tuna)
- 100 (Man. freshwater fishes)
- 108 (1966 Canadian ICNAF studies on swordfish & various other Atl. fishes)
- 138; 255; 256; 263 (queen crab)
- 193 (world, of capelin)
- 204 (Pac. salmon & steelhead trout in N Pac. Ocean)
- 224 (world, of coregonid fishes & their parasites)
- 256 (depth, of queen crab)
- Distribution (physical) (*see also* Pollution)
- T 262 (predicting excess temperature distribution in natural waters receiving hot discharge from steamelectric power plants)
- A 232 (radioactive isotopes in atmospheric & marine environment from various sources)
- Distribution (trade) (*see also* Economics; Fisheries)
- B 149: 45 (Great Lakes fisheries products)
- Distribution of fatty acids in lipids (*see* Acids, fatty)
- Diurnal effects (*see* Behavior; Diel habits; Light, reactions to)
- Diving (undersea) (*see also* Photography, underwater; Submersibles)
- J 24(12): 2637 (decompression chamber for accidents)
- Dixon, Gordon Henry
- S 1245 (protamine biosynthesis during salmonid spermatogenesis)
- Dixon Entrance, B.C. (*see also* Oceanography, Pacific east coast; Queen Charlotte Islands region)
- B 156 (physical oceanography)
- A 74 (good groundfish area found during exploration)
- DNA (deoxyribonucleic acid) (*see* Acids, nucleic; Nucleosides)
- Doane, J.
- S 1716 (analysis of a chlorinated terphenyl & its deposition in Atl. cod tissues)
- Docherty, Georgina Elizabeth

- J 23(9): 1461 (glycogen reserves of trout)
- Dockrill, April
J 26(1): 1 (*Gaffkya homari* in lobster)
- Doctor, fish (*Gymnelis viridis*)
T 261 (bibliography for Gulf of St. Lawrence)
- Dodecaceria* (see Polychaeta)
- Dodge, Douglas Paul
J 27(3): 613 (vital statistics of Great Lakes rainbow trout)
- Dodimead, Allan John
J 24(11): 2207 (E subarctic Pac. waters changes)
T 54 (NE Pac. Ocean temperatures & salinities 1965 & 1966)
70 (oceanographic features of central B.C. coast waters)
75 (central subarctic Pac. region oceanographic conditions, winter 1966)
A 204 (INPFC Canadian report on Pac. salmon & steelhead trout research, 1965)
- Dodson, Julian John
J 29(10): 1445 (ultrasonic tracking of adult American shad during salt to fresh water migration)
- Dog (*Canis familiaris*)
S 1028; 1080; 1203 (fatty acids positional distribution in fat triglycerides)
- Dogfish (European) (*Scyllium canicula*)
J 25(12): 2711 (muscle creatine kinase localization)
- Dogfish, Atlantic (see Dogfish, spiny (Atlantic))
- Dogfish, black (*Centroscyllium fabricii*)
T 261 (bibliography for Gulf of St. Lawrence)
- Dogfish, Pacific (see Dogfish, spiny (Pacific))
- Dogfish, spiny (Atlantic) (*Squalus acanthias*) (dogfish shark) (see also Dogfish, spiny (Pacific))
J 23(1): 153 (underwater observation in off-bottom trawl)
24(2): 357 (α -tocopherol & lipids in tissues of unfed held)
26(4): 805 (parasites, Nfld.)
28(9): 1285 (methylmercury in, N.S. banks)
29(1): 85 (muscle catheptic activity of Atl.)
B 154: 113 (as Nfld. resource)
CSG 54 (underexploited on N.S. banks)
T 103 (in experimental Atl. otter-trawling, 1967)
164 (extensive length-weight data)
260 (standing crop, availability, lengths, weights, etc., from Scotian Shelf surveys, 1958-68)
261 (bibliography for Gulf of St. Lawrence)
MSP 14 (popular description (English & French))
S 1053 (mass mortality re low sea temperatures)
- 1244 (a corticosteroid 1α -hydroxylase in interrenal tissue)
1412 (fluoride content of whole, bones, fillets, & fish protein concentrate)
A 124 (use for fish protein concentrate)
143(F) (French version of CSG 54 above)
175 (same as CSG 54 above)
- Dogfish, spiny (Pacific) (*Squalus acanthias*) (*S. suckleyi*; Dogfish shark; Grayfish; Pacific dogfish) (see also Dogfish, spiny (Atlantic))
J 22(1): 203 (biochemical systematics)
24(3): 527 (quality during frozen storage)
25(8): 1651 (plasma protein bound inorganic iodide)
(12): 2665 (associations with 60 Oregon coast fish species)
26(8): 1985 (stock & yield forecast, N Pac. Ocean)
27(3): 551 (oxygen ventilation re gill blood perfusion)
(7): 1251 (biomass, Strait of Georgia)
29(8): 1211 (pectoral fin length re subspeciation of *Squalus acanthias*)
(10): 1487 (mercury content, Strait of Georgia)
(12): 1717 (size at maturity; fecundity; embryonic growth; in B.C. waters)
B 180: 44 (full description, etc.)
CNG 73 (in Hecate Strait exploratory fishing)
79; 82 (catches, B.C., 1945-65)
80 (predation on herring)
CNS 14; 19 (B.C. landings by areas, & livers by months, 1964, 1965)
28 (Canadian & U.S. trawl catches off B.C., 1954-65)
T 7; 11; 19; 22; 30; 46; 56; 62; 81; 89; 117; 131; 144; 181; 205; 210; 221; 269; 290; 302; 317; 328 (catches during FRB experimental groundfish & trawl surveys; catches or landings from B.C. commercial trawl fishery, 1966-72)
216; 257 (catches from B.C. & U.S. Pac. coast commercial trawling, 1969, 1970)
140; 174; 177; 183; 190; 213 (catches during FRB B.C. offshore herring surveys)
174; 177; 183; 190; 210; 213 (feed)
210; 213 (size & sex composition)
246 (bibliography)
S 1591 (pristane & other hydrocarbons in a commercial Canadian liver oil)
1668 (mercury contamination, B.C.)
A 37 (B.C. & U.S. landings, 1956-63, & fisheries potential)
90; 103 (fishery trend along N America Pac. coast)
235 (estimated biomass, Strait of Georgia)
- Dogwinkle, Atlantic (*Thais (Purpura) lapillus*) (see also Gastropoda; Mollusca; Snails, marine)
J 24(2): 357 (α -tocopherol & lipids in unfed held)
25(2): 267 (occurrence & retention of thetin derivative from feed)
(9): 1803 (caloric content)
27(10): 1898 (2 digestive tract enzymes)
B 177 (re paralytic shellfish poisoning, E Canada)
- Doidge, Dolores Agnes

- CNS 20; 21; 22; 23 (food of salmonids)
- Dolichopteryx* sp. (*see* Spookfish, winged)
- Dollfus, Robert Philippe Ferdinand
J 26(4): 1037(F) (*Tetrarhynchus cestodes*)
- Dollinger, Edward Joseph
J 22(3): 653; 23(5): 673, (6): 925 (chalkiness in Pac. halibut)
23(5): 701 (fish preservation by partial freezing)
- Dollosa cyclolepis* (*see* Rattail, smoothscale)
- Dolly Varden (*Salvelinus malma*)
J 22(3): 736 (in Kananaskis R. system, Alta.)
23(6): 929, (10): 1599 (muscle myogens & multiple hemoglobin electropherograms)
26(2): 325 (S Alta. distribution)
(9): 2319 (parasites, B.C.)
27(6): 991 (smolts age, feed, & migration, SE Alaska)
28(9): 1259 (sympatry & allopatry with cutthroat trout re feed & habits in 3 B.C. lakes)
29(5): 555 (feeding behavior & interaction with coastal cutthroat trout)
B 162: 243 (predator on young sockeye salmon)
173: 148 (full description, etc.)
180: 134 (full description, etc., B.C.)
T 323 (possible effects of logging on, in a Vancouver Is. stream)
S 1668 (mercury content)
- Dolphin (*Coryphaena hippurus*) (a fish)
J 24(3): 683 (feed of, in Barbados waters)
25(9): 1987 (red & white muscle temperature of recently caught)
28(7): 947 (blood pathways effects on blood-pressure drop in gills)
CSG 49 (identification)
T 193 (Atl. tagging, 1961-69)
261 (bibliography for Gulf of St. Lawrence)
S 1361 (absence of gill lamellar fusion)
1409 (gill blood pathways)
- Dolphin, Amazon River (*Inia geoffrensis*)
S 1514 (wax esters, triglycerides, & glyceryl ethers in jaw & blubber fats re echolocation)
- Dolphin, bottle-nosed (*see* Porpoise, bottlenose)
- Dolphin, common (Pacific and Atlantic) (*Delphinus delphis*) (saddleback dolphin)
J 25(12): 2561 (feeding habits from fish otoliths in stomach)
27(11): 1903 (strandings, etc., other than commercially caught, Canadian Atl. coast, 1949-68)
B 171: 17 (single B.C. record)
T 103 (herd of 50 sighted during experimental otter trawling off NW Atl. coast)
S 1454 (skin pigmentation patterns)
1681 (parasites of, W coast N America)
- Dolphin, euphrosyne (*see* Dolphin, striped)
- Dolphin, long-beaked (*see* Dolphin, spinner)
- Dolphin, northern right-whale (*Lissodelphis borealis*) (right-whale dolphin)
J 25(12): 2561 (feeding habits from fish otoliths in stomach)
B 171: 17 (presumable presence in B.C. waters)
S 1681 (parasites of, W coast N America)
- Dolphin, Pacific spotted (*Stenella graffmani*)
J 25(12): 2561 (feeding habits from fish otoliths in stomach)
- Dolphin, Pacific striped (*Lagenorhynchus obliquidens*) (Pacific white-sided dolphin)
J 25(12): 2561 (feeding habits from fish otoliths in stomach)
B 171: 17 (description & records, of B.C.)
S 1454 (skin pigmentation pattern)
1575 (body & heart rate, re feeding rate)
1681 (parasites of, W coast N America)
- Dolphin, Pacific white-sided (*see* Dolphin, Pacific striped)
- Dolphin, right-whale (*see* Dolphin, northern right-whale)
- Dolphin, Risso's (*Grampus griseus*) (gray grampus)
B 171: 23 (single B.C. record, & sightings in NE Pac. Ocean)
S 1001 (first B.C. record)
- Dolphin, saddleback (*see* Dolphin, common)
- Dolphin, spinner (*Stenella longirostris*) (long-beaked dolphin)
J 25(12): 2561 (feeding habits from fish otoliths in stomach)
S 1681 (parasites of, W coast N America)
- Dolphin, spotted (*Stenella dubia*)
S 1681 (parasites of, W coast N America)
- Dolphin, striped (*Stenella coeruleoalba*) (*S. euphrosyne*; euphrosyne dolphin)
J 27(11): 1903 (strandings, etc., other than commercially caught, Canadian Atl. coast, 1949-68)
B 171: 15 (B.C. records; uncertain taxonomy status of *S. coeruleoalba* vs. *S. euphrosyne*)
S 1190 (stranded on Sable Is., N.S.)
- Dolphin, white-beaked (*Lagenorhynchus albirostris*)
J 27(11): 1903 (strandings, etc., other than commercially caught, Canadian Atl. coast, 1949-68)
- Dolphin, white-sided (*Lagenorhynchus acutus*)
J 27(11): 1903 (strandings, etc., other than commercially caught, Canadian Atl. coast, 1949-68)
- Dolphins (Coryphaenidae fishes) (*see also* Dolphin (*Coryphaena hippurus*) heading)

- S 956 (Canadian research in Caribbean Sea)
- Dolphins (mammalian) (*see also* preceding Dolphin headings, *also* Delphinidae species popularly called whales: Whale, false killer; Whale, killer; Whale, pilot)
 B 171: 15 (B.C. coast)
 S 1454 (skin pigmentation patterns re evolution & adaptive coloration)
- Dombroski, Heinz
 S 1161 (rock salt bacteriological investigation)
- Dominance (*see* Behavior; Territorialism)
- Dominy, Charles Leslie
 J 28(8): 1215 (blood changes in alewives through exercise)
- Donaldson, Edward Mossop
 J 25(1): 71 (cortisol in salmonid plasma)
 (7): 1465 (metopirone in salmonids)
 (7): 1497 (salmon pituitary "prolactin")
 26(7): 1789 (cortisol: effect of estrogen)
 27(12): 2286 (cortisone secretion in sockeye salmon)
 (12): 2323 (cortisol secretion rate in sockeye salmon)
 29(1): 13 (pink salmon ova fertilization by sperm from treated juveniles)
 (4): 435 (salmon gonadotropin effect on in vivo maturation of catfish oocytes)
 S 1187 (rainbow trout hypophysectomy effects)
 1249 (spermiation bioassay for gonadotropin)
 1259 (¹⁴C cortisol in salmon)
 1292 (salmon pituitary gonadotropin in goldfish)
 1310 (sockeye cortisol dynamics)
 1336 (hormones & spermiation in goldfish)
 1337 (adrenalectomy of eel)
 1338 (cortisol dynamics of sockeye)
 1360 (fishes body compartments & distribution of electrolytes)
 1376 (fish gonadotropin effects in lizard)
 1526 (feedback mechanism in eels)
 1535 (sexual behavior of female guppy)
 1593; 1630; 1670 (salmon pituitary gonadotropin effects on hypophysectomized catfish gonad functions)
 1682 (salmon pituitary gonadotropin effects on *Oryzias latipes* ovulation)
 1695 (salmon gonadotropin effect on immature gray mullet ovarian & testicular development)
- Donaldson, Henry Adam
 J 29(10): 1419 (sound-scattering layers in NE Pac. Ocean)
- Donaldson, Ivan J.
 J 25(10): 2233 (tattooing fish)
- Donaldson, John Russell
 J 25(3): 485 (sockeye salmon spawning)
- Donaldson, Lauren R.
 S 1061 (Alaska salmon resource)
- Dorfman, Donald
 J 26(9): 2493 (brook trout growth)
- Dorosoma cepedianum* (*see* Shad, gizzard)
- Doudoroff, Peter
 J 24(3): 475 (oxygen re largemouth bass growth)
 25(1): 49 (dissolved O₂ & CO₂ re bass & salmon swimming)
- Douglas, Robert John
 J 26(3): 629 (*Aeromonas salmonicida* phages)
- Douraghi-Zadeh, Koshrow
 S 1254 (stereoisomerism in fatty acids)
- Dowd, Richard Gordon
 J 27(4): 737 (two sonic measuring systems)
- Dragonfish, arrow (*see* Dragonfish, longfin)
- Dragonfish, boa (*Stomias boa ferox*)
 J 26(10): 2691 (new Canadian Atl. records; diurnal depth distribution)
- Dragonfish, highfin (*Bathophilus flemingi*)
 B 180: 165 (full description, etc., B.C.)
 T 11 (in B.C. experimental midwater trawling)
- Dragonfish, longfin (*Tactostoma macropus*) (arrow dragonfish)
 J 25(3): 457 (in N B.C. midwater trawl catches)
 B 180: 167 (full description, etc., B.C.)
 T 11; 22; 175 (in B.C. experimental trawling)
- Dragonflies (*see* Odonata)
- Dragovich, Alexander
 J 26(6): 1676 (*Lolliguncula brevis* measurements)
- Drags, drift (*see* Currents; Drift)
- Drags, fishing (*see also* Trawling)
 J 22(2): 313 (scallop catches by two ring-sizes of)
 25(10): 2123 (underwater observation of efficiency for scallops)
 S 1176 (efficiency & selectivity of 3 types for scallops)
- Dreamer, bulbous (*Oneirodes eschrichti*) (*O. bulbosus*)
 J 24(10): 2101 (second record off B.C.)
 B 180: 218 (full description, etc., B.C.)
 T 11 (taken in FRB experimental midwater trawling, B.C.)
- Dreamer, smooth (*Chaenophryne parvicornis*)
 J 24(10): 2101 (first record off B.C.)
 B 180: 214 (full description, etc., B.C.)
- Dreamer, spiny (*Oneirodes acanthias*)
 J 24(10): 2101 (first record off B.C.)
 B 180: 216 (full description, etc., B.C.)

- T 11 (taken in FRB experimental midwater trawling)
- Dredge
J 29(10): 1503 (improved type for sampling deep arctic benthos from rough sea bottom)
B 179: 62 (for harvesting B.C. deepwater clams)
- Drepane punctata* (see Sicklefish)
- Dressing (see Gutting; Heading)
- Drift (determination of) (see also Currents; Oceanography)
J 22(1): 353 (Northumberland Strait, by bottles)
(3): 689 (NE Pac. Ocean, by transponding buoys)
24(9): 1845 (by sea-drifters, Canadian Atl. continental shelf region)
T 26 (by drogues, Gulf of St. Lawrence)
85 (theory & design of free-floating current followers; effects of wind on floats)
263 (by drogues, off sewage treatment plant outfall)
S 939(F) (by weighted submerged draggers)
1120; 1539 (by aerial photography of dyed surface waters)
1592 (Langmuir circulation & windspeed re oceanic particle concentration)
- Driftfish, silver (*Psenes maculatus*)
J 26(10): 2698 (first Canadian record; off N.S.)
- Drills, clam
J 25(3): 541 (*Polinices lewisi* aquiferous system for podium expansion)
26(6): 1451 (*P. lewisi* accessory boring organ histology)
27(10): 1898 (2 digestive tract enzymes)
B 168: 31 (*P. lewisi* toxicity re paralytic shellfish poison in some B.C. clams)
169: 59 (*Thais lamellosa* predator on B.C. clams, barnacles, & mussels)
177 (*P. heros* (*Lunatia heros*) re paralytic shellfish toxicity, E Canada)
179: 9 (*P. lewisi* biology & predation on B.C. clams)
T 42 (*P. lewisi* biology)
S 1315 (*P. lewisi* sexual dimorphism)
- Drills, oyster
J 26(3): 701 (*P. heros* mortality from unusually low P.E.I. estuarine salinity)
(5): 1121 (*Urosalpinx cinerea* distribution & industrial importance)
27(3): 535 (*P. heros* distribution density on Atl. scallop beds)
28(9): 1225 (*U. cinerea* cadmium toxicity tests)
B 169: 159 (Japanese *Ocenebra japonica* & Atl. coast *U. cinerea* as introduced pest to Pac. oyster culture, B.C.)
S 1315 (*P. heros* sexual dimorphism)
1679 (*Lunatia groenlandica* sterols)
- Drilonerets falcata minor* (see Polychaeta)
- Drinnan, Roy Ellis
J 23(4): 595 (cultivation of Atl. oyster cells)
25(11): 2521 (microturbellarian in oysters off P.E.I.)
CSG 48 (Atl. oyster stocks) 51 (Canadian oyster hatchery development)
S 891 (water-pumping recording apparatus)
1134 (Canadian oyster hatchery development)
1199 (ancient oyster & bay scallop shells from Sable Is.)
1285 (*Hexamita inflata* axenic cultivation from *Crasostrea virginica*)
A 35 (rehabilitating oyster stocks)
- Drip (see also Muscle; Rigor)
J 22(1): 53 (polyphosphate, citrate, and salt as inhibitors)
(4): 955 (after holding salmon in refrigerated sea water)
23(5): 673 (& flesh pH re Pac. halibut flesh chalkiness)
(7): 1077 (on thawing Atl. cod fillets)
24(3): 651 (re postmortem physicochemical changes in unfrozen Atl. cod)
25(4): 743 (of frozen trap-caught Atl. cod)
(4): 829 (variations in, on thawing American plaice fillets)
(7): 1475 (in Atl. cod muscle dipped in tripolyphosphate solution)
CHN 27 (minimization of, by brining Atl. cod fillets)
T 68 (chemical analysis for ethylenediaminetetraacetic acid residues in)
S 1363; 1364; 1365; 1366; 1367 (thaw-drip during processing of Atl. trawled fishes: effect on product quality, also use of polyphosphate dip to minimize)
1416 (degree of, in products from B.C. fishes sea-frozen in various rigor stages)
A 12(F); 65 (in Atl. cod & flounder fillets)
27 (in thawed trap-caught Nfld. cod frozen at sea)
- Driver, Edwin Andrew
J 22(5): 1165 (Manitoba saline lakes)
23(11): 1815 (meristic numbers of yellow perch)
- Drogues (see Drift; Currents)
- Drozdowski, Bronislaw
S 1350 (production of fish protein concentrate from herring)
- Drucker, Benson
J 24(10): 2069 (sockeye salmon migratory behavior)
- Druehl, Louis Dix
J 24(1): 33 (distribution of algae)
27(2): 401 (submersion-emersion sensor for intertidal biological studies)
- Drum, freshwater (*Aplodinotus grunniens*) (sheepshead)
J 23(1): 149 (alkaline phosphatase in scales)
24(6): 1219 (oil yield & composition on reduction)
(6): 1291 (composition & nutritive value of meal)
25(1): 169 (pesticide residues in meals & oils)

- 26(6): 1439 (distribution in Canadian Missouri R. headwaters)
- 27(1): 170 (in Hudson Bay drainage system, Man.)
(10): 1842 (taken during L. Erie smelt surveys, 1962-63)
- 28(7): 1061 (practical drying equipment for fillets & steaks)
(11): 1811 (suitable for introduction into alkaline eutrophic lakes)
- 29(9): 1283 (cadmium content, in New York State waters)
(12): 1685 (mercury concentration re size, in 2 Man. lakes; corrections on J30(8): 1257)
- B 149: 22, 123 (Great Lakes, catches)
151; 151(F) (canned; sausage; wiener; fishballs)
- CCG 7: 1 (keepability of sausage & wiener)
- S 1081 (sweet-cured smoked sliced products; recipe)
1189; 1226; 1395 (oil fatty acids composition & distribution)
1405 (lipoxidase reaction with polyenoic fatty acids of oil)
1591 (pristane & other hydrocarbons in commercial oil)
1668 (mercury contamination, Great Lakes)
1718 (organochlorine pesticide residues in Canadian commercially caught)
- A 6(F) (marinated fillets & similar products)
85 (nutrient composition of meal as poultry feed)
200 (mercury contamination, L. Winnipeg)
201 (mercury contamination, Great Lakes)
- Drummond, George Ira
A 226 (nucleoside cyclic phosphate diesterases)
227 (nucleotide phosphomonoesterases)
- Drury, Donald E.
S 1397 (salmonid fish avoidance to pollutants)
- Dryburgh, James Robert
T 45 (extended tables of the transformation $\phi = 2 \arcsin \sqrt{X}$)
- Dryer, William Raymond
J 22(4): 999 (movement of trout in L. Superior)
25(7): 1377 (Apostle Is. lake trout rehabilitation)
- Drying of fishery products (*see also* Desiccation)
J 28(7): 1061 (practical apparatus for fillets & steaks)
CJG 15: 29 (of Nfld. squid)
- Dubé, James Gilles
T 249 (methodology for identification of marine oils in hydrogenated edible oil products)
- Ducharme, Louis Joseph André
J 26(6): 1661 (Atl. salmon spawning trips)
29(10): 1397 (louver deflectors for guiding Atl. salmon smolts from power turbines)
- Ducks (*Anas*) (*see also* Birds)
T 272 (halogenated hydrocarbons detected in eggs)
- S 1028 (fatty acids positional distribution in pygostyle fat triglycerides)
1203 (positional distribution of monoenoic fatty acids in triglycerides)
1633 (*A. rubripes* eggs contaminated with halogenated hydrocarbons, Bay of Fundy)
- Duedall, Iver Warren
J 28(11): 1815 (dispenser for oxygen reagents)
S 1273 (molal volumes of salts in sea water)
1274 (mercury dispenser)
1275 (nonwetting surface on glass)
1472 (phenosafranin indicator for chlorinity titrations)
1609 (automatic oceanographic analysis at sea)
1627 (calcium carbonate monohydrate in sea water)
1629 (dissolved oxygen distribution in S Atl. Ocean)
1692 (dissolved oxygen distribution in Pac. Ocean)
1707 (calcium carbonate partial molal volume in sea water)
- Duff, David Cecil Buchanan
S 1113 (marine planktonic algae antibacterial activity)
1194 (two *Isochrysis galbana* antibacterial products)
- Duff, George Francis Denton
J 27(10): 1701 (Bay of Fundy tidal resonance & barriers)
- Duffy, James Regis
J 25(1): 189 (Atl. fish DDT residues)
28(1): 59 (DDT in Atl. fishes & shellfishes)
S 1210 (butoxyethanol ester of 2,4-D)
1552 (decrease in DDT residues in young salmon)
- Dugal, Louis Charles
J 24(11): 2229 (iced freshwater fish hypoxanthine; corrections on J25(8): 1760)
25(1): 169 (freshwater fish oils & meals pesticide residue)
S 1180 (fish tank stain removal)
- Dugdale, Richard Cooper
J 29(3): 229 (volcanic ashfalls effects on chemical & sediments characters of 2 Alaska lakes)
- Dugesia* (*see* Turbellaria)
- Dugong (*Dugong dugong*)
S 1079 (faunal succession from extinct form)
- Dulse (*Rhododymenia palmata*) (*see also* Rhodophyta)
J 23(6): 915 (vitamins B in)
S 1239; 1457 (desmosterol & other sterols content)
- Dunaliella* (*see* Chlorophyta)
- Duncan, Richard Norman
J 25(10): 2233 (tattooing fish)
- Dunham, Philip James
J 29(5): 598 (group housing effects on lobster aggression)

- Dunlop, Robert Hugh
J 27(4): 830 (mercury concentrations in fish tissues)
- Dunlop Lake, Ont. (*see* Quirke Lake)
- Dunn, Jean Richard
J 26(11): 3094 (black rockfish in central N Pac.)
- Dunn, Rex Stewart
J 26(7): 1943 (anatomy of winter flounder ovary)
27(5): 957 (3-year oocyte maturation time in winter flounder)
- Durkin, Joseph Terrance
J 26(11): 3083 (detecting device for magnetized wire tags in migrating salmon)
- Dussault, Henri Paul
J 24(5): 1179 (acetylated monoglycerides as frozen fish coating)
- Duthie, Hamish Crichton
J 25(6): 1229 (L. Belwood, Ont., phytoplankton ecology)
27(5): 847 (meromixis of Sunfish L., Ont.)
- Duva multiflora* (*see* Coelenterata)
- Dwarfism
J 24(9): 1905 (sexual, in bryozoa *Cribrilina annulata*)
- Dyeing (*see also* Marking; Pigments; Pollution)
B 161: 36 (during goldeye processing)
T 263 (following sea currents off sewage plant outfall at mouth of Fraser R., B.C.)
S 1120 (sea water for tracing currents by aerial photography)
1539 (recommended as best means of tracing marine flushing re pollution)
- Dyer, William John
J 22(1): 83 (glycolytic activity in Atl. cod muscles)
(2): 411 (quality of frozen cod)
23(6): 921 (glycogen in cod muscle)
(7): 1063 (quality of frozen cod)
(12): 1821 (iced and frozen swordfish)
24(1): 127 (thawing processes effects on cod and redbfish)
(2): 221 (radiation effect on storage of cooked lobster)
(4): 873 (scallop muscle protein)
(8): 1837 (postmortem cod muscle)
25(2): 239 (mackerel muscle nucleotide degradation)
(2): 299 (refrozen cod storage quality)
(4): 817 (redfish muscle hypoxanthine accumulation)
(4): 829 (plaice fillet thaw drip)
(8): 1525 (frozen cod muscle glycogen & phosphorus)
26(6): 1597 (swordfish muscle nucleotide degradation)
(8): 2027 (Nfld. capelin composition)
(10): 2621 (cod muscle changes during freezing)
27(1): 83 (scallop acid-soluble nucleotides)
(6): 1131 (elemental phosphorus in cod)
28(6): 869 (octopine in postmortem muscle of sea scallop)
29(7): 1053 (elemental phosphorus stability in edible muscle during cod processings)
S 1043 (glycolytic metabolites in cod muscle)
1290 (frozen fish storage life)
1365 (quality changes during frozen storage & distribution of frozen products)
1366 (effect of brining & polyphosphate on yield and quality of fish)
1648 (variation of biochemical quality indices by biological & technological factors)
1649 (speed of freezing re frozen fish quality)
A 69 (frozen fish muscle)
- Dyes (*see* Dyeing)
- Dykes, Aubrey Alvin Randle
T 194 (Pac. Ocean Station P oceanographic observations)
- Dymond, John Richardson
J 23(5): 779 (obituary of)
- Dynamics (*see also* Bioenergetics; Hydrodynamics)
S 1388 (of aquatic ecosystems)
1415 (the energy cost of living, for fishes: review)
A 184 (population, re exploitation of arctic ringed & harp seals)
196 (population, re fisheries biology: book review)
212 (same as S 1415 above)
- Dysart, Douglas Keen
J 28(8): 1181 (X-ray effects on trout embryos)

E

- Eagle, Rodney J.
J 26(6): 1680 (first records of *Parabassogigas grandis*)
- Eales, John Geoffrey
J 23(10): 1617 (buoyancy in salmon)
24(5): 955 (purines in parr-smolt Atl. salmon)
25(9): 1901 (*Salmo salar* skin & scales)
26(7): 1927 (silvering in freshwater fishes)
(8): 2093 (Atl. salmon buoyancy)
27(5): 983 (silvering on Atl. salmon at parr-smolt transformation)
B 166 (E Canada eel fishery)
T 28 (*Anguilla* bibliography)
- Ear (*see* Otoliths; Sound, reactions to)
- Earthworms (*see also* Oligochaeta)
J 24(6): 1421 (exotic species (*Lumbricus*, etc.) in B.C. eaten by coho salmon)
25(1): 205 (records of species collected near Vancouver, B.C.)

East Sound, Orcas Island, Wash.

J 27(9): 1661 (flathead sole feed)

Eastman, Joseph Thornton

J 26(9): 2425 (arterial changes in carp)

Eaton, Catherine Anne

- J 23(7): 991 (Atl. herring oils)
 24(2): 467 (fatty acid composition of decapod shrimp)
 (6): 1219 (freshwater fish oils)
 (12): 2563 (Canadian marine oils)
 27(3): 513 (krill lipids & fatty acids)
 (10): 1669 (seasonal trends in herring oils)
 28(4): 601 (investigation re commercial oil from sand lance)
 T 187 (iodine values & fatty acid levels of Atl. herring oils)
 S 975; 976; 1111; 1227 (fin whale lipids)
 1286 (occurrence of squalene in fish)
 1514 (lipids of Amazon R. dolphins)
 1596 (bottle-nosed dolphin milk triglycerides fatty acid composition)
 1608 (isovaleroyl triglycerides from beluga whale blubber & head oils)
 1622 (mackerel lipids & fatty acids)
 1694 (fatty acid compositions of blubber fats from NW Atl. fin whales vs. harp seals)

Eaton, John Gates

J 28(12): 1841 (chloramine toxicity to amphipod and minnow)

Ebel, Wesley James

J 26(7): 1956 (tank to simulate reservoir conditions)
 (11): 3083 (detecting device for magnetized wire tags in migrating salmon)

Eberhardt, Lester Lee

J 25(3): 591 (growth effect on metabolite retention time)

Ecdysis (see Molting)

Echinarachnius parma (see Sand dollar)

Echinodermata (see also Brittle stars; Crinoids; Heart urchins; Sand dollars; Sea cucumbers; Sea urchins; Starfishes)

J 24(4): 833 (from a drifting ice island off E Greenland)
 25(9): 1803 (caloric & sulfur content of several species)
 26(1): 145 (zinc content)
 (5): 1273 (in Atl. cod & haddock feed)
 T 25; 35; 59; 60; 73 (in Strait of Georgia benthos biomass)
 S 1373 (lipid metabolism in: review)

Echinoidea (see Sea urchins)

Echlnorhynchus (see Acanthocephala)

Echiuroidea

T 25; 35; 59; 60; 73 (in Strait of Georgia benthos biomass)

Echo Lake, Maine

J 27(9): 1656 (seasonal depth distribution of some fishes)

Echo sounding (see Sounding, echo)

Echolocation (by animals) (for echolocation of fish, etc., see appropriate Sound and Sounding headings)

S 1515 (jaw & blubber fats composition re possible role in Amazon R. dolphin echolocation ability)

Ecology (see also various aspects of, e.g. Environment; Pollution)

- J 22(1): 173 (environmental and behavioral of juvenile coho salmon)
 (2): 565 (Magdalen Shallows American plaice, Gulf of St. Lawrence)
 (4): 1035 (re behavior and interaction of young coho and trout)
 (5): 1175 (of freshwater leech parasitic on salmonids)
 23(12): 1845 (of feed re mouth & body form in freshwater fishes)
 24(2): 375 (& behavior, Babine R. sockeye salmon fry, B.C.)
 (10): 2117 (Lake Huron white sucker population)
 (10): 2161 (re host specificity of fish parasites)
 25(6): 1229 (of phytoplankton in an Ont. reservoir)
 (11): 2269 (of arctic Canada Bryozoa)
 26(2): 361, (5): 1321, (9): 2283 (comparative, of 5 Haustoriidae amphipod species)
 (5): 1157 (aquatic insects in small Que. stream)
 (6): 1415 (community concept in marine zoology)
 (6): 1429 (distinctive aspects of stream fishes)
 (6): 1485 (production, of zooplankton in Ogac L., Baffin Is.)
 (8): 2211 (re yellowtail rockfish feed in submarine Astoria Canyon)
 (11): 2843 (interpopulation dynamics model in marine)
 27(2): 335 (glycerol pollution re marine planktonic algae)
 (3): 413 (brook trout population, Matamek L., Que.; correction in J 30(7): 1033)
 (4): 621 (benthic infaunal communities, Washington coast)
 (6): 1045 (fauna parasitic on yellow perch gills)
 28(1): 49 (bottom sediments, Marion L., B.C.)
 (1): 73 (ecological energetics & natural history of a thermal spring dipteran) herbivore)
 (3): 391 (red-water ciliate *Mesodinium rubrum*)
 (5): 705 (biological magnification & degradation of insecticides by freshwater invertebrates)
 (7): 971 (of *Sagitta elegans* chaetognath, St. Margaret's Bay, N.S.)
 (7): 1057 (effects from thermal discharge from nuclear power plants)
 (10): 1511 (of bacterial flora associated with surface of hatching Pac. salmon eggs, re egg mortality)
 (10): 1545 (implications of temperature & salinity effects on Pac. herring early development)

- (11): 1783 (^{65}Zn vs. Zn distribution in an experimental marine ecosystem)
- (12): 1877 (DDT accumulation & persistence in a lotic)
- 29(6): entire issue (numerous aspects of, re fish (especially salmonid) communities in N American & European oligotrophic lakes)
- (10): 1381 (*Bothrimonas* cestodes)
- B 152: 51 (N American arctic & subarctic starfishes)
- 155: (Canadian Atl. coast fishes)
- 168: 14 (causative organism & toxicity in B.C. shellfishes)
- 173: (NW Canada & Alaska freshwater fishes)
- 179: 7 (B.C. clams)
- 180: (B.C. marine fishes)
- T 31: (Canada Atl. coast mackerel)
- 43: (Irish moss in Nfld. waters)
- 155: (subtidal shore biota, Bideford R., P.E.I.)
- 252: (herring larvae & macrozooplankton biomass off S N.S. coast)
- 262: (effects from thermal discharge from steamelectric power plants)
- S 1332: (implications re young coho salmon stream diet)
- 1334: (re limitations on salmonid stream populations production)
- 1388: (aquatic ecosystems dynamics)
- I532; 1533: (autecology re invertebrates in high mountain North Boulder Creek, Colorado)
- 1547: (brown trout interactions with brook trout in a Nfld. stream)
- 1587: (paleoecology & biostratigraphy, Santa Barbara Is., Calif.)
- 1589: (habitat temperature re body temperature of fishes: review)
- 1636: (freshwater, of sockeye salmon re thermal physiological relations)
- 1709: (Thames R. & estuary, England)
- A 115; 134: (new FRB laboratory, Dartmouth, N.S., for study of marine)
- 189: (freshwater fish productivity re ecosystem)
- 230: (re human food from a northern environment)
- 232: (radioactivity in the marine environment: extensive summary of book)
- 233: (re pollution problems)
- 269: (an introduction to mathematical ecology: book review)
- Economics (*see also* Fisheries; Marketing; Management)
- B 149: (Great Lakes fisheries of Ontario)
- 154: (Nfld. fishery resources)
- 157: (appraisal of Canadian lobster industry)
- 158: (re District of Mackenzie, N.W.T., fisheries organization)
- 173: (of various species of NW Canada & Alaska freshwater fishes)
- 175: (study of Maritime Provinces oyster fishery)
- S I018: (re possible ICNAF area conservation actions)
- 1368: (commercial aspects of reprocessing & marketing sea-frozen Nfld. offshore catches)
- A 33: (lobster)
- 37: (re B.C. groundfish potentials)
- 125: (fish protein concentrate manufacture)
- 150: (fish schooling pattern research re Atl. coast fisheries)
- 172: (re vertically integrated fishing & filleting operations from iced &/or frozen Atl. fish)
- 173: (re electronic vs. water immersion thawing of Atl. cod & plaice)
- 236: (high price of sea scallop landings re decline in offshore stocks)
- Ecosystems (*see* Ecology)
- Ectocarpus* (*see* Phaeophyta)
- Edelhauser, Henry Francis
J 25(5): 863 (trout cornea ultrastructure)
- Edelstein, Tikvah
J 26(10): 2703 (sublittoral flora of Halifax Co., N.S.)
- Edgington, David N.
J 27(4): 677 (trace elements in Great Lakes fishes)
- Edington, John Malcolm
J 26(2): 399 (stream temperature)
- Edmondson, W. Thomas
J 26(6): 673 (Great Lakes eutrophication problem)
- Edmunds, Philip Howell
J 28(7): 1053 (tetrazolium oxidase in N Atl. tuna)
- Edmundson, Eldon
J 25(7): 1453 (chinook salmon & steelhead trout permanence of station)
- Edsall, Thomas Allan
J 27(11): 2047 (temperature tolerance of bloater)
- EDTA (ethylenediaminetetraacetic acid) (*see* Chelating agents)
- Edwards, H. E.
J 24(4): 709 (fish losses after insecticide sprayings)
- Eel (in addition to following headings *see* heading Eels)
- Eel, American (*Anguilla rostrata*) (common, silver, or yellow eel)
J 23(7): 1101 (behavior records in L. Ainslie, N.S.)
(11): 1799; 25(10): 2011 (re trout production & population in Crecy L., N.B.)
24(8): 1823 (ovine prolactin effect on hypophysectomized yellow)
25(8): 1591 (rheotaxis re different N.S. streams)
(8): 1739 (spinal ganglia position re taxonomy)
(10): 2143 (orientation toward spawning area)
26(3): 639 (corpuscles of Stannius re renal physiology)
(3): 701 (mass mortality in abnormally low estuarial salinity)
28(7): 1507 (effect of warm water of nuclear power plant discharge canal)

- (9): 1285 (methylmercury in N.B.)
 29(5): 535 (life history, L. Ontario)
 (7): 1084 (first Alta. record)
 (9): 1362 (ionoregulation function of Stannius corpuscles)
- B 151; 151(F) (canned; smoked fillets)
 154: 104 (as Nfld. resource)
 166 (biology; description of E. Canada fisheries)
 T 28 (bibliography)
 261 (bibliography for Gulf of St. Lawrence)
 MSP 14 (popular description (English & French))
 S 1337 (adrenalectomy effect on plasma cortisol)
 1343 (fishermen's reports on freshwater & marine migrations)
 1409 (gill blood pathways)
 1526 (physiological evidence for pituitary-adrenocortical feedback mechanism in)
 1604 (chlorinated pesticide residues in, N.B.)
 1668 (mercury contamination)
- Eel, barbel (*Plotosus anguillaris*) (striped catfish)
 J 25(1): 197 (microorganisms isolated from diseased)
- Eel, burrowing worm (*Moringua linearis*)
 J 27(1): 193 (blood chloride regulation re varying salinity conditions of estuarine mud flats, India)
- Eel, common (see Eel, American)
- Eel, conger (*Conger conger*)
 J 25(12): 2711 (muscle creatine kinase localization)
- Eel, deep-sea spiny (see Tapirfish, longnose)
- Eel, duck bill oceanic (*Nessorhamphus ingolfianus*)
 J 26(10): 2691 (recent record off N.S.)
- Eel, European (*Anguilla anguilla*)
 J 25(12): 2715 (muscle creatine kinase localization)
 B 166: 60 (world fishery)
 T 28 (bibliography)
- Eel, Japanese (*Anguilla japonica*)
 B 166: 60 (world fishery)
 T 28 (bibliography)
- Eel, moray (see Moray)
- Eel, silver (see Eel, American)
- Eel, snipe (see Snipe eel)
- Eel, spiny (*Notacanthus nasus*) (largescale tapirfish)
 T 261 (bibliography for Gulf of St. Lawrence)
- Eel, wolf (see Wolf-eel)
- Eel, yellow (see Eel, American)
- Eelblenny, slender (*Lumpenus fabricii*)
 T 261 (bibliography for Gulf of St. Lawrence)
- Eelblenny, stout (*Lumpenus medius*)
 T 261 (bibliography for Gulf of St. Lawrence)
- Eelgrass (*Zostera marina*) (see also Sea grass)
 J 27(10): 1811 (standing stocks, etc., of Alaska populations)
 B 169: 98 (re B.C. oyster culture) CDG 1 (control on oyster beds)
 T 3 (Oozy Creek, P.E.I.)
 155 (zonation in Bideford R., P.E.I.)
 S 1122 (experimental chemical control in oyster areas)
 1210 (chemical control & its effect on oysters, etc.)
 1580 (re classification & ordination of P.E.I. shallow-water benthos)
 1619 (zonation & biomass, St. Margaret's Bay, N.S.)
 A 109; 109(F) (same as CDG 1 above)
- Eelpout, Alaska (*Bothrocara pusillum*)
 B 180: 232 (brief description, in key to Zoarcidae)
- Eelpout, Arctic (*Lycodes reticulatus*)
 J 26(3): 597(F) (retinal structure re activity, etc.)
 (6): 1407 (*Tanypleurus alaicornis* copepod parasitic on gills)
 T 261 (bibliography for Gulf of St. Lawrence)
- Eelpout, bigfin (*Aprodon corteziianus*)
 J 25(12): 2665 (associations with other fishes off Oregon coast)
 26(9): 2319 (parasites, B.C.)
 B 180: 233 (full description, etc., B.C.)
- Eelpout, bigtooth (*Lycodapus grossidens*)
 B 180: 240 (full description, etc., B.C.)
- Eelpout, black (*Lycodes diapterus*) (blackfin eelpout)
 J 25(12): 2665 (associations with other fishes off Oregon coast)
 B 180: 243 (full description, etc., B.C.)
- Eelpout, black belly (*Lycodopsis pacifica*)
 J 25(12): 2665 (associations with other fishes off Oregon coast)
 26(9): 2403 (biology, outer Burrard Inlet, B.C.)
 B 180: 245 (full description, etc., B.C.)
 T 181; 257; 317 (taken in B.C. trawl fishery)
 205; 211 (taken in FRB groundfish surveys)
- Eelpout, blackfin (see Eelpout, black)
- Eelpout, blackmouth (*Lycodapus fierasfer*) (pearly eelpout)
 B 180: 239 (full description, etc., B.C.)
- Eelpout, Esmark's (*Lycodes esmarki*)
 J 26(10): 2698 (off La Have Bank)
 T 261 (bibliography for Gulf of St. Lawrence)
- Eelpout, Laval's (see Eelpout, Newfoundland)
- Eelpout, longfin (*Bothrocara remigera*) (see also Eelpout, longsnout)

- J 25(12): 2665 (associations with other fishes off Oregon coast)
- Eelpout, longsnout (*Bothrocara remigerum*) (see also Eelpout, longfin)
B 180: 237 (full description, etc., B.C.)
- Eelpout, Newfoundland (*Lycodes lavalaei*) (*L. terranova*; Laval's eelpout)
J 26(3): 597(F) (retinal structure re activity, etc.)
T 261 (bibliography for Gulf of St. Lawrence)
- Eelpout, pale (*Lycodes pallidus*) (see also Eelpout, pallid)
T 261 (bibliography for Gulf of St. Lawrence)
- Eelpout, pallid (*Lycodapus mandibularis*) (pale eelpout)
B 180: 241 (full description, etc., B.C.)
- Eelpout, pearly (see Eelpout, blackmouth)
- Eelpout, polar (*Lycodes turneri*)
J 26(3): 597(F) (retinal structure re activity, etc.)
T 261 (bibliography for Gulf of St. Lawrence)
- Eelpout, rattlesnake (see Eelpout, snakehead)
- Eelpout, shortfin (*Lycodes brevipes*)
B 180: 242 (full description, etc., B.C.)
- Eelpout, shortjaw (*Lycenchelys jordani*)
B 180: 238 (full description, etc., B.C.)
- Eelpout, snakehead (*Embryx crotalina*)
J 25(12): 2665 (associations with other fishes off Oregon coast)
B 180: 232 (brief description in key to Zoarcidae)
- Eelpout, soft (*Bothrocara molle*)
B 180: 236 (full description, etc., B.C.)
- Eelpout, twoline (*Bothrocara brunneum*)
J 23(2): 309 (first B.C. coastal record)
25(12): 2665 (associations with other fishes off Oregon coast)
B 180: 235 (full description, etc., B.C.)
- Eelpout, Vahl's (*Lycodes vahlii*)
J 26(3): 597(F) (retinal structure re activity, etc.)
T 261 (bibliography for Gulf of St. Lawrence)
- Eelpout, wattled (*Lycodes palearis*)
B 180: 244 (full description, etc., B.C.)
- Eelpouts (see also above species)
J 24(11): 2452 (*Zoarces viviparus* gill surface index)
26(2): 311 (copepod parasite on fins of Atl.)
(3): 597(F) (retinal structure re activity, etc., of Atl.)
28(9): 1285 (methylmercury in *Lycodes atlanticus* from N.S. banks)
CSG 54 (underexploited on N.S. banks)
T 22; 30; 46; 62; 81; 290; 328 (in FRB experimental trawling, B.C.)
- 261 (bibliography for Gulf of St. Lawrence, including *L. atlanticus* and *L. seminudus*)
- A 143(F) (French version of CSG 54 above)
175 (same as CSG 54 above)
- Eels (see also Eel headings)
J 29(1): 1 (redescription & distribution of *Xenomystax atrarius* in E Pac. Ocean)
B 166 (world distribution of *Anguilla* species)
180: 71 (brief description of *X. atrarius* in key)
T 28 (bibliography of *Anguilla* species)
S 956 (Canadian research in Caribbean Sea)
- Efficiency of fishery gear (see Effort)
- Effluent (see Dilution effect; Pollution; also types of, as named in heading Pollution, e.g. Pulpmill; Fish processing wastes)
- Efford, Ian Ecott
J 24(11): 2283 (phytoplankton of Marion L., B.C.; corrections on J 26(8): 2263)
29(11): 1595 (artificial fertilization effects on enclosed plankton populations in Marion L.)
- Effort, efficiency, and intensity of fishing (see also Apparatus; Catches; Exploitation; Fisheries; Gear; Management; Selectivity of fishing gear; also names of International Commissions; kinds of fisheries; types of fishery gear)
J 24(1): 145 (re total mortality, Arcto-Norwegian cod)
B 157 (re Canadian lobster fishery economics)
CNS 28 (Canadian & U.S. trawl catches off B.C., 1954-65)
S 1176 (efficiency of 3 types of scallop drags)
1182 (efficiency of hacks for digging soft-shell clams)
- Eggs, poultry (see Chicken; Poultry)
- Eggs (ova) of fish and other aquatic animals (see also Culture; Cytology; Development; Embryos; Emergence; Fecundity; Gonads; Hatcheries; Maturation; Ovary; Reproduction; Spawning; also names of animals)
J 22(1): 159 (oxygen mass transfer theory for fish)
(1): 247 (centrifugal subsampling re fecundity)
(4): 913 (temperature re mortality and development rate of char)
(6): 1503 (fertility retention in expressed sockeye salmon)
23(3): 319 (Pac. cod: factors affecting development)
(7): 1037 (resistance of zebrafish immature embryos after damage to membrane)
(8): 1121 (brook & rainbow trout: development re oxygen & temperature)
(11): 1761 (incubation period, of longnose & white sucker)
24(1): 207 (wolfish, off N.S.)
(2): 375 (yolk absorption in sockeye fry)
(3): 613 (seasonal lipids fatty acids changes in Atl. cod)
(5): 917 (size, etc., re steelhead trout fecundity)
(7): 1573 (fertility duration, of pink & sockeye salmon)

- 25(3): 495 (temperature & salinity effects on English sole hatchability; correction on J27(8): 1499)
 (3): 585 (controlled-environment incubator for small marine)
 (8): 1743 (observations on, from butter sole)
 (12): 2695 (chilled storage effect on sockeye & pink salmon)
- 26(4): 865 (*Pellucidhaptor* trematode)
 (4): 975 (*Bothrimonus* cestode)
 (7): 1943 (winter flounder oocyte maturation time)
 (9): 2311 (disinfection of trout, re *Aeromonas liquefaciens*)
- 27(1): 196 (some environmental factors effects on survival, condition, & hatching of chum salmon)
 (3): 587 (atresia in northern pike, in 2 Missouri R. impoundments)
 (4): 749 (maturation of threespine stickleback re photoperiodism)
 (4): 777, 785 (mathematical analysis of English sole & Pac. cod hatchability percentage)
 (7): 1191 (gravel size, depth, & egg density re hatching & movements of coho salmon alevins)
 (7): 1265 (smallfin lanternfish)
 (8): 1429 (development & survival of pink & chum salmon, in revised hatchery method)
 (12): 2197 (incubation time, embryo growth rate, size, etc., of crosses between pink, chum, & sockeye salmon)
 (12): 2215 (size, etc., Nfld. capelin)
- 28(1): 59 (DDT residues in N.B. lobster)
 (4): 513 (size, re age of successive generations of Skeena R. sockeye)
 (5): 647 (results for 3 generations from pink salmon eggs transplanted to Qualicum R., B.C.)
 (5): 727 (salinity & temperature effects on petrale sole embryonic development)
 (5): 745, (12): 1915 (cryopreserved sperm for fertilizing salmonid)
 (6): 883 (salinity, temperature, & dissolved oxygen effects on development, re Pac. cod geographical distribution)
 (8): 1119 (low oxygen concentration effects on fathead minnow females re egg hatching)
 (8): 1181 (growth & fecundity of rainbow trout after eyed eggs exposure to X-rays)
 (9): 1235 (vertebral count re egg size of medaka)
 (10): 1511 (details of bacterial flora associated with surface of stream-incubating pink & chum salmon, re egg mortality)
 (12): 1853 (proteins classification in coho salmon)
- 29(1): 111 (distinguishing cunner from tautog eggs, by immunodiffusion)
 (4): 464 (number of, re carapace length of sidestripe shrimp)
 (5): 567 (bacterial population of hatchery coho & chum salmon)
 (8): 1119 (intertidal exposure effect on survival & development of Pac. herring)
- B 161: 26 (goldeye)
 162: 99 (sockeye salmon)
 173 (& hatching, of NW Canada & Alaska freshwater fishes)
- 180 (of most B.C. fishes)
 CNG 77; 83 (herring, abundance & mortality, B.C., 1966; 1967)
 T 19: 27 (experiments on hatching Pac. cod, English & petrale sole)
 41; 89 (petrale sole embryonic development)
 89 (flathead sole)
 100 (development of flathead sole)
 105 (B.C. commercial groundfishes)
 111 (& milt of pink & sockeye salmon re spawn collection)
 116 (development & numbers, *Clymenella torquata* polychaete)
 167 (size re age of females & growth & maturity of progeny, Skeena R. sockeye salmon)
 231 (data, Arctic char in a small arctic lake)
 236 (mud dab: culture & development)
 246 (bibliography of N America Pac. coast trawled fishes)
 272 (halogenated hydrocarbons detected in aquatic birds)
 333 (cod & plaice: biomass measurements, St. Margaret's Bay, N.S.)
 336 (Pac. herring roe retrieval & processing)
 MSP 16 (considerations & recommendations for control of fish diseases in Canada)
 S 1165 (microbial flora of stream-incubated pink salmon)
 1297 (enzymic degradation of capsule during hatching of salmon & trout)
 1322 (pyruvate & glyoxalate metabolism by Atl. salmon)
 1342 (aminotransferases in Atl. fishes)
 1468 (re spawning behavior of crayfish)
 1521 (proteins of soluble fraction of Pac. salmon species)
 1557 (temperature & photoperiod effects on crayfish egg-laying)
 1606 (varying hatching success depending on water depth, temperature, salinity, & egg mass thickness, for Pac. herring)
 1633; 1696 (insecticide residues concentrate in Bay of Fundy cormorant, gull, & duck)
 A 36 (mortality of Pac. herring)
 59; 62 (lowest recorded abundance of herring spawn in B.C., 1966)
 190 (ICNAF report on American plaice eggs & larvae numbers in Davis & Denmark Straits)
 207 (survey of distribution & abundance, N.B. & N.S. herring)
 256; 263 (development & hatching, queen crab)
- Eglinton, Geoffrey
 S 1254 (stereoisomerism in fatty acids)
 1385 (phytanic acid menthyl esters)
 1528 (geological fate of chlorophyll)
- Egtved virus (*see* Viruses)
- Ehrenberg, John Edward
 J 28(9): 1293 (abundance estimate variance)

- Eisan, Joanne Sylvia
 S 1231 (Atl. cod sperm uricolytic enzymes)
 1236 (lipid biosynthesis by Atl. salmon sperm)
 1237 (carbon dioxide fixation by cod spermatozoa)
 1322 (pyruvate & glyoxalate metabolism by Atl. salmon eggs)
 1342 (fish aminotransferases)
 1650 (carbon dioxide fixation by rabbit & fish testes)
- Eisler, Ronald
 J 28(9): 1225 (cadmium poisoning in *Fundulus*)
 29(9): 1367 (cadmium uptake by marine organisms)
- Ekman mass transport of waters (*see* Transport, mass)
- Ekman grab (*see* Grab)
- Ekman transport (of ocean waters) (*see* Transport, mass)
- Elasmobranchii (*see also* names of species)
 J 22(1): 203 (electropherograms re biochemical systematics)
- Eldjarn, Lorentz
 S 1266 (diastereoisomers of phytanic acid)
- Eldridge, Peter John
 J 26(7): 1955 (flag rockfish range extension)
- Electrical applications and effects (*see also* following Electro. . . headings; *also* Apparatus; Nuclear power plant; Thermal power plant; Conductivity, electrical; Dams; Ray, Pacific electric; Stingray)
 J 28(4): 565 (Atl. salmon olfactory epithelium electrical responses)
 (10): 1595 (pulses during *Velevella* hydroid behavior)
 29(3): 315 (in experiments re Atl. salmon parr subjected to insecticides)
 (9): 1351 (sockeye & coho salmon & rainbow trout olfactory bulb electrical response to various stimuli)
 T 287 (surfactants effects on Atl. salmon olfactory epithelium electrical responses)
- Electrocardiogram (*see* Heart)
- Electroencephalography
 J 26(8): 2111, 2123 (olfactory bulbar, of chinook & coho salmon re discrimination & responses to natural waters)
 27(3): 565 (homing Pac. salmon olfactory bulb stimulation by waters from their origin)
- Electrofishing (*see also* Electronarcosis; Electrotaxis)
 J 27(6): 1033 (shocker adjunct to towed fry-sampling net)
 B 166: 23 (for eels)
 S 1262 (gear modifications for coho salmon underyearlings)
 A 123: 355 (in Nfld. salmon research)
- Electrolytes
 S 1360 (review re marine fishes body compartments & distribution of electrolytes)
- Electrona arctica* (*see* Lanternfish, bigeye)
thompsoni (*see* Lanternfish, bigeye)
- Electronarcosis (*see also* Electrofishing; Electrotaxis)
 J 24(1): 191 (factors for trout response in fresh & salt water)
- Electronics (*see also* Apparatus)
 S 1516 (bridge & amplifier for monitoring d-c level)
 1517 (unijunction transistor for giving frequency divider immunity to input jitter)
- Electrophoresis (*Note*: This method of analysis is so widely used in biochemical investigations that under this heading are included only some representative references to methods and to the separation or identification of biochemical components within a species. Some applications of its use for distinguishing between species will be found under Speciation. *See also* Genetics; Phenotypes; Populations; Stocks; Raciation; *also* Blood; Muscle; Proteins; (and their components); Enzymes)
 J 22(1): 203, 215 (of fish components re biochemical systematics)
 23(6): 929 (micro starch gel apparatus & technique for multiple hemoglobins separation)
 (11): 1653 (of American crayfish meat amino acids)
 24(3): 695 (low-mobility proteins in freshwater fishes, re stresses)
 (4): 873 (scallop striated muscle extracts)
 (6): 1269 (lamprey ammocoetes muscle myogen & blood protein)
 (10): 2169 (rainbow trout blood serum proteins, re various stresses)
 25(3): 607 (crab hemolymph plasma re susceptibility to lobster disease)
 (5): 853 (re glucose metabolism in *Bankia setacea* caccum)
 (7): 1517 (separation of fish brain esterases)
 (8): 1581 (malic enzyme in fish muscle sarcoplasm)
 (8): 1651 (plasma proteins re bound iodide)
 (12): 2711, 2715 (fish muscle creatine kinase)
 26(8): 2101 (lobster blood serum protein re molting & reproduction)
 (9): 2351 (Pac. halibut blood serum transferrins)
 (11): 2969 (free & bound amino acids in an Atl. shrimp)
 (11): 3049 (lactate dehydrogenase isoenzymes from dace)
 27(1): 31 (protein patterns changes in refrigerated haddock filets)
 (2): 404 (mummichog blood serum protein components)
 (8): 1389 (furunculosis antibody in albino rainbow trout serum)
 (11): 2102 (malic enzyme, re quality of superchilled fish flesh)
 28(8): 1005 (walleye white muscle isozymes re phenotypes)

- 29(8): 1169 (amine-citrate buffers for pH control in starch-gel)
- CHN 20 (for distinguishing cod and haddock fillets)
- S 1073 (Atl. herring lactate dehydrogenase)
- 1119 (lobster hemolymph)
- 1146 (insect oxidase-peroxidase system)
- 1214 (Atl. oyster hemolymph protein fractions)
- 1370 (lactate dehydrogenase multiple forms in Atl. cod & tomcod tissues)
- 1635 (sockeye salmon sera, re immunology to salmonid kidney disease)
- Electrotaxis (*see also* Electrofishing; Electronarcosis)
- J 29(11): 1605 (voltage & pulse rates for induction in 12 coastal pelagic & bottom fishes)
- Eleginus gracilis* (*see* Cod, saffron)
- navaga* (*see* Cod, saffron)
- Elgmork, Kåre
- S 1532 (distribution of invertebrates)
- Ellender, Rudolph Dennis
- J 28(5): 788 (analysis of ammonium-nitrogen in artificial seawater aquaria)
- Ellerslie and Ellerslie Brook, P.E.I.
- J 22(2): 395 (trout stream population re silt)
- 24(8): 1743 (brook trout movements re artificial pond en route to sea)
- 25(2): 209 (effect of artificial pond on brook trout catches)
- 28(1): 59 (DDT residues in smelt & shellfishes)
- S 1134 (oyster hatching procedure developments)
- Ellesmere Island, N.W.T. (*see also* Tanquary Fjord)
- J 29(9): 1319 (depth distribution of benthos in Tanquary & Hare Fjords)
- S 1013 (limnology & zooplankton of Hazen L.)
- 1578 (new marine dinoflagellate species & associated phytoplankton)
- Elliott, George Vincent
- J 27(12): 2356 (rainbow trout feeding in relation to drifting invertebrates abundance)
- Elliott, John Malcolm
- J 23(1): 157 (downstream movements of trout fry)
- Elliott Lake, Yukon
- J 29(12): 1772 (pygmy whitefish recorded from)
- Elliptio complanatus* (*see* Mussels, freshwater)
- Ellis, Derek Victor
- J 23(2): 181 (swimming speed of sockeye & coho salmon)
- 25(8): 1737 (benthic investigations computer programs)
- 28(10): 1433 (relation between tube-building and feeding in Polychaeta)
- T 25; 35; 59; 60; 73 (quantitative benthic investigations, Strait of Georgia)
- Ellis, Douglas Graham
- J 24(4): 873 (scallop muscle protein)
- El-Sabh, Mohammed Ibrahim
- J 29(5): 595 (Gulf of St. Lawrence geostrophic circulation)
- Elson, Paul Frederick
- J 22(2): 421 (new toggle tag)
- (2): 625 (Canadian salmon off Greenland)
- 24(4): 731 (DDT effects on wild young Atl. salmon)
- 29(10): 1373 (marine growth of NW Atl. salmon)
- T 6 (N.B. forest spraying damage to salmon fisheries)
- 325 (forest-based industries impact on freshwater-dependent N.B. fish resources)
- S 920 (forest spraying)
- 999 (sublethal copper-zinc pollution in a salmon river)
- 1083 (Atl. salmon scales)
- 1552 (decrease in DDT residues in young salmon)
- A 25 (Atl. salmon near Greenland)
- 83 (criteria for pesticide residues)
- 142 (threat of industrialization to Canada's Atl. salmon)
- 155 (utilization of Atl. salmon tagged & liberated as smolts)
- Elver (immature form of eel) (*see* Eel)
- Embassichthys bathybius* (*see* Sole, deep-sea)
- Embiotoca lateralis* (*see* Seaperch, striped)
- Embiotocidae (*see also* Perch; Seaperch; Surfperch)
- J 24(10): 2161 (specificity as parasite hosts, California)
- Embryos; Embryology (*see also* Cytology; Development; Eggs; Larvae; *also* names of adult organisms)
- J 28(1): 100 (device for rapid removal of fish embryos from eggs)
- Embryx crotalina* (*see* Eelpout, snakehead)
- Emergence (*see* Development; Eggs; *also* names of adult organisms)
- Emery, Alan Roy
- J 23(8): 1145 (Atl. argentine)
- 27(6): 1165 (fish & crayfish mortalities in Georgian Bay, L. Huron)
- Emery, Kenneth Orris
- S 1511 (European flints on N American coast)
- Empididae (*see* Diptera)
- Enchelyopus cimbrius* (*see* Rockling, fourbeard)
- Endocrinology (*see also* Hormones; Steroids)
- R 1965-1966: 31, 80 (programs of Fisheries Research Board)

- Endotoxins
J 26(1): 115 (coho salmon & rainbow trout resistance to bacterial)
- Endrin (*see* Insecticides)
- Energetics (*see* Bioenergetics)
- Energy, radiant (*see also* Irradiation; Light, reactions to; Photosynthesis; Radiation; Radioactivity; Radiometer; X-rays)
S 1295 (re indices of oceanic primary & secondary production)
A 130 (for fish muscle & products preservation)
- Energy, tidal (*see* Tides)
- Energy budget (*see* Bioenergetics)
- Energy flow (*see* Bioenergetics; Metabolism)
- England, Lucas Allison
CSG 48 (Atl. oyster stocks)
A 35 (rehabilitating oyster stocks)
- Englar, John Randall
S 1530 (polysaccharides of red alga)
- Engraulis eurystole* (*see* Anchovy, silver)
mordax mordax (*see* Anchovy, northern)
mordax nanus (*see* Anchovy (San Francisco Bay))
- Enhydra lutris* (*see* Sea otter)
- Ennis, Gerald Peter
J 25(12): 2723 (lobsters from 95 fath off Nfld.)
(12): 2729 (staghorn sculpin in Nfld. waters)
26(6): 1689 (*Myoxocephalus aeneus* (grubby) in Nfld. waters)
27(11): 2037 (shorthorn sculpin reproduction & behavior)
(12): 2155 (shorthorn sculpin age, growth, & sexual maturity)
29(2): 143 (growth per molt of Bonavista Bay lobsters, Nfld.)
(3): 341 (a diver-operated plankton collector)
T 289 (lobster fishery & biology, Bonavista Bay, Nfld.)
- Enolase (*see* Enzymes)
- Enophrys bison* (*see* Sculpin, buffalo)
- Ensilage
A 98 (from Pac. herring re Atl. herring use)
- Ensis directus* (*see* Clam, razor (Atlantic))
- Enterobacteriaceae (*see also* Bacteria)
J 28(10): 1511 (associated with surfaces of hatching Pac. salmon eggs)
29(3): 333 (of bluefish intestine)
- Enteromorpha* (*see* Chlorophyta)
- Entodiscus borealis* (*see* Ciliata)
- Entomostraca (*see* Copepoda; Cirripedia; Ostracoda)
- Entosphenus lamottei* (*see* Lamprey, American brook)
tridentatus (*see* Lamprey, Pacific)
species (*see* J 24(5): 1067 re key based on teeth characteristics)
- Enumeration (*see* Census; Counting)
- Environment (*see also* Behavior; Ecology; Pollution, *also* factors affecting environment)
J 22(1): 173 (effects on coho salmon fry behavior)
26(6): 1429 (classifications re stream fishes ecology)
(10): 2715 (effects of simulated long-term fluctuations of, on maximum sustained yield)
(12): 3101 (changes in Crecy L., N.B., after fertilization)
27(1): 191 (salinity effects on burrowing mud eel blood chloride)
(1): 196 (effects on chum salmon egg to fry stages)
(5): 966 (Pac. hagfish re high oxygen affinity of hemoglobin)
(7): 1251 (production levels in Strait of Georgia pelagic)
(8): 1453 (phytoplankton spatial heterogeneity in a nearshore marine)
28(5): 778 (wave exposure re *Laminaria* seaweed taxonomy)
(6): 883 (effects on Pac. cod eggs re geographical distribution)
(7): 1057 (effects from thermal discharge from nuclear power plants)
29(3): 237 (effects on rainbow trout length & weight variations)
(6): entire issue (effects of natural & man-made changes in, re proceedings of international symposium on Salmonid Communities in Oligotrophic Lakes (N America & Europe))
B 173 (of NW Canada & Alaska freshwater fishes)
CNG 89 (improved artificial rearing of sockeye salmon by control of)
T 200 (possibilities of X-ray fluorescence spectrophotometry of elemental composition of organisms for assessing environmental aspects)
217 (effects from spills of petroleum oil)
262 (effects from thermal discharge from steamelectric power plants)
301 (re sockeye production by mariculture)
323; 325 (effects of logging on, re fish production)
MSP 17 (brochure on FRB Pacific Environment Institute, West Vancouver, B.C.)
S 893; 905; 965 (re Alt. salmon biology and management)
964 (mathematical analysis re aquatic pollution)
1426 (sedimentary, Magdalen Shelf, S Gulf of St. Lawrence)
1430 (re fishes' reactions to temperature)
1590; 1660 (re body temperature of fishes: review)

- 1693 (physical, re *Clostridium botulinum* distribution in Gulf of St. Lawrence)
- 1725 (marine poikilotherms responses to environmental factors acting in concert: review)
- A 183 (oceanography re resources management)
- 201 (of Great Lakes fishes as affecting their food for man)
- 230 (food for man from a northern)
- 232 (radioactivity in the marine: extensive summary of book)
- 234 (re nitrilotriacetates as substitute for phosphate detergents)
- 238 (manipulation, to accelerate young sockeye salmon growth)
- 259 (& heredity as affecting certain salmonid populations)
- Enzymes (see also Electrophoresis)
- J 22(3): 643 (lysolecithinase in Atl. cod muscle, and inhibitors)
- (3): 793 (marine phytoplankters phosphatase activity)
- 23(1): 149 (alkaline phosphatase in various fish scales)
- (2): 207, (11): 1811 (lecithinase activity & distribution in rainbow trout muscle)
- (4): 527 (glycogenolytic in Atl. cod muscle)
- (6): 909 (carbonic anhydrase re Atlantic cod exophthalmia)
- 24(1): 201 (bacterial-toxin lecithinase C in marine algae & spinach)
- (8): 1717 (Atl. cod adenosine monophosphate aminohydrolase)
- (12): 2555 (rainbow trout muscle phospholipase A activity & assay method)
- 25(4): 615 (fish brain acetylcholinesterase properties)
- (6): 1247 (transaminases distribution & action in Pac. salmon tissues)
- (7): 1323 (lactate dehydrogenase in 3 trout species)
- (7): 1517 (fish brain esterases electrophoretic separation)
- (8): 1539 (postmortem muscle glycogen & starch degrading)
- (8): 1571 (organophosphatases in fish liver)
- (8): 1581 (malic: 2 forms in fish skeletal muscle sarcoplasm)
- (12): 2711, 2715 (fish muscle creatine kinase)
- 26(1): 15 (blood serum lactate dehydrogenase isozymes variants in sockeye salmon populations)
- (6): 1577 (re free fatty acid derivation in Atl. herring commercial oils)
- (7): 1857 (lipolytic, in rainbow trout muscle)
- (8): 2193 (acetylcholinesterase activity of rainbow trout larvae subjected to insecticide)
- (8): 2208 (anticholinesterase action of toxin from moray eel)
- (9): 2299 (catalase as catalyst of marine muscle lipids oxidation)
- (9): 2517 (glyceraldehyde-3-phosphate dehydrogenase: temperature effect on activity of)
- (9): 2532 (polymorphic serum esterases suited for population analysis of white bream & ruff)
- (1): 3049 (lactate dehydrogenase isozymes in dace tissues)
- (12): 3175 (alpha-glycerophosphate dehydrogenase activity as new test for iced-storage age of fresh gutted fish)
- (12): 3209 (effect of feeding and DDT on activity of glucose 6-phosphate dehydrogenase in fish liver)
- 27(1): 59 (zinc metalloenzyme re zinc protein association in zinc uptake by Atl. oyster)
- (1): 117 (DNA polymerase isolation & activity from rainbow trout liver nuclei)
- (2): 383 (metal salts poisoning effects on mummichog liver phosphatases, xanthine oxidase, catalase, & ribonuclease)
- (5): 857 (coenzyme A effect on fatty acid oxidation by trout mitochondria)
- (5): 943 (electrophoretic variants of L-alpha-glycerophosphate dehydrogenase in Pac. ocean perch muscle)
- (6): 1115 (genetics of multiple lactate dehydrogenase isozymes in lake whitefish muscle)
- (6): 1141 (glucose metabolism, in *Bankia setacea* caecum)
- (8): 1357 (in lobster gastric juice)
- (9): 1563 (lactate dehydrogenases in rainbow trout liver & gills)
- (10): 1869 (dieldrin insecticide toxic effect on sailfin mollie through increased glutamic oxaloacetic transaminase activity)
- (10): 1898 (glucuronidase & arylsulfatase in some Canadian Atl. coast marine invertebrates)
- (11): 1987 (liver lactate dehydrogenase genotype differences in stream rainbow trout populations below & above a waterfall)
- (11): 2003 (5'-nucleotidase of immature sockeye salmon testes: activators & inhibitors)
- (11): 2101 (malate, solubilized by freezing & thawing of fish flesh, as cause of drip & quality decrease)
- (12): 2167 (esterase & lactate dehydrogenase electrophoresis re *Tilapia* hybrids)
- 28(1): 15 (American lobster esterase isozymes polymorphisms)
- (4): 613 (channel catfish plasma esterases enzymatic properties; esterase content of other fish plasmas)
- (6): 869 (octopine dehydrogenase in sea scallop muscle)
- (6): 879 (lobster enolase isolation & comparison with other enolases re phylogeny)
- (7): 1005 (multiple malate dehydrogenase isozymes in walleye skeletal muscle, re genetics)
- (7): 1015 (lysosomal triglyceride lipase from rainbow trout lateral line tissue)
- (7): 1053 (genic polymorphism of bluefin tuna blood & tissues tetrazolium oxidase)
- (8): 1125 (inosine 5'-monophosphohydrolase effects in iced Atl. fishes filets)
- (9): 1325 (postmortem changes in glycogen phosphorylase activity of sucker & pike muscle)

- (10): 1603 (ribonucleotide reductase in sockeye salmon immature testes)
- (11): 1745 (serum esterases, lactate dehydrogenases, & transferrins of large & dwarf white suckers & longnose sucker)
- (11): 1817 (acid phosphatase activity in *Clostridium botulinum* cells & spores)
- 29(1): 85 (muscle catheptic activity of 13 Atl. fishes, queen crab, & lobster)
- (2): 167 (gill adenosinetriphosphatase activity changes re steelhead trout, coho, & chinook salmon parr-smolt transformation)
- (2): 179 (liver esterases re possible subspeciation of *Salmo salar*)
- (5): 531 (histochemistry in largemouth bass)
- (8): 1169 (amine-citrate buffers for starch-gel electrophoresis of)
- R 1965-1966: 82 (FRB Vancouver Laboratory summary of investigations)
- T 31 (re Atl. mackerel biochemistry)
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- 897 (mononucleotide synthesis by steelhead trout milt)
- 915 (structure and chemical reactions of cobamide coenzymes)
- 944 (in triglyceride stereospecific analysis)
- 967 (differential triglyceride hydrolysis by skate pancreatic lipase)
- 996 (synthesis of 2 coenzyme B₁₂ analogs)
- 1011 (of salmon milt for nucleoside di- & triphosphate synthesis)
- 1036 (systems in fish)
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- 1042 (of *Achromobacter cholinophagum* oxidizing betaine)
- 1049 (lingcod muscle guanine deaminase)
- 1073 (lactate dehydrogenase & aspartate aminotransferase in Atl. herring tissues)
- 1125 (lobster digestive lipase)
- 1140 (proteolytic bacterial, causing skin lesions)
- 1146 (oxidase-peroxidase system in insects)
- 1171 (aldolase activity in a unicellular red alga)
- 1197 (aldolase activity of various marine planktonic algae)
- 1229 (oxidation of choline by *Achromobacter*)
- 1231 (uricolytic in Atl. cod sperm)
- 1244 (corticosteroid 1 α -hydroxylase in elasmobranch interrenals)
- 1248 (phospholipase C from a marine planktonic alga)
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- 1297 (degrading salmon & trout egg capsule preparatory to hatching)
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- 1342 (alanine & aspartate aminotransferases in Atl. fishes eggs & sperm)
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- 1370 (lactate dehydrogenase multiple forms in Atl. cod & tomcod tissues)
- 1371; 1374 (various esters as substrates for pancreatic lipase activity assays)
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- 1427 (phospholipase D characterization in *Porphyridium cruentum* red alga)
- 1447 (uridine diphosphate glucose-glycogen glucosyl transferase from rainbow trout liver)
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- 1508 (purification & properties of chinook salmon testes acid deoxyribonuclease)
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- 1524 (lingcod muscle guanine deaminase mechanism & specificity)
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 (5): 1157 (feed, habits, ecology, in small Que. stream)
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 (12): 2356 (abundance re rainbow trout feeding)
 28(1): 35 (differences upstream & downstream of a dammed Ont. lake)
 (5): 705 (biological magnification & degradation of insecticides by)
 (6): 849 (samplings from shallow stream beds)
 29(9): 1329 (thermal regime changes in S Saskatchewan River below a dam as cause of reduction of)
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 J 23(12): 1841 (bordering Atl. cod ileum, pyloric caeca, & rectum)
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 (9): 2459 (zooplankton seasonal distribution, constitution, & abundance)
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 (8): 1475 (walleye fishery, 1943-62)
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- 24(7): 1553 (hydrography, Penobscot R., Maine; correction on J28(5): 1760)
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- 29(12): 1792 (as Pac. hake feed)
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- 28(2): entire issue (re 463 lakes in FRB Experimental Lakes Area, NW Ont.)
- (11): 1683 (re macroinvertebrate species diversification in L. Ontario bays)
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- 29(6): entire issue (proceedings of international symposium on causes & effects of, particularly on salmonid communities, in N American & European lakes)
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- J 24(10): 2195 (sockeye salmon pigments)
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162: 49 (commercial trends: sockeye salmon)
- CNG 78 (B.C. Pacific cod)
- CSG 54 (underexploited groundfish on N.S. banks)
- T 225 (Bay of Fundy)
298 (information supplementary to that in J 29(6): 741 reference above)
- S 952 (of Fraser R. odd-year pink salmon run)
994 (abundance re catch equation & fishing success)
- 1008 (harp & hood seals)
1126 (Greenland vs. Canadian Atl. salmon fisheries)
1543 (Georgian Bay, L. Ontario, & L. Erie aquatic insects)
- A 17 (N American fishery potential)
18 (re unexploited stocks & fishery techniques)
105 (effect of modern fishing gear on B.C. herring stocks)
142 (of Canada's Atl. salmon)
143(F) (French version of CSG 54 above)
175 (same as CSG 54 above)
176(F) (queen crab)
- Exploration; Prospecting (*see also* Surveys; Trawling)
- J 26(8): 1985 (demersal fishes survey & methods, N Pac. Ocean)
27(3): 535 (sea scallop, from "cubmarine," by photography, etc.)
- CNG 73; 82 (for groundfish in Hecate Strait, B.C.)
76; 85 (for shrimps off B.C. coast)
- T 18 (for shrimp in Gulf of Alaska & Bering Sea, 1957-64)
61 (for shrimps off B.C., 1966 & 1967)
103; 122; 199 (lists of fishes & invertebrates taken during trawl surveys from southern N.S. to Florida)
- S 901 (for fishery resources)
956 (Canadian re Caribbean Sea fisheries)
970 (new cod fishing grounds off Labrador and Nfld.)
- A 18 (re unexploited fishery stocks)
37 (re unexploited groundfish off B.C.)
74 (summary of CNG 82 above)
104 (based on CNG 85 above)
108: 21 (for sea & Iceland scallops)
138 (for queen crab, Nfld., Que., N.S., N.B., P.E.I.)
- Exponentials
A 189 (table of, from e^{-3} to e^3)
- Extinction coefficient (*see* Radiation)
- Eye (*see* Light, reactions to; Vision)
- J 22(1): 221 (Arctic char retinal structure)
(2): 513 (European flatfishes retinomotor changes)
(3): 761 (lake trout corneal lesions)
- 23(6): 909 (exophthalmia mechanism in Atl. cod)
- 25(2): 373 (bluegill retinomotor rhythms)
(5): 863 (cornea ultrastructure of 3 trout species)
(9): 2001(F) (walleye & sauger retinal structure re habitat turbidity)
(11): 2461 (accumulation of natural ^{65}Zn in crustacean)
(11): 2477 (lens protein electrophoresis of 20 rockfish species re systematics)
- 26(1): 143 (copepod parasite on Greenland shark cornea)
(2): 311 (copepod parasite on deep-sea chimera cornea)
(3): 597(F) (retinal structure of 20 Atl. fishes re activity, etc.)
(4): 921 (copepod parasite of arrowtooth flounder)
(7): 1927 (purine source of silvery layer in walleye & pike)
- 27(6): 1051 (deposition of ingested ^{65}Zn in euphausiids & shrimps)
- 29(8): 1229 (eyestalk removal & ecdysterone infusion effects on lobster molting)
(11): 1519 (lens susceptibility to mercury contamination in northern pike)
- S 1073 (enzymes, Atl. herring)

- 1370 (lactate dehydrogenase subunit in Atl. cod retina)
- Ezonema bicornis*
S 1658 (new nematode genus & species, from 2 Japanese freshwater fishes)
- F**
- Faber, Daniel James
J 23(2): 189, (3): 415 (free-swimming copepod nauplii in Narragansett Bay, Rhode Is., USA)
24(5): 927 (N Wisconsin limnetic larval fish)
- Fabia subquadrata* (see Clams, commensal)
- Fager, Edward William
J 25(7): 1405 (recurrent species groups in Gulf of Guinea)
- Fagerlund, Ulf Henrik Mathias
J 22(3): 775 (postspawning death of sockeye salmon)
25(1): 71 (cortisol in salmonid plasma)
(7): 1465 (metopirone in salmonids)
26(7): 1789 (effects of estrogen & cortisol on gonadectomized female sockeye salmon cortisol secretion rate)
27(3): 596 (cortisol & cortisone in salmonid plasma)
(6): 1169 (sockeye interrenal response to mammalian ACTH)
(12): 2287 (cortisol secretion rate in sockeye)
(12): 2323 (cortisone secretion in sockeye)
S 1153 (sockeye plasma cortisol concentration)
1259 (¹⁴C cortisol in salmon)
1310; 1338 (sockeye cortisol dynamics)
1340 (dexamethasone in sockeye)
1373 (lipid metabolism)
- Falcon Lake, Man.
J 23(6): 941 (feeding of indigenous walleye re introduced smallmouth bass)
- Falk, Melvyn Robert
J 29(11): 1655 (brook stickleback unusual occurrence in Mackenzie R., N.W.T.)
- Falkner, Neil Ward
J 23(8): 1109 (thermal shock in goldfish)
- Fallfish (*Semotilus corporalis*)
J 28(9): 1285 (methylmercury in N.B.)
- Family, new (see also Keys; also names of certain families of organisms)
J 26(6): 1407 (new Caligoida family: Tanypleuridae)
(10): 2595 (new polychaete family Acrocirridae, formerly Cirratulidae)
28(10): 1407 (new polychaete family Fauveliopsidae, with key to genera)
- Fangtooth (*Anoplogaster cornuta*) (ogrefish)
J 23(2): 305 (new NE Pac. Ocean record)
- Farley, John
A 58; 58(F) ("swimmer's itch")
- Farmer, David Malcolm
J 29(12): 1767 (instrument for measuring conductivity profiles in inlets)
- Farmer, Gilbert John
J 26(11): 2807 (oxygen consumption of *Tilapia nilotica* re swimming speed & salinity)
- Farming, fish (see Culture)
- Farming, shellfish (see Culture; also Clams; Oyster)
- Farr, Winston Elbert
J 27(5): 947 (floating structure for holding adult Pac. salmon)
- Farrington, John William
J 26(9): 2517 (temperature effect on glyceraldehyde-3-phosphate dehydrogenase activity)
- Fat (see Acids, fatty; Condition; Glycerides; Lipids; Oils and fats; Phospholipids; Triglycerides)
- Fatigue (see Activity; Stress)
- Fatness; Fat content (condition) (see Composition, chemical; Condition; Oils and fats)
- Fatty acids (see Acids, fatty)
- Fatty Basin, Vancouver Island, B.C.
T 44 (progress report on Atl. lobster transplantation to)
301 (progress in rearing lobsters)
S 1096 (transplantation of lobsters to)
1428 (microbiology re Atl. lobsters reared therein, also plankton biomass, etc.)
A 93 (site of lobster transplant experiment)
- Fauna (Note: Fishes, mammals, and some invertebrates are indexed under their vernacular and/or scientific names; many other invertebrates are indexed only under their phyla, classes, orders, and in some cases families or genera. For references to groups or collections not separately indexed, see headings such as Benthos; Biomass; Fishes (lists of); Infauna; Invertebrates (general); Limnology; Plankton; Production, secondary; Sampling; Sediments; Seston; Zooplankton. See also names of bodies of water; also Species, new; Species, new records or range extensions of) A few typical examples are:
J 27(2): 359 (theory of stream drift effect re fish feeding on aquatic fauna)
(4): 621, (12): 2273 (identification & distribution of benthic infauna communities off the coast of Washington)
B 176 (a synopsis of Canadian marine zooplankton, with index of species and higher taxa)
T 103; 122; 199 (faunal otter-trawl collections from off southern N.S. to off Florida)

- 159 (Canadian Arctic Archipelago fauna)
S 1078 (faunal succession of extinct N Pac. marine mammals)
- Fauveliopsidae (polychaetous annelids)
J 28(10): 1407 (new family)
- Favorite, Felix
J 22(3): 689 (transponding oceanographic buoys)
- Feces (see Excretion)
- Fecundity (see also Eggs; Reproduction; Spawning)
J 22(1): 247 (centrifugal subsampling of fish eggs)
23(2): 243 (lake whitefish, Georgian Bay)
(5): 623 (of brook trout in infertile Pennsylvania streams)
24(5): 917 (steelhead trout in an Oregon river)
(7): 1425 (brook trout)
(7): 1531 (Atl. cod in Nfld. & Labrador waters)
(8): 1637 (threespine stickleback hybrid)
(11): 2485 (re lingcod length-weight ratio)
25(1): 157 (*Mesidotea entomon* in Chignik Lakes, Alaska)
(6): 1299 (estimation of winter flounder)
(9): 1813(F) ("giant" smelts of Heney L., Que.)
(10): 2225 (white perch)
26(2): 361, (5): 1321 (of 5 Haustoriidae amphipod species)
(2): 473 (mailed sculpin, Gulf of Maine)
(3): 655 (Bristol Bay sockeye salmon)
(5): 1289 (W L. Superior longnose sucker)
(6): 1585 (differences between 2 Nfld. populations of landlocked Atl. salmon)
(7): 1877 (E & W L. Erie walleyes)
(8): 1969 (& breeding of glass shrimp, Gulf of Maine)
(8): 2245 (*Mytilicola orientalis* parasitic copepod)
(9): 2339 (re age & size of shiner perch)
(11): 2795 (of roach & bleak in River Thames, England)
(12): 3133 (cod off SW Nfld.)
27(1): 140 (lake trout, L. Opeongo, Ont.)
(3): 413 (brook trout, Matamek L., Que.)
(6): 991 (Dolly Varden, SE Alaska)
(6): 1005 (lake chub, Lac la Ronge, Sask.)
(6): 1025 (splake hybrid, L. Huron)
(7): 1265 (smallfin lanternfish)
(10): 1880 (Greenland turbot in Nfld. & Labrador area)
(11): 2037 (shorthorn sculpin in Nfld. waters)
28(3): 456 (yellowtail flounder, from Grand Bank, Nfld.)
(5): 764 (Atl. salmon from 2 Maine rivers)
(7): 1029 (of right vs. left Atl. capelin ovary)
(7): 1051 (white scaperch, Tomales Bay, Calif.)
(8): 1119 (effects of low oxygen concentration on fathead minnow)
(8): 1153 (winter flounder, Long Pond, Nfld.)
(8): 1181 (rainbow trout, after eyed-embryo exposure to X-rays)
(9): 1309 (white whale)
- 29(12): 1717 (B.C. dogfish)
B 162: 99, 123 (sockeye salmon)
165: 14 (carp)
173 (NW Canada & Alaska freshwater fishes)
180 (B.C. marine fishes)
CNG 77; 83 (Pacific herring)
T 105 (B.C. commercial groundfishes)
116 (*Clymenella torquata* polychaete)
231 (Arctic char in a small arctic lake)
246 (bibliography of N America Pac. coast trawled fishes)
296 (B.C. herring)
S 1051 (possible effects of low sea temperature on haddock)
1623 (sand goby)
A 5(F) (lobster)
190 (Greenland turbot)
256; 263 (queen crab)
- Fedoruk, Alex Nicholas
J 23(6): 941 (walleye & bass feeding habits)
- Feed; Feed chain; Feeding behavior and habits; Stomach contents (see also Bioenergetics; Caloric content; Culture; Digestion; Feedstuff; Grazing; Hunger concept; Metabolism; Nutrients, aquatic; Nutrition value; Predation; Productivity, secondary; Rations; Starvation)
J 22(2): 265, 270 (of Nfld. rare skates)
(2): 521 (re growth curve of fishes)
(2): 575 (of American plaice)
(2): 608 (of Nfld. salmon)
(5): 1131 (*Limacina* snails affecting Pacific groundfish quality)
(6): 1357 (of Heming L., Man., northern pike)
(6): 1383 (photoperiod influence on metabolism in sunfish)
(6): 1563 (digestive degradation rate in salmon, re interpretation of stomach contents)
23(1): 85 (of NE Pac. Ocean salmon & steelhead trout)
(4): 487 (thetin incorporation from, in Atl. cod)
(6): 869, (8): 1209 (re growth of fishes)
(6): 941 (walleye re smallmouth bass in a Man. lake)
(8): 1259 (seasonal & diel changes, of adult kokanee)
(9): 1291 (of *Euphausia pacifica*)
(9): 1331 (sensing of position of surface prey, by surface ripples perception through lateral line organs)
(10): 1495, 1523 (consumption re pike growth & maintenance)
(10): 1621 (of redfish in captivity)
(12): 1845 (re mouth & body form of 14 freshwater fishes)
(12): 1971 (re mouth anatomy of pelagic shrimps)
24(1): 53 (of Atl. halibut at maturity stages & spawning)
(2): 375 (of Babine R. sockeye salmon fry)
(2): 463 (*Mysis relicta* introduced into lakes for trout)

- (3): 475 (re oxygen concentration & growth of largemouth bass)
- (3): 569 (of English pink shrimp)
- (3): 683 (West Indies dolphin & yellowfin tuna)
- (4): 701, 769, 807, 823 (effect of insecticides on aquatic insects as feed of Atl. salmon & trout)
- (11): 2363 (re mathematical model for fish growth)
- (11): 2467 (measuring retention of, by aquatic invertebrates)
- (12): 2573 (Atl. cod in Ogac L., Baffin Is.)
- (12): 2515 (Puget Sound starry flounders & sand sole)
- 25(1): 1 (feeding behavior of hatchery vs. wild Atl. salmon parr in aquaria)
- (1): 151 (folic acid deficient diet effect on coho salmon blood)
- (1): 157 (*Mesidotea entomon* in Chignik Lakes, Alaska)
- (2): 267 (of filter-feeding animals re thetin derivative retention)
- (2): 285 (feeding biology of black crappie)
- (2): 347 (stomach contents of Canadian Arctic shrimps)
- (2): 393 (effect of light on jack mackerel)
- (3): 599 (chum salmon fry feeding in B.C. fresh water)
- (4): 717 (statistical analysis of ration re growth of European plaice)
- (4): 807 (of buffalo sculpin)
- (4): 825 (feeding behavior of 3 NE Pac. oceanic fishes)
- (5): 903 (swordfish in NW Atl.)
- (5): 1085 (of 4 salmon species & steelhead trout in NE Pac. Ocean)
- (6): 1133 (of 5 freshwater fish species)
- (6): 1199 (low temperature effect on Great Lakes fishes)
- (9): 1775 (importance to predator species)
- (12): 2561 (habits of cetaceans from fish otoliths in stomachs)
- (12): 2589 (of Fraser R. white sturgeon)
- 26(1): 143 (Greenland sharks, N Baffin Is.)
- (1): 175 (distinguishing northern pike & muskellunge remains in fish stomachs)
- (2): 357 (adding canthaxanthin to young trout & pink salmon feed to enhance flesh color)
- (2): 361 (of 3 Haustoriidae amphipod species)
- (3): 557 (particulate & filter feeding by northern anchovy)
- (3): 583, (5): 1273 (Atl. cod behavior)
- (4): 845 (special nutrition modes of *Anenterotrema* trematodes)
- (4): 871 (lake trout re *Diphyllobothrium* transmission)
- (4): 879 (Atl. argentine re trematode infestation)
- (4): 935 (timing during *Phocanema decipiens* nematode molting cycle)
- (5): 1273 (comparison of Atl. cod & haddock)
- (6): 1429 (habits re stream fishes ecology)
- (6): 1585 (differences in 2 Nfld. populations of landlocked Atl. salmon)
- (6): 1605 (*Cyclops bicuspidatus thomasi* predation including cannibalism)
- (6): 1631 (young chum salmon growth on euphausiid vs. copepod feed)
- (7): 1743 (experiments re some medusae & Chaetognatha habits)
- (7): 1801 (rainbow trout digestive response to pellet diets)
- (7): 1899 (Canadian E Arctic decapod Crustacea)
- (8): 1969 (glass shrimp)
- (8): 2165 (brown trout re feed availability in a British stream)
- (8): 2211 (ecology of yellowtail rockfish in submarine Astoria Canyon)
- (8): 2219 (juvenile Pac. salmon in Chatham Sound, B.C.)
- (9): 2363 (conversion efficiency of young sockeye salmon)
- (9): 2403 (blackbelly eelpout, Burrard Inlet, B.C.)
- (10): 2659 (resources of 3 oligochaetes in Toronto harbour sediments)
- (10): 2669 (of turbellarian *Syndesmis franciscanus*)
- (12): 3165 (winter, of zooplankton, Strait of Georgia, B.C.)
- (12): 3237 (statistical analysis of ration re growth of European plaice)
- (12): 3275 (brown & rainbow trout night feeding in experimental stream channel)
- 27(1): 13 (phytoplankton grazing rates & selection by *Diatomus oregonensis* copepod, Marion L., B.C.)
- (1): 125 (lake trout re fisheries, L. Opeongo, Ont.)
- (1): 156 (computer program availability for fish stomach contents data analysis)
- (2): 281 (young sockeye salmon re limnetic zooplankton & diel vertical movements; correction on J27(8): 1499)
- (2): 359 (theory of stream drift effect on fish feeding on bottom fauna)
- (3): 499 (daggertooth as prey & predator)
- (3): 513 (lipids & fatty acids of 2 euphausiids re their role in feed web)
- (4): 685 (sediment microflora of Marion L., B.C., re *Hyaella azteca* amphipod)
- (6): 991 (Dolly Varden smolts, SE Alaska)
- (7): 1177 (young Atl. salmon digestion rate re temperature & meal size)
- (7): 1295 (conversion efficiency in Atl. salmon re photoperiod regime)
- (8): 1395 (effects of copepods grazing & grazing rate on phytoplankton in Bras d'Or L. & Morrison's Pond, N.S.)
- (8): 1496 (feed chain re DDT accumulation by fish)
- (9): 1661 (flathead sole, East Sound, Orcas Is., Wash.)
- (10): 1875 (effects on larval Atl. herring condition)
- (11): 1927 (re Atl. salmon parr taste reactions)
- (12): 2343 (re RNA-DNA ratios as indicators of fish recent growth rates)
- (12): 2350 (availability re brook stickleback territorialism & nest building)
- (12): 2356 (rainbow trout feeding re abundance of drifting invertebrates in a mountain stream)

- 28(3): 335 (tubificid oligochaete worms on sediment bacteria)
- (3): 343 (intake & conversion factors re presmolt coho salmon growth)
- (3): 409 (satiation time, appetite, & maximum feed intake of sockeye salmon)
- (3): 449 (bluegill sunfish protein consumption & nitrogen excretion)
- (5): 776 (*Pontoporeia affinis* amphipod as fish feed source, Cayuga L., N.Y.)
- (6): 861 (level effect on sockeye salmon scale cirulus formation, also on fish length & weight)
- (6): 928 (of 2 cöhabiting tidepool sculpin species, re difference in amount of copepods eaten)
- (6): 1153 (details of Nfld. winter flounder stomach contents)
- (8): 1185 (bacterial counts of commercial fish diets)
- (8): 1199 (Atl. salmon on scaled lancetfish)
- (9): 1259 (of sympatric vs. allopatric Dolly Varden & cutthroat trouts in 3 B.C. lakes)
- (10): 1433 (re tube-building in a terebellid polychaete)
- (10): 1663 (of fur seal, as clue to Pac. herring offshore distribution)
- (11): 1727 (of winter flounder, Passamaquoddy Bay, N.S.)
- (11): 1733 (of lobster, St. Margaret's Bay, N.S.)
- (12): 1841 (experience effects on rainbow trout)
- (12): 1857 (of kokanee introduced into L. Huron)
- 29(1): 67 (oxygen consumption & salinity re feed consumption of aholehole)
- (2): 161 (rock crab, Northumberland Strait)
- (2): 187 (re sand goby bioenergetics)
- (3): 285 (biting re filtering, of northern anchovy)
- (3): 330 (L. Winnipeg longnose dace)
- (4): 363 (review of feed & feeding habits of USSR freshwater invertebrates)
- (4): 429 (bacterial population of diets for aquarium fishes; correction on J 30(8): 1257)
- (4): 439 (effects on some lobster physiological parameters)
- (4): 461 (as affecting gaffkemia-infected lobsters time to death)
- (5): 555 (feeding behavior & interaction of coastal cutthroat & Dolly Varden trout)
- (6): various papers in this special issue reporting a symposium on Salmonid Communities in Oligotrophic Lakes (N America & Europe)
- (7): 997 (seasonal re resource division, of 13 fishes, Passamaquoddy Bay, N.B.)
- (7): 1085 (pteropods & euphausiids in N.S. mackerel)
- (8): 1181 (effects on walleye bioenergetics)
- (8): 1193 (effects of hunger, prey density, & prey size on predation by rainbow trout)
- (9): 1245 (longnose & blacknose dace, Mink R., Man.)
- (10): 1495 (availability & consumption of American shad, Connecticut R.)
- (11): 1615 (feed specializations of individual rainbow, cutthroat, & brook trouts; corrections on J 30(8): 1257)
- (12): 1725 (effect on captive lobster growth)
- (12): 1792 (Pac. hake, on offshore bank SW Vancouver Is.)
- B 149: 62 (pet and mink, from Great Lakes fisheries)
- 155 (Canadian Atl. coast fishes)
- 161: 26 (of goldeye)
- 162: 166, 234, 254, 340 (young & mature sockeye salmon)
- 165: 15 (carp)
- 169: 43 (Pac. oyster, B.C.)
- 173 (of NW Canada & Alaska freshwater fishes)
- 177 (of E Canada shellfishes re paralytic shellfish toxin retention from *Gonyaulax tamarensis*)
- 179 (B.C. clams)
- 180 (B.C. marine fishes)
- CNS 15; 20; 21; 22; 23 (of NE Pac. Ocean salmonids)
- CPO 1965-70 (measurements associated with Pac. salmon stomachs)
- T 74 (of sablefish)
- 105 (B.C. commercial groundfishes)
- 148 (Atl. salmon fry re survival & growth)
- 149 (Atl. salmon smolts & postsmolts re growth)
- 160 (of 4 *Lepidion* morid fish species)
- 165; 165(F) (*Gammarus lacustris* re rainbow trout farming)
- 174; 177; 183; 190 (B.C. offshore herring)
- 210 (of dogfish & hake off Juan de Fuca Strait)
- 213 (of chinook, pink, & chum salmon, & dogfish, offshore B.C.)
- 231 (of Arctic char in a small arctic lake)
- 236 (of larval mud dab during culturing)
- 248 (*Calanus pacificus* copepod feeding rates, etc., re marine productivity)
- 288 (monthly variations in types of, from commercial Atl. fishes stomachs)
- 309 (esophagus & anus diameter of sablefish, re feed size for tank culturing; mercury levels in fishes used for feed)
- 334 (effect of 3 algal species on oyster lipids & fatty acids)
- S 891 (water-pumping feeding behavior of lamellibranchs)
- 1000 (Pac. salmon in ocean)
- 1024: 26 (Atl. cod)
- 1025 (re competition & predator control, ICNAF area)
- 1054 (cod & haddock re behavior & concentrations)
- 1062; 1063; 1064 (B.C. salmon: sockeye; pink; chum)
- 1078 (walrus)
- 1130 (squid habits)
- 1172 (zooplankton, re size of phytoplankton feed)
- 1206 (of salmon from Labrador Sea & off W Greenland)
- 1223 (seasonal availability variations for coastal benthos)
- 1228 (of fish, whales, & seals, re isoprenoid fatty acids of their oils)
- 1300 (blood feeding of *Salvelinema* nematode on coho salmon swimbladder)
- 1305 (marine microorganisms biomass associated with young Pac. salmon & trout)
- 1317 (salmon off Nfld.)

- 1332 (ecological implications of, for young coho salmon in stream)
- 1334 (limitations re salmonid stream populations)
- 1394; 1395 (relations between zooplankton & larval & juvenile fishes in S Strait of Georgia)
- 1445; 1446 (mathematical model re production & feed supply of aquatic populations)
- 1485 (aquatic organic matter as filter-feeding copepods natural feed)
- 1513 (*Calanus* copepod rations, re marine productivity)
- 1520 (cestode from stomach as clue to feed of giant squid)
- 1547 (re sympatry of brook & brown trout in a Nfld. stream)
- 1551 (of postlarval *Macoma balthica* clam)
- 1559 (*Uronema* ciliate ingestion of bacteria)
- 1575 (feeding rate re body weight of Cetacea)
- 1599 (possible use of ultrasonics by blue whales to locate euphausiid diet)
- 1605 (coho salmon fry, re diel drift of chironomids in artificial stream)
- 1618 (lip hypertrophy re feeding mechanism of Anisomyaria)
- 1625 (of various turtle species re body fat fatty acid compositions)
- 1653 (behavior of young sockeye salmon after enrichment of Great Central L., B.C.)
- 1711 (behavioral adjustment of population density to available feed by young Atl. salmon)
- A 5(F); 66 (of lobsters)
- 115 (new FRB laboratory, Dartmouth, N.S., marine ecology research)
- 133 (Atl. cod)
- 138; 256 (queen crab)
- 184 (harp & ringed seal)
- 188 (cycle in Saanich Inlet, B.C.)
- 193 (capelin)
- 211 (plankton & pink & chum salmon, re trophic levels in feed chain)
- 212 (energy requirements for fish when feeding: review)
- 232 (radioactivity re marine feed ecosystems)
- 233 (pollution re aquatic feed ecosystems)
- Feedback (see Physiology)
- Feeding habits (see Feed)
- Feedstuff (animal rations) (see also Feed; Fishmeal; Rations)
- J 24(6): 1219, 1291 (freshwater fishes oils & meals)
- CNG 79 (NE Pac. groundfish catches used for, 1954-65)
- CNS 14; 19; 28 (B.C. landings of groundfish, etc., for)
- CVG 34; 35 (antioxidant value in preserving herring meal)
- 42 (for chicks, from salmon & herring processing recovered solids)
- T 7; 19; 56; 89; 117; 131; 181; 216; 257; 302 (landings from B.C. trawl fisheries for; T 257 includes data for US Pac. coast also)
- 107 (for rearing sablefish in tanks)
- 246 (bibliography of N America Pac. coast trawled fish for)
- S 969 (antioxidant value in preserving herring meal)
- 1377 (Atl. & Pac. herring meals as chick rations)
- A 37 (NE Pac. groundfish catches used for, 1956-63, & fisheries potential)
- 91 (utilization of B.C. fishes for animal feed; list of 41 species found in landings)
- 231 (utilization from N.W.T. fisheries for dogs)
- Feelerfish, notch (*Bathypterois dubius*)
- J 23(5): 715 (NW Atl. record & species status review)
- Feldmeth, Carl Robert
- J 27(12): 2356 (rainbow trout feeding in relation to drifting invertebrates abundance)
- Fellowships
- MSP 8 (FRB facilities for postdoctorate tenure)
- Fence, counting (see Counting; Migration)
- Fenderson, Owen Charles
- J 25(1): 1 (hatchery-reared & wild salmon behavior)
- 27(1): 1 (salmon insecticide residues)
- 28(4): 505 (Atl. salmon histological comparisons)
- Ferguson, Denzel Edward
- J 26(9): 2395 (resistance patterns in mosquitofish)
- Ferguson, Robert Gilmour
- J 28(8): 1133 (migrations of walleyes)
- A 39 (American smelt)
- Fernando, Constantine Herbert
- J 26(4): 833 (yellow perch parasites)
- 27(2): 213 (benthic fauna colonization)
- (6): 1045 (yellow perch gill parasites)
- 28(3): 365 (simple corer vs. Ekman grab)
- Fertility; Fertilization (of animals) (see also Eggs; Fecundity; Gonads; Matter, particulate; Ovaries; Phytoplankton; Plankton; Production, primary; Reproduction; Spawning; Testes; Sperm)
- J 22(6): 1503 (retention in expressed sockeye salmon eggs & milt)
- 24(7): 1573 (duration of pink & sockeye salmon ova & sperm)
- 26(5): 1400 (of steelhead trout with cryopreserved sperm)
- Fertilization (of waters) (see also Eutrophication; Nutrients, aquatic; Pollution; Waters, natural)
- J 25(10): 2011 (for increasing trout growth rate & yield in lake)
- 26(5): 1133 (experimental nutrient enrichment of sea water re phytoplankton growth)
- (12): 3101 (changes in environment & biota of Crecy L., N.B., after fertilization)
- 28(11): 1763 (effects of, on a small NW Ont. lake)
- 29(11): 1595 (effects of artificial, on enclosed plankton populations, Marion L., B.C.)

- CJG 14: 30 (Nfld. landings of capelin for
T 76 (prefertilization benthic survey, *Ostrea L.*,
N.S.)
324 (Great Central L., Vancouver Is., re sockeye
salmon production)
S 1646 (re lakes eutrophication)
1651; 1652; 1653 (biological effects of enrichment of
Great Central L.)
- Fertilizer (see Fertilization; Meals; Seaweeds)
- Fessler, James Laurence
J 26(11): 2823 (steelhead trout morphological & bio-
chemical changes during parr-smolt change)
- Fiber
B 167: 235 (determination of crude, in sea water)
A 129 (synthetic, characteristics of for fishing gear)
- Fibroma (see Tumors)
- Fields, William Gordon
J 28(10): 1595 (studies on evolution of *Chondrophora*)
(11): 1796 (unusual type of Pac. gonatid squid)
- Figueira, Armando Jorge Gomes
J 29(2): 213 (*Eukrohnia bathypelagica* chaetognath
occurrence in Canadian Atl. waters)
B 176 (synopsis of Canadian marine zooplankton)
- Figularia quaylei*
J 24(9): 2003 (new bryozoan species, NE Pac.)
- Fillets (see also Muscle; Preservatives; Quality of fishery
products)
J 22(2): 414 (cod: quality re freezing rate and storage)
(3): 783 (cod: thaw-drip quality, treated and
untreated)
(3): 865 (lake whitefish: candling for tapeworm
cysts)
23(4): 487 (odors from sulfur compounds ingested by
Atl. cod)
(7): 1063 (palatability of Atl. cod, after single &
double freezing)
(9): 1385 (oxidative rancidity in frozen stored, of
Atl. cod)
24(1): 127 (water- vs. dielectric-thawing effect on
shelf life of cod & redfish)
(1): 211 (desiccation of frozen cartoned, from sole)
(8): 1833 (*Clostridium botulinum* spore germination
in extracts from)
(11): 2229 (hypoxanthine formation in iced fresh-
water fish)
25(2): 299 (storage quality of refrozen Atl. cod)
(3): 605 (ultrasonic test for quality of frozen & tha-
wed whitefish)
(4): 733 (trap-caught Nfld. cod: freezing effects on
quality)
(4): 817 (rapid hypoxanthine accumulation in iced
redfish)
(4): 829 (thaw-drip in American plaice)
(5): 921 (nonbacterial trimethylamine production
in frozen Atl. cod)
(8): 1753, (10): 2071 (preservation by ethylenedi-
aminetetraacetic acid (EDTA) salts)
(12): 2749 (incidence of cod worm in Atl. cod)
26(1): 175 (identifying northern pike vs. maskinonge)
(10): 2651 (EDTA effect on spoilage characteristics
of petrale sole & Pac. ocean perch)
(12): 3217 (bacteriology of Nfld. commercial, from
cod & flounder frozen at sea & thawed in
water)
27(1): 31 (electrophoretic protein patterns alterations
in refrigerated haddock)
(9): 1589 (keeping time of frozen redfish, re han-
dling of raw material)
(11): 1983 (bacterial quality from water-immersion
thawing of plaice)
28(3): 305 (bacterial trimethylamine production in
stored chilled haddock)
(7): 1061 (practical small-scale dryer for)
(8): 1125 (inosine 5-phosphate degradation effects
on iced)
29(5): 525 (DDT residues in raw & cooked L. Michi-
gan yellow perch & bloater)
(7): 1053 (elemental yellow phosphorus in Atl. cod
edible muscle during various types of
processing)
B 151; 151(F) (processing of canned smoked, from fresh-
water fishes)
CHN 20 (identification of cod and haddock by protein
electrophoresis)
27 (weight gain & loss during processing &
storage)
30 (discolored, from small gillnetted Greenland
halibut)
35 (blast freezing rates and weight loss, for
haddock)
CVG 45 (yield from Pac. cod & halibut, re amount of ice
used during sea storage)
T 67; 68 (analysis for residues of EDTA preservatives)
208 (Atl. cod: decline of elemental phosphorus con-
tent with cold storage age)
214 (EDTA as preservative for iced haddock)
280 (effects of shipboard transportation in refriger-
ated sea water of whole Atl. cod, redfish, &
flounders before filleting)
S 993 (practical preparation & freezing, freshwater
fishes)
1031 (antibiotic dips for)
1043 (quality re antemortem activity of Atl. cod &
postmortem glycolysis)
1290 (deterioration & storage life of frozen Atl. cod)
1363; 1364; 1365; 1366; 1367; 1368 (quality from Atl.
trawled fish, re freezing or icing fish at sea,
thawing, processing, refreezing, storage, etc.)
1412 (fluoride content, from several Atl. commercial
fishes)
1416 (quality from B.C. fishes sea-frozen at various
rigor stages)
1639 (dimethylamine & formaldehyde formation re
lipid oxidation & protein changes in gadoid)

- 1686 (bacteriology of fillets from industrial water-thawed fish)
- 1697 (canned, from N.W.T. fishes)
- A 6(F) (marinated, from freshwater fishes)
- 12(F); 65 (weight gains & losses of Atl. cod, when dipped in tap water or brines)
- 26 (antibiotic dips for preserving quality)
- 172 (technical-economic assessment of vertically integrated filleting from iced or frozen Atl. fish)
- 203 (precooked in batter)
- Filter
- S 1345 (retention of marine particles by)
- Fingerlings (*see* names of adult fishes, e.g. Trout; Salmon)
- Finlayson, B. J.
- J 28(9): 1285 (methylmercury in fish)
- Fins; Fin rays (*see also* Marking; Tagging)
- J 22(1): 219 (anomalies in white sucker)
- (1): 237 (abnormalities in thorny skate)
- (6): 1345 (lymphocystis disease of American plaice)
- 23(7): 1099 (development of capelin anal)
- (12): 1845 (re body form of 14 freshwater fishes)
- (12): 1969 (second record of accessory, on northern pike)
- 24(1): 209 (adipose pigmentation for distinguishing juvenile chinook from coho salmon)
- 25(4): 813 (sexual dimorphism in trout anal)
- (7): 1511 (rays for lake sturgeon aging)
- (12): 2589 (rays for white sturgeon aging)
- 26(2): 311 (copepod parasitic on eelpout & wolffish)
- (3): 633 (white sucker fin rays vs. scales, for aging)
- (5): 1199 (sockeye & chum salmon pectoral fin rays for aging)
- (5): 1263 (finclipping effect on young sockeye salmon survival)
- (6): 1619 (effect of fluorescent pigment marking vs. finclipping on coho salmon fry survival)
- (9): 2431 (geographical variation in brook stickleback spines)
- (9): 2537 (Atl. mackerel: fin rays counts re N American populations)
- 27(9): 1549 (vs. vertebrae as NW Atl. Greenland turbot meristic characteristics)
- 28(1): 95 (differential growth in big skate embryos caudal, re respiration)
- (4): 553 (ray counts of spring vs. autumn spawning SW Nfld. herring)
- (7): 1009 (ray counts re S Gulf of St. Lawrence seasonal herring stocks discreteness)
- (10): 1672 (abnormal coloration of petrale sole)
- 29(5): 469 (regeneration re marking by clipping only part of)
- (8): 1211 (pectoral fin length re subspeciation of *Squalus acanthias*)
- T 192 (ray counts, Greenland turbot)
- Fiords (*see* Inlets; Oceanography)
- Firmness (of flesh) (*see also* Quality of fishery products)
- T 220; 242 (sockeye salmon canned after storage of fish at sea in ice & refrigerated sea water)
- Fish farming (*see* Culture)
- Fish flour (*see* Fish protein concentrate)
- Fish ladders (*see* Fishways)
- Fish Lake, Ont.
- J 25(6): 1199 (water temperature effect on fish feeding)
- Fish meal (*see* Fishmeal; Fish protein concentrate)
- Fish oils (*see* Acids, fatty; Lipids; Oils and fats)
- Fish processing (*see* names of commercial fishes; Freshwater fish products; *also* next heading; *also* types of processing and products, e.g. Brines; Canning; Cooking; Delicatessen; Drying; Fillets; Fish protein concentrate; Fishmeal; Freezing; Ice; Oils and fats; Preservatives; Refrigeration; Salting; Smoking; etc.)
- Fish processing wastes (stickwater; waste water)
- J 29(12): 1769 (salmon-canning waste water as bacterial medium for producing possibly useful products)
- CVG 38 (clarifying salmon-canning waste water to minimize pollution by effluent)
- 42 (solids recovery from salmon-canning & herring-pumping waste waters)
- 46 (compact deodorizer for fishmeal plant flame drier, re air pollution)
- T 14 (clarifying fish-plant waste water, for recovery of solids & to minimize pollution by effluent)
- 197; 286 (demonstration plant for treating fish processing plant waste water)
- A 203 (recovery of solids protein from, & lessening pollution from effluent)
- Fish protein concentrate (fish flour; FPC)
- J 24(4): 895 (preservation of Atl. cod scrap as raw material for; analysis of product)
- (7): 1521; 25(4): 805 (isopropanol extraction solvent retention by)
- 26(7): 1919, 1923 (isopropanol-water mixtures, including azeotrope, for fat extraction in Atl. herring)
- 27(3): 591 (bone material estimation method for herring & cod)
- 29(12): 1777 (mercury contamination removal during fat extraction stage of processing; correction on J 30(9): 1404)
- CHN 39 (extraction & colorimetric determination of isopropanol residues in)
- S 929 (processing and characteristics)
- 1339 (fluoride determination method for, and data)
- 1350 (oil & lipids extraction from Atl. herring for)
- 1412 (fluoride content, from several Atl. coast commercial fishes)
- A 98 (composition of Atl. herring & cod)

- 124-127 (Halifax process; nutritive values; economics of production; fish resources & utilizations for)
198 (research & industrial progress, N.S.)
- Fishballs (delicatessen)
B 151: 34; 151(F) (recipes & processing, from freshwater fish)
- Fisher, Stuart G.
J 29(10): 1472 (littoral fauna differences from water-level changes below a dam)
- Fisheries (see also Angling; Catches; Groundfishes; Management; Stock; Yield; also names of commercial fishes, marine mammals, and shellfishes; also names of International Fisheries Commissions)
J 24(5): 1035 (contributions of blue pike year-classes to L. Erie commercial)
(12): 2527 (mathematical treatment of multiple stocks exploitation)
25(4): 667 (exploitation re species succession in Great Lakes)
(12): 2589 (Fraser R. white sturgeon)
26(2): 269 (NW Margaree R., N.B., salmon migration to commercial and angling)
(5): 1205 (exploitation effects on Magdalen Shallows American plaice stock)
(8): 1985 (demersal, NE Pac. Ocean areas)
(8): 2027 (undeveloped, of Nfld. beachspawning capelin)
(10): 2754 (sport: sex ratio of steelhead trout, Babine R., B.C.)
(12): 3133 (cod, off SW Nfld.)
27(1): 125 (long-term effect of natural feed on L. Opeongo lake trout)
(7): 1251 (Strait of Georgia potential)
(8): 1475 (L. Erie walleye, 1943-62)
(10): 1823 (L. Erie smelt, early 1960s)
(12): 2215 (capelin biology re possible Nfld. commercial fishery)
(12): 2261 (yellowtail flounder, in waters off Nfld.)
28(3): 351 (relative utilization rates of Miramichi R., N.B., Atl. salmon by local angling vs. E Canada commercial fisheries)
(3): 417 (Pac. ocean perch off Oregon, Washington, & B.C., 1956-65)
(3): 485 (response of brook trout populations to a fishery)
(6): 821 (gillnet selectivity of pink & sockeye salmon, Skeena R., B.C.)
(7): 1009 (discreteness of populations in Gulf of St. Lawrence spring & autumn herring)
(8): 1211 (advantages & limitations of mathematical models for catch & effort)
(12): 1873 (bowhead whale Canadian population recovery after previous exploitation)
29(2): 161 (Northumberland Strait rock crab)
(5): 477 (L. Michigan alewife)
(6): 629, 717, 741, 755, 777, 833, 849, 867, 877, 899, 951 (past, present, & forecasted data on catches in some N American & European lakes, re natural & man-made environmental changes (including pollution), in proceedings of international symposium on Salmonid Communities in Oligotrophic Lakes)
(8): 1221 (analysis of temperature effects on Canadian & USA inshore lobster fishery)
(12): 1685 (re mercury contamination of 11 fish species of various Man. & NW Ont. lakes)
B 153: 4 (history of Canadian & USA petrale sole)
157 (economic appraisal of Canada lobster)
158 (physical & economic organization, Mackenzie District, N.W.T.)
161: 33, 37, 39 (commercial; sport; management; of goldeye)
162: 43 (sockeye salmon)
165: 39 (carp in Canada: history, present, and potential)
166 (eel, of E Canada)
169: 174, 178, 189 (Pac. oyster in B.C.: leases, regulations, etc.)
171: 50 (B.C. whales, 1905-67)
173 (commercial &/or sport, NW Canada & Alaska freshwater species)
175 (economic study of Maritime Provinces oyster fishery)
177 (control, re paralytic shellfish toxicity in E Canada)
178 (raft culture of Pac. oyster in B.C.)
179 (B.C. clams)
180 (B.C. marine fishes)
CJG 16 (investigations & groundfish landings, Nfld., 1968)
18: 1 (recent developments in Nfld. herring purse-seining)
CNG 78 (review of B.C. Pac. cod & 1967 forecast)
79 (recent developments in NE Pac. groundfish)
80 (recent abundance changes & future prospects, B.C. herring)
CNS 27 (age composition of 1965 B.C. commercial sockeye, chum, & pink salmon catches)
28 (Canadian & American trawl catches from grounds off B.C., 1954-65)
CSG 55 (Atl. herring)
T 7; 19; 23; 56; 89; 117; 131; 181; 216; 257; 302; 317 (B.C. (& in some cases US Pac. coast) commercial trawl fishery 1966-71)
12 (B.C. & US Pac. coast Pac. cod fishery, 1935-65)
31 (Atl. mackerel)
33 (Great Slave L. winter fishery production re number of fishermen)
86 (Canadian cod & haddock, 1965)
108 (Canadian & American catches of rock sole, 1945-64)
166 (computer programming Nfld. herring catch & fishing effort data)
168 (sea scallop, Bay of Fundy)
179 (Greenland turbot in Nfld. area)
180 (Lac la Martre, N.W.T.)
246 (bibliography of N American Pac. coast trawl fishery & groundfish)
256 (Georges Bank scallop fishery study)

- 259 (rock sole landings from Cape Scott Bank, B.C., 1959-69)
- 289 (lobster, Bonavista Bay, Nfld., 1966-70)
- 298 (information supplementary to that on Great Slave L. in J29(6): 741 reference above)
- 326 (Pac. ocean perch by various countries, in NE Pac. Ocean)
- MSP 13; 13(F) (summary of FRB investigations of actual & potential, in Canadian Arctic)
- S 1022 (trends for cod off E Nfld. & Labrador)
- 1037 (international: re biology, systematics, fishermen, law, communications, etc.)
- 1075 (evolution of S Gulf of St. Lawrence cod)
- 1126 (Greenland salmon, effect on N.B. salmon stocks & fishery)
- 1147; 1185 (haddock, ICNAF areas)
- 1148 (Atl. cod, ICNAF areas)
- 1149 (Magdalen Is. herring, Gulf of St. Lawrence)
- 1209 (effect of offshore fishing on inshore Labrador cod fishery)
- 1283 (Nfld. herring, re its resource)
- 1284 (recent developments in Georges Bank scallop)
- 1316 (Scotian Shelf haddock)
- 1318 (W Nfld. cod)
- 1473 (portable refrigerated unit for holding iced fish in remote freshwater fisheries)
- 1540 (Atl. cod in ICNAF Subareas 2 & 3)
- 1541 (American plaice in ICNAF Subarea 3)
- 1546 (NW Atl. squids)
- 1607 (past, present, & probable future, as food for man)
- 1642 (recent events in E Scotian Shelf haddock)
- 1668 (mercury levels in various commercial Canadian species)
- 1699 (N. Atl. food chains & fish production re forecast of potential fisheries yields)
- 1718 (organochlorine pesticide levels in various commercial species)
- A 2 (trawl, for Pac. cod)
- 5(F) (Canadian & U.S. lobster)
- 7(F) (Pac. salmon)
- 8(F) (Atl. herring in Canada)
- 9(F) (Atl. mackerel in Canada)
- 10(F); 64 (sea scallop in Canada)
- 13(F) (rainbow smelt)
- 14(F) (Great Bear L., N.W.T.)
- 17; 53 (N America fishery potential)
- 18 (challenge of unexploited stocks & fishing methods)
- 20 (B.C. clams)
- 21; 49 (Pac. sablefish)
- 22 (Pac. herring)
- 23 (Pac. cod)
- 44; 54(F) (B.C. albacore)
- 45 (sockeye salmon)
- 46; 51(F) (Pac. soles & flounders)
- 47 (B.C. lingcod)
- 48 (coho salmon)
- 50 (B.C. shrimps)
- 60 (same as CNG 79 above)
- 63 (chum salmon)
- 67 (bluefin tuna)
- 70 (eulachon, anchovy, & pilchard)
- 71(F) (northern anchovy)
- 90; 103 (trends in Pac. coast marine)
- 94; 95; 96 (Atl. herring)
- 99 (production from NW Atl.)
- 122 (B.C. whaling industry)
- 131(F) (swordfish)
- 138; 176 (F); 256; 263 (queen crab, Atl. coast)
- 140 (Nfld. herring catch distribution & landings 1967-68)
- 141; 141 (F) (total & per capita consumption of fresh, frozen, cured, & canned, Canada re USA & world, 1948-68)
- 142 (foreign, as threat to Canadian Atl. salmon)
- 149 (trends in Canadian lobster)
- 150 (schooling pattern research as aid to Atl. coast)
- 152; 153; 181; 182; 241 (summaries of Canadian catches & research, ICNAF reports)
- 163; 163(F) (same as CSG 55 above)
- 183 (re oceanography & ocean resources management)
- 184 (Canadian Arctic harp & ringed seals)
- 185 (capelin as latent resource for Nfld.)
- 192; 202; 205 (Atl. salmon by countries, 1961-67; also effects of foreign Atl. salmon fisheries on Canadian fishery)
- 193 (Greenland, Iceland, Norway, & USSR, for Atl. capelin)
- 194 (foreign, off Labrador)
- 201 (Great Lakes: changes in production 1968 vs. 1920)
- 207; 219 (recent commercial & research events in Canadian Atl. herring)
- 208 (Bay of Fundy herring & N.B. "sardine" herring)
- 218 (research, very general synopsis)
- 225 (resume of S 1473 above)
- 231 (summary of FRB investigations of Canadian Arctic)
- 235 (productivity, Strait of Georgia, B.C.)
- 236 (landing price re offshore stocks decline of Georges Bank sea scallop)
- 237 (overfishing the sea)
- 240; 248; 249; 250 (various aspects of ICNAF Canadian research on Atl. cod)
- 246 (status of SW Nfld. herring stocks)
- 247 (NW Atl. harp seal)
- 251 (sea scallop, Georges Bank)
- 252 (a century of fisheries in N America: book review)
- Fisheries Research Board of Canada (*see also* next two headings)
- AR1964; 1965; 1966; 1967; 1968; 1969; 1970; 1971 (These Annual Reports, in both English & French, vary somewhat from year to year in the extent of their coverage of the Board's organization and activities; *see* page ii of the Preface of this Miscellaneous Special Publication for further details. *Note:* The investigations mentioned in

these Reports are presented too briefly to warrant indexing in this Miscellaneous Special Publication, but results of the investigations as published more fully elsewhere are indexed herein.)

- R 1964; 1965/1966; 1967/1968; 1969/1970 (These biennial Reviews, in English, contain information similar to that given in the Annual Reports pertaining to the Board's organization and function, but present considerably more information about its establishments, staffs, and investigations; see page ii of the Preface to this Miscellaneous Special Publication for further details. *Note:* The results of investigations as given in these biennial Reviews are not indexed in this Miscellaneous Special Publication because by the time these Reviews appear the results of most such investigations have been reported or published more fully elsewhere and are indexed herein.)
- MSP 10 (outline of origin; organization; programs; co-operation with other bodies; 1967-68 operating costs & distribution; list of establishments)
- 11; 11(F) (brief brochure on scope of northern Canada biological & oceanographic investigations by its Arctic Biological Station, Ste. Anne de Bellevue, Que.)
- 12 (brochure describing St. Andrews Station for visiting aquatic scientists)
- 13; 13(F) (history & nature of Canadian Arctic investigations through its Arctic Biological Station)
- 14 (brief illustrated description of 18 principal commercial fishes of Canadian Atl. coast (in English & French))
- 15 (brochure re opening of addition to Biological Station at Nanaimo, B.C.; also summary of types of investigations & facilities)
- 16 (considerations & recommendations (by the Canadian Committee on Fish Diseases) for control of fish diseases in Canada)
- 17 (brochure re "open house" of Pacific Environmental Institute at West Vancouver, B.C.)
- A 3 (brief history)
- 73 (current technological research in Atl. area)
- 75 (field activities in Canadian Arctic, 1965)
- 77 (brief review of 1964-65 operating expenditures re previous 12 years; also of 1964-65 research on fisheries products)
- 132 (what it does to help Atl. fishermen)
- 134 (work of Dartmouth Marine Ecology Laboratory)
- 161 (highlights of 1969 activities)
- 231 (see MSP 13(F) above)

Fisheries Research Board of Canada, lists of publications and reports

- B 164: 403-649 (titles & authors from beginning of series in 1900 to end of 1964) (*Note:* The concluding issue of the 1965-1972 annual volumes of the Journal contains a list of titles with authors for the contents of the volume, a list of titles with authors of articles appearing in other

FRB series during the year, and a list of titles with authors of recent articles ("Studies") on FRB investigations published in other periodicals during the year; commencing in 1966 each monthly issue of the Journal contains a list of the recent Studies. The biennial FRB Reviews list the authors & titles (with reference) of all FRB publications during the period alphabetically by name of the first author. The Appendix of this Miscellaneous Special Publication consolidates these lists by series.)

Fisheries Research Board of Canada Experimental Lakes Area, northwestern Ontario

- J 28(2): (entire issue), (11): 1763 (limnology, eutrophication, etc.)
- S 1597 (origin of name & limnology, Hutchison L.)
- 1646 (nutrients re eutrophication of one of)
- 1655 (snow contribution to nutrient budget; physics of ice & snow cover)

Fishery, sport (see Angling, also names of species, e.g. Salmon; Trout)

Fishery products; Fishery by-products (see also types of processing and products; also names of organisms; also Quality of fishery products; for Freshwater fish products see that heading)

- A 203 (lessening pollution by waste waters from)
- 215 (fishery by-products technology: book review)

Fishes, freshwater (see also common and/or scientific names) (For products see Freshwater fish products)

- B 173 (a 381-page treatise on those of NW Canada & Alaska: illustrations, description, taxonomic notes, postglacial dispersion, biology, with keys & index (each species also indexed in present index))
- S 1665 (some comparative aspects of corticosteroid metabolism: review)
- 1666 (are corticosteroids present in the blood of all fish?)
- A 189 (review of assessment methods for production)
- 197 (review of metabolism & biological production)

Fishes, lists of (not all species indexed individually) (see also Checklists; Feed)

- J 24(12): 2515 (in starry flounder & sand sole stomachs)
- 25(1): 197 (microorganisms isolated from 12 species of diseased tropical)
- (7): 1405 (recurrent group analysis of Guinea demersal fish assemblages)
- (12): 2561 (identified by otoliths in cetacean stomachs as feed of latter)
- 26(4): 1075 (marine, examined for haematzoan protozoan blood parasites, N.B. & New England)
- (6): 1439 (in Canadian head waters of Missouri R.)
- (10): 2769 (recent records, Atl. coast of Canada)
- 27(2): 391 (23 deepwater species from New York Bight, Atl. Ocean)

- (7): 1251 (total biomass of commercial species resident in Strait of Georgia, B.C.; also list of larval & juvenile species)
- 29(6): 617, 629, 699, 741, 777, 807, 867, 899, 913 (native & introduced, in N American & European lakes)
- (10): 1381 (parasitized by *Bothrimonus* cestodes)
- T 103; 122; 199 (over 100 species, taken in otter-trawl, longline, & night-light surveys off Atl. coast from southern N.S. to Florida)
- 113; 132 (taken during research groundfish cruises, B.C., 1969)
- 117; 181 (taken during B.C. commercial trawl fishery, 1968)
- 130: 227 (Nfld. streams)
- 175 (larval species collected during NE Pac. Ocean zooplankton sampling)
- 246 (bibliography of N America Pac. coast marine, especially trawled fishes)
- 261 (bibliography for Gulf of St. Lawrence fishes)
- 333 (larval biomass data on 18 species, St. Margaret's Bay, N.S.)
- S 1128 (in benthos of 4 L. Superior bays)
- 1279 (taken by two research trawlers fishing together)
- 1348 (rare fishes from Clyde sea area, W Scotland)
- 1360 (re body compartment volumes, blood volumes, blood & other body fluids, electrolytes, etc.)
- 1660 (body temperature of many species, particularly tunas & sharks, re environment & swimming speed; also physiology)
- 1709 (Thames R., England)
- A 239 (re tracking by underwater telemetry)
- Fishes, marine (*see also* common and/or scientific names)
(For products *see* names of commercial species)
- B 155 (a 485-page treatise on those of the Atlantic coast of Canada: illustrations, description, distinctions, size, range, biology, & economics, with keys & index (each species is indexed in Bulletin 164))
- 180 (a 740-page treatise on those of B.C.: illustrations, description, distinctions, size, range, biology, & economics, with keys & index (each species is indexed in this present Miscellaneous Special Publication))
- T 261 (of Gulf of St. Lawrence: bibliography)
- MSP 14 (illustration & brief description of 18 economically important Atl. species; in English & French)
- S 1665 (some comparative aspects of corticosteroid metabolism: review)
- 1666 (are corticosteroids present in the blood of all fishes?)
- Fishing, exploratory (*see* Exploration; Surveys; Trawling)
- Fishing effort (*see* Catches)
- Fishing methods (*see also* Apparatus; Catches; Fisheries; Gear; Vessels; *also* names of types of gear, e.g. Nets; Traps; Trawling)
- J 24(3): 689 (shrimp pot for experimental fishing)
- B 157: 35, 39 (for lobsters)
- 161: 35 (for goldeye)
- 165: 60, 76 (sports & commercial, for carp)
- 166: 7, 62 (eels in E Canada)
- CNG 81 (new hydraulic digging method for butter clams)
- T 13 (B.C. groundfish)
- 31 (Atl. mackerel)
- S 903 (Canadian research on improvements for)
- A 18 (unexploited)
- 45; 48 (for Pac. salmon)
- 47 (for lingcod)
- 50 (B.C. shrimps)
- 67 (bluefin tuna)
- Fishmeal (*see also* Crabmeal; Feedstuff; Fish protein concentrate; Reduction; Shrimpmeal)
- J 23(3): 395 (protein nutrient quality)
- 24(6): 1219, 1291 (freshwater fish)
- 25(1): 169 (pesticide residues in freshwater fish)
- CHN 29 (capacities of E Canadian plants producing)
- CVG 34 (antioxidant value in improving nutritive value of herring meal)
- 36 (antioxidants control of B.C. herring)
- 37 (preservation of B.C. summer herring on vessel)
- 39 (pilot plant for research)
- 40 (antioxidants for spontaneous heating control in Canadian herring meals)
- 46 (compact deodorizer for plant driers)
- T 114 (chemical & nutritive characteristics of Canadian Atl. herring meals)
- 197 (proposed demonstration plant for obtaining from fish-processing waste water)
- S 969 (antioxidant value in improving nutritive value of herring meal)
- 1221 (B.C. herring & Atl. whitefish meals re chicken egg hatchability)
- 1377 (composition & nutrition value, Atl. & Pac. herring)
- 1696 (organochlorine pesticide contamination in Atl.)
- A 85 (nutrient composition of freshwater, as poultry feed)
- 97 (nutrient value of Atl. & Pac. herring)
- 98 (& stickwater concentrates from Atl. & Pac. herring)
- 112 (same as CVG 39 above)
- 141; 141(F) (Canada, USA, & world utilization, 1948-66)
- 203 (protein recovery from waste water, to reduce pollution)
- Fishways; Fish ladders
- J 28(4): 533, (9); 1253, (11); 1739 (effects on *Chondrococcus columnaris* disease incidence of trouts & salmons, Columbia R.)
- (8): 1215 (changes in blood lactic acid of alewives passing through a pool & weir)
- Fisk, Donald

- J 22(3): 689 (transponding oceanographic buoys)
- Fitch, John Edgar
J 25(12): 2561 (fish otoliths in cetacean stomachs)
- Fitz-Earle, Malcolm
J 25(2): 255 (Heming L., Man., fish stain marking)
- Fitzgerald, Durell Nelson
J 26(5): 1273 (Atl. cod & haddock food)
T 164 (length re weight of Canadian Atl. marine fishes)
- Fjords (*see* Inlets)
- Flabelligeridae (*see* Fauveliopsidae)
- Flagellata (*see also* Protozoa; Pyrrophyta)
J 23(12): 1965 (first records of *Cryptobia salmositica* in sockeye salmon)
26(4): 1075 (marine fish haematozoa)
(11): 2959 (salinity-induced growth, pigments, & cyclohexanetetrol content of *Monochrysis lutheri*)
T 267 (Frobisher Bay, Baffin Is., N.W.T.)
S 1191 (*Distephanus speculum* silicoflagellate in Great Bear L., N.W.T.)
1285 (*Hexamita inflata* axenic cultivation from Atl. oyster)
- Flame ionization detector
S 1265 (re molecular breakdown & fundamental group responses for organic compounds)
- Flannagan, John Fullan
J 27(10): 1691 (benthos samplers)
(10): 1867 (sampling profundal benthos)
T 258 (tolerance tests on aquatic animals)
S 1631 (caddisflies & mayflies emergence from Heming L., Man.)
- Flatfishes (Canadian Atlantic) (*see* Catches; Fisheries; Groundfishes (Canadian Atlantic); International Commission for the Northwest Atlantic Fisheries; Surveys; Trawling; *also* names of commercial Atl. flatfishes)
- Flatfishes (Canadian Pacific) (*see* Catches; Fisheries; Groundfishes (Canadian Pacific); Surveys; Trawling; *also* names of commercial B.C. species)
- Flatfishes (general)
S 1002 (virus tumors in skin)
- Flatnose, Pacific (*Antimora microlepis*) (*A. rostrata*; Pacific antimora; longfin cod)
J 25(12): 2665 (associations with other fishes off Oregon coast)
26(9): 2527 (in deep-sea line fishing off B.C.)
B 180: 220 (full description, etc., B.C.)
T 22; 81; 205; 221 (taken in FRB experimental groundfish surveys)
- Flatwater Pond, Nfld.
J 26(6): 1585 (landlocked Atl. salmon population characters)
- Flatworms (*see* Cestoda; Trematoda; Turbellaria)
- Flavobacterium* species (*see also* Bacteria)
J 24(1): 9 (in fresh lake whitefish)
26(10): 2659 (sp. ingested by oligochaetes in Toronto harbour sediments)
(10): 2760 (in culturing algal feed for rearing bivalve larvae)
29(3): 333 (of bluefish intestine)
S 1165 (on stream-incubated pink salmon eggs)
- Flavor (*see also* Quality of fishery products; Taste panels)
J 26(3): 704 (role of nucleotides in canned shrimp)
(6): 1597 (role of nucleotides in frozen swordfish steaks)
27(7): 1201 (effects of different woods used for smoking lake whitefish)
CVG 43 (effect of delay in chilling in refrigerated sea water on vessel, re canned sockeye & pink salmon)
T 101 (of experimentally canned ocean quahaug)
165 (muddy, in rainbow trout)
1632; 1698 (discriminants and effects, re training of taste panels)
1698 (re smoked whitefish quality appraisal)
A 15; 41 (nature of, in flesh foods)
80 (nature & significance in sea foods)
130 (compounds contributing to fish flesh)
203 (nature of fresh vs. undesirable, in fishery products)
- Flea, beach (*Gammarus oceanicus*)
J 27(1): 21 (yellow phosphorus toxicity to)
- Flemer, David Andrew
J 28(6): 911 (carbon-nitrogen relations in Chesapeake Bay)
- Fleming, Allister Melville
J 22(2): 465 (Bonavista commercial cod fishery)
CJG 13; 14; 15; 16 (Nfld. groundfish investigations & landings)
S 1019 (age & growth in Nfld. inshore cod fishery)
1052 (cod growth & temperature in Nfld. area)
1060 (cod availability in St. Mary's Bay, Nfld.)
A 194 (Nfld. fisheries)
- Fleming, Carol Winifred
J 24(2): 443 (serological differences between 2 Atl. oyster populations)
S 1140 (pseudomonad from rainbow trout)
1214 (hemagglutinins from oyster hemolymph)
- Flesh (*see also* Browning, Chalkiness; Delicatessen; Fillets; Fish protein concentrate; Muscle; Preservatives; Protein; Quality of fishery products; Steaks; *also* other types of processed animal flesh products)

- J 22(4): 955 (color and firmness in salmon canned after partial freezing)
 26(10): 2561 (meat weight in white whales)
 27(2): 271 (ultrasonics re *Triaenophorus* detection in whitefish)
 (11): 2101 (quality, re malic enzyme activation from cell disruption by superchilling & thawing)
 (12): 2287 (color of sockeye salmon: feed & gonadectomy effects)
 28(4): 509 (color of brook trout more attractive after feeding shrimp waste)
- B 169: 120 (meat yield from Pac. oyster)
 T 203 (color enhancement, flavor, texture, etc., re fish processing)
 208 (bioassays of various Nfld. fishes, re elemental phosphorus assimilation)
- T 220; 242 (texture of canned sockeye salmon after storing fish at sea in ice or refrigerated sea water)
- S 1031 (treatment with antibiotics as preservative)
 1309 (color sorting of raw sockeye & coho salmon re subsequent color of canned)
 1412 (fluoride content of frames from several Atl. commercial fishes)
 1622 (lipids & fatty acids of Atl. mackerel)
 A 15 (nature of flavor, in foods)
- Fletcher, Garth Leonardo
 J 27(6): 1131 (elemental phosphorus in cod)
 (8): 1379 (yellow phosphorus toxicity)
 28(5): 793 (accumulation of phosphorus by marine invertebrates & seaweed)
 29(7): 1053 (elemental phosphorus stability in edible muscle during Atl. cod processing)
 (9): 1295 (yellow phosphorus acute toxicity to Atl. salmon smolts & cod)
 T 255 (phosphorus toxicities to seawater-maintained fish)
 S 1356 (testosterone production & clearance in skates)
 1678 (toxicity & chemistry of some iron ore flotation agents re brook trout)
 1716 (analysis of a chlorinated terphenyl & its deposition in Atl. cod tissues)
- Flexiphora ophidii* (monogenetic trematode)
 J 26(4): 1063 (description)
- Flies (*see* Simuliidae (blackflies); Trichoptera (caddisflies); Tipulidae (craneflies); Odonata (dragonflies); Muscoidae (housefly); Ephemeroptera (mayflies); Chironomidae (midges); Plecoptera (stoneflies); *also* Diptera)
- Flint, R. Warren
 J 29(8): 1229 (eyestalk removal & ecdysterone infusion effects on lobster molting)
- Flints
 S 1511 (origin of European on Canadian & U.S. Atl. coast)
- Floats (*see* Drift)
- Flocculating agents
 S 1531 (polyethylenimine interaction with casein, re pollution)
- Flora, aquatic (*see also* Algae; Benthos; Biomass; Diatoms; Eelgrass; Macrophytes; Phytoplankton; Productivity, primary; Seaweeds; *also* classifications of algae and seaweeds)
 J 26(12): 3101 (changes after several fertilizations of a lake)
 27(1): 71 (*Potamogeton*, *Nuphar*, & *Isoetes* macrophytes productivity, Marion L., B.C.)
 (4): 685 (*Potamogeton* & *Chara* re amphipod feed, Marion L., B.C.)
 28(2): 144, 215 (FRB Experimental Lakes Area, NW Ont.)
 (5): 769 (assay method for ¹⁴C-labelled benthos)
 (9): 1322 (quantitative sampler for macrofauna on)
 (12): 1877 (DDT accumulation & persistence in)
 T 3 (Oozy Creek, P.E.I.)
 76 (tidal *Ostrea* L., N.S.)
 155; 158 (tidal zone of Bideford R., P.E.I.)
 S 1553 (mining effluent effects on submerged & river-side vascular plants, NW Miramichi R., N.B.)
- Flora, terrestrial (*see also* Oils, seed)
 J 28(2): 144 (forest cover of FRB Experimental Lakes Area, NW Ontario)
 S 1012 (list of vascular plants around Ogac L., N.W.T.)
 1553 (mining effluent effects on vascular plants along banks of NW Miramichi R., N.B.)
- Flotation
 CVG 42 (solids recovery from salmon-canning & herring-pumping waste waters)
 T 293 (analysis of mine wastes for pollutive flotation agents)
 S 1678 (chemistry & acute toxicity of iron ore flotation agents to brook trout)
- Flounder (in addition to the following headings *see* Dab; Flounders; Halibut; Plaice; Sanddab; Sole; Turbot; Windowpane)
 Flounder, Arctic (*Liopsetta glacialis*)
 B 173: 354 (occurrence in lower portion of some NW Canada & Alaska rivers)
- Flounder, arrowtooth (*Atheresthes stomias*) (arrowtooth sole; long-jaw flounder; Pacific turbot)
 J 22(1): 203 (biochemical systematics)
 25(3): 457 (in N.B.C. midwater trawl catches)
 (12): 2665 (associations with other fishes off Oregon coast)
 26(4): 921 (*Phrixecephalus cincinnatus* copepod eye parasite biology)
 (8): 1996 (stock & yield forecast, N Pac. Ocean)
 B 180: 602 (full description, etc., B.C.)
 CNG 73 (in Hecate Strait exploratory fishing)
 79 (Japanese catches in N Pac., 1963-66)
 82 (1966 Hecate Strait exploratory fishing catches)

- CNS 14; 19 (B.C. landings by areas, 1964, 1965)
 24 (sampling of B.C. commercial catches by areas, 1946-65)
 28 (B.C. commercial landings for animal feed)
 T 7; 11; 16; 19; 22; 30; 46; 56; 81; 89; 144; 205; 210; 221; 257; 269; 278; 290; 317 (in B.C. experimental or commercial trawling)
 34 (distribution, stocks, population, synonymy, systematics)
 81 (parasitic copepods of)
 135 (length-weight relations)
 174: 70 (feed)
 246 (bibliography)
 A 46; 51(F) (brief description)
 60 (same as CNG 79 above)
 91 (1951-66 B.C. catches for mink feed)
- Flounder, Bering (*Hippoglossoides robustus*)
 T 34 (systematics)
 A 75 (range extension to central Canadian Arctic)
- Flounder, blueback (see Flounder, winter; Plaice, American)
- Flounder, Kamchatka (*Atheresthes evermanni*)
 T 34 (distribution, synonymy, systematics)
- Flounder, longjaw (see Flounder, arrowtooth)
- Flounder, smooth (*Liopsetta putnami*)
 T 261 (bibliography for Gulf of St. Lawrence)
- Flounder, starry (*Platichthys stellatus*) (grindstone)
 J 22(1): 203 (biochemical systematics)
 24(12): 2515 (stomach contents of adult)
 25(8): 1539 (postmortem muscle glycogen & starch degradation)
 (8): 1651 (plasma protein-bound inorganic iodide)
 (12): 2665 (associations with other fishes off Oregon coast)
 26(1): 191 (sinistrality percentage increase from S to N B.C.)
 (9): 2319 (parasites, B.C.)
 28(9): 1241 (comparison of skin tumors in 3 flatfish species)
 B 173: 354 (occurrence in lower portion of some NW Canada & Alaska rivers)
 180: 631 (full description, etc., B.C.)
 CNS 14; 19 (B.C. landings by areas, 1964, 1965)
 24 (sampling of B.C. commercial catches by areas, 1946-65)
 28 (Canadian & U.S. trawl catches off B.C., 1954-65)
 T 7; 11; 19; 56; 62; 89; 117; 131; 181; 216; 257; 302; 317 (in B.C. experimental or commercial trawling)
 135 (length-weight relations)
 246 (bibliography)
 A 91 (1951-66 B.C. catches for mink feed)
- Flounder, winter (*Pseudopleuronectes americanus*) (black-back flounder; gray sole; lemon sole; witch)
 J 22(4): 945 (estimating theoretical juvenile biomass for a fishery)
 23(1): 109 (day & night variations in catch size)
 (3): 341 (swimming endurance re speed & temperature)
 24(2): 357 (α -tocopherol & lipids in tissues of unfed held)
 25(5): 1061 (fatty acids of commercial liver oil)
 (6): 1299 (fecundity estimate)
 26(4): 975 (*Bothrimonus* cestode biology in)
 (7): 1943 (ovary anatomy re oocyte maturation)
 (11): 2785 (detailed tissues study re copper sulfate poisoning)
 27(5): 951 (plasma protein variation in a population)
 (5): 957 (3-year oocyte maturation period)
 (12): 2374 (insecticide residues in, Weweantic R., estuary, Mass.)
 28(1): 59 (DDT residues in N.B.)
 (7): 935 (regular component of Passamaquoddy Bay fish communities, N.B., & length frequencies)
 (8): 1125 (purines changes in iced fillets)
 (8): 1153 (distribution, movements, age, growth, & feed details, Long Pond, Nfld.)
 (9): 1285 (methylmercury in Bay of Fundy & N.S. banks)
 (11): 1727 (surges into intertidal zones & feed, Passamaquoddy Bay, N.B.)
 (12): 1907 (factors affecting respiration rates)
 29(1): 85 (muscle catheptic activity)
 (7): 997 (feed resource division, Passamaquoddy Bay)
 B 154: 116 (as Nfld. resource)
 T 80 (stocks, Gulf of St. Lawrence & N.S. banks)
 164 (extensive length-weight data)
 201 (for testing toxicity of dispersants for fuel oil spills)
 225 (associated with Bay of Fundy scallop beds)
 260 (standing crop, availability, lengths, weights, etc., from Scotian Shelf surveys, 1958-68)
 261 (bibliography for Gulf of St. Lawrence)
 288 (monthly changes in stomach contents, Passamaquoddy Bay)
 MSP 14 (popular description (English & French))
 S 1087 (behavior towards otter trawl, observed photographically)
 1405 (lipoxidase reaction with polyenoic fatty acids of oil)
 1569 (determination of residual fuel oil contamination in skin, flesh, & gut)
 A 43; 108 (ICNAF Canadian studies; commercial catches)
 136 (underwater observation from "cubmarine")
 156 (icing & freezing effects on biological length-weight measurements)
 200 (mercury contamination)
- Flounder, witch (*Glyptocephalus cynoglossus*) (gray sole; witch)
 J 22(6): 1565 (new size record)
 23(1): 109 (day & night variations in catch size)
 26(3): 597(F) (retinal structure re activity, etc.)
 27(11): 2053 (depth & regional distribution of various stages, off N.S. & in Gulf of St. Lawrence)

- 28(7): 935 (occasional component of Passamaquoddy Bay fish communities, N.B.)
 (9): 1285 (methylmercury in Bay of Fundy & N.S. banks)
- B 154: 4, 85 (as Nfld. resource)
- CJG 13: 26; 14; 15; 16 (Nfld. fishery: landings, ages, lengths)
- T 80 (stocks, Gulf of St. Lawrence & N.S. banks)
 164 (extensive length-weight data)
 260 (standing crop, availability, lengths, weights, etc., from Scotian Shelf surveys, 1958-68)
 261 (bibliography for Gulf of St. Lawrence)
- S 949; 955; 1023; 1024 (ICNAF Canadian research reports)
 1212 (age determination from otoliths)
 1213 (re weight relations)
- A 43; 108; 119; 152; 153; 181; 182 (ICNAF Canadian research reports)
 194 (Nfld. fishery)
- Flounder, yellowfin (*see* Sole, yellowfin)
- Flounder, yellowtail (*Limanda ferruginea*) (yellowtail)
 J 23(1): 109 (day & night variations in catch size)
 25(3): 597 (*Ichthyophonus* fungus infection)
 26(3): 597(F) (retinal structure re activity, etc.)
 27(12): 2261 (distribution, abundance, spawning, catches, etc., in waters off Nfld. in NW Atl.)
 28(3): 456 (fecundity, Grand Bank, Nfld.)
 (7): 935 (occasional component of Passamaquoddy Bay fish communities, N.B.)
 (9): 1285 (methylmercury in, N.S. banks)
 29(12): 1776 (*Ichthyophonus hoferi* fungal cysts in kidney)
- B 154 (as Nfld. resource)
- CJG 14; 15; 16 (Nfld. commercial fishery landings)
- T 80 (stocks, Gulf of St. Lawrence & N.S. banks)
 164 (extensive length-weight data)
 260 (standing crop, availability, lengths, weights, etc., from Scotian Shelf surveys, 1958-68)
 261 (bibliography for Gulf of St. Lawrence)
- S 1024 (ICNAF Canadian research report)
 1213 (re weight relations)
- A 43; 108; 119; 152; 153; 181; 182 (ICNAF Canadian research reports)
 108 (ICNAF Canadian studies: commercial catches; meristic data re stocks; parasite)
 194 (Nfld. fishery)
- Flounders (Bothidae and Pleuronectidae) (*see also* preceding Flounder headings; *also* Flatfishes; Groundfishes; Trawling)
- J 25(5): 1061 (fatty acid composition of commercial Atl. "flounder" liver oil)
- B 154 (as Nfld. resource)
 180: 595 (full descriptions, etc., B.C.)
- CNG 79 (Japanese catches in N Pac., 1963-66)
- T 68 (fillet analysis of Atl. for ethylenediaminetetraacetic acid preservative content)
 (bibliography of N America Pac. coast)
 246 (effects of shipboard transportation in refrigerated sea water on whole Atl. & fillets therefrom)
- S 1420 (handling aboard chill-freezer Atl. trawlers)
 1668 (mercury contamination, B.C. & Atl.)
- A 12(F); 65 (fillet weight gain & loss of Atl. during processing & storage)
 60 (same as CNG 79 above)
 99 (fishery yields in NW Atl., 1952-64)
 200 (mercury contamination, B.C.)
- Flour, fish (*see* Fish protein concentrate)
- Flow (*see* Currents; Drift; Dilution effect; Hydrodynamics; Oceanography; Tides; Transport, mass)
- Flowers, John Mitchell
 J 29(8): 1221 (temperature effects on inshore lobster fishery)
- Fluid mechanics (*see* Hydrodynamics)
- Flukes (*see* Trematoda)
- Fluorescence
 J 26(5): 1185 (ultraviolet-fluorescing substances in coho salmon belly skin)
 (5): 1263 (of tetracycline absorbed by bone for marking salmon fry)
 (5): 1368 (by muscle nucleotides of white sucker muscle)
 (6): 1619 (of pigment for external marking of salmon fry)
 (6): 1667 (of dyes re separation of invertebrates from sediments)
 27(2): 317 (X-ray spectroscopy of irradiated metal oxides encapsulated in animals for coded marking)
 (5): 963 (locating parasitic nematodes by ultraviolet irradiation of marine tissues)
 (10): 1889 (dyes for marking small fish)
 29(2): 211 (indirect fluorescent antibody technique for detecting fish antibodies to *Aeromonas liquefaciens*)
- T 229; 332 (fluorimetric mapping of marine chlorophyll distribution)
- S 1701 (acid-induced, for ecdysterone estimation)
 A 262 (of fish muscle as quality test of freshness)
- Fluorine derivatives
 J 28(7): 1055 (soil or mud fluoride determination by a nonfusion distillation method)
- T 233 (fluoride content of bottom deposits re pollution, Long Bay, Nfld.)
 255 (fluosilicic acid toxicity tests on brook trout)
- S 1339 (fluoride determination in biological samples of fish protein concentrates)
 1412 (fluoride content of several Atl. commercial fishes tissues, bone, & fish protein concentrates)
- S 1437; 1439 (ion in Green L., N.Y.)
 1505 (direct potentiometric determination of fluoride in sea water)
- Flury, Jann
 J 24(12): 2637 (portable recompression chamber)

- Flushing (*see* Currents; Oceanography; Pollution; Tides)
- Flux, John Etheridge Cormack
J 24(1): 191 (trout response in electric fields)
- Fly (*see* Flies)
- Flyingfishes (Exocoetidae)
S 956 (Canadian research in Caribbean area)
- Foams
S 892; 907 (re pulp mill pollutive effects)
- Foerster, Russel Earle
J 22(6): 1503 (fertility of Pac. salmon)
B 162 (sockeye salmon)
- Fofonoff, Nickolas Paul
J 23(6): 825 (Pac. oceanographic conditions)
- Foley, Diane Mary
J 24(11): 2339 (lobster muscle weight)
26(5): 1385 (lobster gaffkemia disease)
(5): 1392 (lobster hemolymph)
S 1030 (anesthetics for mature lobster)
- Foley, Maurice Aloysius
J 27(11): 2093 (obituary of J. S. M. Harrison)
28(12): 1905 (obituary of)
- Folic acid
J 25(1): 151; 26(1): 111 (deficiency effect on coho salmon blood)
- Follett, Wilbur Irving
J 22(1): 139 (western brook lamprey a nonparasitic species)
24(5): 1067 (terminology of lamprey teeth)
- Food (for man) (*see also* Fisheries; Quality of fisheries products) (*see also* subjects listed in heading Fish processing)
B 173 (utilization of NW Canada & Alaska freshwater fishes)
S 1607 (past, present, and probable future of world fisheries & species)
A 141; 141(F) (fish & fish products; total & per capita consumption in Canada re USA & world, 1945-68)
201 (environmental factors affecting Great Lakes fishes as)
230 (ecosystems, pollution, etc., re sources from a northern environment)
- Food; Food chain (of other than for man) (*see* Bioenergetics; Culture; Feed; Feedstuff; Production, primary; Production, secondary)
- Foot (of molluscs) (*see* Podium)
- Foraminifera (*see also* Protozoa)
T 60 (in Strait of Georgia benthos biomass)
S 1587 (fossil, re Pleistocene paleoecology of Santa Barbara Is., Calif.)
- Ford, Jerry Seymour
T 141 (digital calipers, a measuring & recording device)
172 (optoelectronic plankton sizer)
- Ford, Peter
J 28(1): 95 (tail growth rate in *Raja binoculata*)
- Forecast; Forecasting
J 26(8): 1985 (stock size & yield, NE Pac. Ocean demersal fishing)
(11): 2843 (Pac. sardine catches re predator & prey ecology)
28(6): 801, 809, 815 (mathematical, for fish growth efficiency in nature)
29(6): 931, 937, 941, 951 (future of salmonid communities in N America & European oligotrophic lakes re natural & man-made environmental changes)
(10): 1500 (of copper toxicity in receiving waters)
B 154: 146 (of future of Nfld. marine fisheries; also for individual species on other pages)
168: 33 (possible outbreaks of toxicity in shellfishes)
169: 65 (spatfall of Pac. oyster, B.C.)
CNG 78 (B.C. Pacific cod fishery for 1967)
80 (B.C. herring abundance)
S 1699 (potential N Atl. fisheries production)
A 17; 53 (N American fishery potential)
19 (pink & chum salmon runs by highseas tagging)
33 (for Canadian lobster industry favorable)
99 (fisheries production from NW Atl.)
- Foreign fisheries (*see* Fisheries; Japan; Union of Soviet Socialist Republics; *also* International Commission for the Northwest Atlantic Fisheries; International North Pacific Fisheries Commission. *Note:* In general, fisheries of the USA are not indexed separately from those of Canada unless geographically indicated)
- Forest spraying by insecticides (*see* Insecticides)
- Fork
T 15 (vs. hydraulic rake for B.C. clams)
- Formaldehyde; Formalin
J 27(4): 713 (effect on lobster behavior re kraft mill effluent)
28(12): 1899 (stresses in young rainbow trout & coho salmon upon disinfection by)
29(3): 328 (pathological effects on rainbow trout)
(9): 1303 (effect on marine lipids fatty acids of zooplankton stored in)
B 173: 356 (for preserving fish specimens for study)
CVG 37 (for preserving herring on vessel before reduction)
S 1027 (effect on length & weight of preserved Atl. herring)
1152 (isolation from betaine, dimethyl glycine, & sarcosine oxidation)
1639 (formation in frozen stored gadoid fishes muscle, re protein changes)

- Forney, John Latimer
J 27(3): 445 (walleye larvae distribution)
- Forrester, Clifton Roger
J 23(3): 319 (Pac. cod)
(4): 511 (size limit of sole)
24(3): 691 (shrinkage in groundfish)
25(3): 495 (salinity & temperature effects on English sole; correction on J 27(8): 1499)
26(1): 191 (starry flounder sinistrality)
28(5): 727 (salinity & temperature effects on petrale sole)
(6): 883 (environment of Pac. cod eggs)
(10): 1672 (ambicoloration in petrale sole)
29(3): 337 (first B.C. record of striped bass)
(8): 1211 (pectoral fin length re *Squalus acanthias* taxonomy off B.C.)
(10): 1487 (B.C. dogfish mercury content)
B 153 (population of petrale sole)
CNS 17 (length & age composition of petrale sole)
18 (length & age composition of rock sole)
24 (market samples of B.C. groundfish landings)
28 (Canadian & US trawl production 1954-65)
T 19; 89; 131; 216, 302 (B.C. trawl fishery data)
41 (petrale sole embryonic development)
100 (flathead sole embryonic development)
105 (groundfish life-history information)
108 (studies on rock sole)
135 (groundfish length-weight relation)
236 (eggs & larvae of *Limanda yokohamae*)
246 (Pac. trawl fishery & groundfish bibliography)
S 1319 (English sole tagging in B.C.)
A 91 (fish for animal feed in B.C.)
- Forss, Carl Albert
J 23(8): 1135 (oceanic shrimps)
- Forsythe, Michael George
T 4; 91 (Atl. salmon smolt runs, Miramichi R., N.B.)
- Fortin, Réjean
J 29(5): 517(F) (*Perca flavescens* growth, length, & weight in Lac Saint-Louis, Qué.)
- Fossils (*see* Palaeontology)
- Foster, Nancy Marie
J 28(10): 1455 (redescription of spionid polychaete)
- Fouling organisms (*see also* Antifouling treatments)
B 169: 168; 178: 20 (re oyster culture)
T 119 (types & preventive measures)
158 (settling periodicity, Bideford R., P.E.I.)
- Foulkes, Timothy James
CSG 57 (mechanics & performance of Canadian E coast otter trawls)
T 125 (otter trawl performance)
T 292; 310 (design & performance of towed underwater automatic camera sled)
295 (design & performance of diver-controlled towed underwater research plane)
- Fowler, Laurie Garth
J 25(3): 611 (juvenile salmonid skin pallor by guanidine compounds)
- Fowler, Scott Wellington
J 25(11): 2461; 27(6): 1051 (⁶⁵Zn in marine crustaceans)
26(1): 145 (marine organisms zinc requirements)
- Fox, Alfred Carter
J 25(8): 1741 (water core plankton sampler)
- FPC (*see* Fish protein concentrate)
- Fragala, Robert John
J 28(5): 769 (simple reliable method for assaying ¹⁴C-labelled benthic microflora)
- Fragillaria* sp. (a phytoplankter)
J 26(6): 1625 (chlorophylls extraction procedure)
- Frair, Wayne
S 1625 (depot fat fatty acids of freshwater vs. marine turtles)
- Frank, Richard
J 29(11): 1644 (mercury in Bay of Fundy harbour porpoises)
- Frantsi, Chris
J 28(7): 1064 (infectious pancreatic virus in brook trout)
- Franzin, William Gilbert
J 27(6): 1115 (whitefish lactate dehydrogenase)
29(12): 1772 (new complexities in pygmy whitefish zoogeography & taxonomy)
S 1451 (*Coregonus clupeaformis* species complex)
- Fraser, Doris Isabel (*see also* Hiltz, Doris Fraser)
J 22(1): 83 (glycolytic activity in Atl. cod muscle)
23(6): 921 (glycogen in cod muscle)
(12): 1821 (iced & frozen swordfish)
24(2): 221 (radiation on storage of cooked lobster)
(8): 1837 (postmortem cod muscle)
25(2): 239 (mackerel muscle nucleotide degradation)
(2): 299 (refrozen cod storage quality)
(4): 817 (redfish muscle hypoxanthine accumulation)
(4): 829 (plaice fillet thaw-drip)
(8): 1525 (frozen cod muscle glycogen & phosphorus)
S 1261 (degradation of adenine nucleotides)
- Fraser, James Henry
J 26(7): 1743 (medusae & Chaetognatha feeding)
- Fraser, James Millan
J 29(2): 129 (brook & rainbow trouts & splake recovery from selected Ont. lakes)
(6): 969 (species introductions effects on oligotrophic lakes salmonid communities)

- Fraser River, B.C. (*see also* tributary waters, e.g. Adams River; Babine Lake; Chilko Lake; Cultus Lake; *also* Salmon)
- J 22(4): 1035 (young coho and steelhead trout behavior re ecology in lower tributaries)
- 23(4): 575 (iron compounds in, & distribution in adjacent marine waters)
- 25(12): 2589 (age, growth, feed, & yield of white sturgeon)
- B 162: 72 (sockeye salmon spawning areas)
- T 163 (influence on Strait of Georgia surface flow)
- 263 (current pattern off sewage treatment plant outfall at mouth of)
- S 952 (migration, composition, exploitation, & abundance of pink salmon odd-year run)
- 1120 (tracing estuarial currents by aerial photography)
- 1230 (spawning populations of sockeye & other salmon)
- 1392; 1393; 1394 (influence of its plume on Strait of Georgia primary & secondary production)
- A 242 (oceanography re sewage & other effluent outfall disposal)
- FRB (*see* Fisheries Research Board of Canada)
- Fredeen, Frederick John Hartley
- J 28(1): 105 (residues of DDT, DDE, & DDD in Saskatchewan R. fish)
- Fredin, Reynold Allen
- J 22(1): 33 (ocean mortality of Pac. salmon)
- Freeman, Harry Cleveland
- J 23(8): 1249 (corpuscles of Stannius of Atl. cod)
- 24(1): 205 (1α -hydroxycorticosterone)
- 25(2): 363 (Atl. salmon sperm subzero preservation)
- S 958 (impaired hormone metabolism in Atl. cod)
- 1116 (cortisol binding in Atl. salmon plasma)
- 1205 (1α -hydroxycorticosterone activity)
- 1308 (plasma proteins of fish)
- 1357 (binding of steroids by elasmobranch serum)
- 1362 (sex hormone binding proteins)
- 1489 (affinities of blood proteins in fish)
- Freeman, Reino Samuel
- J 26(4): 871 (*Diphyllobothrium* in trout)
- Freese, Manfred
- J 25(3): 605 (tissue ultrasound backscatter)
- 27(2): 271 (*Triaenophorus* distribution in whitefish flesh)
- 28(8): 1217 (accurate labelling of fish)
- S 1269 (freshwater fish tissue properties)
- A 243 (ultrasonic inspection of parasitized whole fish)
- Freeze-drying and freeze-dried products (*see also* Dehydration)
- J 22(3): 755 (browning of flesh)
- 24(6): 1413 (oysters & clams for total solids assay re condition)
- (7): 1461 (Atl. cod steaks)
- B 151: 25 (freshwater fish products)
- CHN 24 (Atl. cod: advantages & disadvantages re acceptability)
- Freezing (*see also* Refrigeration; Revival; Thawing; *also* Quality of Fishery products)
- J 22(2): 411 (rate effect on stored frozen trap cod)
- (3): 783 (effect on cod fillet thaw-drip)
- (4): 955 (partial, to preserve salmon before canning)
- 23(5): 701 (partial, for Pac. groundfish preservation)
- (6): 917 (effect of partial, on oil of subsequently canned sockeye salmon)
- (7): 1025 (of Atl. cod: effect on muscle lipids)
- (7): 1063 (single & double: effect on Atl. cod fillet palatability)
- (12): 1821 (re swordfish muscle quality)
- 25(2): 299 (rigor effect on processing Atl. cod)
- (3): 605 (ultrasonic effects as quality test for flesh after)
- (4): 733 (effect on trap-caught Atl. cod re prior handling)
- (12): 2623 (very low temperature preservation of Atl. cod sperm)
- 26(10): 2621 (glycolytic & nucleotide changes in critical zone of prerigor Atl. cod muscle)
- (10): 2727 (fatty acids reaction with Atl. cod muscle aged in ice)
- (12): 3254 (Atl. salmon spermatozoa using an extender)
- 29(7): 1053 (yellow elemental phosphorus stability in Atl. cod edible muscle)
- B 160 (tuna by salt-fortified refrigerated sea water in vessel holds)
- CCG 7: 33 (air-blast freezers for freshwater fishes; freezing rate; latent heat of freezing)
- CHN 23 (partial, of Atl. cod, between 30 & 25 F)
- 35 (blast-freezing rates & weight loss for haddock fillets & pieces)
- T 93 (Atl. salmon sperm with extenders & protective agents)
- 242 (partial, of sockeye salmon at sea in salt fortified refrigerated sea water, re quality of canned product)
- S 935 (fish on board vessels)
- 993 (practical method for dressed & filleted freshwater fish)
- 1077 (eutectic brine freezer for Eskimo fishermen)
- 1363; 1364; 1365; 1366; 1367; 1368 (& refreezing of Atl. trawled fish: effects on product quality)
- 1416 (B.C. fishes in prerigor, rigor, & postrigor, re quality of products)
- 1649 (rate: effects on frozen fish quality)
- A 27 (Nfld. trap-caught cod at sea)
- 41 (brine-spray freezing tuna at sea)
- 42 (fish freezer for Eskimo fishermen)
- 79 (re protein denaturation & "browning")
- 156 (effects on length & weight biological measurements of various Atl. commercial fishes)
- 230 (resume of T 242 above; *also* complete freezing of fish)

- Freitas, Yvonne Mae
J 25(1): 197 (tropical fish disease microorganisms)
- Freshness (*see also* Quality of fishery products)
J 28(6): 869 (octopine formation in stored scallop muscle as possible index for)
A 203 (chemical nature of fresh flavor in fishery products)
- Freshwater fish products (*see also* Quality of fishery products; *also* names of commercial freshwater fishes)
J 23(12): 1845 (mouth & body form re feeding ecology)
24(1): 9 (whitefish preservation by gamma irradiation)
(6): 1219 (oil yield & composition of 4 species)
(6): 1291 (composition & nutritive value of meals)
(11): 2229 (hypoxanthine formation in muscle of iced flesh; correction on J 25(8): 1760)
25(1): 169 (pesticide residues in oils & meals)
(3): 605 (ultrasonic backscatter as quality test for frozen whitefish)
27(7): 1201 (smoked & canned smoked: flavor effects of different woods used in controlled temperature kiln)
28(5): 643 (bactericidal irradiation of)
(5): 783 (beneficial effects on keeping quality by washing off slime)
(5): 786 (survey of heavy-metal contamination)
(7): 1061 (practical method for drying fillets & steaks)
29(12): 1685 (acceptability re mercury contamination relation to size of fish)
B 149: 53 (from Great Lakes fisheries: economic aspects)
151; 151(F) (preparation, processing, recipes, etc., for specialty products)
158 (re economics of Mackenzie District, N.W.T., fisheries)
173 (from fishes of NW Canada & Alaska)
CCG 7 (7 articles on various)
S 980 (brining & smokehouse data)
990 (practical salting procedure)
991 (practical small-scale canning method)
992 (practical cleaning & dressing method)
993 (practical freezing dressed & filleted)
1081 (sweet-cured smoked sliced products; recipes)
1189 (some oils, compared with Atl. cod & herring oils)
1433 (techniques for goldeye smoking)
1473 (portable holding unit for iced, in remote fishing areas)
A 6(F) (marinated fillets)
85 (nutrient composition of meals as poultry feed)
201 (environmental effects on Great Lakes fishes, as affecting their use for human food)
225 (resume of S 1473 above)
- Freshwater fishes (*see* Fishes, freshwater; Freshwater fish products)
- Frick, Harold Clay
B 149 (Great Lakes fisheries economics)
- 157 (Canadian lobster fishery)
- Friedlaender, Carlo Gotthelf Immanuel
S 1161 (rock salt bacteriological investigations)
- Frieleia halli* (brachiopod)
T 268 (in B.C. faunistic surveys since 1960)
- Frobisher Bay, Baffin Is., N.W.T. (*see also* Geraldine Lake, N.W.T.)
T 265; 266; 267 (biological oceanographic observations, 1967-71)
- Frogs
J 25(8): 1651 (plasma protein-bound inorganic iodide in *Rana pipiens*)
T 258 (toxicity tests of trisodium nitrotriacetate detergent on leopard frog tadpoles, re pollution)
S 1028; 1226 (fatty acids positional distribution in *R. pipiens* fat triglycerides)
- Fromm, Paul Oliver
J 22(3): 761 (keratitis in lake trout)
(6): 1379 (photoperiod effects on sunfish)
26(7): 1939 (rainbow trout uptake of dieldrin)
- Frost, Bruce Wesley
J 28(1): 23 (*Calanus finmarchicus* & *C. glacialis* taxonomy)
- Frostfish (*Benthodesmus simonyi*) (*B. atlanticus*)
J 24(10): 2201 (in line fishing from Pac. ocean weather-ship; identity doubtful)
B 180: 368 (full description, etc., B.C.)
- Fry (*see* names of adult fishes, e.g. Trout; Salmon)
- Fry, Frederick Ernest Joseph
J 25(11): 2257 (L. Manitou, Ont., marked lake trout survival)
26(9): 2413 (survival of planted lake trout)
27(5): 976 (swimming speed in rainbow trout)
29(6): 795 (exploitation & introductions effects on salmonid community, L. Opeongo, Ont.)
- Fucose (*see* Sugars)
- Fucoxanthin (*see* Pigments)
- Fucus* (*see* Phaeophyta)
- Fuel oil (*see* Oils, petroleum; Pollution)
- Fujihara, Masaaki Paul
J 25(11): 2467 (chinook mortality re *Dermocystidium*)
28(4): 533 (fish ladders re *Chondrococcus columnaris* fish disease)
(9): 1253 (*C. columnaris* disease)
(11): 1739 (disease susceptibility of young trout and salmon)
29(2): 173 (agglutinins reaction re river fishes seasonal distribution of *C. columnaris* infection)

- Fukuda, Y.
S 1129 (N Pac. Ocean salmon) 25(3): 597; 29(12): 1776 (*Ichthyophonus* infection of yellowtail flounder)
(11): 2467 (*Dermocystidium* cause of chinook salmon mortality)
- Fulton, John Douglas
J 29(7): 1075 (automated plankton counter trials)
CNG 84 (zooplankton of NE Pac. Ocean) 29(12): 1776 (longhorn sculpin & Atl. cod as 2 new hosts for *I. hoferi* in NW Atl.; corrections on J 30(8): 1257)
T 37 (zooplankton net for coastal observations) B 162: 92 (*Saprolegnia parasitica* infection of sockeye salmon)
55; 313 (manual & key for identification of B.C. marine zooplankton) T 185 (infection of Canadian fishes (bibliography))
110 (Strait of Georgia observations) 245 (possible cause of mountain whitefish & rainbow trout large mortalities in Kootenay L., B.C.)
S 1172 (phytoplankton cell size re zooplankton grazing) MSP 16 (recommendations re control of fungal fish diseases in Canada)
1369 (infection of marine copepods)
1393 (secondary production in Fraser R. plume, Strait of Georgia)
- Fundulus diaphanus* (see Killifish, banded)
grandis (see Killifish, gulf)
heteroclitus (see Mummichog)
kansae (see Killifish, plains)
majalis (see Killifish, striped)
parvipinnis (see Killifish, California)
- Fundy, Bay of (see also Maine, Gulf of; Oceanography, Atlantic Coast; Passamaquoddy Bay, N.S.)
J 23(3): 463 (unusual occurrence of capelin)
25(6): 1097 (natural tidal oscillations)
(12): 2721 (first Greenland halibut record)
26(9): 2477, (11): 2775 (tidal barriers effect on M₂ tide, re tidal power projects)
(11): 2887 (theory of tidal energy exploitation re)
27(10): 1701 (tidal resonance & tidal barriers)
28(9): 1285 (methylmercury in fishes)
29(5): 573 (larval herring growth)
(10): 1477 (sight records of black right & finback whales in lower bay)
(11): 1644 (mercury & methylmercury in harbour porpoises)
B 177 (paralytic shellfish toxicity in)
T 57 (length & age distribution of herring)
88 (herring spawning & larval distribution, survival, & growth re hydrography)
157 (cod & haddock catches by otter trawlers, 1967)
168 (sea scallop surveys 1966 & 1967; also commercial fishery observations)
225 (records of associated fauna in sea scallop dredging surveys)
277 (larval herring distribution, abundance, & growth)
S 1026 (1964 another cold sea temperature year)
1150 (effect of light on herring movements)
1495 (immature herring populations)
1645 (retention of herring larvae spawned off SW coast of N.S.)
1696 (contamination by chlorinated pesticides)
A 94A (Canadian research on herring populations biology: review)
- Fungi (see also Fungicides; Molds; Yeasts)
J 24(4): 843 (*Dermocystidium* on prespawning adult chinook salmon)
- Fungicides
J 25(11): 2467 (for *Dermocystidium* on salmon)
26(3): 695 (nabam, re mortality of trout & young Atl. salmon)
29(9): 1359 (effect of 2 iodophor disinfectants on *Phoma* & *Saprolegnia*)
S 1007 (trout & young Atl. salmon mortality from an organic agricultural)
- Funk, James David
J 29(1): 13 (accelerating male pink salmon sexual maturation by injecting chinook salmon gonadotropin)
- Fur; Pelage; Pelt (see also names of fur-bearing animals)
J 23(4): 607 (foetal & postpartum pelage of harbour seals)
24(2): 435 (pelage molt re follicle anatomy in E Pac. harbour seal)
(2): 451 (pelage patterns re population distribution of E Pac. harbour seal)
CHN 28 (care & treatment of Atl. seal pelts)
- Fur-bearing animals (see Mink; Sea Otter; Seal)
- Furcellaria* (see Rhodophyta)
- Furunculosis (see also *Aeromonas*; Bacteria; Disease; Hatcheries; Salmon; Trout)
J 22(3): 713 (*Aeromonas salmonicida* culture for immunizing trout against redmouth disease)
25(7): 1521 (in lampreys from *Aeromonas* species)
(12): 2643 (experimental brook trout plantings from infected stock)
26(1): 115 (metabolic effects of endotoxins on coho salmon & rainbow trout)
(3): 629 (bacteriophages re *A. salmonicida*)
(9): 2311 (transmissivity similarity to *A. liquefaciens*)
27(5): 969; (8): 1389 (naturally acquired antibodies against *Aeromonas* in trouts)
(12): 2365 (in nonsalmonids)
28(10): 1629 (aberrant *A. salmonicida* strain in sablefish as first marine spontaneous furunculosis occurrence; also in cultured sockeye & chum salmon)

- 29(2): 204 (virulence & persistence of *A. salmonicida* rough & smooth forms inoculated into coho salmon)
 (11): 1513 (antibiotics toxicity & efficacy against, in adult chinook salmon)
 B 162: 93 (in sockeye salmon from *A. salmonicida*)
 T 309 (re tank culture of sablefish)
 S 1720 (amino acids role in *A. salmonicida* nutrition)
- Fury and Hecla Strait, N.W.T.
 J 22(1): 225 (current speed and direction)
- ### G
- Gadd, Ronald Edward Alfred
 J 22(3): 755 (freeze-dried fish)
- Gadidae (see Codfishes)
- Gadus callarias* (see Cod (European))
macrocephalus (see Cod, Pacific)
morhua (see Cod, Atlantic (biology); Cod, Atlantic (composition, products, & quality))
ogac (see Cod, Greenland)
 J 26(2): 421 (cranial osteology re other Gadidae genera)
- Gaffkemia disease (see next heading)
- Gaffkya homari*; Gaffkemia (Note: for characteristics and incidence in lobster, see appropriate references under heading Lobster, American) (see also Bacteria)
 J 23(9): 1451 (other bacteria associated with, in American lobster)
 25(3): 607, (4): 795 (susceptibility of Atl. rock crabs to)
 29(4): 461 (food & starvation as affecting infected lobster time to death)
 CHN 40 (Pac. rock crab infected through lobsters introduced into B.C.)
 43 (detection procedure, for lobsters)
 T 44 (further data re CHN 40 above)
 S 1726; 1727 (effects on lobster hemolymph; effects not amenable to vaccines)
 A 180 (gaffkemia and its pathology in lobsters)
- Gaidus columbiae* (see Calanoida)
- Gakstatter, Jack Henry
 J 25(9): 1797 (¹⁴C-dieldrin accumulation from ¹⁴C-aldrin in goldfish)
- Galeocerdo cuvieri* (see Shark, tiger)
- Galeorhinus galeus* (see Shark, soupfin)
zyopterus (see Shark, soupfin)
- Gallbladder (see also Bile)
 J 23(10): 1607 (Atl. cod: morphology)
 25(9): 1797 (dieldrin accumulation in goldfish, after aldrin ingestion)
- Gallop, Reginald Ambrose
 J 28(5): 643 (gamma irradiation of whitefish *Salmonella*; correction on J29(8): 1241)
- Gallus domesticus* (see Chicken)
- Gambia* (see Gambusia)
- Gambusia affinis* (see Mosquitofish)
- Gammarellus* (see also Amphipoda)
 J 29(9): 1337, 1340 (biology of *G. angulosus* & *G. homari* in NW Atl.)
- Gammarus* (see Amphipoda)
- Gantzer, Keith Alston
 T 143; 211 (Pac. Ocean Station P oceanographic observations)
- Gar, longnose (*Lepisosteus osseus*)
 T 261 (bibliography for Gulf of St. Lawrence)
- Gardella, Edward Stewart
 J 26(8): 2173 (white bass orientation)
- Gardner, George Robert
 J 26(2): 433 (cyprinodontiform blood morphology)
 27(12): 2185 (responses of estuarine teleost to cadmium)
- Gardner, Linda Joanne
 J 25(8): 1555 (starvation re rainbow trout free fatty acids)
 27(1): 117 (DNA polymerase of trout liver nuclei)
 (11): 2003 (5'-nucleotidase of testes of immature sockeye salmon)
 28(10): 1603 (ribonucleotide reductase in salmon testes)
 S 1418 (ribonucleic acid synthesis)
 1419 (Pac. cod muscle 5'-nucleotidase)
 1560 (deoxyribonucleic acid polymerase from salmon testes)
- Gargilius vitellius* (a morid fish)
 J 27(3): 491 & photo opposite 492 (re confusion with *Lepidion lepidion*)
- Garnett, Donald Geoffrey
 J 25(3): 597 (yellowtail flounder *Ichthyophonus* infection)
- Garrod, David John
 J 24(1): 145 (Arcto-Norwegian cod population dynamics)
- Garside, Edward Thomas
 J 23(8): 1121 (development of trout embryos)
 (10): 1537 (developmental rate in salmonids)
 (11): 1815 (meristic numbers of yellow perch)
 25(12): 2717 (cyprinodontids upper lethal temperatures)

- 26(2): 460 (blackspotted stickleback in Nfld.)
 (5): 1390 (Sable Is. fishes)
 (9): 2537 (Atl. mackerel meristic analyses)
 28(4): 527 (ribbed mussel upper lethal temperatures)
- "Gas bubble" disease
 J 24(4): 867 (histopathology, in Pac. salmon fingerlings)
 29(5): 588 (in oysters & quahaug)
- Gases (*see also* Bubbles; *also* previous heading)
 S 1154 (apparatus for sampling, from bottom sediments)
- Gaskin, David Edward
 J 29(10): 1477 (sightings of right & finback whales in lower Bay of Fundy)
 (11): 1644 (mercury in Bay of Fundy harbour porpoises)
- Gaspereau (*see* Alewife)
- Gasterosteidae (*see* Sticklebacks)
- Gasterosteus aculeatus* (*see* Stickleback, threespine; Sticklebacks)
aculeatus aculeatus (*see* Sticklebacks)
aculeatus leurus (*see* Stickleback, threespine; Sticklebacks)
aculeatus trachurus (*see* Sticklebacks)
aculeatus semiarmatus (*see* Sticklebacks)
wheatlandi (*see* Stickleback, blackspotted; Sticklebacks)
- Gastric secretion (*see* Digestion; Stomach)
- Gastropoda (*see also* Dogwinkle; Drills, clam; Drills, oyster; Limpet; Snails, freshwater; Snails, marine; Whelk; *also* subclassifications of, and names of species)
 J 22(4): 986 (records from NW Atl. Ocean, 1946-61)
 24(5): 1165 (*Crepidula fornicata* shell-weight re age)
 26(12): 3103 (of Crecy L., N.B.)
 29(4): 363 (review of feed & feeding habits of several USSR freshwater genera)
 (4): 385 (review of sterols isolated from)
 B 176 (in Canadian marine zooplankton)
 T 2: 59 (distributional checklist & bibliography of B.C. marine)
 25; 35; 59; 60; 73 (in Strait of Georgia benthos biomass)
 43 (on Irish moss)
 76 (in tidal Ostrea L., N.S.)
 159 (in Canadian Arctic Archipelago)
 196 (in bottom fauna of Okanagan Valley lakes, B.C.)
 225 (associated with Bay of Fundy scallop beds)
 266 (Frobisher Bay, Baffin Is., N.W.T.)
 285 (toxicity tests of trisodium nitrilotriacetate detergent on, re pollution)
 S 1128 (in benthos of 4 L. Superior bays)
 1470 (checklist of B.C. coast)
 1587 (fossil, Santa Barbara Is., California)
 1769 (sterols of 10 types of)
- A 133 (caloric content of 3 representative species)
- Gauley, Veronica Ann
 J 28(11): 1796 (unusual type of Pac. gonatid squid)
- Gazetteer
 B 180: 645 (for latitude & longitude of place names used in text)
- Gear, fishery (*see also* Apparatus; Fisheries; Fishing methods; Gillnet; Nets; Selectivity of fishing gear; Traps; Trawling; etc.)
 J 23(1): 153; 27(3): 535 (underwater observation of action)
 24(3): 689 (shrimp pot)
 (6): 1275 (longline for pelagic redfish)
 26(9): 2527 (various hooks for deep-sea line fishing)
 B 149: 65 (Great Lakes commercial fisheries)
 159 (underwater observation of action)
 CNG 82 (trawl & longline for exploratory B.C. ground-fish fishing)
 T 102 (underwater observation of action)
 104 (B.C. scallop drags)
 270 (Canadian Atl. salmon catches by various types of)
 S 903 (Canadian improvement research)
 909 (soft-shell clam hydraulic harvesting rake)
 928; 940; 949; 954; 955 (ICNAF research reports)
 1176 (relative efficiency & selectivity of 3 types of scallop drags)
 1381 (snella, for Atl. cod experimental catches)
 A 61(F) (underwater photography for tracing fish movements into)
 74 (same as CNG 82 above)
 138 (for queen crab fishing)
- Gebhardt, Gary Alan
 J 25(11): 2519 (fish-marking technique)
- Gee, John Henry
 J 25(7): 1485 (buoyancy adjustment by longnose dace)
 26(8): 2227 (simulating rapids environment)
 (11): 3049 (longnose & blacknose dace & hybrid isozymes)
 27(10): 1855 (buoyancy in blacknose dace)
 28(6): 919 (temperature effects on prespawning Man. sticklebacks)
 29(2): 119 (adaptive variation in dace swimbladder length & volume)
 (3): 330 (lake-dwelling longnose dace population ecology)
 (9): 1245 (longnose & blacknose dace ecological separation, Mink R., Man.)
- Geen, Glen Howard
 J 23(11): 1761 (sucker life histories)
 25(10): 2219 (¹⁴C activity decrease on storage of labelled phytoplankton)
 27(8): 1395 (zooplankton feeding)
- Geiger, Shirley Evelyn

- J 22(3): 653; 23(5): 673, (6): 925 (chalkiness in Pac. halibut flesh)
 (4): 955 (partial freezing of salmon)
 23(5): 701 (fish preservation by partial freezing)
 24(2): 243 (flesh of salmon)
- CVG 41 (weight changes in Pac. coast fish stored at sea)
 43; 44 (storage of Pac. salmon at sea)
 45 (cod & halibut stored in ice at sea)
- T 220; 242 (storage of Pac. salmon at sea)
 336 (B.C. herring roe retrieval & processing)
- S 947 (sodium, potassium, & magnesium in fish)
 1416 (quality of sea-frozen fish from the NE Pac.)
 A 29 (fish in rigor mortis in refrigerated sea water)
- Geiger, Stephen Ralph
 J 25(8): 1637 (NE Greenland amphipods)
- Geiger, Wolfgang A.
 J 29(6): 755 (exploitation & eutrophication effects on salmonid communities in 3 Swiss lakes)
- Gempylidae (*see Nealotus tripes*)
- Gene (*see* Genetics; Polymorphism)
- Genera, new and altered (*see also* Taxonomy; *also* Classification; Family, new; Species, new)
- J 26(2): 311 (*Clavellomimus* parasitic copepod)
 (4): 787 (*Saturnius*, *Bilacinia*, & *Unilacinia* hemiurid trematodes from Australian fishes)
 (4): 1037(F) (*Mustelicola* tetrarhynchian cestode)
 (11): 2987 (subgenera of *Salmincola* parasitic copepods)
- 27(12): 2159 (proposal to suppress *Parabrachiella* for *Brachiella* copepods)
- 28(3): 323 (*Lepeophtheirus* vs. *Dentigryps* parasitic copepods)
 (3): 391 (*Mesodinium* vs. *Cyclotrichum* ciliates)
 (10): 1407 (*Berkeleyia*: new polychaetous annelid genus)
 (11): 1796 (need for redefinition of gonatid squid genera)
- 29(11): 1631 (*Parahucho* & *Parasalmo* as new Salmonidae subgenera)
- B 173: 26 (general discussion of taxonomic validity for certain NW Canada & Alaska freshwater fishes)
 174 (description of new subgenus, *Peusomyia*, of Chaoboridae aquatic insects)
- S 1301 (*Praeidoichondria* parasitic copepod)
 1306 (*Shiinoia* parasitic copepod)
 1358 (new genus *Neobrachiachondria* of copepod parasites on Australian fish)
 1488 (*Pseudoactintscus*: new dinoflagellate genus)
 1496 (*Proclavellodes*: new parasitic copepod genus from S India)
 1499 (misuse of *Caligus* in Copepoda)
 1533 (*Cressoniella*: new dipteran genus from a high Colorado mountain creek)
 1588 (*Harnischia* chironomids)
 1589 (*Dinoasteromonas*: new flagellate genus)
 1617 (*Phycoidella*: new chironomid genus)
 1658 (*Ezonema*: new seuratid nematode genus)
- Genetics; Genes (*see also* Chromosomes; Cytology; Heredity; Phylogeny; Polymorphism)
- J 24(12): 2613 (genetic control in sockeye salmon fry lakeward migrations)
 26(5): 1397 (distribution of frequencies in harp seal blood transferrins)
 (9): 2351 (distribution of frequencies in Pac. halibut blood transferrins)
 (9): 2532 (frequency data re populations analysis of white bream & ruff)
 (10): 2633 (re E Pac. sablefish population parameters)
 (12): 3183 (re red & black threespine sticklebacks)
 27(5): 923 (re walleye & sauger muscle myogen polymorphism)
 (5): 943 (Pac. ocean perch re *Sebastes* taxonomy)
 (6): 1115 (multiple lactate dehydrogenase isozymes re lake whitefish)
 (7): 1325 (hemoglobin structure re Pac. salmonids)
 (9): 1617 (Atl. salmon serum transferrin polymorphism re population distinction)
 (11): 1987 (re rainbow trout populations below & above a waterfall)
 (12): 2197 (re egg & larva development of crosses between pink, chum, & sockeye salmon)
 (12): 2297 (transferrin phenotypes re coho salmon alleles)
- 28(1): 15 (American lobster, re esterase isozymes polymorphisms)
 (6): 879 (lobster enolase & other enolases re)
 (7): 1005 (of multiple malate dehydrogenase isozymes in walleye skeletal muscle)
 (7): 1053 (genic polymorphism in tetrazolium oxidase in bluefin tuna blood & tissues)
- 29(3): 237 (re rainbow trout length & weight variations)
 (& mariculture)
- T 222 (& mariculture)
- S 1335 (possible genetic variations in salmonids resulting from managed populations)
 1354 (rostellar hooks development re Cyclophyllidea cestodes phylogenetics)
 1370 (multiple forms of lactate dehydrogenase & allele frequencies in Atl. cod)
 1545 (Atl. salmon & trouts, re hybridization)
 1563 (re multiple hemoglobins of rainbow & coastal cutthroat trouts)
 1571 (re multiple hemoglobins of Pac. salmonids & rainbow trout)
- Geneva, Lake (Lac Lemán; France and Switzerland)
 J 29(6): 629, 867, 975 (various factors affecting fish communities, particularly salmonid)
- Genital system (*see also* Eggs; Hormones; Milt; Ovary; Reproduction; Sperm; Testes)
 J 24(2): 447 (anatomy in trouts)
- Genoe, Harry Samuel
 J 27(7): 1215 (chinook & coho salmon habitat)
- Gensler, Philip James

- J 29(1): 45 (goldfish orientation to sublethal copper ion concentration gradient)
 (9): 1333 (DDT effects on goldfish locomotor behavior)
- Genus (see Genera)
- Genyonemus lineatus* (see Croaker, white)
- Geochemistry
 S 1722; 1723 (of phytol re petroleum oil formation)
- Geoduck (clam) (*Panope generosa*)
 A 20 (B.C.)
- Geology (see also Fossils; Geomorphology; Glaciation; Morphometry (physical); Palaeontology; Physiography; Sediments)
 J 24(11): 2241 (bottom lithology, Kouchibouguac Bay, N.B.)
 25(11): 2327 (Fe, Mn, & Ti in St. Lawrence R. estuary glacial marine sediments)
 28(2): 139, 277 (of FRB Experimental Lakes Area, NW Ont.)
 29(3): 229 (volcanic ashfall effects on 2 Alaskan lakes)
 B 173: 7 (history of NW Canada & Alaska)
 T 130 (surface, re Nfld. streams productivity)
 S 908 (Canadian large lakes)
 953 (Gulf of St. Lawrence marine)
 957 (St. Lawrence River and Gulf recent depositional conditions)
 1353 (Gulf of St. Lawrence S region)
 1426 (sediments, Magdalen Shelf, S Gulf of St. Lawrence)
 1511 (origin of European flints on Canadian & U.S. Atl. coast)
 1528 (chemical fate of chlorophyll in ancient sediments)
 1587 (paleoecology & biostratigraphy, Santa Barbara Is., Calif.)
 A 199 (investigations of Gulf of St. Lawrence sediments)
 221 ("holed" concretions from Georges Bank off N.S.)
- Geomorphogeny
 J 28(7): 987 (re evolution of western N America *Salmo* species & subspecies)
 (7): 1005 (re isozyme phenotypes heritability of walleye from different localities)
 S 1722; 1723 (diagenesis & maturation of phytol)
- Geomorphology (see also Geology; Physiography; Topography)
 J 23(8): 1197 (of sea floor around Magdalen Is.)
 28(2): 139 (of FRB Experimental Lakes Area, NW Ont.)
 29(6): 617, 629, 639, & some other papers in this issue (re salmonid communities in many N American & European oligotrophic lakes)
 T 98 (Little Codroy R. & estuary, Nfld.)
 S 1353 (S Gulf of St. Lawrence region)
- 1426 (Magdalen Shelf sediments, S Gulf of St. Lawrence)
- Geopotential anomaly (see Currents; Oceanography; Tides)
- Georges Bank, off N.S.
 T 86; 157(F) (Canadian trawl catches of cod & haddock, 1965)
 256 (scallop fisheries studies)
 S 1284 (recent developments in scallop fishery)
 A 236 (price re decline of sea scallop stocks)
 251 (recent recruitment & reduction of cull size of scallops)
- Georgia, Strait of (see also Juan de Fuca Strait; Oceanography, Pacific east coast)
 J 22(3): 853 (Pac. bonito characteristics)
 23(4): 511 (appropriate lemon sole size limits)
 (4): 575 (distribution of iron compounds from Fraser R.)
 (8): 1265 (*Gonyaulax acatenella* bloom re shellfish toxicity)
 24(11): 2455 (larval herring in July 1966)
 26(12): 3165 (bacteria & other heterotrophs as winter zooplankton feed)
 27(7): 1251 (review of production levels in pelagic environment)
 (10): 1847 (*Schizoporella unicornis* introduced on oyster seed from Japan)
 28(9): 1335 (age & growth of weathervane scallop)
 29(10): 1487 (spiny dogfish mercury content)
 B 168; 169 (oyster culture)
 178 (incidence of paralytic shellfish toxicity)
 CPO 1965-2 (monthly mean surface temperatures, 1964)
 1965-3; -5; -7; -8 (oceanographic cruises reports)
 1965-6 (commercial coho troll catches)
 T 25; 35; 59; 60; 73 (quantitative benthic investigations)
 110 (biological oceanography investigations summary, 1965-68)
 142 (oceanography, also that of approach passages)
 156 (one-dimensional hydrodynamical numerical model)
 163 (surface flow measurements by free-floating current followers, re Fraser R. influence)
 169; 178; 191 (current velocity measurements, 1967, 1968, 1969)
 253 (temperature & current velocity program from moored meters, with examples of records, 1968-70)
 S 1369 (*Calanus* copepod infected by a yeast)
 1392; 1393; 1394 (effects of Fraser R. plume on primary & secondary production)
 1503 (occurrence & formation of small particles in)
 A 2 (B.C. Pacific cod trawl fishery)
 165 (5-year pollution studies re plankton & fish)
 211 (feed chains)
 235 (fisheries productivity)
- Georgian Bay, Ont. (see also Huron, Lake; Parry Sound)
 J 23(2): 221 (lake whitefish dynamics & exploitation)
 24(4): 887 (rainbow trout phenotypic characteristics)
 (12): 2539 (lamprey parasitism on rainbow trout)

- 26(6): 1017 (splake population dynamics)
 (6): 1165 (seiche causing fish & crayfish mortality)
 29(1): 79 (distribution & abundance of planktonic crustacea)
 S 1543 (Oligochaeta, Sphaeriidae, & Chironomidae)
- Geraldine Lake, N.W.T.
 T 322 (existing physical, chemical, & biological parameters prior to inflow of hot coolant water from power generator)
- Gerking, Shelby Delos
 J 23(12): 1923 (growth in bluegill sunfish)
- Geryon *quinquedens* (see Crab, deep-sea red)
- Gesser, Hyman Davidson
 S 1684 (extraction of organochlorine pesticides from water by absorbents)
- Gestation (see also Reproduction)
 J 28(9): 1309 (white whale)
- Getchell, Amasa Stanley
 J 28(12): 1877 (DDT in lotic ecosystem)
- Ghelardi, Raymond Joseph
 T 44 (lobster transplantation into Fatty Basin, B.C.)
 301 (a brief on B.C. mariculture)
 A 93 (Atl. lobsters in B.C. waters)
- Gibbons, John R. H.
 J 29(9): 1245 (longnose & blacknose dace ecological segregation, Mink R., Man.)
- Gibbonsia elegans montereyensis* (see Kelpfish, crevice)
metzi (see Kelpfish, striped)
montereyensis (see Kelpfish, crevice)
- Gibson, Robert John
 J 23(7): 1007 (Atl. salmon behavior)
 (12): 1977 (distributions of trout & salmon)
- Gilbertidia sigalutes* (see Sculpin, soft)
- Gilderhus, Philip Albert
 J 29(2): 199 (piscicides exposure time to eliminate certain freshwater fishes)
- Giles, Michael A.
 J 27(2): 371 (salmon growth & composition)
- Gilgan, Michael Wilson
 J 24(11): 2497 (Japanese yew extract)
 S 1224 (conversion of androstenedione to testosterone by lobster tissues)
 1701 (ecdysterone estimation from induced fluorescence)
- Gill (see Gills)
- Gill, Carl Alan
 J 25(1): 33 (S.B.C. trout distribution)
- Gill, Charles David
 J 25(4): 825 (3 oceanic fishes' feeding behavior)
- Gill net and netting (see Gillnets; Gills; Nets; Selectivity of fishing gear)
- Gill rakers (see Gills)
- Gillespie, Douglas Charles
 J 28(5): 783 (effects of washing on keeping quality of freshwater fish)
 (11): 1807 (mobilization of mercury into fish)
 29(7): 1035 (mercury mobilization from sediments into guppies)
 (7): 1071 (compact recirculation unit for fish rearing & maintenance)
- Gillespie, Gerald J.
 A 11(F) (hormones in skate blood plasma)
 66 (lobster diet)
- Gillichthys seta* (see Mudsucker)
- Gillnets (see also Fishing methods; Gear, fishery; Nets; Salmon; Selectivity of fishing gear)
 J 23(2): 246, (3): 423 (lake whitefish)
 25(5): 935 (skeletal muscle chemistry of Atl. cod caught by)
 26(5): 1383 (sockeye salmon)
 (6): 1694 (Atl. salmon muscle damage from nylon)
 (10): 2681 (selectivity re fish shape & structure)
 28(6): 821 (selectivity re Skeena R. sockeye & pink salmon fisheries)
 (8): 1167 (American shad net avoidance behavior)
 29(11): 1636 (DeLury method use in estimating selectivity)
 B 161: 35, 39 (for goldeye commercial fishing)
 T 33 (Great Slave L. under-ice fishery)
 180 (factors re entangling capacity for whitefish & lake trout)
- Gills; Gillrakers (see also Blood; Hemoglobin; Gillnet; Respiration; Selectivity of fishing gear)
 J 24(4): 843 (fungus attack on chinook salmon)
 (5): 965 (raker development in lake trout)
 (6): 1407 (rakers re lake trout populations morphology)
 (8): 1637 (counts of allopatric marine & freshwater sticklebacks & their hybrid)
 (9): 1999 (plasticity of number & length in sockeye salmon)
 (11): 2355, 2448 (mathematical treatment of gill surface re body surface & metabolic rate)
 25(2): 415 (gillraker number variation in N American kokanee)
 (4): 695 (*Gaffkya homari* infection of lobster)
 (9): 1797 (dieldrin accumulation in goldfish, after aldrin ingestion)
 (11): 2467 (*Dermocystidium* fungus infection of chinook salmon)

- (11): 2521 (microturbellarian associated with Atl. oyster)
- 26(1): 165 (dimensions, re size of various fishes)
- (2): 311 (copepod parasitic on Atl. wolffish)
- (4): 833 (parasites on yellow perch)
- (4): 1063 (*Diclidophora* trematodes on gadid fishes)
- (6): 1680 (gill arch characters of *Parabassogigas grandis*)
- (7): 1934 (gill-raker counts re differentiating *Coregonus artedii* from *C. zenithicus*)
- (7): 1939 (uptake of pesticide by rainbow trout)
- (9): 2283 (area re respiration of 5 haustoriid amphipod species)
- (11): 2785 (copper sulfate toxicity effects on winter flounder)
- 27(6): 1045 (ecology of fauna parasitic on yellow perch)
- (9): 1563 (lactic dehydrogenase polymorphism in rainbow trout)
- (9): 1627 (opercular catheterization for sampling fish respiration process water)
- (9): 1637 (hydraulic ram effect in skipjack tuna gill ventilation)
- (12): 2185 (histology of mummichog exposed to cadmium chloride)
- 28(1): 115 (rakers, re anadromous vs. freshwater-resident Arctic char)
- (4): 465 (raker counts of lake char re N American postglacial distribution)
- (4): 553 (raker counts of spring vs. autumn spawning SW Nfld. herring)
- (7): 947 (blood-pressure drop in teleost, re blood pathway effects)
- (10): 1609 (effects of artificial manipulation of rainbow trout)
- 29(1): 109 (infrared photography of fish gills vascularization)
- (2): 167 (adenosinetriphosphatase activity changes re steelhead trout, coho, & chinook salmon parr-smolt transformation)
- (3): 328 (formalin effects on rainbow trout)
- (10): 1463 (gas exchange failure as cause of zinc toxicity to trout)
- (10): 1491 (role in mercury toxicity to fiddler crab)
- B 177 (paralytic shellfish toxin in E Canada clams, mussel, & whelk)
- CAR 1 (tissue breakdown from elemental phosphorus poisoning)
- T 208 (bioassays of various Nfld. fishes re elemental phosphorus assimilation)
- S 1361 (modifications in some Pac. fishes)
- 1378 (area re body size & weight, of 3 tuna species)
- 1409 (blood pathways in teleost fishes)
- 1550 (proprioceptors in Atl. sea raven)
- 1554 (re rainbow trout respiratory pumps responses to hypoxia)
- 1566 (new species of copepod on Kenyan marine fish)
- Gillworm* (see Gills; Turbellaria)
- Ginglymostoma cirratum* (see Shark, nurse)
- Giovando, Lawrence Frank
- J 23(4): 539 (spring phytoplankton bloom)
- T 142 (oceanographic features of inside passage between Vancouver Is. & B.C. mainland)
- 163 (measuring surface flow in Strait of Georgia)
- 169; 178; 191 (Strait of Georgia velocity measurements)
- 263 (current velocities near a Vancouver, B.C., sewerage & drainage outfall)
- Girella nigricans* (see Opaleye)
- Girth (see Size)
- Gjedrem, Trygve
- J 29(3): 237 (genetic & environmental sources of rainbow trout length & weight variations)
- Glaciation (see also Geology; Zoogeography)
- J 27(11): 1987 (re waterfall origin in Kokanee Cr., B.C., & subsequent differences in rainbow trout populations)
- 28(2): 141 (of FRB Experimental Lakes Area, NW Ont.)
- (4): 465 (lake char intraspecific variations re N American postglacial distribution)
- (5): 749 (re N American origin of Arctic grayling having different lateral line scale counts)
- (9): 1331 (re presence of relict *Pontoporeia affinis* amphipod in L. Washington, USA)
- 29(5): 545 (effects re postglacial dispersion of 4 E Ont. & W Que. fish species)
- (6): 617, 629, 639 (re geomorphology, limnology, species succession, etc., in N American & European oligotrophic lakes)
- (12): 1772 (re postglacial pygmy whitefish distribution)
- B 173: 7 (history of, in N America), 7, 15, 54, etc. (effects on distribution of freshwater fishes in NW Canada & Alaska)
- S 1647 (re *Allocapnia* stoneflies dispersal)
- Glass, Norman Ralph
- J 26(10): 2643 (power function re fish respiratory metabolism)
- Glass apparatus (see also Apparatus)
- S 1275 (a silicone for producing nonwetting surface on)
- Glazing (of frozen fish) (see also Refrigeration)
- B 151: 26 (frozen freshwater fish products)
- S 1365 (frozen fish & filets with ice or ice containing alginate)
- A 203 (progress in; beneficial effects on quality of product)
- GLC (gas-liquid chromatography) (see Chromatography)
- Glenn, Clifford Lawrence

- J 25(7): 1505 (measuring walleye stomach contents by "wet" weight)
- Globicephala macrorhyncha* (see Whale, short-finned pilot (Atlantic and Pacific))
melaena (see Whale, pilot (Atlantic))
scammoni (see Whale, pilot (Pacific))
- Globulins (see Serum; Serology)
- Glooschenko, Walter Arthur
 J 28(5): 790 (influence of nutrient enrichment on N Pac. phytoplankton)
 29(9): 1253 (chlorophyll *a* concentration diel periodicity in Oregon coastal waters)
 (9): 1261 (chlorophyll-light estimates of primary production off Oregon)
 (9): 1269 (solar radiation & upwelling effects on daily primary production off Oregon)
- S 1689 (insecticides effect on ¹⁴C uptake by phytoplankton in lakes Erie & Ontario)
 1704 (light intensity & DDT concentration interaction on *Nitzschia* diatom)
- Glossary
 J 24(6): 1315 (anatomical terms re Gadidae cranial osteology)
 B 152: 69 (terms descriptive of sea stars)
 155: 430 (terms descriptive of Canadian Atl. marine fishes)
 156: 126 (of economics terminology re Canadian lobster fishery)
 169: 185 (re Pac. oyster & its culture)
 173: 34-40 (terms used in fish identification, description, morphology, etc., of NW Canada freshwater fishes)
 180: 659 (of morphological, etc., terms re B.C. marine fishes)
 S 1615 (for chironomid morphology)
- Glucan
 S 1530; 1548 (re polysaccharide structure of red seaweed *Rhodymenia pertusa*)
 1657 (role of intracellular, in *Clostridium botulinum* growth & spore formation)
- Glucosamine (see also Chitin)
 J 28(8): 1191 (content of Dungeness crab exoskeleton)
- Glucose (see also Carbohydrates; Cellulose; Glucan; Glucosamine; Glycogen; Saccharides; Sugars)
 J 23(1): 65 (rainbow trout activity effect on metabolism of)
 (7): 975 (effect of starvation & refeeding on levels in Atl. cod)
 24(5): 939 (effects of partial descaling & desliming on rainbow trout blood)
 (8): 1701 (effects of disturbance on rainbow trout metabolism)
 25(5): 853 (metabolism in marine wood borer caecum)
 27(4): 801 (levels in fresh *Tilapia* muscle)
 (6): 1141 (metabolism enzymes in *Bahkia setacea* caecum)
 (6): 1162 (content in rainbow trout blood)
 28(4): 606 (content of juvenile coho salmon blood)
 (5): 625, 635 (levels in brook trout blood after handling, anesthetization, & surgery)
 S 1036 (phosphates)
 1110 (re algae photosynthesis)
 1413 (metabolism in bacteria from deep-sea water: effects of decompression)
- Glugea hertwigi* (see Microsporidia)
- Glycerides (see Acids, fatty; Lipids; Oils and fats; Triglycerides)
- Glycerol (see also Triglycerides)
 J 27(2): 335 (re phototrophic growth enhancement of marine planktonic algae; ecology of pollution by)
 S 1373 (esters metabolism in echinoderms: review)
 1403 (enhances growth of photosynthetic cryptomonad alga in the dark)
- Glycogen; Glycolysis (see also Carbohydrates)
 J 22(1): 83 (postmortem changes in Atl. cod muscle)
 (6): 1397 (in carp lateral muscle effort metabolism)
 23(4): 471, (9): 1461 (re exercised rainbow trout metabolism)
 (4): 527 (glycogenolytic enzymes in Atl. cod muscle)
 (6): 909 (re Atl. cod exophthalmia)
 (6): 921 (nucleotide interference with estimation of in Atl. cod muscle)
 (7): 975 (Atl. cod liver: effects of starvation & refeeding)
 24(3): 651 (re pH, etc., in postmortem unfrozen Atl. cod)
 (5): 939 (effects of partial descaling & desliming on rainbow trout liver metabolism)
 (8): 1701 (effects of disturbance on rainbow trout liver)
 (8): 1837 (in postmortem relaxed Atl. cod muscle)
 25(4): 738 (before & after freezing trap-caught Atl. cod)
 (5): 837 (of exercised Atl. cod muscle)
 (8): 1525 (quantitative extraction from frozen Atl. cod muscle)
 (8): 1539 (postmortem degradation in fish muscle)
 26(10): 2621 (glycolytic changes in critical freezing zone of Atl. cod muscle)
 27(11): 1997 (biochemical changes in white muscle of white sucker & northern pike postmortem at 0 C)
 28(1): 7 (seasonal changes in various food-reserve types of, in freshwater triclaid flatworm)
 (9): 1325 (postmortem changes in phosphorylase activity of sucker & pike muscle)
 B 169: 115; 178: 22 (re Pac. oyster condition)
 T 188 (as condition index for P.E.I. oysters transplanted to W Nfld.)

- S 1043 (antemortem activity effect on postmortem quality of Atl. cod filets)
 1117 (review of postmortem changes in fish muscles)
 1372 (interrenalectomy & hypophysectomy re skate liver glycogen levels)
 1402 (phosphorylase in rainbow trout muscle)
 1447 (synthetase from rainbow trout liver)
 1458 (rainbow trout liver transferase re liver glycogen structure)
 A 30 (enzymic degradation in fish muscle)
- Glycol
 J 26(12): 3254 (advantage of propylene over ethylene as extender for freezing salmon sperm)
 S 1549 (tropylium ion origin in mass spectra of arylboronic acid esters of ethylene glycol)
- Glycoproteins
 J 28(8): 1173 (constituents levels in Pac. salmon, trouts, & bovine blood sera)
- Glyoxylate
 S 1135; 1236; 1237 (metabolism by Atl. salmon & cod sperm)
 1322 (metabolism by Atl. salmon eggs)
- Glyptocephalus cynoglossus* (see Flounder, witch)
zachirus (see Sole, rex)
- Gnathopausia gracilis* (see Mysidacea)
- Gnats (see Culicidae)
- Gobiesox maeandricus* (see Clingfish, northern)
- Gobiosoma paradoxum* (see Goby (common name not given))
- Gobius minutus* (see Goby, sand)
- Goby (*Gobiosoma paradoxum*)
 J 28(11): 1809 (new record of lymphocystis viral infection, E Pac. coast)
- Goby, arrow (*Clevelandia los*)
 B 180: 363 (full description, etc., B.C.)
- Goby, bay (*Lepidogobius lepidus*) (finescaled goby)
 B 180: 366 (full description, etc., B.C.)
- Goby, blackeye (*Coryphopterus nicholsi*) (*Rhinogobius nicholsi*; crested, largescaled, or bluespot goby)
 J 24(2): 433 (scale regeneration)
 26(9): 2319 (parasites, B.C.)
 B 180: 365 (full description, etc., B.C.)
- Goby, bluespot (see Goby, blackeye)
- Goby, crested (see Goby, blackeye)
- Goby, finescaled (see Goby, bay)
- Goby, largescaled (see Goby, blackeye)
- Goby, sand (*Gobius minutus*) (*Pomatoschistus minutus*)
 J 29(2): 187 (bioenergetics)
 S 1623 (gonad development & fecundity)
- Godfrey, Harold
 J 25(9): 1971 (aging chinook salmon from scales)
 CNG 90 (US hatcheries chinook & coho production)
 S 973 (coho salmon in offshore B.C. waters)
 1129 (N Pac. Ocean salmon)
- Godin, Gabriel
 J 26(11): 2887 (tidal energy exploitation theory re Bay of Fundy)
- Gold derivatives
 J 27(4): 677 (traces in Great Lakes fishes & livers)
 29(12): 1691 (chloraic acid, re toxicity to *Daphnia magna*)
- Goldeye (*Hiodon alosoides*)
 J 25(12): 2603 (respiration)
 26(2): 325 (S Alta. distribution)
 27(4): 830 (mercury contamination in organs, Saskatchewan R.)
 28(1): 105 (DDT residues in muscle, Saskatchewan R.)
 29(12): 1685 (mercury concentration re size, in Saskatchewan R.; corrections on J 30(8): 1257)
- B 151; 151 (F) (smoking)
 161 (biology; feed; parasites; fishery; processing; management; etc., in Canada)
 173: 64 (full description, etc.)
 CCG 7: 33 (latent heat of freezing)
 S 980 (brining time before smoking)
 1433 (smoking techniques)
 1668 (mercury contamination, L. Winnipeg & L. Winnipegosis)
 1718 (organochlorine pesticide levels in Canadian commercially caught)
 A 200 (mercury contamination, Saskatchewan R.)
- Goldfish (*Carassius auratus*)
 J 22(6): 1455 (thermal effects on ionic regulation)
 23(8): 1109 (hematological responses to sublethal thermal shock)
 24(3): 695 (blood low-mobility proteins)
 (6): 1419 (ammonia in excreta)
 (11): 2395 (oxygen consumption mathematics)
 25(7): 1333 (marking by feeding strontium-rich diet)
 (7): 1497 (hypophysectomy effect and relief)
 (8): 1689 (respiratory quotient)
 (9): 1797 (dieltrin residues in tissues after aldrin ingestion)
 26(7): 1927 (purine sources of skin silvering)
 (10): 2651 (oxygen metabolism re body weight)
 27(4): 677 (6 trace elements in livers, Great Lakes)
 (4): 781 (mathematical analysis of swimming speed data)
 (6): 1103 (role of vision in turning corners in tank)
 (12): 2225 (chronic poisoning from endrin insecticide)
 28(7): 957 (vulnerability to northern pike predation)

- 29(1): 45 (response to sublethal copper ion shallow gradient)
 (9): 1283 (cadmium content, in New York State waters)
 (9): 1309 (hydrogen sulfide toxicity to)
 (9): 1333 (sublethal DDT effects on locomotor behavior re making turns in a tank)
 (10): 1425 (for testing adequacy of commercial antibacterial formulations)
- S 983 (lethal heat shock effect on water balance)
 1028; 1080; 1226 (fatty acids positional distribution in fat triglycerides)
 1249 (spermiation as bioassay for salmon gonadotropin)
 1292; 1336 (spermatogenesis & ovulation induction in hypophysectomized, by chinook salmon pituitary gonadotropin)
- Goldsack, Douglas Eugene
 S 1232 (protein polypeptide chains)
 1253 (virus structure & subunit amino acid composition)
 1347 (amino acid composition of proteins)
 1522 (optical detection pressure apparatus)
- Gompertz growth equation
 J 26(1): 161 (comparison with von Bertalanffy equation)
- Gonadectomy (*see* Hormones; Maturity; Ovary; Reproduction; Spawning; Sperm; Testes)
- Gonadotropin (*see* Hormones; Pituitary; Sperm)
- Gonads (*see also* Eggs; Genital system; Hormones; Maturity; Milt; Ovary; Spawning; Sperm; Testes)
 J 22(3): 643 (proportion and lysolecithinase activity in Atl. cod)
 (3): 697 (histology in immature sea lampreys)
 (5): 1137 (*Gonyaulax* toxicity in scallop)
 29(3): 330 (female longnose dace, re spawning)
 29(8): 1209 (maturation of brook trout re deep snow cover affecting photoperiod)
 (12): 1709 (morphological differences in male, of 9 Gadidae genera)
 (12): 1749 (winter maturation, of American plaice)
- B 177 (paralytic shellfish toxin in E Canada clams, mussels, & whelk)
 S 943 (cells of rainbow trout, growth stimulation by serum)
 962 (salmon pituitary hormones effect on immature trout)
 1073 (enzymes of Atl. herring)
 1622 (lipids & fatty acids of Atl. mackerel)
 1623 (development in sand goby)
- Gonatus fabricii* (*see* Squid, Arctic)
- Gonotrichium* (*see* Rhodophyta)
- Gonyaulax* dinoflagellates (*see* Paralytic shellfish poisoning)
- Goosefish (*Lophius americanus*) (angler; monkfish)
 J 22(2): 621 (Canadian Atl. inshore distribution)
 26(3): 597(F) (retinal structure re activity, etc.)
 28(7): 935 (occasional component of Passamaquoddy Bay fish communities, N.B.)
 (9): 1285 (methylmercury in, N.S. banks)
 B 154: 115 (as Nfld. resource)
 CSG 54 (underexploited on N.S. banks)
 T 164 (extensive length-weight data)
 260 (standing crop, availability, lengths, weights, etc., from Scotian Shelf surveys, 1958-68)
 261 (bibliography for Gulf of St. Lawrence)
 A 143(F) (French version of CSG 54 above)
 175 (same as CSG 54 above)
- Gorbman, Aubrey
 J 26(8): 2111 (salmon olfactory discrimination)
 (8): 2123 (salmon olfactory responses)
- Gordon, Donald Collingwood, Jr.
 J 28(12): 1912 (fuel oil concentration in Chedabucto Bay)
 T 284 (Halifax harbour oil pollutants concentration & distribution, June-Aug. 1971)
 293 (analysis of N.B. mine waste waters for defotation agents)
 S 1592 (relations between oceanic wind speed, Langmuir circulation, & particle concentration)
- Gordon, Louis Irwin
 S 1713 (time variations in CO₂ partial pressures in N Pac. Ocean)
- Gosselin-Rey, Cécile Françoise
 J 25(12): 2711 (fish creatine kinase in electrophoretic patterns)
 (12): 2715 (carp muscle creatine kinase)
- Goswami, Shashi V.
 J 29(4): 435 (salmon gonadotropin effect on in vivo maturation of catfish oocytes)
- Gots, Barra Louise
 J 27(4): 811; 28(3): 452 (brown trout world distribution)
- Goudie, Carol
 J 23(3): 395 (nutritive value of fish meals)
- Gould, Edith
 J 25(8): 1581 (fish skeletal muscle malic enzyme)
 26(12): 3175 (α -glycerophosphate dehydrogenase as index of iced haddock-age)
 27(11): 2101 (accurate labelling of superchilled fish)
- Gourami, blue (*Trichogaster trichopterus*)
 J 28(1): 47 (spleen, liver, & kidney hemosiderin bodies re erythropoiesis)
- Grabs
 J 27(10): 1691 (efficiencies of various, for sampling freshwater benthos)

- J 28(3): 365 (Ekman grab vs. simple corer for sampling shallow-water benthos)
- Gracilaria (*see* Rhodophyta)
- Grading (*see also* Quality of fishery products; Taste panels)
 J 24(6): 1203 (significance of bound oil in stored canned sockeye salmon)
 (7): 1613 (canned Pac. salmon for color)
 A 31 (preliminary quality tests of cod & haddock with Intelectron Fish Tester)
- Graham, Brian William
 J 28(2): 277 (surface sediment chemistry of FRB Experimental Lakes, NW Ont.)
- Graham, Joseph James
 J 25(6): 1169 (sampling larval herring with buoyed & anchored nets)
- Grainger, Edward Henry
 J 22(2): 543 (arctic zooplankton)
 B 152 (arctic sea stars)
 176: 189 (Canadian Arctic marine zooplankton)
 T 265 (physical, nutrient, & production observations in Frobisher Bay)
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 S 1017 (Labrador Asteroidea)
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- Grampus, gray (*see* Dolphin, Risso)
- Grampus griseus* (*see* Dolphin, Risso)
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- Grand Bank, off Nfld. (*see also* International Commission for the Northwest Atlantic Fisheries)
 J 23(5): 651 (American plaice sexual maturity & spawning)
 S 1051; 1052; 1054; 1055; 1057; 1058 (haddock & cod re low sea temperatures, feed, etc.)
 1053 (mass mortalities of various fishes due to low sea temperatures)
 1207 (diurnal variation in American plaice catches)
- Grand River, Ont. (*see also* Belwood Lake, Ont.)
 J 27(5): 837 (seasonal variations in selected nutrients)
 28(1): 35, 45 (effects on benthos & fishes upstream & downstream of impoundment dam)
- Grant, Blake Francis
 J 27(12): 2225 (endrin poisoning in goldfish)
- Grant, Charles David
 J 24(4): 823 (phosphamidon effects on aquatic insects)
- Gravel (*see also* Spawning)
 J 27(7): 1191 (size re hatching & movement of coho salmon alevins)
- Graveldiver (*Scytalina cerdale*) (burrowing blenny)
 B 180: 357 (full description, etc., B.C.)
- Gray, James Rutherford
 J 28(4): 559 (freshwater zooplankton calorific values)
- Gray, John Robson Allan
 J 26(2): 399 (stream temperature)
- Gray, Ronald Walter
 J 27(11): 2109 (muscle protein electrophoresis in genus *Salmo*)
- Graybill, James Roger
 J 26(5): 1400 (steelhead trout)
- Grayling, Arctic (*Thymallus arcticus*)
 J 25(8): 1651 (plasma protein-bound inorganic iodide)
 (8): 1667 (cytotaxonomic relation to other Great Lakes coregonids)
 26(2): 325 (transplanted into Alta.)
 28(5): 749 (geographic variation in lateral line scale counts re N American origin)
 B 173: 125 (full description, etc.)
 T 180 (Lac la Martre, N.W.T.)
 S 1015 (Great Slave L. sport fishing)
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- Graylings (Thymallidae)
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- Grayskin (*Diagramma griseum*)
 J 25(1): 197 (microorganisms isolated from diseased)
- Graysole (*see* Flounder, winter; Flounder, witch)
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 J 26(6): 1485 (re zooplankton production, Ogac L., Baffin Is.)
 28(11): 1733 (production potential of seaweed-lobster community, St. Margaret's Bay, N.S.)
 29(5): 603 (lobster role in overgrazing of seaweed by sea urchins)
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 S 1513 (zooplankton rations re phytoplankton mortality, re marine productivity estimation)
 1586 (of phytoplankton during 25-hr chlorophyll budget study)
 A 211 (by zooplankton, re feed availability to different trophic levels in marine feed chain)
- Great Bear Lake, N.W.T.
 J 23(7): 963 (limnology; correction on J28(5): 1759)
 29(6): 617 (limnology & fishes about 1800 A.D.)
 B 173 (descriptions of fishes)
 S 908 (limnology)
 1005 (temperature regime)
 1191 (nannoplankton of marine origin in)
 A 14 (history; description; hydrography; limnology; fisheries)
 75 (1965 limnology & fish study)
- Great Central Lake, Vancouver Island, B.C.

- T 324 (young sockeye salmon growth in lake re eventual adult production, before experimental nutrient enrichment of lake)
- S 1651; 1652; 1653 (nutrient enrichment effects on primary production, zooplankton standing stock, juvenile sockeye salmon)
- Great Lakes, Canada and USA (*see also* the individual lakes: Erie; Huron; Michigan; Ontario; Superior; *also* Georgian Bay; South Bay)
- J 22(2): 289 (comparison of lampreys alimentary tracts)
(5): 1197 (whitefish populations year-class fluctuations)
- 25(4): 667 (species succession & fishery exploitation)
(6): 1181 (benthic environment subdivisions of upper)
(6): 1199 (low temperature effect on fish feeding)
(7): 1521 (sea & brook lampreys infection by *Aeromonas*)
(8): 1667 (cytotaxonomic relations of coregonids)
- 26(2): 456 (uniformity of rainbow trout phenotypes upper lethal temperature)
- 27(3): 613 (population vital statistics of rainbow trout re extended spawning season)
(4): 677 (15 trace elements in 13 fish species)
(5): 923 (walleye polymorphism)
- 28(4): 616 (size of giant brook lampreys re average adult size)
- 29(6): 617, 717, 951, 975 (various factors affecting salmonid communities & other fishes)
- B 149 (economic aspects of Ontario fisheries: species, gear, catches, etc.)
- B 151; 151(F) (processing of commercial fishes)
- CCG 7: 21 (plans for extension of sea lamprey control to lower lakes)
- S 900 (availability of fishes)
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1490 (history of lamprey invasion & combating it)
1543 (aquatic insects of Georgian Bay, L. Ontario, & L. Erie)
1668 (mercury levels in fishes)
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- A 106 (history & further possibilities of transplanting *Oncorhynchus* Pac. salmonids into)
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216 (phosphates re eutrophication (polemical))
- Great Lakes Fisheries Commission
- B 149: 92 (history)
- S 1484 (molecular structure re lampicide activity of halogenated mononitrophenols)
- Great Slave Lake, N.W.T.
- J 22(6): 1571 (fall domestic fishery at Snowdrift)
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26(8): 2260 (*Trienophorus crassus* in Arctic lampreys)
29(6): 617, 741, 975 (various factors affecting salmonid communities)
- B 158 (physical & economic organization of fisheries)
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- S 900 (availability of fishes)
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- Green, James Harvey
J 28(3): 446 (electronic processing of acoustical data for fishery research)
- Green, John Marshall
J 27(2): 401 (submersion-emersion sensor for intertidal biological studies)
(11): 2120 (banded gunnel in Nfld.)
28(3): 383 (the tidepool sculpin (*Oligocottus maculosus*))
- Green, Roger Harrison
J 27(1): 204 (graphical estimation of rates of mortality & growth)
28(5): 776 (lipid & caloric contents of Cayuga L. relic amphipod)
29(11): 1565 (multivariate statistical distribution & morphological variation of *Lampsilis radiata* clam in some central Canada lakes)
- Green, W. A.
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- Green Lake, N.Y.
S 1436 (meromixis comparative study)
1437 (physical & chemical limnology)
1438 (precipitation & sedimentation of calcite)
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- Greenberg, David Alexander
J 26(11): 2775 (M_2 tide modification due to Bay of Fundy barriers)
- Greeneye, longnose (*Parasudis truculenta*)
J 25(2): 421 (range extension N to N.S.; morphology)
- Greeneye, shortnose (*Chlorophthalmus agassizi*)
J 26(2): 469 (range extension & morphometrics, off SW N.S.)
(10): 2694 (recent catches & range extension off N.S.)
- Greenfield, David Wayne
J 22(3): 857 (six-gilled shark)
- Greenfield, Leonard Julian
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- "Greening"
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- Greenland
 J 22(2): 422 (Canadian-tagged harp seal recaptures)
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 25(5): 943 (*Anonyx* species distribution off)
 (5): 1071 (*Meganycitiphanes norvegica* larvae off W)
 (8): 1637 (habitat of 9 pelagic amphipod species in NE slope waters)
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 S 1035; 1082; 1102 (salmon fishery of western)
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- Greenland Current, East
 J 26(2): 305 (zooplankton biomass)
- Greenling, fringed (*see* Greenling, rock)
- Greenling, kelp (*Hexagrammos decagrammus*) (*Chirophis decagrammus*; kelpfish)
 J 25(8): 1651 (plasma protein-bound inorganic iodide)
 26(9): 2319 (parasites, B.C.)
 B 180: 461 (full description, etc., B.C.)
 T 181; 257; 317 (taken in B.C. trawl fishery)
 S 1394 (feed of juvenile, Strait of Georgia)
- Greenling, long-spined (*see* Combfish, longspine)
- Greenling, masked (*Hexagrammos octogrammus*)
 J 28(6): 927 (range extension SE from Alaskan to B.C. coast; meristic data)
 B 180: 464 (full description, etc., B.C.)
- Greenling, painted (*Oxylebius pictus*)
 B 180: 470 (full description, etc., B.C.)
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- Greenling, rock (*Hexagrammos lagocephalus*) (*H. superciliosus*; *Lebius superciliosus*; fringed greenling)
 J 26(9): 2319 (parasites, B.C.)
 B 180: 463 (full description, etc., B.C.)
- Greenling, whitespotted (*Hexagrammos stelleri*)
 J 22(1): 203 (biochemical systematics)
 25(8): 1651 (plasma protein-bound inorganic iodide)
 26(9): 2319 (parasites, B.C.)
- B 180: 466 (full description, etc., B.C.)
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- Greenlings (*see also* Combfish; Greenling; Lingcod)
 T 246 (bibliography of N America Pac. coast)
- Greenwell, Marshall
 J 25(4): 829 (plaice fillet thaw-drip)
- Greer, Galen Leroy
 J 25(11): 2321 (DDT degradation in Atl. salmon)
- Greib, Barry James
 J 27(4): 653 (phosphate movement from & through lake muds)
- Grenadier (*Macrourus (Coryphaenoides) rupestris*)
 J 28(9): 1285 (methylmercury in, N.S. banks)
- Grenadier, roughhead (*Macrourus berglax*)
 J 26(2): 311 (copepod parasitic on fins)
 B 154: 116 (as Nfld. resource)
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- Grenadiers (Atlantic) (*see also* Rattails)
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 T 260 (availability, standing crop, lengths, weights, etc., of the common grenadier, from Scotian Shelf surveys, 1958-68)
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- Grey (*see* Gray)
- Gribbles (*Limnoria lignorum*; *L. tripunctata*) (wood-boring isopods)
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- Griffith, John Spencer, Jr.
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- Griffiths, John Stephen
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- Grift, Norbert
 S 1728 (rapid semimicro determination of methylmercury in fish tissue)
- Grilse (*see* name of adult salmon or trouts)
- Grimaldi, Ettore R.

- J 29(6): 777 (exploitation & introductions effects on salmonid community of Lago Maggiore, Italy)
 (6): 931 (future of salmonid communities in European subalpine lakes)
- Grimås, Ulf G. A.
 J 29(6): 807 (exploitation, eutrophication, & introductions effects on salmonid community of L. Vättern, Sweden)
 (6): 937 (future of salmonid communities in Fennoscandian lakes)
- Grimm, Andrew Spalding
 J 26(7): 1823 (sodium transport re 1α -hydroxycorticosterone)
- Grimwood, Brian Edwin
 J 27(4): 801 (*Tilapia* muscle glucose levels)
- Grindstone (*see* Flounder, starry)
- Gring, David Michael
 J 25(2): 373 (bluegill retinomotor rhythms)
- Grinols, Richard Byron
 J 22(5): 1151 (Pac. Alepocephalidae)
 23(2): 305 (range extensions of *Anoplogaster cornuta* & *Cyema atrum*)
 (6): 935 (southern range of *Acantholiparis opercularis*)
 25(4): 825 (3 oceanic fishes feeding behavior)
 26(5): 1237 (new species of *Acantholiparis*)
- Grinyer, Ivan
 J 26(3): 629 (*Aeromonas salmonicida* phages)
- Gronlund, William Dixon
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- Groot, Cornelis
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- Gross, Willard Louis
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- Grosslein, Marvin Darrel
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- Groundfishes (Canadian Atlantic) (*see also* Catches; Fisheries; International Commission for the Northwest Atlantic Fisheries; Trawling; *also* names of commercial N Atlantic groundfishes)
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 105 (life history, etc.)
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 A 37 (realizable potential of B.C. fishery)
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- Group analysis (*see* Species, group analysis of assemblages)
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- Grouper, black (*Mycteroperca bonaci*)
 J 25(7): 1441 (attraction with pulsed low-frequency sound)
- Grouper, Nassau (*Epinephelus striatus*)
 J 25(7): 1441 (attraction with pulsed low-frequency sound)
- Grouper, yellowfin (*Mycteroperca venenosa*)
 J 25(7): 1441 (attraction with pulsed low-frequency sound)
- Groves, Alan Brown

- J 25(5): 867 (olfaction vs. vision in spawning site choice)
 26(7): 1956 (tank to simulate reservoir conditions)
- Groves, Tom David Douglas
 J 27(5): 929 (sockeye salmon body composition changes)
- Growth; Growth rate (*see also* Age; Development; Size; Weight)
 J 22(2): 281 (effect of light for Atl. oyster, mussel, quahaug)
 (2): 521 (curves and equations re feed of fishes)
 (2): 568 (rate, American plaice)
 (5): 1229 (and morphometry of 4 B.C. pygmy whitefish populations)
 (6): 1379 (photoperiods influence on green sunfish)
 23(1): 15 (total annual of yellow perch, re temperature)
 (2): 163 (mathematical method of fitting curves to data; corrections on J 26(8): 2263)
 (2): 248 (rate of lake whitefish, Georgian Bay, Ont.)
 (6): 797 (in southern Nfld. herring population)
 (6): 869, (8): 1209 (re feed of fishes)
 (7): 947 (salmon parr in Nabisipi R., Que.)
 (8): 1145 (Atl. argentine on Scotian Shelf)
 (9): 1291 (*Euphausia pacifica*)
 (10): 1495 (re pike feed consumption & maintenance)
 (10): 1621 (of redfish in captivity)
 (12): 1923 (bluegill sunfish characteristics)
 24(1): 87 (adult smallmouth bass re temperature)
 (2): 305 (*Ampelisca* amphipod sibling pairs)
 (3): 475 (juvenile largemouth bass re oxygen concentration)
 (5): 1077 (American plaice in Nfld. area)
 (6): 1209 (& hypothetical age of Nfld. bait squid)
 (7): 1589 (& toxicity of *Gonyaulax tamarensis*)
 (10): 2117 (tagged white suckers)
 (11): 2355, 2407, 2420, 2428, 2436 (mathematical model for fishes)
 (12): 2573 (& age of Atl. cod in Ogac Lake, Baffin Is.)
 (12): 2595 (effects of tagging vs. marking on young Atl. salmon)
 25(1): 157 (*Mesidotea entomon* in Chignik Lakes, Alaska)
 (3): 547 (& spore development of *Clostridium botulinum*)
 (3): 591 (mathematics of growth effect on radionuclide retention time)
 (4): 657 (& age of Ungava round whitefish; corrections on J 26(8): 2263)
 (4): 717 (re ration of European plaice)
 (6): 1303 (polemic on mathematical treatment of asymptotic)
 (7): 1511 (& age of Sask. R. delta sturgeon)
 (8): 1621 (effect of insecticide on cockle clam)
 (9): 1775 (N.S. offshore sand lance)
 (9): 1831 (F) (& age of 4 Que. lakes maskinonge)
 (10): 2011 (lake fertilization to increase trout growth rate & yield)
 (10): 2037 (algal, in a thermal stream; correction on J 26(8): 2263)
 (10): 2091 (of lake whitefish, Lac la Ronge, Sask.)
 (11): 2443 (DDT insecticide effect on brook trout)
 (12): 2589 (Fraser R. white sturgeon)
 26(1): 161 (comparison of Gompertz vs. Bertalanffy curves for expressing growth in weight of 2 fish species)
 (2): 229 (Babine L. sockeye salmon fry, from natural vs. artificial stream rearing)
 (2): 389 (temperature & salinity effects on Dungeness crab larvae)
 (3): 479 (size-selective mortality & sampling bias effects on estimates of)
 (4): 741 (rate of *Schistocephalus solidus* cestode)
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 (4): 893 (2 hemiurid trematode species in pink & chum salmon)
 (5): 1263, (6): 1625 (effect of finclipping on young Pac. salmon)
 (5): 1289 (W.L. Superior longnose suckers)
 (6): 1485 (zooplankton, Ogac L., Baffin Is.)
 (6): 1585 (differences between 2 Nfld. populations of landlocked Atl. salmon)
 (6): 1631 (young chum salmon under different feeding regimes)
 (8): 1969 (glass shrimp)
 (8): 2252 (& age of N.W.T. broad whitefish)
 (9): 2267 (review of Bertalanffy growth equation application to fishery management problems)
 (9): 2363 (rate of young sockeye salmon re temperature & ration)
 (9): 2403 (& age, backbelly eelpout in Burrard Inlet, B.C.)
 (9): 2493 (effect of lead, temperature, & oxygen fluctuations on brook trout)
 (11): 2959 (salinity-induced changes in *Monochrysis lutheri* flagellate)
 (11): 3069 (formulation of Bertalanffy growth curve)
 (11): 3073 (derivation of average lengths of different fish age-groups)
 (12): 3133 (SW Nfld. cod)
 (12): 3237 (re ration of European plaice)
 27(1): 105 (glacier lanternfish in NW Atl.)
 (1): 136 (rate: lake trout, L. Opeongo, Ont.)
 (1): 172 (mathematical treatment of inferences re parameter for exponential growth curve)
 (1): 204 (rate: graphical estimation of)
 (2): 335 (effect of glycerol pollution on marine planktonic algal phototropic)
 (2): 371 (chum & sockeye salmon fry in spawning channel vs. natural environments)
 (2): 395 (smallmouth bass in an Ont. Precambrian lake)
 (3): 413 (brook trout, Matamek L., Que.)
 (3): 606 (rate re ribonucleic acid concentration in 24 invertebrate species)
 (4): 685 (amphipod *Hyaella azteca* re sediment microflora feed)

- (5): 929 (re body composition changes of young sockeye salmon)
 (6): 1022 (L. Huron splake)
 (6): 1087 (brown & brook trout, Sydenham R., Ont.)
 (7): 1265 (smallfin lanternfish)
 (7): 1295 (photoperiod effect on Atl. salmon smolt)
 (8): 1429 (pink & chum salmon fry in revised hatchery method)
 (11): 2063 (cutthroat trout, Chef Creek, B.C., re scale analysis)
 (12): 2155 (shorthorn sculpin, Nfld. waters)
 (12): 2197 (rate, of embryos & larvae from crosses between pink, chum, & sockeye salmon)
 (12): 2343 (RNA-DNA as indicators of fish recent growth rates)
 28(1): 65 (L. Superior lake trout before lamprey invasion)
 (1): 73 (tail of big skate embryo, re respiration)
 (3): 343 (salinity effects on presmolt coho salmon)
 (4): 537 (jaw tagging effects on landlocked Atl. salmon)
 (5): 711 (2 amphipod species, Marion L., B.C., re secondary production)
 (5): 755 (harbour seal pups, Sable Is., N.S.)
 (6): 801, 809, 815 (fish growth efficiency analysis; prediction; mathematical models)
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 (7): 971 (*Sagitta elegans* arrow worm, re temperature, St. Margaret's Bay, N.S.)
 (7): 1009 (rate, re discreteness of S Gulf of St. Lawrence seasonal herring stocks)
 (8): 1071 (sodium chloride effects on *Clostridium botulinum*)
 (8): 1153 (winter flounder, Long Pond, Nfld.)
 (8): 1181 (rainbow trout, after eyed-embryo exposure to X-rays)
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 (9): 1335 (& age of weathervane scallop, Washington coast)
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 (2): 187 (re sand goby bioenergetics)
 (2): 207 (of cultured sablefish)
 (3): 303 (growth hormone in serum & pituitary gland of migratory adult sockeye salmon)
 (4): 399 (various salinities effect on, for 3 Salton Sea fishes)
 (4): 458 (Floy anchor tag effects on brook trout)
 (5): 469 (dart & disc tags effects on northern pike)
 (5): 477 (increments, L. Michigan alewives)
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 (5): 517 (re weight of yellow perch, Lac Saint-Louis, Que.)
 (5): 535 (re American eel life history, L. Ontario)
 (5): 573 (larval herring, Bay of Fundy & Gulf of Maine)
 (5): 583 (long-term effects of Sevin insecticide on fathead minnow)
 (7): 1043 (data of an unexploited walleye population)
 (8): 1107 (temperature effect on young brook trout)
 (10): 1373 (curve of Atl. salmon in NW Atl. Ocean)
 (11): 1555 (kraft mill effluent effects on young sockeye salmon)
 (12): 1691 (effect of 21 metal ions on *Daphnia magna*)
 (12): 1701 (*Mysis relicta* in an arctic vs. a temperate lake)
 (12): 1717 (embryonic, of B.C. dogfish)
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 231 (Arctic char in a small arctic lake)
 232 (razor clam, Queen Charlotte Is. & W coast Vancouver Is., B.C.)
 243 (tank-cultured sablefish)
 250 (computer programming of data)
 277 (larval herring, Bay of Fundy & Gulf of Maine)
 279 (abalone, B.C.)
 283 (& metabolism of young Pac. salmon: synchronous study in environmental-control tank)
 289 (lobster, Bonavista Bay, Nfld.)
 318 (larval herring, S Gulf of St. Lawrence)
 320 (American lobster in captivity)
 330 (body re scale, of young sockeye salmon reared under 2 light periods & in darkness)
 S 989 (determination technique for rate of, in chain-forming diatoms)
 1019 (random vs. stratified sampling for Atlantic cod)
 1052 (Nfld. area cod re sea temperatures)
 1134 (Atlantic oyster in hatcheries)
 1155 (plankton, determined by electronic particle size enumerator)
 1198 (nitrogen compounds governing *Hemiselmis virescens* phototrophic)

- 1212 (computed rate for witch flounders)
 1217 (revised rate estimates for salmon returning from Greenland to N.B.)
 1255 (NW Atl. capelin)
 1318 (cod, W Nfld. stock)
 1320 (*Gonyaulax* species; humic substances effect on)
 1334 (factors controlling salmonid, in streams)
 1403 (photosynthetic cryptomonad alga in the dark enhanced by glycerol)
 1494 (behavior of growth & mortality estimates based on age-length keys)
 1559 (*Uronema* marine ciliate in culture)
 1590: 545 (temperatures for optimum growth of various fishes: review)
 1653 (of young sockeye salmon as affected by enrichment of Great Central L., B.C.)
 1687 (postembryonic of *Orchestia* amphipods)
 1699 (coefficient, re potential N Atl. Ocean fisheries production)
 1708 (rate, of *Laminaria longicuris*, *L. digitata*, & *Agarum cribosum* seaweeds, St. Margaret's Bay, N.S.)
 A 108 (Canadian 1966 ICNAF studies on various Atl. fishes)
 138; 256; 263 (queen crab)
 179(F) (redfish)
 190 (Greenland turbot)
 193 (capelin)
 214 (hormones for delaying sexual maturation in fish farming, to allow greater growth)
 238 (acceleration, of young sockeye salmon by environmental manipulation)
 244 (of phytoplankton as affected by coastal waters humic substances)
- Grubby (*Myoxocephalus aeneus*) (little sculpin)
 J 26(6): 1689 (occurrences in Nfld. waters)
 28(7): 935 (occasional component of Passamaquoddy Bay fish communities, N.B.)
 T 261 (bibliography for Gulf of St. Lawrence)
- Gruchy, Charles George
 J 23(9): 1457 (longear sunfish)
 25(4): 813 (brown trout anal fin sexual dimorphism)
 26(6): 1467 (Canadian records of warty poacher)
 27(4): 826 (bioluminescence in lanternfishes)
 (5): 981 (*Occella* to supersede *Occa* for a genus of agonid fishes)
 (6): 1109 (new species of sea poacher)
 28(9): 1347 (record of bluespotted poacher in B.C.)
 29(11): 1631 (3 new Salmonidae subgenera)
- Grunt-fish (see Sculpin, grunt)
- Guanidine derivatives
 J 25(3): 611 (induce skin pallor in young salmonids)
- Guanine (see Purines)
- Guano (see also Migration)
- J 24(6): 1299 (of gulls causing guanotrophy of a small lake)
- Guiding (see also Migration)
 29(10): 1397 (louwer deflectors for guiding Atl. salmon smolts from power turbines)
 B 162: 18, 26, 298 (factors in migratory young & mature sockeye salmon)
- Guiguet, Charles Joseph
 S 1001 (first B.C. record of *Grampus griseus*)
- Guilbault, Raymond
 J 23(9): 1465 (Atl. cod salinity tolerance levels)
 25(5): 935 (cod skeletal muscle free amino acids re gillnet fishing)
- Guillemot, common (*Uria aalga*)
 T 272 (halogenated hydrocarbons detected in eggs)
- Guinea, Gulf of
 J 25(7): 1405 (recurrent group analysis of demersal fish species assemblages)
- Gulfs (see Alaska, Gulf of; Guinea, Gulf of; St. Lawrence, Gulf of)
- Gulland, John Alan
 S 1018 (ICNAF area conservation actions)
- Gulls (see also Birds)
 J 24(6): 1299 (black-headed gull, *Larus ridibundus*, probable cause of guanotrophy of a small lake)
 26(4): 1103 (nematodes & other helminths from Australian)
 B 162: 85 (sockeye salmon predators)
 T 272 (herring gull, *L. argentatus*, eggs polluted by halogenated hydrocarbons)
 S 1226 (fatty acids positional distribution in herring gull (*L. argentatus*) and gray gull (*L. marinus*) triglycerides)
 1633; 1696 (*L. argentatus* eggs content of halogenated hydrocarbons, Bay of Fundy)
 1659 (*L. argentatus* eggs & fat content of polychlorinated terphenyls)
- Gunderson, Donald Raymond
 J 28(3): 417 (Pac. ocean perch reproductive patterns)
 29(7): 1061 (different biological characteristics in Pac. ocean perch aggregations)
 T 326 (Pac. ocean perch stocks status off B.C., Washington, & Oregon, 1970)
- Gunnel, banded (*Pholis factata*)
 J 27(11): 2120 (first occurrence S to Nfld.; also meristic characters)
- Gunnel, crescent (*Pholis laeta*) (bracketed blenny)
 J 26(9): 2319 (parasites, B.C.)
 B 180: 347 (full description, etc., B.C.)
- Gunnel, longfin (*Pholis clemensi*)

- B 180: 346 (full description, etc., B.C.)
- Gunnel, penpoint (*Apodichthys flavidus*) (penpoint blenny)
 J 25(2): 335 (host to new parasitic chondracanthid copepod)
 (8): 1651 (plasma protein-bound inorganic iodide)
 26(9): 2319 (parasites, B.C.)
 B 180: 345 (full description, etc., B.C.)
- Gunnel, red (*Pholis schultzi*)
 J 23(2): 313 (first B.C. coastal record)
 B 180: 349 (full description, etc., B.C.)
- Gunnel, rock (*Pholis gunnellus*)
 J 28(7): 935 (occasional component of Passamaquoddy Bay fish communities, N.B.)
 T 225 (associated with Bay of Fundy scallop beds)
 261 (bibliography for Gulf of St. Lawrence)
- Gunnel, rockweed (*Xerperes fucorum*) (fucus blenny)
 B 180: 350 (full description, etc., B.C.)
- Gunnel, saddleback (*Pholis ornata*) (saddled blenny)
 J 26(9): 2319 (parasites, B.C.)
 B 180: 348 (full description, etc., B.C.)
- Gunnerød, Tod Bertel
 J 26(3): 655 (sockeye salmon egg deposition)
- Guppy (*Poecilia reticulata*) (*Lebistes reticulatus*)
 J 24(11): 2414, 2436 (mathematics of weight loss of fasting; also of growth)
 28(11): 1807; 29(7): 1035 (mobilization of mercury from sediments)
 29(10): 1413 (dieldrin insecticide accumulation in; corrections on J 30(8): 1257)
 (10): 1425 (for testing adequacy of commercial antibacterial formulations)
 S 1535 (chinook salmon gonadotropin effect on sexual behavior of hypophysectomized & gonadectomized female)
- Gupta, S. P.
 J 26(4): 965 (*Acanthosentis cameroni*, new acanthocephalan species)
- Gurnet (*Trigla gurnardus*)
 J 25(12): 2711 (muscle creatine kinase localization)
- Gushue, Wilfred George
 J 24(7): 1613 (color in grading canned salmon)
- Gutenmann, Walter H.
 J 29(9): 1283 (total cadmium content survey of New York State freshwater fishes)
- Gutting
 J 26(8): 2257 (hand shears for capelin)
 29(5): 525 (effect on DDT residues in 4 L. Michigan commercial fishes)
 B 151; 151(F)(freshwater fishes)
- Guttman, Abraham
 J 24(4): 895 (isopropyl alcohol preservation of fish protein concentrate raw material)
- Gymnaster pentasterias* (a dinoflagellate)
 S 1191 (in Great Bear L., N.W.T.)
- Gymnelis viridis* (see Doctor, fish)
- Gymnocanthus tricuspis* (see Sculpin, Atlantic staghorn)
- Gymnothorax javanicus* (see Moray)
- Gyrocotyle* (see Cestoda)

H

- Habitat (see also Behavior; Environment)
 J 28(6): 903 (of 2 blood fluke species in N Pac. rockfishes re habitat of those fishes)
 29(1): 91 (selection, re spatial interaction by young chinook salmon & steelhead trout in 2 Idaho streams)
 (3): 265 (utilization, by brook & cutthroat trout in Idaho streams)
 (3): 330 (longnose dace near L. Winnipeg island)
 (7): 1011 (home site & homing evidence for yellow-tail rockfish)
- Habits (see Behavior; Diel habits; Territorialism)
- Hadaway, William Charles
 J 25(11): 2477 (protein electrophoresis re rockfish systematics)
- Haddock (*Melanogrammus aeglefinus*)
 J 23(1): 109 (vertical migrations in NW Atl. Ocean)
 (10): 1507 (muscular fatigue re mortality in otter-trawled)
 25(4): 639 (catalysis of flesh oxidative rancidity by metal ions)
 (8): 1581 (malic enzymes in skeletal muscle sarcoplasm)
 (10): 2071 (fillet preservation by ethylenediaminetetraacetic acid salts)
 26(3): 519 (as an example of catch samples for population statistics computation)
 (5): 1273 (feed, Gulf of St. Lawrence & N.S. banks)
 (12): 3175 (new enzymic activity test for freshness of ice-stored fresh gutted)
 27(1): 31 (electrophoretic protein patterns alterations in refrigerated fillets)
 (4): 701 (transition metals ion effects on muscle extractable protein & lipids oxidation catalysis)
 (11): 2101 (activation of flesh malic enzyme by cell disruption from superchilled storage, re quality)
 28(1): 1 (dimethylamine production in dark muscle during frozen storage)
 (3): 305 (bacteria producing trimethylamine from trimethylamine oxide in chilled fillets)
 (7): 935 (regular component of Passamaquoddy

- Bay fish communities, N.B., & length frequencies)
 (8): 1125 (purines changes in iced fillets)
 (9): 1285 (methylmercury in, N.S. banks)
 29(7): 997 (feed resource division, Passamaquoddy Bay, N.B.)
 (12): 1709 (male gonad morphology re 11 other Gadidae species)
 B 154: 3, 55, 154 (as Nfld. resource)
 CHN 20 (identification of fillets by protein electrophoresis)
 35 (blast freezing rates & weight loss, for fillets & pieces)
 CJG 13: 21 (Nfld. surveys)
 14: 10 (1966 research), 44 (1966 commercial landings)
 15: 35 (new brood on Nfld. Bank), 39 (1952-67 commercial landings)
 16 (Nfld. commercial landings 1953-68 & 1968 details)
 T 68 (fillets analysis for ethylenediaminetetraacetic acid (EDTA) preservative content)
 80 (stocks, Gulf of St. Lawrence & N.S. banks)
 86 (trawl catches on Scotian Shelf & Georges Bank, 1965)
 103 (in experimental otter-trawling, 1967)
 157 (catches by Maritimes otter trawlers, 1967)
 164 (extensive length-weight data)
 170 (length & age composition of Canadian landings from Nfld. area, 1953-64)
 208 (bioassay re elemental phosphorus assimilation)
 214 (EDTA for iced fillet preservation)
 225 (associated with Bay of Fundy scallop beds)
 260 (standing crop, availability; lengths, weights, etc., from Scotian Shelf surveys, 1958-68)
 261 (bibliography for Gulf of St. Lawrence)
 288 (monthly changes in stomach contents, Passamaquoddy Bay, N.B.)
 MSP 14 (popular description (English & French))
 S 886; 887; 890; 928; 930; 940; 949; 955; 1023; 1024; 1089; 1185 (ICNAF Canadian research reports or summaries)
 928 (catch size effect on otter trawl selectivity)
 940 (abundance, age composition of landings, & mortality; off N.S.)
 1051 (sea temperature effects on fecundity)
 1053 (mass mortality from low sea temperatures in Nfld. area)
 1054 (behavior & concentrations re feed)
 1055 (successful year-classes re year-class success of other fishes)
 1057; 1058 (distribution on Grand Bank re season, depth, & temperature)
 1087 (behavior towards otter trawl, observed photographically)
 1147 (distribution off E Canada coast re season, depth, & bottom temperature)
 1158 (heterogeneity in length & age compositions of commercial landings)
 1160 (trend-interpreting difficulties in landings from E Scotian Shelf)
 1185 (fishery trends in ICNAF Subarea 3)
 1316 (size, age, & recruitment comparisons, Scotian Shelf)
 1342 (aminotransferases in eggs & sperm)
 1365 (factors influencing quality changes during frozen storage & distribution of frozen products)
 1368 (commercial aspects of reprocessing & marketing sea-frozen)
 1412 (fluoride content of frames, viscera, fillets, bone, & fish protein concentrate)
 1460 (bacterial spoilage of irradiated, re pre-irradiation quality)
 1492 (movements of tagged, off Digby, N.S.)
 1507 (standard, extreme total, & fork length conversion factors)
 1616 (lactate dehydrogenase polymorphism in skeletal muscle)
 1639 (dimethylamine & formaldehyde formation, re changes in frozen stored muscle)
 1642 (recent events in fishery, E Scotian Shelf)
 1668 (mercury contamination)
 A 43; 108; 119; 152; 153; 181; 182; 240; 241 (ICNAF Canadian research summaries)
 31 (quality assessment by Intelectron Fish Tester)
 99 (fishery yields, 1952-64)
 156 (icing & freezing effects on biological length-weight measurements)
 158 (fork length re head girth)
 159 (age re length studies)
 194 (Nfld. fishery)
 206 (ICNAF study on recruitment & stock abundance forecast for 1970-72)
 240 (comparisons of abundance indices)
 Haddock, Jerusalem (*see* Opah)
 Haedrich, Richard Lee
 J 23(8): 1161 (family Centrolophidae)
 27(2): 391 (*Halargyreus johnsonii* from New York Bight)
 Haefner, Paul Aloysius, Jr.
 J 24(7): 1553 (Penobscot R. estuary hydrography, Maine; correction on J 25(8): 1760)
 Haegele, Carl Walter
 J 29(12): 1792 (feed of hake offshore B.C.)
 CNG 88 (herring spawning along B.C. coast)
 T 210 (*G. B. Reed* groundfish cruise 70-2)
 Haem... (relating to blood constituents: *see* Hema... and Hemo...)
 Haematozoa (*see also* Protozoa)
 J 26(4): 1075 (parasitic in Atl. fishes blood)
 29(9): 1291 (*Cryptobia dahl* in lumpfish stomach)
 Haemobaphes (*see* Lernaeoceridae)
 Haemogregarina mavori
 J 26(4): 1075 (new species of sporozoan parasite in ocean pout blood)

- Haemulon album* (see Margate)
- Hagen, Donald Warren
 J 24(8): 1637 (isolating mechanisms in *Gasterosteus*)
 27(1): 147 (species problems within *Gasterosteus aculeatus*)
- Hager, Stephen Warner
 J 25(12): 2739 (NE Pac. phosphate & silicate distribution)
 S 1713 (time variations in CO₂ partial pressures in N Pac. Ocean)
- Hagfish, Atlantic (*Myxine glutinosa*) (northern hagfish)
 J 28(7): 935 (occasional component of Passamaquoddy Bay fish communities, N.B.)
 T 225 (associated with Bay of Fundy scallop beds)
 261 (bibliography for Gulf of St. Lawrence)
 S 1410 (re presence of corticosteroids in blood)
 1666 (blood plasma steroids)
- Hagfish, black (*Eptatretus deani*) (*Polistotrema deani*)
 J 24(5): 1101 (fatty acids composition)
 25(12): 2665 (associations with other Oregon coast fishes)
 26(12): 3246 (first B.C. record)
 B 180: 17 (full description, etc., B.C.)
- Hagfish, northern (see Hagfish, Atlantic)
- Hagfish, Pacific (*Eptatretus (Polistotrema) stouti*)
 J 25(12): 2665 (associations with other Oregon coast fishes)
 27(5): 966 (habitat characteristics re high oxygen affinity of hemoglobin)
 B 180: 18 (full description, etc., B.C.)
 T 22; 81; 221 (taken in FRB experimental trawling, B.C.)
- Hahn, William Eugene
 J 26(8): 2111 (salmon olfactory discrimination)
 (8): 2123 (salmon olfactory responses)
- Haight, Conrad Giles
 J 22(6): 1571 (fall fishery at Snowdrift, N.W.T.)
- Haight, Richard Edwin
 J 29(7): 1011 (home site & homing of adult yellowtail rockfish)
- Haines, Terry Alan
 J 26(1): 21 (bass response to shelter)
- Hair (see also Fur; Seal)
 J 28(6): 843 (zinc level in rat, when fed P.E.I. oysters)
 S 1220 (re Pinnipedia phylogeny)
- Hake (a SW Atlantic) (*Merluccius merluccius hubbsi*)
 J 22(3): 869 (hematological study)
- Hake, longfin (*Phycis chesteri*) (*Urophycis chesteri*) (see also Hakes)
 T 261 (bibliography for Gulf of St. Lawrence)
- Hake, Pacific (*Merluccius productus*) (see also Hakes)
 J 22(5): 1107 (liver lipid fatty acids)
 24(8): 1763 (host to new trematode species)
 26(8): 1985 (stock & yield forecast, N Pac. Ocean)
 (11): 2843 (role in Pac. sardine ecology; mathematical treatment)
 (12): 3268 (transferrin variants)
 27(2): 409 (hermaphroditism)
 28(9): 1269 (integrated echo voltage re echo sounding for)
 (9): 1275 (integrated echo voltage for estimating populations in Puget Sound, Wash.)
 29(12): 1792 (feed on offshore bank, SW Vancouver Is.)
 B 180: 225 (full description, etc., B.C.)
 CNG 73 (in Hecate Strait exploratory fishing)
 T 7; 11; 22; 30; 46; 56; 81; 144; 181; 205; 210; 221; 257; 269; 278; 290; 317; 328 (taken during FRB experimental or B.C. commercial trawling)
 140; 174; 177; 183; 190 (catches during W coast Vancouver Is. FRB herring surveys)
 174; 183; 190 (feed)
 210 (size & sex composition; feed)
 246 (bibliography)
 A 90; 103 (fishery trend along N America coast)
 91 (observed in B.C. catches of fish for mink feed)
- Hake, red (*Urophycis chuss*) (squirrel hake) (see also Hakes)
 J 24(6): 1315 (cranial osteology)
 28(9): 1285 (methylmercury in, N.S. banks)
 29(12): 1709 (male gonad morphology re 11 other Gadidae species)
 T 225 (associated with Bay of Fundy scallop beds)
 261 (bibliography for Gulf of St. Lawrence)
 A 43 (in Canadian ICNAF area)
- Hake, silver (*Merluccius bilinearis*) (see also Hakes)
 J 24(6): 1315 (cranial osteology)
 25(5): 907 (as swordfish feed in NW Atl.)
 28(1): 1 (trimethylamine production in dark muscle during frozen storage)
 (7): 935 (summer periodic component of Passamaquoddy Bay fish communities, N.B., & length frequencies)
 (9): 1285 (methylmercury in, N.S. banks)
 29(7): 997 (feed resource division, Passamaquoddy Bay, N.B.)
 (12): 1709 (male gonad morphology re 11 other Gadidae species)
 B 154: 115 (as Nfld. resource)
 CIG 16 (Nfld. landings, 1953-68, & details for 1968)
 CSG 54 (underexploited on N.S. banks)
 T 80 (stocks, Gulf of St. Lawrence & N.S. banks)
 103 (in experimental otter-trawling, 1967)
 164 (extensive length-weight data)
 260 (standing crop, availability, lengths, weights, etc., from Scotian Shelf surveys, 1958-68)
 261 (bibliography for Gulf of St. Lawrence)
 S 1024 (ICNAF Canadian research report)
 1639 (dimethylamine & formaldehyde formation, re changes in frozen stored muscle)

- A 43; 119; 153; 182; 241 (Canadian ICNAF research summaries & reports)
 99 (NW Atl. fishery yields, 1952-64)
 143(F) (French version of CSG 54 above)
 175 (same as CSG 54 above)
- Hake, spotted (*Urophycis regius*) (see also Hakes)**
 T 261 (bibliography for Gulf of St. Lawrence)
- Hake, squirrel (see Hake, red)**
- Hake, white (*Urophycis tenuis*) (see also Hakes)**
 J 28(1): 59 (DDT residues in N.B.)
 (7): 935 (summer periodic component of Passamaquoddy Bay fish communities, N.B., & length frequencies)
 (9): 1285 (methylmercury in Bay of Fundy & N.S. banks)
 29(1): 85 (muscle catheptic activity)
 (7): 997 (feed resource division, Passamaquoddy Bay, N.B.)
 B 154: 109 (as Nfld. resource)
 CJG 16 (Nfld. landings, 1953-68, & details for 1968)
 T 80 (stocks, Gulf of St. Lawrence & N.S. banks)
 103 (in experimental otter trawling, 1967)
 121 (used as example in computer program for predator study)
 164 (extensive weight-length data)
 260 (standing crop, availability, lengths, weights, etc., from Scotian Shelf surveys, 1958-68)
 261 (bibliography for Gulf of St. Lawrence)
 272 (halogenated hydrocarbon residues detected in)
 288 (monthly changes in stomach contents, Passamaquoddy Bay)
 S 1604; 1696 (chlorinated pesticide residues in, N.S. banks)
 1643 (tagging, S Gulf of St. Lawrence)
 A 119 (ICNAF 1967 Canadian research report)
- Hakes (*Merluccius* and *Urophycis*) (general, or species not stated)**
 J 25(11): 2349 (direct population estimate of Atl., by echo sounding)
 26(2): 421 (cranial osteology re other Gadidae genera)
 27(12): 2159 (*Merluccius* phylogeny & zoography re parasitization by *Brachiella* copepod)
 CJG 14; 15 (Nfld. landings, 1952-67)
 A 108 (age from otoliths)
- Halargyreus* genus and species (Moridae)**
 J 25(5): 877 (speciation, meristic characters, distribution, etc.)
- Halargyreus johnsonii* (Moridae)**
 J 25(5): 877 (full description, as caught off Nfld.)
 27(2): 391 (westward range extension in Atl. Ocean, & caligoid copepod parasite)
- Halibut, Atlantic (*Hippoglossus hippoglossus*)**
 J 24(1): 53 (sizes at maturity; spawning season; feed)
 26(9): 2517 (temperature effect on dehydrogenase enzyme activity)
 27(4): 701 (transition metals ion effects on muscle extractable protein & lipids oxidation catalysis)
 28(1): 1 (amine production in frozen stored muscle)
 (7): 935 (occasional component of Passamaquoddy fish communities, N.B.)
 (8): 1125 (purines changes in iccd filets)
 (9): 1285 (methylmercury in, N.S. banks)
 29(1): 85 (muscle catheptic activity)
 B 154: 4, 87 (as Nfld. resource)
 CJG 14; 15; 16 (Nfld. commercial landings)
 T 80 (stocks, Gulf of St. Lawrence & N.S. banks)
 164 (extensive length-weight data)
 260 (standing crop, availability, lengths, weights, etc., from Scotian Shelf surveys, 1958-68)
 261 (bibliography for Gulf of St. Lawrence)
 MSP 14 (popular description (English & French))
 S 1024 (ICNAF Canadian research report)
 1080 (fatty acids positional distribution in triglycerides)
 1211 (changes in ICNAF Subareas 3 & 4 fishery, 1954-64)
 1628 (cortisol & cortisone re corticosteroids in)
 A 108 (1966 Canadian ICNAF studies: commercial catches)
- Halibut, California (*Paralichthys californicus*)**
 J 26(5): 1371 (NW range extension)
 T 246 (bibliography)
- Halibut, Greenland (see Turbot, Greenland)**
- Halibut, Pacific (*Hippoglossus stenolepis*)**
 J 22(1): 53 (drip and rancidity inhibitors)
 (1): 203 (biochemical systematics)
 (3): 653 (flesh chalkiness)
 23(5): 673 (free drip & flesh pH re flesh chalkiness)
 (5): 701 (partial freezing for preservation)
 (6): 925 (influence of fishing method on flesh chalkiness incidence)
 26(9): 2351 (blood serum transferrin systems & hemoglobins)
 B 180: 614 (full description, etc., B.C.)
 CNG 73; 82 (in Hecate Strait exploratory fishing)
 CVG 41 (weight changes during holding in refrigerated sea water vs. ice)
 45 (weight changes stored in ice at sea, re amount of ice used)
 T 11; 22; 30; 46; 62; 81; 144; 205; 221; 269; 278; 317; 328 (taken in FRB experimental trawling)
 181; 257 (taken in B.C. trawl fishery)
 S 1080 (fatty acids positional distribution in triglycerides)
 1091 (short description; biology; B.C. fishery)
 1416 (sea freezing in prerigor, rigor, & postrigor, re products quality)
 A 30 (enzymic degradation of muscle glycogen & adenosine phosphate re quality)
 90; 103 (fishery trend along N America Pac. coast)
- Halichoerus grypus* (see Scal, gray)**

- Halifax, N.S. (vicinity)
 J 26(10): 2703 (seaweeds preliminary survey)
 T 219 (harbour sea-level variations analysis)
 284 (fuel oil pollution concentration & distribution in harbour, June-August, 1971)
- Haliotis kamtschatkana* (see Abalone)
- Haliris spinosa* (see *Verticordia spinosa*)
- Hall, James Dane
 J 29(12): 1737 (social interaction between young coho & fall chinook salmon in an Oregon river)
- Halliday, Ralph Gilmore
 J 25(2): 421 (*Parasudis truculentus* off N.S.)
 26(2): 469 (*Chlorophthalmus agassizi* off N.S.)
 (10): 2691 (mesopelagic & other fishes from Canadian Atl.)
 27(1): 105 (distribution of *Bentosema glaciale*)
 T 164 (length re weight of Canadian Atl. marine fishes)
 S 1348 (Clyde Sea area rare fishes)
 1642 (recent events in E Scotian Shelf haddock fishery)
 A 156 (icing & freezing effects on length & weight of groundfish)
 206 (1970-72 haddock recruitment & abundance)
 240 (abundance indices for Atl. cod & haddock)
- Halocline (see also Oceanography headings; also Salinity)
 J 24(11): 2207 (annual changes in, at N Pac. Ocean Weathershp Station P)
- Halosaccion* (see Rhodophyta)
- Halosphaera* (see Chlorophyta)
- Halsey, Thomas Gordon
 J 25(1): 81 (winter limnology of 3 small eutrophic lakes)
 26(7): 1763 (meromictic lakes changes; correction on J 27(8): 1499)
- Halver, John Emil
 J 26(1): 111 (coho salmon folic acid anemia)
- Hamilton, Andrew Lloyd
 J 26(6): 1667 (separating invertebrates from sediments)
 (6): 1685 (collecting stream insects)
 27(10): 1867 (sampling profundal benthos)
 28(2): 257 (zoobenthos of 15 FRB Experimental Lakes, NW Ont.)
 T 124 (Nearctic Chironomidae classification)
 S 1435 (estimating annual production)
 1536 (deformed larvae in Canadian lakes)
 1543 (Great Lakes bottom fauna components)
- Hamilton, Robert Duncan
 J 29(8): 1203 (trisodium nitrilotriacetate (Na₃NTA) biodegradation in a model aerated sewage lagoon)
 S 1444 (culture of a pelagic ciliate)
 1519 (protein, amino acids, & ammonia determination in marine sediments)
 1559 (cultural characteristics of pelagic marine hymenostome ciliate)
 A 234 (research & concern re NTA environmental acceptability)
- Hamley, John Mathew
 J 29(11): 1636 (use of DeLury method to estimate gillnet selectivity)
- Hamlin, Janice Marion
 J 27(2): 383 (metal poisoning in killifish liver)
- Hammer, Ulrich Theodore
 J 27(6): 1005 (breeding biology of lake chub)
- Hammerhead, scalloped (*Sphyrna lewini*) (hammerhead shark)
 CSG 47 (identification)
 T 193 (1961-69 Atl. tagging)
 S 956 (Canadian research in Caribbean Sea)
 1244 (a corticosteroid 1 α -hydroxylase in interrenal tissue)
 A 108; 182 (Canadian ICNAF studies: catches)
- Hammerhead, smooth (*Sphyrna zygaena*)
 CSG 47 (identification)
- Hammond, Brian Ralph
 J 23(1): 65 (metabolism in trout)
- Hamoir, G.
 J 25(12): 2711 (fish creatine kinase in electrophoretic patterns)
- Hanavan, Mitchell Grattan
 S 974 (offshore distribution of coho salmon)
- Handling (see also Apparatus)
 J 25(4): 733 (of trap-caught Atl. cod re quality of frozen)
 28(5): 625 (physiological effects of, on brook trout)
 (12): 1823 (effects on striped bass oxygen requirements)
 29(2): 202 (effects on *Tilapia* body weight after freshwater vs. seawater acclimation)
 (5): 576 (failure of bluegill to habituate to handling)
 (12): 1780 (physiological consequences of stress in young coho salmon & steelhead trout)
 B 166: 38 (& holding of live American eels)
 T 69; 162 (pumps for unloading fish from fishing vessels)
 242 (harmful effect of mishandling sockeye salmon during catching & storage at sea for processing)
 A 10(F); 64 (of sea scallops)
 41 (review of researches on fish)
 203 (fish on vessels and in processing plants)

- Hancock, Anthony John
S 1712 (preparation & characterization of a stereoisomer of 2 tetramethyl fatty acids) (8): 1395 (zooplankton feeding)
- Handsaw-fish (*see* Lancetfish, longnose)
- Hanek, George
J 27(5): 901 (*Gasterosteus aculeatus* parasites)
(7): 1317 (parasites from longnose & white suckers)
(10): 1894 (metazoan parasites of salmonids & coregonids)
- Hansen, Judith Anne
T 209 (filing bibliographic references)
- Hansen, Roy Penrose
S 1193 (diastereomers of phytanic & pristanic acids)
1323 (composition of pristanic acids)
- Hanson, Arthur John
J 24(9): 1955 (sockeye salmon mate selection)
- Hanson, David
J 27(3): 551 (ventilation and perfusion in dogfish)
- Haplosporidae (*see* Sporozoa)
- Hara, Toshiaki J.
J 27(3): 565 (olfactory discrimination in homing salmon)
29(9): 1351 (sockeye & coho salmon olfactory bulb electrical responses)
- Hardness of natural waters (*see also* Calcium derivatives; Carbonate)
J 27(5): 837 (Grand R., Ont.)
(5): 847 (Sunfish L., Ont.)
(8): 1405 (70 S Ont. lakes)
28(1): 73 (thermal springs, Mt. Rainier National Park, USA)
(2): 171 (many small NW Ont. lakes)
T 202 (re diatoms & heavy-metal pollutants, NW Miramichi R., N.B.)
S 1437; 1438; 1439 (Green L., N.Y.)
1438 (mathematical treatment of carbonate equilibria in a lake)
- Hardon, Michael
S 1428 (Atl. lobster introduction into Fatty Basin, B.C.)
- Hardy, Donna Coleen
S 1356 (testosterone production & clearance in skates)
- Hare, Gerard Murdock
S 1406 (pollution & bacterial infection)
- Harengula pensacolatae* (*see* Sardine, scaled)
- Hargrave, Barry Thomas
J 26(8): 2003 (Marion L. benthic primary production)
27(4): 685 (*Hyalella azteca* & sediment microflora)
- Harling, Wayne Robert
J 22(5): 1309 (fish measurement)
23(4): 611 (groundfish trawl net)
(12): 1967 (pygmy rockfish, *Sebastes wilsoni*)
T 22; 46; 81; 113; 144; 205; 221; 278; 290; 328 (FRB experimental groundfish cruises, B.C. coast & NE Pac. Ocean)
- Harman, Paul Douglas
J 28(1): 113 (tricaine methanesulfonate in fish muscle)
- Harmon, Terrence Joseph
T 130 (factors affecting Nfid. streams)
- Harnischia* (*see also* Chironomidae)
S 1588 (nomenclature & phylogeny; synonymy)
- Harpacticoida (*see also* Copepoda)
J 23(2): 189, (3): 415 (identification, key, etc., of free-swimming nauplii)
29(4): 363 (feed & feeding habits of *Bryocamptus*)
B 176 (synopsis of Canadian planktonic)
T 55; 313 (identification manual for B.C. marine)
- Harper, Peter
S 1268 (Que. stoneflies distribution)
- Harpoon
J 25(1): 177 (adapted for tagging surface-swimming fish)
- Harris, Alan James
J 27(8): 1493 (phosphate removal in lakes Erie & Ontario)
- Harris, Colin
J 29(4): 464 (sidestripe shrimp egg number re carapace length, Dabob Bay, Wash.)
- Harris, Earl J.
J 29(9): 1283 (total cadmium content survey of New York State freshwater fishes)
- Harrison, John Stanley Milton
J 27(11): 2091 (obituary of)
B 160 (chilling and freezing salmon and tuna in refrigerated sea water)
- Harriss, Robert C.
S 1439 (Green L., N.Y., interstitial water chemistry)
1704 (light intensity & DDT concentration interaction on *Nitzschia* diatom)
- Hart, John Lawson
J 22(2): 255 (an appreciation of A. G. Huntsman)
24(11): 2485 (lingcod fecundity)
B 155: 1 (foreword to Bulletin on Canadian Atl. coast fishes)
180 (Pac. marine fishes of Canada — illustrated with full descriptions, etc.)

- S 1024 (Atl. fisheries research; a review)
1098 (American smelt)
A 39 (American smelt)
43 (Canadian ICNAF research subareas 1-5)
99 (fisheries production from the NW Atl.)
- Hart, John Sanford
J 25(12): 2603 (goldeye respiration)
- Hart, Josephine Frances Lavinia
J 28(10): 1527 (reptant decapod Crustacea)
- Hartman, Gordon Fredrick
J 22(4): 1035 (behavior of coho salmon and trout)
23(11): 1761 (sucker life histories)
25(1): 33 (S.B.C. trout distribution)
- Hartman, Olga
J 28(10): 1407 (compendium of abyssal polychaetous annelids)
- Hartman, Wilbur Lee
J 24(10): 2069 (sockeye salmon migratory behavior)
29(6): 699 (limnology & fish ecology of world sockeye nursery lakes)
(6): 899 (exploitation, environmental changes, & new species effects on L. Erie fishery resources)
- Hartt, Allan Charles
S 1302 (N Pac. Ocean salmon)
- Harvesting (*see also* Apparatus; Catches; Culture; Fisheries; Gear)
B 169: 100 (Pac. oyster, B.C.)
177 (regulations re paralytic shellfish toxicity in E Canada)
178 (Pac. oyster cultured on rafts in B.C.)
179 (methods for B.C. clams)
T 329 (rake-harvesting of Irish moss: effects on lobsters)
- Harvey, Harold Henry
J 25(6): 1115 (kokanee & sockeye salmon sounding response)
26(3): 633 (white sucker age)
27(1): 167 (controlling of water temperature in tanks & aquaria)
28(12): 1883 (Manitoulin Is. lakes limnology, L. Huron)
29(8): 1131 (fish mortalities from increased acidification of lakes)
- Hashish, Salah Eldin
J 23(4): 601 (preservation by irradiation)
- Hasler, Arthur Davis
J 23(4): 499 (perch distribution)
(9): 1331 (functions of lateral line)
25(4): 711 (changing seasons effects on yellow perch schooling)
(11): 2515 (invertebrates calorific values)
26(8): 2173 (white bass orientation)
- 29(7): 1025 (ultrasonic tracking of adult migratory salmon, B.C. coast)
- Hassan, El Sayed Mohamed
T 219 (physical oceanography of St. Margaret's Bay, N.S.)
- Hassan, N. Y.
J 23(4): 601 (preservation by irradiation)
- Hassine (*see* Ben Hassine, Oum Kalthoum)
- Hatchery (*see also* Culture; Eggs; Management; Salmon; Trout)
J 23(2): 268 (planting effects on lake whitefish)
24(1): 77 (behavior of pink salmon fry in & after holding in a tank)
(2): 281 (returns of marked trout reared in)
(5): 1117 (vs. natural propagation of sockeye salmon re stamina)
25(3): 585 (controlled-environment incubator for small marine fish eggs)
(7): 1390 (re rehabilitation of L. Superior lake trout)
(12): 2643 (furunculosis re brook trout stock)
27(5): 955 (whirling disease of trout in W USA)
(5): 969, (8): 1389 (naturally acquired antibodies against furunculosis in trout)
(8): 1429 (evaluation of revised method tested on pink & chum salmon fry)
28(4): 587 (factors influencing activity scope & active & standard metabolism in wild vs. hatchery rainbow trout)
(8): 1185 (bacterial counts of commercial fish diets)
(9): 1350 (infectious pancreatic necrosis virus found in brook trout in 2 Ont.)
29(5): 567 (bacterial population of coho & chum salmon eggs)
(8): 1151 (survival of pink salmon to adult stage from revised hatchery method vs. natural propagation)
B 162: 387 (vs. natural propagation of sockeye salmon)
CNG 89 (improved artificial rearing of sockeye salmon by environmental control)
90 (coho & chinook salmon production by U.S.)
CSG 51 (progress in development of E Canadian oyster)
MSP 16 (considerations & recommendations for the control of fish diseases in Canada)
S 1039 (lobster)
1134 (procedure developments for Atl. oysters)
1135 (genetic variations in salmonids a possible result of managed populations)
A 57(F) (brook, brown, & rainbow trout in Atl. provinces)
- Hatchetfish (*Polyipnus asteroides*)
J 22(5): 1303 (range extension for W Atl.)
- Hatchetfish, silvery (*Argyropelecus lychnus lychnus*) (*A. olfersii*; *A. sladeni*)

- J 26(10): 2691 (recent record, La Have Bank off N.S.)
 B 180: 163 (full description, etc., B.C.)
- Hatchetfish, transparent (*Sternoptyx diaphana*)
 J 27(4): 804 (range extension N to SE Grand Bank)
- Hatching (see Culture; Development; Eggs; Hatcheries)
- Hatfield, Christie Tisdall
 J 29(1): 27 (insecticides effects on Atl. salmon parr predation by brook trout)
 (3): 315 (insecticides effects on Atl. salmon parr learning & retaining conditioned response)
- Hauser, Brian William
 J 28(2): 129 (initial survey of FRB Experimental lakes, NW Ont.)
- Haustoriidae (see Amphipoda)
- Hayashi, Koichiro
 J 23(6): 783 (effects of exercise on trout)
- Hayashida, Kaye
 J 22(2): 289 (lamprey alimentary tract)
- Hayes, Frederick Ronald
 J 24(9): 1979 (obituary of Edgar Clark Black)
 A 77 (work of FRB)
- Haynes, Evan Baxter
 J 28(9): 1335 (age & growth of giant Pac. sea scallop)
- Hayward, Michael Joseph
 J 26(12): 3217 (Atl. cod & flounder bacteria counts)
 27(11): 1983 (bacteriological evaluation of frozen flounder)
- Hazen, Lake (Ellesmere Is., N.W.T.)
 S 1013 (limnology; zooplankton; *Cyclops scutifer*)
- Head (see Cranium)
- Heading (beheading)
 J 26(8): 2252 (special hand shears for capelin)
- Headlightfish, California (*Diaphus theta*) (*Diaphus rafinesquii*; theta or whitespotted lanternfish)
 J 24(9): 1985 (host of hydroid *Hydrichthys* & a parasitic copepod)
 25(3): 457 (in N.B.C. midwater trawl catches)
 29(8): 1145 (swimbladder morphology; specific gravity)
 B 180: 189 (full description, etc., B.C.)
 T 11 (in experimental B.C. midwater trawling)
- Healey, David Andrew
 J 29(3): 323 (continuous recording salinity-temperature-pressure instrumentation at Pac. Ocean Station P)
 T 106 (Ocean Station P oceanographic data time distribution)
- 143; 145; 153; 184; 211 (Ocean Station P oceanographic observations)
- Healey, Frederick Patrick
 A 266 (bibliography on algal physiology & biochemistry)
- Healey, Michael Charles
 J 24(11): 2321 (pink salmon marine migration)
 29(2): 187 (sand goby population energetics)
 T 297 (sockeye salmon individual & group behavior)
 S 1623 (sand goby gonad development & fecundity)
- Heard, William R.
 J 24(10): 2069 (sockeye salmon migratory behavior)
- Hearing (see Sound, reactions to)
- Heart (see also Blood)
 J 23(4): 595 (in vitro cultivation of Atl. oyster cardiac tissue)
 24(8): 1701 (rainbow trout disturbance effects on)
 (8): 1775 (cardiovascular dynamics in swimming sockeye salmon adults)
 (8): 1819 (electrocardiogram for testing lampricide vs. anoxia effects on sea lamprey)
 (11): 2309 (Atl. cod electrocardiogram re audiogram)
 25(4): 695 (*Gaffkya homari* infection of lobster)
 (6): 1247 (tissues of Pac. salmon re transaminase activity)
 (12): 2643 (furunculosis bacteria in brook trout)
 26(7): 1847 (physiological consequences of brook trout aortic catheterization)
 (9): 2425 (progressive changes in carp ventral aorta re arteriosclerosis)
 (10): 2561 (weight in white whales)
 (11): 3049 (lactate dehydrogenase isozymes in dace tissue)
 27(3): 551 (rate re Pac. dogfish respiration)
 (5): 857 (mitochondria re fatty acids oxidation in trout)
 28(1): 15 (tissue esterase isozymes polymorphisms in American lobster)
 (4): 491 (cardiac responses to anoxia in sea raven)
 (5): 781 (improved vascular catheterization procedure for teleost fish aorta)
 (11): 1793 (feeding rats raw or partially hydrogenated herring oil, re fat deposition in)
 T 229 (see J 28(11): 1793 reference above)
 S 1073 (enzymes of Atl. herring muscle)
 1370 (lactate dehydrogenase subunits in Atl. cod & tomcod)
 1575 (weight re body weight & feeding rate of Cetacea)
 1717 (phospholipids & triglycerides fatty acids, Atl. harbour seal)
 1721 (lipids fatty acids, leatherback turtle)
- Heart urchins (Echinoidea) (see also Echinodermata; Sea urchins)

- J 24(6): 1377 (species status of *Brisaster latifrons* vs. *B. townsendi*)
 (6): 1385 (species off Oregon coast)
 27(12): 2273 (species composition & structure of benthic infauna communities off Washington coast)
- Heat (in addition to following headings, *see* Temperature; Thermal; Thermo...headings)
- Heat, latent (of freezing)
 CCG 7: 38 (of 10 freshwater fishes)
- Heat budget and exchange in waters (*see also* Limnology; Oceanography)
 J 22(6): 1321 (heat exchange along Canadian Maritime coast)
 27(12): 2255 (re circulation, Casco Bay, Maine)
 B 156: 19, 56 (Dixon Entrance, B.C.)
- Heat content (*see also* Caloric content)
 J 26(8): 2135 (L. Ontario, re crustacean plankton distribution)
- Heat exchange in waters (*see* Heat budget and exchange)
- Heat resistance (*see* topics listed in heading Thermal effects)
- Heaton, Evan Kell
 J 29(1): 113 (channel catfish fatty acids)
- Heaton, LeRoy H.
 J 26(3): 707 (stains for use in oyster pathology)
- Hecate Strait, B.C. (*see also* Oceanography, Pacific east coast; Queen Charlotte Islands region; Surveys)
 B 156 (physical oceanography, re Dixon Entrance)
 CNG 73; 82 (exploratory fishing for groundfish)
 76 (shrimp exploration)
 T 62 (groundfish survey)
 108 (rock sole population studies)
 A 2 (B.C. Pac. cod trawl fishery)
 74 (summary of CNG 82 above)
- Hedriodiscus truquii* (*see* Diptera)
- Heffernan, William Paul
 J 27(9): 1569 (quahaug bacterial elimination)
 (9): 1579 (clam bacterial elimination)
- Heinicke, Elizabeth Anne
 J 22(6): 1455 (thermal acclimation of goldfish)
 S 983 (water balance in goldfish)
- Heinle, Donald Roger
 J 26(1): 150 (calanoid copepods culture)
- Heist, Carroll Eugene
 J 27(5): 969 (agglutinating antibodies against *Aeromonas salmonicida* in hatchery trout)
- Helicolenus dactylopterus* (*see* Rosefish, blackbelly)
- Helicosalpa virgula* (Salpidae)
 J 28(12): 1831 (first NE Pac. Ocean record)
- Helminths (*see also* classifications of)
 J 27(5): 901 (15 genera (19 species) parasitic to Nfld. threespine sticklebacks; also new host & range records)
 (7): 1317 (7 genera in longnose & white suckers)
 (10): 1894 (parasitic on Nfld. salmonids & coregonids)
 C/JG 17 (illustrated keys to Nfld. salmonid parasites)
- Hem... (in addition to following headings *see* Haem...)
- "Hemagglutinogens"
 J 28(8): 1208 (comparative heteroagglutination & agglutination inhibition of mummichog & striped killifish erythrocytes)
- Hematin; Hematology; Hematocrit; Hemolymph (*see also* Blood; Hemoglobin)
 J 26(9): 2299 (hematin as catalyst of marine flesh lipids oxidation, re quality of fishery products)
- Hemichordata
 T 60 (in Strait of Georgia benthos biomass)
- Hemigrapsus oregonensis* (*see* Crab, green shore; Crabs, shore)
- Hemilepidotus hemilepidotus* (*see* Irish lord, red)
spinosus (*see* Irish lord, brown)
- Heming Lake, Man.
 J 22(1): 219 (white sucker fin anomalies)
 (6): 1357 (pike feed)
 23(11): 1807 (pugheadedness in northern pike & yellow perch)
 25(2): 255 (staining small fish for populations estimation)
 (11): 2523 (*Triaenophorus nodulosus* in burbot)
 26(4): 821 (*Triaenophorus nodulosus* in yellow perch)
 (12): 3266 (diel activity periods of northern pike, whitefish, walleye, & white sucker)
 CCG 7: 9 (whitefish improvement through pike & *Triaenophorus* control)
 S 1450 (incidence of *Triaenophorus* infection in pike, whitefish, & ciscoes)
 1631 (seasonal emergence dates & sex ratios of various caddisflies & mayflies)
- Hemioniscus balani* (parasitic isopod)
 J 25(6): 1161 (E coast N America distribution)
- Hemiptera (water bugs) (*see also* Insects; Insecticides; Invertebrates)
 J 26(12): 3101 (Crecy L., N.B.)
 27(1): 125 (re lake trout feed, L. Opeongo, Ont.)
- Hemiselmis virescens* (*see* Cryptophyceae)
- Hemithiris psittacea* (*see also* Brachiopoda)

- T 268 (in B.C. faunistic surveys since 1960)
- Hemiripiterus bolini* (see Sculpin, bigmouth)
- Hemiuridae (see also Trematoda)
 J 26(9): 2319 (list of species found in B.C. marine fishes)
- Hemoglobin; Hemolymph (see also Blood; Respiration)
 J 22(1): 203, 215 (electropherograms re fish biochemical systematics)
 (3): 869 (hematology of an Argentine hake)
 23(1): 45 (mountain whitefish hematology)
 (6): 783 (changes in exercised rainbow trout)
 (6): 929, (10): 1599, 1663 (electropherograms of various fishes multiple types)
 (8): 1109 (responses to sublethal thermal shock in goldfish)
 (9): 1385 (iron content pro-oxidant effect on frozen cod fillets)
 (10): 1575, 1581 (hemolysis effect on oxygen uptake in *Salmo*)
 26(9): 2299 (as catalyst of marine flesh lipids oxidation)
 (9): 2351 (Pac. halibut, re transferrin phenotypes of serum proteins)
 27(5): 966 (high oxygen affinity of, in Pac. hagfish re environment)
 (6): 1069 (gas exchange in rainbow trout with varying blood oxygen capacity)
 (7): 1325 (with 3 & 4 different polypeptides, in Pac. salmonids)
 (12): 2167 (electrophoresis re *Tilapia* hybridization)
 (12): 2185 (cadmium chloride effects on mummichog)
 (12): 2233 (electrophoresis re *Sebastes* speciation)
 28(4): 606 (content of juvenile coho salmon)
 (10): 1621 (electropherograms re northern rockfish taxonomy)
 (11): 1745 (of dwarf & large white suckers & long-nose sucker)
- B 150 (role in "greening" of albacore & tuna flesh during precooking before canning)
- S 1451 (protein variation re *Coregonus clupeaformis* whitefish complex)
 1453 (substrate re urea effect on Atl. cod muscle cathepsin activity determination)
 1563 (subunit allelic polypeptides & molecular basis of rainbow & coastal cutthroat trouts multiple hemoglobins)
 1571 (polypeptides re molecular basis for multiplicity of Pac. salmon & rainbow trout hemoglobins)
- Hemolymph (see Blood; Hemoglobin)
- Hemorrhage (see also Blood)
 J 29(2): 149 (channel catfish hemorrhagic virus disease)
 (7): 1089 (subcutaneous, re captive sablefish mortality)
- Hemosiderin bodies (see also Blood)
- J 28(1): 47 (as storage sources of iron in fish spleen, liver, & kidney tissues)
- Henderson, Eugene Blair
 J 22(6): 1567 (Atl. salmon development)
 27(7): 1295 (photoperiod effect on salmon smolting & growth)
 T 147 (survival & growth of Atl. salmon parr in relation to salinity)
 148 (survival & growth of Atl. salmon fry in relation to salinity & diet)
 149 (Atl. salmon smolts growth in relation to salinity, temperature, and diet)
- Henderson, Herman Francis
 J 26(8): 2173 (white bass orientation)
- Henderson, Nancy Elizabeth
 J 24(2): 447 (urinary and genital systems of trout)
 26(2): 325 (S Alta. fishes)
- Hendricks, Jerry Dean
 J 29(12): 1776 (2 new NW Atl. fish hosts of *Ichthyophonus hoferi* parasitic fungus; corrections on J 30(8): 1257)
- Heney Lake, Que.
 J 25(9): 1813 (F) (sympatric populations of giant & dwarf smelts)
- Hennekey, R. J.
 J 29(9): 1367 (cadmium uptake by marine organisms)
- Hennemuth, Richard Clark
 S 940 (data on commercial haddock landings from off southern N.S.)
- Hennick, Daniel Peter
 J 27(11): 2112 (reproductive cycle, size at maturity, & sexual composition of weathervane scallops)
 28(4): 608 (hermaphroditic specimen of weathervane scallop)
- Hepatopancreas (see also Pancreas)
 J 24(11): 2339 (of lobster re muscle weight, serum proteins, & hemocytes)
 25(11): 2461 (accumulation of natural ⁶⁵Zn in crustacean)
 27(6): 1051 (deposition of ⁶⁵Zn in euphausiids & shrimps)
 28(5): 793 (selective accumulation of yellow phosphorus from sea water by lobsters)
 (8): 1191 (fatty & amino acids of Dungeness crab)
 29(10): 1491 (role in mercury toxicity to fiddler crab)
 S 1224 (conversion of androstenedione to testosterone by lobster)
 1226 (positional distribution of fatty acids in triglycerides)
 1706 (of lobster affected through exposure to yellow elemental phosphorus)
- Hepatoxylon trichiuri* (see Cestoda)

- Herbert Lake** (*see* Banff National Park, Alta.)
- Herbicides**
 J 26(5): 1378 (2,4-D water pollution detection by spinner culture of mouse fibroblast cells) CDG 1 (2,4-D ester for eelgrass control & effect on oysters, etc.)
 T 325 (possible effect on freshwater life)
 S 1210 (same as CDG 1 above)
 1536 (possible cause of deformed chironomids larvae in L. Erie & Okanagan R. lakes, B.C.)
 1656 (negative tests for certain impurities in, re accumulation in aquatic animals)
 A 109; 109(F) (same as CDG 1 above)
- Heredity** (*see also* Evolution; Genes)
 J 26(9): 2351 (re Pac. halibut blood serum transferrins)
 (10): 2633 (re sablefish muscle proteins polymorphism & population parameters)
 28(7): 1005 (re phenotypes of malate dehydrogenase isoenzymes in skeletal muscle of walleye from different locations)
 A 259 (& environmental factors affecting certain salmonid populations)
- Hergenrader, Gary Lee**
 J 23(4): 499 (perch distribution)
 25(4): 711 (changing seasons effect on yellow perch schooling)
- Heritage, George Dwight**
 CNG 76 (Hecate Strait and Queen Charlotte Sound shrimp)
 T 283 (environmental-control tank for synchronous growth & metabolism study of young salmon)
- Herlinveaux, Richard Henry**
 T 70 (oceanographic features of central B.C. coast waters)
 99 (Saanich Inlet, B.C., water movement)
 142 (oceanographic features of inside passage between Vancouver Is. & B.C. mainland)
 159 ("Icepack 8/68" oceanographic & biological observations)
 273 (oceanography & biology at Bowie Seamount off Queen Charlotte Is., B.C.)
 300 (oceanographic features of Saanich Inlet)
- Herman, Roger Lee**
 J 29(2): 149 (channel catfish virus disease histopathology)
- Herman, Sydney Samuel**
 J 29(1): 111 (distinguishing cunner & tautog eggs by immunodiffusion)
- Hermaphroditism**
 J 26(7): 1965 (sand dollar)
 (9): 2521 (lake whitefish)
 27(2): 409 (in Pac. hake)
 28(4): 608 (of an Alaskan weathervane scallop)
- Herold, Richard Carl**
 J 26(7): 1965 (*Echinarachnius parma* sand dollar hermaphroditism)
- Herpobdella** (*see* Leeches)
- Herring, Atlantic (biology)** (*Clupea harengus harengus*) (*Clupea harengus*; sardine) (*see also* next heading)
 J 23(6): 797 (characteristics of S Nfld. population)
 25(2): 431 (interrenal tissue biosynthesis of sterones)
 (5): 906 (as swordfish feed in NW Atl.)
 (6): 1169 (tidewater larvae sampling with buoyed & anchored nets)
 (11): 2503 (otolith growth abnormality)
 26(3): 597(F) (retinal structure re activity, etc.)
 (7): 1889 (similarity of otolith nuclei in spring- and autumn-spawning, Gulf of St. Lawrence)
 (8): 2077 (swimbladder, etc., re buoyancy adjustment)
 27(1): 21 (yellow phosphorus toxicity to)
 (10): 1875 (seasonal variations in condition of larvae, Maine coast)
 28(4): 553 (meristic differences between SW Nfld. spring & autumn spawning)
 (7): 935 (regular component of Passamaquoddy Bay fish communities, N.B., & length frequencies)
 (7): 1009 (discreteness of Gulf of St. Lawrence populations in spring & autumn fisheries)
 (9): 1285 (methylmercury in, N.S. banks)
 (11): 1727 (movements in & out of Passamaquoddy Bay intertidal zone)
 29(1): 85 (muscle catheptic activity)
 (5): 507 (larvae distribution, growth, & condition factor, S coast of N.S.)
 (5): 573 (larval growth, Bay of Fundy & Gulf of Maine)
 (8): 1113 (otoliths identify S Gulf of St. Lawrence stocks)
 B 154: 90 (as Nfld. resource)
 CAR 1 (details of stopping mortalities caused by phosphorus pollution in certain Nfld. bays)
 CJG 13: 37 (Nfld. investigations; length composition)
 14: 18 (Nfld. spawnings in recent years)
 15; 16 (migrations, distribution, spawning, & landings of Nfld.)
 18: 1 (recent developments in Nfld. fishery); 20 (tagging results in SW Nfld. coastal waters); 25 (investigations in NE Nfld. & Labrador)
 CSG 55 (catches & stocks, NW Atl.)
 T 5 (studies of fatness condition)
 49 (age determination from scales & otoliths)
 57 (length & age distribution, Bay of Fundy)
 58 (landings in Nfld. re stock distribution & abundance)
 79 (fat contents, & content re length & season)
 80 (stocks, Gulf of St. Lawrence & N.S. banks)
 88 (spawning, larval distribution, survival, & growth re Bay of Fundy hydrography)
 94-97 (Nfld. sampling data & summary tabulations, 1964-65 to 1967-68)

- 137 (Nfld. 1964-65 & 1967-68 scining catches & catch per unit effort)
- 138 (otolith nuclei variations re spring & autumn spawning, Nfld.)
- 139 (catch statistics, length & age composition, in Gulf of St. Lawrence)
- 164 (extensive length-weight data)
- 166 (computer programming of Nfld. fishery sampling, catch, & fishing effort data)
- 208; 255 (effects of elemental phosphorus toxicity)
- 217 (petroleum oil characterization re source of pollution toxicity to)
- 252 (larvae ecology & distribution along southern N.S. coast)
- 261 (bibliography for Gulf of St. Lawrence)
- 272 (halogenated hydrocarbon residues detected in)
- 277 (larvae distribution, abundance, & growth, Bay of Fundy & Gulf of Maine)
- 282 (larval biomass, Bedford Basin, N.S.)
- 291 (survey, N.S. banks; catches, biology, moisture, & fat contents)
- 315 (larval distribution & size, S Gulf of St. Lawrence & SW Nfld. waters)
- 318 (larval distribution, relative abundance, & growth, S Gulf of St. Lawrence)
- 333 (larval biomass, St. Margaret's Bay, N.S.)
- MSP 14. (popular description (English & French))
- S 887; 955; 1023; 1024 (ICNAF Canadian research reports)
- 950; 1149 (sea temperatures re Magdalen Is. fishery)
- 1073 (lactate dehydrogenase & aspartate aminotransferase)
- 1103 (brief description, life history, etc.)
- 1150 (effect of light on movements)
- 1283 (Nfld. fishery, re its resource)
- 1342 (aminotransferases in eggs & sperm)
- 1409 (gill blood pathways)
- 1464 (critique on otolith use for aging Gulf of St. Lawrence)
- 1495 (Bay of Fundy populations of immature)
- 1584 (mortality from pollution of N Sydney harbour, N.S., by coke-oven intermediate oil)
- 1640 (some biological features of SW Nfld. & northern N.S. shelf stocks)
- 1641 (certain biological characteristics of, Magdalen Is. vs. SW Nfld.)
- 1644 (variation in larval nematodes incidence in, Canadian waters)
- 1645 (retention in Bay of Fundy of larvae spawned off southwest N.S. coast)
- 1668 (mercury contamination)
- 1696 (chlorinated pesticide residues in, Bay of Fundy & Gulf of Maine)
- A 8(F) (description; life history; Canadian fishery; age determination)
- 43; 108; 119; 152; 153; 181; 182; 241; 246 (ICNAF Canadian fisheries & research summaries; spawning, age, tagging, condition)
- 92 (abnormal water temperatures effect on fishery)
- 94 (biology; fishery, 1940-65 landings)
- 94A (Canadian research on Bay of Fundy & Gulf of Maine populations; review)
- 95 (recent investigations in Nfld. waters)
- 96 (resources research needs)
- 99 (fishery yields, 1952-64)
- 132 (FRB research on)
- 140 (Nfld. catch distribution & landings, 1967-68)
- 163 (same as CSG 55 above)
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- 171 (high priority for Canadian research on)
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- 207; 219 (recent commercial & research events in Canadian fishery)
- 208 (Bay of Fundy vertebral numbers; origin of N.B. "sardine" herring)
- 219 (*Anasakis* roundworm infection incidence variation)
- Herring, Atlantic (products) (*see also* preceding heading)
- J 23(7): 991 (fatty acid composition of oils)
- (10): 1587 (lipid oxidation test)
- 24(12): 2563 (composition of low-iodine-value fatty acids)
- 25(4): 639 (catalysis of flesh oxidative rancidity by metal ions)
- 26(6): 1577 (free fatty acids origin in commercial oils)
- (7): 1919, 1923 (lipids extraction for preparation of protein concentrate)
- 27(3): 591 (estimating bone material concentrate in protein content)
- (4): 701 (transition metals ion effects on muscle extractable protein & lipids oxidation catalysis)
- (10): 1669 (biochemistry re seasonal trends in iodine values & free fatty levels of commercial oils)
- 28(11): 1793 (rat tests to see if feeding raw or partially hydrogenated oil causes heart or liver fat deposition)
- 29(4): 349 (pesticide residues in commercial oils)
- B 154: 90 (as Nfld. resource)
- CVG 40 (antioxidants for spontaneous heating control in bulk meal)
- T 114 (chemical & nutritive characteristics of meals)
- 187 (seasonal trends in iodine values & free fatty acids of commercial oils)
- 229 (see J 28(11): 1793 above)
- 272 (halogenated hydrocarbon residues detected in)
- S 929 (protein concentrate processing & characteristics)
- 972; 1189; 1192; 1193; 1226; 1350; 1591; 1638 (oil fatty acids composition, structure, & distribution)
- 1027 (formalin preservation vs. cold storage effect on length & weight)
- 1193 (oil phytanic & pristanic acid diastereomers)
- 1350 (oil & lipids extraction during fish protein concentrate processing; also lipids composition)
- 1377 (composition & nutritional value of meals)
- 1405 (lipoxidase reaction with polyenoic fatty acids of oil)

- 1412 (fluoride content of frames, viscera, bones, fillets, & fish protein concentrate)
- 1591 (pristane & other hydrocarbons in Canadian commercial oil)
- 1604; 1696 (chlorinated pesticide residues in)
- 1668 (mercury content of meal)
- A 97 (nutritive value of meal)
- 98; 124; 125; 126 (uses for fish protein concentrate and low-fat meal)
- 177 (oil production increase)
- Herring, Atlantic thread (*Opisthonema oglinum*)
J 29(11): 1605 (voltage & pulse rate for inducing electro-taxis of)
- Herring, blueback (*Alosa aestivalis*)
J 28(7): 1057 (effect of warm water of nuclear power plant discharge canal)
- Herring, lake (see Cisco)
- Herring, Pacific (biology) (*Clupea harengus pallasii*) (*C. pallasii*) (see also next heading)
- J 22(1): 203 (biochemical systematics)
- 23(1): 153 (underwater observation in off-bottom trawl)
- 24(8): 1833 (botulinum spore germination in tissue extracts)
- (11): 2455 (larval occurrence in Strait of Georgia)
- 25(3): 589 (schools behavior to midwater trawl)
- 26(8): 2077 (swimbladder, etc., re buoyancy adjustment)
- (8): 2219 (larvae as feed of juvenile Pac. salmon)
- (9): 2319 (parasites, B.C.)
- 27(7): 1251 (biomass, Strait of Georgia)
- 28(9): 1269 (integrated echo voltage re echo sounding for)
- (10): 1545 (combined temperature & salinity effects on eggs & early development)
- (10): 1663 (offshore distribution, on basis of fur seal stomach contents records)
- (12): 1921 (predation on young chinook salmon in B.C. estuary)
- 29(8): 1119 (intertidal exposure effect on survival & development of spawn)
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- B 180: 96 (full description, etc., B.C.)
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- 1094 (description; life history; B.C. fishery; management; feed)
- 1606 (water depth, temperature, salinity, & egg mass thickness re hatching success)
- 1668 (mercury contamination, B.C.)
- A 22; 36 (history, development, biology, location, distribution, management, technology, etc., of B.C. fishery)
- 59 (1966 B.C. spawning lowest on record)
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- J 23(3): 395 (protein nutrient quality of fish meal)
- (5): 681 (pilot plant fractionation of methyl esters from oil)
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- Herring, round (*Etremus teres*)
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- Herrington, Harry Biggar
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- Hesperophylax oreades* (see Trichoptera)
- Heston, E. K.
J 29(1): 113 (channel catfish fatty acids)
- Hetercope septentrionalis* (see Calanoida)
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- Hewitt, Gordon Christopher
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- (8): 1143 (locomotion in Caligidae)
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- Hexagrammos decagrammus* (see Greenling, rock)
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- Hexamita inflata* (see Flagellata)
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- Hexosamine (see also Sugars)
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- Hexose (see Sugars)
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 J 28(8): 1173 (levels in salmon, trout, & bovine blood sera)
- Heyamoto, Hiromu
 J 22(5): 1151 (Pac. Alepocephalidae)
- Heyl, Henry Livingston
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- Hickman, Cleveland Pendleton, Jr.
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- Higgs, D. A.
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- High, William Louis
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- Hiltz, Doris (Isabel) Fraser (see also Fraser, Doris Isabel)
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- Hiltz, Raymond St. Clair
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- Hines, James Alexander
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- Hingley, Helen Joyce
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- Hinton, David Earl
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- Hiodon alosoides* (see Goldfish)
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- Hipkins, Frederick William
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- Hippoglossoides elassodon* (see Sole, flathead)
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- (3): 695 (immature sea lamprey gonads)
- (3): 761 (lake trout corneal lesions)
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- 23 (4): 595 (Atl. oyster cardiac tissue)
- (6): 909 (Atl. cod eye, re exophthalmia)
- (12): 1841 (epithelial border of Atl. cod ileum, pyloric caeca, & rectum)
- (12): 1913 (histopathology of inflammation induced in Pac. oyster)
- 24 (1): 67 (sexually maturing sockeye salmon thyroid, kidney, & pancreas)
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- (3): 679 (tumor-like growth on freshwater mussel foot)
- (4): 843 (chinook salmon gills attacked by fungus)
- (4): 867 (various tissues of salmon having "gas bubble" disease)
- (8): 1791 (sockeye salmon pituitary gland)
- (9): 1985 (hydroid parasitic on blue lanternfish)
- (9): 2003 (new Bryozoa species *Figularia quaylei*)
- (9): 2007 (snout tumor on snake prickleback)
- (11): 2339 (lobster hepatopancreatic tissue)
- (12): 2549 (Atl. cod white striated myotomal muscle)
- 25 (2): 373 (bluegill retina)
- (3): 541 (*Polinices* podium re expansion)
- (4): 695 (lobster heart & gills infected with *Gaffkya homari*)
- (5): 863 (cornea ultrastructure in 3 trout species)
- (6): 1115 (kokanee pneumatic duct re swimbladder function)
- (7): 1339 (scallop muscle ultrastructure)
- (7): 1465 (salmon & trout pituitary & interrenal tissue re hormones)
- (8): 1739 (spinal ganglia in teleosts)
- (9): 2001 (F) (walleye & sauger retina)
- (11): 2461 (distribution of natural ⁶⁵Zn in crustacean tissues)
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- 26 (3): 597(F) (retinal structure of 20 Atl. fishes)
- (3): 633 (white sucker scales & fin rays, re aging)
- (3): 671 (chum salmon scales, re aging)
- (4): 805 (helminths from Nfld. fishes)
- (4): 909 (acanthocephalan parasite in Atl. salmon)
- (4): 941 (invasion route of dracunculoid nematode to sockeye swimbladder)
- (4): 947 (3 *Diphyllobothrium* cestode (1 new species))
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- (4): 975 (*Bothrimonas* cestode)
- (5): 1199 (chum & sockeye salmon pectoral fin rays re aging)
- (6): 1451 (clam drill accessory boring organ)
- (6): 1694 (Atl. salmon muscle damage from nylon gillnet)
- (8): 2193 (rainbow trout subjected to organophosphate insecticide)
- (8): 2215 (microsporidial infection cysts in English sole)
- (9): 2425 (carp ventral aorta)
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- (10): 2659 (of oligochaete gut tissue re uptake of glycine)
- (10): 2669 (ciliate & turbellarian parasites in intestine of sea urchin)
- (11): 2785 (of winter flounder tissues re toxic effects of copper sulfate)
- (11): 2975 (interrenal tissue of normal vs. gonadectomized sockeye salmon)
- (12): 3242 (lesions in ovaries of aged Atl. cod)
- 27 (1): 191 (inflammatory lesion in American shad)
- (2): 328 (embedded encapsulated tag in pink salmon flesh)
- (4): 749 (threespine stickleback ovarian maturation re spectral photoperiod mechanism)
- (6): 1051 (distribution of ingested ⁶⁵Zn in euphausiid and shrimp tissues)
- (8): 1385 (salmonid tissues infected by necrosis-causing virus)
- (11): 2037 (shorthorn sculpin ovaries)
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- 28 (1): 47 (blue gourami spleen hemosiderin bodies)
- (1): 112 (cutthroat trout organs re leukemia condition)
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- (4): 505 (comparisons of adrenal-cortical cells of wild vs. hatchery landlocked Atl. salmon)
- (6): 903 (blood fluke parasitism in copper rockfish)
- (7): 947 (gill lamella of teleosts re gill blood pressure)
- (8): 1198 (supernumerary copulatory organs in *Dugesia tigrina* turbellarian)
- (9): 1241 (Pac. flounders skin tumors)
- (10): 1677 (sea anemone nematocyst types)
- (11): 1793 (heart & liver of rat fed raw or hydrogenated Atl. herring oil)
- 29 (1): 13 (gonadotropin-treated pink salmon stripped testes)
- (2): 149 (of channel catfish hemorrhagic virus disease)
- (5): 531 (enzyme histochemistry of largemouth bass liver)
- (7): 1015 (attachment organ (bulla) structure of 24 Lernaepodidae species)

- (10): 1381 (gammarid amphipod infected by *Bothriomanus cestode*)
- (11): 1525 (re respiratory adaptations of prenatal pile perch and striped seaperch)
- (12): 1776 (*Ichthyophonus hoferi* fungal cysts in kidney of 3 NW Atl. fishes; corrections on J 30(8): 1257)
- B 179: 5 (butter clam gonads)
- S 1002 (Pac. flatfishes epithelial tumors)
- 1140 (rainbow trout bacterial skin lesions)
- 1181 (*Ceriantharia* nerve cells)
- 1187 (rainbow trout tissues re hypophysectomy)
- 1292 (salmon gonadotropin-injected ovary & testes of hypophysectomized goldfish)
- 1340 (dexamethasone-injected adult sockeye salmon adrenocortical & interrenal tissues)
- 1376 (spermatogenesis in hypophysectomized lizard)
- 1401 (rainbow trout brain)
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- 1477 (Ledig cell homolog in Atl. salmon testis)
- 1478 (Atl. salmon interrenal tissue, re steroidogenesis)
- 1536 (deformed chironomids larvae)
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- 1562 (Atl. salmon mid-testis re androgens)
- 1574 (oral remnants of nasopalatine canals in fin whales)
- 1593 (hormone-reactivated catfish testes)
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- 1706 (changes in lobsters exposed to yellow phosphorus)
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- J 25(4): 667 (Great Lakes species succession & fishery exploitation)
- (12): 2527; 27(4): 811 (worldwide introduction of brown trout)
- 26(5): 1205 (American plaice fishery, Magdalen Shallows, Gulf of St. Lawrence)
- (7): 1699; 28(3): 452 (sources & dates of brook trout introduction throughout world)
- 28(5): 663; 29(12): 1788 (worldwide introductions of rainbow trout)
- 29(6): 683, 765, 819, & certain other papers in this issue (review of fisheries management & exploitation, also introduction of species, in N American & European oligotrophic lakes, with particular reference to salmonids)
- B 143 (fisheries development on each of Great Lakes)
- 149: 89 (Great Lakes fisheries regulations and Commission)
- 153: 4 (Canadian & USA petrale sole fishery)
- 154: 12 (of Nfld. marine fisheries research)
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- 157: 1, 104 (Canadian lobster fishery, re economics)
- 158: 7 (of Mackenzie District, N.W.T., fisheries)
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- 173: 3 (publications on NW Canada & Alaska freshwater fishes); 7 (geology and glaciology of NW Canada & Alaska)
- 175 (Maritime Provinces oyster industry)
- 177 (paralytic shellfish poisoning, Canadian Atl. coast)
- 179: 19 (B.C. clam fishery)
- CNG 75 (shellfish poisoning in B.C.)
- S 1490 (lamprey invasion of Great Lakes & combating it)
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- 122 (B.C. whaling)
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- 138 (queen crab fishery, Canadian Atl. coast)
- Hitz, Charles Robert
- J 26(11): 3094 (black rockfish in central N Pac.)
- 28(9): 1335 (age & growth of giant Pac. sea scallop)
- Hledin, R. V.
- J 28(8): 1173 (Pac. salmon glycoprotein constituents)
- Hoar, William Stewart
- J 25(6): 1115 (kokanee & sockeye salmon sounding response)
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- J 23(7): 1083 (deck sampling of catches)
- 27(11): 2097 (juvenile & spawning Atl. mackerel in Nfld.)
- 28(4): 553 (Atl. herring meristic characters)
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- 1057 (haddock distribution on Grand Bank)
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- 1069 (American shad in Nfld. waters)
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- Hodgins, Harold Osborne
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- Hodgkiss, Willie
 J 28(10): 1511 (identification of bacterial flora in salmon streams)
- Hoffert, Jack Russell
 J 22(3): 761 (keratitis in lake trout)
- Hoffman, Alfred
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- Hoffman, Ethelwyn Gourley
 J 25(3): 439 (laboratory-reared *Paralithodes platypus* larvae)
- Hogan, James William
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 (7): 1517 (fish brain esterases)
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- Hogan, Roger Lloyd
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- Hogenkamp, Henricus Petrus Cornelis
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- Hogman, Walter J.
 J 25(10): 2111 (coregonid annulus formation)
- Hogsucker, northern (*Hypentelium nigricans*)
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- Hokanson, Kenneth E. F.
 J 29(8): 1107 (temperature effects on young brook trout growth & survival)
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- Holland, Geoffrey Leonard
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- Holland, Gilbert Arthur
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- Hollister, Henry John
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- Holmberg, Deanne Marie
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- Holmes, John Carl
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- Holmes, W. N.
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- Holmgren, S. K.
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- Holobomolochus* (see also Cyclopoida)
 J 28(10): 1563 (description of *H. venustus* & *H. occultus*, n. spp.; first B.C. record for *H. spinulus*)
- Holocentrus rufus* (see Squirrelfish, longspine)
- Holoconotus rhodoterus* (see Surfperch, redbtail)
- Holopedium* (see Cladocera)
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- Homarine (*N*-methyl picolinic acid) (see Betaines)

- Homing** (*see also* Odor; Marking; Migration; Spawning; Tagging)
- J 24(10): 2011 (re olfaction & vision in cutthroat trout)
- 25(5): 867 (re olfaction & vision in homing chinook salmon)
- (8): 1591 (selectivity for different stream waters by American eel)
- 26(5): 1243 (blinded & anosmic vs. normal cutthroat trout, Yellowstone L., Wyoming)
- (8): 2111, 2123 (olfactory response of chinook & coho salmon to natural waters)
- (8): 2173 (open-water orientation of white bass, as determined by ultrasonic tracking methods)
- 27(3): 565 (olfactory & other factors re Pac. salmon)
- (4): 715 (cutthroat trout: tracking by ultrasonic tags)
- 28(3): 383 (behavior of tidepool sculpin)
- 29(7): 1011 (home site & homing evidence for yellow-tail rockfish)
- (7): 1025 (directionality of adult sockeye salmon tracked ultrasonically)
- B 162: 18 (theories, re sockeye salmon)
- S 1062; 1063; 1064 (B.C. salmon: sockeye; pink; chum)
- 1675 (review of field studies on fish homing)
- A 259: 101 (heredity & environment re Pac. salmonids)
- 1425 (*trans*-6-hexadecenoic acid in Atl. leatherback turtle)
- 1481 (fatty acids from *Euphoria longana*)
- 1528 (geological fate of chlorophyll)
- 1564 (*trans*-6-hexadecenoic acid and alcohol in sea anemone lipids)
- 1572 (distribution of fatty acids in lipids of 3 species of molluscs)
- 1625 (depot fat fatty acids of freshwater vs. marine turtles)
- 1638 (monoethylenic fatty acids of partially hydrogenated Atl. herring oil)
- 1700 (barracudina lipid wax esters as potential replacement for sperm whale oil)
- 1712 (preparation & characterization of a stereoisomer of 2 tetramethyl fatty acids)
- 1714 (isomer subfractionation effects in study of monoethylene fatty acids of hydrogenated oils)
- 1717 (harbour seal fatty acids in lung & heart phospholipids & triglycerides)
- 1721 (fatty acids distribution in Atl. leatherback turtle tissues & organs)
- 1722; 1723 (diagenesis & maturation of phytol from an ancient sediment)
- Hope, Eric Lorne Victor**
- J 24(5): 1155 (digitized bathythermograph aperture cards)
- Hopkins, Charles Adrian**
- J 26(4): 741 (*Schistocephalus solidus* tapeworm growth & proglottid formation)
- (8): 2250 (*Ligula intestinalis* life cycle)
- Hopkins, Thomas Lee**
- J 26(2): 305 (polar zooplankton biomass)
- Horak, Donald Lee**
- J 29(7): 1005 (hatchery-reared rainbow trout survival re stamina tunnel ratings)
- Hormones** (*see also* Cortisol; Pituitary; Steroids)
- J 23(4): 615 (new adrenal steroid from skates blood)
- (8): 1249 (steroid transformations by Atl. cod *Stannius* corpuscles)
- 24(1): 205 (mineralocorticoid activity of skate blood hydroxycorticosterone for rat)
- (8): 1823 (ovine prolactin effect on hypophysectomized eel osmoregulation)
- (11): 2497 (insect molt-hormone activity of extract from Japanese yew branches)
- 25(2): 431 (interrenal tissue biosynthesis of sterones in Atl. herring)
- (7): 1465 (metopirone effect on pituitary-interrenal function of sockeye salmon & rainbow trout)
- (12): 2549 (1α -hydroxycorticosterone function in skate)
- 26(5): 1147 (re pituitary cytology of sockeye after gonadectomy)
- (7): 1789 (estrogens & cortisol effects on cortisol secretion of gonadectomized female sockeye)
- (7): 1837 (ACTH localization in sockeye pituitary)
- Homoptera**
- J 27(1): 125 (lake trout feed, L. Opeongo, Ont.)
- Hooknose Creek, B.C.**
- J 27(8): 1429 (evaluation of revised hatchery method for pink & chum salmon fry)
- Hookworms** (*see* Nematoda)
- Hooks** (anatomical) (*see also* next heading)
- J 26(12): 3279 (re polychaete taxonomy)
- S 1354 (development of rostellar, in a cestode)
- Hooks** (fishing)
- J 26(9): 2527 (various, for deep-sea line fishing)
- S 1381 (snella gear vs. trawling, for Atl. cod experimental catches)
- A 120 (lures for swordfishing)
- Hooper, Shirley Norma**
- J 27(2): 251 (fatty acid in *Halosphaera viridis*)
- (3): 513 (krill lipids & fatty acids)
- T 198 (lipid content & composition of queen crab tissue & products)
- 249 (methodology for identification of marine oils in hydrogenated edible oil products)
- S 1227 (fin whale lipids, fin whale milk)
- 1228 (isoprenoid fatty acids re whale oils)
- 1254 (stereoisomerism in fatty acids)
- 1266 (diastereoisomers of phytanic acid)
- 1351 (load effect in open-tubular GLC)
- 1385 (phytanic acid menthyl esters)
- 1395 (fish oils branched-chain fatty acids)
- 1423 (fatty acids from Nfid. copepods)

- (11): 2975 (interrenal tissue hypertrophy of sexually maturing sockeye re gonadectomy)
- 27(6): 1169 (sockeye interrenal tissue response to mammalian ACTH, re sexual maturation)
- (7): 1295 (control of Atl. salmon smoltification & growth)
- (12): 2337 (thyroxin injection effect on Atl. cod swimming speed)
- 28(4): 477, 485 (histological effects on tissues of gonadectomized sockeye salmon)
- (4): 505 (histology of adrenocortical cells in Atl. salmon)
- 29(3): 303 (prolactin & growth hormone in serum & pituitary of adult migratory sockeye)
- (4): 435 (salmon gonadotropin effect on catfish oocytes maturation)
- (8): 1229 (ecdysterone effect on lobster molting, re eyestalk removal)
- S 958 (impaired metabolism in moribund Atl. cod)
- 962 (salmon pituitary hormones effect on immature trout gonads)
- 1114; 1141; 1167; 1168 (in skate peripheral plasma or interrenal tissue)
- 1121 (steroid destruction during silica-gel chromatography)
- 1131 (in vitro biosynthesis by Atl. salmon gonad materials)
- 1167; 1168 (in vitro biosynthesis of 1α -hydroxycorticosterone by skate tissues)
- 1205 (biological activity of 1α -hydroxycorticosterone in skates)
- 1224 (androstenedione to testosterone conversion by lobster tissues)
- 1244 (corticosteroid 1α -hydroxylase in elasmobranch interrenals)
- 1292; 1336 (salmon pituitary gonadotropin restoration of sexual activity in hypophysectomized goldfish)
- 1308 (binding by fish plasma proteins)
- 1338 (androgens effect on cortisol distribution & secretion in gonadectomized male sockeye)
- 1356 (skate testosterone production & clearance rates re blood plasma testosterone levels)
- 1357; 1362 (skate serum proteins re testosterone & other sex hormone binding protein)
- 1489 (binding affinities of blood proteins for steroid, of 3 Atl. fishes)
- 1535 (chinook salmon gonadotropin effect on sexual behavior of hypophysectomized & gonadectomized female guppies)
- 1562 (major, in sexually maturing Atl. salmon testicular & peripheral plasma)
- 1576 (Atl. sturgeon plasma corticosteroids & testosterone)
- 1593; 1630 (effects of chinook salmon hormones on catfish testes & seminal vesicles)
- 1670 (effects of chinook salmon hormones on catfish ovulation, etc.)
- 1682 (chinook salmon hormones induction of medaka oocyte in vitro ovulation)
- 1695 (chinook salmon gonadotropin effect on immature striped mullet ovarian & testicular development)
- 1701 (ecdysterone estimation method)
- A 11(F) (hormones isolated from skates blood plasma)
- 135 (endocrinology levels effect on *Orconectes virilis* crayfish molting photoperiod)
- 214 (sex, re fish farming)
- Horn, Michael Hastings
J 27(2): 391 (*Halargyreus johnsonii* from New York Bight)
- Horne, David Alexander
J 27(8): 1379 (yellow phosphorus toxicity)
T 255 (phosphorus toxicities to seawater-maintained fish)
S 1251 (silica gel steroid recovery)
1372 (skate liver glycogen levels)
1562 (stages of sexual development in Atl. salmon)
- Horner, G. W.
J 29(4): 439 (temperature, feed, & starvation effects on lobster physiological parameters)
(4): 461 (feed & starvation re *Gaffkya homari* infection effecting lobster death)
- Horrall, Ross Moody
J 26(8): 2173 (white bass orientation)
27(4): 715 (ultrasonic tracking of cutthroat trout)
29(7): 1025 (ultrasonic tracking of migratory sockeye salmon, B.C. coast)
- Horse, domestic (*Equus caballus*)
S 1028; 1080 (fatty acids positional distribution in flesh fat triglycerides)
1190 (population on Sable Is., N.S.)
- Horton, Donald Bion
J 22(4): 945 (juvenile winter flounder theoretical biomass)
- Horton, Howard Franklin
J 26(5): 1400 (steelhead trout eggs fertilized with cryopreserved sperm)
28(5): 745 (cryopreserved sperm fertilize salmon eggs)
(12): 1915 (preservation of trout sperm)
- Hoskins, Gary Edward
J 28(10): 1511 (identification of bacteria flora in salmon streams)
T 245 (B.C. wild fish mortalities)
S 1297 (salmon egg structure & enzymatic degradation)
- Hotsprings (see Springs, thermal)
- Houck, Warren Jacob
J 24(12): 2503 (Cuvier's beaked whale)
- Houde, Edward Donald

- J 26(6): 1647 (walleye & yellow perch larval swimming ability)
27(3): 445 (walleye larvae distribution)
- Hourston, Alan Stewart**
J 24(12): 2527 (fisheries stock exploitation estimation)
25(11): 2503 (Atl. herring otolith growth cessation)
T 49 (aging of Atl. herring)
58 (Nfld. herring catches & landings)
94-97 (Nfld. herring sampling data 1964-68)
137 (Nfld. herring seine fishery catches)
138 (otolith nuclei as indicators of Nfld. spring & autumn spawning herring)
166 (computer programs for processing Nfld. herring data)
296 (B.C. herring spawning abundance, 1951-70)
S 952 (odd-year pink salmon in the IPSFC Convention Area)
1283 (Nfld. herring fishery)
- Housefly** (*see* Muscoidea)
- Housing** (*see* Shelter)
- Houston, Arthur Hillier**
J 22(6): 1455 (thermal acclimation of goldfish)
23(8): 1109 (thermal shock in goldfish)
24(11): 2267 (trout hematology)
25(1): 173 (rainbow trout hematological correlations)
26(7): 1847 (aortic catheterization re trout)
28(5): 625 (handling and anesthetization effects on brook trout)
(5): 635 (brook trout variations re surgery)
(5): 781 (improvement in vascular catheterization procedure for salmonid and other teleost fishes)
29(9): 1344 (tricaine methane sulfonate levels in brook trout blood during & after anesthesia)
S 983 (water balance in goldfish)
- Hoyle, Richard James**
J 24(3): 607 (seasonal changes in cod condition and lipid content)
25(2): 363 (Atl. salmon sperm subzero preservation)
(6): 1295 (frozen salmon sperm fertilization)
27(8): 1357 (digestive enzymes of lobster)
(8): 1379 (yellow phosphorus toxicity)
(9): 1295 (yellow phosphorus acute toxicity to Atl. salmon smolts & cod)
T 93 (freezing sperm of Atl. salmon)
255 (phosphorus toxicities to seawater-maintained fish)
S 967 (hydrolysis of triglycerides)
1028 (fatty acid distribution in triglycerides)
1118 (polar bear and seal fatty acids)
1186 (dietary triglyceride conversion)
1226 (fatty acids positional distribution)
1233 (fatty acids incorporation into mammal triglycerides & phospholipids)
1471 (lipase assay based on acetaldehyde liberation from vinyl oleate)
- Huang, Chau-Ting**
- J 25(8): 1651 (inorganic iodide binding)
Huang, Pei Chu (*see* Hwang, Pei Chu)
- Hubbard, Lyle Turner, Jr.**
J 28(12): 1831 (Salpidae distribution & abundance)
- Hudson Bay, including James Bay**
J 24(9): 1873 (decapod Crustacea from *Calanus* collections, 1953, 1954, 1958-61)
26(8): 2201, 2205 (white whale wintering & tagging)
27(1): 170 (first record of stonecat in drainage system)
29(3): 217 (athecate hydroids)
B 152 (sea stars)
173 (fishes of W coast N of 60°)
S 1668 (mercury content of beluga meat & organs)
A 106 (unsuccessful & further possibilities of introducing *Oncorhynchus* salmon into)
200 (mercury contamination of fishes & marine mammals)
- Hughes, George Morgan**
S 1378 (gill dimensions of tunny)
1554 (responses of respiratory pumps to hypoxia in rainbow trout)
- Hughes, Roger Neville**
J 26(7): 1959 (caloric content of marine sediments)
S 1580; 1620 (benthic samples classification & ordination in 2 P.E.I. bays)
- Hughes, Steven E.**
J 27(10): 1747 (king crab pots for sablefish capture)
- Hulburt, Edward Macpherson**
J 25(12): 2609 (W Gulf of Maine waters)
27(11): 2081 (phytoplankton relation to turbulence & nutrient renewal)
(12): 2255 (relation of heat budget to circulation in Casco Bay)
- Hull, John Herbert**
T 150 (Canadian Atl. coast temperature data, 1921-69)
- Humber River, Nfld.**
J 22(2): 599 (salmon investigations)
- Humboldt Bay, California**
J 27(7): 1320 (Pac. oyster haplosporidan sporulation)
- Humic substances**
J 29(1): 55 (chemical characteristics of some from decomposed marine algae)
S 1320 (effect on *Gonyaulax* growth)
A 244 (in coastal waters: origin, nature, & fate; influence on phytoplankton growth)
- Humphreys, Robert David**
J 23(3): 463 (capelin in Bay of Fundy)
(6): 797 (Nfld. herring population)
T 94 (Nfld. herring sampling data 1964-65)

- S 1027 (effect of storage on herring)
 1103 (Atl. herring)
 1104 (Atl. mackerel)
 A 8(F) (Atl. herring)
 9(F) (Atl. mackerel)
 94A (Canadian research on Bay of Fundy & Gulf of Maine herring populations biology: review)
- Humphreys, Robert Murray
 J 24(7): 1573 (sockeye and pink salmon ova and sperm fertility)
- Hungar, Linda Dale
 T 123 (clearing & staining salmon for skeletal studies)
- Hungate, Frank Porter
 J 28(4): 533 (fish ladders re *Chondrococcus columnaris* fish disease)
 29(2): 173 (agglutinins reaction re river fishes seasonal distribution of *C. columnaris* infection)
- Hunger concept (see also Feed; Starvation effect)
 J 23(5): 689 (re depensatory process of sockeye salmon)
 29(8): 1193 (effect on predation by rainbow trout)
- Hunn, Joseph Bruce
 J 25(1): 25 (rainbow trout M.S. 222 anesthetic excretion)
- Hunt, Evelyn Phyllis
 J 27(10): 1883 (brook trout blood changes)
- Hunt, Robert Leroy
 J 26(6): 1473 (brook trout overwinter survival)
- Hunt Creek, Michigan
 J 24(7): 1425 (brook trout population studies over 14 years; correction on J 25(8): 1760)
- Hunter, Charles James
 J 27(5): 947 (floating structure for holding adult Pac. salmon)
 29(12): 1784 (device for measuring length & girth of fish)
- Hunter, John Gerald
 T 231 (lake potential in production of landlocked Arctic char)
 MSP 13; 13(F) (FRB studies in Canada's Arctic)
 S 1090 (Arctic char)
 A 75; 231 (FRB studies in Canada's Arctic)
- Hunter, John Roe
 J 23(4): 547 (schooling behavior)
 25(2): 393 (light effect on jack mackerel schooling & feeding)
 27(7): 1225 (fish schools organization)
- Hunter, Robert Comstock
 J 26(7): 1939 (rainbow trout uptake of dieldrin)
- Huntsman, Archibald Gowanlock
 J 22(2): 255 (an appreciation of)
- Hurley, Donal Anthony
 J 29(5): 535 (American eel in E.L. Ontario)
 (6): 975 (eutrophication effects on oligotrophic lakes salmonid communities)
- Huron, Lake (see also Georgian Bay; Manitoulin Island; Great Lakes; Parry Sound; South Bay)
 J 22(5): 1197 (whitefish populations year-class fluctuations)
 27(3): 613 (rainbow trout population vital statistics re extended spawning season)
 (6): 1017 (splake population dynamics)
 28(4): 616 (giant brook lampreys size re average adult size)
 (8): 1133 (adult & juvenile walleye migrations between L. Erie &)
 (12): 1857 (B.C. & U.S. kokanee transplants into)
 29(6): 617, 717, 877, 951, 975 (various factors affecting fish communities, particularly salmonid)
 (10): 1451 (crustacean plankton abundance re eutrophication)
- S 1668 (mercury contamination in various commercial fishes)
 1718 (organochlorine pesticide levels in Canadian commercially caught fishes)
 A 106 (transplantation of *Oncorhynchus* salmon into)
- Hurst, Robert Edward
 J 29(12): 1786 (proportionation of lower molecular weight fatty acids during solvent extraction)
 S 1400 (gas chromatography collection syringe for volatile compounds)
 1522 (optical detection pressure apparatus)
- Hussein, M. F.
 J 23(4): 601 (preservation by irradiation)
- Hutchinson Lake, Ont.
 S 1597 (origin of name; limnology)
- Hutzinger, Otto
 S 1463 (identification of PCB (polychlorinated biphenyls) & DDT)
 1600 (some determination characteristics of PCB)
 1603 (synthesis of some individual PCB)
 1659 (polychlorinated terphenyls in the environment)
 1696 (Bay of Fundy & Gulf of Maine contamination with various pesticides)
- Huyer, Adriana
 T 152 (digitizing of salinity-temperature-pressure with shipboard computer)
 154 (Pac. Ocean Station P oceanographic observations)
- Hwang, Pei Chu
 J 25(12): 2623 (Atl. cod sperm preservation)
 26(2): 413 (salmon seminal components)

- 27(8): 1357 (digestive enzymes of lobster)
- S 1118 (polar bear and seal fatty acids)
- 1226 (fatty acids positional distribution)
- 1233 (fatty acids incorporation into mammal triglycerides & phospholipids)
- 1471 (lipase assay based on acetaldehyde liberation from vinyl oleate)
- Hyaella azteca* (see Amphipoda)
- Hyas araneus* (see Crab, toad)
- coarctatus* (see Crab, toad)
- Hybognathus hankinsoni* (see Minnow, brassy)
- nuchalis* (see Minnow, silvery)
- Hybopsis* (= *Platygio*)
- biguttata* (see Chub, hornyhead)
- gracilis* (see Chub, flathead)
- micropogon* (see Chub, river)
- plumbea* (see Chub, lake)
- Hybrids; Hybridization (see also Splake)
- J 22(3): 732 (cutthroat × rainbow trouts), 743 (lake chub × longnose dace)
- (3): 767 (between *Salmo*, *Salvelinus*, *Cristovomer*: biochemical differentiation)
- (5): 1261 (between pickerels, pike, and maskinonge)
- 23(11): 1663 (bluegill × pumpkinseed hemoglobin electropherogram)
- (12): 1845 (bluegill × pumpkinseed mouth & body form)
- 24(3): 495 (absence in pond with bluegill & pumpkinseed)
- (8): 1637 (re marine & freshwater threespine sticklebacks)
- 25(1): 101 (white × largescale suckers re isolating mechanisms)
- (7): 1317 (muscle proteins inheritance in reidside shiner × peamouth chub)
- (7): 1323 (muscle enzyme difference in brook × brown trout)
- (10): 2111 (scales annulus formation in lake herring × bloater)
- 26(11): 3049 (tissue enzymes of blacknose × longnose dace)
- (12): 3183 (between red & black threespine sticklebacks)
- 27(1): 39 (brook × lake trout selection for swimbladder gas retention ability re deep swimming)
- (6): 1017 (splake population dynamics, L. Huron)
- (12): 2167 (among *Tilapia* species)
- (12): 2197 (genetic effect of parentage sex on egg & larvae development of crosses between pink, chum, & sockeye salmon)
- 28(7): 987 (*Salmo "rosei"* considered a hybrid of golden trout × Kern R. trout)
- 29(5): 579 (chromosome karyotypes of those of various Esocidae fishes)
- (8): 1173 (morphology & myogen of johnny × tessellated darters)
- B 162: 400 (among 5 Pac. salmon species)
- 169: 8 (possibilities for Pac. oysters)
- 173: 28 (definition), 46-354 (various, among NW Canada & Alaska freshwater fish species)
- S 1545 (electrophoretic analysis of Atl. salmon × brown trout protein & esterase systems re detecting hybrids in natural populations)
- A 214 (sex hormones to accelerate sexual maturity for testing)
- Hydra* (see Hydrozoa)
- Hydrachnellae
- T 196 (in bottom fauna of Okanagan Valley lakes, B.C.)
- Hydraulics (see Hydrodynamics)
- Hydrichthys* (see Hydrozoa)
- Hydrocarbons (see also Insecticides; Lipids; Oils, petroleum; Pesticides; Pollution; Polychlorinated biphenyls)
- T 198 (content of queen crab muscle and viscera lipids)
- 201 (toxicity tests of, as oil dispersants for fuel oil spills)
- 272 (polychlorinated biphenyls & other industrial halogenated hydrocarbons in the environment: review, assay methods, & bibliography)
- S 995 (fundamental groups in flame ionization detectors response to oxygenated aliphatic)
- 1286 (pristane & squalene content of eulachon oil)
- 1584 (in pollution from coke-oven intermediate oil as cause of fish mortality)
- 1591 (pristane, phytane, & other alkanes in some marine & freshwater Canadian commercial fish oils)
- 1673 (methyl position influence on GLC retention time of methylbranched)
- 1722 (tetramethylpentadecane from an ancient sediment)
- Hydrocarbons, halogenated (see also Insecticides; Pesticides; Pollution; Polychlorinated biphenyls; also previous heading)
- T 272 (as pollutants; also lists of; uses; analyses for)
- S 1696 (Bay of Fundy & Gulf of Maine contamination by)
- Hydrodynamics (see also Currents; Hydrography; Oceanography; Transport, mass)
- J 26(9): 2477, (11): 2775, 2887 (re Bay of Fundy tidal energy exploitation)
- 27(9): 1637 (hydraulic ram effect in tuna gill ventilation)
- 29(10): 1397 (re louver deflectors for guiding Atl. salmon smolts from power turbines)
- T 156 (one-dimensional numerical tidal model, Juan de Fuca & Georgia straits)
- 195 (water tunnel design for fisheries research)
- 264 (fluid mechanics of netting & low-solidity screens)

- S 998 (of sockeye salmon re swimming energy)
A 242 (re design of sewer & other effluent outfalls)
- Hydroelectric energy (*see* Hydroelectric power plant; Tides)
- Hydroelectric power plant (*see also* Dams)
J 29(10): 1397 (louver deflectors for guiding Atl. salmon smolts from turbines)
(10): 1472 (macroinvertebrate fauna changes from fluctuating water levels below a)
- Hydrogen ion (*see* pH)
- Hydrogen isotope
A 232 (^3H (tritium) as marine radioactive pollutant)
- Hydrogen sulfide (*see also* Sulfides)
J 26(7): 1763 (in B.C. meromictic lakes)
27(5): 847 (re meromixis of Sunfish L., Ont.)
(6): 1059 (in shallow ice-covered lake)
29(9): 1309 (toxicity to goldfish)
B 167: 41 (determination in sea water)
T 245 (possible natural cause of multispecies mortality in tidal Nitinat L., B.C.)
S 1157 (apparatus for oxidation kinetics)
1437 (in Green L., N.Y.)
1500 (from B.C. coastal water sediments close to pulp mills; formation from sediments by *Desulfovibrio desulfuricans*)
- Hydrogenated oils & fats
T 229 (Atl. herring oil in rat feed, re heart or liver fat deposition)
249 (analysis methods for detecting marine oil adulteration of all-vegetable margarine & cooking fats)
S 1638; 1714 (re Atl. herring oil; margarine)
- Hydrography (*see also* International Commission for the Northwest Atlantic Fisheries; Limnology; Oceanography; Sediments; Topography)
J 23(8): 1197 (of sea floor around Magdalen Is.)
24(3): 555 (Tanquary Fjord, Ellesmere Is., Canada Arctic)
(5): 981 (Ogac Lake, Baffin Is.)
(7): 1553 (Penobscot R. estuary, Maine)
(11): 2241 (Kouchibouguac Bay, N.B.; correction on J25(8): 1760)
25(1): 81 (of 3 SW B.C. lakes re trout mortality)
(6): 1181 (L. Michigan)
26(1): 171 (changes in Malpeque Bay, P.E.I., re oyster culture)
(2): 305 (zooplankton biomass re Arctic Basin & East Greenland Current)
T 77 (St. Margaret's Bay, N.S., re primary productivity)
88 (Bay of Fundy, re herring biology)
98 (Little Codroy R. & estuary, Nfld.)
199 (SW North Atl. Ocean, 1969)
S 886; 887; 888; 949; 955 (ICNAF research reports)
956 (Caribbean Sea)
1127 (Labrador Sea, Davis Strait, S Baffin Bay)
- 1353 (Gulf of St. Lawrence sediments)
A 14 (Great Bear Lake, N.W.T.)
43; 108; 119; 152; 153; 181; 182; 241 (summaries of Canadian research in ICNAF areas)
- Hydroids (*see* Coelenterata; Hydrozoa; Jellyfishes; Scyphozoa)
- Hydrolagus affinis* (*see* Chimera)
collieri (*see* Ratfish)
- Hydroxamates (as ore-flotation agents)
S 1678 (chemistry & acute toxicity to brook trout)
- Hydroxycorticosteroids (*see* Steroids)
- Hydroxylamine
B 167: 93 (determination in sea water)
S 1678 (toxicity to brook trout)
- Hydrozetes* (*see* Acarina)
- Hydrozoa (*see also* Coelenterata)
J 22(3): 841 (*Calyropsis nematophora* distribution & morphology in NE Pac. Ocean)
24(9): 1985 (*Hydrichthys* sp. epizoic on myctophid fishes & on their parasitic copepods; correction on J25(8): 1760)
26(6): 1485 (*Aglantha digitale* & *Melicertum octocostatum* ecology in Ogac L., Baffin Is.)
(7): 1743 (experimental determination of feeding habits, feed consumed, growth rate, etc., of species of 6 genera)
27(9): 1501 (descriptions of 54 thecate hydroid species from N Canadian Shelf waters)
28(10): 1595 (*Velella* behavior re chondrophore evolution; arguments to consider it in new superfamily Tubularoidea of hydroids; electrical pulses in)
29(3): 217 (descriptions of 16 species of athecate hydroids from N Canadian Shelf waters, including several new records for N American & N Canadian waters)
B 176 (of Canadian marine zooplankton)
T 158 (settling periodicity as fouling organisms, Bideford R., P.E.I.)
225 (associated with Bay of Fundy scallop beds)
266 (Frobisher Bay, Baffin Is., N.W.T.)
S 1532 (*Hydra* of a high mountain brook, Colorado)
A 14 (*Hydra* of Great Bear L., N.W.T.) on J 30(8): 1257)
- Hygophum hygomi* (*see* Lanternfishes)
macrochir (*see* Lanternfishes)
- Hymenoptera (*see also* Insects; Insecticides; Invertebrates)
J 27(1): 125 (re lake trout feed, L. Opeongo, Ont.)
S 1532 (*Copidosoma naevia* of a high Colorado mountain creek)
- Hynes, Hugh Bernard Noel
J 26(2): 279 (benthic invertebrates)

- 27(4): 653 (phosphate movement & lake muds)
 28(1): 35 (differences in benthos caused by an impoundment)
 (1): 45 (differences in fish populations caused by mainstream impoundment)
- Hypentelium nigricans* (see Hogsucker, northern)
- Hyperodon ampullatus* (see Whale, bottlenose)
- Hyperplasia
 J 27(11): 2095 (of a bryozoan as possible index of water pollution by oil or coal-tar derivatives)
- Hyperprosonopon anale* (see Surfperch, spotfin)
argenteum (see Surfperch, walleye)
ellipticum (see Surfperch, silver)
- Hypocholesterolemia (see also Sterols).
 J 29(4): 385 (review of hypocholesterolemic factors in molluscan sterols)
- Hypomesus pretiosus (pretiosus)* (see Smelt, surf)
olidus (see Smelt, pond)
- Hypophysectomy (see Pituitary)
- Hypoxanthine (see also Purines; Quality of fishery products)
 J 23(7): 1095 (in coho salmon belly-skin pigments)
 (11): 1795 (formation in muscle of stored Atl. salmon, as quality index)
 (12): 1821; 26(6): 1597 (formation in swordfish muscle, as quality index)
 24(11): 2229 (formation in iced freshwater fish muscle; correction on J25(8): 1760)
 25(4): 817 (rapid accumulation in iced redfish fillets)
 (9): 1901 (formation in Atl. salmon)
 26(3): 704 (in canned Arabian Sea shrimp)
 (7): 1927 (source of silvering of freshwater fishes skin, swimbladder, & eye)
 27(1): 83 (re nucleotides degradation in sea scallop muscle during iced storage)
 S 1648 (re degradation of fish products quality)
- Hypoxia (see Oxygen, dissolved; Respiration)
- Hypsogonus quadricornis* (see Poacher, fourhorn)
- Hypsopsetta guttulata* (see Turbot, diamond)
- Hyslop, William Frank
 J 24(10): 2137 (kraft mill effluent in B.C. harbor)
- I
- Iasis zonaria* (see Salpidae)
- Ice; Icing (see also Chilling; Refrigeration)
 J 23(11): 1795, (12): 1821; 24(11): 2229; 25(4): 817 (hypoxanthine & other purines development in ice-stored fish re quality index)
- 25(8): 2059 (re protein extractability & free fatty acid in stored cod muscle)
 (8): 2071 (re quality of chemically preserved had-dock fillets)
 26(10): 2727 (fatty acids reaction with Atl. cod muscle protein aged in ice then cold stored)
 (12): 3175 (new test for iced age of fresh gutted fish)
 27(1): 83 (adductor muscle nucleotides degradation during sea scallop iced storage)
 (6): 1059 (periscope for observing fish behavior under lake ice)
 (9): 1589 (icing of whole redfish re keeping time of frozen fillets)
 29(7): 1053 (stability of yellow elemental phosphorus in edible Atl. cod muscle during)
- B 169: 98 (re B.C. oyster culture)
 CVG 41; 44 (vs. refrigerated sea water re weight changes of some B.C. fishes)
 45 (weight changes in Pac. cod & halibut stored in ice at sea)
 T 220 (effects of storing sockeye salmon in ice vs. refrigerated sea water on quality of canned product)
 265 (depth & contained nutrients, Frobisher Bay, Baffin Is., N.W.T.)
- S 935 (fish on board vessels)
 1031 (containing antibiotic, for fish holding)
 1367 (quality of filets from Atl. cod stored at sea at -0.5 & -3 C in ice vs. in air)
 1473 (portable refrigerated unit for holding iced fish in remote freshwater fisheries)
 1655 (physics & chemistry of snow-ice cover & its contribution to nutrients of a small NW Ont. lake)
- A 26 (containing antibiotics for preserving fish quality)
 41 (review of)
 138 (queen crab on vessel)
 156 (effect on length & weight biological measurements of various commercial Atl. fishes)
 172 (re technical-economic assessment of vertically integrated fishing & filleting operations from iced &/or frozen Atl. fish)
 203 (fish on boats & in processing plants)
 225 (resume of S 1473 above)
- Ice island, drifting
 J 26(2): 305 (zooplankton biomass observed during Arctic basin and East Greenland Current drift)
- Icelinus borealis* (see Sculpin, northern)
burchami (see Sculpin, dusky)
filamentosus (see Sculpin, threadfin)
oculatus (see Sculpin, frogmouth)
tenuis (see Sculpin, spotfin)
- Icelus bicornis* (see Sculpin, twohorn)
spatula (see Sculpin, spatulate)
spiniger (see Sculpin, thorny)
- Ichthyomyzon bdellium* (see Lamprey, Ohio)
castaneus (see Lamprey, chestnut)

- fossor* (see Lamprey, northern brook)
unicuspis (see Lamprey, silver)
- Ichthyophonus* (see Fungi)
- Ichthyoplankton (see also names of adult forms of fishes)
 J 26(8): 2240 (sampling net for)
- Ichthyopterin (see Pteridines)
- Ichthyos lockingtoni* (see Medusafish)
- ICNAF (see International Commission for the Northwest Atlantic Fisheries)
- Icosteus aenigmaticus* (see Ragfish)
- Ictalurus catus* (see Catfish, white)
melas (see Bullhead, black)
natalis (see Bullhead, yellow)
nebulosus (see Bullhead, brown)
punctatus (see Catfish, channel)
- Ictiobus bubalus* (see Buffalo, smallmouth)
cyprinellus (see Buffalo, bigmouth)
- Ide, Frederick Palmer
 J 24(4): 769 (DDT effects on aquatic insects)
 S 963 (Nymphomyiidae)
 966 (effects of forest spraying)
- Identification (see also Electrophoresis; Keys; Speciation; also names of organisms)
 J 26(1): 175 (of northern pike vs. maskinonge filets, etc.)
 (2): 221 (of 2 similar triclad turbellarians)
 B 155 (Canadian Atl. marine fishes)
 173: 30, etc. (freshwater fishes of NW Canada & Alaska)
 180 (B.C. marine fishes)
 T 55 (B.C. marine zooplankton)
- Idler, David Richard
 J 22(2): 411 (quality of frozen Atl. cod)
 (3): 783 (thaw-drip in cod)
 23(4): 615; 24(1): 205 (1 α -hydroxycorticosterone)
 (6): 915 (vitamins B in dulse)
 (7): 1063 (quality of frozen cod)
 (8): 1249 (corpuscles of Stannius of cod)
 24(1): 127 (thawing processes effects on cod and redfish)
 (3): 651 (postmortem changes in cod)
 25(2): 299 (refrozen cod storage quality)
 (2): 363 (Atl. salmon sperm subzero preservation)
 (2): 431 (teleost biosynthesis)
 (4): 733 (Nfld. trap-caught cod quality after single & double freezing)
 (6): 1295 (frozen salmon sperm fertilization)
 (12): 2549 (elasmobranch interrenalectomy & stress)
 (12): 2623 (Atl. cod sperm preservation)
 26(2): 413 (salmon seminal components)
- (7): 1823 (sodium transport re 1 α -hydroxycorticosterone)
 (12): 3254 (improved extender for freezing Atl. salmon spermatozoa)
 27(3): 601 (scallop sterols relative to cholesterol)
 (7): 1329 (cholesterol in the chick)
 (9): 1589 (quality of frozen redfish)
 (12): rapid method for partial hypophysectomy in skate)
 28(10): 1675 (sterols of a brachiopod)
 29(4): 385 (review of molluscan sterols in light of modern structural analysis techniques)
 T 93 (freezing sperm of Atl. salmon)
 S 958 (impaired hormone metabolism)
 1071 (cholesterol glucopyranosiduronate)
 1072 (sterols in Irish moss)
 1114 (skate plasma testosterone)
 1116 (cortisol binding in Atl. salmon plasma)
 1121 (steroid destruction by thin-layer chromatography)
 1131 (Atlantic salmon biosynthesis of 11-ketotestosterone and 11 β -hydroxytestosterone)
 1141 (*Raja* 1 α -hydroxycorticosterone)
 1167 (1 α -hydroxycorticosterone biosynthesis)
 1168 (1 α -hydroxycorticosterone synthesis in vitro)
 1205 (1 α -hydroxycorticosterone activity)
 1224 (conversion of androstenedione to testosterone by lobster tissues)
 1239 (red algal sterols)
 1244 (steroid 1 α -hydroxylation in elasmobranchs)
 1251 (silica gel steroid recovery)
 1264 (Alaskan king crab & N Atl. queen crab sterols)
 1308 (plasma proteins of fish)
 1313 (cartilaginous fish body fluids)
 1325 (1 α -hydroxycorticosterone in vivo and in vitro)
 1329 (steroid desmolase in a marine invertebrate)
 1352 (Atl. cod fishery)
 1356 (testosterone production & clearance in skates)
 1357 (binding of steroids by elasmobranch serum)
 1362 (sex hormone binding proteins)
 1363 (Nfld. offshore fish & influence on quality after freezing)
 1364 (influence of thawing on storage quality of fish)
 1372 (skate liver glycogen levels)
 1404; 1432 (steroidogenesis in fish)
 1410 (corticosteroids in cyclostomes)
 1456 (methyl ether derivatives of sterols)
 1457 (desmosterol content of dulse red algae sterols)
 1459; 1611 (new sterols isolated from sea scallop)
 1477 (Leydig cell homolog in testis of sexually mature Atl. salmon)
 1478 (identification of interrenal tissue in American Atl. sturgeon)
 1479 (in vitro steroidogenesis in yellow bodies of American Atl. sturgeon)
 1489 (affinities of blood proteins in fish)
 1506 (identification of scallop sterols)
 1527 (sterols of Crustacea)
 1562 (stages of sexual development in Atl. salmon)
 1576 (hormonal steroids in sturgeon plasma)
 1628 (Atl. halibut corticosteroids identification & qualification)

- 1663 (separation of steryl acetates by silver-ion chromatography)
- 1665 (some comparative aspects of corticosteroid metabolism)
- 1666 (are corticosteroids present in the blood of all fish?)
- 1679 (molluscan sterols)
- A 27 (Nfld. trap cod)
- 98 (herring for fish protein concentrate & low fat meal)
- 124 (development & scope of Halifax process for fish protein concentrate)
- 148 (coexistence of fishery & major industry in Placentia Bay, Nfld.)
- 172 (assessment of filleting operations dependent on frozen &/or iced fish)
- 173 (assessment of thawers for processing fish blocks)
- 198 (stable protein from the sea)
- Iioka, Chikara
T 236 (eggs & larvae of *Limanda yokohamae*)
- Iles, Christine
J 28(1): 31 (swordfish parasites from NW Atl.)
- Iles, Thomas Derrick
S 1645 (herring larvae retention in Bay of Fundy)
A 207 (Atl. herring fisheries)
208 (N.B. herring & sardines)
- Iles-de-la-Madeleine, Gulf of St. Lawrence
S 950 (water temperatures re herring fishery)
- Ileum
J 23(12): 1841 (epithelial border histology in Atl. cod)
- Iliamna Lake, Alaska
J 25(3): 485 (spawning sockeye salmon behavior on island beaches)
- Illex illecebrosus* (see Squid, shortfinned)
- Illumination (see also Bioluminescence; Darkness; Light, reactions to; Radiation; Vision)
J 23(4): 539 (at photosynthesis critical depth)
S 1704 (& DDT concentration re *Nitzschia* marine diatom photosynthesis)
- Imagotaria downsi* (see Sea lion (fossil))
- Imikpuk Lake, Alaska
J 24(9): 1861 (phytoplankton dynamics in arctic lake)
- Immunity; Immunology (see also Antibodies; Disease; Vaccination; Viruses)
J 24(4): 769 (natural or acquired, of certain aquatic insects against insecticides)
26(1): 1 (lobster re gaffkemia infection)
(1): 115 (coho salmon and rainbow trout resistance to bacterial endotoxins)
- (5): 1392 (lobster hemolymph foreign protein disposal)
- (7): 1837 (re ACTH & prolactin localization in sockeye salmon pituitary)
- (9): 2511 (re infective virus of pancreatic necrosis in rainbow trout)
- 29(2): 173 (of mountain whitefish to *Chondrococcus columnaris* disease)
- S 1635 (re salmonid kidney disease)
- 1654 (aqueous clam extract antiviral activity towards amphibian virus)
- Immunodiffusion
J 29(1): 111 (for distinguishing cunner eggs from tau-tog eggs)
- Impoundment (see Culture; Dams; Ponds)
- Inconnu (*Stenodus leucichthys*)
J 25(8): 1667 (cytotaxonomic relation to other Great Lakes coregonids)
- B 151; 151(F) (canned)
158 (in economics of N.W.T. commercial fisheries)
173: 74 (full description, etc., as *S. leucichthys nelma*)
CCG 7: 33 (latent heat of freezing)
T 33 (in Great Slave L. fishery)
S 1015 (Great Slave L. sport fishing)
1697 (canned products; recipes)
A 14 (Great Bear L., N.W.T.)
- Incubation (see Culture; Eggs; Hatcheries)
- Indexes (Note: In addition to the following, the concluding issue of each 1965-71 annual volume of the Journal of the Fisheries Research Board of Canada contains a subject-author index and list of titles of articles for that volume and other recent Board and Board-related publications)
J 29(12): 1665 (announcement re annual index for 1972)
B 155 (scientific names, also English & French common names, of Canadian Atl. marine fishes)
164 (subject-author, for Fisheries Research Board publications and certain relevant publications, 1900-64, with list of titles)
173: 376 (scientific names, also English & French common names, of NW Canada & Alaska freshwater fishes)
176 (to Canadian Arctic, Pac., & Atl. zooplankton)
180 (scientific names, also English & some French common names, of B.C. marine fishes)
T 2 (genera & species of recent B.C. marine Mollusca)
209 (storage & retrieval of indexed & annotated bibliographical references)
246: 90 (bibliography of translation indexes, re N America Pac. coast trawled fishes)
- India
S 916 ("red water" occurrence on west coast)
- Indian Arm, B.C.

- J 22(3): 825 (diurnal and seasonal distribution changes of two planktonic ostracods)
 24(1): 33 (algae vertical distribution re environment)
- Indiana State, USA
 J 23(12): 1923 (bluegill sunfish growth characteristics in 8 lakes)
- Indicator species (*see also* Phylogeny)
 J 22(6): 1387 (parasites, re Pac. salmon)
 26(4): 879 (trematodes, re Atl. fishes; correction on J 27(8): 1499)
 (4): 909 (*Pomphorhynchus laevis* acanthocephalan)
 27(12): 2159 (*Brachiella lageniformis* copepod)
 28(1): 31 (*Tristoma* trematode species re swordfish populations)
 29(2): 179 (*Anisakis simplex* & *Eubothrium crassum* parasites re possible subspeciation of *Salmo salar*)
 T 134 (various parasites, for Atl. salmon stocks)
 202 (river diatoms re heavy-metal contamination of water)
 S 1302 (parasites re high seas chum salmon origin)
 1640; 1641; 1644 (*Anisakis* nematodes for Atl. herring stocks)
 A 181 (*Anisakis* roundworms & *Eubothrium crassum* tapeworm re geographical origin of Atl. salmon stocks)
- Indium derivatives
 J 27(2): 317 (oxide for coding embedded encapsulated tags in animals)
- Infauna (*see also* Benthos; Fauna)
 J 27(4): 621, (12): 2273 (species composition & structure of benthic communities off Washington coast)
- Infection (*see also* Disease; Furunculosis; *Gaffkya homari*; Immunology; Parasites; Tumors; Viruses; Yeasts)
 J 28(7): 1064 (pancreatic necrosis virus in brook trout; effect of stress on detecting bacterial or viral infections in fishes)
 T 226 (shiners as possible immune carriers of *Aeromonas liquefaciens* bacteria disease to salmon & suckers, NW Miramichi R., N.B.)
 MSP 16 (re control of fish diseases in Canada)
 A 58; 58(F) (human dermatitis from fluke larvae)
 186 (infectious diseases of USSR fishes & control: book review)
- Inflammation
 J 23(12): 1913 (histopathology of induced, in Pac. oyster adductor muscle)
- Ingles, Charles James
 S 1245 (protamine biosynthesis during salmonid spermatogenesis)
- Ingraham, Woodrow James, Jr.
 J 22(3): 689 (transponding oceanographic buoys)
- Ingram, Peter
 S 1419 (Pac. cod muscle 5-nucleotidase)
 1447 (glycogen synthesis in trout liver)
 1458 (branching enzyme in trout liver)
 1624 (human urine sorbitol & mannitol)
- Inia geoffrensis* (*see* Dolphin, Amazon River)
- Injury (*see also* Regeneration)
 J 22(2): 639 (lobster abdominal membrane lesions)
 26(1): 1 (of lobsters allowing infection with gaffkemia disease)
 (6): 1694 (Atl. salmon muscle, from nylon gillnetting)
 T 168 (of sea scallops during dragging)
 S 910 (shell repair by sea scallops)
- Inlets; Fiords (*see also* Indian Arm; Oceanography; Saanich Inlet; Tanquary Fiord; *also* names of other inlets)
 J 24(7): 1475 (oceanography of larger SE Alaskan)
 (11): 2207 (annual changes in waters of B.C.)
 28(8): 1077 (physical oceanographic features of 32 Chilean, & comparison with B.C./Alaska fiord inlets)
 29(12): 1767 (automatic recording of electrical conductivity profiles in upper layers of)
 S 1407 (tides & river inflow re wastes disposal)
 A 220 (condensation of J 28(8) reference above)
- Inopsetta ischyra* (*see* Sole (hybrid))
- Inosine and derivatives (*see also* Purines)
 J 22(2): 307 (in pink shrimp)
 23(12): 1821 (formation in swordfish muscle re quality)
 26(3): 704 (in canned Asiatic shrimp)
 (10): 2621 (re critical freezing zone of Atl. cod muscle)
 27(1): 83 (re nucleotides degradation in sea scallop muscle during iced storage)
 28(8): 1125 (5-monophosphate degradation in skeletal muscle of Atl. fishes re keeping quality)
 S 1648 (re degradation of fish products quality)
- Inosinic acid
 S 1289 (biosynthesis in Pac. salmon & rainbow trout)
- INPFC (*see* International North Pacific Fisheries Commission)
- Insecticides (*see also* Pesticides; Pollution; Toxicants)
 J 22(2): 503 (DDT effect on young Atlantic salmon temperature selection)
 24(2): 429 (lethal endrin level in gizzard shad blood)
 (4): 701, 709, 731, 769, 807, 823 (history, research, & management program, effects on insects, salmon, & trout, etc., re spraying N.B. forests with DDT or phosphamidon to combat spruce budworm infection)
 (5): 1173 (formamidin & hexachlorocyclohexane effects on young coho salmon)
 25(1): 189 (DDT residues & metabolites in Atl. coast fishes)

- (8): 1571 (fish liver phosphatase degradation of organophosphate)
- (8): 1621 (effect of Sevin on cockle clam survival & growth)
- (9): 1787 (DDT effect on brook trout reproduction)
- (9): 1797 (dieldrin residues in goldfish after aldrin ingestion)
- (11): 2321 (DDT degradation in Atl. salmon)
- (11): 2443 (DDT effect on brook trout growth & stress resistance)
- (12): 2677 (DDT effect on brook trout lateral line response)
- 26(1): 47 (DDT in vitro degradation by Atl. salmon intestinal contents)
- (3): 695 (endrin toxicity to Atl. trout & salmon)
- (5): 1378 (biological assay for several types)
- (7): 1939 (dieldrin uptake by perfused rainbow trout gills)
- (8): 2193 (Dylox organophosphate effect on rainbow trout larvae)
- (9): 2395 (resistance of resistant vs. nonresistant mosquitofish to 28 kinds of)
- (12): 3209 (DDT lack of effect on hepatic dehydrogenase activity in young rainbow trout & coho salmon)
- 27(1): 1 (analysis of variations in DDT, dieldrin, etc., residues in landlocked Atl. salmon)
- (1): 93 (effects of Sevin on various stages of Dungeness crab)
- (2): 331 (sublethal DDT exposure effects on brook trout & recovery)
- (2): 347 (coho salmon body weight re chronic oral DDT toxicity)
- (8): 1496 (feed re DDT accumulation by fish)
- (10): 1869 (dieldrin toxicity to sailfin mollie through effect on triaminase)
- (12): 2225 (endrin chronic poisoning in goldfish)
- (12): 2374 (chlorinated hydrocarbons residues in winter flounder in a Massachusetts river estuary)
- 28(1): 59 (DDT residues in Canadian Atl. fishes & shellfishes tissues)
- (1): 105 (DDT residues in Saskatchewan R. fishes muscle)
- (4): 610 (dieldrin concentration in green sunfish blood & brain)
- (4): 613 (anticholinesterase activity of several organophosphorus types of)
- (5): 705 (biological magnification & degradation of DDT & aldrin by freshwater invertebrates)
- (12): 1877 (DDT accumulation & persistence in a lotic ecosystem)
- 29(1): 27 (DDT vs. an organophosphate, re young Atl. salmon resultant vulnerability to brook trout predation)
- (3): 315 (effects of DDT, methoxychlor, & 2 other, on Atl. salmon parr ability to learn & retain simple conditioned response)
- (4): 349 (DDT-complex residues in Atl. herring, seal, & whale oils)
- (5): 525 (dressing & cooking effects on DDT residues in L. Michigan commercial fishes)
- (5): 583 (Sevin long-term effects on fathead minnow survival, growth, & reproduction)
- (9): 1333 (sublethal effects of DDT on goldfish locomotor behavior)
- (10): 1413 (dieldrin accumulation in a green alga, a cladoceran, & in guppy; corrections on J 30(8): 1257)
- T 6 (evaluating salmon fisheries damage from N.B. forest spraying)
- 272 (halogenated hydrocarbons in the environment)
- S 893; 905; 920; 965 (DDT forest spraying effects on Atl. salmon and trouts)
- 966 (DDT effect on aquatic insects)
- 1085 (phosphamidon safer than DDT, re Atl. salmon & trouts)
- 1241 (disproval of *Nemoura* stonefly DDT tolerance)
- 1324 (DDT sublethal effects on brook trout nervous system)
- 1463 (mass spectrometric identification of DDT in mixtures)
- 1536 (possible cause of deformed chironomids larvae in L. Erie & Okanagan R. lakes, B.C.)
- 1552 (decrease in DDT residues in Atl. salmon parr after N.B. forest spraying)
- 1633 (residues in Atl. aquatic birds eggs)
- 1689 (DDT & dieldrin effect on L. Erie & L. Ontario phytoplankton growth)
- 1704 (DDT concentration & light intensity re *Nitzschia* marine diatom photosynthesis)
- A 83 (criteria for DDT residues effects on fish)
- 87 (biological assays for pollution by DDT, etc.)
- 201 (DDT re Great Lakes fishes as human food)
- 222 (DDT effects on physiology & behavior of salmonids at sublethal levels)
- Insects (principally aquatic) (*see also* subclassifications by orders; *also* Insecticides; Invertebrates)
- J 24(4): 701, 709, 731, 769, 807, 823 (affected by spraying N.B. forests with DDT or phosphamidon)
- 26(2): 279 (upstream movements of river larvae)
- (5): 1157 (feed, habits, communities, etc., in a small Que. stream)
- (6): 1685 (emergence trap for collecting in streams)
- (12): 3101 (of Crecy L., N.B.)
- 27(1): 125 (re lake trout biology & fishery, L. Opeongo, Ont.)
- (2): 359 (theory of stream drift effects on fish feeding on bottom fauna)
- (12): 2356 (abundance re rainbow trout feeding)
- 28(1): 35 (differences upstream & downstream of a dammed Ont. lake)
- (1): 73 (ash & caloric content of some thermal spring)
- (5): 705 (biological magnification & degradation of insecticides by)
- (6): 849 (samplings from shallow stream beds)
- (6): 928 (in feed of fluffy & tidepool sculpins)
- (9): 1322 (quantitative sampler for forms on aquatic plants)
- (11): 1683, 1699, 1715 (re L. Ontario bays benthos)

- (12): 1877 (effects of persistent DDT residues in a lotic system)
- 29(9): 1329 (thermal regime changes in river below a dam as cause of reduction of)
- T 130: 221 (of Nfld. streams)
- 258 (toxicity tests of trisodium nitrilotriacetate detergent on larvae, re pollution)
- 323 (possible effects of logging on salmon & trout feed in 2 Vancouver Is. streams)
- 325 (possible effects on freshwater fishes in N.B.)
- S 966 (effect of DDT forest spraying in N.B.)
- 999 (various fly larvae as indicators of Cu-Zn toxicity in Atlantic salmon streams)
- 1128 (in benthos of 4 L. Superior bays)
- 1146 (oxidase-peroxidase system in various)
- 1532; 1533 (in high mountain North Boulder Creek, Colorado)
- 1724 (traps for collecting emerging aquatic)
- Insolation (*see also* Photosynthesis)
- S 919 (re cloud amount and sun altitude over ocean)
- Inspection (*see also* Management)
- A 243 (for parasitization in whole fish by ultrasonics)
- Instruments; Instrumentation (*see* Apparatus)
- Integument
- J 26(1): 1 (lobster: as defense against *Gaffkya homari* infection)
- Intensity of fishing (*see* Catches; Exploitation; Fisheries)
- Interaction (*see also* Behavior; Environment)
- J 22(4): 1035 (between underyearling coho salmon & steelhead trout)
- 29(5): 555 (between coastal cutthroat & Dolly Varden trouts)
- (12): 1737 (social, between juvenile coho & fall chinook salmon, Sixes R., Oregon)
- International Commission for the Northwest Atlantic Fisheries (ICNAF) Research reports and summaries of Canadian investigations
- B 154 (re Nfld. marine fisheries resources)
- S 886; 887; 888; 890; 949; 955; 1023; 1024 (research summaries, 1962-64, re groundfish; other commercial species; gear; hydrography) (continued in "A" Series below)
- 928 (catch size effect on otter trawls selectivity)
- 940 (N.S. haddock abundance, age, mortality)
- 954 (minimum mesh size data re regulations)
- 997 (cod otolith exchange for age determination comparisons)
- 1018 (review of possible conservation actions)
- 1019 (inshore cod age & growth studies sampling comparisons)
- 1020 (otter-trawl selectivity re cod girth-length relations)
- 1021 (age validity from cod otoliths)
- 1022 (trends in cod fishery off E Nfld. & Labrador)
- 1025 (data lack for calculating maximum sustained yields)
- 1026 (1964 another cold sea temperature year)
- 1027 (length & weight changes of herring stored frozen vs. in formalin)
- 1051 (haddock fecundity re sea temperature effects)
- 1052; 1060 (cod growth re Nfld. area sea temperatures)
- 1053 (mass mortality of Nfld. area fish re low temperatures)
- 1054 (cod & haddock behavior & concentrations re feed)
- 1055 (haddock successful year-classes on Grand Bank re year-class success of fish to N & E)
- 1056 (sea & air temperature anomalies off Nfld.)
- 1057; 1058 (haddock distribution re season, depth, & temperature)
- 1059; 1060 (cod research catches re depth & temperature)
- 1089 (Canadian research report)
- 1126 (Greenland salmon fishery influence on N.B. salmon fishery & stocks)
- 1127 (Labrador Sea & Davis Strait hydrography, 1965)
- 1142 (Scotian Shelf waters long-term temperature variations)
- 1143 (forecasting surface water temperatures at St. Andrews, N.B.)
- 1147 (haddock distribution off E Canada coast)
- 1148 (variation in cod recruitment re sea temperatures)
- 1149 (Magdalen Is. herring fishery re sea temperatures)
- 1150 (effect of light on Bay of Fundy herring movements)
- 1158 (heterogeneity of length & age composition in commercial groundfish landings)
- 1160 (trend-interpreting difficulties re cod & haddock landings from E Scotian Shelf)
- 1185 (haddock fishery trends)
- 1206 (characteristics of salmon from Labrador Sea & off W Greenland)
- 1207 (American plaice catches diurnal variation on Grand Bank)
- 1208 (otolith age validation in Labrador cod)
- 1209 (offshore fishing effect on inshore Labrador cod fishery)
- 1211 (changes in halibut fishery in subareas, 1954-64)
- 1212 (age determination of greysole off N.S.)
- 1213 (length-weight relations for American plaice, witch and yellowtail flounder)
- 1215 (recent sea temperature variations in Subarea 4)
- 1216 (sea & air temperature anomalies off Cape Spear, Nfld.)
- 1217 (revised growth rate estimate between Greenland & Miramichi R.)
- 1218 (salmon tagging in Atl. provinces, 1964-66)
- 1279 (comparative fishing by 2 research vessels)
- 1280 (temperatures & salinities off Nfld., 1967)
- 1281 (field identification of fish-net synthetic fibers)

- 1282 (recent changes in size composition of Canadian swordfish catches)
- 1283 (Nfld. herring industry & its implications re the resource)
- 1284 (Georges Bank scallop fishery recent developments)
- 1316 (Scotian Shelf haddock size, age, & recruitment comparisons)
- 1317 (salmon distribution & characteristics over Nfld. banks & ocean depths)
- 1318 (W Nfld. cod stocks biology & fishery)
- 1380 (diurnal variation in availability of different redfish sizes)
- 1381 (experimental snella vs. otter trawl experimental cod catches)
- 1382 (redfish age re growth)
- 1383 (length-weight data on commercial Greenland turbot)
- 1492 (tagged haddock movements off Digby, N.S.)
- 1493 (assessments of mesh size increases of cod trawls)
- 1494 (growth & mortality estimating on basis of age-length keys)
- 1495 (Bay of Fundy immature herring populations)
- 1507 (haddock length conversion factors)
- 1540 (catch/effort assessments for major cod stocks)
- 1541 (trends in American plaice fishery, Nfld.)
- 1542 (temperatures & salinities in E Nfld. area, 1969)
- 1640; 1641; 1645 (biological features of Canadian herring stocks & spawning)
- 1642 (recent change events in E Scotian Shelf haddock fishery)
- 1643 (white hake tagging, S Gulf of St. Lawrence)
- 1644 (variation of larval nematodes incidence in Canadian herring)
- 1645 (SW Nova Scotia herring larvae retention in Bay of Fundy)
- 1699 (food chains & fish production, N Atl. Ocean)
- A 43; 99; 108; 119; 152; 153; 181; 182; 241 (research summaries, 1965-71, re groundfish; other commercial species; gear; hydrography)
- 99 (fisheries production from areas, 1952-64)
- 154 (oceanography, Nfld. to Flemish Cap section, 1968)
- 155 (utilization of 3 Atl. salmon stocks tagged in NW Miramichi R.)
- 156 (effects of icing & freezing gutted groundfishes on length & weight biological measurements)
- 157 (conversion factors relating Atl. cod standard, extreme total, & fork lengths)
- 158 (haddock fork length re head girth)
- 159 (age-length keys for Atl. cod)
- 191 (American plaice eggs & larvae)
- 206 (haddock recruitment & stock abundance, 1970-72)
- 207 (recent events in Canadian Atl. herring fisheries)
- 208 (vertebral numbers of Bay of Fundy herring; origin of N.B. sardines)
- 240 (commercial & research abundance indices for cod & haddock)
- 245 (temperatures & salinities in E Nfld. waters, 1970)
- 246 (status of SW Nfld. herring stocks, 1965-70)
- 247 (calculation of harp seal production in NW Atl.)
- 248 (accuracy of commercial & research abundance indices for cod)
- 249 (virtual population assessment for cod)
- 250 (mesh size increases effects on cod fishery)
- 251 (recent scallop recruitment & reduction in cull size, Georges Bank)
- International North Pacific Fisheries Commission (INPFC)
- S 925; 926; 1038; 1137 (annual reports on Canadian progress in high-seas Pacific salmon & oceanography research, 1962-65; see also A 86 below)
- 973; 1302 (offshore coho salmon biology)
- 974 (offshore biology of 5 salmon species)
- 1062; 1063; 1064 (life history review of B.C. sockeye; pink; chum salmon)
- 1129 (sockeye distribution in N Pac. Ocean)
- 1156 (pink salmon distribution in N Pac. Ocean)
- 1230 (Canadian Pac. salmon spawning populations)
- 1390 (chum salmon origin in N Pac. from scale studies)
- A 86 (1966 salmon & oceanographic research results)
- 204 (same as S 1137 above)
- International Pacific Salmon Fisheries Commission (IPSF)
- S 952 (migration, composition, exploitation, abundance, of Fraser River odd-year pink salmon runs)
- Interrenal tissue (*see also* Adrenal gland; Kidney; Pituitary)
- J 27(6): 1169 (response to mammalian ACTH by sockeye salmon, re maturity)
- 28(4): 477 (histological effects of hormones & cortisol on gonadectomized sockeye)
- S 1167; 1168 (in vitro biosynthesis of 1α -hydroxycorticosterone by skates)
- 1372 (interrenalectomy & hypophysectomy re skate liver glycogen levels)
- 1478; 1479 (histological identification in Atl. sturgeon re steroidogenesis)
- Intestinal tract (*see also* Feed; Digestion)
- J 22(3): 775 (histology, of postspawned sockeye salmon)
- 23(10): 1067 (Atl. cod morphology)
- 25(9): 1797 (dieltrin accumulation in goldfish, after aldrin ingestion)
- (11): 2365 (2 new tapeworm species in deepwater chimaera)
- (12): 2643 (furunculosis bacteria in brook trout)
- 26(1): 47 (bacteria of Atl. salmon degrade DDT insecticide)
- 29(3): 333 (aerobic microflora of bluefish)
- S 1455 (mucosa lipids of fatty acid-deficient rats)
- Introduced species (*see* Species, introduced; Transplantation)

- Invertebrates (in general) (*see* Section IV(c) of Preface, *also* the various subdivisions of aquatic invertebrates and notes to their headings, *also* Bacteria; Benthos; Biomass; Checklists; Fauna; Feed; Insects; Parasites; Plankton; Trawling; Zooplankton; etc.)
- J 24(11): 2467 (measuring organic feed retention by aquatic)
- 26(1): 145 (zinc content)
- (6): 1667 (fluorescent dyes for separating from sediments)
- (12): 3101 (list of, in Crecy L., N.B.)
- 27(3): 606 (growth rate re ribonucleic acid concentration)
- 28(8): 1205 (2 simple epifaunal collectors)
- (9): 1322 (quantitative sampler for those on aquatic plants)
- (10): 1583 (possibilities of speciation by X-ray irradiation spectra)
- (12): 1877 (DDT accumulation & persistence in)
- 29(4): 363 (review of feed & feeding habits of USSR freshwater)
- B 176 (synopsis of, in Canadian marine zooplankton)
- T 43 (found on Irish moss)
- 55 (identification of B.C. marine zooplankton)
- 225 (associated with Bay of Fundy scallop beds)
- 323 (possible effects of logging on salmon & trout feed in 2 Vancouver Is. streams)
- S 1532; 1533 (in high mountain North Boulder Creek, Colorado)
- 1580; 1620 (classification & ordination of many shallow marine benthic species, P.E.I.)
- A 1 (research on Nfld. commercial marine)
- Iodine derivatives (*see also* Thyroxin)
- J 25(8): 1651 (inorganic iodide binding plasma protein)
- 26(9): 2311 (providone-iodine as disinfectant against *Aeromonas liquefaciens* in trout eggs)
- 29(1): 61 (effectiveness of 2 iodophor disinfectants against 3 salmonid viruses)
- T 114 (content of Atl. & Pac. herring meals)
- S 1377 (content of Atl. & Pac. herring meals)
- Iodine values (of oils) (*see also* Acids, fatty)
- J 27(10): 1669 (biological implications of seasonal trends, in commercial Atl. herring oils)
- T 187 (seasonal trends in commercial Atl. herring oils)
- S 1045 (empirical relation re polyunsaturated fatty acid content of various marine animal oils & lipids)
- Ionization, flame
- S 995 (fundamental groups response of oxygenated aliphatic hydrocarbons)
- IPSFC (*see* International Pacific Salmon Fisheries Commission)
- Iredale, David Gordon
- J 28(7): 1061 (method of drying freshwater fish)
- 29(9): 1365 (smoke-processing effect on muddy odor & taste in rainbow trout)
- S 1081 (sweet-cured freshwater fish)
- 1433 (goldeye smoking techniques)
- 1697 (N.W.T. fish & mammal processing plant)
- A 6(F) (sweet-cured freshwater fish slices)
- Irish lord, brown (*Hemilepidotus spinosus*)
- J 22(1): 203 (biochemical systematics)
- 23(8): 1277 (B.C. records & first Alaska record)
- 25(12): 2665 (associations with other fishes off Oregon coast)
- B 180: 504 (full description, etc., B.C.)
- Irish lord, red (*Hemilepidotus hemilepidotus*)
- J 26(4): 799 (new digenetic trematode species from)
- (9): 2319 (parasites, B.C.)
- B 180: 502 (full description, etc., B.C.)
- T 11 (in experimental B.C. midwater trawling)
- Irish moss (*Chondrus crispus*)
- J 26(10): 2703 (vertical distribution off Halifax, N.S.)
- B 154: 144 (as Nfld. resource)
- CJG 13: 49 (Nfld. preliminary experimental harvesting)
- T 43 (ecology in Nfld. waters)
- 329 (raking effects on lobsters, P.E.I.)
- S 1072 (cholesterol & related sterols in)
- 1619 (zonation & biomass, St. Margaret's Bay, N.S.)
- Irminger Sea (east of Greenland)
- J 24(12): 2639 (Atlantic salmon catches re Europe-Greenland migration)
- Iron derivatives (*see also* Blood; Hematin; Hemoglobin)
- J 22(4): 929 (re oxidative rancidity promotion in cod flesh)
- 23(4): 575 (determination & amounts in Fraser R. water & during its mixing in adjacent seawaters)
- (5): 737, (10): 1587 (effect on fish muscle thiobarbituric acid values)
- (8): 1109 (content in goldfish blood)
- (9): 1385 (pro-oxidant effect on frozen Atl. cod fillets)
- 25(4): 639 (catalyzing marine flesh oxidative rancidity)
- (6): 1229 (re phytoplankton ecology in an Ont. reservoir)
- (11): 2327 (in St. Lawrence R. estuary glacial marine sediments)
- (12): 2575 (re limnology of arctic fresh waters)
- 26(9): 2299 (effect on marine muscle lipids oxidation)
- 27(4): 653 (ferrous ion transfer in lake muds)
- (4): 701 (ion effects on marine muscles extractable proteins)
- (5): 837 (as pollution criterion in natural waters)
- (5): 847 (concentration in Sunfish L., Ont.)
- 28(1): 47 (hemosiderin as storage form of, in fish spleen, kidney, & liver tissues)
- (2): 171, 203 (in waters of many small NW Ont. lakes)

- (2): 203 (re photosynthesis by plankton in samples of water from small NW Ont. lakes)
 (2): 277 (in sediments of 16 small NW Ont. lakes)
 (6): 843 (level in P.E.I. oysters)
 29(4): 450 (amount in Atl. oyster shell & soft tissue)
 (12): 1691 (ferric chloride, re toxicity to *Daphnia magna*)
- B 125R: 97; 167: 97 (determination in sea water)
 T 114 (content of Atl. & Pac. herring meals)
 314 (in waters of Petpeswick Inlet, N.S.)
 S 941 (radioactive ⁵⁵Fe seawater contamination)
 1377 (content of Atl. & Pac. herring meals)
 1438 (in Green L., N.Y.)
 1529 (distribution in L. Ontario)
- A 73 (catalyzing fish flesh oxidative rancidity)
 85 (in freshwater fishmeals)
 199 (re Gulf of St. Lawrence marine sediments geology)
 232 (⁵⁵Fe as radioactive marine pollutant)
- Irradiation (see also Energy, radiant; Isotopes; Light, reactions to; Radiation; Radioactivity; Radiometer; X-rays)
 J 23(1): 155 (effect on Atl. cod livers re oil free fatty acid)
 (4): 601 (by gamma rays for sardine preservation)
 24(1): 9 (lake whitefish preservation by gamma)
 (2): 221 (cooked lobster meat preservation by gamma)
 28(5): 643 (by ⁶⁰Co for killing *Salmonella* bacteria in smoked fish; correction on J 29(8): 1241)
- S 1460 (bacterial spoilage of haddock re pre-irradiation quality)
 A 77 (fish & lobster meat preservation by ⁶⁰Co gamma)
 78 (brief summary of preservative effect)
- Irwin, Brian
 J 26(9): 2345 (zooplankton biomass equivalents)
 T 77; 203; 327 (primary productivity measurements in St. Margaret's Bay, N.S.)
 247 (phytoplankton production & nutrients in Bedford Basin, N.S.)
 299 (mapping chlorophyll concentration, Bedford Basin)
 314 (phytoplankton productivity & nutrient measurements, Petpeswick Inlet, N.S.)
- Ishida, K.
 J 29(11): 1644 (mercury in Bay of Fundy harbour porpoises)
- Ishida, Teruo
 S 974 (offshore distribution of Pac. salmon)
 1156 (N Pac. pink salmon)
- Islands, Bay of, Nfld.
 J 22(2): 599 (salmon investigations)
- Isochaetides* (see Oligochaeta)
- Isochrysis* (see Chrysophyta)
- Isoenzymes (see Enzymes; Isozymes)
- Isoetes occidentalis* (aquatic macrophyte)
 J 27(1): 71 (productivity, Marion L., B.C.)
- Isomerism (chemical) (see Acids, fatty; Phytanic acid; also other types of chemical compounds subject to isomerism)
- Isopeptic measurements
 S 1234 (of H₂O-NaCl-Na₂SO₄ system re sea water)
 1512; 1515 (re activity coefficients of H₂O-NaCl-MgCl₂ (& -Na₂SO₄) ternary systems at 25 C)
- Isopoda (see also Gribbles)
 J 24(10): 2161 (*Livoneca* parasitic on surfperches)
 25(1): 157 (*Mesidotea entomon* biology, Chignik Lakes, Alaska)
 (6): 1161 (*Hemioniscus balani* distribution)
 26(9): 2319 (*Livoneca californica* on B.C. shiner perch)
 28(6): 928 (feed of tidepool & fluffy sculpins)
 (11): 1699 (production, Bay of Quinte, Ont.)
 B 176: 60, 162 (synopsis of Canadian marine zooplanktonic)
 T 25; 35; 59; 60; 73 (in Strait of Georgia benthos biomass)
 43 (on Irish moss)
 185 (bibliography re Canada fishes parasitized by)
 266 (Frobisher Bay, Baffin Is., N.W.T.)
 S 1004 (*Mesidotea entomon glacialis* re Canadian Arctic Islands marine-glacial relicts)
 1128 (in benthos of 4 Lake Superior bays)
- Isopropanol (see Alcohols; Fish protein concentrate)
- Isopsetta isolepis* (see Sole, butter)
- Isotopes (radioactive) other than ¹⁴C (see also Radioactivity) (Note: Data on use of ¹⁴C are, with few exceptions, not indexed because of so frequent use; e.g. see Biosynthesis; Photosynthesis. See also Cobalt for additional references to ⁶⁰Co, and Zinc for additional references to ⁶⁵Zn)
 J 23(4): 601; 24(1): 9, (2): 221 (⁶⁰Co for preservative gamma irradiation)
 25(3): 591 (trout growth effect on ⁶⁵Zn retention)
 (8): 1651 (¹²⁵I re plasma protein-bound inorganic iodide)
 (10): 2101 (¹⁵N in studies of N utilization in subarctic lake)
 (10): 2219 (loss of radioactivity in phytoplankton stored on filters)
 (11): 2461 (tissue distribution of natural ⁶⁵Zn in Crustacea)
 (12): 2691 (⁶⁵Zn metabolism in fresh water mussel)
 28(3): 369, (10): 1583 (re radioisotope X-ray fluorescence spectrometry)
 (5): 769 (liquid scintillation assay method for ¹⁴C-labelled benthic microflora)
- S 941 (as seawater contaminants)
 1131; 1186 (³H in tracing hormone or fat biosynthesis)
 1646 (²²²Rn for tracing air-to-water CO₂ from atmosphere)
- A 77 (⁶⁰Co irradiation for flesh pasteurization)
 232 (as marine environment pollutants)

- Isozymes (*see* Enzymes)
- Istiophorus albicans* (*see* Sailfish)
platypterus (*see* Sailfish)
- Isurus nasus* (*see* Shark, salmon)
oxyrinchus (*see* Mako, shortfin)
- Itch, swimmers' and clam diggers'
A 58; 58(F) (cause, control, & treatment)
- Ito, Jun
J 28(12): 1921 (herring predation on young chinook salmon)
- Ivlev, Viktor Sergeevich
J 23(11): 1727 (biological productivity of waters)
- J**
- Jack, mackerel (*see* Mackerel, jack)
- Jackfish (*see* Pike, northern)
- Jackim, Eugene
J 27(2): 383 (metal poisoning effect on killifish liver)
- Jacksmelt (*Atherinopsis californiensis*)
J 27(7): 1225 (some aspects of school organization)
- Jaffray, June Isabella
J 24(3): 651 (Atl. cod postmortem changes)
25(4): 733 (Nfld. trap-caught cod quality after single & double freezing)
S 1363 (Nfld. offshore fish & influence on quality after freezing)
- Jahn, Lawrence Allan
J 23(10): 1475 (movements of trout)
26(5): 1243 (cutthroat trout movements and homing)
- James Bay (*see also* Hudson Bay)
J 26(8): 2205 (white whales wintering in)
- Jamieson, Andrew
T 303 (elemental phosphorus monitoring program results, Long Harbour, Nfld., July 1970-Apr. 1971)
- Jamieson, William David
S 1463 (identification of polychlorinated biphenyls & DDT)
1659 (polychlorinated biphenyls in the environment)
1718 (organochlorine pesticide residues in commercial fish in Canada, 1970)
- Jangaard, Peter Michael
J 22(1): 131 (lipids of squid)
23(1): 21 (free fatty acids in Atl. cod oil)
(5): 681 (fractionation of marine oils)
(9): 1385 (rancidity in cod fillets)
(11): 1809 (fatty acid lipids from cod)
- 24(3): 607 (seasonal changes in cod condition and lipid content)
(3): 613 (seasonal changes in cod fatty acid composition)
(4): 895 (isopropyl alcohol preservation of fish protein concentrate raw material)
25(11): 2419 (harp & hooded seal lipids)
CAR 1 (phosphorus pollution crisis in Placentia Bay, Nfld.)
CHN 22 (sulfide discoloration ("smut"))
26 (salt water fish farming)
28 (care and treatment of seal pelts)
29 (fish meal plants in E Canada)
31 (frozen storage of whole lobsters)
32 (fish paste products)
33 (handling shrimp)
34 (Maine shrimp industry)
S 932 (gray Atl. seal blubber fatty acids)
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987 (concentrating esters in marine lipids)
1177 (cod liver lipids fatty acid esters)
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A 55 (whole lobster frozen storage)
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127 (high priority fish protein concentrate development)
171 (herring research has high priority)
177 (marine oils production increases)
214 (hormone research in fish farming)
215 (review of book on fishery by-products technology)
220 (FRB scientists' role in research cruise)
- Japan
J 25(4): 625 (marine biosynthesis in Aburatsubo Inlet)
(12): 2527 (re brown trout world distribution)
B 169: 82 (culture & export of Pac. oyster seed)
CNG 79 (recent developments in groundfish fishery off Canadian & U.S. Pac. coast)
T 246 (bibliography of trawl fishery off N America Pac. coast)
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326 (Pac. ocean perch catches off B.C., Washington, & Oregon)
S 974: 6 (Pac. salmon fishery)
A 90; 103 (extension of fisheries into NE Pac.)
255 (distribution & fishery of *Chionoectes* queen crabs)
- Jaroszynski, Lubomir Oswald
J 26(8): 2240 (otter surface sampler)
T 333 (macrozooplankton biomass measurements in St. Margaret's Bay, N.S.)
- Jasper National Park, Alta.
J 27(8): 1335 (rotenone effects on zooplankton re limnology of Patricia & Celestine L.)
28(3): 311 (crustacean plankton of 57 alpine & subalpine lakes & ponds)
- Javaid, M. Yaqub

- J 24(7): 1507 (*Salmo salar* and *S. gairdneri* temperature selection)
 (7): 1515 (starvation on salmonid selected temperature)
- Jaw (see also Cranium; Morphology (biological); Teeth)
 J 28(10): 1545 (abnormalities of Pac. herring larvae, raised at elevated temperatures, & possible detriment to adult feeding)
- S 1188 (length re *Phoca vitulina* seal subspecies)
 1514 (fat of Amazon R. dolphin re echolocation ability)
 1608 (isovaleroyl triglycerides in oil from beluga whale)
- Jean, Yves Marie Louis
 J 22(2): 621 (Canadian Atl. monkfish)
- Jelley, Elizabeth
 J 29(8): 1234 (trapping upward-swimming benthos in Bideford R., P.E.I.)
- Jellyfishes (Scyphozoa) (see also Coelenterata)
 J 25(8): 1561 (*Cyanea capillata* lipids fatty acids composition re turtle feed)
 26(6): 1535 (estimated rate of *C. capillata* feed consumption, Ogac L., Baffin Is., N.W.T.)
 26(7): 1743 (experimental determination of *C. capillata* & *Aurelia aurita* feeding behavior, feed consumed, digestion, & growth rate)
- CNG 84 (popular descriptions of some NE Pac. Ocean)
 T 43: 39 (*Haliclystus salpinx* on Irish moss)
 282 (*Aurelia* biomass measurements, Bedford Basin, N.S.)
 A 108: 18 (indications of association of *C. capillata* with Atl. cod larvae)
- Jenkins, Thomas Mandeville, Jr.
 J 26(12): 3275 (brown and rainbow trout night feeding)
 27(12): 2356 (rainbow trout feeding in relation to drifting invertebrates abundance)
 28(7): 1019 (social behavior re introduced rainbow trout)
- Jenkinson, Donald William
 J 23(7): 1089 (salmon scales)
 25(5): 1067 (aging salmon by otoliths & scales)
 26(5): 1199 (pectoral fin rays re salmon age)
 CNS 16; 27 (age composition of B.C. salmon catches)
 25 (B.C. sockeye salmon catches, 1912-63)
 26 (1957-63 B.C. chum salmon catches)
- Jennings, Joseph Brian
 J 26(10): 2669 (nutrition & chemical composition of *Syn-desmis franciscana*, & taxonomy of *S. antillarum*)
- Jensen, Alvin Lee
 J 28(3): 458 (response of brook trout populations to a fishery)
 29(11): 1651 (population biomass, number of individuals, average individual weight, & the linear surplus-production model)
- Jensen, Jens Møller
 J 24(12): 2639 (Irminger Sea Atl. salmon)
- Jessop, Brian Michael
 J 29(4): 452 (assigning round whitefish age by otoliths)
- Jhingran, Vishwa Gopal
 J 26(11): 3073 (derivation of average lengths of different age-groups of fishes)
- Joergensen, Ole Hallig
 T 106; 143 (Pac. Ocean Station P oceanographic data time distribution)
- Johannes, Robert Earl
 J 24(11): 2467 (aquatic invertebrate retention)
- Johannessen, O. M.
 J 29(5): 595 (Gulf of St. Lawrence geostrophic circulation)
- Johansen, Kjell
 J 27(3): 551 (ventilation & perfusion in dogfish)
- Johansen, Peter Herman
 J 29(3): 315 (insecticides effects on Atl. salmon parr learning & retaining conditioned response)
- John, Kenneth Rydal
 J 25(2): 373 (bluegill retinomotor rhythms)
- Johnson, Allyn Gregory
 J 27(5): 943 (α -glycerophosphate dehydrogenase electrophoretic variants)
- Johnson, Bernard Guy Herbert
 S 1484 (molecular structure & biological activity among mononitrophenols containing halogens)
- Johnson, Byron Thomas
 J 28(5): 705 (pesticide accumulation in invertebrates)
- Johnson, Clifford Ray
 J 25(4): 807 (*Enophrys bison* feed)
- Johnson, Eugene Allen
 J 26(8): 2245 (*Mytilicola orientalis* fecundity)
- Johnson, Lionel
 J 22(1): 239 (Baker L., N.W.T., salinity)
 23(7): 963 (circulation of Great Bear L., N.W.T.; correction on J25(8): 1759)
 (10): 1495 (pike food)
 29(6): 731 (culturally unstressed salmonid community characteristics, Keller L., N.W.T.)
 (6): 941 (future of salmonid communities in N American oligotrophic lakes)
 T 165; 165(F) (central Canada rainbow trout farming)
 S 1004 (marine-glacial relicts)
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- A 14 (Great Bear L.)
257 (review of book on Antarctica)
- Johnson, Murray George
J 27(3): 425 (mine-waste effects on phytoplankton)
J 28(11): 1683 (L. Ontario benthos species diversity)
(11): 1699 (L. Ontario benthos production)
(11): 1715 (L. Ontario benthos community metabolism)
- Johnson, Waldo Eugene
J 27(8): 1493 (phosphate removal in lakes Erie & Ontario)
28(2): 123 (background of FRB Experimental Lakes, NW Ont.)
S 982 (self-regulation of population abundance in *Oncorhynchus nerka*)
A 233 (ecology and our pollution problems)
- Johnson Creek, Idaho
J 25(7): 1453 (station permanence studies of juvenile salmon & trout)
- Johnston, Charles Edward
J 24(5): 955 (purines in parr-smolt Atl. salmon)
25(9): 1901 (Atl. salmon skin & scales)
27(5): 983 (Atl. salmon silvering at parr-smolt transformation)
- Jolicoeur, Pierre
J 29(8): 1173 (morphology & myogen of 2 darter species re hybridization)
- Jonas, Richard Edmund Ernest
J 22(4): 891 (acetone in fish blood)
23(2): 207 (lecithinase activity)
(11): 1811 (lecithinase in trout muscle fractions)
24(2): 273 (compounds in rainbow trout muscle)
(12): 2555 (trout muscle phospholipase A activity)
25(10): 2157 (muscle dissolution by lysolecithin)
26(8): 2237 (free fatty acid formation)
27(5): 857 (fatty acid oxidation by trout mitochondria)
28(7): 1015 (trout lysosomal lipase)
(12): 1837 (tissue solubilization by lysolecithin)
29(10): 1467 (lactate oxidation to carbon dioxide by rainbow trout tissues)
- Jones, Alma Hester
J 29(10): 1463 (tissue hypoxia re zinc toxicity fatal to rainbow trout)
- Jones, Barry C.
J 29(8): 1119 (intertidal exposure effect on Pac. herring spawn survival)
- Jones, Bernard Raymond
J 28(6): 924 (temperature requirements for larval ciscos)
29(8): 1107 (temperature effects on young brook trout growth & survival)
- Jones, Leslie Thomas
J 25(5): 1071 (*Meganyctiphanes norvegica* off W Greenland)
- Jones, Meredith Leam
J 28(10): 1445 (new species and redescription of *Magelona*)
- Jones, Noel Rees
J 23(11): 1795 (hypoxanthine in salmon muscle)
27(4): 801 (*Tilapia* muscle glucose levels)
- Jones, Robert Andrew
J 28(8): 1167 (net-avoidance behavior in shad)
29(10): 1445 (ultrasonic tracking of adult American shad during marine to freshwater migration)
- Jones, Ronald Leroy
J 23(5): 767 (technique to obtain chromosomes from fishes)
- Jones Creek (Upper), Ont.
J 25(6): 1199 (water temperature effects on fish feeding)
- Jonkel, Charles Joseph
J 26(8): 2205 (white whales wintering)
- Jordan, Carlisle Marconi
J 25(12): 2717 (cyprinodontids upper lethal temperatures)
- Jordan, Carol
J 26(2): 461 (rainbow trout ovary cells)
(5): 1378 (spinner culture cells detect water pollution)
S 1258 (proteinase from a pseudomonad)
- Jordan, Fred Paul
T 24; 331 (salmon enumeration & sampling data, Babine R., B.C., 1964-71)
S 1296 (population estimates of salmon smolts)
- Jordania zonope* (see Sculpin, longfin)
- Jørgensen, Poul Erik Vestergård
J 28(6): 875 (rainbow trout antibodies neutralizing Egtved virus)
- Juan de Fuca Strait (see also Georgia, Strait of; Oceanography, Pacific east coast)
J 23(4): 575 (distribution of iron compounds from Fraser R.)
26(1): 55 (benthic infauna standing crop)
27(4): 621 (identification & distribution of benthic infaunal communities)
T 142 (oceanographic observations)
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- Judd, James Mark
J 25(7): 1333 (marking fish with stable strontium) 25(12): 2575 (arctic fresh waters)
26(2): 463 (natural phytoplankton populations)
- Jump Creek, Vancouver Island, B.C.
T 323 (survey of possible effects of logging on salmon & trout) Kalmakaff, James
S 1040 (algae enolase)
- June, Frederick Charles, Jr.
J 27(3): 587 (year-class abundance of northern pike) Kamra, Saroja Keshav
J 23(7): 975 (starvation & refeeding of cod)
CHN 30 (discolored flesh in gillnet turbot)
- Junge, Charles Oscar
J 23(5): 689 (depensatory process based on hunger) Kananaskis River system, Alta.
J 22(3): 721 (fish introduction and dams re fishes of)
- K**
- K-line (see also Growth)
J 22(2): 521; 23(6): 869, (8): 1209; 28(6): 801, 809, 815 (analyses of fish growth efficiency re feed)
- Kabata, Zbigniew
J 24(3): 515 (morphology of *Phrixocephalus cincinnatus*)
25(2): 321 (Chondracanthidae from B.C. fish)
(9): 1923 (*Caligus curtus* description & review; correction on J 26(8): 2263)
26(2): 311 (4 Lernaeopodidae)
(4): 921 (*Phrixocephalus cincinnatus*)
(6): 1407 (Tanypleuridae fam. nov.)
(11): 2987 (revision of genus *Salmincola*)
(11): 3043 (*Chondracanthus narium* n.sp.)
27(5): 865 (Lernaeopodidae from B.C. fishes)
(12): 2159 (discovery of *Brachiella lageniformis* in Canadian Pac.)
28(8): 1143 (locomotion in Caligidae)
(10): 1563 (Bomolochidae from B.C. fishes)
29(7): 1015 (Lernaeopodidae attachment organ structure)
(11): 1571 (*Caligus clemensi* copepod developmental stages)
S 1298 (*Salvelinema* buccal region structure)
1301 (*Praeicodochondria galathea* from a Malayan fish)
1306; 1307; 1568 (Copepoda parasitic on Australian fishes)
1358 (Australian chondracanthid copepods)
1429 (copepod parasites of genus *Lepidion*)
1496 (new species of copepod from India)
1501 (haemobaphes in B.C.)
1566 (new female parasitic copepod in Indian Ocean)
1567 (Crustacea as enemies of fishes)
1610(F) (a copepod parasitic on Tunisian mullet)
A 186 (control of infectious disease in fish)
- Kajaji, Vijay Laxmi
J 26(4): 967 (*Acanthosentis cameroni* n.sp.)
- Kalamalka Lake, B.C.
J 24(2): 463 (introduction of *Mysis relicta* as trout feed)
- Kalff, Jacob
J 24(9): 1861 (arctic lake phytoplankton dynamics)
- Kanazawa, Akio
J 23(6): 915 (vitamins B in dulse)
S 1329 (steroid desmolase in a marine invertebrate)
- Kanwisher, John W.
S 1660 (warm-bodied fishes)
- Karlen, Duane James
J 27(6): 1059 (fish observed beneath ice)
- Karluk Lake, Alaska
J 24(12): 2613 (sockeye salmon fry lakeward migrations)
B 162: 187, 201 (re sockeye studies)
- Karnicka, Barbara
J 26(11): 2969 (chemical composition of shrimp flesh & nutritive value)
- Karuppanan, Nalligoundanoor Vealappagounder
J 28(9): 1342 (technique for measurement of carbon dioxide in fish)
- Karyotypes (see Chromosomes)
- Kask, Beverley Anne
T 308 (young chinook salmon observations, Somass R. estuary, B.C.)
- Kason, William Rudolf
S 1531 (casein reaction with polyethylenimine)
- Kates, Morris
S 1323 (composition of pristanic acids)
1385 (phytanic acid menthyl esters)
1712 (preparation & characterization of a stereoisomer of 2 tetramethyl fatty acids)
- Katkansky, Stanley Charles
J 22(4): 1099 (*Mytilicola orientalis* parasitic effects on Pac. oyster)
27(1): 191 (inflammatory lesion in an American shad)
(7): 1320 (sporulation of haplosporidan in Pac. oyster)
- Katodinium auratum* (see Dinophyceae)
- Katsuwonos pelamis* (see Tuna, skipjack)

- Katz, Max**
 J 22(5): 1175 (salmonid leech)
 23(12): 1965 (records of *Cryptobia salmositica* from sockeye salmon)
- Kay, William Wayne**
 J 22(4): 955 (partial freezing of Pac. salmon)
 S 947 (sodium, potassium, and magnesium in fish)
- Kaye, Clifford Alan**
 S 1511 (European flints on N American coast)
- Ke, Paul Jenn**
 J 24(12): 2563 (Canadian marine oils)
 25(5): 1061 (redfish & flatfish oils re fatty acid composition)
 (11): 2419 (harp & hooded seal lipids)
 26(8): 2027 (Nfld. capelin composition)
 (8): 2037 (Nfld. capelin lipids)
 28(7): 1055 (distillation of fluoride in soils)
 T 233 (possible toxic materials in Nfld. bottom deposits)
 S 1339 (fluoride in biological samples)
 1412 (fluoride content of fish protein concentrate & raw fish)
 1505 (fluoride in polluted waters)
 1572 (distribution of fatty acids in lipids of 3 species of molluscs)
- Keast, Allen**
 J 23(12): 1845 (mouth & body form in fish)
 25(2): 285 (black crappie feeding biology)
 (6): 1133 (lake fishes feeding & consumption)
 (6): 1199 (feeding Great Lakes fishes at low temperatures)
- Keck, Richard T.**
 J 29(5): 588 (gas-bubble disease in 2 oyster & 1 clam species)
- Keenleyside, Miles Hugh Alston**
 J 23(7): 1007 (Atl. salmon behavior)
 24(3): 495 (sunfish reproductive isolation)
 (4): 807 (DDT effects on young Atl. salmon feed)
- Keepability (see also Freezing; Preservation; Quality of fishery products; Refrigeration)**
 CCG 7: 1 (freshwater fish vs. meat sausage & wieners)
- Keewatin District, N.W.T.**
 B 158: 65 (commercial fisheries)
- Keleher, James John**
 J 22(6): 1571 (fall fishery at Snowdrift, N.W.T.)
 29(6): 741 (exploitation effects on Great Slave L., N.W.T., salmonid community)
 T 33 (fishermen & Great Slave L. winter fishery 1957-63)
 39 (computer tape system for processing fisheries data)
 176 (bibliography of lake trout 1929-69)
- 298 (information supplementary to that in J 29(6): 741 reference above)
 S 946 (Great Slave L. fishing fleet)
 1015 (Great Slave L. fishing)
 A 100 (Man. keystone freshwater fishes)
- Kelleher, Mary Elizabeth**
 S 1700 (barracudina lipid wax esters as potential replacement for sperm whale oil)
- Keller Lake, N.W.T.**
 J 29(6): 617, 731, 975 (various factors affecting fish communities, particularly salmonid)
- Kelley, James Charles, III**
 J 27(4): 621 (identification of benthic communities)
- Kelly, Joanne Megan**
 J 24(8): 1833 (*Clostridium botulinum* type E in fish and shellfish extracts)
- Kelp seaweeds (see references to certain genera, e.g. *Nereocystis*, *Laminaria*, and *Agarum* under Phaeophyta)**
- Kelpfish (see Greenling, kelp)**
- Kelpfish, crevice (*Gibbonsia montereyensis*) (*G. elegans montereyensis*, spotted kelpfish)**
 B 180: 323 (full description, etc., B.C.)
- Kelpfish, spotted (see Kelpfish, crevice)**
- Kelpfish, striped (*Gibbonsia metzi*)**
 B 180: 322 (full description, etc., B.C.)
- Kelso, John Richard Murray**
 J 27(5): 837 (seasonal nutrient variation in a river system)
 29(7): 1043 (unexploited walleye population data in West Blue L., Man.)
 (8): 1181 (walleye energy utilization)
 ():
 J 29(5): 531 (largemouth bass liver morphology & enzyme histochemistry)
- Kendall's tau**
 S 1070 (computer method for calculating with ungrouped data)
- Kennedy, Owen David**
 J 26(12): 3165 (zooplankton food in winter in Strait of Georgia)
 T 37 (zooplankton net for coastal observations)
 110 (Strait of Georgia biological oceanographic observations)
 S 1386 (shallow scattering layer: detection by high-frequency echo sounder)
 1393; 1394 (production studies in Strait of Georgia)
 1652 (fertilization effect on zooplankton standing stock, Great Central L., B.C.)
- Kennedy, Victor Samuel**

- J 28(8): 1153 (Nfld. winter flounder)
 S 1212 (witch flounder age determination by otoliths)
- Kennedy, William Alexander**
 J 25(10): 2247 (FP-66 tag re sablefish growth)
 27(5): 915 (Pac. cod scale aging)
 (5): 979 (dart-tagged sablefish mortality)
 29(2): 207 (study of sablefish culture, a potential new B.C. industry)
 B 161 (goldeye in Canada)
 T 74 (1964-65 B.C. sablefish study)
 78 (octagonal pound for live fish)
 78; 107; 189; 243; 301: 18; 309 (B.C. sablefish culture)
 301 (a brief on B.C. mariculture)
- Kenney, A. R.**
 J 29(1): 1519 (biochemistry of methylmercury-contaminated northern pike; correction on J 30(8): 1257)
- Keratitis**
 J 22(3): 761 (of lake trout eye)
- Kerekes, Joseph Jenö**
 J 23(10): 1625 (measuring plankton biomass)
 26(2): 460 (blackspotted stickleback in Nfld.)
- Kern River Basin, California**
 J 28(7): 987 (systematics & evolution of *Salmo* species & subspecies of Upper Basin, re western N America *Salmo*)
- Kerns, Orra Edwin, Jr.**
 J 25(3): 485 (sockeye salmon spawning)
- Kerr, Robert Bews**
 J 23(6): 929 (micro starch gel electrophoresis)
- Kerr, Roberta Helen**
 J 24(2): 299 (Catostomidae electropherograms)
- Kerr, Stephen Roy**
 J 28(6): 801 (analysis of laboratory experiments on growth efficiency of fishes)
 (6): 809 (prediction of fish growth efficiency in nature)
 (6): 815 (simulation model of lake trout growth)
 A 269 (book review: An introduction to Mathematical Ecology)
- Kerswill, Charles James**
 J 22(2): 281 (shellfish growth)
 (2): 625 (Canadian salmon off Greenland)
 J 24(4): 701 (introduction and summary to insecticide sprayings)
 (4): 709 (fish losses after insecticide sprayings)
 28(3): 351 (Miramichi salmon smolt utilization)
 MSP 13; 13(F) (FRB studies in Canada's Arctic)
 S 920 (DDT forest spraying in N.B.)
 A 25 (Atl. salmon near Greenland)
 83 (criteria for pesticide residues)
- Ketchen, Keith Stuart**
 J 29(10): 1487 (B.C. dogfish mercury content)
 (12): 1717 (spiny dogfish embryonic growth, mature size, & fecundity, B.C.)
 B 153 (population of petrale sole)
 CNG 78 (review and 1967 forecast of Pac. cod trawl fishery)
 79 (domestic and foreign fishery of groundfish)
 T 12 (1935-65 Pac. cod Canadian & U.S. catch statistics)
 23 (Pac. cod length composition 1951-66)
 171 (determining age of Pac. cod)
 S 922 (measures of species abundance for certain fisheries)
 1002 (studies on virus diseases of fishes)
 A 2 (Pac. cod trawl fishery)
 37 (groundfish potential)
 60 (groundfish in NE Pac.)
 90; 103 (Pac. coast marine fisheries trends)
 252 (review of book: A century of fisheries in N America)
- Ketones**
 J 22(1): 17 (identification re salted cod flavor)
 (4): 891 (acetoacetate and β -hydroxybutyrate in salmonid blood)
 29(8): 1125 (various, developed in iced canary rockfish stored muscle)
 S 1331 (separation of multiple-branched by chromatography)
 1715 (GLC analysis of methylbranched)
- Keyhole Lake, Victoria Island, Canadian Arctic**
 T 231 (potential productivity of Arctic char, from limnological & biological studies)
 A 75 (limnology & fish study, 1965)
- Keys (for identification of organisms)**
 J 22(2): 475 (stonefly species)
 (5): 1296 (*Bathymaster* ronquill species)
 23(2): 189 (free-swimming copepod nauplii)
 24(5): 1067 (to lamprey genera, based on teeth)
 25(5): 954 (N American Atl. & Arctic coast *Anonyx* amphipods)
 (7): 1423 (E N American *Taeniopteryx* stoneflies)
 (9): 1892 (otariid subfamilies)
 26(4): 965 (genus *Acanthosentis* Indian and African acanthocephalans)
 (7): 1727 (Wash. & S B.C. Ophiuroidea)
 (10): 2595 (new family: Acrocirridae polychaetes)
 (11): 3017 (*Salmincola* parasitic copepod species)
 27(6): 1109 (*Stellerina* & *Ocella* poacher genera & species)
 28(3): 401 (*Mesodinium* red-water ciliates)
 (4): 543 (Canadian freshwater leeches (Hirudinoidea))
 (10): 1407 (genera in Fauveliopsidae, a new family of polychaetous annelids)
 (10): 1469 (*Syllides* polychaetes)
 (10): 1645 (*Rhabdochona* nematode species parasitic in N & Central America fishes)

- 29(8): 1173 (johnny & tessellated darters of Ottawa Valley, Ont.)
- B 152: 1 (arctic & subarctic N American sea stars)
 155 (Canadian Atl. marine fishes)
 173: 42 (families), 48 etc. (species, of NW Canada & Alaska freshwater fishes)
 180 (to classifications of B.C. marine fishes)
 CJG 17 (illustrated, of Nfld. Salmonidae metazoan parasites)
 CNG 84 (NE Pac. marine zooplankton major groups)
 T 55 (B.C. marine zooplanktonic medusae, Cladocera, adult copepods, pelagic Amphipoda, Euphausiacea, & Chaetognatha)
 246: 89 (bibliography of, for trawl fishes off N America Pac. coast)
 313 (B.C. adult female marine copepoda)
 S 1375 (males & females of new *Zealeuctra* stonefly spp.)
 1494 (behavior of growth & mortality estimates based on age-length keys)
 1543 (tubificid oligochaetes of E North America)
 1647: 9 (*Allocapnia* stoneflies)
 1658 (Seuratidae genera of nematodes parasitic in fishes)
- Keyte, Freeman Kilbourne
 J 24(11): 2491 (computer vs. manual calculations for oceanographic data)
 T 271 (Gulf of St. Lawrence circulation patterns)
- Khan, Nuzrat Yar
 J 27(1): 161 (L. Superior lake char)
 28(4): 465 (lake char postglacial distribution)
- Khan, R. A.
 J 29(9): 1291 (taxonomy, prevalence, & specificity of *Cryptobia dahli* in lumpfish)
- Khouw, Boen Tie
 S 1285 (*Hexamita inflata* axenic cultivation from *Crassostrea virginica*)
- Kickininee (see Kokanee)
- Kidney (see also Adrenal gland; Interrenal tissue)
 J 23(8): 1249 (steroid transformations by Stannius corpuscles)
 24(1): 67 (effect of feeding on, in sexually ripening sockeye salmon)
 (2): 447 (trout's urinary system)
 (8): 1701 (rainbow trout disturbance effects on)
 25(6): 1247 (tissues of Pac. salmon re transaminases activity; & kidney-diseased sockeye)
 (9): 1797 (dielrin accumulation in goldfish, after aldrin ingestion)
 (12): 2643 (furunculosis bacteria in brook trout)
 26(3): 639 (corpuscles of Stannius re American eel renal physiology)
 (9): 2535 (bacterial disease of hatchery vs. feral Atl. salmon)
 (10): 2561 (weight in white whales)
 (11): 2785 (copper sulfate toxicity effects on winter flounder)
- 27(4): 830 (mercury pollution, in Saskatchewan R. fishes)
 (5): 857 (mitochondria re fatty acids oxidation in trout)
 (6): 1162 (ascorbate content of rainbow trout)
 (12): 2185 (histology of mummichog exposed to cadmium chloride)
 (12): 2365 (infection with furunculosis-causing *Aeromonas salmonicida* in nonsalmonid fishes)
 28(1): 47 (hemosiderin bodies re erythropoiesis in blue gourami)
 (1): 112 (histology of cutthroat trout with leukemia condition)
 (4): 485 (histological effects of hormones & cortisol on gonadectomized adult sockeye salmon)
 (6): 843 (zinc level in rat, when fed P.E.I. oysters)
 (7): 1064 (vs. feces re presence of pancreatic necrosis virus in brook trout)
 (12): 1837 (lysocleithin solubilizing effect on extractability of tissues, in rainbow trout)
 29(2): 149 (histopathology in channel catfish hemorrhagic virus disease)
 (9): 1359 (efficacy of 2 iodophors against kidney disease bacteria cultures)
 (11): 1513 (antibiotics efficacy against *Corynebacterium* kidney disease in adult chinook salmon)
 (11): 1519 (susceptibility to mercury contamination in northern pike)
 (12): 1776 (histology of *Ichthyophonus hoferi* fungus cysts in 3 NW Atl. fishes; corrections on J 30(8): 1257)
 S 1073 (enzymes of Atl. herring)
 1340 (stressed maturing sockeye salmon interrenal activity suppression by dexamethasone corticosteroid injection)
 1635 (salmonid kidney disease immunological response in injected sockeye salmon)
- Kilambi, Raj Varad
 J 24(3): 629 (parasites among surf smelts)
- Kiley, Charles Walter
 J 28(1): 47 (erythropoiesis in *Trichogaster trichopterus*)
- Killifish, banded (*Fundulus diaphanus*) (freshwater mummichog)
 J 22(2): 635 (probable toxicity to warm-blooded animals)
 23(12): 1845 (mouth & body form re feeding ecology)
 25(6): 1133 (diel feeding habits)
 (6): 1199 (low temperature effects on feeding in 3 Ont. localities)
 (12): 2717 (upper lethal temperatures at various salinities after isosmotic acclimation)
 T 261 (bibliography for Gulf of St. Lawrence)
 S 1132 (predation by birds, Crey L., N.S.)
- Killifish, California (*Fundulus parvipinnis*) (Pacific killifish)
 J 26(10): 2643 (oxygen metabolism re body weight)
- Killifish, gulf (*Fundulus grandis*)

- J 29(2): 211 (development of *Aeromonas liquefaciens* antibodies)
- Killifish, Pacific (*see* Killifish, California)
- Killifish, plains (*Fundulus kansae*)
J 28(11): 1811 (suitable for introduction into alkaline eutrophic lakes)
- Killifish, striped (*Fundulus majalis*)
J 26(2): 433 (blood morphology)
27(1): 158 (cultured ovarian cell chromosomes preparation & study)
28(8): 1208 ("hemagglutinogens")
(9): 1225 (cadmium toxicity tests)
(11): 1811 (suitability for introduction into alkaline eutrophic lakes)
- Kimball, Nadine Ruth
S 1121 (steroid destruction by thin-layer chromatography)
- Kinase (*see* Enzymes)
- King, Frederick Jessop
J 25(11): 2453 (dimethyl sulfide & clam odor)
- King, George Robert
J 22(4): 999 (movement of trout in L. Superior)
24(2): 281 (hatchery-reared trout returns)
25(7): 1377 (Apostle Is. lake trout rehabilitation)
- King-of-the-salmon (*Trachipterus altivelis*) (*T. rex-salmonorum*)
B 180: 271 (full description, etc., B.C.)
T 317 (taken in 1971 B.C. commercial trawling)
- Kingfish (*see* Croaker, white)
- Kipling, Charlotte
J 29(6): 819 (exploitation & eutrophication effects on Windermere salmonid community, England)
- Kirkpatrick, Donald
J 23(1): 1 (blood of brook trout)
(8): 1187, (10): 1581 (oxygen dissociation curves)
(10): 1575 (effect of hemolysis)
- Kisker, Dale Steven
J 27(12): 2273 (species composition & structure of benthic infauna communities)
- Kitano, Yutaka
T 109 (age and growth of yellowfin sole)
- Kitchell, James Frederick
J 26(7): 1801 (rainbow trout on pellet diets)
- Kittelsen, Arne
J 28(12): 1918 (abnormalities in trout)
- Kiyi (*Coregonus kiyi*) (*Leucichthys kiyi*)
J 25(4): 667 (re Great Lakes species succession & exploitation)
(8): 1667 (cytotaxonomic relation to other Great Lakes coregonids)
(10): 2111 (scales annulus formation in artificially reared)
- Kleerekoper, Herman
J 27(6): 1103 (blinded goldfish locomotor responses)
29(1): 45 (goldfish orientation to sublethal copper ion concentration gradient)
(9): 1333 (DDT effects on goldfish locomotor behavior)
- Klima, Edward Frank
J 29(11): 1605 (voltage & pulse rates for inducing electrotaxis in coastal fishes)
- K-line (*see* first heading under K)
- Klontz, George William
J 22(3): 713 (redmouth disease)
27(8): 1389 (rainbow trout precipitins)
- Knight, William Rexford
J 25(6): 1303 (polemic on mathematical treatment of asymptotic growth)
26(11): 3069 (formulation of von Bertalanffy growth curve when growth rate is roughly constant)
27(5): 961 (fishery management optimization experiment)
S 1070 (computerizing Kendall's *tau* method)
1494 (growth & mortality estimates)
- Knowles, Charles Otis
J 25(4): 615 (bluegill & channel catfish brain acetylcholinesterase)
(7): 1517 (fish brain esterases)
(8): 1571 (organophosphate degradation)
- Knox, D. F.
J 28(11): 1815 (dispenser for oxygen reagents)
- Knox, George Alexander
J 28(10): 1437 (*Dodecaceria berkeleyi* n.sp.)
- Ko, Ronald Chun
J 26(4): 849 (*Cystidicola* revision)
- Kodiak Island, Alaska
J 22(1): 101; 24(12): 2627 (king crab breeding off)
23(5): 729 (fishery effect on king crab populations structure)
- Kogia breviceps* (*see* Whale, pygmy sperm)
simus (*see* Whales)
- Kohler, Allan Carl
J 23(10): 1621 (growth of redfish)
24(1): 53 (biology of Atl. halibut)
25(3): 555 (Gulf of St. Lawrence cod)
26(5): 1273 (cod & haddock food)

- 27(1): 174 (manefish in Atl. waters off Canada)
 (11): 2053 (witch flounder depth distribution)
 28(9): 1285 (methylmercury in fish)
- CSG 46 (St. Lawrence cod fishery)
 T 80 (N.S. banks & Gulf of St. Lawrence fish stocks)
 157 (cod & haddock catches by Maritime otter trawlers in 1967)
 164 (length re weight of Canadian Atl. marine fishes)
 318 (Gulf of St. Lawrence larval herring distribution, abundance, & growth)
- S 956 (Caribbean Sea fisheries research)
 997 (cod otolith)
 1075(F) (Gulf of St. Lawrence cod fishery)
 1148 (cod recruitment)
 1211 (ICNAF Subareas 3 & 4 halibut fishery)
 1643 (white hake tagging, S Gulf of St. Lawrence)
 A 240 (abundance indices for Atl. cod & haddock)
- Kokanee (landlocked sockeye salmon) (*Oncorhynchus nerka*) (*O. nerka kennealyi*; kickininee)
 J 22(3): 665 (factors affecting spawning entry into a lake tributary)
 23(8): 1259 (seasonal & diel changes in feed of adult)
 24(2): 463 (*Mysis relicta* introduced in lakes as feed)
 (9): 1955 (mating selection, Babine L., B.C.)
 25(2): 409 (distribution & nomenclature of N American)
 (2): 415 (variation in gillraker number, N American)
 (4): 690 (introduction into L. Michigan & Georgian Bay)
 (6): 1115 (sounding response)
 26(2): 325 (transplanted into Alta.)
 28(4): 573 (technique & computer programming for enumerating fry migrating through streams)
 (12): 1857 (introduced into L. Huron: spawning, growth, feed, etc.)
 B 162: 236 (as food competitor during lacustrine stage of anadromous sockeye)
 173: 164 (full description, etc.)
 S 1718 (pesticide residues in)
 A 106 (history of transplantations to 4 of the Great Lakes)
 259 (hereditary & environmental factors affecting populations)
- Kokanee Creek, B.C.
 J 27(11): 1987 (meristic & other differences in rainbow trout populations below & above a waterfall on)
- Kolakowski, Edward
 J 23(11): 1653 (chemical composition of crayfish)
 26(11): 2969 (chemical composition of shrimp flesh & nutritive value)
- Kootenay Lake, B.C.
 J 27(7): 1239 (long-term limnology & macrozooplankton changes)
 29(6): 617, 861, 975 (various factors affecting fish communities, particularly salmonid)
- T 245: 1 (mass mortality of mountain whitefish), 7 (disease in rainbow trout run)
- Kooyman, Albertus Hermanus
 J 28(7): 1005 (walleye malate dehydrogenase)
- Korea
 T 246 (bibliography of trawl fishery off N America Pac. coast)
- Korn, Sidney
 J 27(8): 1496 (DDT accumulation by fish)
- Kosaki, Thomas Iwao
 J 26(8): 2208 (Pac. marine toxins: ciguatoxin not in vivo anticholinesterase)
- Koshinsky, Gordon Donald
 J 27(6): 1005 (breeding biology of lake chub)
 29(5): 469 (dart vs. disc tags for northern pike)
- Koski, K. Victor
 J 26(1): 133 (estimating salmonid survival)
- Kouchibouguac Bay, N.B.
 J 24(11): 2241 (bedrock & sediments of)
 25(12): 2683 (artificial reefs for lobsters)
- Kraft, Melvin Earl
 J 29(10): 1405 (controlled flow reduction effects on a trout stream)
- Kraft mill effluents (*see* Pulpmill effluents)
- Kramer, Donald Emerson
 CVG 41 (weight changes in Pac. coast fish stored at sea)
 43; 44 (storage of Pac. salmon at sea)
 45 (cod & halibut stored in ice at sea)
 T 220 (storage of Pac. salmon at sea)
- Kramer, Robert Henry
 J 28(4): 587 (factors influencing rainbow trout metabolism)
- Kranck, Kate
 J 24(11): 2241 (Kouchibouguac Bay bedrock and sediments)
- Krantz, George Eugene
 J 27(5): 969 (agglutinating antibodies against *Aeromonas salmonicida* in hatchery trout)
- Krauel, David Paul
 T 115 (Margaree & Cheticamp R., N.S., estuaries)
 120 (Bedford Basin data report, 1967)
 146 (tidal flushing of Pictou harbour, N.S.)
- Krebs cycle
 S 1222 (molar responses for methyl esters of metabolic acids)

- Krill (zooplankton feed of whales) (*see also* Euphausiids; Feed; Whale)
S 1111 (fatty acids of *Meganyctiphanes norvegica* re fin whale fatty acids)
- Krishnan Kutty, M.
J 25(6): 1291 (age of exploitation for a given fishing mortality)
- Kristiansen, Ulf Bo Gjerulff
T 205; 210; 269; 278 (FRB experimental groundfish cruises, B.C. coast & NE Pac. Ocean)
- Krouse, Jay Scott
J 29(10): 1479 (some Gulf of Maine rock crab life history aspects)
- Kuhlia sandvicensis* (*see* Aholehole, Hawaiian)
scandricensis (*see* Aholehole, Hawaiian)
- Kühn, Robert
S 1161 (rock salt bacteriological investigation)
- Kuhns, William Joseph
J 28(8): 1208 (killifish "hemagglutinogens")
- Kuntz, Robert Elroy
J 26(4): 793 (nematodes from Malaysia)
- Kuril, Lake (USSR)
J 23(3): 459 (sockeye salmon scale characteristics)
- Kutty, Methil Narayanan
J 25(8): 1689 (goldfish & trout respiratory quotients)
28(9): 1342 (technique for measurement of carbon dioxide in fish)
- Kwain, Wen-hwa
J 23(7): 983 (trout response to light)
26(3): 687 (trout bottom color selection)
(12): 3233 (rainbow trout response to overhead light)
28(5): 771 (life history of L. Superior rainbow trout)
- Kyte, Michael Allan
J 26(7): 1727 (ophiroid synopsis and key)
- L**
- La Cloche Mountain lakes, Ont.
J 29(8): 1131 (mortality of fishes from acid atmospheric fallout reducing pH)
- La Martre, Lac, N.W.T.
T 180 (limnology; gillnet fish survey; commercial fishery)
- La Ronge, Lac, Sask.
J 25(10): 2091 (lake whitefish growth & reproduction)
27(6): 1005 (lake chub breeding biology)
29(6): 617 (limnology & fishes)
- Laastuen, Lester Emil
J 25(3): 611 (juvenile salmonid skin pallor by guanidine compounds)
- Labidesthes sicculus* (*see* Silverside, brook)
- Laboratories, Fisheries Research Board of Canada (*see also* Fisheries Research Board of Canada)
MSP 10: 17 (list of, with addresses (1969); for more recent information *see* page vi of this present Miscellaneous Special Publication)
- Labrador; Waters off Labrador (*see also* International Commission for the Northwest Atlantic Fisheries; Newfoundland)
J 24(6): 1275 (pelagic adult redfish)
(7): 1531 (cod fecundity)
25(12): 2749 (possible effect of harbour seal bounty re Atl. cod cod worm infestation)
27(7): 1317 (helminth parasites of longnose & white suckers)
(10): 1880 (Greenland turbot fecundity)
B 166: 45 (eel fishery)
CJG 16: 25 (cod landings, 1936-68)
T 270 (Atl. salmon catches, 1956-69)
274 (Greenland turbot distribution)
S 970 (new cod fishing grounds off coast)
1017 (sea stars)
1022 (cod fishery trends)
1054 (cod & haddock behavior & concentrations re feed)
1206 (characteristics of salmon)
1208 (otolith age validation of cod)
1209 (offshore fishing effect on inshore cod fishery)
A 195 (fisheries)
- Labrifer balli* (*see* Trematoda)
- Lac... (*see* name of lake, e.g. La Martre, Lac)
- Lackey, Robert Thomas
J 27(9): 1656 (depth distribution of Jandlocked Atl. salmon, brook trout, alewives, & American smelt)
- Lacroix, Guy
J 28(8): 1205 (epifaunal collectors)
- Lactic acid; Lactates (*see also* Enzymes; Metabolism; Physiology)
J 22(4): 891 (in exercised salmonids)
(6): 1397 (in carp lateral muscle effort metabolism)
23(1): 65, (4): 471, (6): 783, (9): 1461 (re exercised rainbow trout metabolism)
24(5): 939 (effects of partial descaling & desliming on rainbow trout glycolysis)
(8): 1837 (in postmortem relaxed Atl. cod muscle)
25(1): 15 (lactic acidosis of channel catfish blood in anoxia)
(3): 473 (blood lactate re exercised salmon mortality)

- (4): 738 (of trap-caught Nfld. cod before & after freezing)
 (5): 837 (of exercised Atl. cod blood & muscle after exercise)
 (7): 1323 (dehydrogenase in 3 trout species)
 26(1): 15 (blood serum lactate dehydrogenase isozymes variants in sockeye salmon populations)
 (11): 3049 (5 dehydrogenase isozymes in tissues of longnose & blacknose dace & their hybrids)
 27(6): 1115 (dehydrogenase isozymes re lake whitefish genetics)
 (9): 1563 (dehydrogenases in rainbow trout liver & gills)
 (11): 1987 (dehydrogenase genotype differences in rainbow trout stream populations below & above a waterfall)
 (12): 2167 (dehydrogenase re *Tilapia* hybrids)
 28(5): 625, 635 (levels in brook trout blood from handling & anesthetization)
 (8): 1215 (changes in blood lactic acid concentration of alewives passing through a pool & weir fishway)
 (11): 1745 (serum & muscle dehydrogenases in suckers)
 29(8): 1169 (buffers for lactate dehydrogenase isozymes electrophoresis)
 (10): 1463 (re zinc toxicity to rainbow trout)
 (10): 1467 (oxidation to CO₂ by rainbow trout tissues)
 T 31: 106, 107 (lactate dehydrogenase electropherograms of various tissues of Atl. mackerel)
 S 1073 (lactate dehydrogenase in Atl. herring)
 1370 (dehydrogenase multiple forms in Atl. cod & tomcod tissues)
 1616 (dehydrogenases polymorphism in 7 gadoid species)
- Ladders, fish (*see* Fishways)
- Ladoga, Lake (USSR)
 J 29(6): 629, 937 (various factors affecting fish communities, particularly salmonid)
- Ladysmith Harbour, B.C.
 B 169 (re B.C. oyster culture)
 178 (raft-culturing of Pac. oyster)
- Lagenorhynchus acutus* (*see* Dolphin, white-sided)
albirostris (*see* Dolphin, white-beaked)
obliquidens (*see* Dolphin, Pacific striped)
- Lagopus mutus* (*see* Ptarmigan, rock)
- LaHam, Quentin Nadime
 J 26(8): 2193 (Dylox insecticide effects on trout larvae)
- Lahiry, N. L.
 J 26(3): 704 (canned shrimp compounds)
- Laird, Marshall
 J 26(4): 1075 (marine fish hematozoa)
- Laishley, Edward
 J 22(2): 411; 23(7): 1063; 25(2): 299 (quality of frozen Atl. cod)
 Lake... (*see* name of lake)
 Lake of the Woods, Ont., Man., and Minnesota
 J 29(3): 275 (fish parasites)
 Lakelse Lake, B.C. (*see also* Salmon)
 B 162: 155, 181, 246 (re B.C. sockeye salmon studies)
 T 10 (age, size, & sex composition of sockeye salmon 1965 & 1966 spawning run)
 Lakes (*see also* Eutrophication; Fisheries; Freshwater fish products; Great Lakes; Limnology; Pollution; Seiches; *also* names of lakes; *also* next two headings)
 J 25(8): 1741 (plankton sampling device for frozen)
 (9): 1911 (mathematical description of average vertical temperature distribution)
 27(2): 233, (8): 1335 (physical & chemical limnology of 4 Albertan alpine)
 (8): 1405 (chemical composition & phytoplankton of 70 S Ont.; corrections on J28(8): 1219)
 28(2): entire issue (FRB Experimental Lakes Area program re biological productivity & eutrophication of 463 small NW Ont. lakes; correction on J29(8): 1241)
 (3): 311 (crustacean plankton of 146 W Canadian alpine & subalpine lakes & ponds)
 (11): 1763 (eutrophication of one of Experimental Lakes Area lakes by addition of phosphate & nitrate)
 (11): 1811 (survival of some freshwater fishes in alkaline, of Nebraska)
 (12): 1883 (limnology of 51 on Manitoulin Is. (L. Huron))
 29(6): entire issue (proceedings of international symposium on Salmonid Communities in Oligotrophic Lakes (N America & Europe))
 (8): 1131 (atmospheric fallout effect on pH and fishes)
 S 900 (large Canadian, re availability of fish)
 908 (large Canadian: physiography and limnology)
 1445; 1446 (models re production & feed supply of aquatic populations)
 1646 (carbon, nitrogen, & phosphorus re eutrophication)
 1672 (summary of crustacean plankton communities of 264 N America lakes)
 A 270; 271 (biological studies of the English lakes (2 reviews of same book)).
- Lakes, saline
 J 22(5): 1165 (limnology of west-central Manitoba)
 S 911 (limnology of Bras d'Or L. area, N.S., barachois ponds)
- Lakes, tidal
 J 22(1): 239 (salinity of Baker L., N.W.T.)
 24(5): 975, 981, (12): 2573 (Ogac & nearby lakes, Baffin Is., biology, hydrography, chemistry)

- LaLanne, John Joseph
J 26(3): 671 (chum salmon scales re age) 175 (frequency of larvae in NE Pac. zooplankton sampling)
- Lamellibranchiata (see Pelecypoda)
- Laminaria (see Phaeophyta)
- Lamna ditropis (see Shark, salmon)
nasmus (see Porbeagle)
- Lamp shells (see Brachiopoda)
- Lampanyctus alatus (see Lanternfishes)
festvus (see Lanternfishes)
leucopsarus (see Lampfish, northern)
nanochir (see Lampfish, northern)
pusillus (see Lanternfishes)
regalis (see Lampfish, pinpoint)
ritteri (see Lampfish, broadfin)
- Lampetra ayresi (see Lamprey, river)
fluvialilis (see Lampreys)
japonica (see Lamprey, Arctic)
lamottei (see Lamprey, American brook)
mariae (see Lampreys)
planeri (see Lamprey, western brook)
richardsoni (see Lamprey, western brook)
tridentatus (see Lamprey, Pacific)
- Lampfish, broadfin (*Lampanyctus ritteri*) (broadfin lanternfish)
J 25(3): 457 (in N B.C. midwater trawl catches)
29(8): 1145 (swimbladder morphology; specific gravity)
B 180: 193 (full description, etc., B.C.)
T 11 (in N B.C. midwater trawl catches)
175 (frequency of larvae in NE Pac. zooplankton sampling)
- Lampfish, dogtooth (*Ceratoscopelus townsendi*) (fangtooth lanternfish)
B 180: 187 (full description, etc., B.C.)
- Lampfish, Mexican (*Triphoturus mexicanus*)
J 24(5): 1101 (fatty acids composition)
- Lampfish, northern (*Stenobranchius leucopsarus*) (*Lampanyctus leucopsarus*; *L. nanochir*; northern or smallfinned lanternfish)
J 24(9): 1985 (host of hydroid *Hydrichthys* & a parasitic copepod)
25(3): 457 (in N B.C. midwater trawl catches)
(5): 1086 (as feed in NE Pac. Ocean)
(8): 1739 (spinal ganglia position re taxonomy)
26(8): 2211 (re feed of yellowtail rockfish)
27(4): 826 (bioluminescence stimulation by hydrogen peroxide & its photography)
(7): 1265 (growth & reproduction)
29(8): 1145 (swimbladder morphology; specific gravity)
B 180: 198 (full description, etc., B.C.)
T 11 (in experimental B.C. midwater trawling)
- Lampfish, patchwork (*Notoscopelus resplendens*) (patchwork lanternfish)
J 26(10): 2691 (first Canadian Atl. record)
B 180: 195 (full description, etc., B.C.)
- Lampfish, pinpoint (*Lampanyctus regalis*) (pinpoint or small-eyed lanternfish)
J 25(3): 457 (in N B.C. midwater trawl catches)
29(8): 1145 (swimbladder morphology; specific gravity)
B 180: 191 (full description, etc., B.C.)
T 11 (in N B.C. experimental midwater trawl catches)
175 (frequency of larvae in NE Pac. zooplankton sampling)
- Lampfishes (in addition to preceding headings, see note after heading Lanternfishes)
- Lamprey, American brook (*Lampetra lamottei*) (*Entosphenus lamottei*)
J 22(2): 289 (alimentary tract comparative study)
23(11): 1663; 24(6): 1269 (blood protein & muscle myogen electropherograms of ammocoete & adult)
25(7): 1521 (infection by *Aeromonas* in Great Lakes)
26(11): 3077 (lampricides tests on)
28(4): 616 (sizes of 5 giant, probably parasitic, females from upper Great Lakes, re average adult size of nonparasitic ordinary type)
T 48 (parasites)
S 1128 (in 3 Lake Superior bays)
- Lamprey, Arctic (*Lampetra japonica*)
J 26(8): 2260 (*Triaenophorus crassus* parasitization in Great Slave L.)
B 173: 50 (full description, etc.)
T 48 (parasites)
- Lamprey, chestnut (*Ichthyomyzon castaneus*)
J 27(10): 1872 (spawning behavior)
- Lamprey, Michigan brook (see Lamprey, northern brook)
- Lamprey, northern brook (*Ichthyomyzon fossor*) (Michigan brook lamprey)
J 22(2): 289 (alimentary tract comparative study)
- Lamprey, Ohio (*Ichthyomyzon bdellium*)
J 28(4): 616 (size re giant American brook lampreys, upper Great Lakes)
- Lamprey, Pacific (*Lampetra tridentatus*) (*Entosphenus tridentatus*)
B 173: 56 (full description, etc.)
180: 20 (full description, etc., B.C.)
T 11; 221 (taken in FRB trawl surveys, B.C.)
- Lamprey, river (*Lampetra ayresi*)

- B 173: 49 (mention in key to NW America lampreys)
180: 22 (full description, etc., B.C.)
- Lamprey, sea (*Petromyzon marinus*) (including landlocked and marine)
J 22(2): 289 (alimentary tract comparative study)
(3): 695 (sexual ratios and dimorphism in immature)
23(2): 241 (predation on lake whitefish, Georgian Bay, Ont.)
(11): 1663 (muscle myogens & blood plasma electropherograms)
24(6): 1269 (blood protein & muscle myogen electropherograms of landlocked ammocoete & adult)
(8): 1819 (comparative effects of a lampricide vs. anoxia)
(10): 2117 (effects on a L. Huron white sucker population)
(12): 2539 (parasitic on Georgian Bay rainbow trout)
25(4): 667 (re Great Lakes species succession & exploitation)
(7): 1368 (effect on walleye in Nipigon Bay, Ont.)
(7): 1521 (infection by *Aeromonas* in Great Lakes)
26(9): 2413 (re survival of planted lake trout, South Bay, L. Huron)
(11): 3077 (larvicide evaluation, Big Garlic R. & Saux Head L., Michigan)
27(6): 1026 (predation on L. Huron splake)
(10): 1735 (morphology, etc., of metamorphosis, L. Michigan & L. Superior region)
28(1): 65 (effect on L. Superior lake trout populations)
(5): 771 (parasitism on rainbow trout, Batchawana Bay, L. Superior)
(12): 1857 (predation marks on introduced kokanee & coho salmon, L. Huron)
29(8): 1237 (downstream seasonality migration of young, before & after lampricide treatment of L. Michigan tributary)
(9): 1277 (timing of blood, morphology, & behavior changes during metamorphosis of landlocked)
- B 149: 104 (effect on Great Lakes fisheries; control)
151: 6; 151(F) (canning & smoking)
CCG 7: 21 (advance control plans from Lake Superior to lower Great Lakes)
T 48 (parasites)
103 (taken in Atl. otter-trawl survey)
261 (bibliography for Gulf of St. Lawrence)
S 1128 (in 4 Lake Superior bays)
1410 (re presence of corticosteroids in blood)
1484 (molecular structure of halogenated mononitrophenols re their toxicity to larvae)
1490 (history of invading Great Lakes, damage to fisheries, & controlling the infestation)
- Lamprey, silver (*Ichthyomyzon unicuspis*)
J 22(2): 289 (alimentary tract comparative study)
24(6): 1269 (blood protein & muscle myogen electropherograms of ammocoete & adult)
- 28(4): 616 (size re giant American brook lampreys, upper Great Lakes)
- Lamprey, western brook (*Lampetra richardsoni*) (*L. planeri*)
J 22(1): 139 (distinguished as new nonparasitic species)
26(12): 3252 (spawning behavior)
B 173: 49 (mention in key to NW America lampreys)
T 48 (parasites)
- Lampreys (genera only given, or no common name given)
J 24(5): 1067 (key to holoarctic genera, based on teeth)
B 173: 42 (family), 48 (key), & 50 (descriptions, NW America species)
T 48 (parasites of *Lampetra fluviatilis* & *L. mariae*)
S 1128 (in L. Superior bays)
- Lampricide (see Lamprey; Piscicides; Toxicants)
- Lampris regius* (see Opah)
- Lampritrema nipponicum* (trematode)
S 1287 (parasite in Atl. argentine stomach)
- Lampsilis radiata* (see Clams (freshwater))
- Lance (see Sand lance)
- Lancetfish, longnose (*Alepisaurus ferox*) (*Alepidosaurus aesculapius*; *Alepisaurus borealis*; handsawfish)
J 24(10): 2201 (in line fishing from Pac. ocean weather-ship P)
B 180: 175 (complete description, etc., B.C.)
CSG 49 (identification)
T 193 (Atl. tagging, 1961-69)
S 1409 (gill blood pathways)
- Lancetfish, scaled (*Paralepis coregonoides borealis*)
J 28(8): 1199 (as Atl. salmon feed in Davis Strait & Labrador Sea)
- Land, Jacob van der
J 25(11): 2365 (2 new species of *Gyrocotyle cestode*)
- Lander, Robert Harry
J 26(5): 1383 (swimming thrust of sockeye salmon re selectivity of gillnets)
- Landings (see Catches; Fisheries; Trawling; also names of commercial fishes)
- Lane, Charles Edward
J 27(10): 1869 (glutamic oxaloacetic transaminase in *Poecilia latipinna*)
- Lane, John Perry
J 25(2): 299 (refrozen Atl. cod storage quality)
- Lang, Grant Wells
J 23(6): 917 (oil binding in canned Pac. salmon)
- Langford, Raymond Robert

- J 29(12): 1701 (*Mysis relicta* growth, life history, & respiration in an arctic & a temperate lake)
- Langford, Robert Wesley
S 1337 (adrenalectomy of eel)
- Langille, Linda Marie
S 1398 (elemental phosphorus effect on L-cells)
- Lanternfish, bigeye (*Protomyxophum thompsoni*) (*Electrona arctica*; *E. thompsoni*; *Hierops arctica*; *Hierops thompsoni*)
J 25(3): 457 (in N B.C. midwater trawl catches)
26(10): 2691 (first Canadian Atl. record since 1910)
27(4): 826 (bioluminescence stimulation by hydrogen peroxide & its photography)
29(8): 1145 (swimbladder morphology; specific gravity)
B 180: 196 (full description, etc., B.C.)
T 11 (in experimental B.C. midwater trawling)
- Lanternfish, bigfin (*Symbolophorus californiense*) (*Myxophum californiense*)
B 180: 200 (full description, etc., B.C.)
T 175 (in NE Pac. experimental trawling)
- Lanternfish, blue (*Tarletonbeania crenularis*) (*T. taylori*)
J 24(9): 1985 (host of hydroid *Hydrichthys* & a parasitic copepod)
25(3): 457 (in N B.C. midwater trawl catches)
- (4): 825, (5): 1086 (as feed in NE Pac. Ocean)
27(4): 826 (bioluminescence stimulation by hydrogen peroxide & its photography)
29(8): 1145 (swimbladder morphology; specific gravity)
B 180: 202 (full description, etc., B.C.)
T 11 (in experimental B.C. midwater trawling)
- Lanternfish, broadfin (*see* Lampfish, broadfin)
- Lanternfish, fangtooth (*see* Lampfish, dogtooth)
- Lanternfish, glacier (*Benthoosema glaciale*)
J 26(10): 2694 (catches off La Have Bank, N.S.)
27(1): 105 (growth & vertical distribution, NW Atl.)
T 261 (bibliography for Gulf of St. Lawrence)
A 182 (ICNAF Canadian research, 1969)
- Lanternfish, horned (*Ceratoscopelus maderensis*)
J 26(10): 2691 (recent catches off N.S.; diurnal depth distribution)
- Lanternfish, Krøyer's (*Notoscopelus krøyeri*)
J 26(10): 2691 (recent catches off N.S.; diurnal depth distribution)
T 261 (bibliography for Gulf of St. Lawrence)
- Lanternfish, largescale (*Symbolophorus veranyi*)
J 26(10): 2697 (8 recent specimens off N.S.)
- Lanternfish, northern (*see* Lampfish, northern)
- Lanternfish, patchwork (*see* Lampfish, patchwork)
- Lanternfish, pinpoint (*see* Lampfish, pinpoint)
- Lanternfish, small-eyed (*see* Lampfish, pinpoint)
- Lanternfish, small-finned (*see* Lampfish, northern)
- Lanternfish, spotted (*Myxophum punctatum*)
J 26(10): 2691 (recent catches off N.S.; diurnal depth distribution)
29(9): 1303 (lipids content & fatty acids)
(12): 1679 (evidence for expatriate populations in NW Atl.)
T 261 (bibliography for Gulf of St. Lawrence)
- Lanternfish, theta (*see* Headlightfish, California)
- Lanternfish, white-spotted (*see* Headlightfish, California)
- Lanternfishes (Myxophidae in general, or species not stated, or no common name given) (*Note*: These fishes are called "lanternfishes" by the authors, but some may now belong to other groups of Myxophidae having newer scientific and/or common names such as lampfishes.)
J 24(5): 1101 (fatty acids composition of *Pac. Scopelengys tristis* & *Myxophum nitidulum*)
25(3): 457 (in experimental N coast midwater trawl catches, B.C.)
(5): 907 (as NW Atl. swordfish feed)
(12): 2561 (as identified by otoliths in S California cetacean feed)
26(10): 2691 (first or recent Canadian Atl. coast records of *Hygophum hygomi*, *H. macrochir*, *Lampanyctus alatus*, *L. festivus*, *L. pusillus*, *Notolynchus valdiviae*, *Lobianchia dofieini*, *Diaphus dumerili*, and *D. termophilus*)
29(8): 1145 (*Protomyxophum crockeri* swimbladder morphology; specific gravity)
CSG 54 (underexploited on N.S. banks)
T 11; 22; 46; 81; 221 (taken during FRB experimental trawling, N B.C. coast)
175 (frequency of larvae in NE Pac. zooplankton sampling)
S 956 (Canadian research in Caribbean Sea)
A 143(F); 175 (same as CSG 54 above)
- Lanthanum derivatives
J 27(2): 317 (oxide for coding embedded encapsulated tags in animals)
(4): 677 (traces in Great Lakes fishes & livers)
- Lantz, Andrew William
J 24(6): 1219 (freshwater fish oils)
(6): 1291 (freshwater fish meals)
27(7): 1201 (whitefish smoked with different woods)
28(7): 1061 (method of drying freshwater fish)
29(11): 1625 (obituary of)
B 151; 151(F) (special products from freshwater fishes)
CCG 7 (chilling freshwater smelt in quantity)
7 (air-blast freezers for freshwater fish)
S 980 (method for brining and smoking fish)
988 (fish cannery in N.W.T.)
990 (method for salting fish)

- 991 (method for canning freshwater fish)
 992 (cleaning & dressing fish)
 993 (freezing fish)
 1077 (eutectic brine freezer for Eskimo fishermen)
 1081 (sweet-cured freshwater fish)
 1433 (goldeye smoking techniques)
 1697 (N.W.T. fish & mammal processing plant)
 1698 (appraising smoked whitefish with sensory panels)
 A 6(F) (sweet cured freshwater fish slices)
 42 (freezer for Eskimo fishermen)
 85 (freshwater fishmeals nutrient composition)
- Lapi, Louis Antinino
 J 28(10): 1583 (X-ray spectrometry)
- Laqueus californianus* (Brachiopoda)
 T 268 (in B.C. faunistic surveys since 1960)
- Lardeau River, B.C.
 J 26(1): 33 (rainbow trout lakeward migration behavior in upper)
- Larkin, Peter Anthony
 J 23(3): 349 (predator-prey relation)
 24(12): 2527 (stock exploitation)
 25(12): 2589 (Fraser R. white sturgeon)
 26(5): 1372 (fish school size & migration)
 (10): 2715 (simulated long-term environmental fluctuations on maximum sustained yield)
 28(6): 821 (gillnet selectivity on sockeye & pink Skeena R. salmon)
 (10): 1493 (sockeye simulation studies)
 29(11): 1615 (feed specialization by individual brook, cutthroat, & rainbow trouts; corrections on J 30(8): 1257)
 S 908 (large Canadian lakes physiography and limnology)
 1037 (review of international fisheries)
 1271 (sockeye population biology)
 A 16 (summarization of summary of symposium)
 17 (N American fishery potential)
 18 (challenges facing fisheries science)
 53 (N American fishery potential)
- Larsen, Ejnar
 J 27(1): 185 (device for measurement of submarine light energy)
- Larson, Gary Lee
 J 29(8): 1209 (brook trout gonad maturation in a high mountain lake under a modified photoperiod)
- Larus* (see Gulls)
- Larvacea (see also Tunicata)
 J 26(8): 2219 (*Oikopleura* in juvenile Pac. salmon feed)
 B 176: 82, 178 (synopsis of Canadian zooplanktonic)
- Larvae (see also Development; also name of adult form of animal)
 J 22(1): 69 (of decapod *Argis dentata*)
- (5): 1313 (of W. Atl. sandlances)
 24(4): 883 (plankton sampler for Pac. oyster)
 (5): 927 (limnetic, of N Wisconsin lakes freshwater fishes)
 27(1): 93 (effect of Sevin insecticide on Dungeness crab)
 28(1): 73 (energetics & natural history of dipteran *Hedriodiscus truquii* in thermal springs)
 B 176 (synopsis of literature to end of 1970 re larval forms in Canadian marine zooplankton; includes an index)
 T 81: 5 (identification of 12 *Sebastes* (*Sebastodes*) species)
 175 (larval fish species collected in NE Pac. zooplankton samples)
- Larvicides (see Insecticides; Piscicides)
- Lasenby, David Charles
 J 29(12): 1701 (*Mysis relicta* growth, life history, & respiration in an arctic & a temperate lake)
- Lasker, Reuben
 J 23(9): 1291 (*Euphausia pacifica* biology)
- Lateral line organs
 J 23(9): 1331 (role in topminnow surface-wave perception)
 (11): 1811 (muscle lecithinase distribution in rainbow trout muscle)
- Lau, Yan Chee
 J 26(7): 1857 (trout muscle lipase)
 28(7): 1015 (trout lysosomal lipase)
 S 1248 (algal phospholipase C properties)
 1427 (phospholipase D in red alga)
- Laub, Margaret Diane
 S 1626 (L-threonine dehydratase of 7 kinds of unicellular marine algae)
- Laubier, Lucien
 J 28(10): 1483 (*Schroederella berkeleyi*, n.sp.)
- Lauder, John Tweedie
 J 27(9): 1589 (quality of frozen redfish)
 A 27 (Nfld. trap cod)
- Launce (see Sand lance)
- Laurel Creek, Ont.
 J 27(2): 213 (Chironomidae re benthic fauna colonization in reservoir)
- Laurent, Pierre Jacques
 J 29(6): 867 (exploitation, eutrophication, & introductions effects on salmonid community, Lac Leman, France-Switzerland)
- Laurs, Robert Michael
 J 24(9): 1985 (hydroid epizoid on myctophid fishes; correction on J 25(8): 1760)

- Lauzier, Louis Marcel
 J 22(2): 353 (drift bottle observations)
 (6): 1321 (marine climate comparisons)
 24(9): 1845 (ocean bottom drift)
 26(12): 3248 (larval swordfish from W Atl.)
 T 136 (larval swordfish in W Atl.)
 150 (Canadian Atl. coast temperature data, 1921-69)
 277 (larval herring distribution, abundance, & growth, Bay of Fundy & Gulf of Maine)
 S 888 (ICNAF research report, 1962)
 939 (seabed drifters)
 950 (water temperature and herring fishing)
 956 (fisheries research in Caribbean Sea)
 1026 (ocean water temperature)
 1109 (Atl. continental shelf water circulation)
 1142 (Scotian Shelf temperature variations)
 1143 (St. Andrews, N.B., water temperatures)
 1149 (Magdalen Is. herring fishery)
 1215 (ICNAF Subarea 4 temperature variations)
 A 82(F) (marine climate)
 92 (abnormal water temperatures affect herring fisheries)
- LaVoy, Alison
 J 29(10): 1472 (littoral fauna differences from water-level changes below a dam)
- Lawler, George Herbert
 J 22(1): 219 (white sucker fin anomalies)
 (5): 1197 (L. Erie whitefish)
 (6): 1335 (natural infections of cyclopoid copepods)
 (6): 1357 (food of pike)
 23(11): 1807 (pugheadedness in perch and pike)
 (12): 1969 (accessory fin of pike, *Esox lucius*)
 25(2): 255 (Heming L., Man., fish stain marking)
 (11): 2523 (*Triacanthopus nodulosus* in burbot)
 26(4): 821 (*Triacanthopus nodulosus* in yellow perch)
 (12): 3266 (Heming L. fishes activity periods)
 CCG 7 (pike control)
 T 165; 165(F) (central Canada rainbow trout farming)
 S 1441 (biological data on pike)
 1442 (*Triacanthopus* spp. in L. Mälaren fishes)
 1450 (parasites of coregonid fishes)
 1631 (caddisflies & mayflies emergence from Heming L., Man.)
 A 224 (parasites of coregonid fishes)
- Lawrence, Donald John
 J 25(5): 1079 (inertial oscillations at 42 N)
- Lawrence Creek, Wisconsin
 J 26(6): 1473 (overwinter survival of wild brook trout fingerlings)
- Lawrie, Andrew Hampton
 J 29(6): 765 (exploitation & introductions effects on L. Superior salmonid community)
 S 1490 (sea lamprey in Great Lakes)
- Lawson, Kenneth D.
 S 1660 (warm-bodied fishes)
- Laycock, Rosemary Anitra
 J 28(3): 305 (haddock fillets bacteria)
 29(4): 443 (*Clostridium botulinum* in Canadian Atl. seaboard sediments)
 T 214 (ethylenediaminetetraacetic acid for iced fillet preservation)
 S 1460 (spoilage of irradiated haddock)
 1693 (*C. botulinum* type E distribution in Gulf of St. Lawrence re environment)
- Le Cren, Eric David
 J 29(6): 819 (exploitation & eutrophication effects on Windermere salmon communities, England)
- Lead derivatives
 J 26(9): 2493 (effect on brook trout growth)
 27(2): 383 (toxicity to 5 liver enzymes of mummichog)
 (10): 1927 (blocking effect on Atl. salmon parr taste reactions)
 28(5): 786 (in dressed Canadian fishes from industrial area lakes)
 29(12): 1691 (PbCl₂, re toxicity to *Daphnia magna*)
 S 1529 (distribution in L. Ontario)
 A 124: 49 (in fish protein concentrates)
- Lear, William Henry
 J 27(10): 1880 (Greenland halibut fecundity)
 28(3): 461 (record of Atl. menhaden from Northumberland Strait)
 (8): 1199 (salmon specimens from Davis Strait & Labrador Sea)
 T 179 (Greenland halibut catch statistics)
 270 (digest of Canadian Atl. salmon catch statistics)
 274 (Greenland halibut distribution re depth & temperature, Nfld.-Labrador area)
 S 1383 (Greenland halibut length-weight relation)
 A 190 (Greenland halibut)
- Learning ability (see Avoidance reaction; Behavior (and note to that heading))
- Lebbeus* (hippolytid shrimps) (see also Shrimps)
 J 25(2): 347 (Queen Elizabeth Is., Canadian Arctic)
 26(7): 1899 (*L. polaris* & *L. groenlandicus* in W Canadian Arctic)
 S 1260 (adaptation re other shrimps in NW Atl.)
- Lebistes reticulatus* (see Guppy)
- Lebius superciliosus* (see Greenling, rock)
- LeBrasseur, Robin John
 J 22(6): 1563 (degradation of consumed organisms)
 23(1): 85 (Pac. salmon and trout stomach contents)
 (4): 539 (spring phytoplankton bloom)
 24(10): 2201 (Pac. ocean station P line fishing)
 26(6): 1631 (juvenile chum salmon growth)
 27(7): 1251 (Strait of Georgia productivity)
 CNG 84 (zooplankton of NE Pac. Ocean)

- CNS 15 (stomach contents of salmonids in northeastern Pac. Ocean)
20; 21; 22; 23 (feed of salmonids)
- T 37 (zooplankton net for coastal observations)
175 (larval fish collected from Pac.)
- S 1172 (phytoplankton blooms)
1295 (ocean survey discussion of critical indices)
1386 (shallow scattering layer: detection by high-frequency echo sounder)
1392; 1393; 1394 (production in the Strait of Georgia, parts I-III)
1652 (fertilization effect on zooplankton standing stock, Great Central L., B.C.)
- A 188 (marine biology in Saanich Inlet)
211 (availability of feed in marine feed chain)
- Lecithaster gibbosus* (hemiurid trematode) (*see also* Trematoda)
J 26(4): 813 (in early sea life of pink salmon)
(4): 893 (biology in pink & chum salmon)
(9): 2913 (common parasite of B.C. fishes)
- Lecithin and derivatives**
J 25(10): 2157 (fish muscle homogenates dissolution by lysolecithin)
28(12): 1837 (lysolecithin solubilizing effect on extractability of various rainbow trout tissues)
CVG 35 (as antioxidant supplement)
T 198 (content of queen crab muscle & viscera lipids)
S 1474 (fatty acid composition in rainbow smelts)
- Lecithinase** (*see* Enzymes)
- Lecithophyllum botryophorum* (*see* Trematoda)
- LeCren, Eric David (*see* Le Cren, Eric David)
- Lee, Agnes Siu-King
J 26(5): 1185 (salmon skin purines & pteridines)
- Lee, Arthur James
S 939 (seabed drifters)
- Lee, Jong Sun
J 28(11): 1789; 29(11): 1657, 1659 (interactions between paralytic shellfish poison & melanin in butter clam)
29(8): 1125 (volatile compounds formed in ice-stored canary rockfish muscle)
- Lee, Pei Jen
T 209 (filing bibliographic references)
244 (multivariate analysis for fisheries biology)
250 (fish catch & pollution principle & operation)
- Leeches (Hirudinea)**
J 22(5): 1175 (distribution, ecology, & biology of *Piscicola salmositica* on salmonids)
24(9): 1937 (on Nfld. freshwater fishes)
26(4): 805 (*Calliobdella nodulifera* on Nfld. dogfish)
(4): 833 (*Piscicola* sp. on yellow perch)
(8): 2016 (partitioning community respiration in a lake sediment)
(12): 3101 (of Crecy L., N.B.)
27(1): 125 (re lake trout feed, L. Opeongo, Ont.)
28(4): 543 (key to Canadian freshwater)
(11): 1683 (associations in Bay of Quinte & L. Ontario)
29(4): 363 (*Herpobdella* feed & feeding habits, USSR)
T 185 (bibliography re Canada fishes parasitized by)
306 (annotated bibliography to Canadian freshwater)
S 1128 (in benthos of 4 L. Superior bays)
1450 (parasitic to northern world coregonid fishes: review)
A 224 (parasitic to N American, USSR, & European coregonid fishes)
- Lee's phenomenon
J 26(3): 479 (re selective mortality & biased sampling effects)
- Legault, Roméo O.
J 25(9): 1813 (F) (smelt spawning)
- Legendre, Rosaire
J 24(7): 1461 (freeze-drying of Atl. cod steaks)
(8): 1693 (brining light-salted fish)
26(12): 3271 (freeze-dried cod steaks quality)
- Leggett, William Claude
J 26(6): 1585 (Nfld. landlocked Atl. salmon)
(11): 3091 (landlocked Atl. salmon pugheadedness)
28(8): 1167 (net-avoidance behavior in shad)
29(10): 1445 (ultrasonic tracking of adult American shad during salt to fresh water migration)
- Lehmkuhl, D. M.
J 29(9): 1329 (thermal regime change as cause of benthic fauna reduction downstream of a reservoir)
- Lei Ching, Hilda
S 937 (*Bacciger* and *Pentagramma* trematode genera: review)
- Leim, Alexander Henry
B 155 (full descriptions of Canadian Atl. marine fishes)
- Leiostomus xanthurus* (*see* Spot)
- Léman, Lac (*see* Geneva, Lake)
- Lenarz, William Henry
J 28(3): 446 (electronic processing of acoustical data for fishery research)
- Length (*see also* Age; Growth; Size; Weight)
J 22(3): 702 (immature sea lampreys length-weight ratio)
(5): 1309 (new type of board for measuring length frequencies)
23(1): 15 (increase of yellow perch re temperature)
(2): 245 (re weight, of lake whitefish)
(3): 463 (frequency, of Bay of Fundy capelin)

- (5): 623 (re weight, of brook trout)
 (6): 797 (composition, re weight of S Nfld. herring population)
 (11): 1761 (frequency, of longnose & white suckers)
 24(1): 87 (smallmouth bass, re temperature)
 (3): 691 (shrinkage factor in measuring groundfish)
 (7): 1531 (vs. fecundity, Atl. cod)
 (10): 2117 (re weight, of white sucker)
 (11): 2455 (frequencies, of Strait of Georgia herring larvae)
 (11): 2481 (pilot whales wintering in Nfld. inshore waters)
 (11): 2485 (re weight, re lingcod fecundity)
 (12): 2573 (re weight of Atl. cod in Ogac L., Baffin Is.)
 25(4): 657 (vs. age & weight, of Ungava round whitefish)
 (4): 667 (distribution, of L. Michigan bloaters)
 (7): 1377 (distribution changes in L. Superior lake trout)
 (7): 1511 (Saskatchewan R. delta lake sturgeon)
 (11): 2403 (re morphology of coho salmon parr-smolt transformation)
 (12): 2651 (Atl. salmon hemoglobin multiplicity increase with)
 (12): 2743 (estimating mean weight from length statistics)
 26(1): 123 (allometric length-weight regression model)
 (1): 143 (Greenland sharks, N Baffin Is.)
 (5): 1289 (length-weight relation, longnose sucker)
 (5): 1301 (distribution, Nfld. American plaice)
 (10): 2561 (white whale from various localities)
 (10): 2741 (re weight, for rapid average weight estimation of young sockeye salmon)
 (11): 3073 (derivation of average lengths of different fish age-groups)
 (12): 3133 (cod off SW Nfld.)
 27(1): 135 (re weight, of lake trout, L. Opeongo, Ont.)
 (1): 156 (computer program availability for fish scale measurements re fish length data)
 (2): 371 (re weight, of chum & sockeye salmon fry in spawning channel vs. natural environments)
 (3): 413 (re age, of brook trout, Matamek L., Que.)
 (3): 493 (frequency distributions, *Lepidion eques*)
 (5): 915 (re scale aging, of Hecate Strait Pac. cod)
 (5): 929 (re body composition, of young sockeye salmon)
 (6): 1005 (frequency, re lake chub sexual dimorphism)
 (7): 1225 (of fishes re interdistances in schools)
 (7): 1265 (frequency, smallfin lanternfish)
 (7): 1295 (re photoperiod regime of Atl. salmon smolts)
 (8): 1429 (of pink & chum salmon fry in revised hatchery method)
 (8): 1475 (L. Erie walleye, 1943-62)
 (12): 2215 (re weight, Nfld. capelin)
 28(4): 513 (successive Skeena R. sockeye salmon generations re egg weight & progeny size)
 (6): 861 (feeding level effects on young sockeye salmon)
 (7): 935 (frequency or range, of 20 Passamaquoddy Bay, N.B., fish communities participants)
 (7): 971 (*Sagitta elegans* arrow worms, re growth & temperature, St. Margaret's Bay, N.S.)
 (7): 1009 (re S Gulf of St. Lawrence seasonal herring stocks discreteness)
 (9): 1309 (re age, white whale)
 (10): 1621 (re age, northern rockfish)
 29(3): 237 (genetic & environment effects on rainbow trout)
 (5): 477 (composition, L. Michigan alewives)
 (5): 517 (re growth & weight of yellow perch, Lac Saint-Louis, Que.)
 (5): 535 (re age of L. Ontario American eel)
 (7): 1043 (frequency, of unexploited walleye population)
 (7): 1061 (re Pac. ocean perch aggregations)
 (7): 1079 (length-weight formula for Gulf of Alaska pomfret)
 (10): 1373 (Atl. salmon increase rate in NW Atl. Ocean)
 (12): 1717 (at maturity of B.C. dogfish)
 (12): 1784 (device for measuring fish length & girth rapidly)
 B 153: 79, 94 (re weight, & length composition, of B.C. petrale sole stocks)
 155 (maximum length of Canadian Atl. marine fishes)
 161: 18 (re weight, of goldeye)
 162: 353 (sockeye salmon)
 171 (B.C. marine mammals)
 173 (average & maximum lengths of NW Canadian & Alaskan freshwater fishes)
 180 (maximum length of B.C. marine fishes)
 CJG 15 (distribution, Nfld. Greenland halibut)
 CNS 16; 27 (composition, of 1964 & 1965 B.C. sockeye & pink salmon catches)
 17 (composition, of petrale sole off Vancouver Is.)
 18 (composition, of Hecate Strait rock sole, B.C.)
 T 23 (composition, of B.C. trawled Pac. cod)
 57 (& age distribution, Bay of Fundy herring)
 62 (frequency, of Pac. cod)
 74 (fork vs. dressed, of sablefish)
 79; 291 (re Atl. herring fat content)
 94-97 (frequency data, Nfld. herring, 1964-65 to 1967-68)
 108 (rock sole, N Hecate Strait, B.C.)
 129 (computer program for statistical analysis of length frequency data; northern pike used as example)
 135 (length-weight relations for 6 B.C. groundfish species)
 139 (frequency distribution & age-length ratios, Gulf of St. Lawrence herring)
 140; 174; 177; 183; 190 (& age composition, B.C. herring)
 141 (electronic recording digital calipers for measuring up to 10 cm)
 147 (Atl. salmon parr re salinity)
 148 (Atl. salmon fry re salinity & diet)
 149 (Atl. salmon smolts re salinity, temperature, & diet)

- 164 (re weights, of Canadian Atl. marine fishes)
 170 (composition, of haddock landings from Nfld. area, 1953-64)
 179 (& age composition, Greenland halibut in Nfld. area)
 213 (distribution, B.C. offshore herring)
 232 (razor clams)
 237; 281 (re weight, of Pac. ocean perch off B.C. & SE Alaska)
 250 (computer programming fish fork length data)
 251; 281 (re girth, of Pac. ocean perch off B.C. & SE Alaska)
 259 (re age, B.C. rock sole)
 260 (groundfish species, Scotian Shelf, from 1958-68 surveys)
 291 (N.S. banks herring)
 315 (distribution, of larval herring & capelin, S Gulf of St. Lawrence & SW Nfld.)
 S 1027 (change in Atl. herring frozen vs. stored in formalin)
 1050 (computer technique for determining age distribution from age-length keys & length distributions)
 1158 (heterogeneity, in Atl. cod & haddock commercial landings)
 1206 (of salmon from Labrador Sea & off W Greenland)
 1213 (re weight, of American plaice, witch & yellow-tail flounders)
 1317 (re weight & age, of salmon off Nfld.)
 1318 (composition, W Nfld. cod stock)
 1380 (redfish: diurnal variation in availability of different lengths)
 1382 (redfish: re age, Nfld. areas)
 1383 (re weight, commercial Greenland turbot)
 1492 (tagged & commercially landed haddock, 1963-66)
 1493 (Atl. cod, re changes in trawl net mesh sizes)
 1494 (behavior of growth & mortality estimates based on age-length keys)
 1495 (frequencies, in Bay of Fundy immature herring populations)
 1507 (conversion factors for haddock standard, extreme total & fork lengths)
 A 156 (icing & freezing effects on biological measurement for various Atl. commercial fishes)
 157 (conversion factors for standard re extreme total re fork lengths for Atl. cod)
 158 (fork length re head girth for haddock)
 159 (re age studies, of Atl. cod by various countries)
- Lenziella* (see Chironomidae)
- Leonard, Edward Neil
 J 27(7): 1277 (copper toxicity to scuds and snails)
- Leong, Roderick Jsun Hong
 J 26(3): 557 (anchovy feeding)
- Lepeophtheirus* (see Caligoida)
- Lepibema chrysops* (see Bass, white)
- Lepidion* (morid fishes)
 J 27(3): 457 (genus review: *L. eques*, *L. guentheri*, *L. lepidion*, *L. schmidti*; first *L. eques* record from NW Atl.)
 T 160 (*L. eques*, *L. lepidion*, *L. guntheri*, & *L. schmidti* meristic, morphometric, weight, feed, & parasites data)
 S 1429 (hosts to 1 known & 2 new parasitic copepod species)
- Lepidochelys olivacea kempii* (see Turtle, ridley)
- Lepidocybium flavobrunneum* (see Escolar)
- Lepidogobius lepidus* (see Goby, bay)
- Lepidophyllum cameroni* (trematode)
 J 26(4): 799 (new digenetic species, from red Irish lord, B.C.)
- Lepidopsetta bilineata* (see Sole, rock)
bilineata bilineata (see Sole, rock)
bilineata mochigarei (see Sole, rock)
bilineata perarctuatus (see Sole, rock)
- Lepisosteus osseus* (see Gar, longnose)
- Lepomis auritus* (see Sunfish, redbreast)
cyanelus (see Sunfish, green)
gibbosus (see Pumpkinseed)
macrochirus (see Bluegill)
megalotis (see Sunfish, longear)
- Lepophidium cervinum* (see Cusk-eel, fawn)
- Leptasterias polaris* (see Starfishes)
- Leptoclinus maculatus* (see Shanny, daubed)
- Leptocottus armatus* (see Sculpin, Pacific staghorn)
- Leptodora kindtii* (see Cladocera)
- Lernaeoceridae (see also Caligoida; also Copepoda)
 J 24(3): 515 (*Phrioxcephalus cincinnatus* morphology)
 (9): 1985 (*Cardiodectes medusaeus* parasitic on myctophid fishes; also parasitized by a hydroid; correction on J 25(8): 1760)
 (10): 2161 (*Haemobaphes diceraus* parasitic on B.C. shiner perch)
 26(4): 921 (*P. cincinnatus* biology)
 T 81 (*P. cincinnatus* on turbot)
 S 1501 (n.sp., *H. intermedius*; also description of *H. diceraus*)
- Lernaeopodidae (see also Caligoida; also Copepoda)
 J 24(9): 1911 (*Salmincola exsanguinata*, n.sp.; *Sa. salmoneus*, on Nfld. fishes)
 26(1): 143 (*Ommatokoita elongata* on Greenland shark cornea)
 (2): 311 (*Clavellomimus macruri*, new genus; *Lernaeopodina longibrachia*, new to Canada;

- Clavella pinguis* & *Clavellodes rugosus*; from Nfld. & Greenland fishes)
- (4): 805 (*Schistobranchia ramosus* from Nfld. thorny skate)
- (9): 2319 (*Sa. californiensis* on coho salmon)
- (11): 2987 (*Achtheres*: re revision of *Salmoncola*; key to *Salmoncola*)
- 27(5): 865 (*Sc. tertia*, n.sp.; *Dendrapta cameroni longiclavata* & *L. pacifica*, new Canadian records; *Pseudocharopinus dentatus*; *Clavella adunca*; detailed descriptions of *Clavella parva* & *perfidia*, *Nectobranchia indivisa*, & *Brachiella robusta*; all from B.C. fishes)
- (12): 2159 (taxonomy & first record of *B. lageniformis* in Pac. Ocean, also its significance to *Merluccius* fishes zoogeography)
- 29(7): 1015 (attachment organ (bulla) structure of 24 species)
- CJG 17 (*Salmincola* on Nfld. Salmonidae; *Salmincola* key)
- T 134 (*Sa. salmoneus* as indicator for distinguishing Atl. salmon stocks)
- S 1307 (6 species (4 new) & 1 naobranchiid species, parasitic on Australian fishes)
- 1429 (possible new *Clavella* species, parasitic on *Lepidion* fishes)
- 1496 (new parasitic genus & species, *Proclavellodes pillaii*, from S India fish)
- 1566 (new parasitic species, *Lernanthropus togatus*, on gills of marine Kenyan fish *Gaterin*)
- 1610(F) (new parasitic species, *Eubrachiella mugilis*, from Tunisian mullets)
- Lesions (see also Disease; Injury; Pathology)
- J 22(3): 761 (corneal, in hatchery lake trout)
- Lesser Slave Lake, Alta:
- S 900 (availability of fishes)
- Lethal limits (see also Insecticides; Pesticides; Piscicides; Pollution; Toxicants; also factors influencing: e.g. Oxygen, dissolved; Respiration; Salinity, reactions to; Temperature, reactions to)
- J 26(2): 456 (upper temperature, for Great Lakes rainbow trout)
- (6): 1473 (temperature, re wild brook trout fingerling winter survival)
- (9): 2283 (5 haustoriid amphipod species re 5 environmental factors)
- 27(11): 2047 (upper temperature, for juvenile & young bloater)
- B 177 (paralytic shellfish toxin to man, mice, domestic animals, & birds)
- S 1590: 522 (of temperature to various fishes: review)
- A 145 (bioassay methods for pollutants toxicity: review)
- Leucichthys* (see Coregonus)
- Leuciscus cephalus* (see Mullet, striped)
- rutilis* (see Roach)
- Leuctridae (see Plecoptera)
- Leukemia (see Blood)
- Leung, Ted Tat Chi
- CHN 20 (identification of fillets)
- S 1073 (enzymes in herring)
- 1349 (isolation of tropomyosin)
- 1370 (lactate dehydrogenase in cod)
- 1616 (gadoid lactate dehydrogenase polymorphism)
- Leuroglossus stilbius* (see Smoothtongue, California)
- stilbius schmidti* (see Smoothtongue, northern)
- Levenstein, Raisa Yakovlevna
- J 28(10): 1429 (*Macellicephaloides berkeleyi* n.sp.)
- Levesque, Raymond Charles
- J 29(10): 1495 (food availability & consumption by young American shad)
- Levin, Catherine B.
- J 25(5): 1091 (permanent dry-mounted teleost chromosomes)
- Levin, Robert Eugene
- J 27(1): 31 (refrigerated fish protein patterns)
- Levings, Colin David
- J 25(8): 1743 (fertilized eggs of butter sole)
- 26(9): 2403 (*Lycodopsis pacifica* in B.C.)
- T 36 (rock sole growth rates in NE Pac.)
- 62 (*G. B. Reed* groundfish cruise to Hecate Strait)
- Lewis, Alan Graham
- J 26(5): 1347 (*Euchaeta japonica* development)
- Lewis, Donald Howard
- J 29(2): 211 (indirect fluorescence for detecting antibodies to *Aeromonas liquefaciens* in fish)
- Lewis, John Bradley
- J 24(3): 683 (dolphin and tuna feed)
- Lewis, Roger Wolcott
- J 24(5): 1101 (marine animal fatty acids)
- Li, Ming Fang
- J 23(4): 595 (cultivation of oyster cells)
- 24(2): 443 (serological differences between 2 Atl. oyster populations)
- (11): 2339 (lobster muscle weight)
- 26(2): 461 (rainbow trout ovary cells)
- (5): 1378 (spinner culture cells detect water pollution)
- 28(1): 104 (skin lesions of rainbow trout)
- 29(5): 501 (tissue culture bioassay for mercuric chloride in water pollution)
- S 943 (growth of rainbow trout)
- 1140 (pseudomonad from rainbow trout)
- 1214 (hemagglutinins from oyster hemolymph)
- 1258 (proteinase from a pseudomonad)

- 1288 (study of lobster using serum protein concentration)
 1398 (effect of elemental phosphorus on L-cells)
 1443 (rainbow trout ovary cells infected with amphibian virus LT-1)
 1654 (antiviral activity of *Mya* clam extract on amphibian virus LT-1)
- Liard River, Yukon, B.C., and N.W.T.
 B 173 (descriptions of fishes in drainage system)
- Libbey, Leonard Morton
 J 29(8): 1125 (volatile compounds formed in ice-stored canary rockfish muscle)
- Libosvsky, Jiri
 T 180 (Lac la Martre survey 1969; gillnets entangling capacity fishing for whitefish & lake trout)
- Library
 T 90 (determining periodical selection policy for a freshwater biological research)
 209 (storage & retrieval of indexed & annotated bibliographic references)
- Lice (*see* Salmon-lice; Whale lice; *also* Amphipoda; Anopleura; Caligoida; Copepoda; Parasites)
- Licht, Paul
 S 1376 (fish gonadotropin effects in lizard)
- Lie, Ulf
 J 26(1): 55 (Puget Sound benthic infauna)
 27(4): 621 (identification of benthic communities)
 (12): 2273 (species composition & structure of benthic infauna communities)
- Life cycle (*see* Life history)
- Life history (*Note*: The following references are only representative of those dealing to some extent or fairly fully with the life cycle or life history of organisms; it is not feasible to list all such references in FRB publications. *See also* the names of organisms and headings dealing with the various aspects of life history)
 J 22(2): 565 (American plaice in Magdalen Shallows)
 23(3): 365 (characteristics variations in steelhead trout)
 (8): 1145 (Atl. argentine on Scotian Shelf)
 (11): 1761 (longnose & white sucker, Sixteenmile L., B.C.)
 24(2): 305 (*Ampelisca vadorum* & *A. abdita* amphipods)
 26(2): 361, (5): 1321 (5 Hautoiriidae amphipod species)
 (4): 717 (*Diphyllobothrium pacificum*)
 (4): 831 (infection dynamics of *Triaenophorus nodulosus* in yellow perch)
 (4): 833 (various parasites of yellow perch)
 (6): 1485 (zooplankton, Ogac L., Baffin Is.)
 (10): 2543 (various planktonic copepods, Parry Sound, Ont.)
 27(3): 613 (rainbow trout population vital statistics re extended spawning season in L. Huron)
 28(1): 73 (*Hedriodiscus truquii* diptera in thermal springs)
 (5): 771 (rainbow trout, Batchawana Bay, L. Superior)
 (7): 971 (*Sagitta elegans* chaetognath, St. Margaret's Bay, N.S.)
 29(2): 161 (Northumberland Strait rock crab)
 (5): 535 (American eel, L. Ontario)
 (9): 1337, 1340 (*Gammarellus angulosus* & *homari* amphipods in NW Atl.)
 (10): 1381 (*Bothrimonus* cestodes)
 (10): 1479 (rock crab, Gulf of Maine)
 (12): 1701 (*Mysis relicta* in an arctic vs. a temperate lake)
 B 154 (of many Nfld. marine fishes, etc.)
 155 (Canadian Atl. coast fishes)
 161 (goldeye)
 162 (sockeye salmon)
 165 (carp)
 166 (American eel)
 169 (B.C. oysters)
 173 (freshwater fishes of NW Canada & Alaska)
 179 6 (B.C. clams)
 180 (B.C. marine fishes)
 T 31 (Atl. mackerel)
 105 (several important B.C. groundfish species)
 231 (Arctic char in a small arctic lake)
 S 973 (offshore NE Pac. Ocean coho salmon)
 1062; 1063; 1064 (review of B.C. sockeye; pink; chum salmon)
 1090 (Arctic char)
 1201 (gray seal off E Canada)
 1255 (NW Atl. capelin)
 1501 (*Haemobaphes* parasitic copepods)
 A 5(F) (lobster)
 7(F) (Pac. salmon)
 8(F) (Atl. herring)
 9(F) (Atl. mackerel)
 10(F); 64 (giant scallop)
 20 (B.C. clams)
 21 (sablefish)
 22 (Pac. herring)
 23 (Pac. cod)
 24 (Atl. salmon)
 36 (B.C. herring)
 39 (American smelt)
 47 (lingcod)
 58 (of parasitic cercariae larvae causing "swimmers' itch" on people)
 67 (bluefin tuna)
 131(F) (swordfish)
 184 (harp & ringed seals)
 256; 263 (queen crab)
- Life span (*see also* Longevity; Life history)
 J 28(10): 1573 (re animal production-biomass ratio)
- Light, polarized (*see* Light, reactions to; Migration)
- Light, production of (*see* Bioluminescence)

Light, reactions to (*see also* Bioluminescence; Darkness; Diel habits; Eye; Illumination; Radiation; Vision)

- J 22(2): 281 (effect on growth of Atl. oyster, mussel, & quahaug)
 (2): 369 (young Atl. salmon behavior to photoperiods and gradients)
 (3): 825 (gradients re marine ostracod distribution)
 (6): 1379 (photoperiods influence on green sunfish growth)
 23(1): 157 (downstream migrating brown trout)
 (2): 293 (re aggregations of chum salmon fry)
 (7): 983 (re rainbow trout seeking overhead cover)
 (7): 1007 (young Atl. salmon & brook trout)
 24(10): 2011 (vision re cutthroat trout homing & orientation)
 (11): 2321 (re pink salmon fry early marine migration)
 25(2): 373 (bluegill retinomotor rhythms)
 (2): 393 (re jack mackerel feeding)
 (4): 711 (re yellow perch schooling behavior)
 (6): 1285 (re brown trout activity)
 (9): 1901 (re guanine & hypoxanthine formation in Atl. salmon)
 (10): 2111 (effect on coregonid scale annulus formation)
 (10): 2143 (re orientation of American eels toward spawning area)
 26(1): 21 (yearling smallmouth bass)
 (1): 33 (lakeward migrating young rainbow trout)
 (2): 279 (re benthic invertebrates upstream river movements)
 (2): 463 (re phytoplankton photosynthesis diel periodicity and efficiency re light intensity)
 (3): 583 (re Atl. cod feeding behavior)
 (3): 687 (re rainbow trout bottom color selection)
 (8): 2093 (re Atl. salmon parr & smolt buoyancy)
 (8): 2250 (accelerating hatching of cestode eggs)
 (11): 2959 (effect on flagellate growth & photosynthesis)
 (12): 3233 (rainbow trout response to overhead, re age and intensity)
 (12): 3266 (re catchability of 4 fish species, Heming L., Man.)
 27(4): 669 (re pink shrimp diel vertical migration)
 (4): 743 (re Atl. oyster spat settlement)
 (4): 749 (visible spectral photoperiodism re threespine stickleback ovarian maturation)
 (5): 983 (re purine silvering of Atl. salmon at parr-smolt transformation)
 (7): 1295 (photoperiod influence on Atl. salmon smolt development & growth)
 (9): 1653 (re lobster larvae molting periods)
 28(4): 587 (re wild vs. hatchery rainbow trout metabolism)
 (6): 919 (prespawning brook sticklebacks)
 (6): 1303 (effects of oxygen depletion & carbon dioxide accumulation on walleye photic behavior)
 (9): 1319 (polarized; perception by yearling sockeye salmon, re migration)
 (9): 1352 (increased predation of torrent sculpin on moonlight nights)
 (11): 1749, 1757 (photoperiods effect on young sockeye scale growth after starvation periods)
 29(2): 151 (sockeye fry migrating up lower Babine R., B.C.)
 (3): 315 (Atl. salmon parr after subjection to 4 insecticides)
 (5): 555 (re coastal cutthroat & Dolly Varden trouts feeding behavior & interaction)
 (8): 1209 (brook trout gonad maturation in high mountain lake re altered photoperiod caused by deep snow)
 T 330 (re body & scale growth of young sockeye)
 S 1150 (effect on Bay of Fundy herring movements)
 1166 (re orientation of seaward-migrating young sockeye)
 1207 (diurnal variation in American plaice catches)
 1333 (negative phototaxis of emerging sockeye fry)
 1486 (newly hatched crayfish)
 1557 (re crayfish ovarian maturation & egg laying)
 A 135 (photoperiod of *Orconectes virilis* crayfish molting)
- Light, William John
 J 26(11): 3088 (range extension of *Manayunkia aestuarina* polychaete in B.C.)
- Lightfishes
 J 24(5): 1101 (*Vinciguerria lucetia* & *Argyropelecus lychnus* fatty acids composition)
 B 180: 160 (general description)
- Lighthart, Bruce
 J 26(2): 299 (bacteriovorous Protozoa)
- Lighthouse oceanographic stations, B.C. coast
 T 32; 82 (surface temperatures & salinities, 1965, 1966)
- Lightle, Therese Elizabeth
 J 27(10): 1898 (β -glucuronidase & arylsulfatase in marine invertebrates)
- Lightner, Donald
 J 26(8): 2247 (virus in trout pancreatic tissue)
- Ligula intestinalis* (*see* Cestoda)
- Liley, Nicholas Robin
 S 1535 (sexual behavior of female guppy)
- Lilly, George Richard
 T 43 (Irish moss ecology in Nfld. waters)
- Limacina* (*see* Gastropoda; Pteropoda; Thetin derivative)
- Limanda aspera* (*see* Sole, yellowfin)
ferruginea (*see* Flounder, yellowtail)
yokohamae (*see* Dab, mud)
- Limidae
 S 1618 (occurrence & function of lip hypertrophy)
- Limnocalanus* (*see* Calanoida; Copepoda)

Limnodrilus (see Oligochaeta)

Limnology (see also Benthos; Eutrophication; Hardness of natural waters; Lakes; Meromyxis; Pollution; Ponds; Sediments; also names of lakes)

- J 22(3): 665 (Nicola L., B.C.)
 (5): 1123 (Cedar L., Man.)
 (5): 1165 (saline west-central Manitoba lakes)
 23(2): 275 (summer, of Long Point Bay, L. Erie, Ont.)
 (5): 723 (bioassay method for toxaphene)
 (7): 963 (Great Bear L., N.W.T.; correction on J 25(8): 1759)
 (10): 1625 (efficiency of suspended biomass estimation methods)
 (11): 1715 (L. Ontario surface waters phytoplankton)
 (12): 1875 (comparative, of 9 Rocky Mt. Trench SE B.C. lakes)
 (12): 1923 (comparative, of 8 Indiana lakes)
 24(1): 101 (thermal regime, South Bay, L. Huron)
 (2): 463 (Pinaus & Kalamalka lakes, B.C.)
 (6): 1299 (& guantrophy of a small lake)
 (9): 1861 (phytoplankton dynamics in Alaskan arctic lake)
 (10): 2045, 2189 (small lakes of Babine L., B.C., system)
 (11): 2283 (Marion L., B.C.)
 (11): 2461 (new plastic-bag water sampler)
 (11): 2473 (simple model of lake for instructional use)
 (11): 2491 (computer vs. manual temperature & depth calculations)
 25(1): 33 (pH & dissolved solids of SW B.C. streams)
 (1): 81 (of 3 SW B.C. lakes re trout mortality)
 (6): 1181 (re benthic environment of upper Great Lakes)
 (6): 1229 (re phytoplankton ecology of L. Belwood, Ont.)
 (8): 1591 (American eel rheotaxis to different stream waters)
 (9): 1911 (mathematical treatment for average vertical temperature distribution)
 (12): 2575 (physical & chemical of some Alaska and N.W.T. lakes & rivers)
 26(5): 1157 (of small Que. stream re aquatic insects)
 (5): 1363 (Owikeno L., B.C., re sockeye salmon production)
 (7): 1763 (of 4 southern B.C. meromictic lakes; correction on J 27(8): 1499)
 (7): 1948 (2 useful devices for vertical plankton & water sampling)
 (12): 3101 (Crecy L., N.B., before and after fertilization)
 27(1): 180 (seston crop estimation technique)
 (1): 185 (self-contained integrating radiometer for measuring underwater light energy in absolute units)
 (2): 213 (Chironomidae re benthic crop colonization in a reservoir)
 (2): 233, (8): 1335 (physical & chemical, of 4 mountain lakes, Banff & Jasper National Parks, Alta.)
 (2): 281 (zooplankton diel vertical movements, Babine L., B.C.)
 (2): 395 (Tadanac L., Ont.)
 (3): 425 (3 adjoining Ont. lakes affected or not affected by uranium ore milling wastes)
 (3): 445 (currents effects on walleye larvae distribution, Oneida L., N.Y.)
 (4): 653 (Paradise L., Ont., re ion movement from & through mud)
 (5): 837 (seasonal variation in selected nutrients, Grand R., Ont.)
 (5): 847 (chemical analysis of Sunfish L., Ont.)
 (6): 1059 (fish behavior & physicochemical conditions under ice in shallow lake)
 (6): 1165 (temperature effects on fishes & crayfish during seiche in Georgian Bay, Ont.)
 (7): 1239 (long-term changes in Kootenay L., B.C.)
 (10): 1405 (chemical composition re phytoplankton in 70 S Ont. lakes; correction on J 28(8): 1219)
 (11): 2009 (Clear L., Ont., re primary production)
 (11): 2022 (chemical budget, Clear L., Ont.)
 28(1): 102 (plotting bathythermograph transect data on a computer printer)
 (2): entire issue (FRB Experimental Lakes Area studies of many small NW Ont. lakes; correction on J 29(8): 1241)
 (5): 759 (rapid ammonium ion determination method for waters)
 (11): 1683, 1699, 1715 (Bay of Quinte & other L. Ontario bays)
 (12): 1883 (physical & chemical aspects of 51 Manitoulin Is. (L. Huron) lakes)
 29(3): 229 (volcanic ashfall effects on 2 Afognak Is. lakes, Alaska)
 (6): entire issue (proceedings of international symposium on Salmonid Communities in Oligotrophic Lakes (N America & Europe))
 (8): 1131 (atmospheric acid fallout cause of pH lowering & fish mortality in lakes)
 B 162: 177 (of sockeye salmon lakes)
 T 90 (determining periodical selection policy on, for a library)
 165; 165(F) (re rainbow trout farming in central Canada)
 180 (Lac la Martre, N.W.T.)
 196 (& bottom fauna survey, Okanagan Valley lakes, B.C.)
 231 (Keyhole L., Canadian Arctic, re Arctic char potential production)
 322 (of small arctic lake before inflow of hot coolant water from diesel power plant)
 MSP 13; 13(F) (summary of FRB investigations in Canadian Arctic)
 S 900 (Canadian lakes re availability of fish)
 908 (Canadian large lakes)
 911 (barachois ponds in Bras d'Or L. area, N.S.)
 1004 (chemical analyses of 6 Canadian Arctic lakes)
 1013 (L. Hazen, N.W.T.)
 1191 (Great Bear L., N.W.T.)
 1434 (sedimentary organic matter re paleolimnology: review)

- 1436; 1437; 1438; 1439 (& mineral constituents, Green L., N.Y.)
- 1532; 1533 (North Boulder Creek, Colorado, re invertebrates in this high mountain area)
- 1597 (Hutchinson L., FRB Experimental Lakes Area, NW Ont.)
- 1646 (nutrients & fertilization re eutrophication of lakes)
- A 14 (Great Bear L.)
- 75 (Great Bear L.; Keyhole L., Victoria Is., Canadian Arctic, 1965 studies)
- 139 (improving evaluation methodology, particularly re pollution effects: review)
- 270; 271 (biological studies of the English lakes (two reviews of the same book))
- Limnoria lignorum*; *L. tripunctata* (see Gribbles; Isopoda)
- Limpet (*Patella vulgata*)
- S 981 (infestation with trematode fluke larvae)
- Limpet, tortoiseshell (*Acmaea testudinalls*)
- J 27(10): 1898 (2 digestive tract enzymes)
- S 1679 (sterols)
- Lindane (see Insecticides)
- Lindsey, Casimir Charles
- J 23(11): 1761 (sucker life histories)
- 25(9): 1987 (large fish muscle temperatures)
- 27(1): 170 (stonecat, *Noturus flavus*, from Hudson Bay drainage)
- 28(9): 1235 (medaka vertebral count re egg size)
- 29(12): 1772 (new complexities in pygmy whitefish zoogeography & taxonomy)
- B 173 (freshwater fishes of northwestern Canada & Alaska)
- S 1451 (*Coregonus clupeaformis* species complex)
- Lindsey, James Keith
- J 27(1): 172 (parameter for exponential growth curve)
- (4): 765 (nonlinear response surface)
- 29(5): 590 (likelihood analysis of 3-way contingency tables)
- T 29 (Maritime area Atl. salmon catches, 1949-65)
- 87; 173; 311 (nonlinear response surfaces computer programs)
- 275 (computer programs for analysis of non-normal data)
- 276 (computer programs for multiple regression & analysis of covariance)
- Line fishing
- CNG 79 (& trawl catches of groundfish off B.C., 1945-65)
- 82 (& trawl for B.C. groundfish exploratory fishing)
- A 74 (same as CNG 82 above)
- Ling (see Burbot)
- Ling, blue (*Molva dypterygia*) (*M. byrkelange*)
- S 1384 (scientific name; distribution & characteristics in W Greenland & Nfld. areas)
- Lingcod (*Ophiodon elongatus*)
- J 22(1): 203 (biochemical systematics)
- (3): 755 (browning of freeze-dried flesh)
- 23(5): 701 (partial freezing for preservation)
- 24(8): 1883 (botulinum spore germination in fillet extracts)
- (11): 2485 (fecundity re length-weight ratio)
- 25(8): 1539 (postmortem muscle glycogen & starch degradation)
- (8): 1651 (plasma protein-bound inorganic iodide)
- (12): 2665 (associations with other fishes off Oregon coast)
- 26(9): 2319 (parasites, B.C.)
- (11): 3043 (new copepod species from nasal cavity)
- 27(7): 1251 (biomass, Strait of Georgia)
- B 180: 467 (full description, etc., B.C.)
- CNG 73; 82 (in Hecate Strait exploratory fishing)
- CNS 14; 19 (B.C. landings by areas, 1964, 1965)
- 24 (sampling of B.C. commercial catches by areas, 1946-65)
- 28 (Canadian & U.S. trawl catches off B.C., 1954-65)
- T 7; 11; 19; 22; 30; 46; 56; 62; 81; 89; 117; 131; 144; 181; 205; 216; 221; 257; 290; 302; 317 (catches during FRB experimental or B.C. commercial trawling)
- 105 (life history, feed, etc.)
- 135 (length-weight relations)
- 174: 66 (feed)
- 246 (bibliography)
- S 894 (muscle adenine deamination enzymes)
- 1049 (muscle guanine deaminase)
- 1048 (muscle purine nucleoside phosphorylase preparation)
- 1416 (sea freezing in prerigor, rigor, & postrigor re product quality)
- 1523 (muscle purine & pyrimidine nucleoside phosphorylases)
- 1524 (muscle guanine deaminase mechanism & specificity)
- A 30 (enzymic degradation of muscle glycogen & adenosine phosphate, re quality)
- 32 (enzymic removal of muscle carbohydrates to inhibit flesh browning)
- 47 (description, habits, life history, fishery methods)
- 91 (1956 & 1966 B.C. landings for mink feed)
- 235 (estimated biomass in Strait of Georgia)
- Linseed oil
- S 1029 (fatty acids positional distribution in triglycerides)
- 1136 (storage of oxidizable fatty acid esters)
- Liopsetta glacialis* (see Flounder, Arctic)
- putnami* (see Flounder, smooth)
- Lip (see Lips)

- Liparid
J 25(12): 2665 (*Rhinoliparis attenuatus* association with other fishes off Oregon coast)
- Liparid (n.sp.) (*Acantholiparis caecus*)
J 26(5): 1237 (description; found off N Oregon coast)
- Liparid, spinycheek (*Acantholiparis opercularis*)
J 23(6): 935 (description of new record)
26(5): 1237 (range extensions S to Oregon coast)
B 180: 71 (range & brief description, in key)
- Liparids (in addition to the following headings see earlier common names shown in the Snailfish headings for the corresponding present common names and references for over a dozen snailfish species formerly called liparids)
- Liparis atlanticus* (see Seasnail (Atlantic))
callydon (see Snailfish, spotted)
cyclopus (see Snailfish, ribbon)
cyclostigma (see Snailfish, polka-dot)
dennyi (see Snailfish, marbled)
florae (see Snailfish, tidepool)
fucensis (see Snailfish, slipskin)
koefoedi (see Seasnail, gelatinous)
liparis (see Seasnail, striped)
mucosus (see Snailfish, slimy)
pulchellis (see Snailfish, showy)
rutteri (see Snailfish, ringtail)
tunicatus (see Snailfish, Greenland)
- Lipase (see Enzymes; Lipids)
- Lipids (see also Acids, fatty; Composition, chemical; Enzymes; Insecticides; Liver oils; Oils and fats; Phospholipids; Rancidity; Tocopherol; Triglycerides)
J 22(1): 131 (of Nfld. squid)
(3): 643 (lysolecithinase action on cod phospholipids)
23(5): 737, (10): 1587 (Fe effect on test for oxidation of)
(7): 1025 (effect of Atl. cod frozen storage on muscle)
(7): 1077 (total, in thawed Atl. cod fillets)
(9): 1353 (content of pink salmon at various life-history stages)
(10): 1629 (lobster blood)
24(3): 527 (hydrolysis in stored frozen Pac. dogfish)
(3): 607 (seasonal changes in flesh & liver, of Atl. cod)
25(8): 1555 (possible mechanism of reserve utilization in fish)
(8): 1561 (fatty acids composition of jellyfish & turtle)
(8): 1603 (of marine phytoplankters re taxonomy, etc.)
(10): 2083 (fatty acids distribution in cod flesh & liver)
(11): 2403 (changes in total, during coho salmon development)
(11): 2419 (fatty acids composition of seal milk)
26(7): 1919, 1923 (extraction from Atl. herring for preparing protein concentrates)
(8): 2030, 2037 (content & fatty acids, also alterations during cold storage, of Nfld. capelin)
(8): 2037 (fat content & lipid hydrolysis of capelin re sex)
(8): 2234 (content of Atl. salmon & canned Pac. salmon)
(8): 2237 (inhibitors for free fatty acids liberation from trout muscle lipids during cold storage)
(9): 2299 (promoters & inhibitors of oxidation of marine muscle)
(11): 2843 (content of steelhead trout during parr-smolt transformation)
27(1): 1 (re insecticides residues in landlocked Atl. salmon tissues)
(2): 347 (content of coho salmon re DDT retention)
(2): 371 (content of chum & sockeye salmon fry from spawning channel vs. natural environments)
(3): 513 (of *Meganyctiphanes norvegica* & *Thysanoessa inermis* euphausiids re role as whale feed)
(4): 701 (catalysis of oxidation in some marine fishes & invertebrates by transition metals ions)
(5): 929 (content of young sockeye salmon as estimated from length, live weight, & total body water)
(9): 1589 (content of frozen redfish fillets & oxidative rancidity tests)
(12): 2215 (fat content of Nfld. capelin)
28(1): 7 (seasonal changes in total, of freshwater triclad flatworm)
(4): 601 (fatty acids of sand lance)
(5): 776 (content of *Pontoporeia affinis* amphipod, Cayuga L., N.Y.)
29(4): 385 (% fats, unsaponifiable matter, & sterols in molluscs)
(4): 407 (composition of queen crab)
(8): 1145 (content of 8 myctophid fishes re function of swimbladder)
B 125R: 147; 167; 227 (determination of particulate, in sea water)
CVG 34 (energy value in herring meal)
35 (oxidation causing heating of fish meals)
40 (action of various antioxidants on herring meal)
T 198 (content of queen crab tissues & meal products)
334 (effect of feeding 3 unicellular algal species on oyster lipids & their fatty acids)
S 944 (stereospecific analysis of triglycerides)
967 (triglycerides hydrolysis by skate pancreatic lipase)
985 (stereospecific analysis of human depot fat triglycerides)
1045 (polyunsaturation re iodine values of various marine animal oils)
1175 (review of influence on frozen fish quality, particularly Atl. cod)
1227 (fatty acids composition of fin whale milk)
1233 (marine fatty acids incorporation into mink & rat)

- 1236 (biosynthesis from added substrates by Atl. salmon sperm)
- 1250 (pancreatic lipase substrate specificity)
- 1286 (content of eulachon oils)
- 1350 (extraction from Atl. herring material for fish protein concentrate; also lipids composition)
- 1371 (esters of phenols as substrates for assaying pancreatic lipase activity)
- 1373 (nature & metabolism in echinoderms: review)
- 1423 (unexpected high concentration of arachidic acid in seawater lipid material)
- 1455 (intestinal mucosa, of fatty acid-deficient rats)
- 1461 (esters fatty acid structure influence on pancreatic lipase activity)
- 1474 (fatty acid composition in rainbow smelts)
- 1475 (confusion between C₁₈ & C₂₀ fatty acids in analysis of water-plant seed lipids)
- 1564 (*trans*-6-hexadecenoic acid & corresponding alcohol in sea urchin *Metridium dianthus*; also fatty acids composition of lipids)
- 1572 (saturated & isoprenoid fatty acids distribution in periwinkle, Atl. oyster, & quahaug)
- 1622 (& fatty acids of Atl. mackerel)
- 1639 (oxidation in frozen stored Atl. coast fishes)
- 1674 (& fatty acids of Atl. cod erythrocytes)
- 1700 (white barracudina: wax esters as possible replacement for sperm whale oil)
- 1717 (fatty acids of Atl. harbour seal heart & lungs)
- 1721 (fatty acids of leatherback turtle tissue & organs)
- A 69 (review of lipid hydrolysis & lipid-protein interaction re quality deterioration in frozen fish)
- 80 (re fish products nutrition value)
- 124; 125 (extraction & residual, fish protein concentrates)
- 130 (re fish muscle nutritional value & preservation)
- 146 (catabolism in fish muscle)
- 177 (popular account of FRB Halifax laboratory studies on)
- 264 (deterioration as quality test for freshwater fish flesh products)
- Lipoxidase (*see* Enzymes; *also* Acids, fatty; Oils and fats; Rancidity)
- Lippa, Erich Johannes Richard
J 22(5): 1311 (groundfish contamination)
CNS 14 (B.C. landings of trawl-caught groundfish)
T 13 (B.C. trawlers & trawl gear)
- Lipps, Jere Henry
S 1587 (pleistocene paleoecology & biostratigraphy, Santa Barbara Is., Calif.)
- Lips (*see also* Mouth)
S 1618 (occurrence & function of hypertrophy in Anisomyaria)
- Lisk, Donald J.
J 29(9): 1283 (total cadmium content survey of New York State freshwater fishes)
- Lissodelphis borealis* (*see* Dolphin, northern right-whale)
- Lister, David Brent
J 27(2): 371 (chum & sockeye salmon growth & composition)
(7): 1215 (chinook & coho salmon habitat)
28(5): 647 (pink salmon in Qualicum R.)
- Lists of fishes (*see* Fishes, lists of)
- Lists of organisms (*see* Benthos; Checklists; Fauna; Fishes, lists of; Flora; Invertebrates; *also* names of some general classifications of organisms)
- Lists of publications (*see* Bibliographies; Fisheries Research Board of Canada, lists of publications and reports; Indexes)
- Litchfield, Carter
S 1226 (fatty acids positional distribution)
1514 (lipids of Amazon R. dolphins)
1608 (isovaleroyl triglycerides from beluga whale blubber & head oils)
- Literature, limnological
T 90 (determining periodical selection policy for a library)
- Lithium derivatives
J 22(4): 929 (re oxidative rancidity promotion in cod flesh)
28(2): 277 (in sediments of 4 small NW Ont. lakes)
S 1437 (in Green L., N.Y.)
- Lithodes aequispina* (*see* Crab, deepwater king)
couesi (*see* Crab, box)
maia (*see* Crab, northern stone)
- Lithology (*see* Geology)
- Little Codroy River, Nfld.
J 25(10): 2165 (salmon smolt survival & adult utilization)
T 38 (estuarine net counting fence for trapping salmon)
84 (numbers of salmon & brook trout captured & marked at above fence)
98 (climatic & geomorphic aspects)
S 1257 (as T 38 above)
- Littorina littorea* (*see* Periwinkle, common)
obtusata (*see* Periwinkle, yellow)
saxatilis (*see* Periwinkle, rough)
- Liu, Dickson Lee-Shen
J 25(5): 853 (marine borer caecum glucose metabolism)
27(6): 1141 (marine borer enzymes)
- Liver (*see also* Hepatopancreas; Liver oils; *also* names of animals) (*Note*: Investigations of livers from a biological or of liver lipids from a biochemical standpoint are mainly listed hereunder; however, because of the dual nature of some

- investigations of liver lipids to include characterization of liver oils as such, references under the heading Liver oils should also be consulted)
- J 22(3): 643 (percentage and lysolecithinase activity in Atl. cod)
- (3): 775 (histology, of postspawned sockeye salmon)
- (5): 1107 (lipid fatty acids of Pac. hake and whiting)
- (5): 1137 (*Gonyaulax* toxicity in scallop)
- 23(1): 21 (effect of decomposition of Atl. cod, on liver oil free fatty acids)
- (1): 155 (effect of irradiation of Atl. cod, on liver oil free fatty acids)
- (4): 471, (9): 1461 (glycogen re exercised rainbow trout metabolism)
- (7): 975 (starvation & refeeding effect on constituents, Atl. cod)
- (10): 1587 (Fe effect on lipid oxidation)
- 24(2): 357 (α -tocopherol content in fish & shellfish)
- (3): 607, 613 (condition, lipid content, & lipid fatty acids seasonal changes in Atl. cod)
- (8): 1701 (rainbow trout disturbance effects on)
- 25(3): 597 (*Ichthyophonus* fungus infection of yellow-tail flounder liver)
- (8): 1571 (phosphatase degradation of organo-phosphate insecticides)
- (9): 1797 (dieldrin accumulation in goldfish, after aldrin ingestion)
- (10): 2083 (lipids & fatty acids of Atl. cod)
- (12): 2643 (furunculosis bacteria in brook trout)
- 26(10): 2561 (weight in white whales)
- (1): 2785 (effects of copper sulfate poisoning on winter flounder)
- (12): 3209 (effect of feeding & DDT on activity of glucose 6-phosphate dehydrogenase in fish liver)
- 27(1): 117 (DNA polymerase isolation from rainbow trout liver nuclei)
- (2): 383 (metal salts poisoning effects on 5 enzymes in mummichog)
- (4): 677 (many trace elements in Great Lakes fishes re pollution)
- (4): 830 (mercury pollution, in Saskatchewan R. fishes)
- (5): 857 (mitochondria re fatty acids oxidation in trout)
- (6): 1131 (in vivo uptake of elemental phosphorus from water by Atl. cod)
- (9): 1563 (lactate dehydrogenase subunits in rainbow trout)
- 28(1): 47 (hemosiderin bodies re erythropoiesis in blue gourami)
- (1): 112 (histology of cutthroat trout with leukemia condition)
- (4): 485 (histological effects of hormones & cortisol on gonadectomized adult sockeye salmon)
- (6): 843 (zinc level in rat, when fed P.E.I. oysters)
- (7): 1053 (genic polymorphism of tetrazolium oxidase in bluefin tuna)
- (7): 1064 (vs. feces re presence of pancreatic necrosis virus in brook trout)
- (11): 1793 (see T 229 below)
- (12): 1837 (lysolecithin solubilizing effect on extractability of tissues, in rainbow trout)
- 29(2): 149 (histopathology in channel catfish hemorrhagic virus disease)
- (5): 531 (morphology & enzyme histochemistry, of largemouth bass)
- (11): 1519 (susceptibility to mercury contamination in northern pike)
- (11): 1644 (mercury in harbour porpoise partly as methylmercury)
- B 151; 151(F) (canning of smoked burbot liver)
- CNS 14; 19 (B.C. landings by months, 1964, 1965)
- T 208 (bioassays of various Nfld. fishes, re elemental phosphorus assimilation)
- 229 (feeding rats raw or partially hydrogenated Atl. herring oil re fat deposition in)
- 1073 (enzymes of Atl. herring)
- 1186 (Atl. cod depot fat triglyceride composition)
- 1203; 1233 (marine fatty acids incorporation into mink & rat, through feed)
- S 1286 (squalene & pristane content of eulachon liver unsaponifiables)
- 1289 (de novo biosynthesis of inosinic & uridylic acids in Pac. salmon and rainbow trout)
- 1370 (lactate dehydrogenase subunits in Atl. cod & tomcod)
- 1371 (interrenalectomy & hypophysectomy re glycogen levels in skate)
- 1418 (ribonucleic acid synthesis by rainbow trout liver nuclei)
- 1447 (transferase preparation from rainbow trout)
- 1458 (glycosyl transferase re glycogen structure in rainbow trout liver)
- 1622 (lipids & fatty acids of Atl. mackerel)
- 1721 (lipids fatty acids, leatherback turtle)
- Liver oils (see note to previous heading; also Acids, fatty; Lipids; Oils and fats; Triglycerides)
- J 22(1): 131 (lipids and component fatty acids of squid)
- (5): 1107 (lipid fatty acids of Pac. hake & whiting)
- 23(1): 21 (effect of Atl. cod liver decomposition on liver oil free fatty acids)
- (1): 155 (effect of irradiation of Atl. cod livers on liver oil free fatty acids)
- 24(3): 613, 635 (structure details of fatty acids)
- 25(5): 1061 (fatty acid composition of redfish & Atl. "flounder oil")
- (10): 2083 (fatty acids distribution in lipids of Atl. cod)
- 27(6): 1131 (Atl. cod: in vivo uptake of elemental phosphorus from polluted water)
- S 945; 972; 1177; 1189 (fatty acids types, composition, & distribution in Atl. cod)
- 972 (fatty acids types in Atl. squid)
- 1193 (pristanic & phytanic fatty acids of Atl. herring)
- 1226 (positional distribution of fatty acids in triglycerides of aquatic animals)
- 1228 (isoprenic fatty acids of Atl. cod oil, re feed)
- 1286 (squalene & pristane in eulachon)
- 1405 (lipoxidase reaction with polyenoic fatty acids of various)

- 1591 (pristane & other hydrocarbons in commercial Canadian Atl. cod & Pac. spiny dogfish)
- Livoneca californica* (see Isopoda)
- Lizard (*Anolis carolinensis*)
S 1376 (gonadotropic activity of chinook salmon pituitary extract in hypophysectomized)
- Lizardfishes (*Synodus* species)
CHN 32 (used in Japanese fish paste)
- Llewellyn, Jack
J 26(4): 1063 (monogenean gill parasites)
- Lo, Eddie
J 23(6): 921 (glycogen in Atl. cod muscle)
- Lobianchia doffeini* (see Lanternfishes)
- Lobster, American (*Homarus americanus*)
J 22(2): 385 (survival out of water)
(2): 421 (toggle tag new design)
(2): 639 (abdominal membrane lesions)
(4): 1103 (*Anonyx* parasite of)
23(9): 1325 (incidence of *Gaffkya homari* disease bacteria)
(9): 1451 (identification of nonpathogenic bacteria interfering with tests for *G. homari* in lobsters)
(10): 1629 (blood lipids)
24(2): 221 (cooked meat preservation by gamma irradiation)
(2): 357 (α -tocopherol & lipids in flesh after unfed holding)
(6): 1403 (newly hatched larvae reaction to low salinity)
(11): 2339 (muscle weight re serum proteins, hepatopancreas, etc.)
(12): 2623 (combating *G. homari* infection)
25(2): 427 (larvae distribution off Pictou, N.S.)
(3): 607 (*G. homari* effect on hemolymph)
(4): 639 (catalysis of flesh oxidative rancidity by metal ions)
(4): 695; 26(1): 1 (defense mechanisms interaction with *G. homari*; bactericidal activity of hemolymph serum)
(8): 1729 (O_2 consumption at low temperature)
(9): 1763 (adverse conditions affecting molting)
(10): 2251 (delay of larvae molt)
(12): 2683 (artificial reef for, in Kouchibouguac Bay, N.B.)
(12): 2723 (in deep water off St. John's, Nfld.)
(12): 2725 (overwintering in burrows, Bideford R., P.E.I.)
26(3): 701 (mortality from unusually low P.E.I. estuarine salinity)
(5): 1385 (*Gaffkya* characteristics, culture, & growth)
(5): 1392 (hemolymph disposal of foreign proteins)
(7): 1931 (larvae resistance to bleached kraft mill effluent)
(8): 2101 (protein serum changes during molt & reproduction)
(9): 2503 (temperature effect on gaffkemia resistance)
27(1): 21 (yellow phosphorus toxicity to)
(2): 257 (laboratory & field tests of modified sphyron tags)
(4): 701 (transition metals ion effects on muscle extractable protein & lipids oxidation catalysis)
(4): 731 (behavior when exposed to bleached kraft mill effluent)
(6): 1123 (osmoregulation)
(6): 1147 (tracking by ultrasonic tags)
(8): 1357 (digestive enzymes)
(8): 1371 (olfactory detection by, & attraction between)
(9): 1635 (solitude effects on larval molting periods)
28(1): 15 (esterase isozymes polymorphisms)
(1): 59 (DDT residues in N.B.)
(5): 793 (yellow phosphorus accumulation in various tissues)
(6): 879 (enolase enzyme isolation & comparison with other enolases re phylogeny)
(7): 1062 (sensor apparatus for detecting presence in burrow)
(9): 1285 (methylmercury in, off N.S.)
(11): 1733 (production potential re seaweed production & feed, St. Margaret's Bay, N.S.)
29(1): 85 (muscle catheptic activity)
(2): 143 (growth per molt of tagged, Nfld.)
(4): 439 (temperature, feed, & starvation effects on some physiological parameters)
(4): 461 (feed & starvation as affecting time to death from gaffkemia)
(5): 598 (effects of group housing in a tank, on aggressive behavior)
(5): 603 (abundance as control of sea urchins overgrazing of seaweeds)
(8): 1221 (analysis of temperature effects on Canadian & USA inshore fishery)
(8): 1229 (eyestalk removal & ecdysterone infusion effects on molting)
(9): 1367 (cadmium uptake from sea water containing added $CdCl_2$)
(12): 1725 (maturity & storage density effects on growth of captive)
B 147(F) (French edition of 1964 Bulletin on storage & shipment)
154: 116 (as Nfld. resource)
157 (economic appraisal of Canadian fishery)
CAR 1 (effects of elemental phosphorus toxicity on)
CHN 21 (unit for holding and displaying live)
31 (frozen storage of preheated whole)
41; 42 (nature & control of gaffkemia disease)
43 (procedure for detecting gaffkemia in)
CJG 13: 40 (Nfld.: biological sampling)
14: 35 (holding & farming in Nfld.)
15: 27 (prefer rocky bottom in Nfld.)
CSG 45 (handling and shipping care for live)
T 44 (progress report on transplant to B.C.; carriers of gaffkemia)

- 102: 18, 36 (underwater observations from "cubmarine")
- 103; 122 (in experimental otter-trawlings, 1967 & 1968)
- 182 (computer programs for summarizing ethological data on)
- 201 (for testing toxicity of dispersants for fuel oil spills)
- 208 (effects of elemental phosphorus toxicity on)
- 217 (pollution from petroleum oil spills)
- 235 (agonistic behavior)
- 289 (biology, tagging, fishery, etc., Bonavista Bay, Nfld.)
- 301 (culturing in B.C.)
- 320 (growth in captivity)
- 329 (effects on, from rake-harvesting of Irish moss, P.E.I.)
- S 927 (oxygen consumption)
- 1028; 1080; 1203; 1226 (fatty acids positional distribution in hepatopancreas fat triglycerides)
- 1030 (general anesthetics for)
- 1039 (conservation, trap regulations, hatcheries, etc.)
- 1076 (Canadian & American offshore trap & trawl investigations)
- 1096 (transplantation to Barkley Sound, B.C.)
- 1106 (general description; life history, etc.)
- 1119; 1144 (hemolymph constituents)
- 1125 (triglyceride hydrolysis by lipase enzyme)
- 1186 (biosynthesis of depot fat from dietary triglycerides)
- 1224 (tissues converting androstenedione to testosterone)
- 1261 (muscle adenine nucleotides postmortem degradation)
- 1276-1278 (kraft mill effluent toxicity to larval & adult)
- 1288 (serum protein concentration of hemolymph as index of condition)
- 1344 (*Gaffkya homari* effects on physiology)
- 1346 (phospholipids biosynthesis)
- 1428 (microbiological studies of, Fatty Basin, B.C.)
- 1527 (muscle sterols)
- 1569 (determination of residual fuel oil contamination in abdominal muscle, claw muscle, gut, & stomach)
- 1602 (biosynthesis of glycerides from labelled fatty acids & other carbon sources)
- 1668 (mercury contamination)
- 1706 (histological changes from yellow elemental phosphorus)
- 1726; 1727 (*G. homari* & other bacterial effects on hemolymph)
- A 1 (Nfld. research review)
- 4(F) (handling; claw-fastening; shipping live)
- 5(F) (life history; Canadian & U.S. fishery production)
- 33 (good economic outlook for)
- 55 (same as CHN 31 above)
- 66 (feed studies)
- 76 (recent biological research in Canada)
- 93 (large-scale breeding attempt on B.C. coast)
- 121 (treating traps against shipworm attack)
- 136 (underwater observations from "cubmarine")
- 149 (trends in Canadian fishery)
- 180 (gaffkemia disease cause & pathology in)
- 194; 195 (Nfld. & Labrador fishery)
- 200 (mercury contamination)
- 213; 213(F) (artificial rearing of)
- Lobster, spiny (*Palinurus argus*)
S 1527 (muscle sterols)
- Lobster, squat (*Munidopsis quadrata*)
J 28(10): 1527 (range extension into B.C.)
- "Lobster disease" (see *Gaffkya homari*; Lobster, American)
- Lochsa River, Idaho
J 25(7): 1453 (station permanence studies of juvenile salmon & trout)
- Lockhart, Wallace Lyle
J 29(11): 1519 (biochemistry of methylmercury-contaminated northern pike; correction on J 30(8): 1257)
- Lockwood, Russell Cedric, Jr.
J 27(6): 1147 (sonic tag for crustaceans)
- Locomotion (see also Swimming; also next heading).
J 25(3): 541 (process in *Polinices* by podium)
28(7): 1062 (sensor apparatus for detecting lobster in a burrow)
(8): 1143 (mechanisms of 2 parasitic copepods)
B 179: 8 (B.C. clams)
S 1551 (development in postlarval *Macoma balthica* clam)
- Locomotor responses (see also Light, reactions to; Odors, perception of; Salinity, reactions to; Swimming; Temperature, reactions to; Vision; also preceding heading)
J 29(9): 1333 (sublethal effects of DDT on goldfish turns in a tank)
- Loftus, Kenneth Howard
J 29(6): 613 (introduction to this issue devoted to 1971 symposium on Salmonid Communities in Oligotrophic Lakes)
(6): 959 (fisheries exploitation effects on oligotrophic lakes salmonid communities)
(6): 985 (postscript to Salmonid Communities in Oligotrophic Lakes symposium featured in this issue)
A 106 (Pac. salmon move east)
- Loggerhead (see Turtle, loggerhead)
- Logging (see also Insecticides; Pollution; Pulpmill effluents)
B 179: 13 (re B.C. clam beds)
T 323 (survey of possible effects on salmon & trout of two E Vancouver Is. streams)
325 (forest-based industries impact on N.B. freshwater-dependent fish resources)
- Logie, Robert Reed

- J 29(1): 101 (obituary of Andrew Lyle Pritchard)
- Logperch (*Percina caprodes*)
 J 23(12): 1845 (mouth & body form re feeding ecology)
 24(5): 927 (limnetic larvae in N Wisconsin lakes)
 29(3): 275 (15 parasites of, Lake of the Woods, Ont.)
 S 1128 (in a L. Superior bay)
- Lohnes, Dianne Paulette
 J 23(12): 1821 (iced & frozen swordfish)
- Loligo opalescens* (see Squid, longfinned (Pacific))
pealei (see Squid, longfinned (Atlantic))
- Lolliguncula brevis* (see Squids)
- Lomond, Loch (Scotland)
 J 29(6): 629, 849, 975 (various factors affecting salmonid communities)
- Long Bay, Nfld. (see Phosphorus, yellow elemental)
- Long Beach, Vancouver Island, B.C.
 T 232 (razor clam breeding & growth)
- Long Harbour, Nfld. (see Phosphorus, yellow elemental)
- Longard, Arthur Alfred
 J 29(4): 443 (*Clostridium botulinum* in Canadian Atl. seaboard sediments)
 T 162 (trawler vacuum unloading system studies)
 208 (ethylenediaminetetraacetic acid for iced fillet preservation)
 280 (tests on refrigerated sea water transport of Atl. cod, redfish, & flounder)
- Longevity (see also Age)
 J 26(4): 879, 893 (various trematodes)
 (6): 1585 (differences between 2 Nfld. populations of landlocked Atl. salmon)
 29(10): 1381 (*Bothrimonas cestodes*)
- Longhurst, Alan Reece
 J 25(7): 1405 (recurrent species groups in Gulf of Guinea)
- Longining
 J 22(2): 465 (Nfld. cod: catch, age, size)
 A 120 (for swordfish)
- Loosejaw, shining (*Aristostomias scintillans*)
 B 180: 169 (full description, etc., B.C.)
 T 11 (in FRB experimental midwater trawling, B.C.)
- Lopholithodes mandtii* (see Crab, box)
- Lord, Esther Irene
 T 168 (1966 & 1967 scallop surveys, Bay of Fundy)
 S 1284 (Georges Bank scallop fishery)
 A 110 (walrus tusk)
 236 (high price of Atl. scallop landings conceals decline in offshore stocks)
- Lord, Irish (see Irish lord)
- Loring, Douglas Howard
 J 23(8): 1197 (sea-floor conditions, Gulf of St. Lawrence)
 25(11): 2327 (St. Lawrence R. estuary minerals)
 26(1): 171 (Malpeque Bay, P.E.I., physiographic changes 1845-1955 re oyster production)
 S 953 (geological investigations in Gulf of St. Lawrence)
 957 (depositional conditions in Gulf of St. Lawrence region)
 1161 (rock salt bacteriological investigation)
 1353 (mineral dispersal patterns)
 1426 (sedimentary environments on Magdalen Shelf)
 1511 (European flints on N American coast)
 1693 (*Clostridium botulinum* type E distribution in Gulf of St. Lawrence)
 A 199 (marine geological investigations in Gulf of St. Lawrence)
- Lorz, Harold William
 J 22(3): 665 (movement of mature kokanee)
 23(8): 1259 (feed of kokanee)
- Lota lacustris* (see Burbot)
lota (see Burbot)
lota lota (see Burbot)
- Loucks, Ronald Harold
 S 1482 (study of eutrophicated marine basin)
- Love, John
 S 1522 (optical detection pressure apparatus)
- Lovett, Raymond L.
 J 29(9): 1283 (total cadmium content survey of New York State freshwater fishes)
- Lowe, Robert
 J 29(2): 161 (rock crab biology, Northumberland Strait, N.B.)
- Lowes, Roberta Helen
 J 25(11): 2477 (protein electrophoresis re rockfish systematics)
- Lucas, Henry F.
 J 27(4): 677 (trace elements in Great Lakes fishes)
- Lucinoma annulata* (see Clam, ringed lucina)
- Luciperca* (see Pikeperches)
- Ludlam, Stuart Dietrich
 S 1436 (comparative study of meromixis)
 1437 (Green L., N.Y., limnology)
- Ludwig, Sigrid Agnes Marie
 J 23(9): 1403 (annulus formation in Pac. salmon scales)
 CNS 16 (age composition of B.C. salmon)

- Luhning, Charles William
J 28(1): 113 (tricaine methane sulfonate in fish muscle)
- Lumbricinae (*see* Earthworms; Oligochaeta)
- Luminescence (*see* Bioluminescence)
- Lumpenella longirostris* (*see* Prickleback, longsnout)
- Lumpenus anguillaris* (*see* Prickleback, (Pacific) snake)
fabricii (*see* Eelblenny, slender)
lumpretaeformis (*see* Snakeblenny)
maculatus (*see* Shanny, daubed)
medius (*see* Eelblenny, stout)
sagitta (*see* Prickleback, (Pacific) snake)
- Lumpfish (*Cyclopterus lumpus*)
J 26(3): 597 (F) (retinal structure re activity, etc.)
27(4): 701 (transition metals ion effects on muscle extractable protein & lipids oxidation catalysis)
28(7): 935 (occasional component of Passamaquoddy Bay fish communities, N.B.)
(9): 1285 (methylmercury in, N.S. banks)
29(9): 1291 (prevalence & specificity of *Cryptobia* parasite in)
B 154: 115 (as Nfld. resource)
T 261 (bibliography for Gulf of St. Lawrence)
- Lumpsucker, Atlantic spiny (*Eumicrotremus spinosus*)
T 261 (bibliography for Gulf of St. Lawrence)
- Lumpsucker, Pacific spiny (*Eumicrotremus orbis*)
J 26(12): 3262 (sexual dimorphism)
B 180: 577 (full description, etc., B.C.)
- Lumpsucker, smooth (*Aptocyclus ventricosus*)
B 180: 571 (full description, etc., B.C.)
T 46; 205 (in B.C. experimental groundfish trawling)
- Lumsden lakes, Ont. (*see* La Cloche Mountain lakes, Ont.)
- Lunatia* (*see* Drills, clam; Drills, Oyster)
- Lund, William Albert, Jr.
J 27(6): 1147 (sonic tag for crustaceans)
- Lungs
J 26(10): 2561 (weight in white whales)
S 1717 (phospholipids & triglycerides fatty acids, Atl. harbour seal)
1721 (lipids fatty acids, leatherback turtle)
- Lures (*see also* Bait)
A 120 (longline, for swordfishing)
- Lusz, Larry Dean
J 23(1): 154 (underwater observation in off-bottom trawl)
- Lutetium
A 232 (¹⁷⁷Lu as radioactive marine pollutant)
- Lutjanus* species (*see* Snappers)
analis (*see* Snapper, mutton)
- Lux, Fred Edward
S 1492 (growth of American plaice)
- Lycenchelys jordani* (*see* Eelpout, shortjaw)
paxillus (*see* Wolf-eel (Atlantic))
- Lycodapus fierasfer* (*see* Eelpout, blackmouth)
grossidens (*see* Eelpout, bigtooth)
mandibularis (*see* Eelpout, pallid)
- Lycodes atlanticus* (*see* Eelpouts)
brevipes (*see* Eelpout, shortfin)
diapterus (*see* Eelpout, black)
esmarki (*see* Eelpout, Esmark's)
lavalaiei (*see* Eelpout, Newfoundland)
palearis (*see* Eelpout, wattled)
pallidus (*see* Eelpout, pale)
reticulatus (*see* Eelpout, Arctic)
seminudus (*see* Eelpouts)
terranoavae (*see* Eelpout, Newfoundland)
turneri (*see* Eelpout, polar)
vahlII (*see* Eelpout, Vahl's)
- Lycodopsis pacifica* (*see* Eelpout, blackbelly)
- Lyconectes aleutensis* (*see* Wrymouth, dwarf)
- Lymnaea* (*see* Snails, freshwater)
- Lymphocystis viral disease (*see* Disease; Viruses)
- Lymphocytes (*see* Blood)
- Lyons Lake, B.C.
J 26(7): 1763 (meromixis & other characteristics)
- Lyonsiella quaylei* (septibranchid bivalve)
J 26(8): 2230 (new NE Pac. species)
- Lyopsetta exilis* (*see* Sole, slender)
- Lysolecithin
J 28(12): 1837 (solubilizing effect on extractability of various rainbow trout tissues)

M

MacAskie, Ian Bruce

- J 28(4): 620 (range extension for a Pac. coast squid)
B 171 (B.C. marine mammals)
S 1115 (killer whale unusual group behavior)
A 209 (sea otter transplant to B.C.)

MacCallum, Wallace Allison

- J 22(2): 411; 23(7): 1063 (quality of frozen Atl. cod)
(3): 783 (thaw-drip in cod)
24(1): 127 (thawing processes effects on cod & redfish)
(3): 651 (postmortem changes in cod)

- 25(2): 299 (refrozen cod storage quality)
 (4): 733 (Nfld. trap-caught cod quality after single & double freezing)
- 26(8): 2027 (Nfld. capelin composition)
 (8): 2037 (Nfld. capelin lipids)
 (8): 2257 (heading and gutting capelin)
 (12): 3217 (cod & flounder bacteria counts)
- 27(9): 1589 (quality of frozen redfish)
 (11): 1983 (bacteriological evaluation of frozen flounder)
- S 935 (chilling and freezing fish on board vessels)
 1363 (Nfld. offshore fish & influence on quality after freezing)
 1364 (influence of thawing on storage quality of fish)
 1368 (reprocessing & marketing of sea-frozen fish)
 1420 (handling fish aboard chill-freezer trawlers)
 1421 (sea-frozen whole fish handling & its effect on bacterial spoilage and sanitary quality)
 1686 (quality aspects of industrial water thawing & fillet processing of fish)
- A 27 (Nfld. trap cod)
 172 (assessment of filleting operations dependent on frozen &/or iced fish)
 173 (assessment of thawers for processing fish blocks)
- MacCallum, Wayne Ross
 J 27(10): 1823 (L. Eric smelt)
- MacCrimmon, Hugh Ross
 J 23(2): 275 (comparative limnology)
 (7): 983 (trout response to light)
 24(1): 47 (young carp scale formation)
 25(12): 2527; 27(4): 811 (brown trout world distribution)
 26(3): 687 (trout bottom color selection)
 (7): 1699; 28(3): 452 (brook trout world distribution)
 (12): 3233 (rainbow trout response to overhead light)
 27(2): 395 (smallmouth bass reproduction & growth)
 (3): 613 (vital statistics of Great Lakes rainbow trout)
 (5): 837 (seasonal nutrient variation)
 (6): 1087 (brown & brook trout exploitations)
 28(5): 663; 29(12): 1788 (rainbow trout world distribution)
 B 165 (carp in Canada)
- MacDonald, E. F.
 S 1611 (a new scallop sterol)
- MacDonald, John Roderick
 J 27(8): 1491 (occurrence of male predominance in Atl. salmon)
 T 6 (N.B. forest spraying damage to salmon fisheries)
- Macdonald, Peter Duncan Macgregor
 T 129 (techniques for statistical analysis of length-frequency data)
- Macdonaldia challengeri* (see Tapirfish, longnose)
- MacDougall, Yvonne M.
 S 1616 (gadoid lactate dehydrogenase polymorphism)
- Macek, Kenneth Joseph
 J 25(9): 1787 (DDT re brook trout reproduction)
 (11): 2443 (trout growth & stress resistance re DDT)
 27(8): 1496 (DDT accumulation by fish)
- MacFarlane, Robert B.
 S 1704 (light intensity & DDT concentration interaction on *Nitzschia* diatom)
- Machniak, Kazimierz
 J 29(3): 330 (lake-dwelling longnose dace population ecology)
- MacIntyre, Reginald Leonard
 MSP 14 (English & French) (illustrations and popular descriptions of 18 common Canadian Atl. coast fishes)
- Mackay, Isobel
 J 25(4): 657 (Ungava round whitefish age & growth; correction on J 26(8): 2263)
 26(11): 2795 (2 cyprinid fishes fecundity in R. Thames)
- MacKay, Kenneth Tod
 J 26(9): 2537 (Atl. salmon meristic analyses)
 (10): 2769 (first records of *Ariomma bondi*, *Caranx crysos*, & *Selar crumenophthalmus* in Gulf of St. Lawrence)
 29(7): 1085 (dimethyl sulfide as odor component in N.S. fall mackerel)
 T 31 (mackerel ecological study)
 S 1667 (further records, body proportions, & behavior of black ruff in NW Atl. Ocean)
- Mackay, Rosemary Joan
 J 26(5): 1157 (Mont St. Hilaire, Que., stream insect communities)
- MacKelvie, Robin Maxwell
 J 25(2): 423 (brook trout nocardiae infection)
 26(12): 3259 (infectious pancreatic necrosis in salmonids of Atl. provinces)
 28(1): 100 (removal of embryos from fish eggs)
 MSP 16: 43 (proposal of total ban on importation into Canada of live salmonids & their nonsterilized products, for disease control)
- MacKenzie, William C.
 B 157: ix (Foreword to Bulletin on Canadian lobster industry economics)
 158: 1 (Foreword to Bulletin on organization of Mackenzie District, N.W.T., fisheries)
- Mackenzie District, N.W.T. (see also Great Bear Lake; Great Slave Lake; also next heading)
 B 158 (physical & economic organization of fisheries)

- Mackenzie River, N.W.T.
 J 26(8): 2252 (broad whitefish age & growth)
 29(11): 1655 (unusual occurrence of brook stickleback)
 B 173 (descriptions of fishes in drainage system)
 A 42 (fish freezer for Eskimos of delta)
- Mackerel, Atka (*Pleurogrammus monopterygius*) (*P. azonus*)
 CHN 32 (used in Japanese fish paste)
- Mackerel, Atlantic (*Scomber scombrus*)
 J 23(10): 1587 (lipid oxidation test)
 24(2): 357 (α -tocopherol & lipids in tissues of unfed held)
 25(1): 189 (DDT residues & metabolites in)
 (2): 239 (nucleotide degradation re quality of chilled mackerel muscle)
 (5): 907 (as swordfish feed in NW Atl.)
 26(9): 2537 (meristic analysis of N American coastal populations)
 27(3): 670 (N range extension to Black Is., Labrador)
 (4): 701 (transition metals ion effects on muscle extractable protein & lipids oxidation catalysis)
 (11): 2097 (occurrence of juvenile & spawning, SE Nfld. waters)
 28(1): 59 (DDT residues in N.B.)
 (7): 947 (blood pathway effects on blood-pressure drop in gills)
 29(1): 85 (muscle catheptic activity)
 (7): 1085 (dimethyl sulfide content of muscle & stomach, caused by pteropods in feed)
 B 154: 93 (as Nfld. resource)
 T 31 (ecological study)
 80 (stocks, Gulf of St. Lawrence & N.S. banks)
 164 (extensive length-weight data)
 261 (bibliography for Gulf of St. Lawrence)
 MSP 14 (popular description: English & French)
 S 1024 (ICNAF Canadian research report)
 1053 (mass mortality re low sea temperatures)
 1104 (brief description; biology, etc.)
 1203; 1226 (fatty acids positional distribution in fat triglycerides)
 1228 (isoprenoid fatty acids of oil)
 1233 (fatty acids incorporation, through feed, into rat tissues)
 1361 (lack of gill lamellar fusion)
 1409 (gill blood pathways)
 1604; 1696 (chlorinated pesticide residues in, Bay of Fundy)
 1622 (lipids & fatty acids of flesh, liver, & gonads)
 A 9(F) (description; life history; Canadian fishery)
 43; 108; 119; 153; 182; 241 (ICNAF Canadian fishery & research summaries)
- Mackerel, bullet (*see* Mackerel, frigate)
- Mackerel, chub (*Scomber japonicus*) (*S. colias*; *Pneumatophorus diego*; *P. japonicus*; Pacific mackerel)
 J 27(7): 1225 (some aspects of school organization)
 29(11): 1605 (voltage & pulse rates for inducing electrotaxis)
 B 180: 374 (full description, etc., B.C.)
 T 261 (bibliography for Gulf of St. Lawrence)
- A 90; 103 (fishery trend along N America Pac. coast)
- Mackerel, frigate (*Auxis thazard*) (some of the following references may be to the bullet mackerel, *A. rochei*)
 T 193 (1961-69 tagging)
 S 1361 (re gill lamellar fusion)
 1409 (gill blood pathways)
- Mackerel, horse (*Trachurus trachurus*)
 J 26(10): 2697 (2 new Canadian Atl. specimens)
- Mackerel, jack (*Trachurus symmetricus*) (*Decapterus polyaspis*; mackereljack)
 J 23(4): 547 (schooling behavior analysis procedure)
 24(10): 2201 (in line fishing from Pac. ocean weather-ship P)
 25(2): 393 (light effects on schooling & feeding)
 (4): 825 (feeding behavior in NE Pac.)
 27(7): 1225 (some aspects of school organization)
 B 180: 287 (full description, etc., B.C.)
 A 90; 103 (fishery trend along N America Pac. coast)
- Mackerel, Pacific (*see* Mackerel, chub)
- Mackerel, Sierra (*see* Sierra)
- Mackerel, Spanish (*Scomberomorus maculatus*)
 J 26(4): 713 (*Diphyllobothrium* tapeworm in Peruvian)
- Mackie, George Owen
 J 28(10): 1595 (Chondrophora evolution studies)
- Mackie, Gerald Lloyd
 J 28(9): 1322 (quantitative sampler for aquatic phytomacrofauna)
- MacKinnon, Gwenfil Anne
 J 27(3): 601 (scallop sterols relative to cholesterol)
 (7): 1329 (cholesterol in the chick)
- MacKinnon, James Cornelius
 J 29(12): 1749 (American plaice energy storage for winter metabolism & gonad maturation)
- MacLaren, Alethea
 B 149: 143 (history of Great Lakes fisheries)
- MacLean, Iain
 S 1254 (stereoisomerism in fatty acids)
 1385 (phytanic acid menthyl esters)
- MacLean, James Alexander
 J 28(6): 919 (temperature effects on prespawning Man. sticklebacks)
- MacLean, Jill
 J 22(4): 929 (salt-induced rancidity)
 23(1): 27 (rancidity in lean fish muscle)
- MacLeod, John Cameron
 J 24(6): 1241 (measuring fish swimming speed)

Macnab, Heather Claire

- J 22(5): 1299 (blood clotting in Atl. cod)
 S 898 (Atl. cod blood volume)
 1131 (Atl. salmon biosynthesis of 11-ketotestosterone and 11 β hydroxytestosterone)

MacNeill, Ian Bruce

- J 28(7): 1035 (fish count sequences)

Macoma balthica (see Clams (Atlantic and eastern Canadian Arctic))
nasuta (see Clam, bent-nose)

MacPhail, John Stuart

- S 909 (new hydraulic clam rake)
 1182 (clam hack fishing efficiency)

MacPhee, John Alden, Jr.

- J 26(5): 1375 (Arctic shanny record, Massachusetts Bay)

Macrochaeta (Polychaeta Sedentaria)

- J 26(10): 2595 (transferred to new family Acrocirridae; n.sp. *M. pege*; description of other species)

Macrophytes (see also Flora, aquatic)

- J 27(1): 71 (productivity in Marion L., B.C.)

Macropinna microstoma (see Barreleye)

Macrourus berglax (see Grenadier, roughhead)
rupestris (see Grenadier)

Macrozoarces americanus (see Pout, ocean)*Maetra* (see Clam, bar)

Madden, Jane Anne

- J 26(7): 1847 (aortic catheterization re trout)
 28(5): 625 (handling & anesthetization effects on brook trout)
 (5): 635 (brook trout variations re surgery)

Madison, Dale Martin

- J 29(7): 1025 (ultrasonic tracking of migratory sockeye salmon, B.C. coast)

Madtom, tadpole (*Noturus gyrinus*)

- J 27(1): 170 (in Hudson Bay drainage system, Man.)
 29(3): 275 (7 parasites of, Lake of the Woods, Ont.)

Magdalen Islands Shelf and Shallows, Gulf of St. Lawrence (see also St. Lawrence, Gulf of; Oceanography, Atlantic west coast)

- J 22(2): 565 (American plaice life history)
 23(8): 1197 (sea-floor conditions)
 26(5): 1205 (exploitation effects on American plaice stock)
 S 1149 (herring fishery re sea temperatures)
 1426 (sedimentary environments)
 1641 (vs. SW Nfld. herring biological features)

Magelona (polychaetes)

- J 28(10): 1445 (*M. berkeleyi*: n.sp., Puget Sound; *M. longicornis* redescription; other recently described species)

Maggiore, Lake (Italy and Switzerland)

- J 29(6): 629, 777, 931, 975 (various factors affecting fish communities, particularly salmonid)

Magnesium derivatives (see also Chlorophyll)

- J 22(1): 113 (seawater Mg ion activity coefficient)
 (1): 117 (re antibiotic bacteria inhibitors)
 (4): 929 (re oxidative rancidity promotion in cod flesh)
 (4): 955 (Mg ion change in salmon held in refrigerated sea water)
 23(2): 171, 203 (in waters of many small NW Ont. lakes)
 (2): 277 (in sediments of 16 small NW Ont. lakes)
 (5): 625, 635 (level changes in brook trout after handling, anesthetization, & surgery)
 26(2): 413 (cation concentration in Atl. salmon semen)
 (8): 2237 (sulfate as inhibitor of trout muscle lipid hydrolysis during cold storage)
 27(5): 847 (concentration in Sunfish L., Ont.)
 (8): 1405 (in concentration and ratios in 70 S Ont. lakes)
 (11): 2022 (in inflow, outflow, rain, & snow, Clear L., Ont.)
 29(12): 1691 (chloride, re toxicity to *Daphnia magna*)
 T 114 (content of Atl. & Pac. herring meals)
 S 947 (Mg ion changes in fish held in refrigerated sea water)
 1273 (partial molal volume of chloride, sulfate, bicarbonate, & nitrate in sea water)
 1377 (content of Atl. & Pac. herring meals)
 1437; 1439 (in Green L., N.Y.)
 1512 (isopiestic measurements on ternary system solutions re MgSO₄ activity coefficient)
 A 29 (changes in flesh of fish held in refrigerated sea water)
 85 (in freshwater fish meals)
 108: 1 7 (MgSO₄ activity coefficient of ions)

Magnin, Etienne

- J 25(9): 1831(F) (*Esox masquinongy* age & growth in 4 Que. lakes)
 29(5): 517(F) (*Perca flavescens* growth, length, & weight in Lac Saint-Louis, Qué.)

Magnuson, John Joseph

- J 27(6): 1059 (fish observed beneath ice)

Maillard browning (see Browning of flesh)

Maine, Gulf of (see also Fundy, Bay of; Oceanography, Northwest Atlantic coastal)

- J 24(7): 1553 (Penobscot R. estuary hydrography)
 25(8): 1749 (cause of red water occurrence)
 (11): 2427 (recent trends in subsurface temperatures)

- (12): 2609 (summer stratification & mixing in western)
- 26(8): 1969 (glass shrimp)
- (10): 2746 (water temperature conditions in & off, 1968)
- 29(5): 573 (larval herring growth)
- (10): 1479 (some rock crab life history aspects)
- CHN 34 (1968 shrimp industry)
- T 277 (larval herring distribution, abundance, & growth)
- S 1696 (contamination by chlorinated pesticides)
- A 94A (Canadian research on herring populations biology: review)
- Maintenance**
- J 23(10): 1495 (re pike feed consumption & growth)
- Maitland, Peter Salisbury**
- J 29(6): 849 (man's effect on Loch Lomond salmon community, Scotland)
- Majak, W.**
- S 1110 (photosynthesis in green algae)
- Makaira albicans** (*see* Marlin, white; *also* Sailfish)
- albida* (*see* Marlin, white)
- audax* (*see* Marlin, striped)
- mitsukurii* (*see* Marlin, striped)
- nigricans* (*see* Marlin, blue)
- Mako, shortfin** (*Isurus oxyrinchus*) (mackerel shark; mako shark)
- CSG 47 (identification)
- T 193 (Atl. tagging & returns, 1961-69)
- S 956 (Canadian research in Caribbean Sea)
- 1244 (a corticosteroid 1α -hydroxylase in interrenal tissue)
- A 108; 182 (Canadian ICNAF studies; catches)
- Makow, David Mark**
- J 25(3): 605 (animal tissue ultrasound backscatter)
- S 1269 (freshwater fish tissue properties)
- Malacodella grossa** (*see* Nemertea)
- Malacoceros indicus** (spionid polychaete)
- J 28(10): 1455 (redescription of)
- Malacocottus kincaidi** (*see* Sculpin, blackfin)
- Malacology** (*see* Mollusca; Shell)
- Malacostraca** (*see also* Amphipoda; Cumacea; Decapoda; Euphausiacea; Isopoda; Mysidacea; *also* certain subclassifications of these; *also* names of common types, e.g. Crab; Lobster; Prawn; Shrimp)
- B 176 (synopsis of Canadian zooplanktonic)
- Mälaren, Lake** (Sweden)
- S 1442 (occurrence of *Triaenophorus* spp. in fishes)
- Malathion** (*see* Insecticides; Pesticides)
- Malformation** (*see* Abnormality)
- Malic acid; Malates** (*see also* Enzymes)
- J 25(8): 1581 (2 forms of malic enzyme in fish muscle sarcoplasm)
- 27(11): 2101 (enzyme activated by freezing & thawing cell disruption in fish flesh as cause of quality drop)
- 28(7): 1005 (dehydrogenase isozyme multiplicity in walleye skeletal muscle, re genetics)
- 29(8): 1169 (buffers for malate dehydrogenase isozymes electrophoresis)
- Mallotus villosus** (*see* Capelin)
- Malonaldehyde**
- J 26(9): 2299 (indicator of lipids hydrolysis & oxidative rancidity)
- S 1314 (reaction with cysteine & methionine)
- 1621 (cyclization of malondialdehyde hydrazones)
- Malouf, Robert Edward**
- J 29(5): 588 (gas-bubble disease in 2 oyster & 1 clam species)
- Malouin, René**
- S 1268 (Que. stoneflies distribution)
- Malpeque Bay, P.E.I.; Malpeque oyster disease**
- J 23(11): 1635 (nutrient & energy cycles re oysters; correction on J 25(8): 1759)
- 24(2): 443 (serology of disease-resistant oyster stock)
- 26(1): 171 (physiographic changes re oyster culture)
- B 169: 164 (nature & cause of oyster disease)
- S 1169 (common occurrence of *Thracia conradi*)
- 1285 (possible relation of *Hexamita inflata* protozoan to oyster disease)
- Malsberger, Richard Griffith**
- J 29(1): 111 (distinguishing cunner & tautog eggs by immunodiffusion)
- Mammals (aquatic)** (*see also* Dolphin; Dugong; Narwhal; Porpoise; Sea lion; Sea otter; Seal; Walrus; Whale)
- MSP 13 (summary of FRB Canadian Arctic investigations)
- S 1028; 1080 (fatty acids positional distribution in depot fat triglycerides)
- 1079 (faunal succession from extinct N Pac. forms)
- 1681 (parasites from, W coast N America)
- Mammals (in general)**
- S 1665 (some comparative aspects of corticosteroid metabolism: review)
- A 229 (aging by teeth & bone layered structure: book review)
- Mammals (land)** (*see also* Cat; Dog; Horse; Man; Mice; Mink; Rabbit; etc.; *also* products of, e.g. Beef; Pork)
- S 1200 (significance of teeth annuli for age determination)

- Man (*see also* Food (for man))
 J 26(4): 713 (*Diphyllobothrium pacificum* tapeworm in Peru)
 B 168; 169: 151; 177 (susceptibility to; symptoms & danger of paralytic shellfish poisoning)
 S 985; 1028; 1080 (fatty acid positional distribution in depot fat triglycerides)
 1266 (Refsum's disease)
 1624 (sorbitol & mannitol in urine of child with Alports syndrome)
 1668 (toxicity of mercury; symptoms of poisoning; mercury in fish)
 A 58; 58(F) (cause, control, & treatment of clam diggers' & swimmers' itch)
 230 (ecosystems, pollution, etc., re a northern environment as sources of food)
 232 (evaluation of radiation exposure from consumption of radioactive pollutants in marine foods)
- Management (*see also* Conservation; Economics; Hatchery; International Commission for the Northwest Atlantic Fisheries; International North Pacific Fisheries Commission; International Pacific Salmon Commission; Marketing fishery products)
 J 26(9): 2267 (review of Bertalanffy growth equation for fishery)
 27(5): 961 (discussion of optimization experiment methods)
 (6): 991 (Dolly Varden, SE Alaska)
 28(10): 1493 (re Adams R. sockeye salmon abundance fluctuations)
 29(6): 683, 777, 787, 819, 833, 913, 951, 969, & some other papers (commercial & sport fisheries re salmonid communities in N American & European oligotrophic lakes)
 B 153: 166, 187 (B.C. & USA petrale sole fishery)
 157 (re economics & regulation of Canadian lobster fishery)
 158 (re physical & economic organization of N.W.T. fisheries)
 161: 39 (commercial goldeye fishery)
 162: 49, 87, 131, 387 (sockeye salmon conservation)
 165: 65 (Canadian fishery regulations for carp)
 168 (B.C. commercial clam industry, re paralytic shellfish poisoning)
 169: 174, 178, 185 (Pac. oyster industry, B.C.)
 173 (of various species of NW Canada & Alaska freshwater fishes)
 175 (economic study of Maritime Provinces oyster fishery)
 177 (re paralytic shellfish toxicity in E Canada)
 179 (B.C. clam harvesting regulations re conservation & occasional toxicity)
 CNG 92 (research needs for intensive, of B.C. steelhead trout)
 T 108 (rock sole fishery, N Hecate Strait, B.C.)
 167 (possibilities re age at maturity of Skeena R. sockeye salmon)
 222 (genetics & mariculture re managed fishery populations)
- 246 (bibliography, N America Pac. coast trawl fisheries)
 256 (Georges Bank scallop fishery suggestions)
 MSP 16 (1972 considerations & recommendations for control of fish diseases in Canada)
 S 893; 1007; 1085 (Atl. salmon and brook trout research program)
 902 (of fisheries populations for fisheries development)
 1235 (mathematics of effect of size limits changes on catches)
 1335 (production & genetic factors in managed salmonid populations)
 1607 (of world fisheries as food for man)
 A 22; 36 (B.C. herring fishery)
 183 (re utilization of ocean resources & oceanography)
 192 (N Atl. salmon multilateral)
 230 (of fisheries & other human food resources from a northern environment, re ecosystems & pollution)
- Manayunkya aestuarina* (polychaete)
 J 26(11): 3088 (range extension to B.C.)
- Manefish (Atlantic) (*Caristius groenlandicus*)
 J 27(1): 174 (first record from Atl. waters off Canada)
- Manefish (Pacific) (*Caristius macropus*)
 J 24(10): 2101 (second record off B.C.)
 B 180: 291 (full description, etc., B.C.)
 T 11 (in experimental B.C. midwater trawling)
- Manganese derivatives
 J 22(3): 851 (deposit on mud-snail shells, P.E.I.)
 25(4): 639 (re marine flesh oxidative rancidity)
 (1): 2327 (in St. Lawrence R. estuary glacial marine sediments)
 27(4): 701 (ion effects on marine muscles extractable protein)
 (5): 847 (concentration in Sunfish L., Ont.)
 28(2): 277 (in sediments of 16 small NW Ont. lakes)
 (5): 786 (in dressed Canadian fishes from industrial area lakes)
 (6): 843 (level in P.E.I. oysters)
 29(4): 450 (amount in Atl. oyster shell & soft tissue; in title & several places in text read "manganese" for "magnesium")
 (12): 1691 (MnCl₂, re toxicity to *Daphnia magna*)
 B 125R: 107; 167: 109 (determination in sea water)
 T 114 (content of Atl. & Pac. herring meals)
 S 941 (radioactive ⁵⁴Mn seawater contamination)
 1377 (content of Atl. & Pac. herring meals)
 1437 (in Green L., N.Y.)
 1529 (distribution in L. Ontario)
 A 85 (in freshwater fishmeals)
 232 (⁵⁴Mn as radioactive marine pollutant)
- Manion, Patrick James
 J 26(11): 3077 (lamprey larvicide evaluation)
 27(10): 1735 (landlocked sea lamprey metamorphosis)

- 28(4): 616 (giant American brook lampreys in upper Great Lakes)
- Manitoba (*see also* Heming Lake; Hudson Bay; Moose Lake; Winnipeg, Lake; *also* other localities and bodies of water)
- J 22(5): 1123 (Cedar L. limnology)
- (5): 1165 (west-central saline lakes classification)
- 23(11): 1815 (meristic numbers in yellow perch of saline lakes)
- 24(5): 1017 (profundal benthic fauna of some lakes)
- (6): 1407 (morphological comparison of lake trout with Ont. lakes populations)
- 29(12): 1685 (mercury concentration re size of 9 fish species from various lakes; corrections on J 30(8): 1257)
- B 151; 151(F) (special products from freshwater fishes)
- 173 (full descriptions, etc., of fishes from arctic drainage system)
- A 100 (re distribution & ecology of freshwater fishes & number of species)
- 200 (mercury contamination of fishes in lakes & Hudson Bay)
- Manitou, Lake, Ont.
- J 25(11): 2257 (marked vs. tagged lake trout survival)
- Manitoulin Island, Lake Huron (*see also* South Bay, Ont.)
- J 28(12): 1883 (physical & chemical limnological aspects of 51 lakes)
- Mann, Cedric Robert
- J 24(8): 1827 (aliasing effects on oceanic variability)
- Mann, David Seymour
- S 912 (salt-water system at St. Andrews Biological Station)
- Mann, John Howard
- J 24(7): 1613 (color in grading canned salmon)
- CVG 43 (storage of Pac. salmon at sea)
- T 220; 242 (storage of Pac. salmon at sea)
- Mann, Kenneth Henry
- J 26(11): 2795 (2 cyprinid fishes fecundity in R. Thames)
- 28(5): 778 (relation between stipe length, etc., of *Laminaria*)
- (11): 1733 (productivity of seaweed-lobster communities)
- 29(5): 603 (interrelation of lobster & sea urchins re kelp abundance)
- S 1388 (aquatic ecosystems dynamics)
- 1482 (study of eutrophicated marine basin)
- 1619 (zonation & biomass of seaweeds in an N.S. Bay)
- 1708 (seaweeds productivity in an N.S. Bay)
- 1709 (R. Thames ecology case history (England))
- A 223 (combating pollution on Canada's E coast)
- Manning, Glenville Thomas
- J 23(6): 783 (effects of exercise on trout)
- Mannitol (*see also* Sugars)
- S 1624 (in urine of child with Alports syndrome)
- Manohar, Shiriram Vajudeo
- J 26(5): 1368 (fish muscle fluorescence)
- 27(11): 1997; 28(9): 1325 (postmortem changes in freshwater fish muscle)
- A 262 (white muscle fluorescence characteristics in prerigor fish)
- Mansfield, Arthur Walter
- J 26(1): 143 (observations on Greenland shark)
- 27(11): 1903 (E Canada inshore cetacean records)
- 28(12): 1873 (bowhead whale in Canadian Arctic waters)
- B 137 (arctic and eastern Canada seals)
- S 1078 (walrus in Canadian Arctic)
- 1188 (Canadian Arctic waters harbour seal distribution)
- 1190 (Sable Is. mammals)
- 1202 (grey seal in E Canadian waters)
- 1573 (harbour seal in Thlewiazia R., N.W.T.)
- A 184 (population dynamics & exploitation of some arctic seals)
- 228 (review of book on Jakob Danielsen's Greenlandic paintings)
- 265 (Eskimo hunting & biology of walrus in Canadian Arctic)
- Manter, Harold Winfred
- J 26(4): 787 (3 new trematode genera)
- Mantle (of shellfishes)
- J 22(5): 1137 (*Gonyaulax* toxicity in scallops)
- B 168: 22; 177: 28 (re paralytic shellfish toxicity)
- S 1551 (development in postlarval *Macoma balthica* clam)
- Mantle (of squid)
- J 26(6): 1676 (length re pen length of *Lolliguncula brevis*)
- Manzer, James Ivan
- J 22(3): 853 (Strait of Georgia bonito)
- 25(5): 1085 (NE Pac. salmon & trout feed)
- 26(8): 2219 (juvenile Pac. salmon stomach contents)
- 29(7): 1079 (pomfret length-weight relation)
- T 324 (growth re production of sockeye salmon prior to nutritionally enriching Great Central L., B.C.)
- S 974 (Pac. salmon offshore distribution)
- 1000 (sea life of Pac. salmon)
- March, Beryl Elizabeth
- J 23(3): 395 (nutritive value of fishmeals)
- 24(6): 1291 (freshwater fishmeals)
- CVG 34 (effect of antioxidants on herring meal)
- T 114 (Atl. coast herring meals)
- S 969 (antioxidant treatment of Pac. coast herring meal)
- 1221 (fish meal supplementation of chicken breeder rations on hatchability)
- 1377 (nutrient content Atl. coast herring fishmeals)
- A 85 (freshwater fishmeals nutrient composition)

- Marcotte, Alexandre
 J 22(6): 1321 (marine climate comparisons)
 CSG 44 (distribution of Atl. cod catches)
 A 82(F) (marine climate)
- Marcy, Barton C., Jr.
 J 28(7): 1057 (survival of fish in nuclear power plant discharge water)
- Margaree River estuary, N.S.
 T 115 (physical oceanography)
 S 1539 (capacity to accept pollutants)
- Margarine
 T 249 (detection & estimation of marine oil adulteration)
 S 1638 (fatty acids of partially hydrogenated Atl. her-ring oil for)
 1714 (fatty acids in commercial)
- Margate (*Haemulon album*)
 J 25(7): 1441 (attraction with pulsed low-frequency sound)
- Margolis, Leo
 J 22(6): 1387 (parasites as biological indicators)
 24(4): 893 (*Trienophorus crassus* in sockeye salmon smolts)
 25(9): 1923 (*Caligus curtus* parasitic copepod; correction on J 26(8): 2263)
 26(4): i (foreword to this issue on parasites)
 (4): 893 (2 hemiurid trematodes)
 28(10): 1385 (larval helminths in polychaetes)
 T 185 (fishes of Canada diseases & parasites)
 S 937 (*Bacciger* and *Pentagramma* trematodes: review)
 1129 (N Pac. Ocean salmon)
 1179 (*Caligus japonicus* synonymy)
 1267 (*Cystidicola*, *Metabronema*, & *Rhabdochona* review)
 1298 (*Salvelinema* buccal region structure)
 1299 (Pac. salmon's swimbladder nematodes)
 1300 (blood feeding in *Salvelinema walkeri*, a coho salmon parasite)
 1391 (*Plicobothrium globicephalae* gen. et sp.n.)
 1487 (nematode diseases of marine fishes)
 1499 (redescription of *Caligus rapax* syntypes)
 1681 (revised annotated list of parasites from E Pacific marine mammals)
- Maria (see Burbot)
- Mariculture (see also Culture; Feed; Hatchery; Management; Ponds; Rations; also Oyster; Sablefish)
 T 222 (re genetics)
 301 (a brief on; also list of Canadian, English, & USA firms & consultants)
- Marinating (see also Delicatessen; Salting)
 A 6(F) (freshwater fish filets)
- Marine fishery products (see names of commercial marine animals and types of processing; also Quality of fishery products)
- Marine plant products (see Algae; Alginate; Dulse; Irish moss; Kelps; Seaweeds)
- Marion Lake, B.C.
 J 24(11): 2283 (phytoplankton productivity factors; corrections on J 26(8): 2263)
 26(6): 1605 (predation of zooplankton standing stocks by *Cyclops*)
 (8): 2003 (epibenthic algal production & community respiration in sediments)
 27(1): 13 (phytoplankton grazing rates and selection by *Diaptomus oregonensis* copepod)
 (1): 71 (macrophytes biomass & productivity)
 (4): 685 (distribution, growth, & seasonal abundance of *Hyalella azteca* amphipod re sediment microflora)
 28(1): 49 (comparison of 2 salamander populations)
 (5): 711 (energy flow & secondary production of 2 amphipod species)
 (9): 1259 (segregation between adult cutthroat & Dolly Varden trouts)
 29(11): 1595 (artificial fertilization effects on enclosed plankton populations)
- Maritime Provinces, Canada (see also New Brunswick; Nova Scotia; Prince Edward Island; also localities and bodies of water) (in addition, see British Columbia; Labrador; Manitoba; Newfoundland; Northwest Territories; Ontario; Quebec; Yukon Territory)
 B 155 (marine fishes of; indexed individually in FRB Index Bulletin 164 but not in this Index)
 175 (economic study of oyster industry)
- Markert, John Richard
 J 22(1): 215 (*Oncorhynchus* species identification)
 23(7): 1095 (pigment in Pac. salmon skin)
 25(11): 2403 (Pac. salmon metamorphosis)
 26(5): 1185 (salmon skin purines & pteridines)
 27(2): 371 (salmon growth & composition)
 28(12): 1853 (proteins in salmon eggs; correction on J 29(8): 1241)
 S 1521 (egg proteins of Pac. salmon)
 1584 (soluble fractions of Pac. salmon eggs)
- Marketing fishery products (see also Management)
 B 149: 25 (Great Lakes fisheries products)
 154 (certain Nfld. products)
 157 (Canadian lobster)
 158 (Great Slave L. & other N.W.T. freshwater products)
 161: 34 (goldeye)
 165: 55 (Canadian carp)
 166: 53 (E Canada eel)
 169: 138; 178: 22 (Pac. oyster, B.C.)
 175 (re economic study of Maritime Provinces oyster industry)
 S 1368 (commercial aspects of reprocessing & marketing sea-frozen Nfld. offshore fish)
 A 138: 38 (queen crab)

- Marking methods, returns, losses, and interpretation (*see also* Migration; Tagging)
- J 22(6): 1477 (pink salmon for comparing scale age)
 (6): 1523 (pink salmon for sea mortality rate estimation)
 23(7): 1043 (re pink salmon ocean distribution & migration)
 (11): 1761 (longnose & white suckers, Sixteenmile L., B.C.)
 24(4): 849 (salmon by antibiotic incorporation into bone)
 (12): 2595 (vs. tagging effects on young Atl. salmon survival and growth)
 25(2): 255 (small fish with stain for populations estimation)
 (4): 757 (pink salmon for estimation of marine mortality)
 (7): 1333 (goldfish by feeding strontium-rich diet)
 (7): 1377 (lake trout, L. Superior)
 (10): 2165 (re Atl. salmon smolts survival & adults utilization)
 (10): 2233 (fluorescent pigment tattooing of fingerling salmonids)
 (11): 2257 (survival of marked vs. tagged lake trout)
 (11): 2519 (fish by high-frequency electric sparks)
 26(2): 229 (sockeye salmon fry)
 (5): 1263 (finclipping vs. tetracycline marking effects on sockeye salmon fingerling survival)
 (6): 1619 (tests of fluorescent pigment vs. finclipping re coho salmon fry survival)
 (8): 2173 (ultrasonic transmitter in white bass stomach, for tracking)
 (10): 2765 (Pac. salmon & steelhead trout with die cooled by liquid nitrogen)
 27(2): 317 (coding embedded capsules of metallic oxides for recognition by X-ray spectroscopy)
 (10): 1889 (technique for small fish, using fluorescent dyes)
 28(3): 351 (Miramichi R., N.B., salmon to ascertain relative utilization rates by angling vs. Atl. provinces commercial fisheries)
 29(4): 455 (^{85}Sr for larval largemouth bass)
 (5): 469 (northern pike by clipping only part of fin)
 B 162: 19 (young sockeye salmon)
 T 84 (Atl. salmon & brown trout, Little Codroy R., Nfld.)
 118 (etching identification on razor clam shell for population studies)
 S 1581 (harp seal)
 A 107 (of 9 species in N Atl., 1966-67)
 123: 358 (Nfld. salmon)
 184 (harp seal)
- Markov chain
 J 26(11): 2843 (re stochastic model of interpopulation dynamics in marine ecology)
- Marlin, blue (*Makaira nigricans*)
 CSG 49 (identification)
 T 272 (halogenated hydrocarbons residues in)
- Marlin, striped (*Tetrapturus audax*) (*Makaira audax*; *M. mitsukurii*)
 J 25(9): 1987 (red & white muscle temperature of recently caught)
 28(7): 947 (blood pathway effects on blood-pressure drop in gills)
 S 1361 (fusion of secondary gill lamellae)
 1409 (gill blood pathways)
- Marlin, white (*Tetrapterus albidus*) (*Makaira albidus*; *M. albicans*) (*see also* Sailfish)
 CSG 49 (identification)
 T 193 (Atl. tagging, 1961-69)
 S 1409 (gill blood pathways)
- Marlin-spike (*Nezumia bairdi*)
 T 261 (bibliography for Gulf of St. Lawrence)
- Marquette Lake, B.C.
 J 25(1): 81 (limnology re trout mortality)
- Marshall, Kenneth Eric
 T 90 (literature citations of freshwater & fisheries biology)
 151 (bibliography of coregonid fishes)
 176 (bibliography of lake trout 1929-69)
 209 (filing bibliographic references)
- Marshall, Nelson
 J 28(5): 769 (simple reliable method for assaying ^{14}C -labelled benthic microflora)
- Marshall, Thomas Lawrence
 J 25(12): 2527; 27(4): 811 (brown trout world distribution)
 (6): 1087 (brown & brook trout exploitations)
- Martin, Nigel Vernon
 J 22(4): 969 (Ont. crustaceans)
 24(5): 965 (lake trout pyloric caeca and gill-raker development)
 27(1): 125 (diet effect on L. Opeongo lake trout, Ont.)
 29(6): 795 (exploitation & introductions effects on salmonid community, L. Opeongo)
- Martin, William Robert
 S 887 (ICNAF research report, 1962)
 903 (research on improvement of fishing methods)
 1148 (Atl. cod recruitment)
 A 96 (Atl. herring resources research needs)
 126 (fish resources utilization for fish protein concentrate)
- Mascaluk, Danny Mitchell
 T 254 (phosphorus levels in Nfld. water)
- Maskinonge (*see* Muskellunge)
- Mason, John Christopher
 J 22(1): 173 (coho salmon behavior)
 26(1): 63 (coho fry hypoxial stress)
 S 1465 (copulatory behavior of crayfish)

- 1468 (egg-laying in N American crayfish)
1486 (crayfish maternal-offspring behavior)
- Mass spectrometry (*see* Analysis methods (chemical); Apparatus)
- Masset, Queen Charlotte Islands, B.C.
T 118 (razor clam breeding, growth, populations)
- Massey, K. Lorne
S 1401 (nucleotide phosphodiesterase of fish brain)
- Mastigophora (*see* *Cryptobia*)
- Masu (*see* Salmon, masu)
- Matamek Lake, Que.
J 27(3): 413 (brook trout population ecology; correction in J 30(7): 1033)
- Mathematical tables (*see also* next heading)
B 125R; 167 (various, re oceanographic methods of analysis)
T 45 (extended, of the transformation $\phi = 2 \arcsin \sqrt{X}$)
A 189: 265 (exponentials (e^{-3} to e^3))
- Mathematical treatment of data (*see also* Computer programming; Models, mathematical; Multivariate analysis; *also* preceding heading)
J 22(1): 33 (estimating Pac. salmon's ocean mortality)
(1): 159 (oxygen mass transfer re fish egg respiration)
(1): 191 (catch equation)
(2): 521 (growth curve of fishes)
(4): 945 (estimating theoretical biomass for a fishery)
(6): 1523 (pink salmon sea mortality rate estimation)
23(2): 163 (fitting growth curves to observed data; corrections on J 26(8): 2263)
(2): 246, (3): 423 (selectivity of gillnets for lake whitefish)
(3): 349 (exploitation in a predator-prey relation type)
(5): 689 (depensatory process based on hunger concept)
(6): 869, (8): 1209 (of feed & growth factors in fishes)
(9): 1411 (electrical analog model for wind-driven marine currents)
(10): 1495, 1523 (re pike feed consumption)
(10): 1553 (methods of estimating exploited populations)
24(2): 249 (Ricker model of equilibrium yield per recruitment)
(5): 1117 (of tests of migrating sockeye salmon fry stamina)
(5): 1155 (digitizing system for bathythermograph aperture cards)
(6): 1187 (sampling research trawl catches at sea)
(10): 2137 (pulp mill effluent concentration determination)
(11): 2355 (model of fish growth, respiration, & mortality)
(11): 2491 (computer vs. manual temperature & depth calculations)
(12): 2527 (exploitation of multiple stocks by a common fishery)
25(3): 591 (growth effect on retention time of radio-nuclide metabolites)
(4): 717 (ration-growth relations for European plaice)
(4): 757 (marine mortality schedules of pink salmon)
(6): 1097 (Bay of Fundy natural tidal oscillations)
(6): 1219 (ocean mortality of Bristol Bay sockeye salmon)
(6): 1291 (age estimation of exploitation at given fishing mortality)
(6): 1303 (polemic on mathematics of asymptotic growth)
(8): 1737 (computer programs for benthic data)
(9): 1911 (for describing average vertical temperature distribution in lakes)
(11): 2349 (direct estimation of fish populations by echo sounding)
(12): 2701 (simplified computation of recruitment rates)
(12): 2743 (estimating mean weights from length statistics)
26(1): 123 (allometric weight-length regression model)
(1): 161 (comparison of 2 fish growth equations)
(2): 199 (estimating zooplankton production from phytoplankton production)
(2): 325 (DeLury population estimator robustness)
(3): 479 (effects of size-selective mortality on sampling bias)
(3): 655 (variance components in sockeye spawning potential)
(5): 1372 (fish school size re migration navigation)
(8): 2223 (rate of storm growth effect on subsequent oceanic surge elevations)
(9): 2267 (review of Bertalanffy growth equation application to fishery management problems)
(9): 2477 (hydrodynamics re, Bay of Fundy tidal barriers)
(10): 2643 (power function for oxygen consumption re body weight of several fishes)
(10): 2715 (effects of simulated long-term environmental fluctuations on maximum sustained yield)
(10): 2741 (weight on length regression for rapid average weight estimation of young sockeye salmon)
(11): 2843 (stochastic model of interpopulation dynamics in marine ecology, re Pac. sardine)
(11): 2887 (theory of tidal energy exploitation re Bay of Fundy)
(11): 3069 (Bertalanffy growth curve modification)
(12): 3237 (ration re growth of European plaice)

- 27(1): 172 (re parameter for exponential growth curve)
 (1): 204 (graphical estimation of mortality & growth rates)
 (2): 359 (theory of distance travelled by animals entering stream drift)
 (4): 621 (benthic infauna communities distribution, Washington coast)
 (4): 765 (nonlinear models analysis: nonlinear response surface)
 (4): 821 (generalization of the Murphy catch equation)
 (8): 1453 (spatial heterogeneity of phytoplankton in a nearshore environment)
 (9): 1637 (hydraulic ram effect in fish gill ventilation)
 (10): 1701 (tidal resonance & barriers in Bay of Fundy system)
- 28(2): 225 (canonical multiple variant analysis of periphyton chemical composition)
 (3): 369 (canonical multiple discrimination analysis of X-ray fluorescence spectroscopy for salmonids elemental chemical composition; see T200 below)
 (7): 1035 (quick analysis of digital echo fish count sequences)
 (9): 1275, 1293 (estimating fish abundance by voltage-integrating fish echo sounder)
 (10): 1666 (Derzhavin's population analysis statistical method)
- 29(1): 19 (spectra of empirical wave force coefficients)
 (5): 590 (likelihood analysis of 3-way contingency tables)
 (11): 1651 (population biomass, number of individuals, & their individual weight, re linear surplus-production model)
- B 125R: 5; 167: 5 (statistical limits in seawater analyses)
 T 84 (fluid drag, wire, & wind effects on free-floating current followers)
 126; 128 (re mass transport of N Pac. Ocean waters)
 195 (hydrodynamics, etc., of water tunnel design)
 200 (extension of J 28(3) reference above)
 212 (computer programming for multiple discrimination analysis of X-ray spectrographic data)
 244 (multivariate analysis for fisheries biology)
 248 (planktonic herbivores grazing re productivity studies)
 264 (fluid mechanics of netting & low-solidity screens)
- S 959 (pulpmill effluent sedimentation)
 964 (analysis of experimental multivariable environments re aquatic pollution)
 979 (flushing rates estimation from tide height & current data)
 994 (abundance & fishing success)
 1070 (computer method for calculating Kendall's tau)
 1235 (quick methods of estimating size limit changes effect on catches)
 1399 (energy efficiency concept in primary productivity)
 1435 (estimating annual production of biomass)
 1438 (carbonate equilibria in a lake)
- 1445; 1446 (model re production & feed supply of aquatic populations)
 1494 (behavior of growth & mortality estimates based on age-length keys)
 1500 (re physics of bubble formation from decomposition of marine sediments)
 1582 (Derzhavin's method)
 1583 (comparison of 2 reproduction curves)
 1699 (food chain & fish production in N Atl., re forecast of potential fishery yields)
 A 189 (assessment methods for freshwater fish production)
 269 (an introduction to mathematical ecology: book review)
- Mather, Frank Jewett, III
 J 24(9): 1991 (transatlantic tuna migrations)
- Mathews, Stephen Barstow
 J 25(6): 1219 (sockeye salmon ocean mortality)
 26(6): 1619 (coho salmon marking & finclipping)
- Mathias, Jack Anthony
 J 28(5): 711 (Marion L. amphipod energetics)
- Mathisen, Ole Alfred
 J 23(3): 459 (Ozernaya R. sockeye salmon scale characters, USSR)
 26(3): 655 (salmon egg deposition)
 (10): 2741 (weight & length measurements re estimation of average weight of juvenile sockeye salmon)
- Mating (see also Courtship; Reproduction)
 J 23(9): 1319 (& premating behavior of Dungeness crab)
 24(3): 495 (noninterspecific of 2 sunfish species)
 (9): 1955 (mate selection in mixed age-groups sockeye salmon population)
 25(1): 101 (of white & largescale suckers re hybridization)
 26(10): 2737 (effects of delayed, on king crab reproduction)
 (12): 3252 (behavior, western brook lamprey)
 27(9): 1607 (re condition of queen crab)
 28(8): 1198 (supernumerary copulatory organs in *Dugesia tigrina* turbellarian)
 29(4): 447 (spider crab)
 S 1465 (*Pacifastacus trowbridgii* crayfish copulatory behavior)
 1555 (claw-shuddering behavior of green shore crab to escape male-male attempted mating)
 A 256; 263 (queen crab)
- Matis, James Henry
 J 29(1): 45 (goldfish orientation to sublethal copper ion concentration gradient)
- Matsumoto, Juichiro John
 J 24(4): 873 (scallop muscle protein)

Matter, particulate (in natural waters) (*see also* Feed; Phytoplankton; Production, primary; Sediments)

- J 22(5): 1107 (marine lipid fatty acids)
 23(10): 1625 (comparison of estimation methods)
 24(5): 909 (continuous size spectrum, Saanich Inlet, B.C.)
 25(4): 625 (re production & mineralization in a Japan inlet)
 (8): 1591 (re rheotaxis of American eel to different stream waters)
 26(3): 557 (re northern anchovy feeding habits)
 (12): 3165 (as winter zooplankton feed, Strait of Georgia, B.C.)
 27(7): 1251 (carbon & nitrogen monthly variation, Strait of Georgia)
 (8): 1493 (benefit of sewage treatment for phosphate removal, re production in Great Lakes)
 (11): 1917 (estimation methods & results, NW Atl. surface waters)
 28(2): 277 (carbon content, in sediments of 16 small NW Ont. lakes)
 (2): 295 (carbon content of sediments re differences & similarities among small NW Ont. lakes)
 (6): 911 (carbon & nitrogen: ratios, also seasonal & depth distributions, Chesapeake Bay, Md.)
 (11): 1783 (⁶⁵Zn vs. Zn distribution in experimental marine ecosystem)
 29(4): 357 (re fish catch, St. Margaret's Bay, N.S.)
 (10): 1482 (fatty acids in N Atl. Ocean surface)
 B 125R: 117; 167: 175, 251 (determination in sea water)
 T 110 (Strait of Georgia, 1965-68)
 S 1155 (Coulter electronic counter for)
 1223 (re seasonal variations in benthos feed availability)
 1326 (organic, as substrate for heterotrophic bacteria, re primary productivity)
 1345 (retention of by screens & filters)
 1392 (re primary production, Strait of Georgia)
 1485 (importance & general implications of organic, re plankton feed, particularly of filter-feeding copepods)
 1503 (occurrence & formation of, in sea water)
 1504 (continuous nephelometric measurement of seawater turbidity)
 1537 (comparison of grade scales; proposed universal grade scale)
 1592 (oceanic concentration, re wind speed & Langmuir circulation)
 1688 (review of size analysis methods for suspended)
 A 211 (size, re feed availability to different trophic levels in marine feed chain)

Matton, Pierre

- J 26(8): 2193 (Dylox effects on trout larvae)

Maturation; Maturity (*see also* Growth; Hormones; Reproduction)

- J 23(3): 455 (re size of spottail shiner)
 (5): 623 (brook trout in infertile Pennsylvania streams)

- (5): 651 (sexual, of Nfld. & Grand Bank American plaice)
 (6): 797 (southern Nfld. herring population)
 (7): 947 (salmon parr in Nabisipi R., Que.)
 (8): 1145 (Atl. argentine on Scotian Shelf)
 24(1): 53 (definition of stages for Atl. halibut)
 (1): 67 (effect of feeding on thyroid, kidney, & pancreas of sexually ripening sockeye salmon)
 (2): 243 (sexual, of sockeye re starvation & flesh Na, K, & water content)
 (6): 1209 (Nfld. bait squid)
 (7): 1425 (brook trout)
 (8): 1791 (sexual, of sockeye re pituitary)
 (12): 2573 (Atl. cod in Ogac L., Baffin Is.)
 25(1): 157 (*Mesidotea entomon* in Chignik Lakes, Alaska)
 (7): 1465 (re hormones of sockeye & rainbow trout)
 (8): 1775 (N.S. offshore sand lance)
 (9): 1813(F) (index of "giant" smelts, Heney L., Que.)
 (10): 2091 (lake whitefish)
 26(4): 893 (2 hemiurid trematode species in pink & chum salmon)
 (5): 1285 (W L. Superior longnose sucker)
 (7): 1877 (E & W L. Erie walleyes)
 (7): 1943 (winter flounder oocyte)
 (12): 3133 (cod, off SW Nfld.)
 27(1): 137 (lake trout, L. Opeongo, Ont.)
 (3): 413 (brook trout, Matamek L., Que.)
 (3): 492 (*Lepidion* sp., N Atl.)
 (3): 613 (rainbow trout re extended spawning period in L. Huron)
 (4): 749 (threespine stickleback sexual maturation re spectral photoperiod mechanism)
 (5): 951 (blood plasma protein variations re winter flounder)
 (6): 1025 (L. Huron splake)
 (6): 1169 (sexual, of sockeye, re interrenal tissue response to mammalian ACTH)
 (7): 1265 (smallfin lanternfish)
 (9): 1607 (queen crab)
 (11): 2112 (size at, commercially harvested Alaskan weathervane scallops)
 (12): 2215 (Nfld. capelin)
 (12): 2261 (yellowtail flounder, in waters off Nfld.)
 (12): 2287, 2323 (cortisol & cortisone secretion rates re gonadectomy at & during sockeye sexual maturation)
 28(3): 417 (Pacific ocean perch)
 (4): 477, 485 (effects of hormones & cortisol on gonadectomized adult sockeye)
 (4): 553 (spring vs. autumn spawning, SW Nfld. herring)
 (7): 1051 (white seaperch, Tomales Bay, Calif.)
 (9): 1309 (white whale, Cumberland Sound, Baffin Is., N.W.T.)
 (10): 1621 (northern rockfish)
 29(1): 13 (accelerating sexual maturation of male pink salmon, & fertilizing effectiveness of their sperm)
 (8): 1209 (gonadal, of brook trout, re deep snow cover on mountain lake affecting photoperiod)

- (12): 1725 (effect on captive lobster growth)
 (12): 1749 (American plaice use of summer-stored energy for winter gonad)
- B 153: 116 (size & age of, petrale sole)
 162: 353 (sockeye salmon)
 165: 12 (carp)
- T 31 (Atl. mackerel)
 94-97 (frequency data, Nfld. herring, 1964-65 to 1967-68)
 105 (B.C. commercial groundfishes)
 138 (re otolith nuclei variations in Nfld. herring)
 167 (maternal influences on age at maturity, Skeena R. sockeye salmon)
 250 (computer programming fish maturity data)
- S 925; 926 (re age of NE Pac. salmon)
 1206 (of salmon from Labrador Sea & off W Greenland)
 1259 (of sockeye salmon re clearing of injected radioactive cortisol)
 1310 (changes in sockeye cortisol dynamics re sexual)
 1318 (W Nfld. cod stock)
 1390 (chum salmon in N Pac. offshore waters)
 1657 (intracellular glucan role in *Clostridium botulinum*)
- A 138 (queen crab size at)
 214 (delaying or accelerating sexual, by hormones, to allow greater growth in fish farming, or to hasten cross-breeding tests)
- Mauck, Wilbur Leon**
 J 28(7): 957 (northern pike predation)
- Maurer, Don**
 J 29(5): 588 (gas-bubble disease in 2 oyster & a clam species)
- Maurolicus muelleri* (see Pearlsides, Müllers)**
- Mawson, Joseph Corwin**
 J 27(1): 156 (3 computer programs: CDC 3600 FOR-TRAN/format)
- Mawson, Patricia Marietje**
 J 26(4): 1103 (nematodes re Australian gulls and terns)
- Maxwell, James Rankin**
 S 1528 (geological fate of chlorophyll)
 1722; 1723 (diagenesis & maturation of phytol from an ancient sediment)
- May, Arthur William**
 J 23(7): 1083 (deck sampling of catches)
 24(2): 457 ("blackberry" condition in Atl. cod)
 (7): 1531 (fecundity of Atl. cod)
 28(8): 1199 (salmon specimens from Davis Strait and Labrador Sea)
 T 27 (cod biological data, Strait of Belle Isle)
 270 (digest of Canadian Atl. salmon catch statistics)
 S 928 (selectivity of otter trawls)
 970 (new cod fishing grounds)
- 1020 (catchability of cod)
 1021 (cod otolith aging)
 1052 (cod growth & temperature in Nfld. area)
 1059 (cod research catches re depth & temperature)
 1201 (ptarmigan off Labrador)
 1208 (Labrador cod otolith age validation)
 1209 (offshore fishing re inshore Labrador cod fishery)
 1279 (research vessels comparative fishing)
 1318 (biology & fishery of the W Nfld. cod stock)
 A 192 (marine fisheries for Atl. salmon)
 195 (Labrador fisheries)
 202 (salmon exploited at sea)
 205 (problems relative to W Greenland salmon)
 237 (overfishing the sea)
- Mayflies (see Ephemeroptera)**
- McAlice, Bernard John**
 J 25(8): 1749 (red water in Gulf of Maine)
- McAllister, Carey Douglas**
 J 26(2): 199 (zooplankton production; corrections on J 26(8): 2264)
 T 37 (zooplankton net for coastal observations)
 248 (continuous grazing by planktonic herbivores)
 S 1513 (marine production of zooplankton and phytoplankton)
- McAllister, Donald Evan**
 J 22(6): 1559 (widow rockfish, new to B.C.)
 24(3): 537 (significance of ventral bioluminescence)
 26(12): 3246 (*Eptatretus deani* from B.C.)
 29(3): 344 (deepwater sculpin new to Alta. waters)
 (8): 1173 (morphology & myogen of 2 darter species re hybridization)
- McArn, Glynn Edward**
 J 24(9): 2007 (neurofibroma in *Lumpenus sagitta*)
 26(8): 2215 (infection of English sole)
 28(9): 1241 (flounder skin tumors)
- McBride, John Raymond**
 J 22(3): 775 (postspawning death of sockeye salmon)
 24(1): 67 (effects of feeding on salmon)
 (2): 243 (flesh of salmon)
 (8): 1791 (spawning sockeye pituitary)
 25(7): 1465 (metopirone in salmonids)
 26(5): 1147 (sockeye gland changes after gonadectomy)
 (11): 2975 (sockeye interrenal tissue hypertrophy & effect of gonadectomy)
 28(4): 477 (gonadal hormones effects on sockeye organs)
 (4): 485 (effects of hormones on sockeye)
 S 1187 (rainbow trout hypophysectomy effects)
 1340 (dexamethasone in sockeye)
- McBride, Roland Norman**
 J 24(3): 689 (experimental fishing shrimp pot)
- McCann, Annette Elizabeth**

- J 29(2): 195 (algal assay method for nutrient parameters in water) 940 (haddock off Nova Scotia)
 954 (minimum mesh sizes)
 1147 (haddock distribution)
 1316 (central Scotian Shelf haddock)
 A 153; 241 (ICNAF Canadian research reports)
- McCarragher, Donald Bruce
 J 28(11): 1811 (survival of fish in alkaline eutrophic waters)
- McCart, Peter
 J 22(5): 1229 (pygmy whitefish)
 24(1): 77 (hatchery release tank for salmon fry)
 (2): 375 (sockeye salmon fry behavior and ecology)
 (2): 433 (scale regeneration in bluespot goby)
 (9): 1999 (*Oncorhynchus nerka* gill rakers)
 27(6): 1154 (largescale sucker spawning habits)
 28(1): 115 (meristic differences in *Salvelinus alpinus*)
 (5): 749 (variation in scale counts of Arctic grayling)
- McCauley, James Elias
 J 24(6): 1377 (status of *Brisaster latifrons*)
 (6): 1385 (Echinoidea of Oregon)
 (9): 1985 (hydroid epizoic on myctophid fishes; correction on J 25(8): 1760)
- McCauley, Robert William
 J 25(9): 1983 (thermal stress on rainbow trout)
 27(10): 1729 (lake trout preferred temperature)
 28(11): 1801 (temperature selection of trout)
- McCleave, James David
 J 24(10): 2011 (cutthroat trout homing and orientation)
 27(4): 715 (ultrasonic tracking of cutthroat trout)
- McCombie, Alen Milne
 J 24(1): 101 (thermal regime of South Bay, Ont.)
 26(10): 2681 (fish shape & structure re selectivity of gillnets)
 29(6): 975 (eutrophication effects on oligotrophic lakes salmonid communities)
- McCormack, Jean Campbell
 J 29(6): 819 (exploitation & eutrophication effects on Windermere salmonid community, England)
- McCormick, J. Howard
 J 28(6): 924 (temperature requirements for larval ciscos)
 29(8): 1107 (temperature effects on young brook trout growth & survival)
- McCormick, Jon Michael
 J 24(9): 1985 (hydroid epizoic on myctophid fishes; correction on J 25(8): 1760)
- McCosker, John Edward
 J 28(11): 1809 (lymphocystis disease in Pac. fish)
- McCracken, Francis Derwood
 J 23(8): 1145 (Atl. argentine)
 CSG 44 (distribution of Atl. cod catches)
 T 86 (cod & haddock catches)
 S 930 (future of groundfishing industry)
- McCrary, Jerry Alden
 J 28(1): 98 (differentiating between some female Pandalidae)
- McCrimmon, Hugh Ross (see MacCrimmon, Hugh Ross)
- McCurdy, Howard Douglas
 S 1285 (*Hexamita inflata* axenic cultivation from *Crassostrea virginica*)
- McDermott, Lawrence Alfred
 J 25(7): 1521 (*Aeromonas* species infection in Great Lakes lampreys)
 (12): 2643 (furunculosis-infected brook trout)
 26(3): 629 (*A. salmonicida* phages)
 28(9): 1350 (infectious pancreatic necrosis of salmonids)
- McDonald, John George
 J 26(2): 229 (sockeye salmon fry survival)
 S 1271 (sockeye population biology)
- McFadden, James Thompson
 J 24(7): 1425 (*Salvelinus fontinalis* numerical changes and population regulation; correction on J 25(8): 1760)
- McFadden, Terence William
 J 26(9): 2311 (disinfection of trout eggs)
 27(12): 2365 (furunculosis in nonsalmonids)
- McHardy, Robert Alexander
 J 22(3): 823 (ostracod distribution in B.C.)
- McInerney, John Edward
 J 26(8): 2061 (blackspotted stickleback reproductive behavior)
 27(4): 749 (stickleback photoperiodism)
 (4): 793 (coho salmon salinity preference)
 (5): 966 (Pac. hagfish habitat characteristics)
- McIntyre, John Demaris
 J 26(12): 3252 (brook lamprey spawning behavior)
- McKenzie, Joseph Addison
 J 27(12): 2109 (muscle protein electrophoresis in genus *Salmo*)
- McKenzie, Russell Alderson
 J 24(1): 213 (fawn cusk-eel in NW Atl.)
 S 1076 (1965 offshore lobster investigations)
- McKeown, Brian Alfred
 J 26(7): 1837 (sockeye salmon ACTH & prolactin)
 29(3): 303 (hormones concentration in adult migratory sockeye serum & pituitary gland)

- McKim, James Montgomery
 J 27(10): 1883 (brook trout blood changes)
 28(5): 655 (trout re toxicity of copper)
- McKnight, Ida Marie
 J 23(1): 45 (blood of mountain whitefish)
- McKone, Warren Douglas
 J 28(1): 110 (salmon evacuated from mountain whitefish stomach)
- McLachlin, Jack
 J 23(3): 357 (dimethyl- β -propiothetin)
 25(8): 1603 (phytoplankter fatty acids)
 26(10): 2703 (sublittoral flora of Halifax Co., N.S.)
 S 1044; 1159 (dimethyl- β -propiothetin in algae)
 1110 (photosynthesis in green algae)
 1183 (photosynthesis in algae)
 A 40 (dimethyl- β -propiothetin)
- McLain, Alberton Lamson
 J 29(6): 889 (exploitation, introductions, & eutrophication effects on salmonid community, L. Michigan)
- McLain, Douglas R.
 J 28(1): 102 (bathothermograph transect data plotting)
- McLain, Lynn R.
 J 29(2): 167 (gill adenosinetriphosphatase activity during salmonids parr-smolt transformation)
- McLaren, Ian Alexander
 J 23(5): 769 (analysis of ringed seal census)
 J 24(5): 975, 981; 26(6): 1485, 1561 (biology, physics, & chemistry of Ogac L., Baffin Is., N.W.T.)
 S 1012 (plants from Ogac L.)
 1013 (zooplankton of L. Hazen, Ellesmere Is., N.W.T.)
- McLay, Colin
 J 27(2): 359 (distance travelled by animals in stream drift)
- McLeese, Donald Wilson
 J 22(2): 385 (lobster survival in air)
 (2): 639 (lesions on lobsters)
 23(9): 1325 (incidence of *Gaffkya homari*)
 25(8): 1729 (oxygen consumption of spider crab & American lobster)
 (8): 1733 (spider crab temperature resistance)
 27(4): 731 (lobsters exposed to bleached kraft mill effluent)
 (8): 1371 (lobster olfaction)
 29(12): 1725 (various effects on captive American lobster growth)
 B. 147(F) (lobster storage & shipment)
 T 320 (lobster growth in captivity)
 S 912 (saltwater system at St. Andrews Biological Station)
 927 (oxygen consumption of lobster)
- 1276; 1277; 1278 (toxicity of kraft mill effluent to lobsters & salmon)
- McLeod, Leslie Earl
 T 81 (*G. B. Reed* groundfish cruise No. 68-2)
- McMullen, John Clarence
 J 24(12): 2627 (ocean breeding of king crabs)
 26(10): 2737 (delayed mating effect on king crab reproduction)
 27(4): 818 (deepwater king crab parasitism)
- McMullon, Patrick William Gerard
 T 102: 14 (photography from inside a "cubmarine" submersible)
- McNeil, William John
 J 24(7): 1629 (randomness in pink salmon redds)
- McPhail, John Donald
 J 22(5): 1293 (new ronquil from Aleutian Is.)
 23(1): 141 (the *Coregonus autumnalis* complex)
 (5): 767 (technique for obtaining chromosomes from teleost fishes)
 26(12): 3183 (stickleback predation & evolution)
 27(1): 147 (species problems within *Gasterosteus aculeatus*)
 (12): 2362 (new species of prickleback from E North Pac.)
 B 173 (freshwater fishes of NW Canada & Alaska)
- McQueen, Donald James
 J 26(6): 1605 (*Cyclops bicuspidatus thomasi* predation)
 27(1): 13 (*Diaptomus oregonensis* feeding)
- McRoy, C. Peter
 J 27(10): 1811 (eelgrass standing stocks in Alaska)
- McSheffrey, Hugh Michael
 J 28(10): 1583 (X-ray spectrometry)
- Meal, fish(see Crabmeal; Fish protein concentrate; Fishmeal; Shrimpmmeal)
- Mealworm (*Tenebrio molitor*)
 S 1028; 1080 (fatty acids positional distribution in fat triglycerides)
- Meats (see also Abalone; Flesh; Quality of fishery products; Scallop; Seal; Whale)
 A 15 (nature of flavors in)
- Medaka (*Oryzias latipes*)
 J 28(9): 1235 (vertebral count re egg size)
 S 1682 (in vitro ovulation of oocytes induced by salmon pituitary gonadotropin)
- Medcof, John Carl
 J 22(2): 281 (shellfish growth)
 (2): 631 (ancient sea shells)
 (2): 635 (killifish)
 23(7): 1101 (observations on eels)

- 25(11): 2439 (Atl. salmon scales re spawning)
 26(5): 1121 (*Urosalpinx* distribution & importance)
- B 131(F) (oyster farming in the Maritimes)
 177 (E Canada paralytic shellfish poisoning; corrections on J 30(8): 1257)
- T 101 (uses of ocean quahaugs)
 S 909 (new hydraulic clam rake)
 910 (sea scallop mortality causes)
 955 (ICNAF research areas)
 1182 (clam hack fishing efficiency)
 1199 (ancient oyster & bay scallop shells from Sable Is.)
- 1343 (migration of eels)
 A 110 (walrus tusk)
 221 (20-million-year-old geological "catch")
- Medusae (see also Coelenterata; Hydroids; Hydrozoa; Jellyfishes; Scyphozoa)
 T 55: 11 (identification & key, of B.C. marine planktonic)
- Medusafish (*Ichthyos lockingtoni*) (brown rudderfish)
 B 180: 381 (full description, etc., B.C.)
 T 11 (in B.C. experimental midwater trawling)
- Meehan, James Morgan
 T 326 (Pac. ocean perch stocks status off B.C., Washington, & Oregon, 1970)
- Meekin, Thomas Kirkeeng
 J 25(11): 2467 (chinook salmon mortality re *Dermocystidium*)
- Megalops (immature stage of crustaceans) (see also Development; also names of adult form of crustaceans, e.g. Crab; Lobster; Shrimp)
 J 22(1): 69 (description of *Argis dentata* shrimp larva & megalops)
- Megalops cyprinoides* (see Tarpon (a tropical))
- Meganctiphanes norvegica* (see Euphausiacea)
- Megaptera novaeangliae* (see Whale, humpback)
- Mehrle, Paul Martin, Jr.
 J 27(12): 2225 (endrin poisoning in goldfish)
 29(11): 1519 (biochemistry of methylmercury-contaminated northern pike; correction on J 30(8): 1257)
- Melamphaes cavernosus* (see Melamphid, highsnout)
lugubris (see Melamphid, highsnout)
rugosus (see Melamphid, crested)
- Melamphid, crested (*Poromitra crassiceps*) (*Melamphaes rugosus*, *P. rugosus*)
 B 180: 264 (full description, etc., B.C.)
 T 11 (in FRB experimental midwater trawling, B.C.)
- Melamphid, highsnout (*Melamphaes lugubris*) (*M. cavernosus*)
- B 180: 263 (full description, etc., B.C.)
 T 11 (in FRB experimental midwater trawling)
- Melampus lineatus*
 S 1679 (mollusc sterols)
- Melanin (see also Pigmentation)
 J 28(11): 1789; 29(11): 1657, 1659 (distribution in butter clam re retention of paralytic shellfish toxin)
- Melanogrammus aeglefinus* (see Haddock)
- Melanophores (see also Pigmentation)
 J 29(12): 1667 (development in N sand lance larvae)
- Melanostigma atlanticum* (see Pout, Atlantic soft)
pammelas (see Softpout, Pacific)
- Melicertum* (see Hydrozoa)
- Melosira* (see Chrysophyta)
- Melville, Joanne Megan
 J 25(3): 547 (*Clostridium botulinum* growth)
 28(11): 1817 (phosphatase activity in *Clostridium botulinum* spores & cells)
 29(12): 1769 (salmon-canning waste water as microbial growth medium)
- Mendelsohn, Joseph Meyer
 J 25(11): 2453 (dimethyl sulfide re clam odor)
- Mendota, Lake, Wisconsin
 J 23(4): 499 (yellow perch activity & distribution under ice)
 25(11): 2515 (caloric values of some invertebrates)
- Menhaden, Atlantic (*Brevoortia tyrannus*)
 J 23(3): 395 (protein nutrient quality of fishmeal)
 28(3): 461 (range extension some 100 miles NE to Northumberland Strait)
 T 261 (bibliography for Gulf of St. Lawrence)
- Menidia menidia* (see Silverside, Atlantic)
- Menominee (see Whitefish, round)
- Méranger, Jean Charles
 J 28(6): 843 (zinc retention in young rats fed increasing levels of high-zinc oysters)
- Mercaptans (see Pulpmill effluents)
- Mercenaria mercenaria* (see Quahaug, northern)
- Mercer, Malcolm Clarence
 J 23(8): 1257 (*Pyrgopsis lemur* (Cephalopoda; Cranchiidae) from NW Atl.)
 24(7): 1623 (*Zalophus californianus* in Nfld.)
 (11): 2481 (wintering of pilot whales)
 (12): 2631 (Atl. walrus in Nfld.)
 27(10): 1892 (tropical loliginid squid)

- T 103 (otter-trawl survey N.S. to Cape Hatteras)
 122 (mid-Atl. bight otter-trawl survey)
 188 (American oyster experimental transplant)
 199 (*A. T. Cameron* otter-trawl Atl. cruise)
- S 1327 (recent Cephalopoda of Canada)
 1379 (migrant ommastrephid squid biological characteristics)
 1544(F) (northern limit of a squid)
 1546 (cephalopod resources and fisheries)
- Mercury and derivatives
- J 27(2): 383 (toxicity to 5 liver enzymes of mummichog)
 (4): 677 (traces in Great Lakes fishes and livers)
 (4): 805 (determination method in fish)
 (4): 830 (concentrations in Saskatchewan R. fish tissues)
 (11): 1927 (blocking effect on Atl. salmon parr taste reactions)
- 28(5): 786 (in dressed Canadian industrial area fishes)
 (9): 1285 (methylmercury in freshwater & marine fishes, N.B., Bay of Fundy, & N.S. banks; also in rain & snow)
 (11): 1807 (sulfide: mobilization from aquatic sediments into fish)
- 29(5): 501 (mouse-cell bioassay for mercuric chloride pollution)
 (7): 1035 (mobilization of various forms from sediments into guppies)
 (9): 1351 (chloride effect on salmonid olfactory bulb electrical responses)
 (10): 1487 (content of Strait of Georgia spiny dogfish)
 (10): 1491 (temperature-salinity stress re fiddler crab uptake of)
 (11): 1519 (methylmercury in northern pike: tissue distribution & elimination; also biochemical characteristics of contaminated fish; correction on J30(8): 1257)
 (11): 1644 (mercury & methylmercury in Bay of Fundy harbour porpoise muscle & liver)
 (12): 1685 (concentration in 11 fish species from various Man. & NW Ont. lakes; corrections on J 30(8): 1257)
 (12): 1691 (HgCl₂, re toxicity to *Daphnia magna*)
 (12): 1777 (removal of contaminant, during fat extraction stage of producing fish protein concentrate; correction on J30(9): 1404)
- T 309 (levels in tank-cultured sablefish, re levels in B.C. dogfish, herring, hake, walleye pollock, & arrowtooth flounder used as their feed)
- S 1274 (apparatus for dispensing liquid mercury)
 1534; 1614 (assay procedure for fish by flameless atomic absorption spectrophotometry)
- 1668 (survey of contamination in Canadian freshwater & marine fish; cause & effects of pollution)
 1685 (determining total & organic in fish tissue)
 1705 (check sample study of determining in fish tissues)
 1728 (rapid semimicro assay for methylmercury in fish tissue)
- A 169 (in freshwater fishes, resulting from pollution)
 178 (details of procedure in S 1534 above)
 200 (sources & effects of contamination in Canadian fishes)
 201 (in Great Lakes fishes used as human food)
- Meristic characteristics (*see also* Morphology; Speciation; Species, new; *also* Length; Size; Weight; *also* names of organisms; *also* meristic features, e.g. Fins; Scales; Vertebrae)
- J 22(3): 853 (Strait of Georgia Pac. bonito)
 (4): 899 (in distinguishing little from winter skate)
 (6): 1559 (widow rockfish)
 23(11): 1815 (yellow perch meristic numbers re lake salinity)
 24(12): 2573 (Atl. cod in Ogac Lake, Baffin Is.)
 25(5): 877 (*Halargyreus johnsonii* morid fish)
 (9): 1775 (offshore N.S. northern sand lance)
 (11): 2509 (3 rockfishes new to B.C.)
 26(6): 1467 (ranges for warty poacher)
 (7): 1934 (re differentiating *Coregonus artedii* from *C. zenithicus*)
 (9): 2431 (geographical variations in brook stickleback)
 (9): 2537 (analysis, in N American Atl. mackerel coastal populations)
- 27(1): 161 (re subspeciation in *Cristivomer namaycush*)
 (1): 174 (manefish in Atl. waters off Canada)
 (3): 457 (genus *Lepidion* fishes, NW Atl.)
 (3): 499 (daggertooth from various ocean areas)
 (9): 1549 (N Atl. Greenland turbot)
 (11): 1987 (differences in stream populations of rainbow trout below and above a waterfall)
 (11): 2104 (*Ammodytes dubius* & *A. hexapterus* sand lances in Nfld. area)
 (11): 2120 (banded gunnel in Nfld. waters)
 (12): 2233 (re *Sebastes melanostomus*, *S. aleutianus*, & *S. caenaematicus* speciation)
- 28(1): 115 (anadromous vs. freshwater-resident Arctic char)
 (3): 427 (tube-snouts re sticklebacks osteology & phylogeny)
 (4): 465 (lake char intraspecific variations & post-glacial distribution)
 (4): 553 (differences between spring- & autumn-spawning SW Nfld. herring)
 (7): 987 (re systematics & evolution of western N America *Salmo* species & subspecies)
 (7): 1009 (re discreteness of Gulf of St. Lawrence seasonal herring stocks)
 (10): 1621 (northern rockfish)
 29(3): 243 (toothed & polar cod)
 (12): 1673 (variations in *Ammodytes* sand lances in NW Atl.)
- T 31 (Atl. mackerel)
 34 (arrowtooth & spinycheek flounder; rock & flathead sole; Pac. cod)
 160 (of 4 *Lepidion* morid fish species)
 192 (Greenland turbot)
 237 (mud dab)
 S 1061 (salmons of Cape Thompson region, Alaska)

- 1129 (sockeye salmon re distribution & origins in N Pac. Ocean)
 1156 (pink salmon re distribution & origins in N Pac. Ocean)
 1206 (salmon from Labrador Sea & off W Greenland)
 1451 (re *Coregonus clupeaformis* whitefish complex)
 1640; 1641 (comparison of SW Nfld., Magdalen Is., & N.S. shelf herring stocks)
 A 108: 20 (yellowtail flounder stocks)
 193 (Atl. & Pac. capelin)
 259 (hereditary & environmental effects on salmonid populations)
- Merluccius* (see also Hakes)
bilinearius (see Hake, silver)
merluccius hubbsi (see Hake (a SW Atlantic))
productus (see Hake, Pacific)
- Meromyxis* (see also Limnology)
 J 26(7): 1763 (characteristics of 4 S B.C. lakes)
 27(5): 847 (Sunfish L., Ont.)
 28(2): 265 (in 2 small NW Ont. lakes indicated by diatoms, ratio in sediments)
 S 1436; 1437; 1438; 1439 (Green L., N.Y., re water chemistry & sedimentation)
- Merritt, J. H.
 S 1421 (sea-frozen whole fish handling & its effect on bacterial spoilage & sanitary quality)
- Mesh size of nets (see also Gillnets; Nets; Plankton; Selectivity of fishing gear; Trawling)
 S 1345 (particulate matter retention by screens)
- Mesidotea entomon* (see Isopoda)
- Mesocyclops* (see Cyclopoida)
- Mesodesma arctatum* (see Clam, Arctic wedge)
- Mesodinium* (see also *Cyclotrichium*; Ciliata)
 J 28(3): 391 (*M. rubrum* "incomplete symbionts"; ultrastructure; taxonomy; key to *M. rubrum*, *M. acarus*, & *M. pulex*)
 S 1294 (*M. rubrum* pigments)
- Mesoplodon* (see also Whales)
bidens (see Whale, North Sea beaked)
carlhubbsi (see Whales)
densirostris (see Whale, dense-beaked)
stejnegeri (see Whale, Stejneger's beaked)
- Mesotrophy
 J 28(2): 265 (of lakes indicated by diatom species in sediments)
- Messieh, Shoukry Naseef
 J 26(7): 1889 (herring otolith nuclei)
 28(7): 1009 (Atl. herring populations)
 29(8): 1113 (otoliths in identifying Gulf of St. Lawrence herring stocks)
- T 57 (Bay of Fundy herring length & age distribution)
 139 (Gulf of St. Lawrence herring catch statistics)
 277 (larval herring distribution, abundance, & growth, Bay of Fundy & Gulf of Maine)
 318 (Gulf of St. Lawrence larval herring distribution, abundance, & growth)
 S 1464 (use of otoliths for aging herring)
 1495 (immature Bay of Fundy herring)
- Messtorff, Joachim
 S 1279 (research vessels comparative fishing)
- Metabolism (see also Activity; Bioenergetics; Stress; also names of metabolic functions)
 J 22(6): 1372 (re size of northern pike and its feed)
 (6): 1397 (effort in carp lateral muscle)
 (6): 1491 (O₂ consumption re sockeye salmon swimming speed and size)
 23(1): 1 (brook trout respiratory function)
 (1): 65, (4): 471, (6): 783, (9): 1461 (rainbow trout: effects of activity, etc., on)
 (3): 357, (4): 487 (phytoplankton thetin to acrylic acid & dimethyl sulfide)
 (6): 869, (8): 1209 (re body weight of fishes: effect of feed & water temperature)
 24(6): 1241 (swimming speed tests condition for increased active)
 (6): 1253 (zebrafish oxygen uptake re zinc sulfate)
 (8): 1701 (disturbance of rainbow trout effects on)
 (8): 1731, 1775 (sockeye re swimming performance)
 (11): 2355 (re mathematical model for fish growth, respiration, & mortality)
 25(3): 591 (mathematics of growth effect on metabolite retention)
 (5): 853 (of glucose in *Bankia setacea* caecum)
 (12): 2691 (of ⁶⁵Zn in freshwater mussel)
 26(1): 115 (coho salmon & rainbow trout resistance to bacterial endotoxins)
 (6): 1429 (re stream fishes ecology)
 (7): 1813 (endogenous nitrogen secretion re bluegill protein maintenance level)
 (9): 2362 (of young sockeye)
 (11): 2807 (re *Tilapia nilotica* swimming speed)
 27(5): 857 (coenzyme A & carnitine effects on fatty acid oxidation by trout tissues mitochondria)
 (6): 1141 (glucose enzymes in *Bankia setacea* caecum)
 28(3): 409 (sockeye feed intake)
 (3): 449 (bluegill sunfish protein consumption & nitrogen excretion)
 (4): 587 (factors influencing active & standard, of wild vs. hatchery rainbow trout)
 (6): 801, 809, 815 (fish growth efficiency re rations & activity)
 (10): 1635 (of young sockeye re nature of diet)
 (11): 1715 (benthos macroinvertebrates, L. Ontario bays)
 (12): 1899 (stresses caused by formalin disinfection of young salmonids)
 29(1): 67 (of aholehole)

- (4): 399 (salinity effects on assimilation of 3 Salton Sea fishes)
 (12): 1691 (effect of 21 metal ions on *Daphnia magna*)
 (12): 1749 (American plaice use of summer-stored energy for winter)
- CVG 34 (metabolizable energy of herring meal)
 T 283 (& growth of young Pac. salmon: environmental-control tank for synchronous study)
- MSP 10 (fish respirometer)
 S 896 (respiratory, of swimming young sockeye salmon)
- 958 (moribund Atl. cod impaired hormone)
 969 (metabolizable energy of herring meal)
 1040 (carbohydrate, of marine planktonic algae)
 1135 (of pyruvate & glyoxalate by Atl. salmon & cod sperm)
 1173 (of pyruvate in testes of rabbit & Atl. cod)
 1174 (of pyruvate in ovarian tissue of Atl. cod)
 1322 (of pyruvate & glyoxalate by Atl. salmon eggs)
 1356 (testosterone clearance rates in skate blood)
 1373 (of echinoderm lipids: review)
 1402 (fish muscle glycogen phosphorylase re)
 1413 (decompression effects on deep-sea bacteria)
 1415 (energy cost of, for fishes)
 1497; 1498 (of putrescine by mycobacteria isolated from fish)
 1590: 534 (of fishes re environmental temperature acclimation: review)
 1665 (some comparative aspects of corticosteroid metabolism in fishes, birds, reptiles, amphibians, & mammals: review)
 1680 (oxygen demand in fishes re other vertebrates: review)
- A 116 (fish respirometer)
 118 (re sockeye salmon swimming speed)
 146 (fish muscle lipids catabolism: review)
 147 (enzyme systems of intermediary, in fish vs. warm-blooded animals: review)
 197 (& biological production in freshwater fishes: review)
 212 (energy cost of living, for fish: review)
 222 (pollutants effects on Atl. salmon & brook trout)
 232 (effects of radioactive pollutants in marine environment)
- Metabronema* (see Cestoda)
- Metal ions (see Mineral content; Mineralization; Pollution; Toxicants; also names of metallic elements)
 J 25(4): 639 (re rancidity development in marine muscle)
- Metamorphosis; Metamorphism (see also Development; Molting)
 J 26(4): 921 (*Phrixecephalus cincinnatus* parasitic copepod)
 (11): 2823 (morphological & biochemical changes in steelhead trout parr-smolt)
 27(10): 1735 (morphology, of landlocked sea lamprey)
- 29(2): 167 (gill enzyme activity changes in salmonid parr-smolt)
 (9): 1277 (timing of accompanying physiological changes, in landlocked lamprey)
- A 123 (Nfld. salmon)
- Metapenaeus dobsoni* (see Shrimps)
- Metavermilia* (see also Polychaeta)
 J 28(10): 1373 (revision of genus; 3 new species: *M. an-nobonensis*, *M. taenia*, *M. nates*; new form of parasite on gills of *M. nates*)
- Metazoa (see classifications and species)
- Meteorology (see also Climate; Precipitation; Wind)
 T 300 (Saanich Inlet, B.C., May-June 1968)
 S 1056 (air temperature anomalies off Nfld.)
- Methionine (see also Acids, amino)
 J 26(11): 2969 (free, in *Parapenaeus* Atl. shrimp)
 S 1314 (reaction with malonaldehyde)
- Methodology
 T 249 (detecting & measuring marine oil adulteration of margarine & cooking fats)
 A 139 (improving evaluation of pollutants effects on marine organisms: review)
- Methylmercury (see Mercury)
- Metridium* (see Sea anemones)
- Metroka, Craig Elliott
 J 28(8): 1208 (killifish "hemagglutinogens")
- Metschnikowia krissii* (see Yeast)
- Mettrick, David Francis
 J 26(10): 2269 (nutrition & chemical composition of *Syn-desmis franciscana*, & taxonomy of *S. antillarum*)
 28(1): 7 (chemical composition of *Dugesia tigrina*)
 (8): 1198 (abnormal sexual organs in fish)
- Mice
 J 26(5): 1378 (fibroblast cell spinner culture to detect water pollutants)
 B 168; 177 (re paralytic shellfish toxicity assaying)
- Michalik, Paula Annette
 J 28(12): 1912 (fuel oil concentration in Chedabucto Bay)
 T 284 (H alifax harbour oil pollutants concentration & distribution, June-Aug. 1971)
- Michalski, Michael Francis Paul
 J 27(3): 425 (mine-waste effects on phytoplankton)
- Michigan, Lake (see also Great Lakes)
 J 25(4): 672 (species changes in fishery)
 (6): 1181 (benthic environment subdivisions)

- 26(11): 3077 (sea lamprey larvicides tests)
 27(4): 677 (15 trace elements in 13 fish species)
 (10): 1735 (lamprey metamorphosis morphology)
 28(4): 616 (size of giant brook lampreys re average adult size)
 29(5): 477 (alewife population biology)
 (5): 525 (dressing & cooking effects on DDT residues in 4 commercial fishes)
 (6): 617, 673, 717, 889, 951, 975 (various factors affecting fish communities, particularly salmonid)
 (8): 1237 (seasonality migration of young lamprey before & after lampricide treatment of tributary stream)
 A 106 (transplantation of *Oncorhynchus* salmon into)
- Microcalanus pygmaeus* (see also Calanoida)
 J 22(2): 543 (development rate in Canadian Arctic Ocean)
- Micrococcus* (see also Bacteria)
 J 24(1): 9 (in fresh lake whitefish)
 26(10): 2643 (population on vacuum- vs. air-packaged EDTA-treated fish filets)
 (10): 2659 (spp. ingested by oligochaetes in Toronto harbour sediments)
- Microcystis aeruginosa* (see also Phytoplankton)
 J 25(6): 1229 (in phytoplankton ecology of an Ont. reservoir)
- Microgadus proximus* (see Tomcod, Atlantic)
tomcod (see Tomcod, Pacific)
- Micropogon undulatus* (see Croaker, Atlantic)
- Micropterus dolomieu* (see Bass, smallmouth)
salmoides (see Bass, largemouth)
- Microsporidia (see also Sporozoa)
 J 26(4): 725 (infection of fishes)
 (8): 2215 (*Glugea* infection of English sole)
 29(3): 275 (parasites of Lake of the Woods fishes, Ont.)
 (11): 1639 (*G. hertwigi* occurrence in rainbow smelt, L. Erie, & associated adult smelt mortality)
- Microstomus kitt* (see Sole, merry)
pacificus (see Sole, Dover)
- Midges (see Chironomidae)
- Midshipman, northern (see Midshipman, plainfin)
- Midshipman, plainfin (*Porichthys notatus*) (northern midshipman)
 J 25(8): 1651 (plasma protein-bound inorganic iodide)
 26(9): 2319 (parasites, B.C.)
 B 180: 207 (full description, etc., B.C.)
 T 7; 22; 56; 62; 181; 257; 317 (taken during FRB experimental or B.C. commercial trawl fishery)
- A 91 (observed in B.C. landings of fish for mink feed)
- Mighell, James LeRoy
 J 26(10): 2765 (salmon & trout rapid cold-branding with liquid nitrogen)
- Migration (see also Behavior; Distribution; Homing; Locomotion; Marking; Spawning; Swimming; Tagging; Tracking)
 J 22(2): 433 (NW Atl. harp seals)
 (2): 625 (Canadian & European salmon to Greenland)
 (4): 1025 (recording sockeye salmon smolt movements by time-lapse photography of sonar traces)
 23(1): 109 (vertical, of some demersal Atl. fishes)
 (1): 157 (downstream, of brown trout, re temperature & light)
 (2): 181 (spawning: swimming speed of sockeye & coho salmon)
 (4): 499 (vertical, of yellow perch under ice)
 (7): 1043 (oceanic, of fin-marked pink salmon)
 (7): 1101 (habits of American eel)
 (8): 1135 (vertical, of NE Pac. oceanic shrimps)
 24(3): 569 (of British pink shrimp in a river)
 (5): 1117 (of sockeye fry re their stamina)
 (8): 1743 (of Atl. brook trout re ponding)
 (9): 1991 (transatlantic, of young bluefin tuna)
 (10): 2011 (cutthroat trout olfaction & vision re homing)
 (10): 2069 (sockeye fry & smolts behavior)
 (11): 2321 (orientation in early sea migration of pink salmon)
 (12): 2613 (genetic control in sockeye fry lakeward)
 (12): 2639 (Atl. salmon Europe-Greenland via Irminger Sea)
 25(7): 1311 (vertical, of crustaceans: pressure effect on respiration)
 (7): 1350 (of walleye in Nipigon Bay region, Ont.)
 (12): 2723 (lobsters into deep water)
 26(1): 33 (lakeward, of young rainbow trout, upper Lardeau R., B.C.)
 (2): 229 (Babine L. sockeye fry, from natural vs. artificial stream rearing)
 (2): 269 (NW Miramichi R., N.B., salmon to other Maritimes fishing areas)
 (5): 1301 (American plaice, Nfld.)
 (5): 1372 (theory of fish school size re navigation during)
 (7): 1837 (re sockeye pituitary activity)
 (8): 2111, 2113 (olfactory responses of chinook & coho salmon)
 27(2): 281 (vertical, of feeding young sockeye & limnetic zooplankton, Babine L., B.C.; correction on J 27(8): 1499)
 (3): 565 (homing instinct theories re Pac. salmon)
 (4): 669 (diel vertical, of pink shrimp)
 (6): 991 (Dolly Varden smolts, SE Alaska)
 (6): 1017 (splake in N L. Huron)
 (11): 2071 (nightly, of skipjack tuna from home banks)

- 28(1): 49 (salamanders in Marion L., B.C.)
 (3): 443 (computer programming for G. M. Jolly's stochastic model for capture-recapture)
 (4): 573 (enumerating kokanee fry in streams)
 (6): 919 (temperature & light effects on prespawning brook sticklebacks)
 (8): 1133 (adult & juvenile walleye between L. Huron & L. Erie)
 (9): 1319 (polarized light possibly aids yearling sockeye salmon seaward)
 (9): 1345 (of carp through brackish B.C. coastal waters)
- 29(2): 151 (observations on sockeye fry, lower Babine R., B.C.)
 (3): 295 (identifying major B.C. & Alaska pink salmon even- & odd-year runs by scales)
 (3): 311 (adrenocortical cell & plasma hydroxycorticosteroids reversible changes during Atl. salmon freshwater spawning journey)
 (7): 1025 (ultrasonic tracking of B.C. coastal adult sockeye)
 (8): 1145 (swimbladder gas volume vs. body lipids content re vertical migration of myctophid fishes)
 (10): 1419 (vertical, of sound-scattering layer in NE Pac. Ocean)
 (10): 1431 (yearling sockeye: followed by time-lapse photography of sonar)
 (10): 1445 (adult American shad estuarial: followed by ultrasonic tags)
- B 157: 15 (lobster)
 162: 13, 18, 71, 287, 328 (sockeye salmon)
- CJG 15 (Nfld. herring)
 16 (Nfld. herring stocks & coastal capelin)
- T 4 (analysis of 1965 Atl. salmon smolt run, Miramichi R., N.B.)
 31 (Atl. mackerel)
 105 (B.C. commercial groundfishes)
 204 (male queen crabs, Gaspé region of Gulf of St. Lawrence)
 312 (computer programming directional data on Pac. salmon orientation during)
 331 (summary of salmon counts at Babine R. counting fence, B.C., 1967-71)
 335 (analysis of ultrasonic tracking records of sockeye migrating into Babine L.)
- S 952 (of Fraser R. odd-year pink salmon run)
 998 (sockeye swimming dynamics)
 1000 (oceanic, of 5 Pac. salmon species)
 1129 (sockeye in offshore N Pac. Ocean)
 1133 (planted hatchery-reared trouts from Crecy Lake, N.B.)
 1137 (salmons in N Pac. Ocean)
 1150 (vertical, in Bay of Fundy re light)
 1156 (pink salmon in offshore N Pac. Ocean)
 1166 (orientation of young sockeye during seaward)
 1343 (fishermen's reports on American eel freshwater & marine)
 1581 (harp seal)
 1675 (review of field studies on fish orientation during)
- A 19 (forecasting pink & sockeye salmon runs by high-seas tagging)
 25 (recovery off Greenland of Canadian-tagged salmon)
 56 (Atl. salmon traced by tagging)
 138 (queen crab)
 184 (harp seal)
 212 (energy requirements for fish when migrating: review)
 259 (heredity & environment re Pac. salmon & steelhead trout)
- Miles, Harry McCauley
 J 28(5): 625 (handling & anesthetization effects on brook trout)
 (5): 635 (brook trout variations re surgery)
- Miles, Stuart Gordon
 J 25(8): 1591 (rheotaxis of elvers)
 (10): 2143 (American eel orientation)
- Milk
 J 25(11): 2419 (lipids fatty acid composition of seals)
 S 1203 (positional distribution of monoenoic fatty acids in triglycerides of fin whale)
 1227; 1228 (lipids fatty acid composition of fin whale)
 1596 (triglycerides fatty acid composition of bottlenose dolphin)
 1613 (neutral carbohydrates of bottlenose dolphin)
- Millemann, Raymond Eagan
 J 25(8): 1621 (Sevin effects on clams)
 26(9): 2339 (reproduction of shiner perch)
 27(1): 93 (Sevin effects on crabs)
- Miller, Alexander, III
 J 29(8): 1125 (volatile compounds formed in ice-stored canary rockfish muscle)
- Miller, Bruce Stuart
 J 22(3): 857 (six-gilled shark)
 24(12): 2515 (flatfish stomach contents)
 27(9): 1661 (feed of flathead sole)
- Miller, Douglas Colenso
 T 177; 183; 190; 213 (B.C. offshore herring surveys)
- Miller, Robert Joseph
 J 28(11): 1733 (productivity of seaweed-lobster communities)
- Millikan, Alan Eugene
 J 27(2): 409 (hermaphroditism in Pac. hake)
 28(9): 1275 (estimation of hake population by echo integrator)
- Mills, Eric Leonard
 J 24(2): 305 (biology of an amphipod sibling species pair)
 26(6): 1415 (marine zoology community concept)
- Milt (*see also* Gonads; Sperm; Testes)

- J 24(3): 613 (seasonal lipids fatty acids changes in Atl. cod)
(7): 1573 (fertility duration, in sockeye & pink salmon)
- S 897 (mononucleotide synthesis by extract of steelhead trout)
1011; 1036 (steelhead & sockeye salmon as enzyme source)
- Minchinia* (sporozoan)
J 27(7): 1320 (possible new species of)
- Mineral constituents of natural waters (*see* names of lakes, names of chemical elements; *also* Composition, chemical; Limnology; Oceanography; Waters, natural)
- Mineral content (*see also* Composition, chemical; *also* names of elements and organisms; for uptake from pollution *see* Pollution; Toxicants)
J 23(8): 1285 (of various phytoplankton species)
24(6): 1291 (of freshwater fish meals: 14 elements)
26(8): 2030 (of beach-spawning Nfld. capelin)
(9): 2345 (re calculation of caloric content of zooplankton biomass)
(11): 2843 (of steelhead trout during parr-smolt transformation)
27(3): 591 (Atl. herring & cod protein concentrate)
28(1): 73 (content of some thermal spring aquatic insects)
- T 114 (Canadian Atl. herring meals)
S 1377 (composition of Atl. herring meals)
A 85 (of freshwater & B.C. herring fishmeals)
- Mineralization (*see also* Fossils; Sediments)
J 25(4): 625 (re marine bacteria activity)
26(1): 150, (5): 1347 (in culture media for calanoid copepods)
(5): 1133 (experimental, of seawater samples re phytoplankton growth)
S 1353 (of Gulf of St. Lawrence sediments)
- Mineralogy (*see also* Sediments; *also* names of chemical elements)
J 28(2): 139, 277 (re limnology of many small NW Ont. lakes)
- Mining effluents (*see also* Copper; Pollution; Toxicants; Zinc)
T 293 (analysis of mine wastes for pollutive flotation agents)
S 1678 (chemistry & acute toxicity of iron ore flotation agent to brook trout)
- Mink (in general)
T 7; 19; 56; 89 (utilization of B.C. fishes for feed)
A 91 (as above)
- Mink, black (*Mustela vison*)
S 1203 (positional distribution of monoenoic fatty acids in triglycerides)
1233 (marine fatty acids incorporation into tissues)
- Mink River, Man.
J 29(9): 1245 (ecological segregation between longnose & blacknose dace)
- Minkley, Bernard George
T 184; 211 (Pac. Ocean Station P oceanographic observations)
- Minnow, bluntnose (*Pimephales notatus*)
J 23(12): 1845 (mouth & body form re feeding ecology)
28(1): 45 (populations upstream & downstream of a dammed Ont. lake)
29(3): 275 (9 parasites of, Lake of the Woods, Ont.)
S 1128 (in 2 L. Superior bays)
- Minnow, brassy (*Hybognathus hankinsoni*)
J 26(6): 1439 (distribution in Canadian Missouri R. headwaters)
27(12): 2365 (furunculosis)
B 173: 266 (full description, etc., of N.E.B.C.)
- Minnow, fathead (*Pimephales promelas*)
J 22(3): 744 (in Bow R. system, Alta., as flathead minnow)
24(6): 1241 (maximum swimming speed & conditioning to increased metabolism)
25(6): 1199 (low-temperature effects on feeding in 3 Ont. localities)
26(2): 325 (S Alta. distribution)
(6): 1439 (distribution in Canadian Missouri R. headwaters)
(9): 2449 (chronic toxicity of copper to)
27(10): 1889 (marking with fluorescent dyes)
(12): 2365 (furunculosis)
28(7): 957 (vulnerability to northern pike predation)
(8): 1107 (mathematical model of effects of pollutant superimposed mortality on populations)
(8): 1119 (chronic effects of low dissolved oxygen concentrations)
(11): 1811 (alkali tolerance in eutrophic Nebraska lakes & ponds)
(12): 1841 (long-term tests of chloramine toxicity to)
29(2): 211 (development of *Aeromonas liquefaciens* antibodies)
(3): 275 (8 parasites of, Lake of the Woods, Ont.)
(5): 583 (Sevin insecticide long-term effects on survival, growth, & reproduction)
(8): 1099 (cadmium sulfate acute & chronic toxicity to)
B 173: 270 (full description of N Alberta)
S 1654 (aqueous clam extract protection against infection by amphibian virus)
- Minnow, flathead (*see* Chub, flathead; *also* Minnow, fathead)
- Minnow, mud (*see* Mudminnow, central)
- Minnow, sheepshead (*Cyprinodon variegatus*)
J 26(2): 433 (blood morphology)
J 28(9): 1225 (cadmium toxicity tests)

- (11): 1811 (suitable for introduction into alkaline eutrophic lakes) S 1079 (extinct N Pac. marine mammals)
 1220 (controversy over diphyly in pinnipeds)
 1240 (NE Pac. stranding distribution & seasonality of *Ziphius cavirostris*)
- Minnow, silvery (*Hybognathus nuchalis*)
 J 26(2): 325 (S Alta. distribution) 1454 (pigmentation pattern in delphinid cetaceans)
 (6): 1439 (distribution in Canadian Missouri R. headwaters) 1574 (fin whale nasal structure)
 1587 (Pleistocene paleoecology and biostratigraphy, Santa Barbara Is., Calif.)
- Minnow, White Cloud Mountain (*Tanichthys albonubes*) (tropical cyprinid) 1596 (bottle-nosed dolphin milk triglycerides fatty acid composition)
 J 26(8): 2250 (laboratory host for cestode culture) 1599 (recording blue whale ultrasonic sounds)
- Minnows A 107 (N Atl. whale research)
 J 24(5): 927 (limnetic larvae in N Wisconsin lakes) 174 (information on tagged whales in N Atl.)
- Minytrema melanops* (see Sucker, spotted) Mites (see Acarina)
- Miramichi River, N.B. Mitochondria (see also Cytology)
 J 23(12): 1977 (brook trout & young salmon association factors) J 27(5): 857 (re coenzyme A in lipids utilization by fish)
- 24(1): 21 (seasonal return pattern of salmon)
 (4): 701, 709, 731, 769, 807, 823 (effects of watershed forest insecticide sprays on salmon, trout, & aquatic insects)
- 26(2): 269 (salmon migration to other Atl. provinces fishery areas, from NW)
- 28(1): 59 (DDT residues in marine fishes & shellfishes)
 (3): 351 (relative utilization rates of salmon by local sport fishery vs. maritime commercial fisheries)
- T 4; 91 (analysis of 1965 & 1966 salmon smolt run)
 202 (diatoms, and their use as indicators of heavy metal pollution)
 226 (1969 fish mortalities in NW branch)
 325 (forest-based industries impact on freshwater-dependant fishes)
- S 1126 (Greenland salmon fishery influence on stocks & fishery of)
 1196 (Cu & Zn mining pollution effects on spawning salmon)
 1217 (revised growth rate estimates for salmon returning from Greenland)
 1218 (salmon tagging results)
 1406 (mine-effluent pollution in NW, re bacterial infection of salmon & suckers)
 1553 (mining effluent effect on vascular plants of NW)
- A 39 (life history & fishery, American smelt)
 155 (returns & utilizations of salmon tagged 1964-67)
- Mirounga angustirostris* (see Seal, northern elephant)
- Missouri River system
 J 26(6): 1439 (fishes distribution in Canadian drainage)
- Mitchell, Barbara Susan
 S 962 (pituitary hormones of Pac. salmon)
- Mitchell, Edward Dick, Jr.
 J 23(12): 1897 (Pleistocene sea otters)
 24(12): 2503 (Cuvier's beaked whale)
 25(9): 1843 (Mio-Pliocene pinniped *Imagotaria*)
- 2477 (Bay of Fundy tide: two-dimensional hydrodynamical equations)
 28(3): 443 (computer programming of G. M. Jolly's capture-recapture stochastic model)
 (6): 801, 809, 815 (fish growth efficiency from rations)
 (7): 971 (empirical, for *Sagitta elegans* chaetognath, St. Margaret's Bay, N.S.)
 (8): 1107 (for effects of pollutant superimposed mortality in fathead minnow populations)
 (8): 1211 (advantages & limitations re fishery catch & effort)
 (10): 1493 (re simulation of Adams R. sockeye salmon abundance fluctuations)
 (10): 1503 (pink & chum salmon fry size re predation by coho salmon)
 (10): 1573 (production-biomass ratio re animal cohorts & populations)
 29(11): 1651 (population biomass, number, & average weight of individuals, re linear surplus-production model)
- T 156 (one-dimensional hydrodynamical numerical tidal, Juan de Fuca & Georgia straits)
 248 (re nocturnal vs. continuous grazing by planktonic herbivores re marine productivity studies)
 307 (for pulpmill effluent effect on oxygen levels in stratified estuary)
 321 (& computer program for simulating effect of coho salmon fingerlings predation on pink salmon fry population growth)
- S 1388 (re dynamics of aquatic ecosystems)
 1445; 1446 (re production & food supply of aquatic populations)
 1513 (similar to T 248 above)

- Modiolus modiolus* (see Mussel, red) 3 (Oozy Creek, P.E.I.)
158 (settlement periodicity as fouling organisms, Bideford R., P.E.I.)
- Mohamed, Mohideen Peer 159 (various, in Canadian Arctic Archipelago)
J 28(9): 1342 (technique for measurement of carbon dioxide in fish) 185 (bibliography re Canada fishes parasitized by)
196 (in bottom fauna of Okanagan Valley lakes, B.C.)
- Moisture content (see also Composition, chemical; Drip) S 1470 (distributional checklist of B.C. marine, based on surveys since 1950)
J 23(5): 775 (equilibrium values for fresh & salt Atl. cod) 1587 (fossil, re Pleistocene paleoecology of Santa Barbara Is., Calif.)
(9): 1353 (pink salmon at various life-history stages) 1679 (sterols of 17 types of)
24(2): 243 (of sockeye salmon flesh re sexual maturity & starvation)
(8): 1693 (of pickle-salted vs. brine-salted Atl. cod)
26(8): 2030 (beach-spawning Nfld. capelin)
(11): 2843 (of steelhead trout during parr-smolt transformation)
27(5): 929 (of young sockeye salmon re growth parameters)
(12): 2215 (of Nfld. capelin)
T 288 (invertebrate feed of Atl. demersal fishes)
29i (herring, N.S. banks)
- Mola mola* (see Sunfish, ocean)
- Molds S 1165 (*Saprolegnia* & *Achlya* on pink salmon eggs)
- Møller, Dag J 27(9): 1617 (transferrin polymorphism)
- Mollienesia latipinna* (see Molly, sailfin)
- Mollusca (see also subclassifications and names of individual species, e.g. Abalone; Clam; Clams; Cockle; Drills; Geoduck; Limpet; Mussel; Octopus; Oyster; Pulmonata; Quahaug; Scallop; Shipworms; Snails; Squid, etc.; also Paralytic shellfish poisoning; Shell)
J 22(4): 977 (records from NW. Atl., 1946-61)
24(5): 1165 (shell-weight re age, of various types)
25(9): 1803 (caloric & sulfur content of several species, St. Margaret's Bay, N.S.)
26(1): 55 (among Wash. coast benthic infauna standing crop)
(1): 145 (zinc content)
(5): 1273 (in Atl. cod & haddock feed)
(8): 2016 (partitioning community respiration in a lake sediment)
28(1): 35 (differences upstream & downstream of a dammed Ont. lake)
(6): 849 (samplings from shallow stream bed)
(6): 928 (in feed of tidepool & fluffy sculpins)
29(4): 363 (review of feed & feeding habits of numerous USSR freshwater)
(4): 385 (review of sterols identified in many species)
(10): 1472 (shift in predominance with change of water-level below a river dam)
CNG 84 (popular description of some NE Pac. planktonic)
T 2 (distributional checklist & bibliography of Canada W coast marine)
- Molly, sailfin (*Poecilia latipinna*) (*Mollienesia latipinna*) J 27(10): 1869 (dieltrix toxicity to, through effect on triaminase)
- Molting; Ecdysis J 22(2): 453 (harp seals)
24(2): 435 (of E Pac. harbour seal)
(6): 1229 (& respiration of euphausiids)
(11): 2497 (insect molt-hormone activity of extract from Japanese yew branches)
25(9): 1763 (adverse conditions affecting lobster)
(10): 2251 (delay of lobster larvae)
26(4): 935 (codworm feeding behavior during)
(8): 2101 (changes in lobster protein serum during)
(10): 2737 (of female king crab re mating & reproduction)
27(9): 1653 (solitude effects on lobster larval periods of)
29(2): 143 (growth per molt of tagged Nfld. lobsters)
(4): 447 (timing, re female queen crab mating)
(8): 1229 (effects of eyestalk removal & ecdysterone infusion on lobster)
T 289 (lobster, Bonavista Bay, Nfld.)
S 1676 (behavior in snow (queen) crab)
1701 (ecdysterone assay method)
A 135 (endocrine levels effect on crayfish *Orconectes virilis* photoperiod of; also molting mortality)
138; 256; 263 (queen crab)
- Molva byrkelange* (see Ling, blue)
dypterygia (see Ling, blue)
- Molybdenum derivatives J 27(2): 317 (oxide for coding embedded encapsulated tags in animals)
S 1377 (content of Atl. & Pac. herring meals)
1529 (distribution in L. Ontario)
T 114 (content of Atl. & Pac. herring meals)
- Monachus schauinslandi* (see Seal, monk)
- Monakov, Andrej Vasiljevitsh J 29(4): 363 (aquatic invertebrates feeding studies in USSR)
- Money, Vida Gwen J 29(4): 429 (microbial burden of 25 aquarium fish feeds; correction on J30(8): 1257)

- Monkfish (*see* Goosefish)
- Monochrysis lutheri* (*see* Chrysophyta; Flagellata)
- Monodon monoceros* (*see* Narwhal)
- Monogenea (*see also* Trematoda)
 J 24(10): 2161 (*Gyrodactylus* parasitic on surfperches)
 26(9): 2319 (list of species found in B.C. marine fishes)
 29(3): 275 (parasites of Lake of the Woods fishes, Ont.)
- Monostroma* (*see* Chlorophyta)
- Monstrilloida (*see also* Copepoda)
 B 176 (synopsis of Canadian zooplanktonic)
 T 55; 313 (identification manual for B.C. marine)
- Moody, Mark (Martin)
 J 29(5): 576 (bluegill sunfish reaction to handling)
- Moon shell (*see* Drills, clam)
- Mooneye (*Hiodon tergisus*)
 J 27(4): 830 (mercury contamination in organs, Saskatchewan R.)
 S 1668 (mercury contamination, L. Winnipeg & Winnipegosis)
- Moonfish (*see* Opah; Panpano)
- Moonlight (*see* Light, reactions to)
- Moore, Barbara Anne
 J 22(4): 929 (salt-induced rancidity)
 23(1): 27 (rancidity in lean fish muscle)
 (5): 737 (TBA values from Atl. cod muscle)
 (9): 1385 (rancidity in cod fillets)
- Moore, Gary Stephen
 J 27(1): 31 (refrigerated fish protein patterns)
- Moose, Paul Henry
 J 28(9): 1293 (abundance estimate variance)
- Moose Lake, Man.
 J 28(5): 786 (heavy-metal concentrations in dressed lake whitefish & northern pike)
- Moravec, František
 J 28(10): 1645 (N and Central American species of *Rhabdochona*)
- Moray (*Gymnothorax javanicus*) (moray eel)
 J 26(8): 2208 (liver & flesh ciguatoxin activity re anticholinesterase action)
- Moridae (*see* *Halargyreus*; *Lepidion*)
- Moringua linearis* (*see* Eel, burrowing worm)
- Morley, Ronald Bruce
 J 25(12): 2695 (sockeye & pink salmon chilled ova & sperm)
 27(12): 2197 (parental influences on salmon development)
 29(1): 13 (pink salmon ova fertilization by sperm from treated juveniles)
 T 111 (salmon ova & milt)
- Morone americana* (*see* Perch, white)
chrysops (*see* Bass, white)
saxitilis (*see* Bass, striped)
- Morphogenesis (*see also* Morphology)
 S 1589 (*Dinoasteromonas* flagellates)
- Morphology; Morphometry (biological) (*see also* Abnormality; Anatomy; Cytology; Histology; Length; Meristic characteristics; Osteology; Size; Species, new; Species, new records; *also* names of organisms, organs, and tissues)
 J 22(1): 1 (new decapod species *Calocaris templemani*)
 (1): 69 (*Argis dentata* decapod larvae & megalops)
 (1): 139 (*Lampetra richardsoni* nonparasitic lamprey)
 (2): 259 (rare Nfld. skates)
 (2): 475 (new Plecoptera species)
 (3): 841 (and distribution of NE Pac. *Calycoptis nematophora*)
 (3): 857 (San Juan Is. six-gill shark)
 (4): 899 (re distinguishing skate species)
 (5): 1151 (2 NE Pac. Alepocephalidae fishes)
 (5): 1229 (re pygmy whitefish growth)
 (6): 1559 (widow rockfish)
 23(2): 189 (free-swimming copepod nauplii)
 (4): 521 (*Sphyrion lumpi* parasitic copepod)
 (6): 805 (*Bradyidius saanichi* calanoid copepod)
 (8): 1257 (*Pyrogopsis lemur* squid)
 (9): 1457 (longear sunfish)
 23(10): 1607 (Atl. cod digestive tract)
 (12): 1845 (freshwater fishes: mouth & body form re feeding ecology)
 J 24(3): 515 (copepod *Phrixecephalus cincinnatus*)
 (4): 887 (Great Lakes rainbow trout phenotypic characteristics)
 (6): 1407 (3 populations of lake char compared)
 (7): 1623 (California sea lion found off Nfld.)
 (8): 1763 (new trematode species *Aporocotyle margolisi*)
 (9): 1945 (new rockfish species *Sebastes reedii*)
 25(1): 101 (of white & largescale suckers re hybridization)
 (1): 181 (*Macdonaldia challengeri* tapirfish)
 (2): 321 (Chondranchthidae parasitic copepods)
 (2): 421 (longnose greeneye)
 (3): 439 (laboratory-reared blue king crab larvae)
 (3): 541 (*Pollinices* podium re expansion & locomotion)
 (4): 813 (sexual dimorphism in trouts anal fins)
 (5): 877 (*Halargyreus johnsonii*)
 (5): 943 (N American Atl. & Arctic coast *Anonyx* Amphipoda)
 (5): 1075 (NW Atl. pelagic stingray)

- (8): 1637 (*Cyphocaris bouvieri* amphipod)
 (9): 1775 (N.S. offshore sand lance)
 (9): 1923 (*Caligus curtus* parasitic copepod)
 (11): 2365 (2 new species of *Gyrocotyle* tapeworms)
 (11): 2403 (changes during parr-smolt coho salmon transformation)
- 26(2): 311 (4 Lernaeopodidae parasitic copepods)
 (2): 433 (blood, of 3 estuarine cyprinodontiform fishes)
 (2): 469 (shortnose greeneye off SW N.S.)
 (3): 543 (re polyteny of Ogac L., N.W.T., *Pseudocalanus*)
 (3): 629 (*Aeromonas salmonicida* bacteriophages)
 (4): 753 (metacercariae of 18 trematodes from S American fishes)
 (4): 787 (3 new genera of hemiurid trematodes from Australian fishes)
 (4): 793 (*Lepidophyllum cameroni*, new trematode species)
 (4): 805 (helminths from Nfld. fishes)
 (4): 821 (*Triaenophorus nodulosus* invasive stage in yellow perch)
 (4): 849 (*Cystidicola* nematodes re genus revision)
 (4): 865 (1 new *Pellucidhaptor* trematode)
 (4): 909 (*Pomphorhynchus laevis* acanthocephalan parasitization of Atl. salmon)
 (4): 921 (*Phrixecephalus cincinnatus* parasitic copepod)
 (4): 957 (2 trematode species (1 new) from S California fishes)
 (4): 997 (*Ergasilus* parasitic copepods re taxonomy)
 (4): 1013 (*Caligus elongatus* parasitic copepod)
 (4): 1037 (tetrarhynchian cestodes (1 new genus) from U.S. Atl. coast sharks)
 (4): 1063 (*Diclidophora* trematodes)
 (4): 1103 (nematodes from Australian birds)
 (5): 1237 (*Acantholiparis caecus* new liparid species)
 (5): 1383 (sockeye salmon shapes re gillnet selection)
 (6): 1407 (*Tanypleurus alcicornis* parasitic copepod)
 (6): 1451 (clam drill accessory boring organ)
 (6): 1680 (rare deep-sea cusk-eel, *Parabassogigas grandis*)
 (8): 2247 (infectious pancreatic necrosis virus in rainbow trout pancreatic tissue)
 (9): 2431 (brook stickleback: geographical variation)
 (10): 2595 (*Acrocirrus* & *Macrochaeta* polychaetes)
 (10): 2703 (variations with depth of Atl. seaweeds)
 (11): 2785 (effects of copper sulfate toxicity to winter flounder)
 (11): 2823 (of steelhead trout during parr-smolt transformation)
 (11): 2987 (*Salmincola* parasitic copepods)
 (11): 3043 (*Chondracanthus narium* parasitic copepod)
- 27(1): 161 (differences in L. Superior lake char re subspeciation)
 (1): 170 (stonecat, Red R., Man.)
 (1): 174 (manefish from Atl. waters off Canada)
- (3): 457 (genus *Lepidion* fishes in N Atl.)
 (3): 499 (daggertooth from various ocean arcas)
 (5): 865 (1 new & 8 other Lernaeopodidae parasitic copepods)
 (5): 923 (walleye re muscle myogen polymorphism regional variation)
 (7): 1285, (8): 1385 (viruses causing hematopoietic necrosis in salmonids)
 (9): 1501 (thecate hydroids of N Canada)
 (10): 1735 (landlocked sea lamprey metamorphosis)
 (10): 1757 (burbot subspecies: review)
 (10): 1847, (11): 2095 (bryozoan introduced into Strait of Georgia & Puget Sound on oyster seed from Japan)
 (11): 2104 (*Ammodytes dubius* & *A. hexapterus* sand lances in Nfld. area)
 (12): 2159 (*Brachiella lageniformis* parasitic copepod)
 (12): 2233 (*Sebastes aleutianus*-*S. melanostomus* complex, & of n.sp. *S. caenaemeticus*)
 (12): 2297 (9 calanoid copepod species as new records for N Pac.)
- 28(1): 23 (re taxonomic status of adult male *Calanus finmarchicus* & *C. glacialis*)
 (1): 31 (cestode & trematodes in N Atl. swordfish)
 (1): 73 (thermal springs dipteran herbivore *Hedriodiscus truquii*)
 (1): 98 (sternal spines re female shrimps spawning history)
 (3): 323 (*Lepeophtheirus* caligid copepod species parasitic to ocean sunfish)
 (3): 427 (osteology re tube-snouts & sticklebacks phylogeny)
 (4): 465 (lake char re intraspecific variations & post-glacial distribution)
 (4): 517 (*Vibrio anguillarum* bacterium)
 (4): 543 (Canadian freshwater leeches: in key)
 (5): 767 (new trematode species, *Labrifer balli*)
 (5): 771 (rainbow trout, L. Superior)
 (8): 1143 (of parasitic copepods locomotory parts)
 (10): 1373, 1393, 1407, 1429, 1437, 1445, 1455, 1469, 1483 (various current and new polychaete species)
 (10): 1527 (3 new hermit crab species, B.C.)
 (10): 1563 (2 new *Holobomolochus* parasitic copepod species)
 (10): 1621 (northern rockfish)
 (10): 1615 (new caridean shrimp species, *Eualus berkeleyorum*)
 (10): 1645 (7 *Rhabdochona* parasitic nematodes, including a new species)
 (11): 1796 (unusual Pac. gonatid squid of uncertain genus)
- 29(1): 1 (rare deep-sea eel *Xenomystax atrarius*)
 (3): 243 (3 sympatric *Arctogadus* & *Gadus* arctic codfishes)
 (4): 413 (shrimp larval stages)
 (5): 531 (largemouth bass liver)
 (8): 1145 (swimbladder, of 8 myctophid fishes)
 (8): 1173 (parental vs. hybrid johnny & tessellated darters)

- (9): 1277 (timing of changes in, during landlocked sea lamprey metamorphosis)
- (11): 1525 (comparative, of embryonic viviparous fishes)
- (11): 1565 (variation in *Lampsilis radiata* freshwater clam, by multivariate statistical analysis)
- (11): 1571 (development stages of *Caligus clemensi*)
- (12): 1667 (larval, of northern sand lance in NW Atl.)
- (12): 1673 (variations of *Ammodytes* sand lances in NW Atl.)
- (12): 1709 (differences in male gonads among 12 species of 9 Gadidae genera)
- B 162: 378 (re sockeye salmon stocks identification)
- 168: 23, 52 (butter clam, re paralytic shellfish poisoning)
- 169: 8 (Pac. oyster)
- 170 (& variation, of N American chironomids, including 33 new species)
- T 34 (arrowtooth & spinycheek flounder; rock & flathead sole; Pac. cod)
- 136 (larval swordfish)
- 141 (electronic recording digital calipers for distances to 10 cm)
- 160 (of 4 *Lepidion* morid fish species)
- 279 (abalone, B.C.)
- S 951 (*Caligus gurnardi* parasitic copepod)
- 1129 (re sockeye salmon distribution in N Pac. Ocean)
- 1263 (*Caligus longicaudatus* copepod)
- 1298 (*Salvelinema nematodes* buccal cavity)
- 1299 (*Salvelinema salmonicola* & *S. walkeri*)
- 1301; 1306 (type species of 2 new parasitic copepod genera)
- 1306; 1307 (copepods parasitic on Australian fishes)
- 1354 (rostellar hooks development in a cestode)
- 1374 (blue ling, Nfld. & W Greenland)
- 1398 (cultured L-cells affected by elemental phosphorus)
- 1429 (1 known & 2 new parasitic copepod species)
- 1483 (variation in *Lecithophyllum botryophorum* trematode)
- 1488 (new genus & species of dinoflagellates from Canadian Arctic lakes)
- 1496 (new genus & species of copepod from S India)
- 1499 (*Caligus rapax* syntypes re taxonomy)
- 1501 (*Haemobaphes intermedius* & *H. diceraus* parasitic copepods)
- 1533 (chironomids of a high mountain brook, Colorado)
- 1536 (deformed chironomids larvae)
- 1566 (new parasitic copepod species *Lernanthropus togatus*)
- 1568 (Eudactylinidae & Pseudocycnidae parasitic Copepoda)
- 1588 (*Harnischia* chironomids)
- 1589 (*Dinoasteromonas* flagellates, re discoasters)
- 1610(F) (new lernaepodid copepod, *Eubrachiella mugilis*)
- 1615 (chironomid general morphology & terminology)
- 1617 (a new genus & 4 new species of chironomids)
- 1667 (body proportions of black ruff)
- A 156 (icing & freezing effects on length & weight measurements of various Atl. commercial fishes)
- 157 (standard length re extreme total length re fork length conversion factors for Atl. cod)
- 158 (fork length re head girth of haddock)
- 159 (age re length of Atl. cod & haddock)
- Morphometry (biological) (see Morphology)
- Morphometry (physical) (see also Geology; Geomorphology; Glaciation; Limnology; Physiography)
- J 23(12): 1875 (of 9 Rocky Mt. Trench SE B.C. lakes)
- 27(2): 233 (2 mountain lakes, Banff National Park, Alta.)
- (8): 1335 (2 mountain lakes, Jasper National Park, Alta.)
- 28(2): 139 (of 16 small NW Ont. lakes)
- (2): 295 (re hypothesis to explain differences & similarities among small NW Ont. lakes)
- 29(6): 617, 629, & some other papers in this issue (of N America & European oligotrophic lakes, re salmonid communities past & present)
- T 98 (Little Codroy R. & estuary, Nfld.)
- 130 (factors affecting Nfld. streams)
- Morris, Byron
- J 27(12): 2297 (N Pac. calanoid copepods)
- Morris, Robert John
- J 29(9): 1303 (preservation of some oceanic animals for lipid analysis)
- Morrison, Alexander Baillie
- J 22(1): 13 (protein quality of Atl. cod)
- Morrison, Carol Marianne
- J 25(7): 1339 (Atl. scallop striated muscle)
- S 1422 (periodicities in filaments of adductor muscle of oyster)
- Morrison, George Edwin
- J 28(3): 379 (hardshell clam oxygen requirements)
- (12): 1907 (respiration in flounder)
- Morrison's Pond, N.S. (see Bras d'Or Lake, N.S.)
- Morse, Norman Harding
- B 175 (economic study of Maritime Provinces oyster fishery)
- Mortality (see also Disease; Insecticides; Lethal limits; Pesticides; Piscicides; Pollution; Predation; Survival; Toxicants)
- J 22(1): 33 (estimating for sockeye salmon; applications)
- (2): 597 (re cod predation on American plaice)
- (4): 913 (temperature effect on Windermere char eggs)
- (6): 1523 (rate in pink salmon)
- 23(2): 256 (rate, of lake whitefish, Georgian Bay)
- (10): 1507 (of otter-trawled haddock from fatigue)

- 24(1): 145 (fishing, re fishing effort for Arcto-Norwegian cod)
 (4): 709, 731 (of Atl. salmon & trout by insecticides)
 (4): 843 (chinook salmon from fungus attack)
 (7): 1627 (brook trout by an acanthocephalan invasion)
 (10): 2117 (in a L. Huron white sucker population)
 (11): 2355, 2431 (mathematical model for fishes)
 25(1): 81 (of trouts & shiners re limnology of 3 SW B.C. lakes)
 (3): 473 (after stress in salmon)
 (3): 555 (rates of S Gulf of St. Lawrence cod population)
 (4): 757 (marine, of pink salmon: mathematical treatment)
 (6): 1145 (re angling harvest of maskinonge in 2 Ont. lakes)
 (6): 1219 (estimation theory for Bristol Bay sockeye salmon oceanic)
 (6): 1291 (re age of exploitation: mathematical treatment)
 (7): 1359 (& survival re walleye exploitation in Nipigon Bay fishery, Ont.)
 (8): 1733 (of commercially caught spider crabs)
 (10): 2091 (lake whitefish, Lac la Ronge, Sask.)
 (10): 2169 (kinds of, experienced by Atl. salmon, Little Codroy R., Nfld.)
 (11): 2467 (from fungus attack on chinook salmon)
 26(3): 479 (effects of size-selective, on growth, mortality, production, & yield estimates)
 (3): 695 (mass, of brook trout & Atl. salmon in pesticide-polluted stream)
 (3): 701 (mass, of estuarine fauna due to abnormally low salinity, P.E.I.)
 (5): 1205 (in exploited American plaice stock)
 (12): 3133 (SW Nfld. cod: rates re landings, etc.)
 27(1): 204 (rate: graphical estimation of)
 (3): 413 (natural, re brook trout ecology, Matamek L., Que.)
 (5): 979 (dart-tagged sablefish through infection)
 (6): 1165 (fish & crayfish due to internal seiche of cold water, Georgian Bay, Ont.)
 28(1): 65 (L. Superior lake trout populations re lamprey invasion)
 (5): 745 (chinook & coho salmon sperm & eggs re fertilization by frozen preserved sperm)
 (5): 755 (harbour seal pups, Sable Is., N.S.)
 (7): 1057 (larval & juvenile fish in warm discharge canal of nuclear power plant)
 (8): 1107 (mathematical model of pollutant superimposed mortality in fathead minnow populations)
 (10): 1511 (of hatching Pac. salmon eggs, re bacterial flora associated with egg surfaces)
 (10): 1545 (Pac. herring eggs & early larvae, re temperatures & salinities)
 (10): 1573 (re animal production-biomass ratio)
 (10): 1666 (re population biostatistical analysis)
 (12): 1883 (winter kill of yellow perch & northern pike in Manitoulin Is. lakes (L. Huron))
 29(2): 207 (in rearing sablefish)
 (5): 469 (of dart- & disc-tagged northern pike)
 (7): 1043 (rate, in an unexploited walleye population)
 (7): 1089 (subcutaneous hemorrhage in captive sablefish)
 (8): 1131 (of small lakes fishes from atmospheric sulfur dioxide)
 B 153: 118 (rates, of B.C. petrale sole)
 161: 21 (rates, of goldeye)
 162: 67, 83, 131, 145, 365, 371 (sockeye salmon during life history stages)
 169: 113 (re Pac. oyster culture, B.C.)
 CAR 1 (details of Nfld. herring, caused by elemental phosphorus pollutant)
 T 108 (rates, rock sole, N Hecate Strait, B.C.)
 189 (tank-cultured sablefish)
 206 (Atl. salmon, during parr-smolt stages)
 226 (mass, of fish in NW Miramichi R., N.B., 1969)
 243 (tank-cultured sablefish)
 245 (mountain whitefish & rainbow trout, from uncertain causes, Kootenay L. & Lardeau R., B.C.; multispecies, from uncertain cause, tidal Nitinat L., B.C.)
 248 (phytoplankton, from zooplankton grazing, re marine productivity)
 319 (phytoplankton bloom & oxygen depletion as cause of sudden fish & shellfish mortality in Nanoose Harbour, B.C.)
 S 910 (causes of natural and fishing, sea scallops)
 940 (total, southern N.S. haddock)
 982 (re self-regulation of sockeye salmon population abundance)
 1053 (mass, of various Nfld. area sea fishes re low temperatures)
 1062; 1063; 1064 (B.C. salmon: sockeye, pink, chum)
 1182 (in digging soft-shell clams)
 1185 (haddock, ICNAF Subarea 3)
 1316 (rates, Scotian Shelf haddock)
 1318 (W Nfld. cod stock)
 1406 (salmon & suckers from bacterial disease, NW Miramichi R., N.B.)
 1494 (behavior of growth & mortality estimates based on age-length keys)
 1513 (phytoplankton, from zooplankton grazing, re marine productivity)
 1584 (herring, from coke-oven intermediate oil pollution in N Sydney harbour, N.S.)
 A 36 (Pac. herring spawn)
 108 (1966 Canadian ICNAF studies on Atl. seals & various Atl. fishes)
 135 (following *Oronectes virilis* crayfish molting)
 249 (fishing, re Atl. cod)
- Morton, Margaret Louise
 CHN 23 (superchilled Atl. cod storage)
 S 1367 (characteristics of cod stored at superchill temperatures)
- Moselaya cyclolepis* (see Rattail, smoothscale)
- Mosquitoes (see Culicidae)

- Mosquitofish (*Gambusia affinis*) (*Gambia affinis*)
 J 22(3): 732 (in Bow R. system, Alta.)
 26(9): 2395 (resistance to 28 insecticides by resistant vs. nonresistant fish)
- Moss, G. W.
 S 1411 (estimation of neutral sugars by gas-liquid chromatography)
- Motella tricerratus* (see Onos)
- Moulds (see Molds)
- Mounib, M. Said
 J 25(12): 2623 (Atl. cod sperm preservation)
 S 1135 (metabolism by fish sperm)
 1173 (pyruvate metabolism)
 1174 (cod pyruvate metabolism)
 1231 (cod sperm uricolytic enzymes)
 1236 (lipid biosynthesis by salmon sperm)
 1237 (carbon dioxide fixation by cod spermatozoa)
 1322 (pyruvate & glyoxylate metabolism by salmon eggs)
 1342 (fish aminotransferases)
 1650 (carbon dioxide fixation by rabbit & fish testes)
- Mount, Donald Irvin
 J 24(2): 429 (lethal endrin in blood of gizzard shad)
 26(9): 2449 (toxicity of copper to minnows)
- Mouse (see Mice)
- Moussette, Marcel
 CSG 44 (distribution of Atl. cod catches)
- Mouth (see also Jaw; Lip; Snout; Teeth)
 J 23(10): 1607 (Atl. cod morphology)
 (12): 1845 (re feed & body form of 14 freshwater fishes)
 (12): 1971 (anatomy re pelagic shrimps feeding habits)
 28(10): 1433 (role in terebellid polychaete tube building)
 29(12): 1761 (gape re age of immature yellow perch, as affecting size selection of *Daphnia pulex* feed)
 T 309 (& esophagus size of sablefish, re size of feed for tank culture)
 S 1298 (*Salvelinema* nematodes buccal cavity)
- Mouthbrooder, Mozambique (*Tilapia mossambica*) (see note in heading Tilapia)
- Movement (see also Behavior; Currents; Distribution; Locomotion; Marking; Migration; Swimming; Tagging; also names of organisms)
 J 22(4): 999 (of hatchery-reared lake trout in L. Superior)
 23(4): 499 (yellow perch under ice)
 (10): 1475 (cutthroat trout in open water)
 29(5): 535 (American eel in L. Ontario)
- Moxostoma anisurum* (see Redhorse, silver)
erythrurum (see Redhorse, golden)
macrolepidotum (see Redhorse, shorthead)
melanops (see Sucker, spotted)
rubresque (see Redhorse, greater)
valenciennesi (see Redhorse, greater)
- Mud (see Sediments)
- Mudminnow, central (*Umbra limi*)
 J 23(12): 1845 (mouth & body form re feeding ecology)
 25(6): 1199 (low temperature effects on feeding in 3 Ont. localities)
 29(3): 275 (2 parasites of, Lake of the Woods, Ont.)
 S 1128 (in a L. Superior bay)
- Mudminnow, Olympic (*Novumbra hubbsi*) (western mudminnow)
 J 26(12): 3183 (differential predation on red vs. black threespine stickleback)
- Mudminnow, western (see Mudminnow, Olympic)
- Mudpuppy (*Necturus maculosus*) (an amphibian)
 S 1226 (fatty acids positional distribution in triglycerides)
- Mudsucker (common name not given) (*Gillichthys seta*)
 J 28(11): 1809 (new record of lymphocystis viral infection, E Pac. coast)
- Mugil auratus* (see Mulletts)
cephalus (see Mullet, striped)
cunnesius (see Mulletts)
saliens (see Mulletts)
- Muir, Barry Sinclair
 J 26(1): 165 (function of gill dimensions)
 27(9): 1637 (fish gill ventilation)
 28(7): 947 (blood pathway and pressure drop in fish gills)
 29(1): 67 (oxygen consumption of aholehole re salinity, swimming, & feed)
 S 1361 (observations on gill modifications)
 1378 (gill dimensions of tunny)
 1409 (blood pathways in teleost gills)
- Mujib, Khwaia Abdul
 J 24(6): 1315 (Gadidae cranial osteology)
 26(2): 421 (osteology of *Brosme brosme*)
- Muktuk (food product from blubber & skin of white whale)
 S 1668 (mercury contamination in)
 1697 (freezing & canning, N.W.T.)
 1718 (organochlorine pesticide residues in)
- Mullet, gray (see Mullet, striped)
- Mullet, striped (*Mugil cephalus*) (gray mullet) (see also Mulletts)
 J 25(12): 2711 (muscle creatine kinase localization)

- (called "chub", *Leuciscus cephalus*, by authors)
- 28(11): 1811 (suitable for introduction into alkaline eutrophic lakes)
- S 1009 (occurrence of odd-numbered fatty acids in oil)
- 1695 (chinook salmon gonadotropin effect on testicular & ovarian development in immature)
- Mulletts**
- J 25(1): 197 (microorganisms isolated from diseased *Mugil cunnesius* (India))
- B 151; 151(F) (delicatessen products from)
- CCG 7: 33 (latent heat of freezing) (probably striped mullet)
- S 980 (brining time before smoking) (probably striped mullet)
- 1610 (new parasitic copepod from Tunisian *Mugil auratus* & *M. saliens*)
- 1718 (pesticide residues in Canadian commercially caught)
- Multivariate analysis (see also Computer programming; Mathematical treatment of data)**
- J 28(3): 369 (of X-ray spectroanalysis of sockeye salmon from different regions)
- 29(11): 1565 (re distribution & morphological variation in *Lampsilis radiata* clam in some central Canada lakes)
- T 87; 173; 311 (computer programming nonlinear response surfaces analysis)
- 200; 212 (of radioisotope X-ray fluorescence spectrometric data)
- 275 (computer programs for non-normal data)
- 276 (computer programs for multiple regression & analysis of covariance)
- S 1510 (re applying bioassay results to pollutants toxicity towards fish)
- 1580 (shallow-water marine benthos, P.E.I.)
- Mummichog (common) (*Fundulus heteroclitus*)**
- J 22(2): 635 (probable toxicity to warm-blooded animals)
- 25(8): 1739 (spinal ganglia position re taxonomy)
- (12): 2717 (upper lethal temperatures at various salinities after isosmotic acclimation)
- 26(2): 433 (blood morphology)
- (5): 1390 (distribution, Sable Is., N.S.)
- 27(1): 158 (cultured ovarian cell chromosome preparation & study)
- (2): 383 (effects of metal salts poisoning on 5 liver enzymes of)
- (3): 404 (temperature effects on serum protein components)
- (12): 2185 (histological & hematological response to cadmium chloride)
- 28(7): 999 (schooling vs. aggregation spacing & density)
- (8): 1208 ("hemagglutinogens")
- (9): 1225 (re cadmium poisoning)
- 29(9): 1367 (cadmium uptake from sea water containing added CdCl₂)
- T 255 (yellow phosphorus toxicity tests)
- 261 (bibliography for Gulf of St. Lawrence)
- MSP 14 (popular description (English & French))
- Mummichog, freshwater (see Killifish, banded)
- Munawar, Mohiuddin**
- S 1690 (L. Ontario phytoplankton composition & horizontal distribution, 1970)
- Mundie, John Harold**
- J 28(6): 849 (sampling benthos & substrate materials in shallow streams)
- S 1332 (diet of juvenile coho salmon in streams)
- 1605 (Chironomidae stream-drift re coho salmon fry diet)
- 1724 (traps for sampling emerging aquatic insects)
- A 271 (book review: Biological Studies of the English Lakes)
- 272 (book review: of Board Bulletin 170 on nearctic Chironomidae)
- Munidopsis quadrata* (see Lobster, squat)
- Munro, Ian Craig**
- J 22(1): 13 (protein quality of Atl. cod)
- Murai, Sueto**
- S 1156 (N Pac. offshore pink salmon)
- Murchelano, Robert Adrian**
- J 26(10): 2760 (algal foods bacterial flora for rearing bivalve larvae)
- Murphy, Garth Ivor**
- J 22(1): 191 (catch equation solution)
- Murphy catch equation**
- J 22(1): 191 (solution)
- 27(4): 821 (computer programming for)
- Murray, Alan Roderick**
- J 25(10): 2165 (salmon survival & utilization, Little Codroy R., Nfld.)
- 26(6): 1694 (Atl. salmon muscle damage in gillnets)
- T 98 (climatic & geomorphic aspects of Little Codroy R.)
- 130 (factors affecting Nfld. streams)
- A 123 (Nfld. salmon)
- Murray, Derek A. J.**
- J 28(7): 1043 (nitritotriacetic acid determination in inland waters)
- Murray, John**
- J 23(11): 1795 (hypoxanthine in Atl. salmon muscle)
- T 38 (Little Codroy R., Nfld., salmon counting fence)
- 84 (Atl. salmon & brook trout at Little Codroy R., 1954-63)
- S 1257 (counting fence for Atl. salmon)
- Musca domestica* (see Muscoidea)

Muscoidea (housefly) (*see also* Diptera)

- J 24(1): 2497 (*Musca domestica* for assay of insect molt-hormone activity of Japanese yew extract)
S 1146 (oxidase-peroxidase system of)

Muscle (*see also* Actomyosin; Drip; Fillets; Flesh; Myogen; Myoglobin; Myosin; Protein; Quality of fishery products; Rigor; Steaks; Tropomyosin)

- J 22(1): 83 (postmortem glycolytic changes in Atl. cod)
(3): 643 (lysolecithinase in Atl. cod)
(3): 653 (pH re halibut flesh chalkiness)
(3): 861 (cause of orange-red color in scallops)
(4): 929 (oxidative rancidity in lean cod)
(6): 1397 (lateral: effort metabolism of carp)
23(1): 65, (4): 471, (9): 1461 (effect of activity on metabolism, in rainbow trout)
(4): 527 (glycogenolytic enzymes in Atl. cod)
(5): 673 (free drip & pH re chalkiness, in Pac. halibut)
(5): 737, (10): 1587 (iron salts effect on rancidity test)
(6): 921 (nucleotide interference with glycogen determination in red & white, of Atl. cod)
(7): 1025 (lipids of fresh vs. frozen Atl. cod)
(12): 1821 (nucleotide degradation re quality of ordinary and red, of swordfish)
(12): 1913 (histopathology of induced inflammation in Pac. oyster)
24(2): 273 (choline derivatives in chilled rainbow trout)
(2): 357 (α -tocopherol & lipids content, fish & shellfish)
(3): 607, 613 (condition, lipid content, & lipid fatty acids seasonal changes in Atl. cod)
(3): 651 (postmortem physicochemical changes in unfrozen Atl. cod)
(4): 873 (protein in extracts of scallop)
(8): 1701 (rainbow trout disturbance effects on adrenaline & catecholamine in skeletal)
(8): 1717 (adenosine monophosphate aminohydrolyase in Atl. cod prerigor & postrigor)
(8): 1837 (nucleotide degradation re postmortem changes in relaxed Atl. cod)
(9): 1945 (protein electropherograms of *Sebastes* species)
(11): 2229 (hypoxanthine formation in iced yellow walleye)
(11): 2339 (weight in lobster re serum proteins, hemocytes, & hepatopancreas)
(12): 2549 (ultrastructure of Atl. cod white striated myotomal)
(12): 2555 (phospholipase A activity in rainbow trout)
25(2): 239 (adenine nucleotide degradation products as quality criteria in chilled fresh & thawed mackerel)
(4): 738 (lactate, glycogen, & pH of Atl. cod, after freezing)
(5): 837 (lactic acid and glycogen of Atl. cod, after exercise)
(6): 1247 (white skeletal of Pac. salmon re transaminases activity)
(7): 1317 (proteins inheritance in reidside shiner \times peamouth chub hybrids)
(7): 1339 (ultrastructure of scallop striated)
(7): 1475 (tripolyphosphate dip to reduce drip loss)
(8): 1525 (quantitative glycogen & Δ 7P extraction from frozen cod)
(8): 1539 (postmortem degradation in fish)
(8): 1555 (starvation effect on rainbow trout free fatty acids)
(8): 1581 (2 forms of malic enzyme in fish muscle sarcoplasm)
(9): 1797 (dieldrin accumulation in goldfish, after aldrin ingestion)
(9): 1987 (temperature of recently caught marlin, etc., red & white)
(10): 2059 (protein extractability re free fatty acids in iced cod)
(10): 2157 (dissolution of homogenates, by lysolecithin)
(11): 2461 (accumulation of natural ^{65}Zn in crustacean)
(12): 2711, 2715 (fish muscle creatine kinase)
26(2): 325 (indirect color enhancement of trouts & pink salmon)
(5): 1368 (fluorescence of white sucker)
(6): 1597 (nucleotide degradation in frozen swordfish)
(6): 1694 (damage from nylon gillnetting of Atl. salmon)
(8): 2234 (color of raw & cooked Atl. salmon, vs canned Pac. salmon)
(8): 2237 (inhibitory agents for free fatty acid liberation from trout muscle during cold storage)
(10): 2621 (glycolytic & nucleotide changes in critical freezing zone of prerigor Atl. cod)
(10): 2633 (polymorphism of sablefish)
(10): 2727 (fatty acids reaction with Atl. cod muscle protein iced then frozen)
27(1): 83 (nucleotides degradation in sea scallop adductor muscle during iced storage)
(3): 604 (trigonelline & homarine occurrence in sea scallop adductor muscle)
(4): 701 (protein extractability in marine fishes & shellfishes as affected by metal ions & amino acids)
(4): 801 (glucose levels in fresh *Tilapia*)
(4): 830 (mercury pollution, in Saskatchewan R. fishes)
(5): 857 (mitochondria re fatty acid oxidation in trout)
(5): 923 (myogen polymorphism re walleye morphology)
(5): 943 (dehydrogenase phenotypes re Pac. ocean perch genetics)
(5): 973 (carotenoids in spawning & prespawning sockeye salmon)
(6): 1051 (deposition of ingested ^{65}Zn in euphausiids & shrimps)
(6): 1115 (multiple lactate dehydrogenase isozymes in lake whitefish)
(6): 1131 (in vivo uptake of elemental phosphorus from water by cod)

- (11): 1997 (postmortem glycolytic & other biochemical changes in white sucker & northern pike white)
- (12): 2374 (chlorinated hydrocarbon insecticide residues in winter flounder)
- 28(1): 1 (dimethylamine & other amine formation in stored frozen light vs. dark muscle of various Atl. coast fishes)
- (1): 59 (DDT residues in N.B. & P.E.I. fishes & shellfishes)
- (6): 869 (octopine formation in sea scallop, as possible freshness index)
- (7): 1005 (multiple malate dehydrogenase isozymes of walleye skeletal, re genetics)
- (7): 1053 (genic polymorphism of tetrazolium oxidase in bluefin tuna)
- (8): 1191 (fatty & amino acids of Dungeness crab skeletal)
- (8): 1203 (field technique for obtaining small samples from living fish)
- (9): 1325 (postmortem changes in glycogen phosphorylase activity in sucker & pike)
- (11): 1745 (myogens & lactate dehydrogenase of suckers)
- (12): 1837 (lysolecithin solubilizing effect on extractability of several tissues of rainbow trout)
- 29(1): 85 (catheptic activity of, in 13 Atl. fishes, queen crab, & lobster)
- (2): 149 (histopathology of skeletal, in channel catfish hemorrhagic virus disease)
- (7): 1053 (yellow elemental phosphorus stability in Atl. cod edible, during various types of processing)
- (8): 1125 (identification of various volatiles developed in ice-stored canary rockfish ground)
- (11): 1644 (mercury in Atl. harbour porpoise mostly as methylmercury)
- B 160 (changes in salt content, nitrogenous constituents, etc., in fish held in refrigerated sea water)
- 168: 22; 177: 27 (paralytic shellfish toxin in shellfishes adductor)
- T 198 (lipids, fatty acids, & tocopherol of queen crab)
- 256 (scallop meat size, Georges Bank commercial fishery)
- S 894 (adenine-deaminating enzymes in lingcod)
- 1043 (Atl. cod red vs. white: postmortem glycolytic metabolites)
- 1049 (guanine deaminase of lingcod)
- 1073 (enzymes of Atl. herring)
- 1117; 1124 (review of postmortem changes in sugars, sugar phosphates, etc., in fish)
- 1224 (hormone conversion by lobster)
- 1261 (adenine nucleotides postmortem degradation in lobster)
- 1349 (heat treatment isolation of tropomyosin from Atl. cod)
- 1370 (lactate dehydrogenase subunits in Atl. cod & tomcod)
- 1402 (glycogen phosphorylase in rainbow trout)
- 1419 (5²nucleotidase in Pac. cod)
- 1422 (periodicities in thick filaments of oyster adductor)
- 1459; 1506 (sterols of sea scallop)
- 1509 (accelerated denaturation of rabbit & trout myosin in frozen solution)
- 1527 (sterols of crustacean)
- A 29 (changes in fish passing through rigor while held in refrigerated sea water)
- 30 (glycogen & adenosine phosphate degradation in fish)
- 32 (enzymic removal of carbohydrate in, re inhibition of browning)
- 69 (review of chemical changes in frozen, re organoleptic quality)
- 130 (review of nutritional value & preservation)
- 146 (lipid catabolism in fish: review)
- Musick, John Andrew
J 26(2): 473 (sculpin occurrence and spawning)
- Muskellunge (*Esox masquinongy*) (Maskinonge)
J 22(5): 1261 (hybrids with other Esocidae)
23(11): 1663 (muscle myogens electropherogram)
25(6): 1145 (angler harvest re mortality in 2 Ont. lakes)
(9): 1831(F) (age & growth in 4 Que. lakes)
26(1): 175 (distinguishing filets or remains from those of northern pike)
29(3): 275 (8 parasites of, Lake of the Woods, Ont.)
(5): 579 (chromosome karyotypes of, & of hybrid ("tiger muskie") with northern pike, re evolution)
(5): 1283 (cadmium content, in New York State waters)
T 261 (bibliography for Gulf of St. Lawrence)
A 201 (mercury contamination in Great Lakes)
- "Muskie, tiger" (see Muskellunge)
- Mussel, bay (Atlantic) (see Mussel, blue)
- Mussel, bay (Pacific) (*Mytilus edulis*)
J 23(8): 1265 (occasional toxicity in Strait of Georgia)
26(1): 190, (8): 2245 (*Mytilicola orientalis* parasitic copepod in)
B 168: 33 (toxicity tests, B.C.)
179: 59 (experimental culture, B.C.)
- Mussel, black (see Mussel, blue)
- Mussel, blue (*Mytilus edulis*) (Atlantic bay mussel; black mussel)
J 22(2): 281 (light effect on growth)
24(2): 357 (α -tocopherol & lipids in unfed held)
25(2): 267 (occurrence & retention of the tin derivative from feed)
26(3): 701 (mortality from unusually low P.E.I. estuarine salinity)
(12): 3237 (feed in ration re growth analysis of European plaice)
27(10): 1898 (2 digestive tract enzymes)
28(1): 59 (DDT residues in N.B. & P.E.I.)
(5): 793 (yellow phosphorus concentration in body, N.S.)

- (9): 1225 (cadmium toxicity tests)
 (11): 1733 (respiration rate)
 29(4): 385 (review of sterols isolated from)
- B 154: 127 (as Nfld. resource)
 177 (re paralytic shellfish poisoning, E Canada)
- T 158 (settlement periodicity as fouling organism, Bideford R., P.E.I.)
 159 (in Canadian Arctic Archipelago)
 225 (Bay of Fundy)
- S 891 (water-pumping behavior recording apparatus)
 1569 (determination of residual fuel oil contamination in)
 1604 (chlorinated pesticide residues in, Miramichi Bay, N.B.)
 1679 (sterols)
- Mussel, horse (*see* Mussel, red)
- Mussel, red (*Volsella (Modiolus) modiolus*) (horse mussel)
 J 22(5): 1137 (low toxicity from *Gonyaulax*)
 24(2): 357 (α -tocopherol & lipids in unfed held)
 25(2): 267 (occurrence & retention of thetin derivative from feed)
 28(11): 1733 (respiration rate)
 29(9): 1347 (fuel oil residues in, 26 months after spill in Chedabucto Bay, N.S.)
- B 154: 127 (as possible Nfld. resource)
 177 (re paralytic shellfish poisoning, E Canada)
- Mussel, ribbed (*Volsella demissa*)
 J 24(2): 357 (α -tocopherol & lipids in unfed held)
 25(2): 267 (occurrence & retention of thetin derivative from feed)
 28(4): 527 (upper lethal temperatures re osmotic stress)
- T 155 (zonation in Bideford R. tidal zones, P.E.I.)
- Mussel, sea (*Mytilus californianus*)
 B 168: 18 (re paralytic shellfish poisoning in B.C.)
 179: 60 (potential use, B.C.)
- Mussels, freshwater
 J 24(3): 679 (tumor-like growth on foot of *Anodonta californiensis*)
 (5): 1165 (shell-weight re age of *Unio pictorum*, *U. tumidus*, & *Anodonta* in British waters)
 25(12): 2691 (⁶⁵Zn metabolism in *A. californiensis*)
 27(10): 1898 (2 digestive tract enzymes in *Elliptio complanatus*)
 28(11): 1695 (associations & species diversity, Bay of Quinte, Lake Ontario)
 28(12): 1877 (accumulation & persistence of DDT in)
 29(11): 1565 (*A. grandis* in some central Canadian lakes)
- Mussels, marine (*see also* Mussel headings)
 J 29(11): 1633 (*Vibrio parahaemolyticus* in some Canadian Atl.)
 T 2 (checklist & bibliography of B.C.)
 S 1470 (checklist & bibliography of B.C.)
- Mustela vison* (*see* Mink)
- Mustelicola woodsholei*
 J 26(4): 1037(F) (new genus & species of cestode)
- Muth, Kenneth Maxwell
 J 25(1): 1 (hatchery-reared & wild Atl. salmon behavior)
 26(8): 2252 (broad whitefish age & growth)
- Mya arenaria* (*see* Clam, mud; Clam, soft-shell)
- Mycteroperca bonaci* (*see* Grouper, black)
venenosa (*see* Grouper, yellowfin)
- Myctophidae (*see* Headlightfish; Lampfish; Lanternfish; Lanternfishes)
- Myctophum californiense* (*see* Lanternfish, bigfin)
nitidulum (*see* Lanternfishes)
punctatum (*see* Lanternfish, spotted)
- Myers, Betty June
 J 26(4): 793 (nematodes from Malaysia)
- Mylocheilus caurinus* (*see* Peamouth)
- Myogen (*see also* Muscle; Myosin)
 J 22(1): 203, 215 (electropherograms re fish biochemical systematics)
 (3): 767 (of parental vs. hybrid Salmonidae)
 23(1): 101 (of *Oncorhynchus* re interspecies relationships)
 (10): 1599 (of Salmonidae re interrelationships)
 (11): 1663 (of muscle of various fish families re relationships)
 24(2): 299 (of Catostomidae re speciation)
 (6): 1269 (electropherograms of lamprey muscle)
 27(5): 923 (polymorphism re walleye morphology variations)
 (12): 2167 (electrophoresis re *Tilapia* hybrids)
 28(11): 1745 (of dwarf & large white suckers & of long-nose sucker)
 29(8): 1173 (electropherograms of parental vs. hybrid johnny & tessellated darters)
- Myoglobin (*see also* Muscle)
 J 26(9): 2299 (effect on marine flesh lipids oxidation)
 B 150: 15 (role in "greening" of albacore & tuna flesh during precooking before canning)
- Myosin (*see also* Actomyosin; Muscle; Myogen; Tropomyosin)
 J 23(4): 563 (preparation & properties of rainbow trout)
 24(7): 1607 (amino acids of trout muscle)
 S 1195 (reaction with malonaldehyde re trout muscle denaturation)
 1509 (accelerated denaturation of rabbit & trout, in frozen solution)
 1561 (sulfhydryl content of rainbow trout & rabbit, re protein stability)

Myoxocephalus aeneus (see Grubby)

- octodecempinosus* (see Sculpin, longhorn)
quadricornis (*quadricornis*) (see Sculpin, fourhorn)
quadricornis thompsoni (see Sculpin, fourhorn)
scorpioides (see Sculpin, Arctic)
scorpius (see Sculpin, shorthorn)
thompsoni (see Sculpin, fourhorn)

Mysidacea

- J 22(4): 969 (Algonquin Park, Ont., distribution of *Mysis relicta*)
 24(2): 463 (*M. relicta* introduction into 2 B.C. lakes as trout feed)
 (5): 1101 (*Gnathophausia gracilis* fatty acids composition)
 27(7): 1239 (*M. relicta* re long-term zooplankton changes, Kootenay L., B.C.)
 (9): 1661 (as flathead sole feed)
 (10): 1864 (*M. relicta* not an infective carrier of *Echinorhynchus salmonis* acanthocephalan parasite to lake trout)
 28(2): 257 (*M. relicta* in zoobenthos of 15 small NW Ont. lakes)
 29(2): 187 (*Neomysis integer* caloric content)
 (12): 1701 (*M. relicta* growth, life history, & respiration in an arctic vs. a temperate lake)
 B 176 (species in Canadian marine zooplankton)
 T 55: 93 (identification of B.C.)
 333 (*M. mixta* & *Erythrops erythroptalma* biomass measurements, St. Margaret's Bay, N.S.)
 S 1004 (*M. relicta* re Canadian Arctic Islands marine glacial relicts)
 1128 (in benthos of 4 L. Superior bays)
 A 14 (Great Bear L., N.W.T.)

Mysis (see Mysidacea)*Mytilicola orientalis* (see Cyclopoida)*Mytilus californianus* (see Mussel, sea)
edulis (see Mussel, bay (Pacific); Mussel, blue)

Myxophyceae (see Cyanophyta)

Myxosoma cerebralis (see Whirling disease)

Myxosporidea (see also Sporozoa)

- J 22(3): 849 (*Henneguya salmonicola* parasitic in Pac. salmon)
 26(4): 725 (taxonomic review of fish parasitization by)
 27(5): 955 (W US rainbow & cutthroat trout epizootics of *Myxosoma cerebralis* causing whirling sickness)
 29(3): 275 (parasites of Lake of the Woods fishes, Ont.)
 MSP 16 (re fish diseases in Canada)

N

Nabisipi River, Que.

- J 23(7): 947 (juvenile Atl. salmon & tagging results)

Naevdal, Gunnar

- J 26(5): 1397 (harp seals polymorphism)

Nagayama, Fumio

- S 1071 (cholesterol glucopyranosiduronate)

Nakai, Shurye

- S 1531 (casein & polyethylenimine)

Nakamura, Royden

- J 28(6): 928 (food of tide-pool Cottidae)

Nakano, Tomoo

- J 24(8): 1701; 25(3): 603 (trout catecholamine and carbohydrate concentrations)

Nakatani, Roy Eiji

- J 24(4): 867 ("gas-bubble" disease in salmon)
 25(3): 591 (growth effect on metabolite retention time)
 (12): 2691 (⁶⁵Zn in freshwater mussel)
 28(9): 1253 (*Chondrococcus columnaris* disease)
 (11): 1739 (disease susceptibility of young trout and salmon)

Nakken, Odd

- J 27(4): 737 (2 sonic measuring systems)

Nalewajko, Czeslawa

- J 23(8): 1285 (freshwater planktonic algae composition)
 (11): 1715 (phytoplankton in L. Ontario)
 27(8): 1405 (S. Ont. lakes chemistry; corrections on J 28(8): 1219)

Nanensia candida (see Argentine, bluethroat)*Nannochloris* (see Chlorophyta)

Nanoose Harbour, B.C.

- T 319 (phytoplankton bloom & oxygen depletion as cause of sudden fish and shellfish mortality)

Naobranchia (parasitic copepods)

- S 1307 (on Australian fishes)

Narayanan, Memana

- J 28(9): 1342 (technique for measurement of carbon dioxide in fish)

Naragansett Bay, Rhode Island

- J 23(2): 189, (3): 415 (free-swimming copepod nauplii: descriptions; key; seasonal occurrence; abundance)

Narver, David Wells

- J 24(10): 2045 (Babine L. primary productivity)
 (10): 2189 (primary production in 2 B.C. lakes)
 25(1): 157 (*Mesidotea entomon* in Alaska)

- 26(2): 405 (stickleback phenotypic variation)
 (5): 1363 (Owikeno L. productivity)
 (10): 2754 (Babine R. steelhead trout age & size)
 27(2): 281 (diel vertical movements of sockeye; correction on J 27(8): 1499)
 CNG 91 (Vancouver Is. steelhead trout age & size)
 T 323 (possible effects of logging on trouts & coho salmon of 2 E Vancouver Is. streams)
- Narwhal (*Monodon monoceros*)
 J 26(1): 143 (attacks by Greenland sharks)
 MSP 13; 13(F) (actual & potential Canadian Arctic fishery)
 A 75 (Canadian Arctic studies, 1965)
 231 (actual & potential Canadian Arctic fishery)
- Nash, Frank William
 J 29(5): 590 (likelihood analysis of 3-way contingency tables)
 T 251 (length-girth relations for Pac. ocean perch)
 335 (computer analysis of ultrasonic tracking sockeye salmon in Babine L., B.C.)
- Nasopalatine canals
 S 1574 (oral remnants of, in fin whales)
- Nass River, B.C. (*see also* Salmon)
 S 1230 (spawning populations of sockeye & other salmon)
- Nassarius obsoletus* (*see* Snails, marine)
- Natantia (shrimps)
 J 23(8): 1135 (NE Pac. oceanic depth distribution)
- Natarajan, Arayapuram Vaidyanathaswami
 J 26(11): 3073 (derivation of average lengths of different age-groups of fishes)
- National Parks, Canadian (*see* Banff National Park; Jasper National Park; Waterton Lakes National Park; Yoho National Park) (*see also* Algonquin Park (provincial))
- National Parks, USA (*see* Yellowstone Lake)
- Nauplii
 J 23(2): 189, (3): 415 (of free-swimming copepods)
- Nautichthys oculofasciatus* (*see* Sculpin, sailfin)
robustus (*see* Sculpin, smallsail)
- Nauwerck, Arnold
 S 1690 (L. Ontario phytoplankton composition & horizontal distribution, 1970)
- Navicula grevillei* (a benthic marine alga)
 J 24(1): 33 (vertical distribution, Indian Arm, B.C.)
- Nayyar, S. K.
 S 1593; 1630 (salmon hormones gonadotropin effects on hypophysectomized catfish testes & seminal vesicles)
- Neal, Wanda Eloise
 J 23(1): 27 (rancidity in lean fish muscle)
 (5): 737 (TBA values from Atl. cod muscle)
 (9): 1385 (rancidity in Atl. cod fillets)
 24(2): 221 (radiation effect on storage of cooked lobster)
 25(5): 921 (frozen cod muscle TMA)
 27(4): 701 (fish muscle protein)
 (10): 1685 (frozen fish DMA)
 28(1): 1 (DMA in muscle of gadoid fish)
- Nealotus tripes* (a gempylid fish)
 J 24(5): 1177 (new to Canadian Atl.)
 25(5): 916 (X-ray showing effect of attack by swordfish)
- Neate, Harry
 S 1262 (gear for electrofishing coho salmon)
- Neave, Ferris
 S 899 (Pac. salmon ocean stocks & fishery developments)
 1063 (pink salmon in B.C.)
 1064 (chum salmon in B.C.)
 1156 (N Pac. pink salmon)
- Neave, Nancy Mae
 J 23(10): 1617 (buoyancy in Atl. salmon)
- Nebraska
 J 28(11): 1811 (freshwater fishes tolerance to alkalinity in eutrophic lakes & ponds)
- Necrosis (*see* Disease; Virus)
- Nectobranchia indivisa* (*see* Lernaepodidae)
- Nectoliparis pelagicus* (*see* Snailfish, tadpole)
- Necturus maculosus* (*see* Mudpuppy)
- Needler, Alfred Walker Hollinshead
 J 27(12): 2333 (obituary of W. M. Chapman)
- Needler, George Treglohan
 J 24(8): 1827 (aliasing effects on oceanic variability)
- Neilsen, John Rickart
 J 23(9): 1319 (mating behavior of Dungeness crab)
- Neish, Iain Charles
 J 28(1): 49 (salamander populations in Marion L., B.C.)
- Nelson, Joseph Schieser
 J 22(3): 721 (dams and fish introduction effects on fishes of Kananaskis R. system, Alta.)
 25(1): 101 (*Catostomus commersonii* & *C. macrocheilus* hybridization & isolating mechanisms)
 (2): 409 (N American kokanee distribution & nomenclature)
 (2): 415 (N American kokanee gillraker variation)

- 26(9): 2431 (variation in *Culaea inconstans*)
 28(3): 427 (comparison of the Aulorhynchidae & Gasterosteidae)
- Nematocera* (see Diptera)
- Nematocysts
 J 28(10): 1677 (types in a sea anemone)
- Nematoda (hookworms, roundworms) (see also Helminths; Parasites)
 J 22(6): 1387 (*Dactinis*, etc., re Pacific salmon biological information)
 24(3): 629 (*Anisakis* infestation as indicator of surf smelt populations heterogeneity)
 (9): 1911 (descriptions; parasitic on Nfld. freshwater fishes)
 (10): 2161 (*Anisakis* & *Cucullanus* parasitic on surfperches)
 25(12): 2749 (possible effects of harbour seal bounty on Atl. cod infestation by *Phocanema* codworm)
 26(4): 793 (checklist of, from Sabah fishes, amphibians, & reptiles)
 (4): 805 (of Nfld. fishes)
 (4): 813 (*Contraecum* larvae in pink salmon)
 (4): 833 (in yellow perch, Bay of Quinte, Ont.)
 (4): 849 (revision of *Cystidicola* genus)
 (4): 935 (*Phocanema decipiens* molting cycle feeding habits)
 (4): 941 (*Philonema oncorhynchi* invasion route to sockeye swimbladder)
 (4): 1103 (including a new species, *Capillaria thomascameroni*, from Australian gulls & terns)
 (9): 2319 (list of species in B.C. marine fishes)
 27(2): 221 (in reservoir benthic fauna)
 (5): 963 (*Anisakis*, *Contraecum aduncum*, & *Phocanema decipiens* identified in marine tissues by ultraviolet fluorescence)
 (7): 1317 (2 species parasitic in Labrador longnose & white suckers)
 (10): 1894 (parasite of Nfld. salmonids & coregonids)
 (12): 2215 (infection of Nfld. capelin by *Contraecum*)
 28(10): 1385 (various Polychaeta as intermediate hosts of)
 (10): 1645 (N & Central America distribution of *Rhabdochona*, including a new species *R. canadensis*; descriptions of 5 other species & key to genus)
 29(2): 179 (*A. simplex* as indicator re possible *Salmo salar* subspeciation)
 B 162: 94, 378 (*Dactylis truttiae* & *Philonema oncorhynchi* re sockeye salmon stocks identification)
 T 43 (on Irish moss)
 48 (parasitic to lampreys)
 134 (as indicator species for distinguishing Atl. salmon stocks)
 160 (3 species found in *Lepidon eques* morid fish)
 185 (bibliography re Canada fishes parasitization by)
- 196 (in bottom fauna of Okanagan Valley lakes, B.C.)
 291 (*Anisakis* incidence in Atl. herring)
 S 1001 (in Risso dolphin stomach)
 1206 (*Anisakis* parasitic in Atl. salmon liver)
 1255 (*Contraecum* parasitic in capelin)
 1267 (*Cystidicola*, *Metabronema*, & *Rhabdochona* (Japan) taxonomy re *Oncorhynchus* parasitization)
 1298 (*Salvelinema* buccal structure)
 1299 (Cystidicolinae parasites of Pac. salmon)
 1299; 1300 (*Salvelinema walkeri* parasitic in coho salmon swimbladder)
 1450 (parasitic to northern world coregonid fishes: review)
 1487 (diseases & other effects of parasitization on fishes: review)
 1532 (Tylenchidae of a high Colorado mountain creek)
 1565 (instrument for removing cephalic sections)
 1640; 1641; 1644 (*Anisakis* larvae incidence in Canadian Atl. herring; use as indicator species for stocks)
 1658 (*Ezonema bicornis*: new genus & species of Seuratidae, found in 2 Japanese freshwater fishes; key to Seuratidae)
 1681 (revised annotated list of, from W coast N America marine mammals)
 A 181 (*Anisakis* as parasitic indicator of geographical origin of Atl. salmon stocks)
 219 (*Anisakis* incidence variations in Atl. herring from different Canadian areas)
 224 (parasitic to N American, USSR, & European coregonid fishes)
- Nematonurus cyclolepis* (see Rattail, smoothscale)
- Nemertea (ribbonworms)
 J 29(8): 1234 (*Cerebratulus lacteus* in Bideford R. estuarial benthos, P.E.I.)
 B 179: 12 (*Malacobdella grossa* commensal with B.C. clams)
 T 25; 35; 59; 60; 73 (in Strait of Georgia benthos biomass)
- Nemichthys avocetta* (see Snipe eel, slender)
scolopaceus (see Snipe eel, slender)
- Neoamphitrite robusta* (terebellid polychaete)
 J 28(10): 1433 (tube-building re feeding)
- Neobrachiochondria quadrata* (see also Cyclopoida)
 S 1358 (new genus & species, on Australian fish)
- Neodymium derivatives
 J 27(2): 137 (oxide for coding embedded encapsulated tags in animals)
- Neohaustorius biarticulatus* (see Amphipoda)
- Neoscopelarchoides dentatus* (see Pearleye, northern)
- Nepszy, Stephen Joseph

- J 29(6): 969 (species introductions effects on oligotrophic lakes salmon communities)
 (11): 1639 (*Glugea hertwigi* microsporidian parasite occurrence re associated mortality of L. Erie rainbow smelt)
- Neptune, ten-ridged (*see* Whelk, ten-banded)
- Neptunea decemcostata* (*see* Whelk, ten-banded)
- Nereis* (*see* Polychaeta)
- Nereocystis* (*see* Phaeophyta)
- Nerve system
 J 25(8): 1739 (taxonomic correlation of spinal ganglia position in teleosts)
 (9): 1797 (dieldrin accumulation in goldfish spinal cord after aldrin ingestion)
 (12): 2677 (DDT effect on brook trout lateral line response)
 27(11): 1927 (re Atl. salmon parr taste responses)
 S 1181 (*Cerianthus* sea anemone responses)
 1324 (DDT sublethal effect on brook trout)
 1550 (re Atl. sea raven gill proprioceptors reflexes)
- Nessorhamphus ingolfianus* (*see* Eel, duckbill oceanic)
- Nets; Netting (*see also* Fishing methods; Gear, fishery; Gill-nets; Plankton; Sampling; Selectivity of fishing gear; Traps; Trawl)
 J 24(4): 709, 731, 769, 823 (for determining effects of forest insecticide sprays on Atl. salmon, trout, & aquatic insects)
 25(6): 1161 (for sampling tidewater Atl. herring larvae)
 26(8): 2240 (otter surface sampler for neuston)
 B 162: 219, 220 (plankton)
 CPO 1965-(comparison of, for zooplankton)
 T 37 (selection for coastal zooplankton observations)
 38 (estuarine, for trapping Atl. salmon)
 264 (fluid mechanics of nets, netting, & low-solidity screens)
 S 928 (catch size effect on otter trawl selectivity)
 954 (minimum mesh sizes for different materials, re ICNAF regulations)
 1084 (trap, for harp seals)
 1257 (estuarine, for trapping Atl. salmon)
 1281 (field tests for synthetic fibers used in)
 1493 (assessments of effects of increasing mesh size of Atl. cod trawls)
 1724 (suspended, for collecting emerging aquatic insects)
 A 129 (synthetic fibers, used for fishing gear)
- Nets, trap (*see* Traps)
- Neuroptera
 J 26(5): 1157 (*Silas* distribution in a small Que. stream)
 27(1): 125 (re lake trout feed, L. Opeongo, Ont.)
- New Brunswick (*see also* Fundy, Bay of; Miramichi River; St. Lawrence, Gulf of; *also* localities and bodies of water; names of commercial fisheries)
 J 24(4): 701, 709, 731, 769, 807, 823 (effect of spraying forests with insecticides on salmon, trout, & aquatic insects)
 (11): 2241 (bedrock & sediments of Kouchibouguac Bay)
 28(1): 59 (DDT residues in marine fishes & shellfishes)
 (9): 1285 (methylmercury in freshwater & marine fishes)
 B 157 (lobster industry economic appraisal)
 166: 48 (eel fishery)
 175 (economic study of Maritime Provinces oyster industry)
 CHN 29 (capacities of fishmeal plants)
 T 6 (evaluating forest spraying effects on salmon)
 270 (Atl. salmon catches, 1947-69)
 325 (forest-based industries impact on freshwater-dependent fish resources)
 S 1552 (DDT residues in young salmon re forest spraying)
 A 83 (effects of DDT forest spraying residues on salmon)
 138 (queen crab)
 207 (herring fishery, 1963-69, & biology)
 208 (Bay of Fundy herring vertebral numbers, & origin of "sardine" herring)
- New York Bight, Atlantic Ocean
 J 27(2): 391 (23 deepwater fish species, including westward range extension of *Halargyrus johnsonii*)
- Newcomb, Timothy Wallace
 J 27(7): 1321 (Blazka respirometer modified version)
- Newfoundland region (*see also* Grand Bank; Labrador; North Harbour River (re transplants of Pacific pink salmon to); Placentia Bay (re pollution by elemental phosphorus); *also* other localities and bodies of water; *also* International Commission for the Northwest Atlantic Fisheries; Oceanography, Northwest Atlantic coastal; names of commercial fishes)
 J 22(1): 237 (skate abnormalities)
 (2): 259 (5 rare skate species)
 (2): 411 (quality of frozen trap cod)
 (2): 465 (cod catch, age, & size in Bonavista longlining)
 (2): 599 (Humber R. and Bay of Islands salmon investigations)
 (3): 783 (quality of frozen trap cod)
 24(5): 1077 (age & growth of American plaice in waters near)
 (6): 1209 (growth & hypothetical age of bait squid)
 (7): 1531 (cod fecundity)
 (7): 1623 (record of California sea lion)
 (9): 1911 (description of 26 species of parasites from freshwater Salmonidae & Coregonidae)
 (11): 2481 (pilot whales wintering in inshore waters)
 (12): 2631 (walrus records)
 25(4): 733 (quality of trap-caught cod after freezing)

- (10): 2165 (salmon smolt survival & adult utilization, Little Codroy R.)
- (12): 2723 (lobsters in deep water off St. John's)
- 26(4): 805 (fish parasites)
- (6): 1585 (differences in 2 landlocked Atl. salmon populations)
- (6): 1689 (grubby distribution)
- (8): 2027, 2037 (chemical composition of beach-spawning capelin, re fishery potential)
- (12): 3133 (cod fishery & biology off SW coast)
- (12): 3217 (bacteriology of commercial cod & flounder fillets from fish variously handled at sea)
- 27(1): 201 (marine borer activity tests)
- (10): 1894 (parasites of salmonids & coregonids)
- (11): 2037 (reproduction & associated behavior of shorthorn sculpin)
- (11): 2097 (first record of juvenile & spawning mackerel)
- (11): 2104 (inshore vs. offshore species of sand lance)
- (11): 2120 (first occurrence, & meristic characters of banded gunnel)
- (12): 2155 (shorthorn sculpin age, growth, & sexual maturity)
- (12): 2215 (capelin biology re feasibility of commercial fishery)
- (12): 2261 (yellowtail flounder biology, catches, etc.)
- 28(4): 553 (meristic differences between spring & autumn spawning herring from SW)
- B 154 (scientific & statistical aspects of marine resources)
- 155 (descriptions of marine fishes)
- 157 (lobster industry economic appraisal)
- 166: 45 (eel fishery)
- CHN 29 (capacities of fishmeal plants)
- CJG 12; 14; 15; 16 (fishery investigations & groundfish landings, 1964-68)
- 13 (groundfish & squid surveys, catches, gear catches, etc.)
- 17 (illustrated keys to metazoan parasites of Salmonidae)
- 18: 1 (recent herring fishery developments), 20 (herring tagging results in SW coastal waters), 25 (herring investigations in NE coastal waters & Labrador)
- T 43 (Irish moss ecology)
- 94-97 (herring sampling data & summary tabulations, 1964-65 to 1967-68)
- 130 (factors affecting productivity of many streams)
- 137 (herring seining catches & catch per unit effort, 1964-65 & 1967-68)
- 138 (otolith variations re spring & autumn spawning)
- 166 (computer programming herring data)
- 170 (haddock length & age composition from Nfld. area catches by Canadian trawlers, 1953-64)
- 179 (catches, length, & age composition of Greenland halibut)
- 188 (experimental transplant of P.E.I. oyster to W)
- 270 (salmon catches, 1956-69)
- 274 (Greenland halibut distribution)
- 289 (lobster biology & fishery, Bonavista Bay, 1966-70)
- 315 (larval herring & capelin distribution & size in SW waters)
- S 893; 905; 965 (salmon and trout investigation and management research programs)
- 906 (1964 squid fishery prospects)
- 970 (new cod fishing grounds off NE coast)
- 1007; 1085: 8; 1105 (Atl. salmon & transplanted pink salmon)
- 1022 (cod fishery trends)
- 1051-1060 (cod & haddock biological factors)
- 1056; 1216 (sea & air temperature anomalies)
- 1069 (2 further records of American shad)
- 1283 (herring fishery re its resource)
- 1367 (salmon distribution & characteristics from banks & deeps off)
- 1368 (biology & fishery of stock off W)
- 1363; 1364; 1365; 1366; 1367; 1368 (various aspects of handling offshore catches: freezing, icing, thawing; refreezing of products, economics)
- 1379 (biological characteristics of short-finned squid)
- 1382 (age composition & growth rate of redfish)
- 1384 (blue ling distribution & characteristics)
- 1542 (temperatures & salinities in E waters)
- 1640; 1641 (herring biological characteristics)
- A 1 (research on commercial marine invertebrates)
- 95 (recent investigations of herring)
- 123 (salmon: review of research, biology, commercial, & sport fishery)
- 137 (cod research)
- 138 (queen crab exploratory fishing)
- 140 (herring catch distribution & landings, 1967-68)
- 185 (capelin as a latent resource)
- 192; 193; 194 (capelin fishery)
- 194 (general fisheries)
- 245 (temperatures & salinities in E waters, 1970)
- 246 (herring stocks status, 1965-70)
- Newman, Joseph Thomas, Jr.
J 29(3): 333 (bluefish intestine aerobic microflora)
- Newt (*Taricha granulosa*)
J 28(1): 49 (populations in Marion L., B.C.)
- Nezumia bairdi* (see Marlin-spike)
- Niacin (see Vitamin B group)
- Nichols, Frederic Hone
J 28(10): 1491 (new benthic polychaetes)
- Nicholson, Harold Frederick
T 186 (chlorophyll *a* content of L. Ontario surface waters)
S 1529 (trace elements and chlorophyll in L. Ontario)
- Nickel derivatives
J 22(4): 929 (re oxidative rancidity promotion in cod flesh)

- 25(4): 639 (re marine flesh oxidative rancidity)
 27(4): 701 (ion effects on fish muscles extractable protein)
 28(2): 277 (in sediments of 4 small NW Ont. lakes)
 (5): 786 (in dressed Canadian fishes from industrial area lakes)
 29(12): 1691 (NiCl₂, re toxicity to *Daphnia magna*)
 S 1529 (distribution in L. Ontario)
- Nickerson, Richard Barret
 J 22(1): 101 (king crabs)
 23(5): 729 (size-class of king crabs)
- Nicol, Joseph Arthur Colin
 J 22(2): 513 (flatfishes retinomotor changes)
- Nicola Lake, B.C.
 J 22(3): 665 (factors affecting kokanee spawning)
 23(8): 1259 (seasonal & diel changes in adult kokanee feed)
- Nicotinic acid and derivatives (*see also* Betaines; Vitamin B group)
 B 150: 15 (nicotinamide as inhibitor of albacore & tuna flesh "greening")
- Nielsen, Niels Ole
 J 27(4): 830 (mercury concentrations in fish tissues)
- Nighswander, James Edward
 J 27(11): 2009 (Clear L., Ont., nutrient supply & primary production)
- Nigrelli, Ross Franco
 J 25(3): 597 (yellowtail flounder *Ichthyophonus* infection)
 28(8): 1208 (killifish "hemagglutinogens")
 (11): 1809 (lymphocystis disease in Pac. fish)
 S 1002 (studies on virus diseases of fishes)
- Niimi, Arthur John
 J 29(1): 67 (oxygen consumption of aholehole re salinity, swimming, & feed)
- Nilsson, Nils-Arvid
 J 29(6): 693 (effects of introducing salmonids into barren lakes)
 (6): 807 (exploitation, eutrophication, & introductions effects on salmonid community of L. Vättern, Sweden)
 (6): 937 (future of salmonid communities in Fennoscandian lakes)
- Nipigon Bay, Ont.
 J 25(7): 1347 (dynamics & exploitation of mature walleyes)
- Nishikawa, Masabumi
 A 151 (fermenting spent sulfite liquor to produce acid)
- Nitinat Lake (tidal), Vancouver Island, B.C.
- T 245: 12 (multispecies mortality from probable sudden overturn of waters)
- Nitrate (for general data re content in natural waters, *see* Nutrients, aquatic; *see also* Limnology; Oceanography)
 J 24(5): 899 (in subarctic Pac. Ocean)
 (5): 981 (in semimarine waters of Ogac L., Baffin Is., N.W.T.)
 25(6): 1229 (re phytoplankton ecology in an Ont. reservoir)
 (10): 2101 (utilization in subarctic lake)
 26(5): 1133 (re marine phytoplankton growth)
 (6): 1561 (re primary production, Ogac L.)
 (12): 3101 (in a lake after several fertilizations)
 27(3): 425 (in lakes affected by uranium ore milling wastes)
 (7): 1251 (monthly variations, Strait of Georgia)
 (11): 2022 (in inflow, outflow, rain, & snow, Clear L., Ont.)
 (11): 2081 (re turbulence & nutrient renewal, Casco Bay, Maine)
 28(2): 171, 203 (in waters of several small NW Ont. lakes)
 (2): 203 (effect on photosynthesis when added to samples of water from small NW Ont. lakes)
 (11): 1763 (eutrophication of small NW Ont. lake upon addition of)
 B 125R: 73; 167; 71, 125 (determination in sea water)
 T 77; 203; 327 (re primary productivity, St. Margaret's Bay, N.S.)
 120; 247 (in Bedford Basin waters, N.S.)
 265 (in sea waters & ice, Frobisher Bay, Baffin Is., N.W.T.)
 314 (re primary productivity, Petpeswick Inlet, N.S.)
 S 1223 (re marine benthos feed)
 1273 (partial molal volume of sodium, potassium, magnesium, and calcium, in sea water)
 1341 (re eutrophication of inlet extension of Victoria harbour, B.C.)
 1355 (distribution in NE Pac. Ocean)
 1437 (in Green L., N.Y.)
 1467; 1609 (automated measurement of, in sea water)
 A 216 (re Great Lakes eutrophication)
- Nitroltriacetates (detergents to replace phosphates)
 J 28(7): 1043 (determination in inland waters)
 29(8): 1203 (biodegradation in model aerated sewage lagoon; enhancement by *Daphnia* as bacterial predator)
 T 258 (toxicity tests on aquatic invertebrates & amphibians, re detergent pollution)
 S 1291 (chelating antipollutant for protecting fish from copper & zinc in waters)
 1536 (re deformed chironomid larvae in a lake)
 A 111 (as sequestering agent to combat pollutant metal ions)
 234 (research & concern re environmental acceptability)
- Nitrite (for general data re content in natural waters *see* Nutrients, aquatic; *see also* Limnology; Oceanography)

- J 24(5): 899 (in Ogac L. semimarine waters)
 28(2): 171 (in waters of several small NW Ont. lakes)
 B 125R: 79; 167: 77, 129 (determination in sea water)
 150: 15 (as inhibitor of albacore & tuna flesh "greening")
 CVG 37 (for preserving herring aboard vessel before reduction)
 T 120; 327 (in Bedford Basin waters, N.S.)
 314 (re primary productivity, Petpeswick Inlet, N.S.)
 S 1341 (re eutrophication of inlet extension of Victoria harbour, B.C.)
- Nitrogen derivatives (in general, principally organic) (see also certain types of, and individual compounds of, e.g. Acids, amino; Amines; Ammonia; Composition, chemical; Excretion; Nitrate; Nitroliotriacetates; Nitrite; Nucleosides; Proteins; Purines; Trimethylamine)
 J 23(11): 1653 (American crayfish meat)
 24(5): 909 (of Saanich Inlet, B.C., particulate matter)
 25(10): 2101 (N fixation & other inorganic N sources in subarctic lake)
 27(7): 1813 (excretion of endogenous, re bluegill protein maintenance level)
 (8): 2030 (nonprotein content, of Nfld. capelin)
 28(1): 7 (seasonal changes in lipid, protein, & other nitrogen of freshwater triclad flatworm)
 (2): 171 (total dissolved, in waters of many small NW Ont. lakes)
 (2): 215 (content of periphyton in 4 small NW Ont. lakes)
 (2): 277 (content of sediments in 16 small NW Ont. lakes)
 (2): 295 (re similarities & differences in small NW Ont. lakes)
 (3): 449 (re protein consumption of bluegill sunfish)
 (6): 911 (particulate, re carbon-nitrogen relations in Chesapeake Bay, Md.)
 29(2): 195 (algal bioassay method for, as freshwater nutrient)
 (4): 357 (sources & role in water nutrients, St. Margaret's Bay, N.S.)
 B 125R: 89, 143; 167: 71, 77, 81, 87, 119, 143, 221 (determination in sea water)
 S 1198 (requirements for *Hemiselmis virescens* phototrophic growth)
 1223 (particulate, re marine benthos feed)
 1646 (re lakes eutrophication)
- Nitzschia* (see Bacillariophyta)
- Noble, E. R.
 J 29(9): 1291 (taxonomy, prevalence, & specificity of *Cryptobia dahli* in lumpfish)
- Noble, Richard Lee
 J 27(6): 1033 (fry net avoidance)
- Nocardia asteroides* (bacteria)
 J 25(2): 423 (causing nocardiosis of brook trout)
- Nocomis biguttatus* (see Chub, hornyhead)
- micropogon* (see Chub, river)
- Noel, Thomas Corbin
 J 23(5): 775 (equilibrium values of cod)
- Noise (see Sound, reactions to)
- Nomenclature (see also Taxonomy)
 J 24(5): 1067 (lampreys)
 25(2): 409 (& distribution of N American kokanee)
 (11): 2269 (Arctic Canada Bryozoa)
 26(3): 687 (new *Anonyx* synonymy)
 (9): 2431 (brook stickleback)
 27(12): 2233 (synonymy of a *Sebastes* (*Sebastodes*) complex)
 28(3): 323 (*Lepeophtheirus* vs. *Dentigryps caligid* parasitic copepods)
 (7): 987 (*Salmo* species of Upper Kern R. Basin, Calif.)
 29(4): 385 (of molluscan sterols)
 (5): 606 (synonymy of *Sebastes caenaematicus* with *S. borealis*)
 (11): 1631 (*Parahucho* & *Parasalmo* as new subgenera, & *Salmo* (*Rhabdosario*) *copei* as new combination, of Salmonidae)
 B 155 (Canadian Atlantic Coast fishes, with English & French names)
 170 (N American Chironomidae & synonymy)
 173: 26 (general), 46 etc. (for each species, of NW Canada & Alaska freshwater fishes, with English & French names)
 180 (of B.C. marine fishes & derivation of their generic & specific names)
 T 2 (synonymy of Canada W coast Mollusca)
 34 (arrowtooth & spinycheek flounder; rock & flathead sole; Pac. cod)
 S 1164; 1179 (confusion in copepod *Caligus* species)
 1219 (Polychaeta (Errantia) recorded from B.C. since 1923)
 1243 (Polychaeta (Sedentaria) recorded from B.C. since 1923)
 1293 (application to change *Caligus appendiculatus* to *C. lacustris*)
 1382 (*Sebastes marinus* & *S. mentella* for redfish)
 1384 (*Molva dypterygia* as scientific name for blue ling)
 1499 (misuse of name *Caligus rapax* (copepod) since 1850)
 1588 (*Harnischia* chironomids)
 1597 (Hutchinson L., in FRB Experimental Lakes Area, NW Ont.)
 1683 (terminology for phosphorus compounds in natural waters)
- Nomographs
 J 22(6): 1575 (for chlorophyll *a*, *b*, *c* phytoplankton pigment spectrophotometry)
- Nonlinear response surfaces
 J 27(4): 765 (mathematical treatment, with examples)
 T 87 (computer programming for analysis of)
 173 (supersedes T 87; includes correction sheet)

- 311 (third version of T 87 above)
244: 42 (re multivariate analysis)
- Nonwetting surface
S 1275 (silicone for producing, on glass apparatus)
- Norris, David Otto
J 26(7): 1801 (rainbow trout on pellet diets)
- Norris, James Scott
J 26(7): 1801 (rainbow trout on pellet diets)
- North Boulder Creek, Colorado
S 1532 (distribution of invertebrates in, as high mountain brook with lakes)
1533 (chironomids & other invertebrates in)
- North Carolina, USA
J 27(1): 47 (zinc & ⁶⁵Zn levels in Atl. oysters from industrial- or fallout- polluted waters)
- North Harbour River, Nfld. (re British Columbia pink salmon transplanted into)
J 23(6): 939 (scale characteristics)
CJG 14: 32; 15: 24 (increased establishment of)
S 1007; 1085; 1105 (spawning returns)
A 106 (success of)
108: 12 (1966 ICNAF report on)
113 (review)
181 (research summary)
- Northcote, Thomas Gordon
J 22(3): 665 (movement of mature kokanee)
23(8): 1259 (food of kokanee)
(11): 1761 (sucker life histories)
26(1): 33 (rainbow trout migration)
(7): 1763 (meromictic lakes changes)
27(1): 196 (survival, condition, & timing of emergence of chum salmon fry)
(7): 1191 (coho salmon alevins)
(11): 1987 (genotype differences in stream populations of rainbow trout)
28(9): 1259 (cutthroat and Dolly Varden segregation)
29(5): 555 (coastal cutthroat trout & Dolly Varden feeding behavior)
(6): 861 (man's effects on salmonid community, Kootenay L., B.C.)
- Northumberland Channel, B.C.
S 979 (tidal flushing rates re pulpmill effluent dispersal)
- Northumberland Strait (see also Oceanography, Northwest Atlantic coastal; St. Lawrence, Gulf of)
J 22(2): 353 (drift-bottle current measurements)
24(11): 2241 (bedrock & sediments structure off NW end)
27(3): 535 (scallop beds survey from "cubmarine")
29(2): 161 (rock crab biology & fishery)
- Northwest Territories (N.W.T.), Canada (see also Arctic; Baffin Island; Eskimos; Great Bear Lake; Great Slave Lake; Keyhole Lake; Mackenzie River; Ogac Lake; also names of other places, islands, and bodies of water)
J 22(1): 225 (Fury and Hecla Strait currents)
(6): 1571 (fall domestic fishery at Snowdrift, Great Slave L.)
25(12): 2575 (physics & chemistry of some fresh waters)
B 158 (physical & economic organization of Mackenzie District fisheries)
173 (full descriptions, etc., of freshwater fishes of mainland)
T 180 (limnology, fish survey, & commercial fishery of Lac la Martre)
S 988 (fish cannery at Daly Bay established)
1697 (fish & mammal processing plant, Rankin Inlet)
A 231 (fish production & utilization for man & dogs)
- Norwegian Sea (see Oceanography, Norwegian Sea)
- Nose (see Nasopalatine canal; Odors; Odors, perception of; Snout)
- Nota, Dirk Johannes Gregorius
J 23(8): 1197 (sea-floor conditions)
25(11): 2327 (St. Lawrence R. estuary minerals)
S 957 (depositional conditions in the St. Lawrence region)
1353 (mineral dispersal patterns)
1426 (sedimentary environments on Magdalen Shelf)
1511 (European flints on N American coast)
- Notacanthus nasus* (see Eel, spiny)
- Notolepis coruscans* (see Barracudina, ribbon)
rissoi kroyeri (see Barracudina, white)
rissoi rissoi (see Barracudina, ribbon)
- Notolynchus valdiviae* (see Lanternfishes)
- Notorynchus cepedianus* (see Shark, sevengill)
maculatus (see Shark, sevengill)
- Notoscopelus kroyeri* (see Lanternfish, Krøyer's)
resplendens (see Lampfish, patchwork)
- Notropis anogenus* (see Shiner, pugnose)
atherinoides (see Shiner, emerald)
blennius (see Shiner, river)
cornutus (see Shiner, common)
deliciosus (see Shiners)
heterodon (see Shiner, blackchin)
heterolepis (see Shiner, blacknose)
hudsonius (see Shiner, spottail)
spilopterus (see Shiner, spotfin)
- Noturus flavus* (see Stonecat)
gyrinus (see Madtom, tadpole)
- Nova Scotia (see also Bedford harbour; Fundy, Bay of; Nova Scotia banks; Oceanography, Northwest Atlantic

- coastal; Sable Island; St. Lawrence, Gulf of; St. Margaret's Bay; *also* other localities; names of commercial fisheries)
 J 25(2): 427 (lobster larvae distribution off Pictou)
 27(11): 2053 (depth distribution of witch flounder stages)
 28(5): 755 (whelping seal colony observations, Sable Is.)
 (9): 1285 (methylmercury in N.S. banks fishes)
 B 157 (lobster industry economic appraisal)
 166: 45 (eel fishery)
 175 (economic study of Maritime Provinces oyster industry)
 CHN 29 (capacities of fishmeal plants)
 CSG 54 (underexploited groundfish on banks)
 T 252 (ecology & distribution of herring larvae along S coast; macrozooplankton biomass ecology on Scotian Shelf)
 270 (Atl. salmon catches 1947-69)
 A 138 (queen crab)
 143(F) (French version of CSG 54 above)
 175 (same as CSG 54 above)
 207 (herring fishery, 1963-69, & biology)
 208 (Bay of Fundy herring vertebral numbers)
- Nova Scotia banks
 J 26(5): 1273 (comparison of cod & haddock feed)
 (10): 2691 (mesopelagic & other fishes)
 T 80 (fish stocks)
 S 1640 (vs. SW Nfld. herring biological characteristics)
- Noven, Bengt
 J 28(2): 245 (zooplankton distribution & abundance in 2 FRB Experimental Lakes, NW Ont.)
- Novumbra hubbsi* (*see* Mudminnow, Olympic)
- Nowlan, Sandra Simpson
 J 24(8): 1837 (postmortem Atl. cod muscle)
 25(8): 1525 (frozen cod muscle glycogen & phosphorus)
 26(10): 2621 (cod muscle changes during freezing)
 S 1648 (variation of biochemical quality indices by biological & technological factors)
- Nuclear power plant (*see also* Thermal power plants)
 J 28(7): 1057 (mortality vs. survival of larval & juvenile fish in warm water of discharge canal)
 A 232 (effluent as source of radioactivity in marine environment)
- Nucleic acids (*see* Acids, nucleic; Nucleosides)
- Nucleosides; Nucleotides (*see also* Acids, amino; Acids, nucleic; Enzymes; Hypoxanthine)
 J 22(2): 307 (of pink shrimp)
 23(6): 921 (interference with Atl. cod muscle glycogen determination)
 (12): 1821 (nucleotide degradation re swordfish ordinary & red muscle quality)
 24(8): 1837 (degradation re changes in postmortem Atl. cod muscle)
- 25(2): 239 (adenine nucleotides degradation products as quality criteria for chilled mackerel muscle)
 (4): 817 (nucleotide degradation in iced redfish filets)
 (8): 1667 (re cytotaxonomy of Great Lakes coregonids)
 26(3): 704 (& related compounds in canned shrimp)
 (5): 1368 (fluorescence of white sucker muscle)
 (6): 1597 (degradation in frozen swordfish muscle)
 (10): 2621 (changes in critical freezing zone of Atl. cod muscle)
 27(1): 83 (in sea scallop adductor muscle & their degradation during iced storage)
 (1): 117 (re DNA biosynthesis by trout liver nuclei DNA polymerase)
 (11): 2003 (activators & inhibitors of immature sockeye salmon testes nucleotidase)
 28(6): 869 (re octopine formation in sea scallop muscle)
 (10): 1603 (ribonucleotide reductase in sockeye salmon immature testes)
 S 897 (synthesis by steelhead trout milt extract)
 914 (synthesis of cyclic phosphates)
 1011; 1036 (nucleoside phosphates synthesis by salmon-milt enzyme)
 1036 (& enzyme systems in fish)
 1041 (*Daphnia magna* encysted embryos nucleotides)
 1112 (¹⁴C-traced formation by salmon & trout testes tissue)
 1117 (review of postmortem changes in fish muscles)
 1246 (nucleoside-3',5' cyclic phosphates synthesis)
 1247 (nucleotide *p*-nitrophenyl & 2,4-dinitrophenyl esters)
 1261 (adenine nucleotides postmortem degradation in lobster)
 1401 (cyclic nucleotide phosphodiesterase in rainbow trout brain & other marine tissues)
 1408 (purine nucleoside phosphorylase preparation from lingcod muscle)
 1419 (Pac. cod muscle 5'-nucleotidase)
 1508 (salmon testes deoxyribonuclease re internucleotide linkages)
 1523 (lingcod muscle purine & pyrimidine nucleoside phosphorylases)
 1525 (trout liver pyrimidine deoxynucleoside phosphorylase & deoxyribosyltransferase)
 1560 (deoxyribonucleic acid polymerase from sockeye salmon testes)
 A 38 (review of, in fish)
 226 (nucleoside cyclic phosphate diesterases)
 227 (nucleotide phosphomonoesterases)
- Nucleotides (*see* Nucleosides)
- Nucula* (pelecypods)
 S 1679 (sterols of unnamed species)
- Numann, Wilhelm
 J 29(6): 833 (exploitation & eutrophication effects on salmonid community of the Bodensee, Switzerland-Germany)

- (6): 931 (future of salmonid communities in European subalpine lakes)
- Nuphar polysepala* (aquatic macrophyte)
 J 27(1): 71 (productivity, Marion L., B.C.)
- Nursall, John Ralph
 J 26(6): 1672 (spottail shiners & yellow perch aggregations)
 (8): 2260 (*Trienophorus crassus* in Arctic lampreys)
- Nutrients, aquatic (*see also* Culture; Feed; Fertilization; Limnology; Nutrition value; Oceanography; Productivity, primary)
 J 27(5): 837 (seasonal variations, Grand R., Ont.)
 (5): 847 (re meromixis of Sunfish L., Ont.)
 (5): 887 (re phytoplankton blooms)
 (7): 1251 (review of production levels in Strait of Georgia pelagic environment)
 (8): 1466 (phosphate in water re chlorophyll *a* in marine phytoplankton)
 (11): 2009 (Clear L., Ont., re primary production)
 (11): 2081 (renewal re turbulence in Casco Bay, Maine)
 28(2): 171, 203 (in waters of many small NW Ont. lakes)
 (2): 203 (effects of various nutrients on photosynthesis when added to water samples from various small NW Ont. lakes)
 (5): 790 (nitrogen, phosphorus, & iron enrichment influence on photosynthesis & assimilation ratios of N Pac. phytoplankton)
 29(2): 195 (algal bioassay method for)
 (4): 357 (re fish catch, St. Margaret's Bay, N.S.)
 B 125R (methods of determining micronutrients in sea water)
 T 77; 203; 327 (St. Margaret's Bay, N.S.)
 110 (nitrate, nitrite, phosphorus, silicate, carbon, etc., Strait of Georgia, 1965-67)
 247 (Bedford Basin, N.S., re phytoplankton production, 1969-70)
 265 (in Frobisher Bay waters & ice, N.W.T., re primary production)
 314 (Petpeswick Inlet, N.S., re phytoplankton production, 1971-72)
 S 1355 (nitrate distribution in NE Pac. Ocean)
 1467 (automated measurement of seawater dissolved)
 1482 (comparison of eutrophicated Bedford Basin vs. nearby St. Margaret's Bay, N.S.)
 1485 (importance & general implications of organic matter in aquatic environments, particularly re filter-feeding copepods)
 1538 (marine dissolved, re energy flow & species diversity in phytoplankton bloom)
 1646 (carbon, nitrogen, & phosphorus re freshwater lakes eutrophication)
 1655 (contribution by snow to nutrient budget of small NW Ont. lakes)
 A 216 (re Great Lakes eutrophication)
- 220 (program during C.S.S. *Hudson* oceanographic survey circumnavigating N & S America)
- Nutrition (*see* Culture; Feed; Nutrients, aquatic; Nutrition value; *also* other cognate subjects, e.g. Digestion; Metabolism)
- Nutrition value (*see also* Caloric content; Composition, chemical; Feed; Feedstuff; Production, primary; Production, secondary; Rations; *also* nutrient materials, e.g. Carbohydrates; Fats and oils; Mineral constituents; Nutrients, aquatic; Proteins; Vitamins)
 J 23(3): 395 (of protein in fishmeals)
 (11): 1653 (of American crayfish meat)
 24(6): 1291 (freshwater fishmeals)
 25(9): 1803 (caloric content of marine benthic & epibenthic invertebrates)
 (11): 2515 (caloric content of some freshwater invertebrates)
 26(3): 557 (of particulate vs. filter-feeding habits of northern anchovy)
 (11): 2969 (*Parapenaeus* Atl. shrimps)
 28(10): 1635 (of zooplankton in young sockeye salmon diets)
 B 167: 119, 139, 175 (determination methods for sea water)
 169: 137 (Pac. oyster)
 CVG 34 (antioxidant value in protecting herring meal)
 T 114 (Canadian Atl. herring meals)
 248 (re planktonic herbivores grazing & production)
 S 929 (fish protein concentrate)
 969 (antioxidant value in protecting herring meal)
 1377 (Atl. & Pac. herring meals)
 A 80 (general, re various quality changes & flavor)
 97; 98 (herring & Atl. cod products & by-products)
 124: 48; 125 (fish protein concentrates)
 130 (review of fish muscle, & preservation)
- Nyman, Olof Lennart
 J 26(9): 2532 (serum esterases in freshwater fishes)
 29(2): 179 (differences in N American vs. European Atl. salmon)
 S 1545 (electrophoretic analysis of salmon & trout hybrids)
 1547 (ecological interaction of trout)
 1612 (salmonids serum esterases molecular weight heterogeneity)
- Nymphomyiidae (aquatic flies)
 S 963 (new genus found in N.B.)
- O**
- Obituaries
 J 23(5): 779 (John Richardson Dymond)
 (11): 1790 (W. F. Thompson)
 24(9): 1979 (Edgar Clark Black)
 27(11): 2091 (John Stanley Milton Harrison)
 (12): 2333 (Wilbert McLeod Chapman)
 28(4): 599 (John Douglas Hipwell Strickland)
 (12): 1905 (Maurice Aloysius Foley)

- 29(1): 101 (Andrew Lyle Pritchard)
(11): 1625 (Andrew William Lantz)
- Observation, underwater (*see* Diving; Photography, underwater; Submersibles)
- Occa* (*see* *Occella*)
- Occella dodecaedron* (*dodacaedron*) (*see* Poacher, Bering)
impi (*see* Poacher, pixie)
verrucosa (*see* Poacher, warty)
- Ocean (*see also* Arctic Ocean; Atlantic Ocean; Pacific Ocean; *also* Hydrography; Oceanography headings)
A 258 (conserving the ocean as a source of natural resources)
- Ocean perch (*see* Redfish; Redfish, deepwater; for Pacific ocean perch *see* Perch, Pacific ocean)
- Ocean pout (*see* Pout, ocean)
- Ocean Station P (*see* Oceanography, North Pacific)
- Oceanography (*Note*: In addition to the following Oceanography headings, *see* headings such as Arctic Ocean; Atlantic Ocean; Bering Sea; Continental Shelf; Hudson Bay; Pacific Ocean; Scotian Shelf; *also* Corers; Currents; Drift; Estuaries; Hydrography; Halocline; Inlets; Pollution; Production, primary; Radiation; Salinity; Sea level; Sea water; Sediments; Sounding, echo; Temperature; Thermocline; Tides; Transport, mass; Upwelling; Waves; Wind; etc.; *also* Nitrate; Nitrite; Oxygen, dissolved; Phosphate; Silicate; Nutrients, aquatic; *also* names of certain banks, bays, channels, gulfs, inlets, straits, etc. (as listed under their names)).
- Oceanography (general) (analytical methods; apparatus; instrumentation; and other topics generally applicable to marine waters; *see also* note to the heading Oceanography; *also* Apparatus; Analysis methods (chemical); Sampling; Sediments)
- J 22(1): 113 (sea water Mg ion activity coefficient)
23(11): 1805 (speed calibration curves for histogram current meter)
- 24(5): 1155 (digitizing system for bathythermograph aperture cards)
(8): 1827 (aliasing effect on long-term oceanic variability studies off Canadian coast)
(11): 2491 (computer vs. manual temperature & depth calculations)
- 26(7): 1948 (2 useful devices for vertical plankton & water sampling)
(8): 2223 (rate of storm growth effect on subsequent surge elevations)
- 27(1): 185 (self-contained integrating radiometer for measuring submarine light energy in absolute units)
(2): 401 (surf effects on tidal sensor)
- 28(1): 102 (plotting bathythermograph transect data on computer printer)
- (11): 1815 (dispenser for Winkler dissolved oxygen reagents)
- 29(1): 19 (empirical wave-force coefficients spectra determination)
(3): 323 (continuous-recording salinity-temperature-pressure instrumentation)
(10): 1503 (dredge for sampling benthos on deep bouldery bottoms)
- B 125R; 167 (seawater analysis methods manuals)
163 24 (current metering instrumentation)
- CPO 1965-1 (modifications for salinometers)
- T 85 (free-floating current followers)
152 (computer programming salinity-temperature-pressure data)
163 (surface flow measurement by free-floating current followers)
207 (computer programming for bathythermograph data)
218 (effects of sea water on bacteria survival)
307 (numerical model to demonstrate effect of pollutive effluent in a stratified estuary)
- S 1014 (possible estimation of oceanic thermocline depth from satellite data)
1120 (tracing coastal currents by aerial photography)
1162 (measuring sodium sulfate activity coefficient)
1234; 1512; 1515; 1517 (isopiestic measurements of H₂O-NaCl-MgCl₂ (& -Na₂SO₄) ternary systems at 25 C)
1273 (partial molal volumes of 16 salts in sea water)
1467 (automated measurement of dissolved nutrients)
1472 (phenosafranin as improved indicator in chlorinity titrations)
1476 (implementation of Canadian ocean engineering, chemical oceanography, & geochemistry re pollution & climatology)
1539 (re capacity of estuaries to accept pollutants; use of dyes)
1592 (wind speed re Langmuir circulation re particle concentration)
1627 (calcium carbonate monohydrate in sea water)
1707 (calcium carbonate partial molal volume)
A 52 (water, the producer - weather of the sea)
139 (improving evaluation methodology, particularly re pollutants effects: review)
183 (re ocean resources management)
220 (C.S.S. *Hudson* circumnavigation of N & S America)
232 (radioactivity in the marine environment: extensive summary of book)
258 (conserving the ocean as a source of natural renewable resources)
- Oceanography, Arctic (*see also* note to the two preceding Oceanography headings)
J 22(1): 225 (Fury and Hecla Strait currents)
24(3): 555 (Tanquary Fiord, Ellesmere Is.)
(5): 975, 981 (Ogac L. (tidal), Baffin Is.)
26(2): 305 (Arctic Basin & E Greenland current)
T 71; 72 (Norwegian Sea transport computations, 1950-60)

- 159 (Project "Icepack" observations from submersible, in Canadian Archipelago, 1968)
- 265 (physical, nutrient, & primary production data, Frobisher Bay, Baffin Is.)
- MSP 13; 13(F) (summary of FRB investigations of Canadian)
- S 1127 (Labrador Sea, Davis Strait, S Baffin Bay)
- A 52 (general)
- 166 (summary of recent trends)
- Oceanography, North Atlantic** (*Note: References under this heading should be considered in conjunction with those under the next heading and the note to the two Oceanography headings. See also under International Commission for the Northwest Atlantic Fisheries for additional references to North Atlantic oceanographic data taken during biological studies*)
- J 23(5): 651 (temperature re depth off Nfld.)
- 24(8): 1827 (aliasing effects on studies of long-term variables)
- 25(5): 1079 (inertial oscillation at lat 42 N)
- (11): 2427 (Gulf of Maine subsurface waters recent temperature trends)
- (12): 2609 (summer stratifications & mixing, Gulf of Maine)
- 26(10): 2746 (1968 water temperature conditions in & off Gulf of Maine)
- (12): 3248 (off Puerto Rico)
- B 155: 8 (synopsis of currents & temperatures)
- T 71; 72 (Norwegian Sea transport computations, 1950-60)
- 103; 122; 199 (continental shelf, Nfld. to Florida)
- 136 (Cape Hatteras to off Puerto Rico)
- S 1026 (1964 another cold sea temperature year)
- 1109 (continental shelf, Nfld. to Florida)
- 1127 (Labrador Sea; Davis Strait; off S Baffin Is.)
- 1142 (long-term temperature variations off N.S.)
- 1592 (wind speed re Langmuir circulation & particle concentration, near Bermuda)
- Oceanography, Northwest Atlantic coastal** (*Note: References under this heading should be considered in conjunction with those under the preceding heading and the note to the two Oceanography headings. See also under International Commission for the Northwest Atlantic Fisheries for additional references to northwest Atlantic coastal oceanographic data taken during biological studies (see also Fundy, Bay of; Georges Bank; Grand Bank; Maine, Gulf of; Northumberland Strait; Scotian Shelf; St. Lawrence, Gulf of; also Hydrography; Pollution)*)
- J 22(2): 353 (Northumberland Strait drift)
- (6): 1321(F) (surface temperatures & heat exchanges re marine climate)
- 23(8): 1197 (sea-floor geomorphology off Magdalen Is., Gulf of St. Lawrence)
- (9): 1411 (electrical analog model for wind-driven circulation, Gulf of St. Lawrence)
- (11): 1635 (nutritional cycles in P.E.I. oyster area; correction on J25(8): 1759)
- 24(7): 1553 (Penobscot R. estuary, Maine; correction on J28(5): 1760)
- (9): 1845 (bottom residual drift on continental shelf area)
- 26(9): 2477, (11): 2775, 2887; 27(10): 1701 (re proposed tidal energy utilization in Bay of Fundy)
- (12): 3248 (off Cape Hatteras to Florida)
- 27(11): 2081, (12): 2255 (turbulence, heat budget, & circulation, re nutrients renewal)
- 29(5): 595 (winter geostrophic circulation, Gulf of St. Lawrence)
- B 154: 23 (re Nfld. fishery resources)
- 155: 8 (synopsis of)
- T 26 (1965 summer observations, S Gulf of St. Lawrence)
- 77; 203; 219; 327; 1482; 1539 (St. Margaret's Bay, N.S.)
- 103; 122; 199 (continental shelf surface circulation, Nfld. to Florida)
- 115 (physical, of Margaree & Cheticamp R. estuaries, N.S.)
- 120; 247 (Bedford Basin, N.S.)
- 146 (tidal flushing of Pictou harbour & road, re pulp mill effluent)
- 150 (Canadian Atl. coastal stations temperature data, 1921-69)
- 252 (temperatures, N.S. Shelf)
- 265 (Frobisher Bay, Baffin Is.)
- 271 (Gulf of St. Lawrence circulation patterns & geopotential anomalies, June 1968 & Sept. 1969)
- 314 (Petpeswick Inlet, N.S.)
- S 950 (Gulf of St. Lawrence water temperatures)
- 953 (Gulf of St. Lawrence marine geology)
- 1026 (sea & air temperatures off Nfld.)
- 1109 (continental shelf surface circulation, Nfld. to Florida)
- 1142 (long-term variations in Scotian Shelf area waters)
- 1143 (forecasting temperatures in Passamaquoddy Bay, N.B.)
- 1147 (re haddock distribution)
- 1148 (re cod recruitment)
- 1149 (re Magdalen Is. herring fishery)
- 1215 (recent sea temperature changes)
- 1216 (sea vs. air temperature anomalies)
- 1280 (temperatures & salinities, St. John's-Flemish Cap Section)
- 1426 (Magdalen Shelf sedimentary environments)
- 1482 (Bedford Basin, N.S.)
- 1542 (temperatures & salinities off E. Nfld., 1969)
- A 52 (re weather & the sea)
- 82(F) (marine climate, Gulf of St. Lawrence & to SW)
- 92 (abnormal sea temperatures effect on herring fishery)
- 108 (1966 Canadian ICNAF studies on temperature, salinity, currents, etc.)
- 134 (function of Dartmouth Marine Ecology Laboratory, N.S.)
- 154 (temperatures & salinities, St. John's-Flemish Cap, 1968)
- 166 (summary of recent trends)
- 223 (combating pollutants)

- 245 (temperatures & salinities in E Nfld. waters, 1970)
- Oceanography, North Pacific (*Note: References under this heading should be considered in conjunction with those under the next heading and the note to the two Oceanography headings. See also under International North Pacific Fisheries Commission for additional references to North Pacific oceanographic data taken during biological studies*) ("P" = Weathership Ocean Station P at 50 N, 145 W)
- J 22(3): 689 (first use of transponding buoys)
- 23(4): 539 (re spring primary productivity in E subarctic)
- (6): 825 (variability of conditions between "P" & Swiftsure Bank)
- 24(3): 581 (Ekman transport re zooplankton concentration)
- (5): 899 (chemical features of subarctic boundary)
- (8): 1827 (aliasing effects on study of long-term variables at "P")
- (11): 2207 (annual changes in E subarctic)
- 25(12): 2739 (surface phosphate & silicate distribution in NE)
- 29(3): 323 (use of continuous-recording salinity-temperature-pressure instrumentation at "P")
- (9): 1269 (upwelling re primary production off Oregon coast)
- B 162: 329 (re sockeye salmon oceanic life & distribution)
- 180: 6 (resume, re Pac. fishes of Canada)
- CPO 1965-7; -8; -9 (during FRB oceanographic cruises off B.C. coast)
- T 50; 51; 52; 63; 64; 65; 66; 127; 230; 240 (Ekman mass transport charts for surface waters, 1946-70)
- 53; 126; 128; 238; 239 (Ekman & other transport computations, 1946-70)
- 54 (temperatures & salinities, NE, 1965-66)
- 75 (central subarctic region, winter 1966)
- 106 (time distribution of serial data from "P" program)
- 143; 145; 153; 154; 184; 194; 211 (data from "P" program, Oct. 1968-Jan. 1970)
- 273 (observations at Bowie Seamount, 53 N, 136 W)
- S 917 (regions & processes in seasonal zone)
- 919 (insolation re cloud amount & sun altitude at "P")
- 925; 926; 1038; 1137 (Canadian INPFC annual research reports, 1962-65)
- 977 (wind speed re summer isothermal surface layer at "P")
- 1032; 1033 (time series of variables at "P")
- 1295 (critical indices of primary & secondary production at "P")
- 1355 (nitrate distribution in NE)
- 1386 (high-frequency echo sounding for assessing zooplankton biomass in sound-scattering layers)
- 1713 (CO₂ partial pressures variance with time in surface waters)
- A 52 (weather of the sea)
- 86 (1966 temperatures & salinity re salmon research)
- 167 (microbial biomass in subarctic euphotic zone)
- 205 (surface temperatures at "P" & in NE areas, 1951-65)
- Oceanography, Northeast Pacific coastal (*Note: References under this heading should be considered in conjunction with those in the preceding heading and the note to the two Oceanography headings. See also under International North Pacific Fisheries Commission for additional references to northeast Pacific coastal oceanographic data taken during biological studies*) (*see also Alberni Inlet; Alaska; Alaska, Gulf of; Dixon Entrance; Fraser River; Georgia, Strait of; Hecate Strait; Juan de Fuca, Strait of; Puget Sound; Queen Charlotte Sound; Saanich Inlet; also Inlets; Pollution*)
- J 22(3): 801 (pollution re water exchange, Port Moody, B.C.)
- (3): 825; 24(1): 33 (Indian Arm, B.C.)
- (6): 1425 (Juan de Fuca Strait salinity & tides)
- 23(4): 575 (iron distribution from Fraser R. into Georgia & Juan de Fuca straits)
- 24(7): 1475 (larger inlets of SE Alaska)
- (11): 2207 (offshore & certain inlets, from SE Alaska to W coast Vancouver Is.)
- 26(12): 3165; 27(7): 1251 (Strait of Georgia)
- 29(1): 103 (explanation for warm water intrusion off B.C. coast)
- (9): 1269 (upwelling re daily primary production off Oregon coast)
- B 171: 2 (re B.C. marine mammals)
- 156 (physical, of Dixon Entrance, Hecate Strait, etc.)
- CPO 1965-2 (mean monthly surface temperatures, B.C. coast, 1964)
- 1965-3; -5; -7; -8; -9 (FRB oceanographic cruises)
- 1965-4 (salinities at B.C. lighthouses, 1964)
- T 32; 82 (surface temperatures & salinities, B.C. coast, 1965 & 1966)
- 61 (B.C. coast water temperatures, 1966-67)
- 70; 142 (central B.C. coast)
- 99; 300 (Saanich Inlet, B.C.)
- 110 (summary for Strait of Georgia, 1965-68)
- 156 (one-dimensional hydrodynamical numerical model, Georgia & Juan de Fuca straits)
- 163; 169; 178; 191; 253 (Strait of Georgia current velocities, 1967-69)
- 253 (Strait of Georgia current velocities & temperatures, 1968-70)
- 263 (current velocities off sewage treatment plant at mouth of Fraser R.)
- S 918 (daily & seasonal sea-level oscillations, B.C. coast)
- 979 (tidal flushing rates re pulp mill effluent into channels near Nanaimo, B.C.)
- 1032 (time series of variables at B.C. lighthouses)
- 1110 (Strait of Georgia currents tracing by aerial photography)
- 1295 (Strait of Georgia critical indices of primary production)

- 1341 (eutrophication of inlet extension of Victoria harbour, B.C.)
 1392; 1393; 1394 (Fraser R. effects on adjacent Strait of Georgia waters)
 1407 (waste disposal re physical environment of B.C. coast: review)
 A 52 (general)
 166 (summary of recent trends)
 187; 242 (re sewage disposal, Victoria harbour, B.C.)
 235 (Fraser R. effects on adjacent Strait of Georgia waters)
 242; 258 (applications of oceanography to sewage & other waste disposal, B.C. coast & other waters)
- Oceanography, Norwegian Sea
 T 71; 72 (sea water mass transport computations, 1951-60)
- Oceanography, South Atlantic
 S 1629 (dissolved oxygen distribution off S America)
- Oceanography, South Pacific
 J 28(8): 1077 (physical oceanographic features of 32 Chilean fiord inlets & adjacent waters)
 S 1692 (dissolved oxygen distribution)
 A 220 (condensation of J reference above)
- Ocenebra japonica* (see Drills, oyster)
- O'Connell, Charles Patrick
 J 26(3): 557 (anchovy feeding)
 29(3): 285 (biting re filtering in northern anchovy feeding activity)
- O'Connell, David Thomas
 J 25(1): 189 (Atl. fish DDT residues)
- Octopine (arginine derivative)
 J 28(6): 869 (in sea scallop muscle re freshness index)
- Octopus (*Octopus apollyon*) (see also next heading)
 T 7; 56; 181; 257; 317 (taken in B.C. commercial trawling)
- Octopuses (see also preceding heading and Cephalopoda)
 CNG 84 (popular description of some NE Pac. Ocean)
 CNS 14 (B.C. landings by areas)
 T 225 (associated with Bay of Fundy scallop beds)
 S 1327 (Canadian, with synopsis)
 1470 (checklist of B.C. coastal)
- Ocyurus chrysurus* (see Snapper, yellowtail)
- Odense, Paul Holger
 J 23(9): 1465 (salinity tolerance levels)
 (10): 1607 (digestive tract of Atl. cod)
 (12): 1841 (epithelial border of cod)
 24(3): 651 (postmortem changes in cod)
 (12): 2549 (cod myotomal muscle)
 25(4): 805 (fish protein concentrate isopropyl alcohol retention)
 (5): 935 (cod skeletal muscle free amino acids re gillnet fishing)
- (7): 1339 (scallop striated muscle)
 28(11): 1793 (herring oil effects on rat cardiac functions)
 29(1): 85 (muscle catheptic activity of some marine species)
 CHN 20 (identification of fillets)
 T 229 (herring oil effects on rat organs)
 S 1073 (enzymes in Atl. herring)
 1119 (*Homarus americanus* hemolymph constituents)
 1349 (isolation of tropomyosin)
 1370 (lactate dehydrogenase in cod)
 1422 (periodicities in filaments of adductor muscle of oyster)
 1453 (cathepsin activity measurement with hemoglobin substrate)
 1616 (gadoid lactate dehydrogenase polymorphism)
- Odobenus rosmarus* (see Walrus, Atlantic and Pacific)
- Odonata (dragonflies; damselflies) (see also Insects; Insecticides; Invertebrates)
 J 24(4): 823 (effect of phosphamidon insecticide on)
 26(8): 2016 (partitioning community respiration in a lake sediment)
 (12): 3101 (list of Crecy L., N.B.)
 27(1): 125 (re lake trout feed, L. Opeongo, Ont.)
 28(5): 705 (biological magnification & degradation of insecticides by)
 T 130: 225 (of Nfld. streams)
 258 (toxicity test of trisodium nitrilotriacetate detergent on, re pollution)
 S 1128 (in benthos of 4 Lake Superior bays)
- Odontomesa* (see Orthoclaadiinae)
- Odors (see also Dimethyl sulfide; Quality of fishery products; Taste, reactions to; Trimethylamine) (see also next heading)
 J 22(4): 929 (associated with oxidative rancidity in cod flesh)
 (4): 955 (in salmon canned after partial freezing)
 25(4): 639; 26(9): 2299 (developed by metal-induced oxidative rancidity in marine flesh lipids)
 (10): 2071 (developed in untreated & EDTA-treated haddock fillets)
 29(8): 1125 (identification of various volatiles developed in ice-stored canary rockfish muscle)
 (9): 1365 (smoking effect on muddy odor in rainbow trout)
 B 160 (in salmon held in refrigerated sea water)
 CVG 39 (suppression in fishmeal production)
 46 (compact deodorizer for fishmeal plant flame driers)
 T 101 (of experimentally canned ocean quahaug)
 165; 165(F) (muddy, in rainbow trout)
 280 (effect of refrigerated seawater transportation of Atl. cod, redfish, & flounders on fillet odor)
 S 1698 (re smoked whitefish quality appraisal)
 A 112 (same as CVG 39 above)

- Odors, perception of and reactions to (*see also* Taste, reaction to)
- J 24(10): 2011 (re cutthroat trout homing & orientation)
- 25(5): 867 (of chinook salmon re choosing spawning site)
- 26(3): 583 (Atl. cod towards various feeds & extracts)
- (5): 1243 (homing of anosmic vs. blind-anosmic and normal cutthroat trout)
- (8): 2111, 2123 (chinook & coho salmon discrimination of natural waters)
- 27(3): 565 (Pac. salmon olfactory bulb stimulation by waters from their origin; olfactory sense acuity in other fishes: a review)
- (4): 731 (lobsters, to substances re bleached kraft mill effluent constituents)
- (8): 1371 (lobsters, to amino acids, crustacean extracts, & between themselves)
- 28(4): 565 (olfactory epithelium electrical responses of Atl. salmon to various organic chemicals)
- 29(9): 1351 (sockeye & coho salmon & rainbow trout olfactory bulb electrical responses to feed extracts, hand rinse, & amino acids, *also* effect of mercuric & cupric ion on)
- T 287 (surfactants effects on Atl. salmon olfactory epithelium functions)
- S 1574 (oral remnants of nasopalatine canals in fin whales)
- 1478 (identification of interrenal tissue in American Atl. salmon)
- O'Hara, James
- J 29(10): 1491 (temperature-salinity stress & mercury uptake in fiddler crab)
- Oikawa, Toyoko Gene
- S 996 (synthesis & properties of 2,5-dideoxyadenosylcobalamin & 5'-deoxythymidylcobalamin)
- 1041 (nucleotides in *Daphnia* embryos)
- Oikopleura* (*see also* Tunicata)
- J 26(8): 2219 (in young Pac. salmon feed)
- B 176: 82, 178, 225 (synopsis of Canadian zooplanktonic)
- Oil spills (*see* Oils, petroleum (as pollutants of waters))
- Oilfish (*Ruvettus pretiosus*)
- CSG 49 (identification)
- T 189 (Atl. tagging)
- Oils, blubber (*see* Blubber)
- Oils, fish (*see* Liver oils; Oils and fats)
- Oils, fuel (*see* Oils, petroleum)
- Oils, liver (*see* Liver oils)
- Oils, petroleum (as pollutants of waters from oil spills)
- J 27(11): 2095 (hyperplasia of Bryozoa as possible index of)
- 28(9): 1327 (Copepoda tolerance to particulate oil, & its sedimentation via feces)
- (12): 1912 (residues in Chedabucto Bay, N.S., 14 months after spill of)
- 29(9): 1347 (Bunker C oil in sediments & 5 macrobenthic species 26 months after Chedabucto Bay spill)
- CHN 37 (chromatographic recognition of)
- T 201 (toxicity tests of dispersants for)
- 217 (characterization, re tracing origin of spills affecting aquatic environment)
- 284 (concentration & distribution in Halifax harbour, N.S., June-Aug. 1971)
- S 1476 (Canadian implementation of ocean engineering, chemical oceanography, & geochemistry re oil pollution)
- 1569 (determination of residual contamination of aquatic animals)
- 1584 (coke-oven intermediate oil re herring mortality in N Sydney harbour, N.S.)
- 1710 (toxicity of polyoxyethylene esters & ethers dispersants to fish & *Gammarus*)
- 1722; 1723 (diagenesis & maturation of phytol, re formation of)
- A 170 (chromatographic recognition of)
- 223 (combating, on Canadian Atl. coast)
- 258: 26 (effects on ocean ecology)
- Oesophagus
- J 23(10): 1607 (Atl. cod morphology)
- Ogac Lake (semitidal), Baffin Is., N.W.T.
- J 24(5): 975, 981 (history of biological studies; hydrography and chemistry of its semimarine waters)
- (12): 2573 (Atl. cod biology in; bathymetry)
- 26(3): 543 (*Pseudocalanus* polyteny & size variation)
- (6): 1485 (zooplankton population & production ecology)
- (6): 1561 (primary production & nutrients)
- S 1012 (list of vascular plants from around)
- Ogilvie, David Malcolm
- J 22(2): 503 (DDT effect on Atl. salmon temperature selection)
- Ogilvie, J. M.
- J 25(7): 1475 (cod muscle polyphosphates)
- Oglesby, Ray Thurmond
- J 29(6): 787 (exploitation & introductions effects on salmonid community, Cayuga L., N.Y.)
- Ogrefish (*see* Fangtooth)
- O'Halloran, Mary-Jane
- J 26(7): 1823 (sodium transport re α -hydroxycorticosterone)
- 27(12): 2339 (rapid method for partial hypophysectomy in skate)
- S 1372 (skate liver glycogen levels)
- 1477 (Leydig cell homolog in testis of sexually mature Atl. salmon)

- Oils, seed
- S 1029 (fatty acids positional distribution in fat triglycerides of various)
- 1074 (rapeseed oil monoethylenic fatty acids)
- 1136 (storage of linseed oil fatty acid esters)
- 1170 (corn oil triglycerides)
- 1475; 1481 (fatty acids of *Symphytum officinale* & *Euphorbia longana*)
- Oils and fats (of fish) (for fish liver oils, see Oils, liver; for marine mammal oils, see Blubber; for marine invertebrate and terrestrial animal oils, see name of animal) (Note: A few references to the fatty acid structure and composition of oil and fat glycerides are included here, but many more references are given under Acids, fatty; Lipids; Triglycerides. See also Antioxidants; Condition; Enzymes; Margarine; Phospholipids)
- J 22(4): 955 (in salmon and trout canned after partial freezing)
- 23(5): 681 (pilot plant fractionation of methyl esters from Pac. herring)
- (6): 917 (free, in canned sockeye salmon: binding effect of prior treatment of fish)
- (12): 1835 (digestion of by Atl. cod)
- 24(6): 1203 (binding of, in canned sockeye salmon)
- (6): 1209 (of sheephead, tullibee, burbot, & alewife: yield & composition from reduction)
- 25(1): 169 (pesticide residues in freshwater fish)
- J 26(7): 1919, 1923 (extraction from Atl. herring for preparing fish protein concentrate)
- (8): 2077 (role in Atl. & Pac. herring buoyancy)
- (8): 2093 (role in Atl. salmon parr & smolt buoyancy)
- (9): 2363 (content of young sockeye salmon re feed conversion efficiency)
- 27(10): 1669 (biochemical implications of seasonal trends in iodine values & free fatty acid levels of commercial Atl. herring)
- 28(4): 601 (fatty acids of sand lance oils & lipids)
- (11): 1793 (see T 229 below)
- 29(4): 349 (pesticide residues in commercial Atl. herring, seal, & whale oils)
- (5): 525 (content of raw & cooked tissues of 4 L. Michigan commercial fishes)
- CVG 38 (recovery by clarifying salmon-canning waste waters)
- T 5 (fatness condition of Atl. herring)
- 79; 291 (Atl. herring fat contents, & content re season & herring length)
- 187 (seasonal variations in iodine values & free fatty acid levels of commercial Atl. herring)
- 216; 257 (landings for, from B.C. & U.S. Pac. coast commercial trawling, 1969, 1970)
- 220 (effects of storing sockeye salmon in ice vs. refrigerated sea water on free oil content of canned product)
- 229 (rat tests to see if feeding raw or partially hydrogenated Atl. herring oil causes heart or liver fat deposition)
- 249 (analysis methods for detecting & estimating marine oil adulteration of all-vegetable margarines & cooking fats)
- 272 (halogenated hydrocarbon residues in commercial Atl. fish oil)
- 291 (fat content of N.S. banks herring)
- S 972 (fatty acids types in various Atl.)
- 1080 (fatty acids positional distribution in depot fat triglycerides of several fishes, man, & several terrestrial animals)
- 1350 (extraction from Atl. herring material for fish protein concentrate; also composition of)
- 1395 (branched-chain fatty acids of 4 freshwater fishes oils)
- 1405 (lipoxidase reaction with polyenoic fatty acids of various marine)
- 1591 (pristane & other hydrocarbons in some freshwater & marine Canadian commercial fish oils)
- 1602 (lobster biosynthesis of glycerides from radioactive-labelled compounds)
- 1625 (depot fat fatty acids of 3 marine & 6 freshwater turtle species)
- 1638 (monoethylenic fatty acids of partially hydrogenated Atl. herring)
- 1696 (organochlorine pesticide contamination in Atl. herring)
- 1700 (white barracudina lipid wax esters as potential replacement for sperm whale oil)
- 1714 (isomer effects in studying monoethylene fatty acids of margarine)
- A 98 (Atl. herring)
- 124; 125 (extraction & residual, fish protein concentrates)
- 177 (Canadian production increase; popular account of FRB Halifax Laboratory researches on)
- Oithona* (see Cyclopoida)
- Okanagan Valley lakes, B.C.
- T 196 (bottom fauna survey of Okanagan, Skaha, & Osoyoos)
- S 1536 (deformed chironomids larvae possibly caused by synthetic chemical pollutants)
- Olfactory perception and response (see Odors, perception of and reactions to)
- Oligochaeta (see also Annelida; Tubificidae)
- J 24(6): 1421 (exotic B.C. earthworms eaten by coho salmon)
- 25(1): 205 (earthworm species collected from near Vancouver, B.C.)
- 26(8): 2016 (partitioning community respiration in a lake sediment)
- (10): 2581 (bottom corer for sampling tubificid)
- (10): 2659; 27(11): 1961, 1971; 28(3): 335 (nutritional resources, defecation rates, & types of sediment bacteria surviving ingestion by *Tubifex tubifex*, *Limnodrilus hoffmeisteri*, & *Peloscoclex multisetosus* in Toronto harbour, Ont.)
- 27(2): 220 (*Limnodrilus* in reservoir benthic fauna)
- 28(6): 849 (samplings from shallow stream bed)
- (11): 1683 (associations & species diversification in L. Ontario bays)

- (11): 1699 (production, L. Ontario bays)
 29(4): 363 (feed & feeding habit of *Limnodrilus*, *Isochaetides*, & *Chaetogaster*)
 (10): 1472 (shift in predominance with water-level change below a river dam)
 T 43 (on Irish moss)
 196 (in bottom fauna of Okanagan Valley lakes, B.C.)
 S 1532; 1533 (of a high Colorado mountain creek)
 1543 (Georgian Bay, L. Ontario, & L. Erie; also key)
- Oligocottus maculosus* (see Sculpin, tidepool)
snyderi (see Sculpin, fluffy)
- Oligotrophy (see also Eutrophication)
 J 28(2): 265 (in several small NW Ont. lakes as indicated by diatom species in sediments)
 (11): 1683 (re benthic macroinvertebrates associations & species diversity in L. Ontario bays)
 29(6): entire issue (proceedings of international symposium on Salmonid Communities in Oligotrophic Lakes (N American & European))
- Olisthodiscus* (see Xanthophyceae)
- Olive Oil
 S 1029 (fatty acids positional distribution in triglycerides)
- Oliver, Donald Raymond
 T 124 (Nearctic Chironomidae classification)
- Olson, P. A.
 J 28(11): 1739 (disease susceptibility of young trout and salmon)
- Ommatokoita elongata* (parasitic copepod)
 J 26(1): 143 (on Greenland shark cornea)
- Omnastrephes sloani pacificus* (see Squids)
- Oncorhynchus biwa* (see Salmon, redspot)
gorbuscha (see Salmon, pink)
keta (see Salmon, chum)
kisutch (see Salmon, coho)
masu (see Salmon, masu)
masu ishikawae (see Salmon, masu)
nerka (see Salmon, sockeye; Kokanee)
nerka kennerlyi (see Kokanee)
rhodurus (see Salmon, redspot)
tshawytscha (see Salmon, chinook)
 (see also Salmon (Pacific in general); Salmonidae)
- Onega, Lake (USSR)
 J 29(6): 629, 937 (factors affecting fish communities, particularly salmonid)
- Oneida Lake, N.Y.
 J 27(3): 445 (water currents effects on walleye larvae distribution)
- Oneirodes acanthias* (see Dreamer, spiny)
bulbosus (see Dreamer, bulbous)
eschrichti (see Dreamer, bulbous)
- Onos (*Motella tricerratus*)
 J 25(12): 2711 (muscle creatine kinase localization)
- Ontario (see also Algonquin Park; Erie, Lake; Georgian Bay; Great Lakes; Huron, Lake; Hudson Bay; Ontario, Lake; Quinte, Bay of; St. Clair, Lake; Superior, Lake; also other localities and bodies of water; names of commercial fisheries)
 J 24(6): 1407 (morphological comparison of lake trout with Man. lakes populations)
 25(2): 285, (6): 1133 (L. Opinicon fishes feeding habits)
 (6): 1145 (Pigeon & Sturgeon L. maskinonge mortality re angling)
 (6): 1199 (fishes feeding habits in Fish L. & 2 creeks)
 (6): 1229 (L. Belwood reservoir phytoplankton ecology)
 (7): 1347 (walleye exploitation & dynamics in Nipigon Bay)
 27(8): 1405 (chemical composition & phytoplankton of 70 lakes (not indexed separately) in southern; corrections on J28(8): 1219)
 J 28(2): (entire issue), (11): 1763 (FRB Experimental Lakes Area program for biological productivity & eutrophication in many small lakes; correction on J29(8): 1241)
 29(6): 617, 717, 913, 951, 975 (various factors affecting fishes, particularly salmonid communities)
 (9): 1283 (cadmium content of several fishes)
 (10): 1451 (crustacean plankton abundance re eutrophication)
 (12): 1685 (mercury concentration re size of 5 fish species from various NW lakes; corrections on J 30(8): 1257)
 B 151; 151(F) (special products from freshwater fishes)
 166: 52 (eel fishery)
 S 1718 (organochlorine pesticide levels in commercially caught fishes from various waters)
- Ontario, Lake (see also Great Lakes; Quinte, Bay of)
 J 23(11): 1715 (biological composition of surface phytoplankton)
 24(4): 887 (rainbow trout phenotypic characteristics)
 26(4): 833 (yellow perch parasites, Bay of Quinte)
 (8): 2135 (crustacean plankton horizontal distribution & composition)
 27(8): 1493 (benefit of sewage treatment for phosphate removal re particulate matter production in)
 (11): 1961, 1971 (tubificid oligochaetes of Toronto harbour; defecation rates)
 28(5): 786 (heavy-metal concentrations in dressed lake whitefish)
 (11): 1683 (benthic macroinvertebrates associations & species diversity in certain bays)
 (11): 1699 (macroinvertebrate production in certain bays)

- (11): 1715 (benthos community metabolism in certain bays)
 29(5): 535 (American eel life history)
 (9): 1283 (cadmium content of several fish species)
 T 186 (chlorophyll *a* of surface waters, 1967)
 S 1529 (trace elements & chlorophyll *a* distribution)
 1536 (occurrence of deformed chironomids larvae possibly caused by synthetic chemical pollutants)
 1543 (Oligochaeta, Sphaeriidae, & Chironomidae)
 1668 (mercury contamination in various commercial fishes)
 1689 (dieldrin & DDT effect on in situ phytoplankton growth)
 1690 (composition & horizontal distribution of plankton, 1970)
 1718 (organochlorine pesticide levels in commercially caught fishes)
 A 106 (transplants of *Oncorhynchus* salmonids into)
- Onuphis longibranchiata*
 S 1677 (new Polychaeta species, from B.C.)
- Oocyte (see Eggs; Maturation; Ovary; Reproduction)
- Oozy Creek, P.E.I.
 T 3 (biotic survey)
- Opah (*Lampris regius*) (Jerusalem haddock; moonfish)
 B 180: 269 (full description, etc., B.C.)
 CSG 49 (identification)
- Opaleye (*Girella nigricans*)
 J 26(4): 957(F) (new trematode species from)
- Opegaster cameroni* (trematode)
 J 26(4): 957(F) (new species from S California fishes)
- Opeongo, Lake, Ont.
 J 24(1): 87 (smallmouth bass growth re temperature)
 27(1): 125 (long-term effect of natural feed on lake trout fishery)
 29(6): 617, 795, 975 (various factors affecting fish communities, particularly salmonid)
- Ophel, Ivan Lindsay
 J 25(7): 1333 (marking fish with stable strontium)
- Ophiodon elongatus* (see Lingcod)
- Ophiuroidea (see Brittlestars; Starfishes)
- Opinicon, Lake, Ont.
 J 23(12): 1845 (fishes mouth & body form re feeding ecology)
 25(2): 285 (feeding biology of black crappie & associates)
 (6): 1133 (diel feeding habits of 5 species of fish)
- Opisthobranchiata (see also Mollusca; Pteropoda)
 T 2: 118 (checklist & bibliography of W coast of Canada)
 S 1470 (checklist & bibliography of B.C. marine)
- Opisthonema oglinum* (see Herring, Atlantic thread)
- Opsanus tau* (see Toadfish, oyster)
- Orchestia* (see Amphipoda)
- Orcinus orca* (see Whale, killer)
rectipinna (see Whale, killer)
- Orconectes* (see Crayfishes)
- Ordination (see also Associations; Communities)
 S 1580; 1620 (& classification of many shallow-water benthic species, P.E.I.)
- Oregon, USA
 J 23(11): 1673 (sea stars bathymetric distribution)
 24(5): 917 (steelhead trout fecundity in Alsea R.)
 25(12): 2665 (species associations of coastal benthic fishes)
 29(9): 1253, 1261, 1269 (radiation re chlorophyll & primary production off coast)
 T 326 (1970 status of Pac. ocean perch stocks off)
- Oregonia gracilis* (see Crabs, spider)
- Oreo (*Alloctytus* sp.)
 B 180: 266 (full description, etc., B.C.)
- Organolepsis (see Light, reactions to; Odors, reactions to; Quality; Salinity, reactions to; Sound, reactions to)
- Organoleptic tests (see Quality of fishery products; Taste panels)
- Organophosphates (see Insecticides; Phospholipids; Phosphorus derivatives)
- Oribatoidea (see Acarina)
- Orientation (see also Buoyancy; Distribution (biological); Homing; Migration)
 J 24(10): 2011 (re cutthroat trout homing)
 (11): 2321 (during pink salmon early marine migration)
 25(10): 2123 (of sea scallop on bottom & swimming when disturbed)
 (10): 2143 (of adult American eel towards spawning area)
 29(1): 45 (of goldfish in shallow gradient of sublethal cupric ion)
 (2): 151 (of sockeye salmon fry migrating up lower Babine R., B.C.)
 T 312 (computer programming directional data on migrating Pac. salmon orientation)
 S 1166 (of young sockeye salmon during migration from lakes)
 1675 (review of field studies on fish)
- Orlowski, Stanley J.

- J 29(1): 111 (distinguishing cunner & tautog eggs by immunodiffusion)
- Ornithology (see Birds; also names of species)
- Orr, Thomas Samuel Campbell
 J 26(4): 741 (*Schistocephalus solidus*, a tapeworm)
 (8): 2250 (*Ligula intestinalis* life cycle)
- Orthocladinae (see also Chironomidae)
 J 29(4): 363 (feed & feeding habits of *Odontomesa* & *Cricotopus*, USSR)
 B 170 (descriptions, morphology, taxonomy, distribution, etc., of 47 species)
 T 124 (classification of Nearctic)
 A 272 (review of B 170 above)
- Orthopagurus* (see Crabs, hermit)
- Oryzias latipes* (see Medaka)
- Osborn, T. R.
 J 29(12): 1767 (instrument for measuring conductivity profiles in inlets)
- Oscillation, tidal or current (see Currents; Tides)
- Oscillatoria* species (see also Phytoplankton)
 J 25(6): 1229 (in phytoplankton ecology of an Ont. reservoir)
 27(5): 847 (*O. agardhii* dominant phytoplankton in Sunfish L., Ont.)
- Oshima, Kiyoshi
 J 26(8): 2111, 2123 (Pac. salmon olfactory discrimination & responses)
- Osmeridae (see Capelin; Eulachon; Smelt; Smelts)
- Osmerus dentex* (see Smelt, rainbow; Smelts)
eperlanus (see Smelts)
eperlanus mordax (see Smelt, rainbow)
mordax (see Smelt, rainbow; Smelts)
mordax dentex (see Smelt, rainbow)
- Osmoregulation (see Acclimation; Salinity, reactions to)
- Osmotic coefficient (see also Activity, coefficient of)
 S 1234 (of H₂O-NaCl-Na₂SO₄ system re sea water)
- Osoyoos Lake, B.C.
 T 196 (limnology & bottom fauna survey)
- Ossiander, Frank James
 J 23(5): 729 (size-class of king crabs)
- Osteology (see also Bone; Skeleton; Vertebrae)
 J 24(6): 1315 (of Gadidae crania)
 25(9): 1843 (of new genus & species of fossil sea lion)
 26(1): 175 (re distinguishing northern pike vs. maskinonge filets or remains)
 (2): 421 (cranial, of cusk re other Gadidae genera)
- 28(3): 427 (re phylogenetic implications in tubesnouts & sticklebacks)
 29(1): 1 (rare deep-sea eel *Xenomystax atrarius*)
 B 171 (identification of B.C. marine mammals from skull remains)
 S 1188 (of jaw re *Phoca vitulina* subspecies)
 1240 (skulls of stranded Cuvier's beaked whales)
- Osterberg, Charles Lamar
 J 25(11): 2461 (⁶⁵Zn in marine crustaceans)
- Ostovar, Kurosh
 J 24(1): 9 (whitefish preservation with radiation)
 28(5): 643 (gamma irradiation of whitefish *Salmonella*; correction on J29(8): 1241)
 (5): 783 (effects of washing on keeping quality of freshwater fish)
- Ostracoda (see also Crustacea)
 J 22(3): 823 (diurnal & seasonal distribution changes of 2 *Conchoecia*)
 28(6): 928 (in feed of fluffy & tidepool sculpins)
 29(4): 363 (feed & feeding habits of 3 USSR freshwater species)
 B 176 (synopsis of, in Canadian marine zooplankton)
 T 25; 35; 59; 69; 73 (in Strait of Georgia benthos biomass)
 55: 31 (identification of B.C.)
 266 (*Philomedes globosa*, Frobisher Bay, Baffin Is., N.W.T.)
 S 1587 (fossil, re Pleistocene paleoecology of Santa Barbara Is., Calif.)
- Ostrea edulis* (see Oyster, European)
lurida (see Oyster, Olympic)
- Ostrea Lake, N.S. (tidal)
 T 76 (preferential benthic survey)
- Otaria byronia* (see Sea lion (Peru))
- Otariidae (see also Sea lion)
 J 25(9): 1843 (subfamilies, tribes, & genera classification of fossil)
- Otodistomum veliporum* (see Trematodes)
- Otoliths (for fish age determination) (see also Age)
 J 22(2): 568; 24(5): 1077 (American plaice)
 23(3): 463 (Bay of Fundy capelin)
 (8): 1151 (formation in Atl. argentine)
 (12): 2573 (Ogac L. Atl. cod)
 25(5): 1067 (vs. scales for sockeye & chum salmon)
 (11): 2503 (abnormal growth in Atl. herring)
 (12): 2561 (in cetacean stomachs re feeding habits)
 26(7): 1889 (nuclei similarity in spring- & autumn-spawning in Atl. herring)
 (12): 3133 (growth in cod off SW Nfld.)
 27(1): 105 (glacier lanternfish)
 (2): 393 (of a record size & age Atl. capelin)
 (7): 1265 (smallfin lanternfish)
 (12): 2155 (shorthorn sculpin, Nfld.)
 28(10): 1621 (northern rockfish)

- 29(3): 243 (comparison of Greenland cod, polar cod, & toothed cod)
 (4): 452 (round whitefish, Leaf R., Ungava, Que.)
 (8): 1113 (as natural "tag" for identifying S Gulf of St. Lawrence herring stocks)
- T 27 (Atl. cod)
 31 (Atl. mackerel)
 49 (Atl. herring)
 74 (vs. scales for sablefish)
 108 (rock sole, B.C.)
 109 (yellowfin sole, B.C.)
 138 (opaque & hyaline nuclei re Nfld. herring spring & autumn spawning)
 171 (examination of criteria for aging Pac. cod; also preparation)
 231 (Arctic char)
- S 997 (Atl. cod: international exchange for age determination comparisons)
 1021; 1208 (validity for Atl. cod)
 1212 (witch flounder)
 1255 (re NW Atl. capelin)
 1318 (W Nfld. cod stock)
 1464 (critique of use for Gulf of St. Lawrence herring)
- A 108: 19 (Atl. hake)
- Ott, Alvin George
 J 28(5): 745 (cryopreserved sperm fertilize salmon eggs)
 (12): 1915 (preservation of trout sperm)
- Ottawa River, Ont. & Que.
 J 29(5): 535 (American eel life history)
- Otter, sea (*see* Sea otter)
- Otter trawl (*see* Trawling)
- Otto, Robert George
 J 27(4): 793 (coho salmon salinity preference)
 28(3): 343 (presmolt coho survival & growth re salinity)
- Ouananiche (*see* Salmon, Atlantic landlocked)
- Ouareau, Lake, Que.
 J 25(9): 1831(F) (muskellunge age & growth)
- Outram, Donald Noel
 J 29(12): 1792 (feed of hake offshore B.C.)
 CNG 74; 77; 83; 86; 88 (herring spawn abundance along B.C. coast, 1965-69)
 T 296 (B.C. herring spawning, 1951-70)
 A 36; 59; 62; 102 (B.C. herring spawning)
- Ova (*see* Eggs (ova) of fish and other aquatic animals)
- Ovary (*see also* Eggs; Fecundity; Gonads; Hermaphroditism; Hormones; Maturity; Reproduction; Spawning)
 J 24(2): 447 (anatomy in trouts)
 25(6): 1299 (re ova density in winter flounder)
- (9): 1797 (dieltrin accumulation in goldfish, after aldrin ingestion)
 (9): 1813(F) (to body weights of "giant" vs. "dwarf" smelts)
 (12): 2643 (furunculosis bacteria in brook trout)
- 26(2): 461 (temperature, pH, & virus effects on rainbow trout cells in vitro)
 (7): 1789 (gonadectomy effects on sockeye salmon cortisol secretion rate)
 (7): 1943 (anatomy re winter flounder oocyte maturation)
 (9): 2521 (re lake whitefish hermaphroditism)
 (11): 2975 (re interrenal tissue hypertrophy in sexually maturing sockeye)
 (12): 3242 (fibrous & cystic lesions in, of aged Atl. cod)
- 27(1): 143 (weights, of lake trout, L. Opeongo, Ont.)
 (1): 158 (preparation & study of chromosomes, from mummichog & striped killifish)
 (5): 749 (maturation in threespine stickleback re spectral photoperiod mechanism)
 (5): 957 (3-year oocyte maturation time in winter flounder)
 (5): 973 (carotenoids of prespawning & spawning sockeye)
 (11): 2037 (development & histology, shorthorn sculpin)
 (12): 2287, 2323 (gonadectomy effects on cortisol & cortisone secretion rate in sockeye)
- 28(4): 477, 485 (hormones effects on gonadectomized sockeye)
 (5): 793 (selective accumulation of yellow phosphorus from sea water, by lobster)
 (7): 971 (length re body length of mature *Sagitta elegans* arrow worms, St. Margaret's Bay, N.S.)
 (7): 1029 (fecundity of right vs. left, in Atl. capelin)
 (8): 1191 (fatty acids & amino acids of Dungeness crab)
- S 1174 (pyruvate metabolism by Atl. cod tissue)
 1292 (goldfish ovulation restored by salmon pituitary extract)
 1443 (amphibian infection of rainbow trout)
 1535 (clinook salmon gonadotropin effect on growth & maturation of gonadectomized vs. normal guppy)
 1557 (temperature & photoperiod effects on crayfish maturation of)
 1695 (salmon gonadotropin effect on promoting development in striped mullet)
- Overbeeke, Abraham Pieter van
 J 24(8): 1791 (spawning sockeye salmon pituitary)
 26(5): 1147 (sockeye gland changes after gonadectomy)
 (7): 1837 (sockeye ACTH & prolactin)
 (11): 2975 (sockeye interrenal tissue hypertrophy & effect of gonadectomy)
- Owens, Eben Lowell
 J 25(11): 2519 (fish-marking technique)
- Owikeno Lake, B.C. (*see also* Rivers Inlet, B.C.; Salmon)

- J 26(5): 1363 (primary productivity re sockeye salmon production)
 B 162: 185 (re B.C. sockeye studies)
- Oxidation (*see also* Antioxidants; Rancidity)
 CVG 36 (control of B.C. herring meals by antioxidants)
- Oxygen, dissolved (for general data re natural waters *see* Hydrography; Limnology; Oceanography; *see also* Eutrophication; Pollution; Respiration)
- J 22(1): 159 (mass transfer theory for fish-egg respiration)
 (3): 823 (re marine ostracod distribution)
 (6): 1491 (consumption re sockeye salmon size and swimming speed)
 23(8): 1121 (re temperature in trouts embryo development)
 24(3): 475 (influence on juvenile largemouth bass growth)
 (6): 1253 (uptake of zebrafish re resistance to zinc sulfate)
 (6): 1299 (absence in guantrophic region of a small lake)
 (11): 2355, 2395, 2398, 2400, 2402 (consumption of various fishes, mathematically treated)
 25(1): 49 (effect on swimming speed of juvenile largemouth bass & coho salmon)
 (1): 81 (artificial vertical circulation effect on, in eutrophic lakes)
 (3): 579 (effects of diurnal fluctuations on brook trout growth)
 (6): 1229 (re phytoplankton ecology in an Ont. reservoir)
 26(1): 63 (hypoxial stress in coho salmon egg & fry; effects on fry competitiveness)
 (6): 1561 (re primary production, Ogac L., Baffin Is.)
 (9): 2283 (tolerance of 5 haustoriid amphipod species)
 (9): 2493 (re lead effect on brook trout growth)
 (10): 2746 (re temperature conditions in & off Gulf of Maine)
 (11): 2807 (re salinity & swimming speed of *Tilapia nilotica*)
 27(5): 966 (high affinity for, in Pac. hagfish hemoglobin)
 (6): 1069 (gas exchange in rainbow trout with varying capacity of blood for)
 (6): 1172 (oxygenating device for live-bait wells & holding tanks)
 (9): 1627 (opercular oxygen tension in fish expired water)
 28(2): 157, 257 (of many small NW Ont. lakes)
 (2): 295 (re differences & similarities among small NW Ont. lakes)
 (3): 379 (requirements for northern quahaug embryonic & larval development)
 (6): 883 (effects on Pac. cod eggs development re geographical distribution)
 (8): 1119 (chronic effects of low concentrations on fathead minnow)
 (8): 1196 (digital recorder monitoring in fish tanks)
 (9): 1303 (depletion effect on walleye photic behavior)
 (10): 1459 (concentration re polychaete settlement on test panels)
 (11): 1815 (dispenser for simultaneous delivery of Winkler reagents)
 (12): 1823 (handling & salinity effects on striped bass requirements)
 (12): 1907 (winter flounder respiration rates)
 29(8): 1119 (hypoxia from intertidal exposure effect on Pac. herring spawn)
 (9): 1309 (concentration re bioassay for hydrogen sulfide toxicity to goldfish)
 (11): 1641 (comparative efficacy of aquaria aeration oxygenation devices)
 B 125R: 23; 167; 21, 263 (determination in sea water)
 T 77; 327 (St. Margaret's Bay, N.S., re primary productivity)
 120; 247 (Bedford Basin, N.S.)
 130 (availability in Nfld. streams re industrial pollution)
 294 (re operation of a model aerated sewage lagoon)
 307 (numerical model for effect of pulp mill effluent on, in stratified estuary)
 316 (pulp mill effluent effects on, Alberni Inlet, B.C.)
 319 (depletion from phytoplankton bloom as cause of sudden fish & shellfish mortality, Nanoose harbour, B.C.)
 S 892 (re pulp mill wastes pollution effects)
 927 (consumption by lobster)
 1629 (distribution in S Atl. Ocean)
 1680 (metabolic demand in fishes re reptiles, mammal, & birds: review)
 1692 (horizontal & vertical distribution, N & S Pac. Ocean)
- Oxygen dissociation (*see also* Respiration)
 J 23(1): 1, (8): 1187 (of brook trout & Atl. salmon blood)
- Oxylebius pictus* (*see* Greenling, painted)
- Oyster, American (*see* Oyster, Atlantic)
- Oyster, Atlantic (*Crassostrea virginica*)
 J 22(2): 281 (light effect on growth)
 (2): 631 (ancient shells in now oyster-barren areas)
 23(4): 595 (in vitro cultivation of cardiac tissue cells)
 (11): 1635 (nutrient & energy cycles in Malpeque Bay, P.E.I.; correction on J 25(8): 1759)
 24(2): 357 (α -tocopherol & lipids in unfed held)
 (2): 443 (serological differences between 2 populations)
 (6): 1413 (freeze-drying for total solids assay re condition)
 (10): 2155 (chromosomes)
 25(2): 267 (occurrence & retention of thetin derivative in feed)
 (4): 639 (catalysis of flesh oxidative rancidity by metal ions)
 (11): 2521 (association with a microturbellarian)

- 26(1): 171 (Malpeque Bay physiographic changes re possible effects on production)
 (3): 707 (2 modified stains for tissue pathology)
 (5): 1121 (distribution & industrial importance of parasitic drill on Canadian Atl. coast)
 (10): 2760 (bacterial flora of some algal feeds for rearing larvae)
- 27(1): 47 (zinc & ⁶⁵Zn levels in, from industrial- or fallout-polluted North Carolina waters)
 (1): 59 (role of zinc enzyme re zinc-protein association in zinc uptake)
 (4): 743 (effect of light on spat settlement)
- 28(1): 59 (DDT residues in N.B. & P.E.I.)
 (6): 843 (biological activity of zinc in, determined by feeding to rats)
- 29(4): 385 (review of sterols isolated in)
 (4): 450 (distribution of Fe, Mn, Cu, Zn, & Ag in, along Georgia coast)
 (5): 588 ("gas-bubble" disease in, from gas super-saturation in sea water)
 (9): 1367 (cadmium uptake from sea water containing added CdCl₂)
- B 131(F) (French edition of 1961 original English edition on culture of, in Canadian Maritime Provinces. See Bulletin 164 for complete indexing.)
 169: 6 (in B.C.)
 175 (economic study of Maritime Provinces fishery)
 CDG 1 (eelgrass control on beds)
- CJG 13: 48 (growth in Nfld. barachois pond)
 16: 24 (results of transplantation from P.E.I. to Nfld.)
- CSG 48 (further progress in rehabilitating Canadian stocks)
 51 (progress in Canadian hatchery development)
- T 188 (experimental transplant from P.E.I. to W Nfld.)
 334 (effect of feeding 3 unicellular algal species on lipids & fatty acids)
- S 1122; 1210 (experimental chemical control of eelgrass on beds)
 1134 (hatchery procedure development)
 1198 (ancient shells on Sable Is., N.S.)
 1215 (hemolymph hemagglutinins)
 1285 (axenic culture of *Hexamita inflata* from, re possible relationship to Malpeque disease)
 1422 (periodicities in thick filaments of adductor muscle)
 1572 (saturated & isoprenoid fatty acids distribution in lipids)
 1668 (mercury contamination)
 1679 (sterols)
- A 35 (stocks rehabilitation)
 84 (effect of various pollutants on productivity)
 109; 109(F) (eelgrass control on beds) (same as CDG 1 above)
 200 (mercury contamination)
- Oyster, European (*Ostrea edulis*)
 J 24(5): 1165 (shell-weight re age in British waters)
 T 334 (effects of feeding 3 unicellular algal species on lipids & fatty acids)
- S 891 (water-pumping behavior recording apparatus)
- Oyster, Olympic (*Ostrea lurida*)
 B 169: 4 (localities found in, B.C.)
- Oyster, Pacific (*Crassostrea gigas*)
 J 22(4): 1099 (effect of *Mytilicola* parasite on condition)
 23(8): 1265 (occasional toxicity in Strait of Georgia)
 (12): 1913 (turpentine-induced inflammation histopathology)
 24(4): 883 (sampler for planktonic larvae)
 (8): 1833 (botulinum spore germination in tissue extracts)
 (10): 2155 (chromosomes)
 26(1): 190, (8): 2245 (*Mytilicola orientalis* parasitic copepod in)
 27(7): 1320 (halosporidan sporulation in a Californian)
 29(4): 385 (review of sterols isolated from)
 (5): 588 ("gas-bubble" disease in, from gas super-saturation of sea water)
- B 168: 33; 169: 151 (paralytic shellfish poison tests, B.C.)
 169 (culture, harvesting, processing, marketing, etc., in B.C.)
 178 (raft culture in B.C.)
 T 301 (raft culture in B.C.)
 S 1097 (brief description; biology; B.C. culture)
 A 258: 20 (re pollution of coastal waters)
- Ozonolysis
 S 1151 (esterification of fatty acids ozonides products)

P

Pachycerianthus (see Sea anemones)

Pacifastacus trowbridgii (see Crayfishes)

Pacific Fisheries Marine Commission

S 1319 (results of English sole tagging, B.C.)

Pacific Ocean, northern (see also appropriate Oceanography headings and other headings relating to oceanic waters; also Fisheries; International North Pacific Fisheries Commission; Surveys; also names of commercial Pacific marine fishes (particularly salmons) and other marine life)

J 22(1): 33 (estimating salmon mortality)

(5): 1151 (distribution of 2 Alepocephalidae)

23(1): 85 (stomach content of salmons & steelhead trout)

(2): 305, 309, 313 (new fish records)

(4): 539 (spring phytoplankton bloom in subarctic)

(6): 825 (variability of conditions between Cape Flattery & ocean weathership station)

(7): 1043 (fin-marked pink salmon migration & distribution)

(8): 1135 (oceanic shrimps depth distribution off Oregon)

24(3): 581 (Ekman transport re zooplankton concentration off California & in Bering Sea)

- (5): 899 (chemical features of subarctic boundary)
 26(2): 199 (plankton primary production in NE)
 (5): 1133 (experimental nutrient enrichment of seawater samples from tropical areas re phytoplankton growth)
 (8): 1985 (evaluation of exploratory fishing methods in NE; stock size & yield forecasts)
 27(10): 1781 (distribution & abundance of Pac. ocean perch & other rockfishes in NE)
 (12): 2297 (99 calanoid copepod species along 160 E)
 28(10): 1403 (amphipacific distribution of some 25 polychaete species)
 29(10): 1419 (biomass & depth change of sound-scattering layers in NE)
 B 162 (oceanic life of sockeye salmon)
 CNG 79 (recent developments in groundfish trawl fishery)
 84 (guide to zooplankton of NE)
 CNS 15; 20; 21; 22; 23 (salmonids stomach contents, 1956-64)
 CPO 1965-2(B.C. coastal surface temperatures, 1964)
 1965-4(B.C. coastal surface salinities, 1964)
 T 175 (larval fish species found in zooplankton sampling)
 230; 240 (N Pac. Ekman transport charts, 1969, 1970)
 238; 239 (N. Pac. Ekman & other transport calculations, 1969, 1970)
 246 (bibliography of trawled fishes off Alaska, B.C., USA)
 273 (oceanographic conditions at Bowie Seamount off Queen Charlotte Is.)
 S 899 (stocks and fishery developments of salmon)
 917 (oceanographic regions and processes in seasonal zone)
 918 (daily and seasonal sea-level oscillations, B.C. coast)
 925; 926 (salmon research and oceanography)
 973 (coho salmon life history, stocks, distribution, etc.)
 974 (5 salmon species distribution & mingling of E & W stocks)
 1129 (distribution of sockeye salmon in offshore)
 1137 (longline fishing, tagging, & racial studies of salmon)
 1156 (distribution of pink salmon in offshore)
 1386 (echo sounding for assessing zooplankton biomass)
 1466; 1467 (large-scale studies of primary production)
 1692 (oxygen distribution, horizontal & depth)
 1713 (carbon dioxide partial pressures in surface waters variance with time)
 A 19 (predicting pink & sockeye salmon runs by high-seas tagging)
 60 (same as CNG 79 above)
 167 (microbial biomass in subarctic euphotic zone)
 204 (salmon & steelhead trout studies)
 S 1692 (horizontal & vertical oxygen distribution)
 A 220 (condensation of J reference above)
 Packaging
 J 26(10): 2651 (vacuum vs. air, re EDTA preservative action on fish fillets)
 27(9): 1605 (effects on frozen storage life of redfish fillets)
 B 151; 151(F) (freshwater fish products)
 169: 108 (Pac. oyster, B.C.)
 173: 357 (preserved fish specimens for shipment)
 S 1365 (frozen products from Atl. trawl fishery)
 A 203 (advances in, for fishery products)
 Page, Orville Thomas
 J 26(1): 47 (DDT degradation by salmon)
Pagophilus groenlandicus (see Seal, harp)
Paguristes (see also Crabs, hermit)
 J 28(10): 1527 (new records off B.C. for *P. tergidis* & *P. ulreyi*)
Pagurus (see Crabs, hermit)
 Paim, Uno
 J 25(11): 2321; 26(1): 47 (DDT degradation in Atl. salmon)
 Paintings
 A 228 (of Greenland life & scenery: book review)
 Paints, antifouling and for protection against woodborers
 CSG 52; 53 (for ships' hulls)
 T 88; 114; 119 (for ships' hulls)
 Pakkala, Irene S.
 J 29(9): 1283 (total cadmium content survey of New York State freshwater fishes)
Palaemonetes (see Shrimps, glass)
 Palaeolimnology (see also Evolution; Geology; Glaciation; Palaeontology)
 J 28(2): 265 (diatoms in sediments of 16 small NW Ont. lakes as indicators of limnological history of lakes)
 S 1434 (re sedimentary organic matter: review)
 Palaeontology; Fossils (see also Evolution)
 J 23(12): 1897 (of modern sea otter)
 S 1440 (amino acids of northern quahaug shells)
 1587 (re paleoecology & biostratigraphy, Santa Barbara Is., Calif.)
 1589 (Dinophyta secreting discoasters)
 A 144 (Atl. shark teeth, in fisheries catches)
 Palatability (see Quality of fishery products)
Palinurus argus (see Lobster, squat)
Pallasina barbata aix (see Poacher, tubenose)

Pacific Ocean, southern

- J 28(8): 1077 (physical oceanographic features of 32 Chilean fiords & inlets, also of some adjacent waters)

- Paloheimo, Jyri Erkki
 J 22(2): 521 (growth of fishes)
 23(6): 869, (8): 1209 (feed & growth of fishes)
 25(3): 555 (Gulf of St. Lawrence cod population analysis)
 S 994 (abundance & fishing success)
 1158 (groundfish heterogeneity)
 1445 (production & food supply)
- Palometa simillima* (see Pompano, Pacific)
- Pancreas (see also Hepatopancreas)
 J 23(10): 1607 (Atl. cod morphology)
 24(1): 67 (effect of feeding on, in sexually ripening sockeye salmon)
 25(2): 383 (infectious pancreatic necrosis (IPN) in young trout)
 26(6): 145 (detection of brook trout carriers of IPN virus)
 (8): 2247 (morphology of IPN virus in rainbow trout pancreatic tissue)
 (9): 2511 (clinical & immune response of trouts to inoculation with IPN live virus)
 (12): 3259 (incidence of IPN virus in trouts & salmon in Atl. hatcheries)
 28(4): 485 (histological effects of hormones & cortisol on gonadectomized adult sockeye salmon)
 (7): 1064 (vs. feces re presence of IPN virus in brook trout)
 (9): 1350 (IPN virus found in 2 Ont. brook trout hatcheries)
 29(1): 61 (disinfectants tests against IPN in rainbow trout)
 S 967 (triglyceride-hydrolyzing lipase from skate)
 1250; 1462 (pancreatic lipase substrate specificity)
 1371; 1374 (various esters as substrates for assaying lipase activity)
 1471 (pancreatic lipase colorimetric assay method)
 1721 (lipids fatty acids, leatherback turtle)
- Pandalid, benttail (*Pandalus goniurus*) (proposed name in B.C. for humpy shrimp of Alaska; see Shrimp, humpy)
- Pandalid, bluespotted (*Pandalus stenolepis*) (proposed name in B.C. for this species)
 J 27(6): 1051 (distribution of ingested ⁶⁵Zn in tissues)
 T 241: 38 (bibliography)
- Pandalidae (see also Pandalid; Prawn; Shrimp; Shrimps)
 T 241: 38 (bibliography)
- Pandalopsis dispar* (see Shrimp, sidestripe)
- Pandalus borealis* (see Shrimp, pink)
danae (see Shrimp, coonstripe)
goniurus (see Shrimp, humpy; Pandalid, benttail)
hypsinotus (see Shrimp, humpback)
jordani (see Shrimp, smooth pink)
montagui (see Shrimp, striped pink)
platyceros (see Prawn)
stenolepis (see Pandalid, bluespotted)
 species (see T 241 for bibliography of)
- Panope generosa* (see Geoduck)
- Panpano (*Trachinotus ovatus*) (Moonfish)
 J 25(1): 197 (microorganisms isolated from diseased)
- Pantosteus platyrhynchus* (see Sucker, mountain)
- Pantothenic acid (see Vitamin B group)
- Paperbone, scaly (see Wearyfish, scaly)
- Parabassogagus grandis* (see Cusk-eel (a deep-sea))
- Parabomolochus* (see Cyclopoida)
- Parabrachiella* (see also *Brachiella lageniformis*)
 J 27(12): 2159 (proposal to suppress *Parabrachiella* for *Brachiella* copepods)
- Parahaustorius longimerus* (see Amphipoda)
- Parahucho* (see Salmonidae)
- Paralepis coregonoides borealis* (see Lancetfish, scaled)
- Paralichthys californicus* (see Halibut, California)
- Paraliparis copei* (see Seasnail, blacksnout)
deani (see Snailfish, prickly)
- Paralithodes camtschatica* (see Crab, king)
platypus (see Crab, blue king)
- Paralomis verrilli* (see Crab, box)
- Paralytic shellfish poisoning (cause of toxicity of some shellfish to man, as result of ingestion of the following dinoflagellates by the shellfish)
 J 22(5): 1137 (*Gonyaulax tamarensis* in Atl. scallop organs)
 23(8): 1265 ("red water" bloom of *G. acatenella* re shellfish toxicity in Strait of Georgia, B.C.)
 24(7): 1589 (*G. catenella* & *G. tamarensis* growth & toxicity; comparison of their toxins; correction on J25(8): 1760)
 25(10): 2241 (*Amoebophyra* dinoflagellate parasitic to *G. catenella* dinoflagellate)
 28(11): 1789; 29(11): 1657, 1659 (melanin distribution in butter clam re toxin retention)
- B 168: 14; 169: 151 (re "red tide" on B.C. coast; *G. catenella* & *G. acatenella* as cause of toxicity development in B.C. shellfish subject to "red tide"; case histories of toxicity to man)
 177 (*G. tamarensis* re shellfish toxicity on Canadian Atl. coast; similarity to *G. catenella* on B.C. coast; symptoms, precautions, etc., re toxicity to man; corrections on J 30(8): 1257)
- 179: 13 (re B.C. clams)
- CNG 75 (*G. catenella* & *G. acatenella* cause of occasional shellfish toxicity on B.C. coast; history, nature, control, & safety precautions)
- S 916 (re "red water" on west coast of India)

- 1256 (experimental determination of toxin accumulation in rough whelk)
- 1320 (humic substances effect on 4 *Gonyaulax* species growth)
- A 244: 359 (humic substances effect on *G. tamarensis* growth)
- Paramecium* (see Ciliata)
- Paranjape, Madhu A.
J 24(6): 1229 (euphausiid molting and respiration)
- Parapagurus pilosimanus* (see Crabs, hermit)
- Parapenaeus* (see Shrimps)
- Parasalmo* (see Salmonidae)
- Parasites; Parasitization (see also Acarina; Acanthocephala; Amphipoda; Caligoida; Copepoda; Cyclopoidea; Disease; Drills; Indicator species; Fungi; Lamprey; Leeches; Lernaeoceridae; Lernaeopodidae; Mollusca; Nematoda; Protozoa; Snails; Sporozoa; Trematoda) (Note: J 26(4) is a special issue devoted to articles about parasites too numerous to be indicated under J 26(4) below; that issue should be consulted, or see the references to it under most of the headings listed just above. See also T 185 below)
- J 22(2): 265 (of Jensen's skate)
- (3): 849 (myxosporidian, in Pac. salmon)
- (4): 1099 (*Mytilicola* seasonal size distribution re parasitism on Pac. oyster)
- (4): 1103 (*Anonyx* on lobster)
- (5): 1175 (*Piscicola* leech on salmonids)
- (6): 1387 (as source of Pac. salmon biological information)
- 23(4): 521 (copepod *Sphyrion lumpi* reproduction)
- (12): 1965 (flagellate *Cryptobia salmositica* in sock-eye salmon)
- 24(3): 515 (*PhrEXOcephalus cincinnatus* copepod morphology)
- (3): 629 (*Anisakis* nematodes in surf smelt)
- (4): 893 (*Triaenophorus* in sockeye salmon smolts)
- (6): 1275 (*Sphyrion* on & in pelagic redfish re redfish populations)
- (7): 1627 (*Echinorhynchus lateralis* in brook trout)
- (9): 1911 (description of 26 species from freshwater Salmonidae & Coregonidae of insular Nfld.)
- (9): 1985 (*Hydrichthys* epizoic on myctophid fishes & on their parasitic copepods)
- (10): 2161 (re host fishes specificity)
- (12): 2539 (sea lamprey on Georgian Bay rainbow trout)
- 25(2): 321 (Chondracanthidae copepoda on B.C. fishes)
- (6): 1161 (*Hemioniscus balani* isopod in barnacles)
- (9): 1923 (review & description of *Caligus curtus* copepod)
- (10): 2241 (*Amoebophyra* dinoflagellate on *Gonyaulax* dinoflagellate)
- (11): 2365 (2 new *Gyrocotyle* tapeworms from deep-water chimaera)
- (11): 2467 (*Dermocystidium* fungus on chinook salmon)
- (11): 2521 (microturbellarian association with Atl. oyster)
- 26(1): 143 (*Ommatokoita elongata* copepod on Greenland shark eye)
- (1): 190, (8): 2245 (*Mytilicola orientalis* copepod in Pac. coast oyster & mussel)
- (2): 311 (4 Lernaeopodidae copepods on Nfld. & W Greenland fishes)
- (4): complete issue (see note to above heading)
- (5): 1121 (oyster drill, Canadian Atl. coast)
- (6): 1407 (*Tanypleuris allicornis* caligid on Canadian Atl. fishes)
- (9): 2319 (of various B.C. marine fishes)
- (11): 2987 (revision of *Salmincola* copepod genus)
- (11): 3043 (new copepod species *Chondracanthus narium* in lingcod nasal cavity)
- 27(2): 271 (distribution of *Triaenophorus crassus* in whitefish flesh re ultrasonic detection)
- (2): 391 (caligid copepod on 3 deepwater Atl. fishes)
- (4): 818 (*Briarosaccus callosus* barnacle on deep-water king crab)
- (5): 865 (1 new & 8 other Lernaeopodidae copepod species on B.C. fishes; discussion of hosts)
- (5): 901 (19 helminth & 2 copepod species, of threespine stickleback in Nfld. & Labrador)
- (5): 963 (ultraviolet light for locating nematodes in marine flesh by fluorescence)
- (6): 1045 (ecology of fauna parasitic on yellow perch gills)
- (7): 1313 (marine trematode in river-resident white sturgeon)
- (7): 1317 (7 genera of helminths in Labrador long-nose & white suckers)
- (7): 1320 (*Minchinia* haplosporidian on Pac. oyster)
- (10): 1864 (lake trout infected by *Echinorhynchus salmosis* acanthocephalan through *Mysis relicta* vector)
- (11): 1943 (copepods, of Pac. ocean perch, including 2 new species)
- (12): 2159 (*Brachiella lageniformis* re hake phylogeny)
- (12): 2215 (Nfld. capelin by *Contraecum* nematodes)
- 28(1): 31 (cestode & trematodes in N Atl. swordfish)
- (3): 323 (caligid *Lepeophtheirus* copepods from ocean sunfish)
- (4): 616 (probable parasitism by giant type of American brook lamprey, vs. nonparasitism by ordinary type)
- (5): 767 (*Labrifer balli*, new trematode species, from California pink seaperch)
- (5): 771 (rainbow trout by lampreys, Batchawana Bay, L. Superior)
- (6): 901 (habitat of 2 blood fluke species in N Pac. rockfishes re habitat of those fishes)
- (8): 1143 (locomotory mechanisms of 2 copepods)
- (10): 1373 (new form of parasite found on *Metavermilina nates* polychaete)

- (10): 1385 (various Polychaeta as intermediate hosts of helminth parasites)
 (10): 1527 (of hermit crabs)
 (10): 1563 (2 new species, 1 new record, & several new hosts, of homolochid copepods)
 (10): 1615 (*Hemiarthrus abdominalis* isopod in new shrimp species)
 (10): 1645 (*Rhabdochona* nematode species in N & Central America fishes, including a new species *R. canadensis*)
 29(2): 179 (re possible subspeciation of *Salmo salar*)
 (3): 275 (170 species from 41 species of fish, Lake of the Woods, Ont.)
 (7): 1015 (attachment organ (bullae) structure of 24 Lernaeopodidae species)
 (9): 1291 (*Cryptobia dahli* haemoflagellate in lumpfish)
 (10): 1381 (hosts of *Bothrimonus* cestodes in N hemisphere)
 B 161: 33 (of goldeye)
 162: 94, 378 (re sockeye salmon stocks identification)
 169: 154 (& pests re Pac. oyster culture, B.C.)
 173 (of certain NW Canada & Alaska freshwater fishes)
 179: 10 (*Mytilicola orientalis* copepod on B.C. clams)
 CCG 7: 9 (*Triaenophorus crassus* re whitefish)
 CJG 17 (illustrated keys to metazoan, of Nfld. Salmonidae)
 T 42 (clam drill on B.C. clams)
 48 (of lamprey species)
 81 (copepod, of Pac. turbot)
 83 (bibliography of Atl. salmon)
 134 (of Atl. salmon as biological indicators)
 160 (of 4 *Lepidion* morid fish species)
 185 (of Canada fishes: bibliography, 1879-1969)
 246 (bibliography of, from N America Pac. coast trawled fishes)
 250 (computer programming fish parasite data)
 291 (nematode incidence in Atl. herring)
 S 910 (of sea scallop)
 925; 926 (aid to distinguishing NE Pac. salmon stocks)
 937 (Trematoda genera review)
 948 (Protozoa, in *Limnoria*)
 951 (*Caligus gurnardi* copepod review and redescription)
 981 (trematode fluke larvae infesting limpet)
 1010 (*Parabomolochus* copepod on seaperch gills)
 1129 (re sockeye salmon distribution in N Pac. Ocean)
 1156 (re pink salmon distribution in N Pac. Ocean)
 1206 (of salmon in Labrador Sea & off W Greenland)
 1255 (of NW Atl. capelin)
 1267 (nematodes in *Oncorhynchus* salmon)
 1269 (detection in lake whitefish by ultrasound)
 1287 (digenetic trematode in Atl. argentine stomach)
 1298-1300 (nematodes in Pac. salmon swimbladder)
 1301 (new copepod genus & species, *Praeacidochondria galathea*, on Malayan fish)
 1302 (indicator species for high-seas chum salmon origin)
 1306 (new copepod genus & species, *Shiinoa occlusa*, on Australian fishes)
 1307; 1358 (copepoda on Australian fishes)
 1317 (of salmon off Nfld.)
 1369 (ectoparasitism of *Calanus* copepods by a yeast)
 1391 (new genus & species of cestode from pilot whale)
 1429 (1 known and 2 new copepod species on *Lepidion* fishes)
 1442 (*Triaenophorus* infection of several L. Mälaren fish species, Sweden)
 1450 (of northern world coregonid fishes: review)
 1483 (morphometric variation in *Lecithophyllum botryophorum* trematode in Atlantic argentine)
 1487 (diseases & other effects of nematode parasitization of fishes: review)
 1496 (new genus & species of copepod, from S India)
 1501 (*Haemobaphes* copepods on Strait of Georgia sculpins)
 1566 (new copepod species *Lernanthropus togatus* on gills of marine Kenyan fish *Gaterin*)
 1567 (Crustacea as enemies of fishes, re diseases)
 1568 (copepods on Australian fishes)
 1640; 1641; 1644 (incidence of *Anisakis* nematodes in Canadian Atl. herring; use as indicator species)
 1681 (revised annotated list of, from W coast N America sea mammals)
 A 58; 58(F) (flake larvae cause of human dermatitis)
 108: 17 (of *Sagitta elegans*)
 224 (world distribution of coregonid fishes & their parasites)
 243 (inspection for, in whole fish by ultrasonics)
Parasudis truculenta (see Greeneye, longnose)
Paricelimus hopliticus (see Sculpin, thornback)
Paricterotaenia paradoxa (see Cestoda)
 Park, Paul Kilho
 J 24(5): 899 (subarctic boundary chemical features)
 25(12): 2739 (NE Pac. phosphate & silicate distribution)
 S 1713 (time variations in CO₂ partial pressures in N Pac. Ocean)
 Park, Tai Soo
 J 23(6): 805 (new species of *Bradyidius*)
 24(2): 231 (2 new species of copepods from the Strait of Georgia)
 Parker, Eva
 S 1370 (lactate dehydrogenase in cod)
 Parker, Robert Ray
 J 22(6): 1523 (sea mortality rates for pink salmon)
 23(9): 1353 (young pink salmon composition)
 25(4): 757 (pink salmon mortality schedules, Bella Coola R., B.C.)

- (9): 1923 (*Caligus curtus* parasitic copepod; correction on J26(8): 2263)
 26(4): 1013 (*C. elongatus* validity)
 28(10): 1503 (size selective predation)
 (12): 1921 (herring predation on young chinook salmon)
- T 17 (micromagnetic tagging of pink salmon fry)
 307 (pulpmill effluent effect on estuarial dissolved oxygen levels)
 308 (young chinook salmon observations, Somass R. estuary, B.C.)
 316 (pulpmill effluent effects on dissolved oxygen supply, Alberni Inlet, B.C.)
 321 (computer model simulation of pink salmon fry population growth under predation by coho salmon fingerlings in an estuary)
- S 951 (*C. gurnardi* review & redescription)
 1179 (*C. japonicus* a synonym of *C. orientalis*)
 1263 (*C. longicaudatus*)
 1293 (request for suppression of *C. appendiculatus*)
 1499 (redescription of *C. rapax* syntypes)
- Parkinson, John Perry
 CSG 51 (Canadian oyster hatchery development)
 S 1134 (Canadian oyster hatchery development)
- Parks, Canadian National (*see* listing in heading National Parks)
 Parks, Canadian Provincial (*see* Algonquin Park)
- Parks, M. J.
 T 3 (Oozy Cr ek biotic survey, P.E.I.)
- Parophrys vetulus* (*see* Sole, English)
- Parr (*see* names of mature forms, e.g. Salmon; Trout)
- Parry Sound, Georgian Bay, Lake Huron, Ont.
 J 26(10): 2543 (life cycle, seasonal abundance, & vertical distribution of various planktonic copepods)
- Parsons, John Wilson
 J 24(5): 1035 (blue pike contributions to L. Erie fishery)
 27(8): 1475 (walleye fishery of L. Erie)
- Parsons, Leon Scott
 J 27(3): 610 (Atl. mackerel northern range extension)
 (11): 2097 (juvenile and spawning Atl. mackerel in Nfld.)
 28(4): 553 (Atl. herring meristic characters)
 CJG 18: 25 (NE Nfld. & Labrador herring investigations)
 T 97 (Nfld. herring sampling data 1967-68)
 138 (otolith nuclei as indicators of spring & autumn spawning herring)
 291 (1971 offshore herring survey, N.S. banks)
 S 1640; 1641 (some biological features of Gulf of St. Lawrence herring)
 1644 (larval nematodes incidence variation in Atl. herring)
- Parsons, Timothy Richard
 J 23(4): 539 (spring phytoplankton bloom)
 24(5): 909 (size spectrum for particle size in the sea)
 27(7): 1251 (Strait of Georgia productivity)
 28(4): 599 (obituary of J. D. H. Strickland)
 B 125R (a manual of seawater analysis)
 167 (seawater analysis handbook)
 S 923 (determination of plant pigments)
 924 (microdetermination of chlorophyll)
 989 (growth rate of phytoplankton)
 1155 (Coulter Counter)
 1172 (phytoplankton blooms)
 1223 (food availability seasonal variations for benthos)
 1294 (*Mesodinium rubrum* ciliate pigments)
 1295 (ocean surveys discussion of critical indices)
 1303 (marine sediment decomposition)
 1326 (allochthonous bacteria & organic materials)
 1355 (NE Pac. Ocean nitrate)
 1392; 1393; 1394 (production in the Strait of Georgia, parts I-III)
 1414 (determining structure of plankton community)
 1466 (primary production studies in N Pac. Ocean)
 1485 (organic matter in aquatic environments)
 1503 (small particles in sea water)
 1651 (fertilization effect on primary production, Great Central L., B.C.)
 1713 (time variations in CO₂ partial pressures in N Pac. Ocean)
- A 164 (automated techniques for detection & characterization of seawater particles)
 165 (plankton, pollution, & fish in the Strait of Georgia)
 168 (review of manual on primary production in waters)
 183 (bases of resource management; oceanography)
 210 (review of book on marine chemistry)
 211 (availability of food in marine food chain)
 235 (Strait of Georgia productivity, B.C.)
- Particulate matter (*see* Matter, particulate)
- Pasiphaea* sp. (*see* Shrimps)
multidentata (*see* Shrimp, glass)
pacifica (*see* Shrimps)
sulcatifrons (*see* Shrimps)
- Passamaquoddy Bay, N.B. (*see also* Fundy, Bay of; St. Andrews, N.B.)
 J 28(7): 935 (components of fish communities by seasons, abundance, & temperature regime, re communities in warmer waters)
 (11): 1727 (surges of winter flounder into intertidal zone)
 29(7): 997 (feed resource division of 13 demersal fishes)
 T 288 (monthly changes in demersal fishes stomach contents)
- Pastes, fish
 CHN 32 (Japanese frozen minced fish)

- Pasteurization (*see* Irradiation)
- Patalas, Kazimierz
 J 26(8): 2135 (L. Ont. crustacean plankton)
 28(2): 231 (zooplankton communities in 45 FRB Experimental Lakes, NW Ont.)
 29(10): 1451 (crustacean plankton re Great Lakes eutrophication)
- S 1671 (primary & secondary production in a Poland lake heated by thermal power plant)
 1672 (crustacean plankton communities of N. America lakes)
- Patella vulgata* (*see* Limpet)
- Paterson, Colin Garth
 J 26(7): 1934 (occurrence of *Coregonus artedii* & *C. zenithicus*)
 27(2): 213 (benthic fauna colonization)
 28(3): 365 (simple corer vs. Ekman grab)
- Paterson, William Douglas
 J 26(3): 629 (*Aeromonas salmonicida* phages)
- Pathogens (*see* Bacteria; Disease; Pathology; Viruses)
- Pathology; Pathological conditions (*see also* Cytology; Disease; Histology; Infection; Inflammation; Parasites; Tumors; Viruses)
 J 26(3): 707 (2 modified stains for oyster tissues)
 (8): 2215 (of microsporidial infection of English sole)
 (9): 2425 (progressive changes in carp ventral aorta)
 (11): 2785 (of copper sulfate toxicity to winter flounder)
 (12): 3242 (fibrous & cystic lesions in ovaries of aged Atl. cod)
 27(1): 191 (inflammatory lesion in American shad)
 (5): 956 (whirling disease infection of trouts)
 (7): 1285, (8): 1385 (necrosis of salmonids caused by virus)
 (12): 2185 (of mummichog exposed to cadmium chloride in sea water)
 (12): 2225 (goldfish chronic poisoning by endrin insecticide)
 28(1): 104 (rainbow trout skin lesions)
 (3): 448 (lake trout subcutaneous fibroma)
 (4): 517 (vibriosis of Pac. salmon)
 (9): 1241 (skin tumors on Pac. flounders)
 29(2): 149 (channel catfish hemorrhagic virus disease)
 (3): 328 (formalin effects on rainbow trout)
 T 245 (re mass mortality from uncertain causes, of mountain whitefish & rainbow trout, Kootenay L., B.C.)
 S 1369 (yeast ectoparasitism on *Calanus* copepods)
 1487 (of nematode-parasitized fishes)
- Patinopecten caurinus* (*see* Scallop, weathervane)
- Patricia Lake (*see* Jasper National Park, Alta.)
- Patrick, Karl
 J 26(11): 3055 (tetrachloro-*o*-benzoquinone toxic to young salmon)
- Patriquin, David G.
 J 24(12): 2573 (Ogac L. *Gadus morhua*)
- Patten, Benjamin Genc
 J 28(9): 1352 (increased predation by torrent sculpin)
- Pattie, Bradley Herren
 J 26(5): 1371 (range of ocean whitefish & California halibut)
 27(2): 409 (hermaphroditism in Pac. hake)
- Pauley, Gilbert Buckhannan
 J 23(12): 1913 (inflammation in Pac. oyster)
 24(3): 679 (tumor-like growth on the foot of a freshwater mussel)
 (4): 843 (adult salmon mortality due to *Dermocystidium*)
 (4): 867 ("gas-bubble" disease in salmon)
 25(11): 2467 (chinook mortality re *Dermocystidium*)
 (12): 2691 (⁶⁵Zn in freshwater mussel)
 26(3): 707 (stains for use in oyster pathology)
- Paulik, Gerald John
 J 24(2): 249 (computer program for yield per recruitment)
 (12): 2527 (stock exploitation)
- PCB (*see* Polychlorinated biphenyls)
- Peace River, B.C. and Alta.
 B 173 (descriptions of fishes in drainage system)
- Peamouth (*Mylocheilus caurinus*) (Peamouth chub; Columbia River chub)
 J 23(6): 929 (electropherogram of multiple hemoglobins)
 25(7): 1317 (muscle proteins inheritance in hybrids with reidside shiner)
 28(9): 1331 (W Washington distribution re zoogeography)
 29(2): 173 (*Chondrococcus columnaris* disease seasonal distribution, Columbia R.)
 B 173: 232 (full description, etc., of N Alta. & B.C.)
- Peanut oil
 S 1029 (fatty acids positional distribution)
- Pearcy, William Gordon
 J 23(8): 1135 (oceanic shrimps)
 (12): 1971 (feed of pelagic shrimps)
 25(7): 1311 (pressure re crustacean respiration)
 (12): 2665 (species associations off Oregon)
 26(8): 2211 (shelf rockfish feeding)
 27(7): 1265 (lanternfish development)
 28(12): 1831 (Salpidae distribution & abundance)
 29(8): 1145 (myctophids swimbladder morphology & specific gravity)

- (10): 1419 (sound-scattering layers in NE Pac. Ocean).
- Pearleye, northern** (*Benthalbella dentata*) (*Neoscopecarchoides dentatus*)
 B 180: 179 (full description, etc., B.C.)
 T 11 (in experimental B.C. midwater trawling)
- Pearls**
 B 169: 11 (from Pac. oyster valueless)
- Pearlsides, Müller's** (*Mauroliticus muelleri*)
 J 26(10): 2691 (range in Canadian Atl. waters; diurnal depth distribution)
- Pearlstone, Paul Stephen Maurice**
 J 26(9): 2413 (survival of planted lake trout)
- Pearson, Roger Eugene**
 J 23(5): 747 (scales of pink salmon)
- Pecors Lake, Ont.**
 J 27(3): 425 (uranium milling pollution effects on physicochemical limnology vs. an upstream & a downstream lake)
- Pecten maximus* (see Scallops)
- Pectinaria hyperborea* (see Polychaeta)
- Pectinidae**
 S 1618 (occurrence & function of lip hypertrophy)
- Peden, Alex. Edward**
 J 23(2): 313 (red gunnel & slimy snailfish)
 (8): 1277 (rare marine fishes)
 24(1): 1 (N Pac. prickleback; correction on J 24(12): 2641)
 (12): 2641 (*Alectridium aurantiacum*: correct spelling)
 25(1): 181 (*Macdonaldia challengerii* in NE Pac. Ocean)
 28(6): 927 (range extension of B.C. masked greenling)
 (9): 1347 (record of bluespotted poacher in B.C.)
 29(1): 1 (redescription & distribution of rare deep-sea eel *Xenomystax atrarius*)
 (3): 337 (first B.C. record of striped bass)
 T 34 (N Pac. Ocean systematics of 6 demersal fishes)
- Peer, Donald Lloyd**
 J 23(3): 455 (maturity of spottail shiner)
 25(9): 1803 (invertebrate caloric content)
 27(12): 2143 (predator biomass, productivity, & loss relation)
 S 1482 (study of eutrophicated marine basin)
- Pegea confoederata* (Salpidae)
 J 28(12): 1831 (range extension N to Oregon)
- Pelage** (see Fur)
- Pelecypoda** (= Bivalvia and Lamellibranchia) (see also Mollusca; also Clam; Cockle; Mussel; Oyster; Scallop)
- J 22(4): 978 (records from NW Atl. Ocean, 1946-61)
 24(7): 1553 (in Penobscot R. estuary, Maine)
 26(3): 701 (severe mortalities due to unusually low P.E.I. estuarine salinity)
 (4): 833 (parasitic on yellow perch gills)
 (8): 2230 (description of 6 new NE Pac. septibranch species)
 (9): 2403 (as blackbelly eelpout feed)
 27(4): 621, (12): 2273 (identification & distribution of benthic infaunal communities, Washington coast)
 29(4): 385 (review of sterols identified in)
 B 168: 30 (positive & negative toxicity tests in B.C.)
 T 2 (distributional checklist & bibliography of B.C. marine)
 25; 35; 59; 60; 73 (in Strait of Georgia benthos biomass)
 43 (on Irish moss)
 76 (in tidal *Ostrea L.*, N.S.)
 159 (seen from submersible, Canadian Arctic Archipelago)
 225 (associated with Bay of Fundy scallop beds)
 S 891 (apparatus for recording water-pumping behavior)
 1128 (in benthos of 4 L. Superior bays)
 1169 (*Thracia conradi* common appearance, Malpeque Bay, P.E.I.)
 1469 (occurrence of *Cristispira* spirochaete commensal in 12 of 63 W Canadian marine species)
 1470 (distributional checklist of B.C. marine)
 1587 (fossil, Santa Barbara Is., California)
 1618 (occurrence & function of lip hypertrophy in certain genera)
 1679 (sterols of 7 types of)
- Pellucidhaptor* (see Trematoda)
- Peloscolex multisetosus* (see Oligochaeta)
- Pelroy, Gretchen Ann**
 J 26(10): 2651 (EDTA preservative re spoilage of petrale sole & ocean perch fillets)
- Pelt** (see Fur)
- Pelvetia* (see Phaeophyta)
- Pen** (of squid)
 J 26(6): 1676 (length of, re other *Lolliguncula brevis* measurements)
- Pendrell Sound, B.C.**
 B 169: 69; 178: 8 (re Pac. oyster breeding)
 T 110 (biological oceanography observations summary 1965-68)
- Pennell, James Thomas**
 S 1146 (insect oxidase-peroxidase system)
- Pennsylvania, USA**
 J 23(5): 623 (maturation & fecundity of brook trout in infertile streams)

- Penobscot River, Maine
J 24(7): 1553 (estuary hydrography & biology)
- Pentaceros richardsoni* (see Armorhead, pelagic)
- Pentagramma* (see also Trematoda)
S 937 (review of genus, and *P. petrowi* on B.C. coast fishes)
- Peppar, John Lovell
T 34 (N Pac. Ocean systematics of 6 demersal fishes)
- Pepper, Vernon Alfred
J 28(5): 749 (variation in scale counts of Arctic grayling)
- Peprilus simillimus* (see Pompano, Pacific)
triacanthus (see Butterfish)
- Peptides (see Polypeptides)
- Pequegnat, John Eugene
J 26(1): 145 (marine organisms zinc requirements)
- Perca flavescens* (see Perch, yellow)
fluviatilis (see Perch, yellow)
- Perception (see also Light, reactions to)
J 23(9): 1331 (of surface ripples by topminnow lateral line organs)
- Perch, American yellow (see Perch, yellow)
- Perch, black (*Embiotoca jacksoni*)
J 24(10): 2161 (parasitization re other surfperches)
- Perch, dwarf (*Micrometrus minimus*)
J 24(10): 2161 (parasitization re other surfperches)
- Perch, kelp (*Brachyistius frenatus*) (*B. brevipinnis*; brown or kelp seaperch)
J 24(10): 2161 (parasitization re other surfperches)
26(9): 2319 (parasites, B.C.)
B 180: 303 (full description, etc., B.C.)
- Perch, log (see Logperch)
- Perch, ocean (see Perch, Pacific ocean; Redfish)
- Perch, Pacific ocean (*Sebastes* (*Sebastodes*) *alutus*) (longjaw rockfish)
J 22(1): 203 (biochemical systematics)
(5): 1309 (rapid length distribution measurement)
24(6): 1187 (re sampling research trawl catches at sea)
(9): 1945 (hemoglobin & muscle protein electropherograms)
25(2): 329 (host to parasitic Chondracanthid copepod)
(3): 457 (in B.C. midwater trawl catches)
(11): 2477 (proteins electropherograms re rockfishes systematics)
- (12): 2665 (associations with other fishes off Oregon coast)
26(8): 1985 (stock size & yield forecast, N Pac. Ocean)
(9): 2319 (parasites, B.C.)
(10): 2651 (EDTA effect on fillet spoilage characteristics)
27(5): 943 (electrophoretic variants of muscle L- α -glycerophosphate dehydrogenase, re genetics)
(10): 1781 (distribution, abundance, size, etc., survey in NE Pac., 1963-66; (correction on J 28(8): 1219)
(11): 1943 (parasitic copepods, including 2 new species)
28(3): 417 (reproductive patterns re bathymetric distribution & seasonal abundance)
29(7): 1061 (aggregations with different biological characteristics in Queen Charlotte Sound, B.C.)
B 180: 396 (full description, etc., B.C.)
CNG 73; 82 (in Hecate Strait exploratory fishing)
79 (Japanese catches in N Pac., 1963-66)
CNS 14; 19 (B.C. landings by areas; used for reduction, 1964, 1965)
24 (sampling of B.C. commercial catches by areas, 1946-65)
28 (Canadian & U.S. trawl catches off B.C., 1954-65)
T 7; 11; 16; 19; 22; 30; 46; 56; 62; 81; 89; 113; 132; 144; 181; 205; 210; 216; 221; 237; 251; 257; 269; 278; 281; 302; 317; 326; 328 (taken in FRB experimental, or B.C. commercial trawling; also (216; 257; 326) in U.S. Pac. coast commercial trawling; tables of size & sex composition, catch rate, etc.)
T 237; 251; 281 (length-girth & length-weight relations off B.C. & SE Alaska)
246 (bibliography)
326 (status of stocks off B.C., Washington, & Oregon in 1970)
S 1416 (sea freezing in prerigor, rigor, & postrigor, re products quality)
A 37 (B.C. & U.S. landings, 1956-63, & fisheries potential)
60 (same as CNG 79 above)
90; 103 (fishery trend along N America coast)
91 (1956 & 1966 B.C. landings for mink feed)
- Perch, pile (*Rhacochilus vacca*) (*Damalichthys vacca*; pile seaperch; dusky perch)
J 24(10): 2161 (parasitization re other surfperches)
25(8): 1651 (plasma protein-bound inorganic iodide)
26(9): 2319 (parasites, B.C.)
28(10): 1563 (new host of *Bomolochus cuneatus* copepod)
29(11): 1525, 1543 (respiratory adaptations of prenatal young in ovary)
B 180: 312 (full description, etc., B.C.)
T 7; 56; 81; 257; 317 (taken during FRB experimental or B.C. commercial trawling)
A 91 (observed in B.C. landings of fish for mink feed)

- Perch, reef (*Micrometrus aurora*) (*Amphigonopterus aurora*)
 J 24(10): 2161 (parasitization ecological specificity) (4): 833 (*T. nodulosus* & other parasites, Bay of Quinte, Ont.)
 (6): 1439 (distribution in Canadian Missouri R. headwaters)
- Perch, Sacramento (*Archoplites interruptus*)
 J 28(11): 1811 (alkali tolerance in Nebraska eutrophic lakes & ponds) (6): 1647 (larvae sustained swimming ability)
 (6): 1672 (aggregations with spottail shiners; predators)
- Perch, shiner (*Cymatogaster aggregata*) (shiner scaperch; yellow shiner)
 J 22(1): 203 (biochemical systematics) (10): 2681 (shape & structure re selectivity of gillnets)
 24(10): 2161 (parasitization re other surfperches) 27(1): 125 (re lake trout feed, L. Opeongo, Ont.)
 25(12): 2665 (associations with other Oregon coast fishes) (4): 677 (6 trace elements in livers, Great Lakes)
 (4): 830 (mercury contamination in organs, Saskatchewan R.)
 26(9): 2319 (parasites, B.C.) (6): 1033 (sampling fry by high-speed towed Miller net)
 (9): 2339 (female age & size re embryo number & size) (6): 1045 (ecology of gills parasitic fauna)
 (6): 1059 (observing behavior under ice by periscope)
 B 180: 304 (full description, etc., B.C.) (10): 1842 (taken during L. Erie smelt surveys, 1962-63)
 T 7; 11; 22; 56; 62; 181; 257; 317 (taken during FRB experimental or B.C. commercial trawling)
 S 1010 (*Parabomolochus* copepod parasitic on gills) (12): 2365 (furunculosis)
 A 91 (observed in B.C. landings of fish for mink feed) 28(1): 45 (populations upstream & downstream of a dammed Ont. lake)
 (1): 105 (DDT residues in muscle, of Saskatchewan R.)
- Perch, trout (see Trout-perch) (5): 783 (slime as bacterial medium re keeping quality)
 (5): 786 (heavy-metal concentrations in dressed, from Moose L., Man., & L. Erie)
 (7): 957 (vulnerability to northern pike predation)
 (9): 1285 (methylmercury in N.B.)
 (11): 1811 (suitable for introduction into alkaline eutrophic lakes)
 (12): 1883 (winter kill in Manitoulin Is. lakes (L. Huron))
- Perch, white (*Morone americana*) (*Roccus americanus*)
 J 25(6): 1199 (low-temperature effects on feeding in 3 Ont. localities) (29(2): 173 (*Chondrococcus columnaris* disease seasonal distribution, Columbia R.)
 (10): 2225 (reproduction in Bay of Quinte, L. Ontario) (2): 199 (necessary exposure times to eliminate by antimycin & rotenone)
 28(7): 1057 (effect of nuclear power plant discharge canal warm water on) (3): 275 (31 parasites of, Lake of the Woods, Ont.)
 (9): 1285 (methylmercury in N.B.) (5): 517 (growth-length-weight relations of, Lac Saint-Louis, Que.)
 (11): 1811 (suitable for introduction into alkaline eutrophic lakes) (5): 525 (dressing & cooking effects on DDT residues in L. Michigan)
 (12): 1685 (mercury concentration re size, in 3 Man. lakes; corrections on J30(8): 1257)
 T 261 (bibliography for Gulf of St. Lawrence) (12): 1761 (mouth gape re age of immature, re size selection of *Daphnia pulicaria* feed, West Blue L., Man.)
- Perch, yellow (*Perca flavescens*) (*P. fluviatilis*; American yellow perch)
 J 23(1): 15 (total annual growth dependence on temperature) B 149: 19, 118 (Great Lakes, catches)
 (1): 149 (alkaline phosphatase in scales) 173: 342 (full description, etc., of N. Alta. & N. Sask.)
 (4): 499 (diel activity & vertical distribution under ice) CCG 7: 16 (protein electropherograms)
 (11): 1807 (pugheadedness abnormality, Heming L., Man.) T 261 (bibliography for Saguenay R. estuary, Que.)
 (11): 1815 (meristic numbers in Man. saline lakes) S 1128 (in a L. Superior bay)
 (12): 1845 (mouth & body form re feeding ecology) 1442 (*Triaenophorus* infection of, L. Mälaren, Sweden)
 24(3): 695 (blood low-mobility proteins) 1668 (mercury contamination, & content of 12 other metal elements, Great Lakes & other Canadian waters)
 (5): 927 (limnetic larvae in N. Wisconsin lakes) S 1128 1718 (pesticide residues in Canadian commercially caught)
 25(4): 667 (re Great Lakes species succession & exploitation)
 (4): 711 (seasonal effect on schooling behavior)
 (6): 1133 (diel feeding habits)
 (6): 1199 (low temperature effects on feeding in 3 Ont. localities)
 (8): 1651 (plasma protein-bound inorganic iodide)
 (8): 1739 (spinal ganglia position re taxonomy)
 26(2): 325 (S. Atl. distribution)
 (4): 821 (*Triaenophorus nodulosus* infection dynamics, Heming L., Man.)

- A 200; 201 (mercury contamination in Man. waters & Great Lakes)
- Perches (Percidae) (*see also* Darter; Perch; Sauger; Walleye)
 J 29(6): 717 (& some other papers in this special issue on salmonid communities of N American & European oligotrophic lakes)
 (9): 1283 (cadmium content, in New York State waters)
 B 173: 45 (family key), 341 (general description & key to NW Canada & Alaska species), 342-353 (full descriptions of those species)
- Percidae
 J 23(11): 1663 (muscle myogen & blood hemoglobin electropherograms re other fishes)
- Percina caprodes* (*see* Logperch)
- Percopsis omiscomaycus* (*see* Trout-perch)
- Pereira, Ronald Roy
 J 28(5): 643 (gamma irradiation of whitefish *Salmonella*; correction on J29(8): 1241)
- Pereyra, Walter Thomas
 J 26(8): 1985 (exploratory fishing methods)
 (8): 2211 (shelf rockfish feeding)
- Periclimenes* (*see* Shrimps)
- Peridineae (*see also* Phytoplankton; Pyrrophyta)
 J 25(6): 1229 (*Peridinium aciculiferum* in phytoplankton ecology of an Ont. reservoir)
 28(2): 195 (of several small NW Ont. lakes)
 (11): 1763 (effects of phosphate & nitrate lake enrichment on)
- Periphyton (*see also* Algae)
 J 28(2): 215 (of NW Ont. experimental lakes)
- Periplaneta* (*see* Cockroaches)
- Periscope
 J 27(6): 1059 (for biological observations under ice)
- Periwinkle, common (*Littorina littorea*)
 J 24(2): 357 (α -tocopherol & lipids in unfed held)
 25(2): 267 (occurrence & retention of thetin derivative from feed)
 27(10): 1898 (2 digestive tract enzymes)
 28(5): 793 (yellow phosphorus concentration in body, N.S.)
 (11): 1733 (respiration rate)
 29(9): 1347 (fuel oil residues in, 26 months after oil spill in Chedabucto Bay, N.S.)
 T 217 (pollution from petroleum oil spills)
 S 1226 (fatty acids positional distribution in triglycerides)
 1569 (determination of residual fuel oil contamination in)
- 1572 (saturated & isoprenoid fatty acids distribution in lipids)
 1679 (sterols)
- Periwinkle, rough (*Littorina saxatilis*)
 J 26(3): 701 (resistance to abnormally low estuarine salinity)
 T 155 (zonation in Bideford R. tidal zones, P.E.I.)
- Periwinkle, yellow (*Littorina obtusata*)
 J 27(10): 1898 (2 digestive tract enzymes)
- Perlmutter, Alfred
 J 28(1): 47 (erythropoiesis in *Trichogaster trichopterus*)
- Peru
 J 23(3): 395 (protein nutrient quality of anchovy fishmeal)
 26(4): 717 (*Diphyllobothrium* & other parasites in fish, birds, marine mammals, & man)
- Pesch, Gerald
 J 27(5): 951 (winter flounder plasma protein variation)
- Pesticides (*see also* Piscicides; Fungicides; Herbicides; Insecticides; Pollution; Polychlorinated biphenyls; Toxicants)
 J 25(1): 169 (residues in freshwater fishmeals & oils)
 26(3): 695 (mass mortalities & behavior of brook trout & young Atl. salmon re nabam & endrin)
 (5): 1378 (water pollution detection by spinner culture of mouse fibroblast cells)
 28(4): 613 (organophosphate esterase inhibitor effects; anticholinesterase activity of several)
 B 169: 163 (re Pac. oyster culture, B.C.)
 T 272 (halogenated hydrocarbons re environment: review & bibliography)
 S 1595 (effect of solvent impurities in silicic acid chromatography of)
 1656 (chlorinated dibenzodioxins & dibenzofurans as impurities in: not detected in tests for them in aquatic animals)
 1684 (extraction of organochlorine types from water, for assay)
 1696 (Bay of Fundy & Gulf of Maine contamination by organochlorine types, & effects on fishes & birds)
 1718 (residues of organochlorine types in Canadian commercially caught fish)
 A 81 (chemical methods of assaying for residues)
 87 (biological methods of assaying for residues)
 201 (re Great Lakes pollution & effects on fish as food)
 258: 29 (effects on ocean ecology)
- Peter, Richard Ector
 J 26(2): 325 (S Alta. fishes)
- Peters, Howard August
 J 27(1): 31 (refrigerated fish protein patterns)
- Peters, James Eugene

- T 269; 278 (FRB experimental groundfish cruises, B.C. coast & NE Pac. Ocean)
- Peters, John Anthony**
 J 25(2): 299 (refrozen Atl. cod storage quality)
 S 1365 (quality changes during frozen storage & distribution of frozen products)
- Peters, Marilyn Diane**
 J 27(12): 2179 (canned salmon direct pigmentation)
 S 1549 (occurrence & origin of tropylium ion in the mass spectra of arylboronic acid esters)
- Peterson, Alvin Edward**
 S 974 (offshore distribution of Pac. salmon)
- Peterson, Margaret Raymonde**
 S 1324 (DDT effects on brook trout)
- Peterson, Richard Harry**
 J 26(1): 93 (Atl. salmon activity)
 S 1556 (effects of temperature on brain oxygen in salmonid fishes)
- Petpeswick Inlet, N.S.**
 T 314 (phytoplankton productivity & nutrient measurements, 1971-72)
- Petroleum oils (as pollutants) (see Oils, petroleum)**
- Petrolisthes (see Crab, porcelain)**
- Petromyzon marinus (see Lamprey, sea)**
- Petromyzonidae (see also Lampreys)**
 J 23(11): 1663 (muscle myogen & blood hemaglobin electropherograms re other fish families)
 24(5): 1067 (teeth: their terminology & use in a key to holarctic lamprey genera)
- Pettibone, Marian Hope**
 J 28(10): 1393 (*Stehnelais fusca* & *S. berkeleyi* polychaetes)
 S 1123 (type-specimens of polychaetes)
- Pfrille neogaea (see Dace, finescale)**
- pH (see also Alkalinity; Limnology; Oceanography; also Hardness of natural waters)**
 J 23(5): 673 (of flesh & free drip re Pac. halibut flesh chalkiness)
 (7): 1077 (of thawed Atl. cod fillets)
 24(3): 651 (of muscle in unfrozen Atl. cod)
 25(1): 15 (re blood lactic acidosis of channel catfish in anoxia)
 (1): 33 (of SW B.C. streams)
 (4): 738 (of trap-caught Atl. cod before & after freezing)
 (6): 1229 (re phytoplankton ecology in an Ont. reservoir)
 26(2): 413 (Atl. salmon seminal components)
 (2): 461 (limits for in vitro culture of rainbow trout ovary cells)
- 27(8): 1405 (re phytoplankton in 70 S Ont. lakes)
 (9): 1589 (of redfish during iced holding, & of fillets during freezing & storage)
 28(9): 1303 (effects on walleye photic behavior)
 (11): 1811 (alkalinity tolerance of Nebraska freshwater fishes)
 29(8): 1131 (pollutive acidification cause of fish mortality in small lakes)
 (8): 1169 (amine-citrate buffers for pH control in starch-gel electrophoresis)
 (10): 1505 (effect on % un-ionized NH₃ in aqueous ammonia solutions)
 B 125R: 29, 194-200; 167: 27, 295-302 (determinations & tables, re seawater analysis)
 T 202(F) (effects on river diatoms caused by heavy-metal contamination of water)
- Phaeodactylum tricornutum (see Bacillariophyta)**
- Phaeophyta (see also Algae)**
 J 22(6): 1425 (distribution of 27 species re salinity & tidal factors, S end of Vancouver Is.)
 24(1): 33 (*Agarum*, *Costaria*, *Laminaria*, *Fucus*, & *Sargassum* vertical distribution re environment, Indian Arm, B.C.)
 26(1): 145 (zinc content of *Pelvetia*, *Ascophyllum*, *Fucus*, & *Nereocystis*)
 (10): 2703 (vertical distribution & host of 66 species off Halifax, N.S.)
 28(5): 778 (*Laminaria longicruris* & *L. agardhii* taxonomy re stipe length & environment)
 (5): 793 (yellow phosphorus accumulation in *F. vesiculosus* & *F. distichus*)
 (11): 1733 (*Laminaria* & *Agarum* biomass growth re seaweed-lobster community potential, St. Margaret's Bay, N.S.)
 29(1): 55 (chemical composition of humic substances from decomposed *F. vesiculosus* & *L. digitata*)
 (5): 603 (lobster as control re *Laminaria* overgrazing by sea urchins)
 B 154: 144 (*Laminaria*, *Agarum*, *Fucus*, & *Ascophyllum* as Nfld. resources)
 T 158 (*Ectocarpus* & *Pylaiella* in Bideford R. estuary, P.E.I.)
 159 (*Fucus*, *Laminaria*, *Desmarestia*, & *Agarum* in Canadian Arctic Archipelago)
 S 923 (pigments isolated from *Sargassum muticum*)
 1145 (optical activity of *S. muticum* & *F. vesiculosus* fucoxanthin re its chemical structure)
 1619 (zonation, biomass, caloric value, & composition of *L. longicruris*, *L. digitata*, & *A. cribrosum*; also zonation & biomass of *Fucus*, *Ascophyllum*, & *Chorda*, St. Margaret's Bay, N.S.)
 1708 (*L. longicruris*, *L. digitata*, & *A. cribrosum* productivity & growth rate, St. Margaret's Bay, N.S.)
- Phaeophytin**
 T 77; 203 (re primary production, St. Margaret's Bay, N.S.)
 247 (re primary production, Bedford Basin, N.S.)

- 314 (re primary productivity, Petpeswick Inlet, N.S.)
- Phaeosaccion* (see Chrysophyta)
- Phages (see Bacteriophages)
- Phalacrocorax auritus* (see Cormorant, double crested)
carbo (see Cormorant, common)
- Phanerodon furcatus* (see Seaperch, white)
- Pharmacology
B 177 (re paralytic shellfish poisoning)
- Phenol esters
S 1371 (of various phenols as substrates for pancreatic lipase activity assay)
- Phenols (see also Pollution; Pulpmill effluents)
S 1397 (lack of avoidance by rainbow trout)
- Phenotypes (see also Genetics; Morphology; Polymorphism)
J 26(1): 15 (of sockeye salmon blood serum lactate dehydrogenase)
(2): 405 (4 threespine stickleback variations, Alaska)
(2): 456 (upper lethal temperature uniformity in phenotypic Great Lakes rainbow trout)
(9): 2351 (of Pac. halibut blood serum transferrins)
(9): 2532 (of white bream & ruff blood serum esterases)
(10): 2633 (sablefish muscle protein polymorphism)
(12): 3268 (frequencies of transferrin, in Pac. hake serum)
27(5): 923 (of walleye re regional variation)
(5): 943 (of Pac. ocean perch muscle L- α -glycerophosphate dehydrogenase)
(6): 1115 (lake whitefish isozymes)
(9): 1563 (rainbow trout liver & gill lactate dehydrogenases)
(11): 1987 (liver dehydrogenase differences in stream populations of rainbow trout below and above a waterfall)
(12): 2371 (of coho salmon blood transferrin re potential use for identifying stocks)
- Phillips, Gary Lee
J 26(1): 2881 (hematological studies of 2 buffalofishes)
- Phillips, Robert Wilson
J 26(1): 133 (estimating salmonid survival)
- Philomedes* (see Ostracoda)
- Philometra* (see Nematoda)
- Philonema* (see also Nematoda)
J 26(4): 941 (*P. oncorhynchi* invasion route to sockeye salmon swimbladder)
- Phinney, Duane Earl
J 24(1): 209 (fin pigmentation to distinguish Alaska chinook and coho salmon)
25(1): 203 (surf smelt W range extension)
26(6): 1619 (coho marking & finclipping)
29(1): 107 (Bering poacher & Pac. staghorn sculpin near Chignik, Alaska)
- Phoca groenlandicus* (see Seal, harp)
hispada (see Seal, ringed)
vitulina concolor (see Seal, harbour (western Atlantic))
vitulina largha (see Seal, harbour (western Pacific))
vitulina mellonae (see Seal, Ungava freshwater)
vitulina richardi (see Seal, harbour (eastern Pacific))
- Phocanema decipiens* (codworm) (see Nematoda)
- Phocoena phocoena* (see Porpoise, harbour (Atlantic and Pacific))
sinus (see Porpoise, harbour (Gulf of California))
- Phocoenoides dalli* (see Porpoise, Dall)
- Pholis clemensi* (see Gunnel, longfin)
laeta (see Gunnel, crescent)
ornata (see Gunnel, saddleback)
schantzi (see Gunnel, red)
- Phoronidea
B 176: 76, 174 (in Canadian marine zooplankton)
T 35 (in Strait of Georgia benthos biomass)
- Phosphamidon (see Insecticides)
- Phosphatases (see Enzymes)
- Phosphates (for general data re content in natural waters see Nutrients, aquatic; Waters, natural; also Limnology; Oceanography) (for phosphatases, see Enzymes; see also Eutrophication; Nucleosides; Phosphorus derivatives; Pollution)
J 22(1): 53 (poly-, effects in drip loss and rancidity)
(3): 783 (poly-, effects on thaw-drip of cod filets)
(3): 793 (phosphatase activity in marine phytoplankters)
(4): 929 (re oxidative rancidity in lean cod flesh)
23(1): 65 (rainbow trout activity effect on metabolism of)
24(5): 899 (in subarctic Pac. Ocean)
25(6): 1229 (re phytoplankton ecology in an Ont. reservoir)
(7): 1475 (weight changes in Atl. cod muscle dipped in Na tripolyphosphate solutions)
(8): 1571 (degradation of toxicant, by fish liver phosphatases)
(12): 2739 (NE Pac. Ocean surface distributions)
26(5): 1133 (re marine phytoplankton growth)
(6): 1561 (re primary production, Ogac L., Baffin Is.)
(8): 2193 (organophosphate insecticide effect on rainbow trout larvae)

- (9): 2395 (organophosphate insecticides effect on resistant vs. nonresistant mosquitofish)
- (9): 2517 (glyceraldehyde-3-phosphate dehydrogenase activity re temperature)
- (12): 3101 (concentrations in a lake after several fertilizations)
- (12): 3175 (alpha-glycerophosphate dehydrogenase activity as new index of iced-storage age of fresh-gutted fish)
- (12): 3209 (effect of feeding & DDT on hepatic glucose 6-phosphate dehydrogenase in fish)
- 27(3): 425 (in lakes affected by uranium ore milling wastes)
- (4): 653 (phosphate ion movement from & through lake muds)
- (5): 837 (as pollution criterion of natural waters)
- (5): 943 (phenotypes of L- α -glycerophosphate dehydrogenase re Pac. ocean perch genetics)
- (7): 1239 (content of Kootenay L. waters, 1949 & 1964)
- (7): 1251 (monthly variations, Strait of Georgia)
- (8): 1453 (in water re chlorophyll *a* in phytoplankton)
- (8): 1493 (benefit of sewage treatment for phosphate removal, re particulate matter production in Great Lakes)
- (11): 2022 (in inflow, outflow, rain, & snow, Clear L., Ont.)
- 28(2): 171, 203, 295 (in waters of many small NW Ont. lakes)
- (2): 203 (effects on photosynthesis when added to samples of water from small NW Ont. lakes)
- (2): 215 (content of periphyton in 4 small NW Ont. lakes)
- (2): 277 (in sediments of 16 small NW Ont. lakes)
- (11): 1763 (eutrophication of small NW Ont. lake upon addition of)
- B 125R: 43; 167: 63, 135, 139, 245 (& polyphosphates, determination in sea water) (*see also* S 1467 below)
- 162: 200 (as nutrient in sockeye salmon lakes)
- T 77; 203; 327 (re primary productivity, St. Margaret's Bay, N.S.)
- 120; 247 (in Bedford Basin waters, N.S.)
- 258 (toxicity tests of trisodium nitrilotriacetate detergent as replacement for phosphate detergent, re pollution)
- 265 (in sea waters & ice, Frobisher Bay, Baffin Is. N.W.T.)
- 314 (re primary productivity, Petpeswick Inlet, N.S.)
- S 1117; 1124 (review of sugar, in postmortem changes in fish muscles)
- 1246 (nucleoside-3',5'-cyclic phosphates synthesis)
- 1341 (re eutrophication of inlet extension of Victoria harbour, B.C.)
- 1363; 1366 (polyphosphate treatment to minimize drip during processing of filets from frozen fish)
- 1377 (phosphate phosphorus content of Atl. & Pac. herring meals)
- 1397 (avoidance of "Dreft" phosphate-sulfonate detergent by salmonids, re pollution)
- 1437 (in Green L., N.Y.)
- 1467; 1609 (automated measurement of, in sea water)
- 1646 (re lakes eutrophication)
- 1683 (nature of, & terminology for, types in natural waters)
- A 12(F); 65 (polyphosphate dips retard water loss during fillet processing)
- 30; 32 (sugar, re enzymic degradation in fish flesh to inhibit browning)
- 38 (review of, in fish)
- 85 (in freshwater fishmeals)
- 216 (re eutrophic pollution in the Great Lakes)
- 226 (nucleoside cyclic phosphate diesterases)
- 227 (nucleotide phosphomonoesterases)
- Phosphatides (*see also* Nucleosides)
- S 1373 (utilization by sea urchin spermatozoa: review)
- Phospholipase (*see* Enzymes)
- Phospholipids (*see also* Lipids)
- J 23(2): 207 (isotope-labelled for testing lecithinase activity)
- (7): 1025 (of fresh vs. frozen Atl. cod muscle)
- 24(2): 273 (glycerylphosphorylcholine in chilled trout muscle)
- (3): 607, 613 (seasonal changes in Atlantic cod flesh, liver, roe, & milt lipids)
- (12): 2555 (phospholipase A activity in rainbow trout muscle)
- 26(6): 1557 (source of free fatty acids in Atl. herring oils)
- (8): 2037 (of capelin lipids)
- (9): 2237 (re free fatty acid formation in refrigerated fish muscle)
- 27(3): 513 (of 2 euphausiid species)
- 28(4): 601 (fatty acids, of sand lance)
- S 986 (simplified preparation of glyceryl phosphorylcholine)
- 1045 (polyunsaturation re iodine value of various marine animal oils)
- 1175 (influence on fish quality, particularly Atl. cod)
- 1178 (choline utilization in aerobic marine microbe synthesis of)
- 1189 (of 4 freshwater vs. 2 marine fish oils fatty acids)
- 1227 (fatty acids composition in fin whale milk)
- 1233 (marine fatty acids incorporation into rat & mink)
- 1248 (phospholipase C from a marine planktonic alga)
- 1272 (of giant scallop, also in vivo incorporation of radioactive bases into)
- 1286 (content in eulachon oils lipids)
- 1346 (biosynthesis by lobster)
- 1373 (of echinoderms re metabolism: review)
- 1564 (fatty acids composition of sea anemone *Metridium dianthus*)
- 1717 (fatty acids of Atl. harbour seal lung & heart)
- A 38 (review of, in fish)
- Phosphorescence (*see* Bioluminescence)

- Phosphorus, yellow elementary (effluent from manufacture of, as cause of marine toxic pollutant) (*Note*: For derivatives of phosphorus, *see* accompanying Phosph... headings)
- J 27(1): 21 (toxicity to Atl. salmon, Atl. herring, lobster, & beach flea; stability of phosphorus in sea water)
- (6): 1131 (in vivo uptake by Atl. cod muscle & liver, from polluted water)
- (8): 1379 (toxicity to seawater-maintained brook trout & smelt)
- 28(5): 793 (accumulation in lobster tissues, & in body of clam, quahaug, mussel, periwinkle, & starfish, N.S. coast; also clearing rate)
- 29(7): 1053 (stability in Atl. cod edible muscle tissue during various types of processing)
- (9): 1295 (acute toxicity to adult Atl. cod & salmon)
- CAR 1 (effluent from manufacture cause of Nfld. herring mortalities)
- T 208 (assessment of assimilation by Nfld. marine organisms)
- 233 (content of bottom deposits, Long Bay, Nfld.)
- 254 (levels in water, Long Harbour, Nfld.)
- 255 (relative toxicities of production wastes to seawater-maintained fish)
- 303 (monitoring results, Long Harbour, July 1970-April 1971)
- S 1398 (toxicity to cultured L-cells)
- 1424 (determination by gas-liquid chromatography re pollution)
- 1539 (capacity of Long Harbour & Placentia Bay, Nfld., to accept pollutants)
- 1706 (histological changes in lobsters from)
- A 148 (remediation of phosphorus pollution re fisheries, Nfld.)
- 223 (combating pollution by, Long Harbour)
- 232 (³²P as radioactive marine pollutant)
- 29(1): 109 (infrared, for studying fish gills vascularization)
- (10): 1431 (time-lapse, of sonar display of migrating yearling sockeye salmon)
- Photography, aerial
- T 263 (for following currents by dyeing sea water off sewage plant outfall)
- S 1120 (for tracing coastal currents re pollution)
- Photography, underwater
- J 22(4): 1025 (time-lapse, of sonar traces of migrating smolts)
- 23(1): 153 (of fish behavior towards otter trawl)
- (8): 1197 (of Gulf of St. Lawrence sea bottom)
- (8): 1271 (of fish specimens in aquarium)
- 25(10): 1213 (of scallop drags efficiency)
- 27(3): 535 (from "cubmarine" for Atl. scallop surveys)
- (4): 826 (of lanternfishes bioluminescence)
- 28(11): 1805 (estimating distances between schooling aquarium fish by simultaneous)
- B 159 (automatic, for fisheries research)
- T 102 (from "cubmarine")
- 159 (of marine organisms in Canadian Arctic Archipelago)
- 210 14 (from inside a "cubmarine")
- 292; 295; 310 (from a towed "sled" or "plane")
- S 1087 (of reaction of Atl. fishes to otter trawl)
- A 61(F) (for tracing fish movements into nets or trawls)
- 136 (from submersibles, for fishery research)
- Photoheterotrophy (*see* Productivity, primary)
- Photoperiodism (*see* Darkness; Diel habits; Illumination; Light, reactions to; Radiation)
- Photophores (*see* Bioluminescence)
- Photosynthesis (*see also* Algae; Chlorophylls; Diel habits; Flora, aquatic; Phytoplankton; Pigments; Plankton; Productivity, primary; Radiation; Thetin derivatives; *also* sub-classifications of algae)
- J 22(4): 1083 (re marine phytoplankton carbon balance)
- 23(4): 539 (at critical depth in E subarctic Pac.)
- (7): 963 (in Great Bear L., N.W.T.; correction on J 25(8): 1579)
- 25(4): 625 (re production of marine bacteria)
- (10): 2037 (algal, in a thermal stream; correction on J 26(8): 2263)
- 26(2): 463 (efficiency of phytoplankton re light intensity)
- (8): 2003 (in epibenthic algae, Marion L., B.C.)
- (11): 2959 (salinity & illumination effects on chlorophyll & carotenoids production in a flagellate)
- 28(2): 189, 203 (liquid scintillation method for ¹⁴C activity re photosynthesis in several small NW Ont. lakes)
- (2): 203 (by phytoplankton in artificially enriched samples of water from several small NW Ont. lakes)
- Phosphorus derivatives (*see also* other Phosph... headings; *also* Nucleosides; for organophosphorus insecticides, *see* Insecticides)
- J 23(11): 1653 (of crayfish meat)
- 25(8): 1525 (quantitative extraction from frozen Atl. cod muscle)
- 26(11): 2969 (content of *Parapenaeus* Atl. shrimp)
- (12): 3101 (organic, in a lake after several fertilizations)
- 29(2): 195 (algal bioassay method for)
- (10): 1451 (re Great Lakes eutrophication)
- B 125R: 43, 141; 167: 45-57, 141, 219 (determination of particulate & reactive, in sea water)
- T 114 (content of Atl. & Pac. herring meals)
- S 1036 (in fish)
- 1683 (nature of, & terminology for, types in natural waters)
- Phosphorylases (*see* Enzymes)
- Photography (*see also* following two headings)
- J 28(11): 1805 (simultaneous top & side, for measuring distances between fish in a tank)

- (2): 215 (by periphyton of 4 small NW Ont. lakes)
 (5): 790 (nitrogen, phosphorus, & iron enrichment effects on, in N Pac. phytoplankton)
- B 125R: 165; 167: 261 (rate determination in sea water)
 S 1110; 1159; 1183 (in Chlorophyceae & Prasinophyceae algae)
 1198 (N compound requirements for *Hemiselmis virescens* growth)
 1392 (in Fraser R. plume in Strait of Georgia)
 1399 (energy efficiency concept in primary production)
 1704 (light intensity re DDT concentration effects on marine diatom *Nitzschia*)
 A 266 (bibliography on algal)
- Phototropism (see also Light, reactions to; Productivity, primary; Skototaxis)
 J 27(2): 335 (glycerol enhancement of marine algal growth, re glycerol pollution)
- Phoxinus eos* (see Dace, northern redbelly)
neogaeus (see Dace, finescale)
- Phrixecephalus cincinnatus* (see also Lernaoceridae)
 J 24(3): 515 (morphology)
 26(4): 921 (morphology, metamorphosis, host-parasite relations)
- Phycis chesteri* (see Hake, longfin)
- Phycodris* (see Rhodophyta)
- Phycoidella* (see Chironomidae)
- Phyllichthyidae* (see also Copepoda)
 J 27(11): 1943 (*Colobomatus kyphosus*, n.sp., parasitic to Pac. ocean perch)
- Phyllobothrium* (see also Cestoda)
 J 26(4): 805 (in Nfld. fishes)
 (9): 2319 (in B.C. marine fishes)
 T 103 (infection in short-finned squid)
- Phyllophora* (see Rhodophyta)
- Phyllospadix scouleri* (see Sea grass)
- Phylogeny
 J 24(10): 2161 (of host fishes re parasites)
 25(9): 1843 (Pinnipedia: Otariidae)
 27(12): 2159 (*Merluccius* hakes)
 28(3): 427 (osteology re phylogenetic implications in the Aulorhynchidae & Gasterosteidae)
 (6): 879 (lobster enolase re other enolases)
 B 162: 4 (sockeye salmon)
 174 (Chaoboridae genera & *Chaoborus* species of mysids)
 S 1171; 1197 (of marine planktonic algae)
 1220 (controversy over diphyly in Pinnipedia)
 1588 (*Harnischia* complex of chironomids)
 1647 (*Allocapnia* stoneflies)
- Physa* (see Snails, freshwater)
- Physeter catodon* (see Whale, sperm)
- Physiography (see also Geology; Geomorphology; Glaciation; Morphometry (physical))
 J 26(1): 171 (changes in Malpeque Bay, P.E.I., re oyster culture)
- Physiology (see also aspects of)
 J 25(9): 1983 (rainbow trout undergoing thermal stress)
 26(3): 639 (American eel corpuscles of Stannius re renal)
 (7): 1847 (aortic catheterization effects on brook trout)
 (9): 2283 (tolerances of 5 haustoriid amphipod species to 5 environmental factors)
 27(1): 193 (osmoregulation in burrowing mud eel)
 (3): 587 (atresia of northern pike ova)
 (5): 887 (of phytoplankton bloom population)
 (5): 909 (of anesthesia by M.S. 222 & benzocaine in rainbow trout)
 (5): 951 (blood plasma protein variations re winter flounder)
 (6): 1123 (lobster osmoregulation)
 (6): 1169 (sockeye salmon interrenal tissue response to mammalian ACTH, re sexual maturity)
 (7): 1295 (re photoperiod effects on Atl. salmon smolt development & growth)
 28(1): 7 (seasonal changes in composition & food reserves in flatworm)
 (1): 73 (energetics of a dipteran in thermal springs)
 (1): 95 (differential growth rate of Pac. big skate tail)
 (3): 343 (salinity effects on presmolt coho salmon survival & growth)
 (3): 379 (dissolved oxygen requirements for northern quahaug early development)
 (3): 409 (sockeye salmon feed intake)
 (3): 417 (Pac. ocean perch reproductive patterns)
 (3): 449 (bluegill sunfish protein consumption & nitrogen excretion)
 (5): 625, 635 (effects of handling, anesthetization, & surgery of brook trout)
 29(4): 399 (of 3 Salton Sea fishes re various salinities)
 (4): 439 (temperature, feed, & starvation effects on lobster)
 (11): 1525 (comparative, of embryonic viviparous fishes)
 (11): 1543 (comparative, of oxygen exchange in seaperch embryo vs. embryos of several mammalian species)
 (12): 1780 (various consequences of handling stress in young coho salmon & steelhead trout)
 S 1344 (*Gaffkya homari* effects on lobster)
 1526 (evidence for pituitary-adrenocortical feedback system in eel)
 1550 (of Atl. sea raven gill proprioceptors re respiration)
 1660 (of warm-bloodedness in tunas & sharks)
 A 138 (queen crab)

- 222 (assessment of pollutant effects on fish)
266 (bibliography on algal)
- Phytane (*see* Hydrocarbons; Phytol)
- Phytanic acid (*see also* Acids, fatty)
S 1193 (diastereoisomers from various fats)
1228 (of fish, seal, & whale oil, re their feed)
1266 (re Refsum's disease)
1385 (gas-liquid chromatographic separation of diastereoisomeric optically active isomers)
- Phytichthys chirus* (*see* Prickleback, ribbon)
- Phytoflagellates (*see* Dinophyceae; Flagellata)
- Phytol
S 1722; 1723 (diagenesis & maturation re geochemistry)
- Phytomacrofauna
J 28(9): 1322 (quantitative sampler for aquatic)
- Phytoplankton (*see also* Algae; Biomass; Chlorophylls; Feed; Grazing; Limnology; Oceanography; Plankton; Productivity, primary; *also* classifications of phytoplankton, e.g. subclassifications of algae)
J 22(3): 793 (phosphatase activity of some marine)
(4): 1083 (carbon balance of marine)
(5): 1107 (lipid fatty acids of marine)
(6): 1575 (nomographs for chlorophyll *a*, *b*, & *c* spectrophotometry)
23(3): 357 (thetin content as precursor of dimethyl sulfide odor in fish products)
(4): 539 (spring bloom advent in E subarctic Pac.)
(8): 1285 (dry weight, ash, & volume data for various species)
(11): 1715 (biological composition of, in L. Ontario surface waters)
24(1): 201 (examination of marine, for lecithinase C)
(2): 457 (thetin content as precursor of dimethyl sulfide odor in Labrador cod flesh)
(9): 1861 (dynamics in Alaskan arctic lake)
(11): 2283 (spatial & temporal differences in productivity in a lake; corrections on J 26(8): 2263)
25(6): 1229 (ecology in L. Belwood reservoir, Ont.)
(6): 1269 (generation of starch in ocean waters)
(8): 1603 (fatty acids of marine)
(8): 1749 (associated with Gulf of Maine red water bloom)
(10): 2219 (loss of radioactivity of ¹⁴C-labelled stored on filters)
26(2): 199 (production re zooplankton in NE Pac. Ocean; corrections on J 26(8): 2264)
(2): 463 (light intensity diel periodicity re photosynthesis efficiency)
(5): 1133 (re experimental nutrient enrichment of sea water)
(6): 1625 (chlorophyll extraction from 5 marine species; correction on J 26(8): 2264)
(12): 3101 (changes after several fertilizations of a lake)
- 27(1): 13 (grazing rates & selection by *Diaptomus oregonensis* copepod, Marion L., B.C.)
(2): 338 (18 species re phototrophic growth enhancement by glycerol)
(3): 436 (125 species recurrence in adjoining lakes affected or not affected by uranium ore milling wastes)
(5): 847 (re meromixis of Sunfish L., Ont.)
(5): 887 (physics, chemistry, & physiology of natural blooms)
(8): 1395 (effects of 4 copepod species grazing on, in Bras d'Or L. & Morrison's Pond, N.S.)
(8): 1405 (re chemical composition of 70 S Ont. lakes; corrections on J 28(8): 1219)
(8): 1429 (spatial heterogeneity in St. Margaret's Bay, N.S.)
(11): 1917 (productivity, NW Atl. surface waters)
(11): 2009 (productivity, standing crop, & principal species, Clear L., Ont.)
(11): 2081 (re turbulence & nutrient renewal in Casco Bay, Maine)
28(2): 189, 203, 215 (re primary production & photosynthesis in several small NW Ont. lakes)
(2): 295 (re differences & similarities among small NW Ont. lakes)
(5): 790 (nitrogen, phosphorus, & iron enrichment effects on photosynthesis & assimilation ratios of N Pac.)
(11): 1763 (change in dominant species on adding phosphate & nitrate to small NW Ont. lake)
29(11): 1595 (artificial fertilization effects on enclosed populations, Marion L., B.C.)
(11): 1627 (acidification & bubbling superior to membrane filtration for production determination by the ¹⁴C method)
- B 125R: 117; 167; 185 (pigment, etc., determination in sea water)
- T 77; 203 (biomass re primary productivity, St. Margaret's Bay, N.S.)
110 (seasonal distribution of 3 species, Strait of Georgia, 1965-67)
120 (Bedford Basin, N.S.)
172 (optoelectronic sizer for)
247 (production & nutrients, Bedford Basin, N.S., 1969-70)
248 (grazed by zooplankton, re marine productivity)
267 (tables, Frobisher Bay, Baffin Is., N.W.T.)
314 (productivity, Petpeswick Inlet, N.S., 1971-72)
319 (bloom, principally diatoms, as cause of fish & shellfish kill, Nanoose Harbour, B.C.)
- S 908 (of Canadian large lakes)
1040 (enolase activity of marine algal)
1044 (*Syracosphaera carteri* thetin content)
1155 (Coulter electronic counter for quantitative estimation)
1172 (dependence of zooplankton grazing on size of)
1191 (some of marine origin in 291 Great Bear Lake species)
1223 (re seasonal variations in marine benthos feed availability)

- 1254 (chlorophyll as possible precursor of shale isoprenoid fatty acids)
- 1392; 1393 (production & grazing by zooplankton, Strait of Georgia)
- 1448 (survival of marine axenic cultures from prolonged exposure to darkness, re ecology in ocean depths)
- 1482 (community structure of eutrophicated Bedford Bay, N.S., vs. St. Margaret's Bay, N.S.)
- 1485 (role of aquatic organic matter as feed for)
- 1513 (re zooplankton grazing, re marine productivity)
- 1538 (energy flow & species diversity in bloom of marine)
- 1577 (Como Creek, Colorado)
- 1578 (coastal waters of Ellesmere Is., N.W.T.)
- 1579 (annual production, St. Margaret's Bay, N.S.)
- 1586 (chlorophyll production budget over a 25-hr period, Bedford Basin, N.S.)
- 1651 (as affected by enrichment of Great Central L., B.C.)
- 1669 (local abundance variation re turbulence)
- 1689 (insecticides effect on in situ growth, L. Erie & L. Ontario)
- 1690 (composition & horizontal distribution, L. Ontario, 1970)
- A 211 (re feed availability to different trophic levels in marine feed chain)
- 220 (program during C.S.S. *Hudson* oceanographic survey circumnavigating N & S America)
- 244 (coastal water humic substances effects on growth)
- Phyotosynthesis (*see* Phytoplankton; Production, primary)
- Pickard, George Lawson
- J 24(7): 1475 (oceanographic characteristics of SE Alaska inlets)
- (11): 2207 (E subarctic Pac. waters changes)
- 28(8): 1077 (oceanographic features of Chile inlets)
- Pickereel (*see* Pike, northern)
- Pickereel, chain (*Esox niger*)
- J 22(5): 1261 (hybrids with other Esocidae)
- 28(9): 1285 (methylmercury in N.B.)
- 29(5): 579 (chromosome karyotypes re evolution)
- (9): 1283 (cadmium content, in New York State waters)
- S 1604 (chlorinated pesticide residues in, N.B.)
- Pickereel, grass (*Esox americanus vermiculatus*)
- J 22(5): 1261 (hybrids with other Esocidae)
- 24(3): 695 (blood low-mobility proteins)
- 25(6): 1199 (low-temperature effects on feeding in 3 Ont. localities)
- 28(4): 613 (blood plasma esterase activity)
- 29(5): 579 (chromosome karyotypes re evolution)
- Pickereel, redfin (*Esox americanus americanus*)
- J 22(5): 1261 (hybrids with other Esocidae)
- 26(4): 849 (*Cystidicola* nematode in swimbladder)
- 29(5): 579 (chromosome karyotypes re evolution)
- Pickering, Quentin H.
- J 29(8): 1099 (cadmium toxicity to fathead minnow)
- Pictou harbour and road, N.S.
- J 26(7): 1931 (lobster larvae unaffected by kraft mill effluent)
- T 145 (tidal flushing re pulpmill effluent)
- Pienaar, Leon Visser
- J 25(12): 2743 (mean weight from length statistics)
- 26(1): 123 (weight-length regression model)
- 27(4): 765 (nonlinear response surface)
- T 40 (multiple discriminant analysis program)
- 50; 51; 52; 63; 64; 65; 66 (surface transport charts N Pac. Ocean, 1946-62)
- 92 (computer program for equilibrium yield per recruitment)
- 112 (multiple discriminant analysis (FORTRAN 1130))
- Pietsch, John Paul
- J 29(1): 61 (virucidal activity of 2 iodophors to salmonid viruses)
- Pig (*see* Pork)
- Pigeon Lake, Ont.
- J 25(6): 1145 (maskinonge angling harvest re mortality)
- Pigments; Pigmentation (*see also* Chlorophylls; Discoloration; Dyeing; Skin; Stains)
- J 22(3): 861 (zeaxanthin cause of scallop orange-red meats)
- (4): 955 (re quality of canned partially frozen salmon)
- 23(6): 921 (Atl. cod red vs. white muscle glycogen)
- (7): 1025 (Atl. cod red vs. white muscle lipids)
- (7): 1095 (of coho salmon belly skin)
- (12): 1981 (a bocaccio xanthochroic color variant)
- 24(1): 209 (of fins for distinguishing juvenile chinook from coho salmon)
- (2): 451 (pelage patterns of E Pac. harbour seal)
- (3): 527 (of stored frozen Pac. dogfish re flesh quality)
- (7): 1613 (of canned Pac. salmon re grading)
- (10): 2195 (xanthophylls in unusual, of sockeye salmon skin)
- 25(3): 611 (guanidine compounds induction of skin pallor in salmonids)
- (4): 801 (of early larval canary rockfish)
- (10): 2233 (fluorescent, for tattooing fingerling salmonids)
- 26(2): 357 (indirect pigmentation of trouts & pink salmon flesh by canthaxanthin in feed)
- (5): 1185 (in coho salmon fry belly skin)
- (6): 1619 (fluorescent, for marking coho salmon fry)
- (6): 1667 (fluorescent, for separating invertebrates from sediments)
- (8): 2234 (carotenoid, re color of raw & cooked Atl. salmon flesh vs. canned Pac. salmon flesh)

- (11): 2959 (salinity-induced changes in *Monochrysis lutheri* flagellate)
- (12): 3183 (origin, etc., of red- vs. black-skinned threespine stickleback)
- (12): 3262 (re Pac. spiny lump sucker sexual dimorphism)
- 27(5): 973 (astaxanthin in prespawning & spawning sockeye salmon tissues)
- (12): 2179 (canthaxanthin derivative for direct pigmentation of canned salmon)
- (12): 2233 (re *Sebastes* speciation)
- (12): 2287 (carotenoid flesh color of sockeye salmon re feed & gonadectomy)
- 28(4): 477 (androgen-induced nuptial skin coloration in gonadectomized male sockeye salmon)
- (4): 509 (brook trout skin & flesh pigments after feeding crustacean wastes plus canthaxanthin)
- (10): 1672 (ambicoloration in a petrale sole)
- (11): 1789; 29(11): 1657, 1659 (melanin distribution in butter clam re paralytic shellfish toxin retention)
- 29(12): 1667 (melanophore, in northern sand lance larvae)
- B 125R: 117 (determination, of phytoplankton, in sea water)
- 150 ("greening" of albacore & tuna flesh during precooking before canning)
- 155 (characteristics of Canadian Atl. marine fishes)
- 167: 185 (carotenoids & chlorophylls determination in sea water)
- 173 (descriptions of NW Canada & Alaska fresh-water fishes)
- 180 (characteristics of B.C. marine fishes)
- CHN 22 (by sulfur compounds in canned products)
- 30 (discolored flesh problem in gillnetted Greenland halibut)
- 36 (determination of total carotenoids in trout & salmon flesh)
- T 220 (effects of storage of sockeye salmon in ice vs. refrigerated sea water, on color of canned product)
- S 923; 924 (spectrophotometric determination of marine-plant)
- 1145 (optical activity of seaweed fucoxanthin)
- 1294 (origin of ciliate *Mesodinium rubrum*)
- 1309 (color sorting of raw sockeye & coho salmon flesh re subsequent color of canned)
- 1403 (chloroplast pigment formed by photosynthetic cryptomonad alga cultured in darkness with glycerol)
- 1454 (patterns of dolphins & porpoises)
- A 124 (color reflectance of fish protein concentrates)
- 203 (salmon flesh color enhancement for canning)
- Pike, Amur (*Esox reicherti*)
- J 29(5): 579 (chromosome karyotypes of, & of hybrid with northern pike, re evolution)
- Pike, Gordon Chesley
- B 171 (B.C. marine mammals)
- S 1001 (first B.C. record of *Grampus griseus*)
- A 122 (N Pac. whaling, end of era)
- Pike, blue (*Stizostedion vitreum glaucum*) (blue pickerel; blue pikeperch; blue walleye)
- J 24(5): 1035 (contributions of year-classes to Lake Erie commercial fishery)
- B 149: 19, 118 (Great Lakes, catches)
- T 161 (bibliography)
- Pike, northern (*Esox lucius*) (pickerel; jackfish)
- J 22(3): 744 (in Bow R. system, Alta.)
- (5): 1261 (hybrids with other Esocidae)
- (6): 1357 (feed of, in Heming L., Man.)
- 23(1): 149 (alkaline phosphatase in scales)
- (10): 1495, 1523 (feed consumption re growth & maintenance)
- (11): 1663 (muscle myogens & blood hemoglobins electropherograms)
- (11): 1807 (pugheadedness abnormality, Heming L.)
- (12): 1845 (mouth & body form re feeding ecology)
- (12): 1969 (second record of accessory fin)
- 24(3): 695 (blood low-mobility proteins)
- 25(8): 1651 (plasma protein-bound inorganic iodide)
- (12): 2711 (muscle creatine kinase localization)
- 26(1): 175 (distinguishing fillets or remains from those of maskinonge)
- (2): 325 (S Alta. distribution)
- (6): 1439 (distribution in Canadian Missouri R. headwaters)
- (7): 1927 (purine sources of skin silvering, swimbladder, & eye silvery layer)
- (12): 3266 (diel activity, judged by gillnet catchability)
- 27(1): 170 (in Hudson Bay drainage system, Man.)
- (3): 587 (atresia of ova in 2 Missouri R. impoundments)
- (4): 830 (mercury contamination in organs, Saskatchewan R.)
- (6): 1059 (observing behavior under ice by periscope)
- (11): 1997 (postmortem glycolytic & other biochemical changes in white muscle at 0 C)
- 28(1): 105 (DDT residues in muscle, of Saskatchewan R.)
- (4): 613 (blood plasma esterase activity)
- (5): 783 (slime as bacterial medium re keeping quality)
- (5): 786 (survey of heavy-metal concentrations in dressed, from Moose L., Man., L. St. Pierre, & L. Erie)
- (7): 957 (vulnerability of 17 species to predation by)
- (7): 1061 (practical drying equipment for steaks & fillets)
- (9): 1325 (postmortem changes in muscle glycogen phosphorylase activity)
- (11): 1811 (alkali tolerance in Nebraska eutrophic lakes & ponds)
- (12): 1883 (winter kill in Manitoulin Is. lakes (L. Huron))
- 29(3): 275 (16 parasites of, Lake of the Woods, Ont.)
- (5): 469 (effects of 2 types of tags, & of partial fin clipping)

- (5): 579 (chromosome karyotypes of, & of hybrid with muskellunge & Amur pike, re evolution)
 (9): 1283 (cadmium content, in New York State waters)
 (11): 1519 (tissue distribution, elimination, & effects of methylmercury contamination; correction on J 30(8): 1257)
 (12): 1685 (mercury concentration re size, in 11 Man. & 5 NW Ont. lakes; corrections on J 30(8): 1257)
- B 149: 19, 120 (Great Lakes, catches)
 151; 151(F) (smoking)
 158 (in economics of N.W.T. commercial fisheries)
 173: 206 (full description, etc., of NW Canada & Alaska)
- CCG 7: 9 (control re whitefish infestation by *Trianaophorus*)
 7: 16 (protein electropherogram)
 7: 33 (freezing rate; latent heat of freezing)
- T 33 (in Great Slave L. fishery)
 129 (used as example in computer programming for statistical analysis of length-frequency data)
 180 (Lac la Martre, N.W.T.)
 261 (bibliography for Gulf of St. Lawrence)
- S 980 (brining time before smoking)
 1015 (Great Slave L. sport fishing)
 1081 (sweet-cured smoked sliced products; recipes)
 1409 (gill blood pathways)
 1441 (synopsis review of all biological aspects)
 1442 (*Trianaophorus* parasitization in L. Mälaren, Sweden)
 1450 (incidence of *Trianaophorus* parasitization, Heming L., Man.)
 1668 (mercury contamination, & 12 other metal elements content, in various Canadian lakes & rivers)
 1718 (organochlorine pesticide residues in Canadian commercially caught)
- A 6(F) (marinated filets & similar products)
 14 (Great Bear L., N.W.T.)
 200; 201 (mercury contamination in various Canadian rivers & lakes)
 224 (incidence of *Trianaophorus crassus* in Heming L., Man.)
- Pike, walleyed (*see* Walleye)
- Pike, yellow (*see* Walleye)
- Pikeperch, blue (*see* Pike, blue)
- Pikeperch, yellow (*see* Walleye)
- Pikeperches
 T 161 (bibliography of *Stizostedion* & *Lucioperca* genera)
 S 1442 (*Trianaophorus* parasites in *L. lucioperca*, L. Mälaren, Sweden)
- Pilchard (*see* Sardine, Pacific)
- Pileworm (*see* Shipworms)
- Pillinger, Colin Trevor
 S 1528 (geological fate of chlorophyll)
- Pilot plant (*see* Plant, pilot)
- Pimephales notatus* (*see* Minnow, bluntnose)
promelas (*see* Minnow, fathead)
- Pinaus Lake, B.C.
 J 24(2): 463 (introduction of *Mystis relicta* as trout feed)
- Pinder, Kenneth Lee
 A 151 (fermenting spent sulfite liquor to produce acid)
- Pinder, Lesley Jeanette
 J 26(8): 2093 (Atl. salmon buoyancy)
- Pinhorn, Allenby Thomas
 J 22(2): 369 (*Salmo salar* behavior)
 26(12): 3133 (SW Nfld. coast cod)
 S 1019 (age & growth in Nfld. inshore cod fishery)
 1052 (cod growth & temperature in Nfld. area)
 1493 (effects of increases in mesh size of trawls)
 1540 (catch/effort assessment of major cod stocks)
 A 157 (cod length conversion factors for Flemish Cap)
 248 (accuracy of research vs. commercial abundance indices for Nfld. cod)
 249 (virtual population assessment of Nfld. cod)
 250 (assessments of effects of increases in Nfld. cod trawl mesh sizes)
- Pinnipedia (*see also* Sea lion; Seal; Walrus)
 J 25(9): 1843 (new genus of Mio-Pliocene period)
 B 171 (of B.C.)
 S 1220 (controversy over diphyly)
 1681 (annotated list of parasites from, W coast N America)
- Pinnixia* (*see* Crabs, commensal)
- Pinnotheres* (*see* Crabs, commensal)
- Pinsent, Morley Edward
 J 26(6): 1672 (spottail shiners & yellow perch aggregations)
- Pipefish, bay (*Syngnathus griseolineatus*)
 J 26(9): 2319 (parasites, B.C.)
 B 180: 278 (full description, etc., B.C.)
- Pipefish, northern (*Syngnathus fuscus*)
 T 261 (bibliography for Gulf of St. Lawrence)
- Piper, Robert G.
 J 29(3): 328 (pathological effects in formalin-treated rainbow trout)
- Pippy, John Herbert Charles
 J 24(7): 1627 (kill of *Salvelinus fontinalis* involving *Echinorhynchus lateralis*)

- (9): 1911 (Nfld. freshwater fish parasites)
 26(4): 909 (*Pomphorhynchus laevis* in *Salmo salar*)
 (9): 2535 (kidney disease in Atl. salmon)
 27(5): 963 (ultraviolet light to find parasitic nematodes in situ)
 28(3): 461 (record of Atl. menhaden from Northumberland Strait)
 29(2): 179 (differences in N American vs. European Atl. salmon)
 CJG 17 (keys to metazoan parasites to Salmonidae of insular Nfld.)
 T 83 (bibliography on Atl. salmon parasites & disease)
 134 (1966-68 investigations re parasites as biological tags in Atl. salmon)
 226 (Miramichi R. fish mortalities)
 S 1406 (pollution & bacterial infection)
 1520 (food of giant squid)
 A 58; 58(F) ("swimmer's itch")
- Pirson, Jacques Emile
 J 25(12): 2739 (NE Pac. phosphate & silicate distribution)
- Pisaster brevispinus* (see Starfish, pink)
ochraceus (see Starfish, ochre)
- Piscicides (see also Pollution; Toxicants)
 J 23(5): 723 (bioassay method for residual toxaphene in lake water)
 24(8): 1819 (lampicide tests)
 26(11): 3077 (2 sea lamprey larvicides evaluation in Michigan waters)
 27(8): 1335 (rotenone effects on lacustral zooplankton)
 29(2): 199 (necessary exposure times to eliminate some freshwater fishes by antimycin & rotenone)
 CCG 7: 21 (re lamprey control)
 S 1484 (molecular structure of halogenated mononitrophenols re their toxicities to sea lamprey larvae & rainbow trout fingerlings)
 1490 (re lamprey control)
- Piscicola salmositica* (see Leeches)
- Pisidium* (see Clams (freshwater))
- Pitotmeter
 B 163: 17 (for measuring forces exerted on otter trawl)
- Pitt, Thomas Kenton
 J 22(1): 247 (modified whirling vessel)
 23(5): 651 (spawning of American plaice; correction on J 25(8): 1759)
 (7): 1099 (development of anal fin of capelin)
 24(5): 1077 (American plaice age and growth)
 26(5): 1301 (American plaice migration)
 27(4): 804 (hatchetfish from Grand Bank)
 (12): 2261 (yellowtail flounder distribution & spawning)
 28(3): 456 (fecundity of yellowtail flounder from Grand Bank, Nfld.)
 T 274 (Greenland halibut distribution re depth & temperature, Nfld.-Labrador area)
 S 1207 (American plaice catches diurnal variation)
 1541 (trends in American plaice fishery)
- Pitts, Dianne Paulette
 J 25(2): 239 (mackerel muscle nucleotide degradation)
- Pituitary (see also Hormones; Interrenal tissue)
 J 24(8): 1791 (of sockeye salmon during sexual maturity & spawning)
 (8): 1823 (hormone action on hypophysectomized American eel)
 25(7): 1465 (metopirone effect on pituitary-interrenal function of sockeye salmon & rainbow trout)
 (7): 1497 (hypophysectomy effect & relief in goldfish by chinook salmon pituitary extract)
 26(5): 1147 (cytology of sockeye salmon after gonadectomy)
 (7): 1837 (immunohistochemical localization of ACTH & prolactin in sockeye salmon)
 (11): 2975 (re hypertrophy of sexually maturing sockeye salmon interrenal tissue)
 27(7): 1295 (function re Atl. salmon photoperiod regime)
 (12): 2339 (rapid partial hypophysectomy method for 3 Atl. skate species)
 28(4): 477 (histological effects of hormones & cortisol on gonadectomized sockeye salmon)
 29(1): 13 (gonadotropin from chinook salmon, to accelerate male pink salmon maturity)
 (3): 303 (prolactin & growth hormone in adult migratory sockeye salmon)
 S 962 (salmon hormones effect on immature trout gonads)
 1187 (effect of hypophysectomy on rainbow trout pituitary-interrenal axis)
 1245 (extract promoting protamine biosynthesis in steelhead trout)
 1249 (hypophysectomized goldfish spermiation as bioassay for salmon gonadotropin)
 1292; 1336 (gonadotropin of chinook salmon induces spermatogenesis & ovulation in hypophysectomized goldfish)
 1340 (stressed maturing sockeye salmon interrenal activity suppression by dexamethasone corticosteroid injection)
 1372 (interrenalectomy & hypophysectomy re skate liver glycogen levels)
 1376 (gonadotropic activity of chinook salmon pituitary extract in hypophysectomized male lizard)
 1526 (physiological evidence for pituitary-adrenocortical feedback mechanism in eel)
 1535 (chinook salmon gonadotropin effect on sexual behavior of hypophysectomized & gonadectomized female guppies)
 1593; 1630 (chinook salmon hormones effects on seminal vesicles of hypophysectomized catfish)
 1670 (chinook salmon hormones effects on ovulation, etc., of hypophysectomized catfish)

- 1682 (chinook salmon pituitary gonadotropin induction of in vitro ovulation of medaka oocytes)
- 1695 (chinook salmon gonadotropin effect on ovarian & testicular development in immature striped mullet)
- Pivnicka, Karel
J 27(10): 1757 (subspecies of burbot)
- Placentia Bay; Long Bay; Long Harbour, Nfld. (see also Phosphorus, yellow elementary)
S 1539 (capacity to accept pollutants)
- Placid Lake, B.C.
J 28(9): 1259 (segregation between adult cutthroat & Dolly Varden trouts)
- Placopecten magellanicus* (see Scallop, sea)
- Plaice (European) (*Pleuronectes platessa*)
J 22(2): 513 (retinomotor changes)
24(11): 2407; 25(4): 717; 26(12): 3237 (mathematical treatment of growth & feeding)
- Plaice, Alaska (*Pleuronectes quadrituberculatus*)
T 246 (bibliography)
- Plaice, American (*Hippoglossoides platessoides*) (blueback flounder)
J 22(2): 565 (life history, ecology, in Magdalen Shallows)
(6): 1345 (lymphocystis disease on eastern Grand Bank)
23(1): 109 (vertical migrations)
(5): 651 (sexual maturity & spawning, Nfld. & Grand Banks; correction on J 25(8): 1759)
24(5): 1077 (age & growth in Nfld. area)
25(4): 639 (catalysis of flesh oxidative rancidity by metal ions)
(4): 829 (thaw-drip variations in fillets)
26(5): 1205 (size changes, mortality, & equilibrium yields in an exploited stock)
(5): 1301 (tagging & migration, Nfld.)
(9): 2299 (promoters & inhibitors of muscle lipids oxidation)
(12): 3217 (bacteriology of commercial fillets from fish iced at sea & thawed in water)
27(4): 701 (transition metals ion effects on muscle extractable protein & lipids oxidation catalysis)
(11): 1983 (bacteriological evaluation of, when water-immersion thawed after frozen at sea, & of fillets therefrom)
28(1): 1 (amine formation in stored frozen muscle)
(7): 935 (regular component of Passamaquoddy Bay fish communities, N.B., & length frequencies)
(8): 1125 (purines changes in iced fillets)
(9): 1285 (methylmercury in, N.S. banks)
29(1): 85 (muscle catheptic activity)
(7): 997 (feed resource division, Passamaquoddy Bay, N.B.)
- (12): 1749 (summer energy storage & its use for winter metabolism & gonad maturation)
- B 154: 4, 81, 154 (as Nfld. resource)
- CJG 13: 24 (Nfld. spawning & catches)
14 (Nfld. landings, 1966)
15 (Nfld. landings, 1952-67)
16 (research vessel catches, 1958-66, & commercial landings, 1953-68, Nfld.)
- T 80 (stocks, Gulf of St. Lawrence & N.S. banks)
103 (in experimental otter-trawling, 1967)
164 (extensive length-weight data)
260 (availability, standing crop, lengths, weights, etc., from Scotian Shelf surveys, 1958-68)
261 (bibliography for Gulf of St. Lawrence)
272 (halogenated hydrocarbon residues detected in)
288 (monthly changes in stomach contents, Passamaquoddy Bay)
333 (larvae & eggs biomass, St. Margaret's Bay, N.S.)
- S 886; 887; 949; 955; 1023; 1024 (ICNAF Canadian research reports)
1087 (behavior toward otter trawl, observed photographically)
1207 (diurnal variation in catches from Grand Bank)
1213 (length-weight relations in ICNAF Subarea 4)
1363; 1364 (quality re freezing & thawing of fish, then freezing & frozen storage of fillets therefrom)
1368 (commercial aspects of reprocessing & marketing sea-frozen)
1420 (handling aboard chill-freezer trawlers)
1421 (sea-frozen: bacterial & sanitary quality of products)
1541 (fishery trends in ICNAF Subarea 3)
1604; 1696 (chlorinated pesticide residues, in N.S. banks)
- A 43 (Nfld. landings in 1964)
108; 119; 152; 153; 181; 182 (ICNAF Canadian research summaries; commercial catches; spawning; maturity; growth; age)
156 (icing & freezing effects on biological length-weight measurements)
173 (economics of electronic vs. water immersion thawing)
191 (ICNAF report on egg & larvae numbers in Davis & Denmark straits)
194 (Nfld. fishery)
- Planes marinus* (see also Crabs (Pacific))
J 28(10): 1527 (range extension off B.C.)
- Plankton (see also Algae; Feed; Phytoplankton; Production, primary; Zooplankton; also subclassifications of algae and planktonic animals)
J 23(10): 1625 (efficiency of methods for determining)
(12): 1875 (of 9 Rocky Mt. Trench B.C. lakes)
24(4): 883 (sampling device)
(8): 1811 (pumping device for sampling small marine)
25(8): 1741 (sampling pipe used on frozen lakes)
26(2): 199 (estimating zooplankton production from phytoplankton production)

- (7): 1948 (2 useful devices for vertical sampling)
 (8): 2135 (composition & horizontal distribution of L. Ontario crustacean)
 28(2): 189, 203, 215, 231, 245, 257 (studies of many small NW Ont. lakes)
 (3): 311 (crustacean, of 146 W Canadian alpine & subalpine lakes & ponds)
 (11): 1783 (⁶⁵Zn vs. Zn distribution in experimental marine ecosystem)
 29(3): 341 (diver-operated underwater collector)
 (7): 1075 (optoelectronic counter-sizer)
 B 162: 205, 224, 254, 346 (re sockeye salmon feed in lakes & sea)
 CPO 1965-3; -5; -7; -8 (observations in Strait of Georgia)
 T 172 (optoelectronic sizer for)
 252 (high-speed sampler)
 S 956 (Caribbean Sea Canadian research)
 1414 (particle size spectra re determining community structure)
 A 52 (in oceans, general)
 165 (5-year pollution studies in Strait of Georgia, B.C., re)
 181; 182 (ICNAF Canadian 1969 research summaries)
- Plants (*see* Flora, aquatic; Flora, terrestrial; Oils, seed)
- Plants, pilot (*see also* Fish protein concentrate; Refrigeration)
 J 23(5): 681 (for Pac. herring oil methyl esters fractionation)
 CVG 39 (for fishmeal research)
 T 197 (proposed, for treating fish processing plant waste water)
 A 112 (same as CVG 39 above)
- Plants, power (*see* Dams; Nuclear power plant; Thermal power plant)
- Plasma (*see* Blood; Enzymes; Hormones; Proteins; Serum)
- Plates, bony (of Agonidae)
 J 26(6): 1467 (standardization of terminology for)
- Platford; Robert Frederick
 J 22(1): 113 (magnesium ion in sea water)
 (4): 885 (sodium ion in sea water)
 S 1162 (sodium sulfate in sea water)
 1234 (H₂O-NaCl-Na₂SO₄ isopiestic measurements at 25°C)
 1512; 1515 (isopiestic measurements)
- Platichthys stellatus* (*see* Flounder, starry)
- Platidia hornii* (Brachiopoda)
 T 268 (in B.C. faunistic surveys since 1960)
- Platinum derivative
 J 29(12): 1691 (H₂PtCl₆, re toxicity to *Daphnia magna*)
- Platt, Trevor
 J 26(6): 1625 (extraction of chlorophylls; correction on J 26(8); 2264)
- (9): 2345 (zooplankton biomass equivalents)
 27(1): 185 (device for measurement of submarine light energy)
 (5): 887 (natural plankton bloom)
 (8): 1453 (phytoplankton heterogeneity)
 T 77; 203; 327 (primary productivity measurements in St. Margaret's Bay, N.S.)
 247 (phytoplankton production & nutrients in Bedford Basin, N.S.)
 299 (mapping chlorophyll concentration, Bedford Basin)
 314 (phytoplankton productivity & nutrient measurements, Petpeswick Inlet, N.S.)
 332 (mapping chlorophyll concentration, Gulf of St. Lawrence)
 S 1399 (efficiency of primary production)
 1482 (study of eutrophicated marine basin)
 1538 (marine energy flow)
 1579 (production by phytoplankton in St. Margaret's Bay, N.S.)
 1586 (effect of plankton grazing in small marine basin)
 1669 (local phytoplankton abundance re water turbulence)
- Platygobio gracilis* (*see* Chub, flathead)
- Platyhelminthes (*see* Cestoda; Trematoda; Turbellaria)
- Plectobranthus evides* (*see* Prickleback, bluebarred)
- Plecoptera (stoneflies) (*see also* Insects; Insecticides; Invertebrates)
 J 22(2): 475 (new records and descriptions of new species)
 24(4): 769, 807, 823 (affected by N.B. forest insecticide sprays, re their role as salmon & trout feed)
 25(7): 1423 (E N American *Taeniopteryx*: keys; synonymy; descriptions; distribution records; 4 new species)
 26(2): 279 (upstream movements of river larvae)
 (5): 1157 (feed, habits, ecology, in small Que. stream)
 27(12): 2356 (abundance re rainbow trout feeding)
 28(6): 849 (samplings from shallow stream beds)
 T 130: 223 (of Nfld. streams)
 S 966 (effect of DDT forest spraying in N.B.)
 968 (Canadian distribution)
 1128 (in benthos of 4 L. Superior bays)
 1241 (disproval of tolerance to DDT insecticide)
 1268 (distribution of, Que.)
 1375 (*Zealeuctra* genus position in Leuctridae; new *Zealeuctra* species; evolution of Leuctridae genera)
 1532; 1533 (of a high Colorado mountain creek)
 1647 (*Allocapnia* classification, evolution, dispersal, key, etc.)
- Plerocercoids (*see* classifications of helminth parasites)
- Pletcher, Ferdinand Tony
 J 23(2): 309 (new B.C. fishes)

- (8): 1271 (photographing fish at sea)
 25(10): 2237 (subcutaneous dart tag for fish)
 T 74 (1964-65 sablefish study)
- Pleurobrachia* (see Ctenophora)
- Pleurogrammus azonus* (see Mackerel, Atka)
monopterygius (see Mackerel, Atka)
- Pleuroncodes planipes* (see Shrimps)
- Pleuronectes platessa* (see Plaice (European))
quadrituberculatus (see Plaice, Alaska)
- Pleuronectidae (righteye flounders) (see also names of species)
 T 246 (bibliography of N America Pac. coast)
- Pleuronichthys coenosus* (see Sole, C-O)
decurrens (see Sole, curifin)
- Plicobothrium globicephalae* (see also Cestoda)
 S 1391 (new genus & species of cestode, from pilot whale)
- Plocamionida* (see Sponges)
- Plotosus anguillaris* (see Eel, barbel)
- Plutonium
 A 232 (²³⁸Pu as radioactive marine pollutant)
- Pneumatophorus diego* (see Mackerel, chub)
japonicus (see Mackerel, chub)
- Poacher, Atlantic (*Agonus decagonus*) (Atlantic sea poacher)
 J 26(3): 597(F) (retinal structure re activity, etc.)
 T 161 (bibliography for Gulf of St. Lawrence)
- Poacher, Bering (*Ocella dodacaedron*) (*O. dodacaedron*)
 J 29(1): 107 (southerly range extension to Chignik, Alaska)
- Poacher, bigeye (*Asterotheca pentacanthus*) (bigeye starsnout)
 J 25(12): 2665 (associations with other fishes off Oregon coast)
 B 180: 556 (complete description, etc., B.C.)
- Poacher, blackfin (*Bathyagonus nigripinnis*)
 J 25(12): 2665 (associations with other fishes off Oregon coast)
 B 180: 557 (complete description, etc., B.C.)
- Poacher, blacktip (*Xeneretmus latifrons*)
 J 25(12): 2665 (associations with other fishes off Oregon coast)
 26(9): 2319 (parasites, B.C.)
 B 180: 566 (complete description, etc., B.C.)
- Poacher, bluespotted (*Xeneretmus triacanthus*)
 J 25(12): 2665 (associations with other fishes off Oregon coast)
 28(9): 1347 (range extension N into B.C.)
 B 180: 567 (complete description, etc., B.C.)
- Poacher, cutfin (*Xeneretmus leiops*) (smootheye poacher)
 B 180: 548 (reported off B.C. coast, in key to Agonidae)
- Poacher, deep-pitted (see Rockhead)
- Poacher, fourhorn (*Hypsagonus quadricornis*) (four-horn sea-poacher)
 B 180: 560 (complete description, etc., B.C.)
- Poacher, northern spearnose (*Agonopsis emmelane*) (*Averuncus emmelane*; windowtail poacher)
 J 25(8): 1651 (plasma protein-bound inorganic iodide)
 (12): 2665 (associations with other fishes off Oregon coast)
 B 180: 549 (complete description, etc., B.C.)
 T 30 (in B.C. experimental trawling)
- Poacher, pixie (*Ocella impi*) (*Occa impi*)
 J 27(6): 1109 (proposed generic, specific, & common name for new described species off B.C.)
 B 180: 561 (complete description, etc., B.C.)
- Poacher, pricklebreasted (*Stellerina xyosterna*)
 B 180: 547 (brief description in key to Agonidae)
- Poacher, pygmy (*Odontopyxis trispinosa*)
 B 180: 564 (complete description, etc., B.C.)
- Poacher, smooth (see Alligatorfish, smooth)
- Poacher, smootheye (see Poacher, cutfin)
- Poacher, sturgeon (*Agonus acipenserinus*) (sturgeon-like sea-poacher)
 J 22(1): 203 (biochemical systematics)
 26(9): 2319 (parasites, B.C.)
 B 180: 550 (full description, etc., B.C.)
 T 181; 257; 317 (taken in B.C. trawl fishery)
- Poacher, tubenose (*Pallasina barbata aix*) (tubesnout poacher)
 B 180: 565 (complete description, etc., B.C.)
- Poacher, tubesnout (see Poacher, tubenose)
- Poacher, warty (*Ocella verrucosa*) (*Occa verrucosa*)
 J 25(12): 2665 (associations with other fishes off Oregon coast)
 26(6): 1467 (new Canadian records & bony plate terminology standardization)
 B 180: 562 (complete description, etc., B.C.)
- Poachers (general)
 J 27(5): 981 (genus *Ocella* proposed for superseding name *Occa*; also comparison with *Stellerina*)
 (6): 1109 (key to *Ocella* & *Stellerina* genera)

- B 180: 546 (key to B.C.)
T 22; 46; 62; 81 (in B.C. experimental groundfish trawling)
- Podium**
J 24(3): 679 (tumorous growth on, in freshwater mussel)
25(3): 541 (aquiferous system for expansion, in *Polinices*)
- Podon* (see Cladocera)
- Podonominae** (see also Chironomidae)
B 170 (descriptions, morphology, taxonomy, distribution, etc., of 4 nearctic species)
T 124 (classification of nearctic)
A 272 (review of B 170 above)
- Poecilia latipinna* (see Molly, sailfin)
reticulata (see Guppy)
- Poisons** (see Herbicides; Insecticides; Paralytic shellfish poisoning; Pesticides; Piscicides; Pollution; Toxicants; also names of toxic elements)
- Polar, S. M.**
T 102: 15 (electrical equipment used with "cubmarine" submersible)
- Polides* (see Rhodophyta)
- Polinices heros* (see Drills, clam; Drills, oyster)
lewisi (see Drills, clam)
- Polistotrema* (see *Eptatretus*)
- Pollachius virens* (see Pollock (Atlantic))
- Pollack** (see Pollock (Atlantic))
- Pollock (Atlantic)** (*Pollachius virens*) (pollack)
J 22(6): 1555 (swimbladder volume determination method)
23(10): 1587 (lipid oxidation test)
28(1): 1 (dimethylamine formation in dark muscle during frozen storage)
(7): 935 (winter periodic component of Passamaquoddy Bay fish communities, N.B., & length frequencies)
(8): 1125 (purines changes in iced fillets)
(9): 1285 (methylmercury in, N.S. banks)
29(7): 997 (feed resource division, Passamaquoddy Bay, N.B.)
B 154: 109 (as Nfld. resource)
CNG 14; 15; 16 (Nfld. landings, 1952-68)
T 80 (stocks, Gulf of St. Lawrence & N.S. banks)
164 (extensive length-weight data)
261 (bibliography for Gulf of St. Lawrence)
MSP 14 (popular description, in English & French)
S 887; 955; 1024 (ICNAF research reports)
1365 (factors influencing quality changes during frozen storage & distribution of frozen products)
1368 (commercial aspects of reprocessing & marketing sea-frozen)
A 43; 108; 119; 182; 241 (ICNAF Canadian research reports)
- Pollock (Pacific)** (see Pollock, walleye)
- Pollock, walleye** (*Theragra chalcogramma*) (Alaska pollock; Bigeye; Pacific pollock; Walleye; Whiting)
J 22(1): 203 (biochemical systematics)
(5): 1107 (liver lipid fatty acids)
26(8): 1985 (stock & yield forecast, NE Pac. Ocean)
(9): 2319 (parasites, B.C.)
B 180: 228 (full description, etc., B.C.)
CHN 32 (used for Japanese fish paste)
CNG 73 (in Hecate Strait exploratory fishing)
79 (Japanese catches in N Pac., 1963-66)
CNS 14; 19 (B.C. landings by areas, 1964, 1965)
28 (B.C. commercial landings for animal feed)
T 7; 11; 16; 22; 30; 46; 56; 62; 81; 144; 181; 205; 210; 221; 257; 278; 290; 317; 328 (taken during FRB experimental, or B.C. commercial trawling)
34 (distribution, stocks, populations, synonymy, systematics)
174: 65 (feed)
246 (bibliography)
S 1616 (lactate dehydrogenase polymorphism in heart & skeletal muscle)
1639 (dimethylamine & formaldehyde formation, re changes in frozen stored muscle)
A 60 (same as CNG 79 above)
90; 103 (Japan & USSR Bering sea fishery)
91 (1951-66 B.C. landings for mink feed)
- Pollution; Pollutants** (Note: Because of the large number of articles on this subject in FRB series in recent years certain types of pollutants are indexed under their separate headings, e.g. Antipollution measures; Copper and derivatives; Fish processing wastes; Herbicides; Insecticides; Mercury and derivatives; Nitrotriacetates; Oils, petroleum; Pesticides; Phosphates; Phosphorus, elemental; Polychlorinated biphenyls; Pulpmill effluents; Sewage; Zinc and derivatives. For mining effluent compounds other than those of copper, mercury, and zinc, see certain references hereunder, also names of elements. See also Ecology; Eutrophication; Isotopes; Piscicides; Radioactivity; Toxicants)
J 22(3): 801 (disposal re water exchange, Port Moody, B.C.)
26(3): 695 (pesticides effect on brook trout & Atl. salmon)
(5): 1378 (spinner culture of mouse fibroblast cells to detect chemical water pollutants)
27(2): 335 (ecology of marine pollution by glycerol)
(2): 383 (silver, beryllium, cadmium, copper, mercury, & lead salts effects on 5 liver enzymes of mummichog)
(3): 425 (uranium ore milling wastes effects on limnology of 2 affected vs. 1 unaffected Ont. lakes)
(4): 653 (phosphate, ferrous, & ammonium ion transfer in lake muds & suggested prevention)

- (4): 677 (concentrations of 15 trace elements in whole fish or liver of 13 Great Lakes species)
- (5): 837 (chemical constituents in natural waters as criteria of)
- (8): 1486 (re decline of L. Erie walleye fishery)
- (11): 2095 (hyperplasia of a bryozoan as possible index of water pollution by oil or coal-tar derivatives)
- (12): 2185 (toxicological effects of cadmium to mummichog)
- 28(5): 786 (survey of heavy-metal concentrations in dressed Canadian fishes from industrial vs. nonindustrial area lakes)
- (7): 1057 (discharge from nuclear power plants)
- (9): 1225 (cadmium toxicity tests on various marine organisms)
- 29(6): most papers in this issue, particularly those commencing on p. 849, 861, 899, 931, 937, 941, and 951 (effects of natural & man-made, on N American & European fishes (particularly salmonid communities) in oligotrophic lakes)
- (8): 1131 (acid atmospheric fallout effect on lake pH and fishes)
- B 168: 3 (re toxicity of shellfish)
- 169: 140 (re Pac. oyster culture, B.C.)
- 178 (re raft-culturing of Pac. oyster in B.C.)
- 179: 13, 68 (re B.C. clams)
- T 130 (dissolved oxygen availability in Nfld. streams re industrial)
- 200 (possibilities of X-ray fluorescence spectrophotometry of organisms elemental composition, for assessing)
- 218 (antibacterial properties of sea water)
- 233 (elemental phosphorus & fluoride content of bottom deposits, Long Bay, Nfld.)
- 250 (computer programming for)
- 262 (hot water effluent from steamelectric power plants)
- 272 (of environment by halogenated hydrocarbons: review & bibliography)
- 293 (analysis of mine wastes for xanthate, etc., flotation agent residues)
- MSP 9 (collected copies of studies related to FRB work, 1902-66)
- S 960 (apparatus for studying avoidance by young Atl. salmon)
- 964 (mathematical analysis of multivariable environments effects)
- 1007 (trout & young Atl. salmon mortality from fungicide)
- 1120 (tracing coastal by aerial photography)
- 1157 (apparatus for measuring hydrogen sulfide oxidation kinetics)
- 1304 (biological effects of freshwater & marine)
- 1341 (eutrophication of inlet extension of Victoria harbour, B.C.)
- 1397 (avoidance reactions of salmonids to representative pollutants, e.g. detergent, phenol, chlorine, kraft mill effluent)
- 1407 (sewage & other wastes disposal re physical environment, B.C. coast: review)
- 1476 (re implementation of Canadian ocean engineering, chemical oceanography, & geochemistry)
- 1504 (tracing drift in sea water by continuous turbidity measurement)
- 1510 (applying bioassay results re toxicities towards fish: review)
- 1531 (interaction of casein with polyethylenimine flocculating agent, re removal of pollutants)
- 1536 (herbicides or detergents as possible cause of deformed chironomids larvae in L. Erie & Okanagan R. lakes, B.C.)
- 1539 (capacity of marine estuaries to accept pollutants; use of dyes to follow flushing action)
- 1558; 1570 (polychlorinated biphenyls in sea water; effects on *Gammarus oceanicus* amphipod)
- 1584 (herring mortality from coke-oven intermediate oil in N Sydney harbour, N.S.)
- 1678 (hydroxamate flotation agents in iron ore milling wastes)
- 1719 (re man's effects on global freshwater supplies)
- 1729 (salinization of groundwater in arid zones; control; desalting)
- A 81 (chart of types & chemical analyses for; effects on waters)
- 84 (impact on Atl. Provinces fisheries)
- 87 (detection & measurements by biological assays)
- 111 (sequestering agent to combat metal ions)
- 132 (FRB research on)
- 139 (improving methodology of evaluation re pollutants effects on marine organisms: review)
- 142 (as threat to Canadian Atl. salmon)
- 145 (bioassay methods for acute or lethal toxicity: review)
- 165 (5-year study in Strait of Georgia re plankton & fish)
- 183 (re oceanography & ocean resources management)
- 201 (re environment of Great Lakes fishes as affecting their food for man)
- 216 (phosphate detergents, sewage, etc., re causes of Great Lakes eutrophication (polemical))
- 222 (assessment of effects on fish physiology & behavior)
- 230 (re a northern environment as source of food for man)
- 232 (radioactivity in the marine environment: extensive summary of book)
- 233 (ecology re aquatic)
- 242 (application of oceanography to design of sewer & other effluent outfalls)
- 258 (conserving the ocean as a source of natural resources)
- 260 (biological aspects of water: book review)
- 261 (sewage pollution effects on ecology, Biscayne Bay, Florida: book review)
- 268 (sublethal effects & "safe" concentrations of toxicants to fish)
- Polychaeta
J 24(7): 1553 (Penobscot R. estuary, Maine)

- 25 (9): 1803 (caloric & sulfur content)
- 26 (1): 55 (in Washington coast benthic infauna standing crop)
- (5): 1273 (as cod & haddock feed)
- (9): 2403 (as blackbelly eelpout feed)
- (10): 2595 (new family: Acrocirridae)
- (11): 3088 (range extension of *Manayunkya aestuarina* to B.C.)
- 27 (9): 1661 (as flathead sole feed)
- (12): 2143 (*Pectinaria hypoborea* trumpetworm biology, etc., St. Margaret's Bay, N.S.)
- (12): 2273 (in benthic fauna off Washington coast)
- 28 (9): 1225 (cadmium toxicity tests on *Nereis virens*)
- (10): 1360 (dedication of issue to Edith & Cyril Berkeley's investigation on)
- (10): 1365 (list of Edith & Cyril Berkeley's publications on)
- (10): 1373 (revision of *Metavermlia* serpulids & description of 3 new species)
- (10): 1385 (various species as intermediate hosts of helminth parasites)
- (10): 1393 (descriptions of *Sthenelais fusca* & new species *S. berkeleyi* from E Pac.)
- (10): 1403 (amphipacific distribution of some 25 species)
- (10): 1407 (abyssmal annelids: a new family, Fauveliopsidae, with key to genera; 2 new genera, *Berkeleyia profunda* & *Bruunilla natalensis*; a new species, *Progoniada simplex*, & 23 other species; also compendium of 504 species in 242 genera & 52 families)
- (10): 1429 (description of new aphroditid species, *Macellicephaloides berkeleyi*, from Aleutian trench)
- (10): 1433 (tube-building re feeding in *Neoamphitrite robusta*)
- (10): 1437 (list of 13 recognized *Dodecaceria* cirratulid species, & description of a new species)
- (10): 1445 (*Magelona berkeleyi* n.sp.; *M. longicornis* redescription; other *M.* species)
- (10): 1455 (redescription of *Malacoceros indicus*)
- (10): 1459 (seasonal settlement of *Polydora limicola*, *Capitella capita*, & *Hydroides pacificus*, etc., on test panels, California)
- (10): 1469 (descriptions of new species *Syllides benedicti*, & of 6 other syllid species; also key for Syllidae)
- (10): 1483 (description of new species *Schroederella berkeleyi*, re *S. pauliani*, from off Massachusetts)
- (10): 1487 (bioluminescence in 2 holopelagic families of)
- (10): 1491 (first Washington coast records of *Chloea entypa* & *Drilonereis falcata minor*)
- 29 (2): 187 (*Nereis diversicolor* caloric content)
- (8): 1234 (upward-swimming activity from estuarial benthos)
- (9): 1319 (depth distribution of 68 benthic species, in 2 Canadian Arctic fiords)
- B 169: 155 (*Polydora ciliata* parasitic to Pac. oyster in B.C.)
- 176 (in synopsis of B.C. zooplankton)
- T 25; 35; 59; 60; 73 (in Strait of Georgia benthos biomass)
- 43 (on Irish moss)
- 55 (identification of B.C.)
- 76 (in tidal *Ostrea L.*, N.S.)
- 116 (*Clymenella torquata* egg production)
- 159 (in Canadian Arctic Archipelago)
- 225 (associated with Bay of Fundy scallop beds)
- 266 (Frobisher Bay, Baffin Is., N.W.T.)
- S 1067; 1138 (new B.C. records & distribution extensions)
- 1123 (type-specimens described by Edith & Cyril Berkeley, 1923-64)
- 1219 (Errantia: checklist of B.C. since 1923)
- 1243 (Sedentaria: checklist of B.C. since 1923)
- 1401 (cyclic nucleotide phosphodiesterase in *Nereis*)
- 1677 (new species, *Onuphis longibranchiata*, from B.C.; first N America record of *Laetmonice pelucida*; first B.C. record of *Leanira* & *Ehlersleanira*; also notes on 9 other species)
- Polychlorinated biphenyls (PCB) and similar halogenated aromatic organic compounds (re environmental pollution when used as pesticides)
- J 29 (4): 349 (residues in commercial Atl. herring, seal, & whale oils)
- (5): 592 (identification & estimation of major components of Arochlor 1221)
- T 272 (& other industrial halogenated hydrocarbons in the environment: uses; polluting effects; analytical methods for; metabolic effects on man & other organisms; bibliography; lists of chemical & trade names, etc.)
- S 1452 (solubilization in water for tests of toxicity to aquatic animals)
- 1463 (identification in mixtures with DDT by mass spectrometry)
- 1536 (re deformed chironomid larvae in lakes)
- 1558; 1570; 1662 (uptake, toxicity, & physiological effects re *Gammarus oceanicus* amphipod)
- 1570 (solubilization in sea water for bioassays)
- 1595; 1661 (problems affecting chromatographic separation & determinations)
- 1600 (characteristics & determination)
- 1603 (synthesis of some)
- 1604 (& organochlorine pesticides residues in freshwater & marine fishes)
- 1633 (in Bay of Fundy marine birds eggs)
- 1656 (certain impurities in PCB not detected in tests for them in aquatic animals)
- 1659 (polychlorinated terphenyls in the environment)
- 1684 (extraction from aqueous samples, for assay)
- 1696 (Bay of Fundy & Gulf of Maine contamination by)
- 1716 (chlorinated terphenyl & its deposition in Atl. cod tissues)
- 1718 (residues in commercially caught Canadian fishes)
- A 258: 30 (effects on ocean ecology)
- Polydora* (see *Polychaeta*)
- Polyethylenimine

- S 1531 (interaction with casein, re flocculation of water impurities & pollutants)
- Polyipnus asteroides* (see Hatchetfish)
- Polymixia lowei* (see Beardfish)
- Polymorphism (see also Genetics; Phenotypes)
- J 27(5): 923 (of muscle myogen found in walleye)
 (5): 943 (Pac. ocean perch dehydrogenase)
 (9): 1563 (in rainbow trout liver & gill lactic dehydrogenases)
 (9): 1617 (of Atl. salmon serum transferrin, re genetics)
 (12): 2371 (of coho salmon transferrin re potential use for stock determination)
- 28(1): 15 (of American lobster esterase isozymes)
 (7): 1005 (of walleye skeletal muscle malate dehydrogenase isozymes, re genetics)
 (7): 1053 (genic, of tetrazolium oxidase in bluefin tuna blood & tissues)
 (11): 1745 (serum transferrins re dwarf & large white suckers)
- S 1612 (molecular weight heterogeneity of salmonids serum esterases)
 1616 (of some gadoid lactate dehydrogenases)
- Polyoxyethylene esters and others (as oil dispersants)
- S 1710 (toxicity to Atl. salmon & *Gammarus* amphipod)
- Polypeptides (see also Proteins)
- S 1563 (subunits & molecular basis in rainbow & coastal cutthroat trouts hemoglobins)
 1571 (re molecular basis for multiplicity of Pac. salmon & rainbow trout hemoglobins)
- Polypera greeni* (see Snailfish, lobefin)
- Polyphosphates (see Phosphates)
- Polysaccharides (see Carbohydrates; Cellulose; Glycogen; Saccharides)
- Polysiphonia* (see Rhodophyta)
- Polyteny
- J 26(3): 543 (re *Pseudocalanus* size, cell, & chromosome size differences in Ogac L., Baffin Is.)
- Pomatoma saltatrix* (see Bluefish)
- Pomatoschistus minutus* (see Goby, sand)
- Pomfret (Pacific) (*Brama japonica*) (*B. raii*)
- J 24(10): 2201 (preponderate in line catches from Pac. Ocean weathership P)
 29(7): 1079 (length-weight formula for, Gulf of Alaska)
 B 180: 289 (full description, etc., B.C.)
- Pomoxis annularis* (see Crappie, white)
- nigromaculatus* (see Crappie, black)
- Pompano, California (see next heading)
- Pompano, Pacific (*Peprilus simillimus*) (*Poronotus simillimus*; *Palometa simillima*; California pompano)
 B 180: 383 (full description, etc., B.C.)
- Pomphorhynchus laevis* (see Acanthocephala)
- Pond, Stephen Garrick
 T 254 (phosphorus levels in Nfld. water)
- Pond, W. L.
 J 28(11): 1801 (temperature selection of trout)
- Ponds; Ponding (see also Antipollution measures; Culture; Pound)
- J 24(8): 1743 (brook trout)
 25(2): 209 (effect on brook trout catches)
 27(5): 947 (large floating structure for Pac. salmon behavior studies)
 28(3): 311 (crustacean plankton of 146 W Canadian alpine & subalpine ponds & lakes; definition of pond vs. lake)
 (11): 1811 (survival of some freshwater fishes in alkaline, of Nebraska)
- CHN 42 (disinfecting lobster-holding, against gaffkemia disease bacteria)
 A 57(F) (brook, brown, & rainbow trout)
- Pontoporeia affinis* (see Amphipoda)
- Pope, Michael Anthony
 J 26(9): 2527 (line fishing off B.C.)
- “Pop-eye” (see Eye)
- Populations (see also Abundance; Communities; Composition (biological); Exploitation; Genetics; Indicator species; Stock)
- J 22(2): 395 (brook trout re stream siltiness)
 (5): 1197 (year-class fluctuations of L. Eric whitefish)
 (5): 1229 (growth & morphology of pygmy whitefish)
 23(2): 221 (dynamics & exploitation of Georgian Bay lake whitefish)
 (3): 365 (life history variations in steelhead trout)
 (5): 623 (brook trout infertile Pennsylvania streams)
 (5): 729 (fishery effect on size-class structure, king crab)
 (5): 769 (acrial census for ringed seal)
 (6): 797 (biological characteristics of S Nfld. herring)
 (10): 1553 (mathematical treatment of estimating exploited)
 (11): 1761 (estimates of longnose & white suckers, Sixteenmile L., B.C.)
 24(1): 145 (dynamics of Arcto-Norwegian Atl. cod)
 (2): 443 (serological differences of Atl. oysters)

- (2): 451 (re pelage patterns of E Pac. harbour seal)
 (3): 629 (heterogeneity of surf smelt, judged by *Anisakis* infestation)
 (6): 1275 (redfish in Labrador Sea)
 (6): 1407 (morphology of lake char compared)
 (7): 1425 (brook trout regulation & numerical changes; correction on J25(8): 1760)
 (9): 1955 (mate selection in mixed age-groups of sockeye salmon)
 (10): 2117 (sea lamprey effects on a Lake Huron white sucker)
 (12): 2573 (estimates of Atlantic cod in Ogac L., Baffin Is.)
 25(1): 101 (sympatric & allopatric, of suckers, re hybridization)
 (2): 255 (of small fishes: estimation by staining)
 (3): 555 (analysis of S Gulf of St. Lawrence cod)
 (7): 1349, 1365 (of walleye in Nipigon Bay area, Ont.)
 (9): 1813(F) (2 sympatric, of American smelt)
 (11): 2349 (echo sounding for direct estimation of hake)
 26(1): 15 (blood serum isozymes variants in different sockeye salmon)
 (1): 123 (allometric weight-length regression model for fish)
 (1): 179 (computer programming for estimation of exploited)
 (2): 339 (DeLury estimator robustness)
 (6): 1485 (zooplankton, Ogac L., Baffin Is.)
 (6): 1585 (differences between Nfld. landlocked Atl. salmon)
 (9): 2523 (polymorphic serum esterases of white bream & ruff)
 (9): 2535 (bacterial kidney disease re possible distinction of E & W Atl. Ocean Atl. salmon)
 (9): 2537 (meristic analysis of N American Atl. mackerel coastal)
 (10): 2581 (bottom corer for estimating sedimentary benthic)
 (10): 2633 (parameters of sablefish)
 (11): 2843 (interpopulation dynamics model in marine ecology)
 27(3): 413 (ecology of brook trout, Matamek L., Que; correction in J 30(7): 1033)
 (4): 621, (12): 2273 (identification & distribution of benthic infaunal communities, Washington coast)
 (6): 1017 (dynamics, L. Huron splate)
 (8): 1335 (rotenone effects on alpine lacustral zooplankton)
 (9): 1617 (population differences in Atl. salmon)
 (10): 1757 (of burbot re subspeciation)
 (10): 1811 (features of Alaska coast eelgrass)
 (11): 1987 (meristic & lactate dehydrogenase genotype differences in stream rainbow trout below & above a waterfall)
 28(1): 35, 45 (differences in benthos & fishes upstream & downstream of a dammed Ont. lake)
 (1): 49 (differences in populations of 2 salamander species, Marion L., B.C.)
 (1): 65 (L. Superior lake trout population biology before lamprey invasion)
 (2): 203, 215, 231, 245, 257 (plankton in many small NW Ont. lakes)
 (3): 458 (response of brook trout populations to a fishery)
 (7): 971 (empirical mathematical model for *Sagitta elegans* chaetognath, St. Margaret's Bay, N.S.)
 (7): 1009 (discreteness of, in spring & autumn southern Gulf of St. Lawrence herring fisheries)
 (8): 1107 (mathematical model of effects of pollutant superimposed mortality in fathead minnow)
 (9): 1309 (white whale, Cumberland Sound, Baffin Is., N.W.T.)
 (10): 1573 (re mathematical models of animal production-biomass ratio)
 (10): 1666 (Derzhavin's biostatistical analysis method for)
 (12): 1873 (recovery of Canadian bowhead whale, after previous exploitation)
 29(5): 477 (L. Michigan alewives)
 (11): 1651 (population biomass re linear surplus-production model)
 (12): 1679 (evidence for expatriate, in NW Atl. spotted lanternfish)
 (12): 1731 (use of commercial dredge to estimate for quahaug, by stratified random sampling)
 B 152 (dynamics of B.C. brill)
 CAG 9 (NW Atl. large whale species, particularly fin whale)
 T 108 (studies of B.C. rock sole)
 118 (razor clam, Masset, B.C.)
 224 (ringed seal data analysis computer programming)
 232 (razor clams, Masset beaches, Queen Charlotte Is., & Long Beach, Vancouver Is.)
 250 (computer programming fish population characterization)
 321 (model & computer programming of effect of young coho salmon predation on pink salmon population growth)
 S 902 (management for Canadian fisheries development)
 982 (self-regulating mechanism for abundance of sockeye salmon)
 994 (re abundance & fishing success)
 1025 (dynamics re ICNAF area)
 1204 (units of scobrbrids re serum transferrin polymorphism)
 1230 (of Canadian N Pac. spawning salmon)
 1271 (biology factors of Skeena R. system sockeye salmon)
 1296 (aluminum staple tag for salmon smolt studies)
 1334 (stream production limitations on salmonid)
 1335 (production & genetic factors in managed salmonid)
 1379 (heterogeneity of, among Nfld. inshore squid)
 1445; 1446 (mathematical model re production & feed supply of aquatic)
 1495 (immature Bay of Fundy herring)

- 1582; 1583 (Derzhavin's biostatistical analysis method for)
- 1711 (young Atl. salmon population density behavioural adjustment to available feed)
- A 36 (distribution, of B.C. herring)
- 75 (Greenland cod, seals, & whales in Canadian Arctic)
- 94A (Atl. herring: Canadian research on biology, Bay of Fundy & Gulf of Maine)
- 184 (dynamics, re exploitation of arctic ringed & harp seals)
- 196 (dynamics, re fisheries biology: book review)
- 249 (virtual assessment of ICNAF Division 2J cod)
- 259 (hereditary & environmental factors affecting certain salmonid)
- Porbeagle (*Lamna nasus*)
- B 154: 112 (as Nfld. resource)
- CSG 47 (identification)
- T 189 (Atl. tagging, 1961-69)
- 261 (bibliography for Gulf of St. Lawrence)
- A 43; 108; 182 (Canadian ICNAF area research summaries, catches & landings)
- Porcupinefish (*Diodon hystrix*)
- J 28(11): 1809 (new record of lymphocystis viral infection in)
- Porgy (see Surfperch, redtail)
- Porgy, longspine (*Stenotomus caprinus*)
- J 29(11): 1605 (voltage & pulse rates for inducing electroaxis in)
- Porichthys notatus* (see Midshipman, plainfin)
- Porifera (see Sponges)
- Pork (see also Sausage)
- S 1028; 1080 (fatty acids positional distribution in salt pork fat triglycerides)
- 1203 (positional distribution of monoenoic fatty acids in bacon & mesenteric triglycerides)
- Poroclinus rothrocki* (see Prickleback, whitebarred)
- Poromitra crassiceps* (see Melamphid, crested)
- rugosus* (see Melamphid, crested)
- Poromya (Dermatomya) canadensis* (septibranchid bivalve)
- J 26(8): 2230 (new NE Pac. species)
- Poronotus* (see *Peprilus*)
- Porphyra* (see Rhodophyta)
- Porphyridium cruentum* (see Rhodophyta)
- Porpoise, bottlenose (*Tursiops truncatus*) (bottle-nose dolphin)
- J 27(11): 1903 (strandings, etc., other than commercially caught, Canadian Atl. coast 1949-68)
- S 1575 (body & heart weight, re feeding rate)
- 1596 (milk triglycerides fatty acid composition)
- 1613 (milk neutral carbohydrates)
- 1681 (parasites of, W coast N America)
- Porpoise, common (see Porpoise, harbour (Atlantic and Pacific))
- Porpoise, Dall (*Phocoenoides dalli*)
- B 171: 27 (description, records, etc., of B.C.)
- S 1575 (body & heart weight, re feeding rate)
- 1681 (parasites of, W coast N America)
- Porpoise, harbour (Atlantic and Pacific) (*Phocoena phocoena*)
- J 27(11): 1903 (strandings, etc., other than commercially caught, Canadian Atl. coast, 1949-68)
- 29(8): 1213 (predation by white shark)
- (11): 1644 (mercury & methylmercury in liver & muscle, Bay of Fundy)
- B 171: 26 (description, records, etc., of B.C.)
- S 1190 (on Sable Is., N.S.)
- 1575 (body & heart weight, re feeding rate)
- 1681 (parasites of, W coast N America)
- Porpoise, harbour (Gulf of California) (*Phocoena sinus*)
- J 25(12): 2561 (feeding habits from fish otoliths in stomach)
- Porpoise Harbour, B.C.
- S 1066 (pulpmill sulfite pollution in, & vicinity)
- Porpoises
- S 1079 (faunal succession of N Pac. extinct)
- 1454 (skin pigmentation patterns)
- Porrocaecum decipiens* (codworm) (see *Phocanema* entries under Nematoda)
- Port John Lake, B.C.
- B 162: 184 (re B.C. sockeye salmon studies)
- Port Moody, B.C.
- J 22(3): 801 (water exchange re pollution disposal)
- Portage Inlet, Victoria harbour, B.C.
- S 1341 (eutrophication)
- Post, George
- J 23(10): 1487 (response of trout to antigens)
- (12): 1957 (rainbow trout serum)
- 26(8): 2247 (virus in trout pancreatic tissue)
- Pot (see Trap)
- Potamogeton* (aquatic macrophytes)
- J 27(1): 71 (productivity, Marion L., B.C.)
- Potassium derivatives
- J 22(4): 929 (re oxidative rancidity promotion in cod flesh)
- (4): 955 (K ion decrease in salmon held in refrigerated sea water)

- (6): 1455 (in goldfish blood plasma)
 24(2): 243 (in sockeye salmon flesh re sexual maturity & starvation)
 26(2): 413 (cation concentration in Atl. salmon semen)
 27(8): 1408 (ion concentration & ratios in 70 S Ont. lakes)
 (11): 2022 (in inflow, outflow, rain, & snow, Clear L., Ont.)
 28(2): 171, 203 (in waters of many small NW Ont. lakes)
 (2): 277 (in sediments of 16 small NW Ont. lakes)
 (5): 625, 635 (level changes in brook trout after handling, anesthetization, & surgery)
 29(12): 1691 (chloride, re toxicity to *Daphnia magna*)
 T 114 (content of Atl. & Pac. herring meals)
 280 (changes, in Atl. fish held in refrigerated sea water)
 S 947 (K ion changes in fish held in refrigerated sea water)
 957 (in St. Lawrence River and Gulf sediments)
 1273 (partial molal volume of chloride, sulfate, bicarbonate, & nitrate in sea water)
 1377 (content of Atl. & Pac. herring meals)
 1437 (in Green L., N.Y.)
 A 29 (changes, in flesh of fish held in refrigerated sea water)
 85 (in freshwater fishmeals)
- Potatomus saltatrix* (see Bluefish)
- Potter, Ian Caesar
 J 29(9): 1277 (timing of blood, morphology, & behavior changes during sea lamprey metamorphosis)
- Poultry (see Chicken; Turkey)
- Pound (see also Ponds; Tanks)
 T 78 (octagonal, for live fish)
- Pout, Atlantic soft (*Melanostigma atlanticum*)
 T 261 (bibliography for Gulf of St. Lawrence)
- Pout, ocean (*Macrozoarcus americanus*)
 J 23(3): 341 (swimming endurance re speed)
 28(7): 935 (regular component of Passamaquoddy Bay fish communities, N.B., & length frequencies)
 (9): 1285 (methylmercury in, N.S. banks)
 (11): 1727 (movements in & out of intertidal zone, Passamaquoddy Bay)
 29(7): 997 (feed resource division, Passamaquoddy Bay)
 T 164 (extensive length-weight data)
 208 (bioassay re elemental phosphorus assimilation)
 260 (standing crop, availability, lengths, weights, etc., from Scotian Shelf surveys, 1958-68)
 261 (bibliography for Gulf of St. Lawrence)
 288 (monthly changes in stomach contents, Passamaquoddy Bay)
- Pout, Pacific soft (see Softpout, Pacific)
- Povoledo, Domenico
 J 28(2): 277 (surface sediment chemistry of FRB Experimental Lakes, NW Ont.)
 (7): 1043 (nitrotriacetate determination in inland waters)
- Powell, Guy Charles
 J 22(1): 101 (king crabs)
 23(5): 729 (size-class of king crabs)
 29(4): 423 (male Alaska tanner crab size at sexual maturity, re commercial fishery)
- Powell, Neil Andrew
 J 24(9): 1905 (*Cribrilina annulata* sexual dwarfism)
 (9): 2003 (*Figularia quaylei*: a new bryozoan)
 25(11): 2269 (Canadian Arctic Bryozoa)
 27(10): 1847 (alien bryozoan in Strait of Georgia)
 (11): 2095 (hyperplasia in an estuarine bryozoan)
- Power, Geoffrey
 J 23(7): 947 (Nabisiipi R. salmon parr)
 25(4): 657 (Ungava round whitefish age & growth; correction on J 26(8): 2263)
 (10): 2225 (Bay of Quinte white perch)
 26(6): 1585 (Nfld. landlocked Atl. salmon)
 27(3): 413 (brook trout ecology; correction in J 30(7): 1033)
- Power, Henry Edwin
 J 23(1): 21 (free fatty acids in Atl. cod oil)
 (1): 155 (free fatty acids in cod livers)
 24(2): 221 (radiation effect on storage of cooked lobster)
 (7): 1521 (isopropyl alcohol in fish protein concentrate)
 25(10): 2071 (haddock preservation by ethylenediaminetetraacetic acid (EDTA))
 CHN 21 (lobster display unit)
 23 (superchilled storage of cod)
 T 67 (volumetric determination of EDTA)
 68 (colorimetric determination of EDTA salts on haddock, cod, & flounder)
 69 (Atl. coast mechanical unloading devices)
 114 (Atl. coast herring meals)
 S 929 (fish protein concentrate)
 1339 (fluoride in biological samples)
 1367 (characteristics of cod stored at superchill temperatures)
 1377 (nutrient content Atl. coast herring fish meals)
 1412 (fluoride content of fish protein concentrate & raw fish)
 A 125 (fish protein concentrate production costs)
- Power plants (electrical) (see Hydroelectric power plant; Nuclear power plant; Thermal power plant)
- Powers, Charles Fales
 J 25(6): 1181 (upper Great Lakes benthic environment)
- Powles, Percival Mount

- J 22(2): 565 (Magdalen Shallows plaice)
 (6): 1565 (new size record for greysole)
 24(1): 207 (Atl. wolffish eggs off N.S.)
 25(3): 597 (yellowtail flounder *Ichthyophonus* infection)
 26(5): 1205 (equilibrium yields of American plaice)
 27(11): 2053 (witch flounder depth distribution)
 S 1212 (witch flounder age determination by otoliths)
 1213 (ICNAF Subarea 4 plaice, witch & yellowtail flounder)
- Pozar, Dusan Frank
 S 1502 (automatic wet-food dispenser for fish culture)
- Praeicodochondria galathea* (see Cyclopoida)
- Praesodýmium derivative
 J 27(1): 317 (oxide, for coding embedded encapsulated tags in animals)
- Prakash, Anand
 J 23(8): 1265 (*Gonyaulax acatenella* blooms, Atl. coast)
 24(7): 1589 (*G. tamarensis* growth & toxicity, Atl. coast; correction on J 25(8): 1760)
 27(2): 251 (*Halosphaera viridis* fatty acids)
 (11): 1917 (production & standing stock of particulate matter in the sea)
 29(1): 55 (chemistry of humic compounds from decomposed marine algae)
 B 177 (Canadian E coast paralytic shellfish toxicity; corrections on J 30(8): 1257)
 S 916 ("red water" phenomenon re shellfish toxicity)
 1320 (marine phytoplankton growth)
 1321 (foraminiferal tests, planktonic organisms, & lithogenic particles in Bedford Basin, N.S.)
 1482 (eutrophicated marine basin study)
 1592 (relations between oceanic wind speed, Langmuir circulation, & particle concentration)
 A 244 (terrigenous organic matter & coastal phytoplankton fertility)
- Prasinophyceae (see Chlorophyta)
- Prawn (in addition to the following heading, see Pandalid; Shrimp; Shrimps)
 Prawn (*Pandalus platyceros*) (spot shrimp)
 J 24(3): 687 (trap for experimental fishing, Alaska)
 27(6): 1051 (distribution of ingested ⁶⁵Zn in tissues)
 29(4): 413 (laboratory rearing of larvae; description of stages)
 CNG 76; 85 (FRB prospecting for, B.C. coast)
 87 (experimental trap fishing, B.C. coast)
 T 22; 30; 81; 221 (taken in FRB experimental groundfish trawling, B.C.)
 241 (bibliography)
 S 1518 (complete biological & economic synopsis)
 A 50 (description)
 104 (based on CNG 85 above)
 128; 128(F) (condensed version of CNG 87 above)
- Precipitation (chemical) (see Flocculating agents; Sediments)
 Precipitation (rain & snow) (see also Climate; Dilution effect; Snow)
 J 27(2): 2009 (re chemical nutrient supply to Clear L., Ont.)
 28(9): 1285 (mercury ion in)
 29(8): 1131 (sulfur dioxide in, & effect on lake fishes from pH lowering)
- Precooking (see Cooking)
- Predation (see also Cannibalism; Feed; Parasites)
 J 22(2): 577 (cod on American plaice)
 23(2): 241 (sea lamprey on lake whitefish, Georgian Bay, Ont.)
 (3): 349 (exploitation in predator-prey relation)
 24(1): 215 (of large amphipod on skate)
 (2): 375 (of fish & birds on Babine R. sockeye salmon fry)
 (5): 1117 (sockeye salmon migrant fry vulnerability to, as stamina test)
 (10): 2069 (on Alaskan migrating sockeye fry & smolts)
 (10): 2117 (sea lamprey on Lake Huron white suckers)
 25(10): 2011 (control to increase trout yield in lake)
 26(2): 361 (birds on sand-burrowing amphipods)
 (5): 1273 (Atl. cod & haddock on other fishes)
 (6): 1605 (of zooplankton standing stocks by *Cyclops*)
 (6): 1672 (in & on aggregations of spottail shiners & yellow perch)
 (12): 3183 (differential, of western mudminnow on red vs. black threespine sticklebacks)
 27(4): 689 (re *Hyalella azteca* amphipod; Marion L., B.C.)
 (6): 1026 (sea lamprey on L. Huron splake)
 (8): 1335 (on zooplankton in alpine lakes)
 (12): 2143 (on trumpet worm, St. Margaret's Bay, N.S.)
 28(1): 65, (5): 771 (sea lamprey on L. Superior trouts)
 (6): 801, 809, 815 (brook trout, re fish growth efficiency analysis)
 (7): 957 (vulnerability of 17 fish species to northern pike)
 (9): 1352 (increased predation on coho salmon fry by torrent sculpin on moonlight nights)
 (10): 1493 (possible role re Adams R. sockeye population fluctuations)
 (10): 1503 (pink & chum salmon fry size re predation by coho salmon)
 (10): 1663 (fur seal on Pac. herring, re offshore distribution of latter)
 (12): 1877 (re DDT accumulation & persistence in prey & predators)
 (12): 1847 (effect of experience in, by rainbow trout)
 (12): 1921 (Pac. herring on young chinook salmon in a B.C. estuary)
 29(1): 27 (brook trout on young Atl. salmon treated with insecticides)

- (5): 601 (thermal stress effect on young coho salmon predator avoidance)
- (6): various papers in this special issue on Salmonid Communities in Oligotrophic Lakes (N America & Europe)
- (8): 1193 (prey density & prey size effect on predation by rainbow trout)
- (8): 1213 (white shark on harbour porpoise)
- B 161: 33 (on goldeye)
- 162: 83, 239 (by & on sockeye salmon)
- 165: 66 (on & by carp)
- 169: 154 (types of, and control, re Pac. oyster culture in B.C.)
- 179: 9 (types of, on B.C. clams)
- CNG 80 (dogfish on B.C. herring)
- T 42 (clam drill on Pac. clams)
- 121 (computer analysis program for feeding heterogeneities re predator body size)
- 174; 177; 183; 190 (on B.C. offshore herring)
- 231 (birds on Arctic char in a small arctic lake)
- 321 (model for effect of coho salmon fingerlings predation on pink salmon fry population growth)
- S 910 (fish & starfish on sea scallops)
- 1007; 1085 (on Atl. salmon, & control)
- 1025 (control, re feed & competition, ICNAF area)
- 1132 (on Atl. salmon & trouts by various birds)
- 1490 (history of lamprey invasion of Great Lakes & control measures)
- A 36 (on & by Pacific herring)
- Prediction (*see* Forecast)
- Preservatives and preservative treatments (*see also* Quality of fishery products; *also* Antibiotics; Antioxidants; Energy, radiant; Ethylenediaminetetraacetic acid; Formaldehyde; Irradiation; Rancidity; *also* preservative processes, e.g. Canning; Drying; Freezing; Ice; Refrigeration; Salting; Smoking, etc.)
- J 22(1): 53 (polyphosphates, citrate, and salt against drip loss & rancidity)
- 23(1): 155 (Atl. cod livers by irradiation)
- (4): 601 (of Red Sea sardines by gamma irradiation)
- (5): 701 (partial freezing for Pac. groundfish)
- 24(4): 895 (isopropyl alcohol for fish protein concentrate raw materials)
- (5): 1179 (acetylated monoglycerides as bacteriostatic dips for frozen Atl. cod)
- 25(8): 1753, (10): 2071 (ethylenediaminetetraacetic acid (EDTA) & CTC as bactericides & bacteriostats)
- (12): 2623 (cryogenic, of Atl. cod sperm)
- 26(5): 1400 (cryorefrigeration of steelhead trout semen)
- (10): 2651 (EDTA effect on fillet spoilage characteristics)
- 28(5): 783 (slime removal from freshwater fishes)
- 29(9): 1303 (formalin & methanol effects on zooplankton, re fatty acids identification)
- B 173: 356 (of fish specimens for study)
- CSG 52 (antifouling coatings for vessels)
- CVG 37 (B.C. summer herring on vessel prior to reduction)
- T 67; 68 (chemical analysis for EDTA residues in fish products)
- 214 (EDTA as preservative for iced haddock fillets)
- S 889 (against bacterial fish spoilage)
- 1031 (antibiotics for fish products; residues, regulations)
- A 77; 78 (brief summaries of several types)
- 88 (same as CSG 52 above)
- 130 (general, re fish muscle & products)
- 203 (for fresh & processed fishery products)
- 156 (icing & freezing effects on biological weight measurements of various Atl. commercial fishes)
- 160 (antibiotic, for fish at sea)
- 203 (for fresh & processed fishery products)
- Preslan, Janet Evelyn
- S 1444 (culture of a pelagic ciliate)
- 1559 (cultural characteristics of pelagic marine hy-menostome ciliate)
- Pressure (for results of routine oceanographic hydrostatic pressure observations, *see* Oceanography headings; *see also* Swimbladder)
- J 24(12): 2637 (decompression chamber for diving accidents)
- 25(7): 1311 (effect of hydrostatic, on respiration of vertically migrating Crustacea)
- 26(2): 413 (effect of osmotic, on Atl. salmon seminal components)
- 29(3): 323 (continuous recording pressure-salinity-temperature oceanographic instrumentation)
- T 152 (computer programming oceanographic salinity-temperature-pressure data)
- S 1413 (decompression effects on deep-sea bacteria glucose metabolism)
- 1522 (pressure-jump bomb with optical detection)
- Prest, Janice Elaine (*see also* Smith, Janice Elaine)
- T 56; 89; 117 (B.C. trawl fishery catch & effort statistics)
- Prey (*see* Feed; Predation)
- Priapulida (marine worms)
- T 60 (in Strait of Georgia benthos biomass)
- Price, Robert James
- J 28(11): 1789; 29(11): 1657, 1659 (interactions between paralytic shellfish poison & melanin in butter clam)
- Price, Vincent Arthur
- J 29(4): 413 (spot shrimp larvae development stages in laboratory)
- (4): 464 (sidestripe shrimp egg number re carapace length, Dabob Bay, Wash.)
- Prickleback, black (*Xiphister atropurpureus*) (*Epigeichthys atropurpureus*; black blenny)

- J 26(9): 2319 (parasites, B.C.)
 B 180: 341 (full description, etc., B.C.)
- Prickleback, black-and-white (*see* Prickleback, bluebarred)
- Prickleback, bluebarred (*Plectrobranchus evides*) (black-and-white prickleback)
 J 25(12): 2665 (associations with other fishes off Oregon coast)
 B 180: 339 (full description, etc., B.C.)
- Prickleback, cockscomb (*see* Cockscomb, high)
- Prickleback, decorated (*see* Warbonnet, decorated)
- Prickleback, lesser (*Alectridium aurantiacum*) (north Pacific prickleback)
 J 24(1): 1 (redescription of Alaska species; distinction from similar species & genera; correction on J 24(12): 2641)
- Prickleback, longsnout (*Lumpenella longirostris*) (long-snouted blenny)
 J 22(1): 203 (biochemical systematics)
 B 180: 334 (full description, etc., B.C.)
- Prickleback, mosshead (*see* Warbonnet, mosshead)
- Prickleback, (Pacific) snake (*Lumpenus sagitta*) (*L. anguil-laris*; eel-blenny; Pacific snakeblenny)
 J 22(1): 203 (biochemical systematics)
 24(9): 2007 (neurofibroma on snout)
 B 180: 337 (full description, etc., B.C.)
- Prickleback, pearly (*Bryozoichthys marjorius*)
 J 27(12): 2362 (new species, off SE Alaska)
 B 180: 331 (full description, etc.)
- Prickleback, ribbon (*Phytichthys chirus*) (belted blenny)
 B 180: 338 (full description, etc., B.C.)
- Prickleback, rock (*Xiphister mucosus*) (rock blenny)
 B 180: 343 (full description, etc., B.C.)
- Prickleback, snake (*see* Prickleback, (Pacific) snake)
- Prickleback, whitebarred (*Poroclinus rothrocki*) (blenny, white-barred)
 B 180: 340 (full description, etc., B.C.)
- Prickleback, Y- (*Allolumpenus hypochromus*) (Y-blenny)
 B 180: 327 (full description, etc., B.C.)
- Priestfish (*see* Rockfish, blue)
- Primary productivity (*see* Productivity, primary)
- Prince Edward Island (*see also* Northumberland Strait; St. Lawrence, Gulf of; *also* Bideford River; Ellerslie; Malpeque Bay; Oyster, Atlantic)
 J 25(11): 2521 (oyster gill worm in oysters)
 26(3): 709 (first northern redbelly dace record)
- 28(1): 59 (DDT residues in smelt & shellfishes)
 B 157 (lobster industry economic appraisal)
 166: 47 (eel fishery)
 175 (economic study of oyster fishery)
 CHN 29 (capacities of fishmeal plants)
 T 270 (Atl. salmon catches, 1910-70)
 S 1016 (snake fauna)
 1580; 1620 (classification & ordination of many shallow water benthic samples)
 A 138 (queen crab)
- Prins, Henry Bernhard
 J 27(2): 331 (sublethal DDT in brook trout)
- Prionace glauca* (*see* Shark, blue)
- Prionistus macellus* (*see* Sculpin, roughspine)
- Pristane (*see also* Hydrocarbons)
 S 1286 (content of eulachon oil)
 1591 (in some freshwater & marine fish oils)
- Pristanic acid (*see also* Acids, fatty)
 S 1193; 1228; 1323 (occurrence & characterization from fish & other animal oils)
- Pritchard, Andrew Lyle
 J 29(1): 101 (obituary of)
 S 902 (population management)
- Pritchard, Hayden Nelson
 J 29(1): 111 (distinguishing cunner & tautog eggs by immunodiffusion)
- Probability (*see* Forecast; *also* next heading)
- Probability analysis (*see also* Mathematical treatment of data)
 J 27(4): 765 (nonlinear models analysis: nonlinear response surface)
- Processing of fish products (for topics, *see* heading Fish processing)
- Processing wastes (*see* Fish processing wastes)
- Proclavellodes* (*see* Lernaepoidae)
- Prodrome
 T 2 (for distributional checklist & bibliography of recent Canada W coast marine Mollusca)
- Production (*see also* Catches; Fisheries; *also* names of organisms *and* following three headings)
 J 26(3): 479 (size-selective mortality & sampling bias effects on estimates of)
 (6): 1485 (ecology: of zooplankton in Ogac L., Baffin Is.)
- Productivity (*see also* Benthos; Epibenthos; Fecundity; Productivity, primary; Productivity, secondary)
 J 23(11): 1727 (biological, of waters)

- 27(1): 125 (lake trout, L. Opeongo, Ont.)
 (3): 413 (brook trout, Matamek L., Que.)
 (12): 2143 (*Pectinaria hyperborea* polychaete, St. Mary's Bay, N.S.)
- 28(2): entire issue (re 463 small lakes in FRB Experimental Lakes Area, NW Ont.)
 (7): 971 (*Sagitta elegans* chaetognath, St. Margaret's Bay, N.S.)
 (9): 1309 (white whale)
 (10): 1573 (production-biomass ratio re animal cohorts & populations; mathematical models)
 (11): 1699 (benthic macroinvertebrates, L. Ontario bays)
- B 179: 35 (B.C. clam beds)
 T 130 (factors affecting, for many Nfld. streams)
 231 (potential, of Arctic char in a small arctic lake)
 S 1435 (mathematical treatment of estimating biomass production)
 1445; 1446 (mathematical model re production & food supply of aquatic populations)
 1699 (food chains & fish production, N Atl. Ocean, re forecast of potential fish yields)
 1708 (*Laminaria longicuris*, *L. digitata*, & *Agarum cribrosum* seaweeds, St. Margaret's Bay, N.S.)
 (Thames R., England)
 1709 (assessment methods for fish production in fresh waters)
 A 189 (of freshwater fishes re their metabolism: review)
 197 (program during C.S.S. *Hudson* oceanographic survey circumnavigating N & S America)
 235 (Strait of Georgia fisheries)
 237 (overfishing the sea)
 247 (calculation for NW Atl. harp seals)
- Productivity, primary (see also Algae; Caloric content; Carbon; Matter, particulate; Phytoplankton; Plankton; Productivity; Productivity, secondary)
 J 23(4): 539 (in E subarctic Pac. Ocean)
 (12): 1875 (rank of 9 Rocky Mt. Trench SE B.C. lakes)
 24(5): 909 (in Saanich Inlet, B.C., particulate matter)
 (9): 1861 (phytoplankton dynamics in Alaskan arctic lake)
 (10): 2045, 2189 (carbon production in Babine Lake system, B.C.)
 (11): 2283 (phytoplankton temporal & spatial, Marion Lake, B.C.; corrections on J26(8): 2263)
 25(4): 625 (production & mineralization in a Japan inlet)
 (10): 2037 (& algal growth in a thermal stream; correction on J26(8): 2263)
 (10): 2101 (nitrogen fixation in subarctic lake)
 26(2): 199 (estimating zooplankton production from phytoplankton production in NE Pac. Ocean; corrections on J26(8): 2264)
 (5): 1363 (Owikeno L., re sockeye salmon)
 (6): 1561 (Ogac L., Baffin Is.)
 (8): 2003 (epibenthic, in Marion L. sediments)
 (12): 3165 (winter, Strait of Georgia, B.C.)
 27(1): 71 (macrophytes vs. phytoplankton, Marion L.)
 (1): 180 (seston crop estimation by filtration with glass fiber discs superior to centrifuging)
 (1): 185 (self-contained integrating light-energy radiometer for use re ¹⁴C experiments)
 (2): 335 (glycerol enhancement of marine algal phototrophic growth)
 (3): 438 (lake phytoplankton production as affected by uranium ore milling wastes)
 (5): 887 (physics, chemistry, & physiology of natural phytoplankton bloom, St. Margaret's Bay, N.S.)
 (7): 1251 (production levels in Strait of Georgia pelagic environment: review)
 (8): 1493 (benefit of sewage treatment for phosphate removal re, in Great Lakes)
 (11): 1917 (estimation methods & results, for particulate matter in NW Atl. surface waters)
 (11): 2009 (Clear L., Ont.)
 28(2): entire issue (re many small lakes in FRB Experimental Lakes Area, NW Ont.)
 (5): 790 (seawater enrichment effect on plankton photosynthesis)
 (6): 911 (re particulate carbon-nitrogen relations, Chesapeake Bay, Md.)
 29(9): 1253, 1261, 1269 (solar energy re chlorophyll & primary production off Oregon coast)
 B 122 (revised ed.) (measuring, of marine phytoplankton)
 125R: 165; 167: 261 (analytical methods for determination in sea water)
 162: 209 (re sockeye salmon feed)
 T 77; 203; 327 (St. Margaret's Bay, N.S.)
 110 (Strait of Georgia, 1965-68)
 247 (phytoplankton, Bedford Basin, N.S., 1969-70)
 248 (re *Calanus pacificus* copepod secondary marine productivity)
 265; 267 (Frobisher Bay, Baffin Is., N.W.T.)
 314 (phytoplankton, Petpeswick Inlet, N.S., 1971-72)
 S 1295 (& secondary: critical indices in large-scale ocean surveys)
 1303 (bacterial decomposition of marine sedimentary organic debris)
 1326 (re organic particulate matter as substrate for heterotrophic bacteria)
 1388 (& secondary, re aquatic ecosystems dynamics)
 1392; 1393; 1394 (influence of Fraser R. plume on primary & secondary productivity in Strait of Georgia)
 1399 (energy efficiency concept in)
 1414 (particle size spectra re plankton community structure)
 1445; 1446 (re feed supply in aquatic populations)
 1466; 1467 (large-scale studies, N Pac. Ocean)
 1513 (re *Calanus* secondary marine productivity)
 1586 (25-hr study of phytoplankton chlorophyll production, Bedford Basin, N.S.)
 1646 (re lakes eutrophication)
 1651 (as affected by nutrient enrichment of Great Central L., Vancouver Is., B.C.)
 1671 (in a Poland lake heated by coolant water from thermal power plant)

- 1703 (manual on measuring methods, for aquatic environments)
 A 52 (of the sea)
 108 (1966 Canadian ICNAF studies on Atl. Ocean)
 115 (new Board laboratory at Dartmouth, N.S., for study of marine)
 168 (review of book on manual of methods for measuring)
 188 (Saanich Inlet, B.C., marine biology)
 189 (assessment methods for fresh waters)
 211 (re feed availability to different trophic levels in marine feed chain)
 220 (program during C.S.S. *Hudson* oceanographic survey circumnavigating N & S America)
- Productivity, secondary (*see also* Caloric content; Carbon; Feed; Plankton; Productivity; Productivity, primary; Zooplankton)
 J 26(2): 199 (estimating zooplankton production from phytoplankton production in NE Pac. Ocean; corrections on J 26(8): 2264)
 (6): 1485 (ecology of zooplankton, Ogac L., Baffin Is.)
 (9): 2345 (caloric & carbon equivalent of zooplankton biomass)
 27(7): 1251 (review of production levels in Strait of Georgia pelagic environment)
 28(2): entire issue (re many small lakes in FRB Experimental Lakes Area, NW Ont.)
 (5): 711 (& energy flow of 2 amphipod species, Marion L., B.C.)
 T 248 (*Calanus pacificus* culture & grazing on diatoms, re marine)
 266 (zooplankton data, Frobisher Bay, N.W.T.)
 333 (macrozooplankton biomass measurements, St. Margaret's Bay, N.S.)
 S 1295 (critical indices in large-scale ocean surveys)
 1388 (re aquatic ecosystems dynamics)
 1392; 1393; 1394 (influence of Fraser R. on, in Strait of Georgia)
 1485 (importance & general implications of organic matter in, particularly re filter-feeding copepods)
 1513 (*Calanus* grazing on diatoms, re marine)
 1671 (in a Poland lake heated from coolant water of thermal power plant)
 A 188 (Saanich Inlet, B.C., marine biology)
 189 (assessment methods for fresh waters)
 211 (re feed availability to different trophic levels in marine feed chain)
- Products, fishery (for topics, *see* heading Fish processing; *see also* individual types of products and names of commercial fishes, shellfishes, seaweeds, etc.)
- Prolactin (*see also* Hormones)
 J 24(8): 1823 (effect of ovine, on hypophysectomized eel osmoregulation)
 25(7): 1497 (ovine vs. chinook salmon pituitary extract effect on hypophysectomized goldfish)
 26(7): 1837 (immunohistochemical localization in sockeye salmon pituitary)
 29(3): 303 (in serum & pituitary of adult migratory sockeye)
 Pro-oxidants (*see also* Antioxidants; Rancidity)
 J 23(1): 27, (9): 1385 (effect of various on Atl. cod muscle rancidity)
 Propionic acid (*see also* Acids, fatty)
 A 151 (production from bacterial fermentation of pulpmill sulfite liquor, instead of pollution therefrom)
 Proprioceptors (*see* Gills)
Prosopium coulteri (*see* Whitefish, pygmy)
cylindraceum (*see* Whitefish, round)
quadrilaterale (*see* Whitefish, round)
williamsoni (*see* Whitefish, mountain)
 Prospecting (*see* Exploration)
 Protamine
 S 1245 (biosynthesis during salmonid spermatogenesis)
 Protein (*see also* Acids, amino; Browning, of flesh; Composition, chemical; Drip; Denaturation; Electrophoresis; Fish protein concentrate; Flesh; Muscle; Plasma; Protamine; Proteolysis)
 J 22(1): 13 (salting and smoking effects on quality of Atl. cod)
 (3): 653 (denaturation re Pac. halibut flesh chalkiness)
 (4): 955 (proteolysis in canning of Pac. salmon)
 23(3): 395 (nutrient value of fishmeals)
 (7): 975 (effect of starvation & refeeding Atl. cod on plasma protein)
 (9): 1353 (content of pink salmon at various life-history stages)
 (12): 1957 (of rainbow trout serum and antibodies)
 24(3): 527 (denaturation in stored frozen Pac. dogfish)
 (3): 695 (distribution of low mobility, in freshwater fishes blood)
 (4): 873 (in scallop striated muscle extracts)
 (11): 2339 (of lobster serum re muscle weight, etc.)
 25(7): 1317 (muscle: inheritance in hybrids)
 (8): 1651 (inorganic iodide binding in plasma)
 (10): 2059 (extractability re free fatty acids in iced cod muscle)
 (11): 2477 (electrophoresis of muscle, from 30 rockfish species re systematics)
 26(5): 1397 (polymorphism in harp seal blood)
 (7): 1813 (maintenance level for bluegill)
 (8): 2030 (content of beach-spawning Nfld. capelin)
 (8): 2101 (serum: changes in, during lobster molt & reproduction)
 (9): 2363 (content of young sockeye salmon re feed conversion efficiency)
 (10): 2727 (fatty acids reaction with Atl. cod muscle protein iced, then frozen)

- (11): 2843 (content of steelhead trout during parr-smolt transformation)
- 27(1): 31 (electrophoretic patterns changes in refrigerated haddock fillets)
- (1): 59 (zinc metalloenzyme re zinc-protein association in zinc uptake by Atl. oyster)
- (2): 404 (temperature effect on mummichog blood serum protein components)
- (3): 591 (content & density in fish protein concentrate)
- (4): 701 (extractability from muscle of various Atl. fishes & shellfishes as affected by added metal ions & amino acids)
- (5): 929 (content of young sockeye salmon as estimated from length, live weight, & total body water)
- (5): 951 (blood plasma variations in winter flounder population)
- (6): 1162 (total, of rainbow trout blood)
- (9): 1589 (extractable protein nitrogen & actomyosin values of frozen redfish fillets)
- (11): 2109 (muscle: electrophoretic patterns re distinguishing *Salmo* species)
- (12): 2167 (electrophoresis of various tissues, re *Tilapia* hybrids)
- 28(3): 449 (bluegill sunfish protein consumption & nitrogen excretion)
- (4): 606 (content of juvenile coho salmon blood)
- (8): 1113 (calorie-protein ratio re brook trout culture)
- (8): 1173 (glycoproteins constituents levels in Pac. salmon, trouts, & bovine blood sera)
- (11): 1745 (muscle & serum, of suckers)
- (12): 1837 (lysolecithin solubilizing effect on trout tissue protein extractability)
- (12): 1853 (classification of coho salmon-egg)
- 29(1): 85 (muscle protein nitrogen of 15 commercial Atl. fisheries species)
- B 125R: 161; 167 (determination for sea water)
- CVG 34 (value of herring meal)
- T 114 (total, water soluble & amino acids, of Canadian Atl. herring meals)
- S 969 (value of herring meal)
- 1040 (content of various marine planktonic algae)
- 1119; 1144 (constituents of lobster hemolymph)
- 1195 (malonaldehyde reaction with myosin re rainbow trout muscle denaturation)
- 1232 (polypeptide chains re denaturants)
- 1347 (amino acid composition re secondary structure of)
- 1356; 1357; 1362 (in skate blood serum as sex hormones binding agent)
- 1377 (digestibility of herring meals)
- 1432 (cortisol binding by blood plasma in various fishes)
- 1451 (variation re speciation in *Coregonus clupeaformis* whitefish complex)
- 1489 (binding affinities of blood proteins for sex hormones & corticosteroids in 3 Atl. fishes)
- 1519 (nondestructive determination in marine sediments)
- 1521 (of soluble fraction of 5 Pac. salmon species eggs)
- 1522 (isomerization kinetics with pressure-jump bomb)
- 1545 (electrophoretic analysis of protein systems of Atl. salmon × brown trout bybrids)
- 1561 (stability re sulfhydryl content of rabbit & rainbow trout myosins)
- 1601 (function as lipase cofactors)
- 1607 (world fisheries as source, for man)
- 1626 (content of 7 unicellular algae)
- 1639 (dimethylamine & formaldehyde formation re changes in gadoid fishes muscle)
- 1665 (binding of corticosteroids: review)
- A 79 (denaturation re freezing & cold storage)
- 198 (stable (as fish protein concentrate), from the seas)
- Protein concentrate, fish ("fish flour") (see Fish protein concentrate)
- Proteolysis (see also Enzymes; Protein)
- J 22(4): 955 (in canning of "feedy" salmon)
- 25(5): 921 (re nonbacterial trimethylamine formation in frozen Atl. cod & scallop muscle)
- 26(5): 1392 (of foreign protein in lobster)
- B 160 (in flesh of fish held in refrigerated sea water)
- A 78 (brief summary re bacterial spoilage)
- Protohaustorius deichmannae* (see Amphipoda)
- Protomyctophum crockeri* (see Lanternfishes)
- thompsoni* (see Lanternfish, bigeye)
- Protothaca staminea* (see Clam, littleneck)
- Protozoa (see also Ciliata; *Cryptobia*; Flagellata; Foraminifera; Phytoplankton; Plankton; Sporozoa; Suctoria; Zooplankton)
- J 26(2): 299 (bacteriivorous, in Puget Sound plankton & benthos)
- (4): 725 (taxonomy, re fish parasitization)
- (4): 1075 (haematozoan (1 new species) from N.B. & New England marine fishes)
- (6): 1534 (*Ptychocylis obtusa* tintinnid ecology, Ogac L., Baffin Is.)
- (8): 2016 (partitioning community respiration in lake sediments)
- (9): 2459 (seasonal abundance, distribution, & composition, L. Erie)
- (9): 2535 (re salmon kidney disease)
- 29(3): 275 (parasites of Lake of the Woods fishes, Ont.)
- B 169: 20 (*Cristispira* spirochaete associated with Pac. oyster crystalline style)
- 169: 154 (parasites of Pac. oyster, B.C.)
- T 185 (bibliography re Canada fishes infection by)
- MSP 16 (recommendations re control of fish diseases in Canada)
- S 1450 (parasitic to northern world coregonid fishes: review)

- A 224 (parasitic to N America; USSR, & European coregonid fishes) 1258 (proteinase in several species re cause of trout skin lesions)
- Proudfoot, Frederick Gordon 1303 (re utilization of marine sediments organic debris)
- J 27(3): 601 (scallop sterols relative to cholesterol) 1460 (re irradiated haddock spoilage)
- Provincial Park (see Algonquin Park, Ont.) A 32 (*P. fragi* enzyme for removal of fish muscle carbohydrate to inhibit flesh browning)
- Prowfish (*Zaprora silenus*)
 B 180: 359 (full description, etc., B.C.)
 T 11; 181; 205; 257; 317 (taken during FRB experimental or B.C. commercial trawling)
- Pseudopentaceros richardsoni* (see Armorhead, pelagic)
- Proximate analysis (see Composition, chemical)
- Pseudopleuronectes americanus* (see Flounder, winter)
- Pseudorca crassidens* (see Whale, false killer)
- Psammobatis spinosissimus* (see Skates (Pacific: general))
- Pseudostylochus ostreophagus* (flat worm)
 B 169: 87 (introduced to B.C. & Wash. with oyster seed from Japan)
- Psenes maculatus* (see Driftfish, silver)
- Psettichthys melanostictus* (see Sole, sand)
- Pseudoactiniscus apentasterias* (see Dinophyceae)
- Pseudovermilia* (see *Metavermilia*)
- Pseudoalectrias* species
 J 24(1): 1 (distinction from *Alectridium* & *Alectrias* pricklebacks)
- Psiloteredo megotara* (see Shipworms)
- Pseudocalanus* (see Calanoida)
- Psychrolutes paradoxus* (see Sculpin, tadpole)
- Pseudocynidae (see also Copepoda)
 S 1568 (2 species from Australian fishes)
- Ptarmigan, rock (*Lagopus mutus*)
 S 1201 (occurrence off N Labrador)
- Pteridines*
 J 26(5): 1185 (in coho salmon belly skin)
- Pterolamiops longimanus* (see Shark, ocean whitetip)
- Pteromonas* (see also Bacteria)
 J 22(3): 755 (*P. fragi* for inhibiting processed fish flesh browning)
 23(9): 1451 (in lobster)
 24(1): 9 (in fresh lake whitefish)
 26(10): 2651 (population on vacuum- vs. air-packaged EDTA-treated fish fillets)
 (10): 2659; 28(3): 335 (*P. fluorescens* & other species ingested by oligochaetes in Toronto harbour sediments)
 (10): 2760 (in culturing algal feed for rearing quahaug & Atl. clam larvae)
 28(1): 104 (morphology of *Pseudomonas*-like proteolytic pseudomonad causing rainbow trout skin lesions)
 (3): 305 (*P. putrefaciens* producing trimethylamine from trimethylamine oxide in chilled haddock fillets)
 (10): 1511 (characterization, identification, & ecology as associated with surface of hatching Pac. salmon eggs, re egg mortality)
 29(3): 333 (of bluefish intestine)
 (5): 567 (*P. putida* & *P. fluorescens* on hatchery chum & coho salmon eggs)
 (9): 1359 (effect of 2 iodophor disinfectants on fluorescent & nonfluorescent)
 (10): 1425 (inadequacy of some commercial aquarium antibactericides against *P. aeruginosa* & *putida*)
- Pterophyllum eimekei* (see Cichlidae)
- Pteropoda* (see also Dimethyl sulfide; Gastropoda)
 J 22(5): 1311; 23(1): 85 (*Limacina helicina* in feed of NE Pac. Ocean groundfish, salmon, & steelhead trout)
 27(3): 606 (*Clione limacina* & *Spiratella retroversa* growth rate re ribonucleic acid content)
 29(7): 1085 (*S. retroversa* in mackerel feed)
 CNG 84 (popular description of NE Pac. *Limacina* & *Clione*)
 CNS 15; 20; 21; 22; 23 (*Limacina* in NE Pac. Ocean salmonids stomachs)
 T 55: 137 (identification of B.C.)
 S 1679 (*S. helicina* sterols)
- Ptilichthys goodei* (see Quillfish)
- Ptilota serrata* (see Rhodophyta)
- Ptychocheilus oregonensis* (see Squawfish, northern)
- Ptychocyllis obtusa* (see Ciliata)
- Publication
 A 254 (communication between scientists through primary journals)
- Publications, lists of (see Bibliographies; Fisheries Research Board of Canada, lists of publications and reports)

- Puffer, spiny (*see* Balloonfish) 979 (re tidal flushing rates in channels near Nanaimo, B.C.)
- Puffinus griseus* (*see* Shearwater, sooty) 1066 (sulfite wastes in partially enclosed marine systems near Prince Rupert, B.C.)
- Puget Sound, Washington, USA 1276-1278 (kraft mill effluent toxicity to lobster & Atl. salmon)
- J 23(7): 1043 (oceanic distribution & migration of pink salmon fin-marked in)
- 24(12): 2515 (starry flounder & sand sole stomach contents)
- 26(1): 55 (benthic infauna standing crop)
(2): 299 (planktonic & benthic bacterivorous Protozoa)
- 27(4): 621 (identification & distribution of benthic infaunal communities)
- 28(9): 1269, 1275 (estimating Pac. hake populations & density by voltage-integration echo sounding)
- Pugh, John Richard
- J 26(7): 1956 (tank to simulate reservoir conditions)
- Pugheadedness
- J 26(11): 3091 (in landlocked Atl. salmon does not affect its life)
- Pulmonata (*see also* Snails, marine)
- T 2 (distributional checklist & bibliography of B.C. marine)
- S 1470 (checklist & bibliography of B.C. marine)
- Pulpmill effluents (*see also* Logging; Pollution)
- J 23(6): 813 (re young Atl. salmon)
- 24(10): 2137 (kraft mill effluent distribution, Alberni Harbour, B.C.)
- 25(7): 1369 (re walleye fishery, Nipigon Bay region, Ont.)
- 26(7): 1931 (lobster larvae resistance to bleached kraft mill effluent)
(11): 3055 (tetrachloro-*o*-benzoquinone in kraft mill effluent toxic to young Atl. salmon)
- 27(4): 731 (lobster behavior when exposed to bleached kraft mill effluent)
- 29(8): 1225 (spent sulfite liquor acute toxicity to Atl. salmon)
(10): 1500 (spent sulfite liquor chelating effect in reducing copper toxicity to Atl. salmon parr)
(11): 1555 (whole bleached kraft mill effluent effects on young sockeye salmon growth & feed conversion efficiency)
(12): 1769 (possibility of using salmon-canning waste water for enhancing bacterial breakdown of)
- B 179: 13 (re B.C. clam beds)
- T 146 (re tidal flushing of Pictou harbour & road, N.S.)
- 255 (sodium sulfite toxicity tests on brook trout)
- 307 (numerical model for effect of, on oxygen levels in a stratified estuary)
- 316 (effects on dissolved oxygen supply, Alberni Inlet, B.C.)
- S 892; 907; 959 (wastes disposal problems)
- Pumpkinseed (*Lepomis gibbosus*) (pumpkinseed sunfish)
- J 22(2): 405 (respiratory metabolism re swimming speed)
- 23(11): 1663 (muscle myogens & blood hemoglobins electropherograms)
(12): 1845 (mouth & body form re feeding ecology)
- 24(3): 495 (reproductive isolation from bluegill)
(3): 695 (blood low-mobility proteins)
(5): 927 (limnetic larvae in N Wisconsin lakes)
- 25(6): 1133 (diel feeding habits)
(6): 1199 (low temperature effects on feeding in 3 Ont. streams)
- 28(9): 1285 (methylmercury in N.B.)
- 29(3): 275 (16 parasites of, Lake of the Woods, Ont.)
- CCG 7: 16 (protein electropherogram; also of hybrid with bluegill)
- A 201 (mercury contamination, Great Lakes)
- Pumps
- T 69; 162 (for unloading fish from fishing vessels)
- S 1006 (air-lift, for unloading fish from hold)
- A 34 (same as S 1006 above)
- 203 (for unloading fish from boats)
- Pungitius pungitius* (*see* Stickleback, ninespine; Sticklebacks)
- Punjamapirom, Somsee
- J 26(8): 2027 (Nfld. capelin composition)
- Purification (*see also* Depuration; Pollution)
- B 169: 147 (Pac. oyster, B.C.)
- Purines (*see also* Acids, nucleic; Hypoxanthine; Inosine; Nucleosides; Pyrimidines)
- J 23(7): 1095 (guanine in coho salmon belly-skin pigments)
- 24(5): 955 (in integument of Atl. salmon during parr-smolt transformation)
- 25(2): 239 (adenine nucleotide degradation products as quality criteria for chilled mackerel muscle)
(9): 1901 (guanine & hypoxanthine formation in Atl. salmon)

- (9): 2001(F) (guanine in walleye & sauger retina re habitat)
 (11): 2403 (re belly skin guanine in parr & smolt coho salmon)
 26(3): 704 (inosine & hypoxanthine in canned Arabian Sea shrimp)
 (5): 1185 (in coho salmon belly skin)
 (7): 1927 (guanine, hypoxanthine, etc., source of silvering of freshwater fishes skin, swimbladder, and eye)
 (10): 2621 (re critical freezing zone of Atl. cod muscle)
 27(1): 83 (re nucleotides degradation in sea scallop muscle during iced storage)
 (5): 983 (temperature re skin silvering of Atl. salmon during parr-smolt transformation)
 28(8): 1125 (re Atl. fishes postmortem quality)
 S 1049 (lingcod muscle guanine deaminase)
 1112 (traced incorporation into nucleic acid derivatives by salmon testes tissue)
 1198 (re *Hemiselmis virescens* phototrophic growth)
 1231 (re uricolytic enzymes in Atl. cod sperm)
 1408 (muscle purine nucleoside phosphorylase preparation from lingcod)
 1523 (lingcod muscle purine & pyrimidine nucleoside phosphorylases)
 1524 (lingcod muscle guanine deaminase mechanism & specificity)
- Purpura lapillus* (see Dogwinkle, Atlantic)
- Purvis, Harold Arthur
 J 28(4): 616 (giant American brook lampreys in upper Great Lakes)
- Pusa hispida* (see Seal, ringed)
- Putrescine
 S 1497; 1498 (metabolism by mycobacteria isolated from fish)
- Pycha, Richard Lawrence
 J 22(4): 999 (movement of trout in L. Superior)
 24(2): 281 (hatchery-reared trout returns)
 28(1): 65 (population biology of L. Superior lake trout)
- Pycnopodia hellanthes* (see Starfishes)
- Pylaiella* (see Phaeophyta)
- Pyloric caeca (see Caeca, pyloric)
- Pyrgopsis lemur* (see Squids)
- Pyridine
 J 27(4): 731 (effect on lobster behavior re kraft mill effluent)
- Pyrimidines (see also Purines)
 S 1523 (lingcod muscle purine & pyrimidine nucleoside phosphorylases)
- 1525 (trout liver pyrimidine deoxynucleoside phosphorylase & deoxyribosyltransferase)
- Pyrolysis
 S 1440 (effects on amino acids of modern & fossil northern quahaug shells)
- Pyrophyta (see also Algae; Cryptophyceae; Dinophyceae; Peridineae; Paralytic shellfish poisoning; Phytoplankton; Plankton)
 J 22(4): 1083 (carbon balance re photosynthesis)
 24(8): 1811 (recoveries by 2 plankton sampling methods)
 28(2): 195 (of several small NW Ont. lakes)
 S 1197 (*Amphidinium carteri* aldolase activity re phylogeny)
 1403 (*Chroomonas salina* heterotrophic growth & pigment formation in the dark, as enhanced by glycerol)
 1448 (axenic culture survival re prolonged exposure to darkness)
- Pyruvate
 J 23(6): 783 (changes in exercised rainbow trout)
 J 29(10): 1463, 1467 (re rainbow trout zinc poisoning; also re metabolism)
 S 1135 (metabolism by Atl. salmon & cod sperm)
 1173 (metabolism by rabbit & Atl. cod testes)
 1174 (metabolism by Atl. cod ovarian tissue)
 1236; 1237 (metabolism by Atl. salmon & cod sperm)
 1322 (metabolism by Atl. salmon eggs)

Q

- Qadri, Sami Ullah
 J 24(6): 1407 (morphological comparisons of *Cristovomer namaycush*)
 25(10): 2091 (lake whitefish in Lac la Ronge)
 27(1): 161 (L. Superior lake char)
 28(4): 465 (lake char postglacial distribution)
 (9): 1322 (quantitative sampler for aquatic phytomacrofauna)
- Quahaug, bay (see Quahaug, northern)
- Quahaug, black (see Quahaug, ocean)
- Quahaug, northern (quahog) (*Mercenaria (Venus) mercenaria*) (bay quahaug; hardshell clam; littleneck clam)
 J 22(2): 281 (light effect on growth)
 (2): 631 (ancient shells in now quahaug-barren areas)
 24(2): 357 (α -tocopherol & lipids in unfed held)
 (5): 1165 (shell-weight re age, in British waters)
 25(2): 267 (occurrence & retention of thetin derivative from feed)
 26(10): 2760 (bacterial flora of some algal feeds for rearing larvae)
 27(9): 1569 (environment re bacteria elimination)
 28(1): 59 (DDT residues in N.B.)
 (3): 379 (dissolved oxygen requirements for embryonic & larval development)

- 29(5): 588 (gas-bubble disease from gas supersaturation of sea water)
 (12): 1731 (dredging to estimate population by stratified random sampling)
 B 177 (re paralytic shellfish poisoning, E Canada)
 S 1440 (pyrolysis effects on amino acids of modern, Pleistocene, & Miocene shells)
 1572 (saturated & isoprenoid fatty acids distribution in lipids)
- Quahaug, ocean (*Arctica islandica*) (*Cyprina islandica*; black clam; black quahaug; quahog; ocean clam)
 J 24(2): 357 (α -tocopherol & lipids in unfed held)
 25(2): 267 (occurrence & retention of thetin derivative from feed)
 27(3): 535 (density distribution on Atl. scallop beds)
 (10): 1898 (2 digestive tract enzymes)
 28(5): 793 (yellow phosphorus concentration in body, N.S.)
 29(4): 385 (sterols isolated from)
 B 177 (re paralytic shellfish poisoning, E Canada)
 T 101 (obstacles & opportunities re utilizations)
 280 (bioassay re elemental phosphorus assimilation)
 S 1679 (sterols)
- Qualicum River, B.C.
 J 28(5): 647 (results for 3 generations from pink salmon eggs transplanted to)
- Quality of fishery products (*see also* Antibiotics; Antioxidants; Bacteria; Flavor; Grading; Odors; Pigments; Pollution; Preservatives; Sanitation; Taste; *also* types of processing and products)
 J 22(1): 13 (smoked and salted cod protein)
 (1): 17, 27 (carbonyl compounds re salted cod flavor)
 (1): 53 (drip loss & rancidity inhibitors for frozen salmon)
 (1): 83 (glycolytic changes in cod muscle)
 (2): 411 (re freezing rate and frozen stored trap cod)
 (3): 783 (thaw-drip of untreated vs. polyphosphate-treated fillets)
 (3): 861 (orange-red-pigmented scallop meats)
 (3): 865 (re tapeworm cysts in lake whitefish fillets)
 (4): 955 (canned partially frozen Pac. salmon)
 (5): 1131 (*Limacina* feed affecting B.C. groundfish)
 23(3): 395 (protein nutrient value of fishmeals)
 (7): 1063 (taste panel tests of Atl. cod single & double-frozen fillets)
 (11): 1795 (muscle hypoxanthine as test of, in Atl. salmon)
 (12): 1821 (re nucleotide degradation in swordfish muscle)
 24(1): 9, (2): 221 (gamma-irradiated vs. nonirradiated lake whitefish; cooked lobster meat)
 (1): 127 (water- vs. dielectric-thawed cod & redfish fillets)
 (3): 527 (stored frozen Pac. dogfish)
 (3): 651 (unfrozen Atl. cod)
 (11): 2229 (muscle hypoxanthine as test for freshwater fish; correction on J 25(8): 1760)
 25(2): 239 (adenine nucleotide degradation products as criteria of, in chilled mackerel muscle)
 (2): 299 (rigor & freezing-thawing effects on frozen Atl. cod)
 (3): 605 (ultrasonic backscatter as test, for frozen & thawed flesh)
 (4): 733 (of frozen trap-caught Atl. cod re prior handling)
 (4): 817 (unreliability of hypoxanthine test for)
 (4): 829 (re seasonal changes in thaw-drip in American plaice fillets)
 (5): 921 (nonbacterial trimethylamine formation in frozen Atl. cod & scallop muscle)
 (5): 935 (of gillnetted Atl. cod skeletal muscle)
 (8): 1753 (of flesh treated with EDTA & CTC)
 (10): 2071 (of haddock fillets treated with EDTA)
 (11): 2453 (dimethyl sulfide a natural constituent of odor of fresh soft-shell clams)
 26(2): 357 (indirect color enhancement of trouts & pink salmon flesh)
 (3): 704 (canned shrimp re nucleotides)
 (5): 1368 (muscle fluorescence re fish freshness)
 (6): 1597 (re frozen swordfish muscle nucleotides)
 (8): 2234 (color of raw & cooked Atl. salmon flesh vs. canned Pac. salmon flesh)
 (9): 2299 (re oxidative rancidity)
 (9): 2523 (effect of seawater chilling on improving scallop meats keepability)
 (10): 2651 (EDTA effect on petrale sole & Pac. ocean perch spoilage characteristics)
 (12): 3175 (new enzymic activity test for ice-storage age of fresh gutted haddock)
 (12): 3217 (bacteriology of Nfld. commercial fillets from cod & flounder variously handled at sea)
 (12): 3271 (evaluations of freeze-dried vs. frozen Atl. cod steaks)
 27(1): 31 (re electrophoretic patterns of refrigerated fish)
 (1): 83 (re scallop muscle nucleotides degradation during postmortem iced storage)
 (2): 271 (detection of *Triaenophorus crassus* in whitefish flesh by ultrasonics)
 (3): 591 (bone material estimation in fish protein concentrates)
 (5): 963 (parasitic nematodes location in flesh by ultraviolet light)
 (7): 1201 (flavor of lake whitefish smoked with different woods)
 (9): 1569, 1579 (deuration of bacteria by quahaug & clam)
 (9): 1589 (effects of whole redfish iced handling on keeping time of frozen fillets)
 (10): 1658 (dimethylamine formation as index of frozen-storage deterioration of Atl. cod)
 (11): 1983 (bacterial evaluation of plaice frozen at sea, thawed by water immersion, & of fillets prepared therefrom)
 (11): 2101 (deterioration possible from enzyme activation in haddock flesh by superchilling & thawing)

- 28(4): 509 (attractiveness of brook trout skin & flesh color enhanced by feeding shrimp waste)
- (5): 643 (killing *Salmonella* bacteria by ⁶⁰Co irradiation during lake whitefish smoking)
- (5): 783 (beneficial effects of washing slime off freshwater fish)
- (6): 869 (octopine in muscle as possible index of sea scallop freshness)
- (8): 1125 (muscle inosine phosphate degradation re)
- (8): 1217 (re ultrasonic method for distinguishing thawed frozen fish from fresh fish)
- 29(8): 1125 (identification of various volatiles developed in iced-stored canary rockfish muscle)
- (9): 1365 (effect of smoking on muddy odor & taste in rainbow trout)
- B 151(F)** (storage & keeping qualities of freshwater fishes products)
- 160 (salmon & tuna chilled or frozen in refrigerated normal or fortified sea water)
- 168 (re paralytic shellfish poisoning from B.C. shellfishes)
- 169: 104, 109, 138, 140, 151 (Pac. oyster, B.C.)
- 177 (re paralytic shellfish poisoning from Canadian Atl. coast shellfishes)
- 178 (condition of raft-cultured Pac. oysters in B.C.)
- R 1965-66:** 25, 76 (summary of FRB investigations)
- CHN 30** (re flesh discoloration in gillnetted small Greenland halibut)
- 31 (frozen partially or wholly precooked lobsters)
- 38 (dimethylamine test vs. trimethylamine test as index of quality of marine flesh, especially Gadidae)
- 39 (determination of isopropanol residues in fish protein concentrates)
- CVG 41;** 43; 44 (re chilling salmon, etc., on vessel before shore canning)
- T 69** (of fish unloaded from vessels by mechanical means)
- 101 (experimentally canned & frozen ocean quahaug)
- 165(F) (muddy odor of rainbow trout)
- 214 (ethylenediaminetetraacetic acid as iced fillet preservative)
- 220 (effects of storing sockeye salmon in ice vs. refrigerated sea water, on firmness, color, etc., of canned product)
- 242 (as for T 220 above, using salt-fortified sea water; also effects of mishandling)
- 280 (effects of shipboard transportation in refrigerated sea water on whole Atl. cod, redfish, & flounders, & fillets therefrom)
- S 889** (preventing bacterial spoilage of fish)
- 904 (Canadian research on)
- 1117 (review of postmortem changes in fish muscles minor organic constituents)
- 1175 (review of influence of lipid changes in frozen fish)
- 1290 (deterioration & storage life of frozen Atl. cod fish & fillets)
- 1309 (color sorting of raw coho & sockeye salmon flesh re subsequent color of canned)
- 1363-1368 (effects of freezing or icing fish at sea; thawing; refreezing, processing, packaging, etc., on quality of Atl. trawl fishery products)
- 1416 (re B.C. fishes frozen in prerigor, inrigor, & postrigor condition)
- 1417 (re superchilling of Pac. salmon intended for canning)
- 1421 (bacterial & sanitary, of sea-frozen Atl. trawled fishes)
- 1460 (bacterial spoilage of halibut re preirradiation quality)
- 1632 (training of taste panels)
- 1648 (inosine, inosine monophosphate, & hypoxanthine as indices of stored)
- 1649 (effects of freezing & thawing speed on stored)
- 1686 (quality aspects of industrial water thawing of fish; bacteriology of fillets therefrom)
- 1698 (appraising smoked whitefish with sensory panels)
- A 12(F); 65** (re fillet drip)
- 15 (nature of flavor in flesh foods)
- 26 (review of use of antibiotics for preserving)
- 27 (effect of environmental or physiological factors on Nfld. trap-caught cod)
- 28 (metal-catalyzed rancidity in Atl. groundfish)
- 29 (rigor changes in fish held in refrigerated sea water)
- 30 (enzymic degradation of glycogen & adenosine phosphate in fish muscle)
- 31 (assessment with Intelectron Fish Tester)
- 32 (enzymic removal of carbohydrates from fish muscle to inhibit browning)
- 41 (review of factors affecting)
- 69 (review of chemical changes in frozen fish muscle re organoleptic quality)
- 73 (as affected by condition of living fish, or season or stress of catching)
- 78; 79; 80 (re bacterial action; freezing effects; nutritive value)
- 130 (fish muscle & its preservation)
- 138 (queen crab products)
- 160 (antibiotic preservation of fish at sea)
- 162 (same as CHN 38 above)
- 203 (progress in seafoods sanitation; also color, odors, etc.)
- 230 (ecosystems, pollution, etc., re a northern environment as sources of fishery & other foods for man)
- 243 (ultrasonic inspection of whole fish for parasitization)
- 262 (muscle fluorescence of fish as freshness quality test)
- Quay, Wilbur Brooks
S 1574 (fin whale nasal structure)
- Quayle, Daniel Branch
J 24(4): 883 (plankton sampler for oyster larvae)
(12): 2637 (portable recompression chamber)
- B 168** (paralytic shellfish poisoning)
- 169 (oyster culture in B.C.)
- 178 (B.C. Pac. oyster raft culture)

- 179 (B.C. clam fisheries)
 CNG 75 (paralytic shellfish poisoning)
 T 232 (breeding & growth of razor clams in B.C.)
 279 (growth, morphometry, & breeding of abalone in B.C.)
 301 (a brief on B.C. mariculture)
 S 948 (marine wood borers)
 A 117 (B.C. marine borers)
- Quebec Province (*see also* Hudson Bay; St. Lawrence, Gulf of; St. Lawrence River; Ungava Bay; *also* names of fisheries and specific localities)
 J 27(3): 413 (brook trout growth in Matamek L.)
 B 157 (lobster industry economic appraisal)
 166: 50 (eel fishery)
 CHN 29 (capacities of fishmeal plants)
 T 270 (Atl. salmon catches, 1947-69)
 S 1268 (stoneflies distribution)
 A 138 (queen crab)
- Queen Charlotte Islands waters, B.C. (*see also* Dixon Entrance; Groundfishes; Hecate Strait; Oceanography, Northeast Pacific coastal; Queen Charlotte Sound; Surveys; Trawling)
 J 24(10): 2101 (unusual fishes trawled off)
 T 11; 30; 46; 62 (FRB experimental fisheries surveys)
 118; 232 (razor clam populations, breeding, & growth, Masset beaches)
- Queen Charlotte Sound and Strait, B.C. (*see also* Groundfishes; Oceanography, Northeast Pacific coastal; Queen Charlotte Islands waters; Surveys; Trawling)
 J 29(7): 1061 (aggregations of Pac. ocean perch with different biological characteristics)
 CNG 76 (shrimp exploration)
 T 11 (FRB experimental midwater trawl survey)
 30; 46; 144 (FRB experimental groundfish surveys)
 142 (oceanographic data)
 259 (rock sole fishery landings, 1959-69)
 A 2 (Pac. cod trawl fishery)
- Queen Elizabeth Islands, Canadian Arctic (*see also* Arctic; Arctic Ocean; Ellesmere Island; Hazen, Lake; Keyhole Lake; Northwest Territories; Tanquary Fjord; *also* Oceanography, Arctic)
 J 25(2): 347 (hippolytid & crangonid shrimps)
- Quigley, James Joseph
 S 1105 (Pac. salmon in Atl.)
- Quillback (*Carpionus cyprinus*) (quillback sucker)
 J 24(2): 299 (muscle myogen electropherograms re speciation)
 26(2): 325 (S Alta. distribution)
 29(3): 275 (6 parasites of, Lake of the Woods, Ont.)
- Quillfish (*Ptilichthys goodii*)
 B 180: 353 (full description, etc., B.C.)
- Quimby, Millicent Childs
 J 25(2): 383 (infectious pancreatic necrosis virus-free trout selection)
- 26(9): 2511 (trout re infectious pancreatic necrosis virus)
- Quinn, James Gerard
 J 29(10): 1482 (N Atl. surface particulate matter fatty acids)
- Quinones
 S 1480 (isoprenoid quinone composition re tocopherol & vitamin K in unicellular red alga)
- Quinte, Bay of (Lake Ontario)
 J 25(10): 2225 (white perch reproduction)
 26(4): 833 (yellow perch parasites)
 28(11): 1683 (benthic macroinvertebrates associations & species diversity)
 (11): 1699 (macroinvertebrate production)
 (11): 1715 (macroinvertebrate community metabolism)
- Quirke Lake, Ont. (*see* Pecora Lake, Ont.)
- Qureshi, Mohiy-ud-Din
 J 28(8): 1173 (Pac. salmon glycoprotein constituents)

R

Rabbit

- J 25(12): 2711 (muscle creatine kinase localization)
 26(9): 2517 (vs. Pac. halibut dehydrogenase enzyme activity alteration by temperature, re animals' activity)
 S 1028; 1080 (fatty acids positional distribution in mesenteric fat triglycerides)
 1173 (pyruvate metabolism in testes)
 1509 (accelerated denaturation of muscle myosin in frozen solution)
 1561 (sulfhydryl content of myosins re protein stability)
 1650 (carbon dioxide fixation by testes)

Rabin, Harvey

- A 180 (gaffkemia bacterial disease of lobsters)

Racial studies (*see also* Populations; Speciation)

- J 24(2): 443 (Atl. oysters)
 (3): 629 (surf smelts)
 (6): 1407 (lake char)
 S 1137 (Pac. salmon in N Pac. Ocean)

Radford, Duane Samuel

- J 29(7): 1084 (first Alta. record of American eel)

Radiation (*see also* Bioluminescence; Energy, radiant; Fluorescence; Illumination; Irradiation; Light, reactions to; Photosynthesis; Radioactivity; Radiometer; X-rays)

- J 24(11): 2283 (sunlight re lake phytoplankton productivity)
 (11): 2473 (simulation of, in model of a lake, by electric lamp)
 27(2): 233 (penetration in waters of 2 Albertan alpine lakes)

- (4): 749 (visible spectrum effects on threespine stickleback sexual maturation)
 (5): 887 (solar, re phytoplankton blooms)
 (7): 1251 (irradiance re primary productivity, Strait of Georgia)
 28(2): 157 (solar penetration regime in certain lakes of Experimental Lakes Area, NW Ont.)
 29(9): 1253, 1261, 1269 (solar, re chlorophyll & primary production in Oregon coastal waters)
 T 77; 203; 327 (energy data re primary productivity, St. Margaret's Bay, N.S.)
 120; 247 (ultraviolet absorbance of Bedford Basin waters, N.S.)
 314 (re primary productivity, Petpeswick Inlet, N.S.)
 316 (kraft mill effluent effect on penetration of solar, & on primary production, Alberni Inlet, B.C.)
 S 1295 (re indices of oceanic primary & secondary production)
 1388 (re aquatic ecosystems dynamics)
 1392 (re primary productivity in the Fraser R. plume, Strait of Georgia)
 1399 (energy efficiency concept in primary production)
 A 233 (solar, as primary energy source of ecosystems)
- Radioactivity (*see also* Irradiation; Isotopes)
 J 25(10): 2219 (loss of ¹⁴C-labelled radioactivity from stored phytoplankton)
 (11): 2505 (measuring self-absorption of ¹⁴C)
 27(1): 47 (⁶⁵Zn levels in North Carolina oysters from industrial- or fallout-polluted waters)
 (2): 331 (²⁴¹Am for decoding metal oxide tags by inducing X-ray fluorescence)
 (6): 1051 (⁶⁵Zn traced by autoradiography in tissues of marine crustaceans)
 S 941 (pollution re B.C. coast marine environment and fisheries)
 1259 (sockeye salmon sexual maturity effects on clearing of injected radioactive cortisol)
 1304 (uptake of radionuclides pollution by marine organisms)
 A 232 (in the marine environment & biological effects of: extensive summary of book)
- Radiometer
 J 27(1): 185 (self-contained integrating, for measuring submarine light energy in absolute units)
- Radionuclides (*see* Isotopes; Radioactivity; *also* names of elements)
- Radon
 S 1646 (²²²Rn for tracing CO₂ invasion from atmosphere into lake waters)
- Radulinus asprellus* (*see* Sculpin, slim)
boleoides (*see* Sculpin, darter)
taylori (*see* Sculpin, spinynose)
- Rafail, Samir Zaky
- J 25(4): 717; 26(12): 3237 (American plaice ration re growth)
- Raft
 B 178 (culture of Pac. oyster in B.C.)
- Ragfish (*Icosteus aenigmaticus*) (*Acrotus willoughbyi*) (brown or fantail ragfish)
 B 180: 386 (complete description, etc., B.C.)
 T 221 (taken in B.C. groundfish surveys)
- Rahrer, Jerold Francis
 J 29(6): 765 (exploitation & introductions effects on L. Superior salmonid community)
- Raubaut André
 S 1610(F) (a copepod parasitic on Tunisian mullet)
- Rain (*see* Climate; Precipitation)
- Raine, Gary Earnest
 J 24(6): 1403 (lobster larvae low salinity avoidance)
- Raja abyssicola* (*see* Skate, deep-sea)
binoculata (*see* Skate, big)
clavata (*see* Skates (Atlantic: general))
erinacea (*see* Skate, little)
fyllae (*see* Skate, round)
hyperborea (*see* Skate, Arctic)
inornata (*see* Skate, California)
jenseni (*see* Skate, Jensen's)
kincaidi (*see* Skate, black)
laevis (*see* Skate, barndoor)
lutea (*see* Skate, white)
mollis (*see* Skate, soft)
ocellata (*see* Skate, winter)
radiata (*see* Skate, thorny)
rhina (*see* Skate, longnose)
senta (*see* Skate, smooth)
spinicauda (*see* Skate, spinytail)
stellulata (*see* Skate, starry)
trachura (*see* Skate, roughtail)
- Rake
 T 15 (digging efficiency of fork vs. hydraulic rake for B.C. clams)
 329 (rake-harvesting of Irish moss: effects on lobsters)
 S 909 (hydraulic, for soft-shell clam harvesting)
- Raleigh, Robert Franklin
 J 24(12): 2613 (sockeye salmon fry genetic control)
- Ramnarine, Arjoon
 J 26(5): 1347 (*Euchaeta japonica* development)
- Ramsay, Barbara Ann
 J 22(2): 425 (toxicity of metal salts mixtures to salmon)
- Rana pipiens* (*see* Frog)
- Rancidity (*see also* Antioxidants; Lipids; Oils and fats)

- J 22(4): 929 (various metal salts effects in promoting or retarding, in cod flesh)
 (4): 955 (development in salmon held in refrigerated sea water)
 23(1): 27 (in Atl. cod muscle: effects of added amino acids, etc.)
 (5): 737, (10): 1587 (iron salts effect on thiobarbituric acid test)
 (9): 1385 (in frozen stored Atl. cod fillets)
 24(3): 527 (in stored frozen Pac. dogfish)
 25(4): 639 (acceleration by metal ions, in marine flesh)
 26(9): 2299 (promoters & inhibitors of marine muscle lipids oxidation)
 S 1175 (of lipids re quality of frozen fish)
 A 27; 73 (metal-catalyzed, in cod flesh, & for hastening tests of quality changes in frozen fish)
 41 (studies review, Vancouver FRB Station, also antioxidants)
 130 (general, of fish muscle & products)
- Rand, Stephen Colby
 T 287 (synthetic surfactants influence on Atl. salmon olfactory epithelium)
- Randall, David John
 S 978 (dorsal aortic pressures in rainbow trout)
- Rangaswamy, J. R.
 J 26(3): 704 (canned shrimp compounds)
- Range, extension of (*see* Distribution; Species, new records or range extensions of)
- Rao, Desiraju Bhavanarayana
 J 25(6): 1097 (natural sea water oscillations, Bay of Fundy)
- Rapeseed oil
 S 1029 (fatty acids positional distribution)
 1074 (analysis of monoethylenic fatty acids)
- Rashid, Mohammad Abdul
 J 29(1): 55 (chemistry of humic compounds from decomposed marine algae)
 S 1320 (humic substances effects on marine phytoplankton growth)
- Rat, white (*Rattus norvegicus*)
 J 25(8): 1651 (plasma protein-bound inorganic iodide)
 28(6): 843 (retention of zinc from oysters)
 (11): 1793 (*see* T 229 below)
 T 229 (tests for heart & liver fat deposition when fed raw & partially hydrogenated Atl. herring oil)
 S 1028; 1080 (fatty acids positional distribution in subcutaneous & intestinal fat glycerides)
 1203 (positional distribution of monoenoic fatty acids in triglycerides)
 1233 (marine fatty acids incorporation into fat of tissues)
 1455 (intestinal mucosa lipids of fatty-acid-deficient)
- Ratfish (*Hydrolagus coliei*)
 J 22(1): 203 (biochemical systematics)
 25(2): 339 (host to new parasitic Chondracanthid copepod)
 (8): 1651 (plasma protein-bound inorganic iodide)
 (12): 2665 (associations with other Oregon coast fishes)
 B 180: 66 (full description, etc., B.C.)
 CNG 73; 82 (in Hecate Strait exploratory fishing)
 CNS 14; 19 (B.C. landings by months, 1964, 1965)
 T 7; 11; 22; 30; 46; 56; 62; 81; 144; 181; 205; 210; 221; 257; 290; 317; 328 (taken during FRB experimental or B.C. commercial trawling)
 246 (bibliography)
 S 1404; 1432 (biosynthesis of cortisol by interrenal tissue)
 A 91 (observed in B.C. catches of fish for mink feed)
- Rations (*see also* Culture; Feed; Feedstuff; Hatcheries; Hunger concept; Metabolism; Starvation)
 J 26(9): 2363 (re growth rate & body composition of young sockeye salmon)
 28(6): 801, 809, 815 (levels re fish growth efficiency analysis)
 (8): 1113 (calorie-protein ratio for brook trout)
 (8): 1185 (bacterial counts of commercial fish diets)
 (10): 1635 (young sockeye growth responses to different diets & nutrition planes)
 29(2): 207 (for sablefish culture)
 (4): 429 (bacterial populations of diets for aquarium fishes; correction on J 30(8): 1257)
 (8): 1181 (effects on walleye bioenergetics)
 CNG 89 (re improved artificial rearing of sockeye)
 T 189; 243 (for sablefish tank culture)
 248 (zooplankton, re marine productivity)
 S 1513 (zooplankton, re marine productivity)
- Rattail, bearded (*Coryphaenoides liocephalus*)
 B 180: 255 (full description, etc., B.C.)
- Rattail, filamented (*Coryphaenoides filifera*) (*Chalinura filifera*, filamented grenadier)
 B 180: 254 (full description, etc., B.C.)
 T 81 (in B.C. experimental ground fish trawling)
- Rattail, pectoral (*Coryphaenoides pectoralis*) (pointed rattail)
 J 25(12): 2665 (associations with other Oregon coast fishes)
 26(9): 2527 (in deep-sea line fishing off B.C.)
 B 180: 256 (full description, etc., B.C.)
- Rattail, pointed (*see* Rattail, pectoral)
- Rattail, roughscale (*Coryphaenoides acrolepis*)
 J 24(5): 1101 (fatty acids composition)
 25(12): 2665 (associations with other Oregon coast fishes)
 26(9): 2527 (in deep-sea line fishing off B.C.)
 B 180: 251 (full description, etc., B.C.)
 T 22 (in B.C. experimental midwater trawling)
- Rattail, smoothscale (*Coryphaenoides cyclolepis*) (*Dolloa*

- cyclolepis*, *Nematonurus cyclolepis*, *Moselaya cyclolepis*, smoothscale grenadier)
 B 180: 252 (full description, etc., B.C.)
- Rattails (Pacific) (*see also* Grenadiers)
 T 205 (sp.? taken during B.C. groundfish survey)
- Rattus* (*see* Rat, white)
- Rausch, Robert Lloyd
 J 26(4): 947 (cestodes from Hawaiian monk seal)
 S 1391 (new cestode genus & species)
- Raven, sea (*Hemitripteris americanus*) (Atlantic sea raven)
 J 23(3): 341 (swimming endurance re speed)
 28(4): 491 (cardiac & respiratory responses to hypoxia)
 (7): 935 (regular component of Passamaquoddy Bay fish communities, N.B., & length range)
 (9): 1285 (methylmercury in, N.S. banks)
 (11): 1727 (movements in & out of intertidal zone, Passamaquoddy Bay)
- CSG 54 (underexploited on N.S. banks)
 T 164 (extensive length-weight data)
 225 (associated with Bay of Fundy scallop beds)
 226 (standing crop, availability, lengths, weights, etc., from Scotian Shelf surveys, 1958-68)
 261 (bibliography for Gulf of St. Lawrence)
 272 (halogenated hydrocarbon residues detected in)
- S 1550 (gill proprioceptors)
 1696 (halogenated pesticide residues in, Bay of Fundy & Gulf of Maine)
- A 143(F) (French version of CSG 54 above)
 175 (same as CSG 54 above)
- Ravesi, Elinor Mae
 J 25(10): 2059 (protein extractability & free fatty acid in Atl. cod)
 26(10): 2727 (protein in frozen cod muscle re free fatty acids)
- Ray, Pacific electric (*Torpedo californica*) (*Tetranarce californica*)
 B 180: 50 (full description, etc., B.C.)
 T 181; 257; 317 (taken during B.C. trawl fishery)
- Ray, Shankar
 S 1716 (analysis of a chlorinated terphenyl & its deposition in Atl. cod tissues)
- Rayner, Martin Drake
 J 26(8): 2208 (Pac. marine toxins: ciguatoxin not an in vivo anticholinesterase)
- Rays, fin (*see* Fins)
- Rays, X- (*see* X-rays)
- Reactions (animal) (*see* Behavior; Currents, reaction to; Light, reactions to; Odor; Salinity, reactions to; Sound, reactions to; Taste, reactions to; Temperature, reactions to; Toxicants)
- Rearing (*see* Culture; Hatcheries)
- Recipes
 B 151; 151(F) (for various products from freshwater fishes)
 S 1081 (sweet-cured smoked sliced products from freshwater fishes)
 1697 (for various canned products from N.W.T. fishes & marine mammals at Eskimo processing plant, N.W.T.)
- Records, new (*see* Species, new; Species, new records)
- Records, size (*see also* Size)
 J 22(6): 1565 (witch flounder)
 28(4): 616 (giant female brook lamprey)
 B 155 (for each species of Canadian Atl. marine fishes)
 171 (B.C. marine mammals)
 173 (for NW Canada & Alaska freshwater fishes)
 180 (for each species of B.C. marine fishes)
- Recovery (*see* Disease; Survival)
- Recruitment (*see also* Mortality; Population; Stock)
 J 24(2): 249 (re equilibrium yield: computerized Ricker model)
 25(12): 2701 (simplified computation of rates)
 28(10): 1666 (re population biostatistical analysis)
- B 153: 94, 130 (B.C. petrale sole stocks)
 T 92 (computer program for equilibrium yield per recruitment for a fish stock)
 108 (rock sole populations, N Hecate Strait, B.C.)
 256 (effects of recent, on Georges Bank scallop fishery landed meat size)
- S 1025 (re ICNAF area fish stocks)
 1148 (Atl. cod variations re environmental changes)
 1316 (& size & age comparisons for Scotian Shelf haddock)
- A 206 (ICNAF forecast re haddock for 1970-72)
 251 (& apparent reduction in cull size of sea scallop, re Canadian Atl. fishery)
- Rectum
 J 23(12): 1841 (epithelial border histology in Atl. cod)
 T 309 (diameter of sablefish, re size of feed)
- "Red mouth" disease
 J 22(3): 713 (oral immunization of rainbow trout against an etiologic agent of)
 23(10): 1487 (rainbow trout, & antigen)
 29(9): 1359 (effect of 2 iodophors on)
- "Red tide"; "Red water" (terms not always clearly distinguished; for references not given below, *see* Paralytic shellfish poisoning)
 J 22(4): 1083 (carbon balance of causative dinoflagellates)
 23(8): 1265 (re Strait of Georgia shellfish toxicity)

- 25(8): 1749 (bloom in Gulf of Maine caused by red ciliate)
- 28(3): 391 (*Mesodinium rubrum* incomplete symbionts, ultrastructure, taxonomy)
- S 916 (occurrence on west coast of India)
- Redds (*see* Spawning)
- Reddy, Barbara Helen
- S 1720 (amino acids role in *Aeromonas salmonicida* nutrition re furunculosis)
- Redfish (*Sebastes marinus*) (*S. marinus marinus*; ocean perch; rosefish)
- Redfish, deepwater (*Sebastes mentella*) (*S. marinus mentella*; ocean perch)
- (*Note*: Because of the recent official separation of the above two species they are here indexed together; most of the following references dealt with them under the single name Redfish)
- J 23(1): 101 (vertical migrations in NW Atl.)
- (3): 341 (swimming endurance re speed & temperature)
- (4): 521 (reproduction of parasitic copepod *Sphyrion lumpi*)
- (7): 1083 (deck sampling of research vessel catches)
- (10): 1621 (feeding & growth in captivity)
- 24(1): 127 (shelf life of water- vs. dielectric-thawed fillets)
- (6): 1275 (pelagic adults in Labrador Sea) (*S. mentella*)
- 25(4): 639 (catalysis of flesh oxidative rancidity by metal ions)
- (4): 817 (rapid hypoxanthine accumulation in iced fillets)
- (5): 906 (feed in NW Atl.)
- (5): 1061 (fatty acids of commercial liver oil)
- (11): 2477 (proteins electropherograms re rockfishes systematics)
- 27(9): 1589 (keeping time of frozen fillets re handling of raw material)
- 28(1): 1 (amine production in stored frozen muscle)
- (7): 935 (regular component of Passamaquoddy Bay fish communities, N.B., & length frequencies)
- (8): 1125 (purines changes in iced fillets)
- B 154: 3, 69, 154 (as Nfld. resource)
- CJG 13: 29 (Nfld. surveys, landings; length distributions)
- 14; 15; 16 (Nfld. landings, 1952-68)
- T 80 (stocks, Gulf of St. Lawrence & N.S. banks)
- 103 (in experimental otter-trawling, 1967)
- 164 (extensive length-weight data)
- 225 (associated with Bay of Fundy scallop beds)
- 260 (standing crop, availability, lengths, weights, etc., from Scotian Shelf surveys, 1958-68)
- 261 (bibliography for Gulf of St. Lawrence)
- 272 (halogenated hydrocarbon residues detected in)
- 280 (effects of shipboard transportation in refrigerated sea water on whole fish & fillets therefrom)
- MSP 14 (popular description (English & French))
- S 886; 890; 928; 930; 949; 955; 1023; 1024; 1025; 1089 (ICNAF Canadian research reports; series continued below with A 43)
- 928 (catch size effect on otter trawl selectivity)
- 1100 (brief description, life history, etc.)
- 1382 (age determination & growth rate, Nfld. areas)
- 1363; 1364 (quality re freezing & thawing of fish, then freezing & storage of fillets therefrom)
- 1368 (commercial aspects of reprocessing & marketing sea-frozen)
- 1380 (diurnal variation in availability of different sizes)
- 1382 (age determination & growth rate, Nfld. areas)
- 1409 (gill blood pathways)
- 1604 (chlorinated pesticide residues in, N.S. banks)
- 1696 (chlorinated pesticide residues in, Bay of Fundy & Gulf of Maine)
- A 43; 108; 119; 152; 153; 181; 182; 241 (ICNAF Canadian research reports)
- 99 (fishery yields, 1952-64)
- 179(F) (distinction between *S. marinus marinus* & *S. marinus mentella*; biology & fishery of latter)
- 194; 195 (Nfld. & Labrador fisheries)
- Redhorse, golden (*Moxostoma erythrurum*)
- J 24(2): 299 (muscle myogen electropherograms re speciation)
- 29(3): 275 (6 parasites of, Lake of the Woods, Ont.)
- CCG 7: 16 (protein electropherogram)
- Redhorse, greater (*Moxostoma valenciennesi*) (*M. rubresque*; mullet)
- B 151; 151(F) (delicatessen products from)
- Redhorse, northern (*see* Redhorse, shorthead)
- Redhorse, shorthead (*Moxostoma macrolepidotum*) (northern redhorse)
- J 24(2): 299 (muscle myogen electropherograms re speciation)
- 26(2): 325 (S Alta. distribution)
- (6): 1439 (distribution in Canadian Missouri R. headwaters)
- 27(4): 830 (mercury contamination in organs, Saskatchewan R.)
- 28(1): 105 (DDT residues in muscle of Saskatchewan R.)
- B 173: 275 (mention in key to NW America suckers)
- CCG 7: 16 (protein electropherogram)
- Redhorse, silver (*Moxostoma anisurum*)
- J 24(2): 299 (muscle myogen electropherograms re speciation)
- 26(2): 325 (first Alta. record)
- 29(3): 275 (15 parasites of, Lake of the Woods, Ont.)
- Reduction (*see also* Blubber; Crabmeal; Fish processing wastes; Fishmeal; Oils and fats; Shrimpm meal; Whalemeal)

- T 7; 19; 56; 89; 131; 181; 216; 257; 302 (commercial landings of fish for, B.C. coast)
- Reed, Dale Frank**
J 27(1): 180 (seston crops estimates with glass fiber discs)
- Reed, Edward Brandt**
J 27(1): 180 (seston crops estimates with glass fiber discs)
- Reed, Paul Houston**
J 26(2): 389 (Dungeness crab larvae survival)
- Reed, Roger John**
J 27(1): 156 (back-calculation, condition factor, & stomach content computer programs)
29(10): 1495 (feed availability & consumption by young American shad)
- Reef**
J 25(12): 2683 (artificial, for lobsters)
- Reeves, Jerry Edwin**
J 28(9): 1275 (estimation of hake population by echo integrator)
- Reflex, conditioned** (*see* Behavior; *also* types of reactions listed in that heading)
- Refrigerated sea water** (*see* Sea water, refrigerated)
- Refrigeration** (*see also* Chilling; Freezing; Glazing; Ice; Sea water, refrigerated; Superchilling; Thawing)
J 22(2): 411 (re freezing rate and quality of frozen trap cod)
23(9): 1385 (oxidative rancidity in Atl. cod fillets)
24(1): 211 (desiccation of frozen cartoned sole fillets)
(3): 527 (stored frozen Pac. dogfish quality)
25(2): 299 (storage quality of Atl. cod after thawing)
(2): 363, (6): 1295 (of Atl. salmon sperm)
(5): 921 (nonbacterial trimethylamine production in frozen Atl. cod & scallop muscle)
26(1): 154 (precise low-temperature controlled, for fish)
(5): 1400 (cryo, of steelhead trout semen)
(8): 2037 (alterations in capelin lipids & fatty acids)
(8): 2237 (cryoprotective agents re rainbow trout muscle lipid hydrolysis during cold storage)
(9): 2523 (chilled sea water for improving keepability of scallop meats)
(10): 2727 (fatty acids reaction with Atl. cod muscle protein aged in ice then cold stored)
(12): 3217 (bacteriology of commercial Nfld. cod & flounder fillets from fish frozen whole or gutted at sea)
27(1): 31 (storage effect on electrophoretic protein patterns & quality of fish)
(1): 83 (effects on scallop muscle postmortem iced storage)
(9): 1589 (keeping time of frozen redfish fillets re previous handling of raw material)
- (10): 1685 (dimethylamine formation as index of frozen-storage deterioration of Atl. cod)
28(1): 1 (dimethylamine & other amine formation in stored frozen muscle of various Atl. coast fishes)
29(7): 1053 (yellow elemental phosphorus stability in Atl. cod edible muscle during)
(9): 1303 (of zooplankton intended for lipids & fatty acids analyses)
CHN 23 (holding Atl. cod partially frozen between 30 & 25 F)
31 (frozen storage of preheated whole lobsters)
T 101 (experimentally frozen ocean quahaug quality)
S 1027 (effect on length & weight of Atl. herring)
1290 (deterioration & storage life of frozen Atl. cod fish & fillets)
1363-1368 (chemical & physical changes during handling, processing, & storage of Atl. trawled fish, re product quality)
1416 (B.C. fishes at sea re products quality)
1420 (Atl. fishes aboard chill-freezer trawlers & subsequent handling)
1421 (Atl. whole fish at sea: handling & effect on bacterial spoilage & sanitary quality)
1461 (thermistor readout monitoring system for temperatures)
1473 (portable holding unit for iced fish)
1639 (dimethylamine & formaldehyde formation in frozen stored gadoid fishes muscle, re changes in lipids & protein)
1648 (effects on biochemical quality indices for stored fishery products)
1649 (freezing & thawing rate effects on frozen fish quality)
1697 (N.W.T. fish & marine mammal products)
A 26 (fish & shellfish with antibiotics)
27; 28 (quality of frozen Atl. cod)
55 (same as CHN 31 above)
69 (review of chemical changes in frozen fish muscle re organoleptic quality changes)
130 (general, re fish muscle preservation)
138 (queen crab)
172 (re technical-economic assessment of vertically integrated fishing & filleting operations from iced &/or frozen Atl. fish)
173 (economics of electronic vs. water-immersion thawing of Atl. halibut & plaice frozen blocks)
225 (résumé of S. 1473 above)
- Refum's disease** (heredopathia atactica polyneuritiformis)
S 1266 (caused by phytanic acid in tissues (of man), from phytol or phytanic acid in diet)
- Regeneration**
J 24(2): 433 (of bluespot goby scales)
26(3): 671 (chum salmon scales, re aging)
(5): 1263, (6): 1619 (of marked sockeye & chum salmon fins)
27(11): 2063 (of scales rapid in older cutthroat trout)
A 263 (of legs by queen crab)
- Regier, Henry Abraham**

- J 23(2): 221 (lake whitefish)
 (3): 423 (selectivity of gillnets)
 27(10): 1823 (L. Erie smelt)
 29(6): 613 (introduction to this issue devoted to 1971 Symposium on Salmonid Communities in Oligotrophic Lakes)
 (6): 683 (history of management approach to exploitation & introduction of salmonids in oligotrophic lakes)
 (6): 959 (fisheries exploitation effects on oligotrophic lakes salmonid communities)
 (6): 985 (postscript to Symposium named in 29(6): 613 reference above)
- Regier, Lloyd Wesley
 J 27(3): 591 (bone material in fish protein concentrates)
 28(3): 305 (haddock filets bacteria)
 (4): 509 (brook trout pigmentation)
 (7): 1055 (distillation of fluoride in soils)
 29(12): 1777 (mercury removal from fish protein concentrate; correction on J 30(9): 1404)
- CHN 35 (fillet freezing time & weight loss at -17 F)
 36 (carotenoid pigments in trout & salmon flesh)
 39 (extraction of isopropanol in fish protein concentrates)
- T 162 (trawler vacuum unloading system studies)
 198 (lipid content & composition of queen crab tissue & products)
 214 (ethylenediaminetetraacetic acid (EDTA) for iced fillet preservation)
 280 (tests on refrigerated sea water transport of Atl. cod, redfish, & flounder)
- S 1339 (fluoride in biological samples)
 1412 (fluoride content of raw fish & fish protein concentrate)
 1460 (spoilage of irradiated haddock)
 1505 (fluoride in polluted waters)
- Regulation (*see* Fisheries; Management; *also* names of International Commissions)
- Rehabilitation (*see also* Conservation; Hatchery)
 J 24(2): 281 (by hatchery-reared lake trout, southern L. Superior)
 25(7): 1377 (of lake trout in Apostle Is. region, L. Superior)
 CSG 48 (Canadian Maritimes oyster stocks)
 A 35 (Atl. oyster stocks)
- Reid, Ronald Allan
 J 29(11): 1627 (an alternative to filtration in ¹⁴C determination of phytoplankton production)
- Reid, Sidney George
 J 26(11): 3055 (tetrachloro-*o*-benzoquinone toxic to young salmon)
- Reimers, Paul Edward
 J 25(9): 2005 (chinook salmon social behavior)
 29(12): 1737 (social interaction between young coho & fall chinook salmon in an Oregon river)
- Reinert, Robert Edward
 J 29(5): 525 (dressing & cooking effects on DDT residues in 4 L. Michigan fishes)
 (10): 1413 (dieldrin accumulation in an alga, a cladoceran, and a guppy; corrections on J 30(8): 1257)
- Reinhardtius hippoglossoides* (*see* Turbot, Greenland)
- Reinke, James
 S 1684 (extraction of organochlorine pesticides from water by absorbents)
 1718 (organochlorine pesticide residues in commercial fish in Canada, 1970)
- Reish, Donald James
 J 28(10): 1459 (seasonal settlement of polychaetous annelids)
- Reisman, Howard Maurice
 J 25(12): 2703 (blackspotted stickleback reproductive isolating mechanisms)
- Relict species (*see* Species, relict)
- Remilegia australis* (*see* Whalesucker)
- Remora australis* (*see* Whalesucker)
- Renfro, William Charles
 J 23(12): 1971 (feed of pelagic shrimps)
- Renshaw, Roby Ward
 J 22(3): 841 (*Calycopsis nematophora* distribution)
- Reproduction (*see also* Courtship; Eggs; Fecundity; Fertilization; Mating; Maturity; Spawning; Sperm; *also* names of organisms and reproductive organs)
 J 22(1): 101 (king crabs)
 (2): 448 (harp seals)
 23(4): 521 (*Sphryion lumpi* redfish copepod parasite)
 (5): 689 (re compensatory process based on sockeye salmon hunger concept)
 (5): 757 (rates of harp seal)
 24(2): 447 (tract anatomy, in trouts)
 (3): 495 (isolation between pumpkinseed & bluegill sunfish)
 (12): 2627 (breeding king crabs in ocean environment)
 25(9): 1787 (of brook trout as affected by DDT insecticide)
 (10): 2091 (of lake whitefish in Lac la Ronge, Sask.)
 (10): 2225 (white perch, Bay of Quinte, L. Ontario)
 (12): 2703 (isolating mechanisms of blackspotted stickleback)
 26(2): 361 (3 Haustoriidae amphipod species)
 (2): 449 (regional pupping season differences in harbour seals)
 (6): 1429 (re stream fishes ecology)
 (8): 1969 (& fecundity of glass shrimp, Gulf of Maine)
 (8): 2061 (behavior of blackspotted stickleback)

- (8): 2101 (changes in lobster protein serum during)
 (9): 2403 (blackbelly eelpout, Burrard Inlet, B.C.)
 (10): 2737 (delayed mating effects on king crab)
 27(2): 395 (smallmouth bass in an Ont. Precambrian lake)
 (6): 1005 (lake chub courtship & spawning behavior)
 (7): 1265 (smallfin lanternfish)
 (9): 1607 (maturity, mating, & egg laying of queen crab)
 (10): 1873 (mating & nesting of chestnut lamprey)
 (11): 2037 (& associated behavior, shorthorn sculpin)
 (11): 2095 (bryozoan hyperplasia possible index for oil pollution)
 (11): 2112 (cycle, commercially harvested Alaskan weathervane scallops)
 (12): 2125 (territorialism & mating behavior as deterrents to hybridization between 2 dace species; correction on J28(8): 1219)
 28(3): 417 (patterns of Pac. ocean perch re bathymetric distribution & seasonal abundance)
 (5): 755 (observation of whelping colony of harbour seals, Sable Is., N.S.)
 (9): 1309 (white whale, Cumberland Sound, Baffin Is., N.W.T.)
 (12): 1857 (kokanee introduced into L. Huron)
 29(5): 583 (long-term effects of Sevin insecticide on fathead minnow)
 (12): 1691 (effect of 21 metal ions on *Daphnia magna*).
 B 155 (Canadian Atl. marine fishes)
 157: 15 (lobsters)
 161: 22 (goldeye)
 162: (sockeye salmon)
 168: 23 (Pac. oyster, B.C.)
 173 (of NW Canada & Alaska freshwater fishes)
 180: (B.C. marine fishes)
 T 235 (agonistic behavior re lobster mating)
 279 (of abalone, B.C.)
 S 1398 (of cultured L-cells affected by elemental phosphorus)
 1582; 1583 (mathematical comparison of 2 reproduction curves)
 1590: 552 (of fishes re temperature: review)
 1662 (polychlorinated biphenyls presence in sea water effects on *Gammarus* amphipod)
 A 117 (gribble)
 138; 256; 263 (queen crab)
 179(F) (redfish)
 184 (harp & ringed seal)
 Reptiles (*see also* Lizard; Turtle; Turtles; Snakes)
 S 1665 (some comparative aspects of corticosteroid metabolism: review)
 1680 (metabolic oxygen demand, re other invertebrates: review)
 Research vessel operations (*see* Surveys; Trawling; Vessels)
 Reservoirs
 J 26(7): 1965 (experimental tank to simulate conditions in)
 27(1): 180 (estimation of seston crops by filtration vs. centrifuging)
 (2): 213 (Chironomidae re benthic fauna colonization)
 28(1): 35, 45; 29(9): 1329 (changes in aquatic fauna upstream & downstream of a river dam)
 Resources (*see also* Abundance; Fisheries; Populations; *also* names of Provinces and commercial aquatic organisms)
 A 258 (conserving the ocean as a source of natural renewable resources)
 Respiration, and metabolism of (*see also* Activity; Blood; Gills; Hemoglobin; Lungs; Oxygen, dissolved; Respirometer; Stress)
 J 22(1): 159 (oxygen mass transfer theory for fish eggs)
 (2): 405 (re pumpkinseed swimming speed)
 (6): 1491 (re sockeye salmon swimming speed and size)
 23(1): 1 (re blood of brook trout acclimated to seasonal temperature)
 (6): 783 (rainbow trout, after exercise)
 (9): 1291 (*Euphausia pacifica*)
 24(6): 1229 (& molting of euphausiids)
 (11): 2267 (hematology of rainbow trout thermoacclimation)
 (11): 2355 (mathematical model for fish)
 25(7): 1311 (pressure effect on vertically migrating crustacean)
 (8): 1689 (goldfish & rainbow trout respiratory quotient)
 (8): 1729 (O₂ consumption of crab & lobster at low temperature)
 (12): 2603 (goldeye)
 26(1): 93 (temperature changes effects on acclimated Atl. salmon; respirometer apparatus)
 (8): 2003 (benthic community, in sediments of Marion L., B.C.)
 (10): 2643 (oxygen consumption metabolism re body weight: mathematical relations for several fishes)
 27(3): 551 (gill ventilation re gill blood perfusion in Pac. dogfish)
 (6): 1069 (gas exchange with varying blood oxygen capacity in rainbow trout)
 (9): 1627 (sampling water expired by fish)
 (10): 1860 (re blood circulation time in rainbow trout)
 28(1): 73 (*Hedriodiscus truquii* diptera larvae)
 (1): 95 (re tail growth in embryo big skate)
 (3): 379 (oxygen requirements for northern quahaug early development)
 (4): 491 (responses to hypoxia in sea raven)
 (5): 625, 635 (physiological effects of handling, anesthetization, & surgery of brook trout)
 (7): 947 (blood-pressure drop in teleost gills, re blood pathway)
 (8): 1119 (chronic effects of low oxygen concentrations on fathead minnow)

- (9): 1342 (measuring respiratory quotient of *Tilapia mossambica*)
- (10): 1609 (rainbow trout circulatory & ventilatory responses to artificial manipulation of gills)
- (11): 1733 (rate of organisms, St. Margaret's Bay, N.S.)
- (12): 1823 (handling & salinity effects on striped bass oxygen requirements)
- (12): 1907 (factors affecting rates, in winter flounder)
- 29(1): 67 (re swimming, salinity, & feed consumption of aholehole)
- (2): 187 (re sand goby bioenergetics)
- (3): 328 (formalin effects on rainbow trout)
- (4): 399 (effects of various salinities on corvina)
- (7): 987 (*Sagitta elegans* yearly respiration rate re energy budget)
- (10): 1463 (gill gas exchange hypoxia cause of trout death from zinc toxicity)
- (11): 1525, 1543 (respiratory adaptations of parents, & of prenatal young in ovary, of 2 viviparous seaperch species)
- (12): 1701 (*Mysis relicta* in an arctic vs. a temperate lake)
- S 896 (young sockeye salmon swimming energy requirements)
- 927 (lobster oxygen consumption)
- 998 (re sockeye swimming dynamics)
- 1550 (re Atl. sea raven gill proprioceptors)
- 1554 (rainbow trout respiratory pumps responses to hypoxia)
- 1680 (metabolic oxygen demand in fishes re reptiles, birds, & mammals: review)
- A 197 (oxygen consumption re metabolic activities of fish: review)
- Respirometer (*see also* Respiration)
- J 26(1): 63, 93, (11): 2807 (for fish metabolism experiments)
- 27(7): 1321 (improved design for swimming fish)
- 28(1): 73 (for insect larval respiration rate)
- 29(8): 1214 (correction for lag in continuous-flow respirometry)
- MSP 10 14 (for fish swimming speed re water temperature)
- T 195 (water tunnel design)
- A 116 (for fish)
- Retallack, Mabel Elizabeth
- J 24(11): 2497 (Japanese yew extract re insect molting hormone)
- Retina (*see* Eye)
- Retrieval, information (*see also* Bibliographies; Indexes)
- T 209 (storage & retrieval of indexed & annotated bibliographical references)
- Review papers and articles (*see also* Bibliographies; *also* next two headings)
- J 24(2): 375 (Babine R. sockeye salmon fry behavior & ecology)
- (4): 701-832 (effects of forest insecticide sprays in fish & aquatic insects)
- 26(6): 1429 (distinctive aspects of stream fishes ecology)
- (9): 2267 (Bertalanffy growth equation application to fishery management problems)
- 27(3): 565 (homing instinct in Pac. salmon)
- (7): 1251 (production levels in Strait of Georgia pelagic environment)
- (10): 1757 (burbot subspeciation)
- 28(3): 391 (ultrastructure of red-water ciliate *Mesodinium rubrum*; *Mesodinium* taxonomy & key)
- (10): 1583 (radioisotope X-ray fluorescent spectroscopy in aquatic biology)
- 29(4): 363 (feed & feeding habits of USSR freshwater invertebrates)
- (4): 385 (molluscan sterols)
- (6): entire issue (proceedings of international symposium on Salmonid Communities in Oligotrophic Lakes (N American & European))
- B 162 (sockeye salmon)
- 165 (carp in Canada)
- 166 (eel fisheries of E Canada)
- AR 1964-71 (Fisheries Research Board of Canada Annual Reports, including research highlights or brief summaries)
- R 1964; 1965/66; 1967/68; 1969/70 (Fisheries Research Board of Canada Biennial Reviews, including brief reviews of principal types of investigations)
- T 272 (halogenated hydrocarbons industrial uses re effects on environment)
- S 1117 (postmortem changes in fish muscles minor organic constituents)
- 1123 (polychaete studies by E. and C. Berkeley)
- 1175 (influence of lipids changes on frozen fish quality)
- 1352 (Atl. cod biology, fishery, products, etc.)
- 1360 (re fishes body compartments & distribution of electrolytes)
- 1373 (echinoderm lipids constitution & metabolism)
- 1388 (dynamics of aquatic ecosystems)
- 1404; 1432 (steroidogenesis in fishes)
- 1407 (sewage & other wastes disposal re physical environment, B.C. coast)
- 1434 (sedimentary organic matter re paleolimnology)
- 1441 (biological aspects & data, northern pike)
- 1450 (northern world coregonid fishes parasites)
- 1487 (diseases & other effects of parasitization on fishes)
- 1510 (utilizing & applying bioassay results re pollutants toxicities towards fish)
- 1590 (temperature effects on living fishes)
- 1637 (triglycerides stereospecific analysis)
- 1664 (analysis of fatty acids & related materials by gas-liquid chromatography)
- 1675 (field studies on fish orientation)
- 1680 (metabolic oxygen demand in fishes re reptiles, birds, & mammals)

- 1688 (size analysis methods for fine-grained suspended sediments)
- 1725 (factor combinations re marine poikilotherms responses to environmental factors acting in concert)
- A 1 (research on Nfld. commercial invertebrates)
- 15 (nature of flesh food flavors)
- 26 (antibiotic preservation of fish)
- 38 (phosphorus compounds in fish)
- 69 (chemical changes in frozen fish muscle re organoleptic quality)
- 94A (Canadian research on Bay of Fundy & Gulf of Maine herring populations biology)
- 122 (B.C. whaling)
- 123 (Nfld. salmon research, biology, fishery, etc.)
- 124-127 (FRB Halifax Station development of fish protein concentrate)
- 130 (fishes muscle nutritional value re its preservation)
- 139 (improving evaluation methodology re pollutants effects on marine organisms)
- 145 (bioassay methods for pollutants toxicity)
- 146 (fish muscle lipids catabolism)
- 147 (intermediary metabolism enzyme systems of fish vs. warm-blooded animals)
- 164 (automated techniques for detection & characterization of marine particulate matter)
- 197 (metabolism & biological production in fish)
- 212 (energy cost of living, for fish)
- 215 (fishery by-products technology)
- 254 (suggestion that scientists should be encouraged to prepare critical review papers for scientific journals)
- 268 (sublethal effects & "safe" concentrations of pollutive toxicants to fish)
- Reynolds, James B.
J 28(1): 102 (bathythermograph transect data plotting)
- Rhabdochona* (see also Nematoda)
J 28(10): 1645 (*R. canadensis* new species; 5 other species described; systematics; key to genus; distribution in N & Central America)
- S 1267 (taxonomy re *Oncorhynchus* parasitism)
- Rhacochilus toxotes* (see Seaperch, rubberlip)
vacca (see Perch, pile)
- Rhamphocottus richardsoni* (see Sculpin, grunt)
- Rhenium derivatives
J 27(4): 677 (traces in Great Lakes fishes & livers)
- Rheotaxis (see also Currents, reaction to)
J 25(8): 1591 (selectivity for different stream waters by American cel)
- Rheotropy (see also Homing)
J 27(3): 565 (re homing instinct of Pac. salmon)
- Rhinichthys atratulus* (see Dace, blacknose)
atronasus (see Dace, blacknose)
cataractae (see Dace, longnose)
evermanni (see Dace, Umpqua)
falcatus (see Dace, leopard)
osculus (see Dace, speckled)
- Rhinogobius nicholsi* (see Goby, blackeye)
- Rhinoliparis attenuatus* (see Liparid)
- Rhizocephala (see Cirripedia)
- Rhizoprionodon terraenovae* (see Shark, Atlantic sharpnose)
- Rhode Island, USA
J 22(4): 945 (estimating theoretical biomass of young winter flounder for a fishery)
- Rhodomela* (see Rhodophyta)
- Rhodophyta (for *Rhodymenia palmata* see Dulce; for *Chondrus crispus* see Irish moss)
J 22(6): 1425 (distribution of 13 species re salinity & tidal factors, S end of Vancouver Is.)
24(1): 33 (*Constantinea subulifera* vertical distribution re environment, Indian Arm, B.C.)
25(8): 1603 (*Porphyridium* sp. fatty acids)
26(10): 2703 (vertical distribution & hosts of 72 sublittoral species off Halifax, N.S.)
27(2): 335 (glycerol enhancement of phototrophic growth)
- B 154: 7, 146 (*Ptilota* use as fertilizer, Nfld.)
T 158 (*Gracilaria*, *Ceramium*, *Gonotrachium*, & *Poly-siphonia* in Bideford R. estuary, P.E.I.)
159 (*Rhodymenia* & *Halosaccion* in Canadian Arctic Archipelago)
S 1159 (*Por. cruentum* photosynthetic thetin)
- Reviews, Fisheries Research Board of Canada (see Fisheries Research Board of Canada)
- Reviews of books
- A 168 (primary productivity measurement methods)
- 186 (fish infectious diseases & control)
- 196 (fisheries biology; a study in population dynamics)
- 210 (seawater analysis methods)
- 228 (Jakob Danielson, Greenlandic painter)
- 229 (aging mammals by teeth & bone layering)
- 252 (a century of fisheries in N America)
- 257 (Antarctica)
- 260 (biological aspects of water pollution)
- 261 (effects of abatement of domestic sewage pollution on the benthos, volumes of plankton, and the fouling organisms of Biscayne Bay, Florida)
- 269 (an introduction to mathematical ecology)
- 270 (biological studies of the English lakes)
- 271 (same as 270 above, but by a different reviewer)
- 272 (review of FRB Bulletin No. 170 indexed & listed in this present publication)
- Revival
- S 1590 533 (of fishes after supercooling: review)

- 1171 (*Por. cruentum* aldolase activity re phylogeny)
 1239 (sterols of *Porphyra*, *Halosaccion*, *Rhodomela*, *Polides*, & dulse)
 1359; 1431 (extraction & chemical constitution of a mannopyranosyl glycerate from *Rhodomela larix*)
 1427 (phospholipase D characterization in *Por. cruentum*)
 1448 (*Por. cruentum* axenic culture survival re prolonged exposure to darkness)
 1457 (seasonal sterols content of *Ptilota*, *Furcellaria*, *Phyllophora*, & dulse)
 1480 (tocopherol, vitamin K, quinones, & carotenoids in *Por. cruentum*)
 1530; 1548 (*Rhodymenia pertusa* cell-wall glucan chemical structure)
 1619 (*Ptilota serrata* zonation & biomass, St. Margaret's Bay, N.S.)
 1626 (*Por. cruentum* protein content & threonine dehydratase activity)
 A 40 (similar to S 1159 above)
- Rhodymenia palmata* (see Dulce)
pertusa (see Rhodophyta)
- Ribbonworms (see Nemertea)
- Riboflavin (see Vitamin B group)
- Ribonuclease (see Enzymes)
- Ribonucleic acid (see Acids, nucleic)
- Ribonucleotides (see Nucleosides)
- Ribose (see Carbohydrates; Saccharides; Sugars)
- Ricard, Michel
 T 202(F) (diatoms as indicators of pollution from mine wastes)
- Richard, Joseph Donat
 J 25(7): 1441 (fish attraction with pulsed low-frequency sound)
- Richards, Sarah Wheatland
 J 22(5): 1313 (W Atl. sand lances postlarvae comparison)
- Richibucto, N.B.
 J 28(1): 59 (DDT residues in marine fishes & shellfishes)
- Ricker, William Edwin
 J 22(2): 475 (stoneflies)
 (6): 1477 (pink & chum salmon scale annuli)
 23(11): 1727 (translator's foreword)
 25(7): 1423 (N American species of *Taeniopteryx*)
 (12): 2743 (mean weight from length statistics)
 26(3): 479 (effects of size-selective mortality)
 (10): 2715 (simulated long-term environmental fluctuations on maximum sustained yield)
- 28(10): 1666 (biostatistical population analysis)
 S 900 (availability of fish)
 968 (distribution of Canadian stoneflies)
 1062 (sockeye salmon in B.C.)
 1268 (Que. stoneflies distribution)
 1375 (position of *Zealeuctra* in the family Leuctridae)
 1582 (Derzhavin's biostatistical method)
 1583 (comparison of 2 reproduction curves)
 1607 (food from the sea)
 1647 (classification, evolution, & dispersal of winter stonefly genus *Allocapnia*)
 A 106 (Pac. salmon move east)
 189 (assessment of freshwater fish production)
 (editor & contributor of various sections)
 259 (hereditary & environmental factors affecting certain salmonid populations)
- Ricker model of equilibrium yield per recruitment
 J 24(2): 249 (generalized computer program for)
- Ridgway, George J.
 J 24(4): 849 (marking Pac. salmon with tetracycline antibiotics)
 26(8): 2101 (lobster molt serum protein)
 28(1): 15 (isozyme polymorphisms in American lobsters)
- Ridley (see Turtle, ridley)
- Riffenburgh, Robert Harry
 J 26(11): 2843 (stochastic model of interpopulation dynamics in marine ecology)
- Rigby, D
 J 29(9): 1365 (smoke-processing effect on muddy odor & taste in rainbow trout)
- Rigor (see also Drip; Muscle)
 J 24(3): 651 (re Atl. cod postmortem physiochemical changes)
 (4): 873 (re protein in scallop striated muscle)
 (8): 1717 (re Atl. cod muscle adenosine monophosphate aminohydrolase)
 (8): 1837 (nucleotide degradation, re postmortem changes in relaxed Atl. cod muscle)
 25(2): 299, (4): 733 (effect on refrozen Atl. cod storage quality)
 26(12): 3271 (effect on quality of freeze-dried Atl. cod steaks)
 S 947 (re ionic concentration changes in muscle)
 1363 (benefit of freezing trawl fish at sea in prerigor state)
 1416 (sea-freezing B.C. commercial fishes before, during, & after, re products quality)
 A 27 (re quality of Nfld. trap-caught cod)
 29 (re changes in fish held in refrigerated sea water)
 69 (re chemical changes in muscle as later affecting quality of frozen fish)
- Rimicola muscarum* (see Clingfish, kelp)

- Ringrose, Richard Caig
J 28(8): 1113 (caloric-protein ratio for brook trout)
- Rivers Inlet, B.C. (*see also* Owikeno Lake; Salmon)
S 1230 (spawning populations of sockeye & other salmon)
- Rivulus strigatus* (a killifish species)
J 25(8): 1739 (spinal ganglia position re taxonomy)
- RNA (ribonucleic acid) (*see* Acids, nucleic; Nucleosides)
- Roach (*Rutilus rutilus*) (*Leuciscus rutilus*)
J 25(12): 2711 (muscle creatine kinase localization)
26(11): 2795 (fecundity in R. Thames, England)
S 1442 (*Trianaophorus* in L. Mälaren, Sweden)
- Roach, Stewart Williard
J 22(4): 955 (partial freezing of salmon)
23(5): 701 (fish preservation by partial freezing)
27(11): 2093 (obituary of J. S. M. Harrison)
B 160 (chilling & freezing salmon & tuna in refrigerated sea water)
CVG 41 (weight changes in Pac. coast fish stored at sea)
43; 44 (storage of Pac. salmon at sea)
45 (cod & halibut stored in ice at sea)
T 220; 242 (storage of Pac. salmon at sea)
S 1006 (methods for unloading fish)
1416 (quality of sea-frozen fish from the NE Pac.)
1417 (partial freezing of Pac. salmon intended for canning)
A 34 (same as S 1006 above)
- Roberts, Eve
J 22(1): 203 (muscle myogens of vertebrates)
(1): 215 (*Oncorhynchus* species identification)
(3): 767 (salmonid hybrids)
23(1): 101 (*Oncorhynchus* muscle myogens)
(6): 929 (micro starch gel electrophoresis)
(10): 1599 (muscle myogen patterns)
(11): 1663 (comparative electropherograms)
24(2): 299 (Catostomidae electropherograms)
25(11): 2477 (protein electrophoresis re rockfish systematics)
26(9): 2351 (halibut transferrin systems)
(10): 2633 (sablefish muscle protein polymorphism)
- Roberts, Larry Spurgeon
J 26(4): 997 (*Ergasilus arthrosis* n.sp., & taxonomic status of *E. versicolor*, *E. elegans*, & *E. celestis*)
- Roberts-Pichette, Patricia
S 1553 (effects of mining pollution on Miramichi R. plants)
- Robertson, Andrew
J 25(6): 1181 (upper Great Lakes benthic environment)
- Robins, Geoffrey Lewis
J 28(6): 861 (effects of feeding level on scales of young Pac. salmon)
- (11): 1757 (response of young salmon to starvation periods)
(11): 1757 (effect of starvation on scales of salmon)
- T 161 (bibliography of pikeperch genus *Stizostedion* including *Lucioperca*)
- MSP 15 (FRB Nanaimo station: staff, facilities, & programs)
- Robinson, Douglas Grant
J 28(9): 1345 (anomalous occurrence of carp in marine environment)
S 1413 (activity of microorganisms in sea water)
1653 (fertilization of Great Central L., effect on juvenile sockeye salmon)
- Robson, Douglas Sherman
J 23(3): 423 (selectivity of gillnets)
- Roccus chrysops* (*see* Bass, white)
saxatilis (*see* Bass, striped)
- Rockbass (*see* Bass, rock)
- Rockfish, aurora (*Sebastes* (*Sebastodes*) *aurora*)
J 25(11): 2477 (proteins electropherograms re rockfishes systematics)
(11): 2509 (first B.C. record)
28(6): 903 (habitat of a blood fluke species in)
B 180: 400 (full description, etc., B.C.)
T 22; 81; 205; 221 (taken during FRB experimental trawling)
- Rockfish, banded (*see* Rockfish, tiger)
- Rockfish, big-eye (*see* Rockfish, sharpchin)
- Rockfish, black (*Sebastes* (*Sebastodes*) *melanops*)
J 25(11): 2477 (proteins electropherograms re rockfishes systematics)
(12): 2665 (associations with other fishes off Oregon coast)
26(9): 2319 (parasites, B.C.)
(11): 3094 (occurrence in open N Pac. Ocean, vs. usual demersal habitat)
28(6): 903 (habitat of 2 blood fluke species in)
B 180: 426 (full description, etc., B.C.)
T 7; 11; 56; 181; 257; 317 (taken in FRB experimental or B.C. commercial trawling)
246 (bibliography)
- Rockfish, blackbanded (*see* Rockfish, tiger)
- Rockfish, blackblotched (*see* Rockfish, darkblotched)
- Rockfish, blackgill (*see* Rockfish, shorttraker)
- Rockfish, blackmouth (*see* Rockfish, darkblotched)
- Rockfish, black-throated (*see* Rockfish, shorttraker)
- Rockfish, blue (*Sebastes* (*Sebastodes*) *mystinus*) (priestfish)

- J 24(10): 2201 (in line fishing from Pac. Ocean weather-ship P; identity doubtful)
 25(11): 2477 (proteins electropherograms re rockfishes systematics)
 B 180: 429 (full description, etc., B.C.)
 T 30 (in B.C. experimental groundfish trawling)
 246 (bibliography)
- Rockfish, brown (*Sebastes (Sebastodes) auriculatus*) (*S. dalli*; calico rockfish)
 B 180: 398 (full description, etc., B.C.)
- Rockfish, calico (*see* Rockfish, brown)
- Rockfish, canary (*Sebastes (Sebastodes) pinniger*) (orange rockfish)
 J 23(9): 1469 (range extension in N Pac.)
 25(4): 801 (early larvae pigment patterns)
 (11): 2477 (proteins electropherograms re rockfishes systematics)
 27(10): 1781 (taken in Pac. ocean perch surveys, NE Pac.)
 28(6): 903 (habitat of 2 blood fluke species in)
 29(8): 1125 (identification of various volatiles developed in ice-stored muscle)
 B 180: 437 (full description, etc., B.C.)
 T 7; 11; 22; 30; 46; 56; 62; 81; 144; 181; 205; 257; 269; 290; 317; 328 (taken in FRB experimental or B.C. commercial trawling)
 246 (bibliography)
 A 91 (observed in B.C. landings of fish for mink feed)
- Rockfish, china (*Sebastes (Sebastodes) nebulosis*) (yellow-striped rockfish)
 J 25(11): 2477 (proteins electropherograms re rockfishes systematics)
 B 180: 431 (full description, etc., B.C.)
 T 56 (in B.C. commercial groundfish trawling)
- Rockfish, copper (*Sebastes (Sebastodes) caurinus*)
 J 22(1): 203 (biochemical systematics)
 23(9): 1455 (northern Pac. range extension)
 25(8): 1651 (plasma protein-bound inorganic iodide)
 (11): 2477 (proteins electropherograms re rockfishes systematics)
 26(9): 2319 (parasites, B.C.)
 28(6): 903 (habitat of 2 blood fluke species in)
 (10): 1563 (host of a new copepod species)
 B 180: 407 (full description, etc., B.C.)
 T 7; 56; 181; 257; 317 (taken during B.C. commercial trawling)
 246 (bibliography)
- Rockfish, cow (*Sebastes (Sebastodes) levis*)
 T 30: 22 (in FRB experimental groundfish trawling)
- Rockfish, darkblotched (*Sebastes (Sebastodes) crameri*) (blackblotched or blackmouth rockfish)
 J 24(9): 1945 (hemoglobin & muscle protein electropherograms; correction on J 25(8): 1760)
 25(11): 2477 (proteins electropherograms re rockfishes systematics)
- (12): 2665 (associations with other fishes off Oregon coast)
 27(10): 1781 (taken in Pac. ocean perch surveys, NE Pac.)
 28(6): 903 (habitat of a blood fluke species in)
 B 180: 410 (full description, etc., B.C.)
 T 11; 22; 30; 46; 56; 62; 81; 144; 181; 205; 210; 221; 257; 290; 317; 328 (taken during FRB experimental or B.C. commercial trawling)
 246 (bibliography)
- Rockfish, dusky (*Sebastes (Sebastodes) ciliatus*)
 J 22(1): 203 (biochemical systematics)
 25(11): 2477 (proteins electropherograms re rockfishes systematics)
 (11): 2509 (first B.C. record)
 27(10): 1781 (taken in Pac. ocean perch surveys, NE Pac.)
 B 180: 409 (full description, etc., B.C.)
 T 11; 30; 46; 205 (taken during FRB experimental trawling)
- Rockfish, flag (*see* Rockfish, redbanded)
- Rockfish, greenstriped (*Sebastes (Sebastodes) elongatus*)
 J 22(1): 203 (biochemical systematics)
 23(9): 1455 (northern Pac. range extension)
 25(11): 2477 (proteins electropherograms re rockfishes systematics)
 (12): 2665 (associations with other fishes off Oregon coast)
 26(9): 2319 (parasites, B.C.)
 27(10): 1781 (taken in Pac. ocean perch surveys, NE Pac.)
 B 180: 414 (full description, etc., B.C.)
 T 7; 11; 22; 30; 46; 56; 62; 81; 144; 181; 205; 221; 257; 269; 290; 317 (taken during FRB experimental or B.C. commercial trawling)
 246 (bibliography)
- Rockfish, harlequin (*Sebastes (Sebastodes) variegatus*)
 B 180: 446 (full description, etc., B.C.)
 T 290 (catch during FRB experimental trawling)
- Rockfish, longjaw (*see* Perch, Pacific ocean)
- Rockfish, longspine channel (*see* Thornyhead, longspine)
- Rockfish, northern (*Sebastes (Sebastodes) polyspinis*)
 J 22(1): 203 (biochemical systematics)
 25(11): 2477 (proteins electropherograms re rockfishes systematics)
 27(10): 1781 (taken in Pac. ocean perch surveys, NE Pac.)
 28(10): 1621 (taxonomy, distribution, & biology)
 T 205 (taken in B.C. groundfish survey)
 246 (bibliography)
- Rockfish, olive-backed (*see* Rockfish, stripetail)
- Rockfish, orange (*see* Rockfish, canary)

- Rockfish, orange-spotted (*see* Rockfish, quillback) (12): 2665 (associations with other fishes off Oregon coast)
- Rockfish, Puget Sound (*Sebastes (Sebastodes) emphaeus*) 27(10): 1781 (taken in Pac. ocean perch surveys, NE Pac.)
 J 23(12): 1967 (distinction from *S. wilsoni*)
 B 180: 415 (full description, etc., B.C.) 28(6): 903 (habitat of a blood fluke species in)
 B 180: 439 (full description, etc., B.C.)
- Rockfish, pygmy (*Sebastes (Sebastodes) wilsoni*) (Wilson's rockfish) T 7; 11; 16; 22; 30; 46; 56; 81; 144; 181; 205; 210; 221; 257; 269; 290; 317; 328 (taken during FRB experimental or B.C. commercial trawling)
 J 23(12): 1967 (B.C. northern range extension; distinction from *S. emphaeus*) 273 (observed on Bowie Seamount, off Queen Charlotte Is., B.C.)
 25(11): 2477 (proteins electropherograms re rockfishes systematics)
 (12): 2665 (associations with other fishes off Oregon coast)
 27(10): 1781 (taken in Pac. ocean perch surveys, NE Pac.)
 B 180: 448 (full description, etc., B.C.)
 T 22; 81; 144; 205; 290 (taken during FRB experimental trawling)
- Rockfish, quillback (*Sebastes (Sebastodes) maliger*) (orange-spotted rockfish) 27(10): 1781 (taken in Pac. ocean perch surveys, NE Pac.)
 J 22(1): 203 (biochemical systematics)
 25(8): 1539 (postmortem starch degradation)
 (8): 1651 (plasma protein-bound inorganic iodide)
 (11): 2477 (proteins electropherograms re rockfishes systematics)
 26(9): 2319 (parasites, B.C.)
 27(10): 1781 (taken in Pac. ocean perch surveys, NE Pac.)
 28(6): 903 (habitat of 2 blood fluke species in)
 B 180: 424 (full description, etc., B.C.)
 T 7; 56; 62; 181; 257; 317 (taken during FRB experimental or B.C. commercial trawling)
 S 1416 (sea freezing in prerigor, rigor, & postrigor, re products quality)
- Rockfish, rasphead (*see* Rockfish, yelloweye)
- Rockfish, red (*see* Rockfish, yelloweye)
- Rockfish, redbanded (*Sebastes babcocki*) (*Sebastodes rubrivinctus*; flag rockfish; *Sebastes rubrivinctus* is now the flag rockfish) 27(10): 1781 (taken in Pac. ocean perch surveys, NE Pac.)
 J 22(1): 231 (N Pac. range extension)
 25(11): 2477 (proteins electropherograms re rockfishes systematics)
 26(7): 1955 (range extension westward to Aleutian Is.)
 B 180: 401 (full description, etc., B.C.)
 T 7; 22; 30; 46; 56; 62; 81; 144; 181; 205; 210; 221; 257; 269; 290; 317; 328 (taken during FRB experimental or B.C. commercial trawling)
 246 (bibliography)
- Rockfish, redstripe (*Sebastes (Sebastodes) proriger*) J 24(9): 1945 (hemoglobin & muscle protein electropherograms; correction on J 25(8): 1760)
 25(11): 2477 (proteins electropherograms re rockfishes systematics)
- Rockfish, rosethorn (*Sebastes (Sebastodes) helvomaculatus*) (*S. rosaceus*; rosy rockfish) J 22(1): 231 (N Pac. range extension)
 25(11): 2477 (proteins electropherograms re rockfishes systematics)
 (12): 2665 (associations with other fishes off Oregon coast)
 27(10): 1781 (taken in Pac. ocean perch surveys, NE Pac.)
 28(6): 903 (habitat of a blood fluke species in)
 B 180: 421 (full description, etc., B.C.)
 T 11; 22; 30; 46; 56; 81; 144; 181; 205; 221; 257; 278; 290; 317; 328 (taken during FRB experimental or B.C. commercial trawling)
 246 (bibliography)
- Rockfish, rosy (*see* Rockfish, rosethorn)
- Rockfish, rougheye (*Sebastes aleutianus*) B 180: 394 (description, etc., as occurring in N America W coastal waters; see also second paragraph under shortraker rockfish on p. 403 of that Bulletin, & note under heading Rockfish, shortraker in this index, re the probability that some of the references under Rockfish, shortraker may apply to this rougheye rockfish)
- Rockfish, salmon (*see* Bocaccio)
- Rockfish, sharpchin (*Sebastes (Sebastodes) zacentrus*) (big-eye rockfish) J 22(1): 231 (N Pac. range extension)
 24(9): 1945 (hemoglobin & muscle protein electropherograms; correction on J 25(8): 1760)
 25(11): 2477 (proteins electropherograms re rockfishes systematics)
 (12): 2665 (associations with other fishes off Oregon coast)
 27(10): 1781 (taken in Pac. ocean perch surveys, NE Pac.)
 28(6): 903 (habitat of a blood fluke species in)
 B 180: 450 (full description, etc., B.C.)
 T 11; 16; 22; 46; 56; 81; 144; 181; 205; 221; 257; 278; 290; 317; 328 (taken during FRB experimental or B.C. commercial trawling)
 246 (bibliography)
- Rockfish, shortbelly (*Sebastes (Sebastodes) jordani*) J 23(2): 309 (first B.C. coastal record)

- 25(11): 2477 (proteins electropherograms re rockfishes systematics)
 27(10): 1781 (taken in Pac. ocean perch surveys, NE Pac.)
 B 180: 423 (full description, etc., B.C.)
 T 22 (in B.C. experimental groundfish trawling)
- Rockfish, shortraker (*Sebastes borealis*) (see B 180: 403 reference below re the names *Sebastes aleutianus* or rougheye rockfish; *Sebastes introniger* or blackthroat rockfish; *Sebastes melanostomus* or blackgill rockfish; and *Sebastes caenaematicus* or shortraker rockfish, with probability that some of the other references below may relate to *Sebastes aleutianus*, the rougheye rockfish)
 J 22(1): 203 (biochemical systematics)
 25(11): 2477 (proteins electropherograms re rockfishes systematics)
 26(9): 2527 (taken during deep-sea line fishing off B.C.)
 27(10): 1781 (taken during Pac. ocean perch surveys, NE Pac.)
 (12): 2233 (description as *Sebastes caenaematicus*, a new NE Pac. species)
 29(5): 606 (synonymy of *S. caenaematicus* with *S. borealis*; also range extension)
 B 180: 403 (description, taxonomy, etc., as found off B.C. & Alaska coast)
 T 11; 22; 30; 46; 56; 62; 81; 144; 181; 205; 221; 257; 278; 290; 317; 328 (taken during FRB experimental or B.C. commercial trawling)
 132: 7 (size composition)
 246 (bibliography)
- Rockfish, shortspine channel (see Thornyhead, shortspine)
- Rockfish, silvergray (*Sebastes (Sebastes) brevispinis*)
 J 25(11): 2477 (proteins electropherograms re rockfishes systematics)
 27(10): 1781 (taken in Pac. ocean perch surveys, NE Pac.)
 28(6): 903 (habitat of a blood fluke species in)
 B 180: 405 (full description, etc., B.C.)
 T 7; 11; 22; 30; 46; 56; 62; 81; 144; 181; 205; 221; 257; 259; 278; 290; 317; 328 (taken during FRB experimental or B.C. commercial trawling)
 246 (bibliography)
- Rockfish, spinychecked (see Thornyhead, shortspine)
- Rockfish, splitnose (*Sebastes (Sebastes) diploproa*)
 J 25(11): 2477 (proteins electropherograms re rockfishes systematics)
 (12): 2665 (associations with other fishes off Oregon coast)
 26(9): 2319 (parasites, B.C.)
 27(10): 1781 (taken in Pac. ocean perch surveys, NE Pac.)
 28(6): 903 (habitat of a blood fluke species in)
 B 180: 412 (full description, etc., B.C.)
 T 7; 16; 22; 30; 46; 56; 81; 144; 181; 205; 221; 257; 290; 317; 328 (taken during FRB experimental or B.C. commercial trawling)
 246 (bibliography)
- Rockfish, stripetail (*Sebastes (Sebastes) saxicola*) (olive-backed rockfish)
 J 25(11): 2477 (proteins electropherograms re rockfishes systematics)
 (12): 2665 (associations with other fishes off Oregon coast)
 27(10): 1781 (taken in Pac. ocean perch surveys, NE Pac.)
 B 180: 444 (full description, etc., B.C.)
 T 22; 30; 46; 81; 144; 205; 221; 290 (taken during FRB experimental trawling)
 246 (bibliography)
- Rockfish, tiger (*Sebastes (Sebastes) nigrocinctus*) (banded rockfish; blackbanded rockfish)
 J 25(8): 1651 (plasma protein-bound inorganic iodide)
 28(6): 903 (habitat of a blood fluke species in)
 B 180: 433 (full description, etc., B.C.)
 T 56; 205 (taken during FRB experimental or B.C. commercial trawling)
 246 (bibliography)
- Rockfish, vermilion (*Sebastes (Sebastes) miniatus*)
 B 180: 428 (full description, etc., B.C.)
 T 56 (in B.C. commercial trawling)
 246 (bibliography)
- Rockfish, widow (*Sebastes (Sebastes) entomelas*)
 J 22(6): 1559 (new to B.C. coast)
 25(11): 2477 (proteins electropherograms re rockfishes systematics)
 (12): 2665 (associations with other fishes off Oregon coast)
 27(10): 1781 (taken in Pac. ocean perch surveys, NE Pac.)
 B 180: 417 (full description, etc., B.C.)
 T 11; 16; 22; 46; 56; 81; 144; 181; 205; 210; 221; 257; 269; 290; 317; 328 (taken during FRB experimental or B.C. commercial trawling)
 174 (catches during FRB offshore herring surveys, B.C.)
 246 (bibliography)
 273 (observed on Bowie Seamount off Queen Charlotte Is., B.C.)
- Rockfish, Wilson's (see Rockfish, pygmy)
- Rockfish, yelloweye (*Sebastes (Sebastes) ruberrimus*) (rasphead rockfish; red rockfish; red snapper)
 J 22(1): 53 (drip and rancidity inhibitors for frozen products)
 25(11): 2477 (proteins electropherograms re rockfishes systematics)
 27(10): 1781 (taken in Pac. ocean perch surveys, NE Pac.)
 B 180: 442 (description, etc., B.C.)
 T 7; 11; 22; 46; 56; 62; 81; 144; 181; 205; 257; 290; 317 (taken during FRB experimental or B.C. commercial trawling)
 273 (observed on Bowie Seamount off Queen Charlotte Is., B.C.)

- S 1416 (sea-freezing in prerigor, rigor, & postrigor, re products quality)
- Rockfish, yellowmouth (*Sebastes (Sebastodes) reedi*)
 J 24(9): 1945 (new species, NE Pac., distinguished from muscle & hemoglobin protein electropherograms; correction on J25(8): 1760)
 25(11): 2477 (proteins electropherograms re rockfishes systematics)
 27(10): 1781 (taken in Pac. ocean perch surveys, NE Pac.)
 B 180: 440 (full description, etc., B.C.)
 T 46; 56; 62; 81; 144; 205; 221; 257; 269; 278; 290; 317; 328 (taken during FRB experimental or B.C. commercial trawling)
 246 (bibliography)
- Rockfish, yellowstriped (*see* Rockfish, china)
- Rockfish, yellowtail (*Sebastes (Sebastodes) flavidus*)
 J 22(1): 203 (biochemical systematics)
 23(9): 1469 (range extension in N Pac.)
 25(11): 2477 (proteins electropherograms re rockfishes systematics)
 26(8): 2211 (feed ecology in Astoria Canyon off mouth of Columbia R.)
 27(10): 1781 (taken in Pac. ocean perch surveys, NE Pac.)
 28(6): 903 (habitat of 2 blood fluke species in)
 29(7): 1011 (home site & homing evidence of adult)
 B 180: 418 (full description, etc., B.C.)
 T 7; 11; 22; 30; 46; 56; 62; 81; 144; 181; 205; 210; 221; 257; 269; 290; 317; 328 (taken during FRB experimental or B.C. commercial trawling)
 147 (catches during FRB offshore herring survey, B.C.)
 246 (bibliography)
 273 (observed on Bowie Seamount off Queen Charlotte Is., B.C.)
- Rockfishes (*Sebastes (Sebastodes)*; *Sebastolobus*) (In addition to the foregoing individual species, *see* Boccacio; Chilipepper; Perch, Pacific ocean; Redfish; Thornyhead; *also* Exploration; Groundfish; Surveys; Trawling)
 J 25(11): 2477 (proteins electropherograms re systematics)
 (12): 2665 (associations with other fishes off Oregon coast)
 27(12): 2233 (taxonomy of a *Sebastes (Sebastodes)* complex)
 28(6): 903 (incidence & habitat of 2 blood fluke species in, re habitat of the fish species)
 B 180: 388 (descriptions, key, illustrations, etc., B.C.)
 T 175 (frequency of larvae in NE Pac. zooplankton samples)
 246 (bibliography of N America Pac. coast)
 S 1093 (brief description; life history; B.C. fishery)
 A 37 (fisheries potential, B.C.)
 235 (estimated biomass in Strait of Georgia)
- Rockhead (*Bothragonus swani*) (deep-pitted poacher; deep-pitted sea-poacher)
- B 180: 558 (full description, etc., B.C.)
- Rockling, fourbeard (*Enchelyopus cimbrius*)
 J 28(7): 935 (summer periodic component of Passamaquoddy Bay fish communities, N.B.; length frequencies)
 29(7): 997 (feed resource division, Passamaquoddy Bay)
 T 164 (extensive length-weight data)
 261 (bibliography for Gulf of St. Lawrence)
- Rockweeds (*see* references to certain genera, e.g. *Ascophyllum* and *Fucus*, under Phaeophyta)
- Rodriguez, Jorge Luis
 J 22(3): 869 (hematology of hake)
- Roe (*see* Eggs, fish)
- Roelofs, Eugene Woodrow
 J 22(6): 1379 (photoperiod effects on sunfish)
 28(4): 610 (dieldrin concentrations in blood & brain of green sunfish at death)
- Rohtee cotio* (an India freshwater fish)
 J 26(4): 965 (host of new acanthocephalan species, *Acanthosentis cameroni*)
- Romilly, Mervyn J.
 S 1480 (composition of a unicellular red alga)
- Ronald, Alexander Pollock
 J 23(6): 929 (micro starch gel electrophoresis)
 27(7): 1325 (molecular species in salmonid hemoglobins)
 S 1563 (trout hemoglobins)
 1571 (molecular basis for multiplicity of Pac. salmon hemoglobins)
- Ronald, Keith
 J 22(5): 1299 (blood clotting in Atl. cod)
 T 48 (checklist of parasites of lampreys)
 S 898 (blood of aquatic vertebrates)
- Ronquil, northern (*Ronquilus jordani*)
 J 23(5): 767 (simple technique for obtaining chromosomes)
 25(12): 2665 (associations with other fishes off Oregon coast)
 26(9): 2319 (parasites, B.C.)
 B 180: 319 (full description, etc., B.C.)
 T 205 (taken during B.C. groundfish survey)
- Ronquil, smallmouth (*Bathymaster leurolepis*)
 J 22(5): 1293 (new species, and key to *Bathymaster*)
- Ronquilus jordani* (*see* Ronquil, northern)
- Rorqual, lesser (*see* Whale, minke)
- Roseau River, Man.

- J 28(6): 919 (temperature & light effects on prespawning brook sticklebacks) 1524 (mechanism & specificity of guanine deaminase)
1525 (fish liver enzymes)
- Rosefish (*see* Redfish)
- Rosefish, blackbelly (*Helicolenus dactylopterus*)
J 26(10): 2698 (2 new Canadian Atl. specimens)
- Ross, Avron John
J 22(3): 713 (redmouth disease)
26(1): 115 (endotoxins in salmonids)
29(9): 1359 (effect of 2 iodophors on bacterial & fungal fish pathogens)
- Ross, Herbert Holdsworth
J 25(7): 1423 (N American *Taeniopteryx* stonefly species)
S 1268 (Que. stonefly species)
1375 (position of *Zealeuctra* in Leuctridae family)
1647 (classification, evolution, & dispersal of *Allo-capnia* winter stoneflies)
- Rostherne Mere, England
J 24(6): 1299 (limnology re guanotrophy)
- Rotenone (*see* Piscicides)
- Roth, Hermann
J 29(6): 755 (exploitation & eutrophication effects on salmonid communities in 3 Swiss lakes)
- Rotifera (*see also* Plankton; Zooplankton)
J 26(6): 1536 (*Synchaeta tamara*, Ogac L., Baffin Is.)
(9): 2459 (seasonal abundance, distribution, & composition, L. Erie)
(12): 3101 (of Crecy L., N.B.)
27(8): 1335 (effect of rotenone on, in 2 alpine lakes)
28(2): 245 (vertical distribution & seasonal abundance in 2 small shallow NW Ont. lakes)
(4): 559 (seasonal calorific values, from 3 small E Ont. lakes)
29(4): 363 (*Asplanchna priodonta* feed & feeding habits, USSR)
S 1652 (as affected by enrichment of Great Central L., B.C.)
- Rottiers, Donald Victor
J 27(11): 2047 (temperature tolerance of bloaters)
- Roundworms (*see* Nematoda)
- Roushdy, H. M.
J 23(4): 601 (sardine preservation by irradiation)
- Rowe, Virginia Leslie
T 116 (observations on *Clymenella torquata*)
- Roy, Joan Elaine
S 1011 (phosphorylation in Pac. salmon milts)
1049 (guanine deaminase in lingcod)
1112 (incorporation of radioactive compounds)
1523 (fish muscle phosphorylases)
- Roy, Kenneth L.
S 1524 (mechanism & specificity of guanine deaminase)
- Royer, Leroy Merne
J 23(5): 723 (determination of toxaphene)
25(7): 1511 (Saskatchewan R. lake sturgeon age & growth)
28(1): 105 (residues of DDT, DDE, & DDD in Saskatchewan R. fish)
- RSW (*see* Sea water, refrigerated)
- Rubidium derivatives
J 27(4): 677 (traces in Great Lakes fishes & livers)
- Rudd, John William McCullaugh
J 29(8): 1203 (trisodium nitrilotriacetate biodegradation in a model aerated sewage lagoon)
T 294 (design & operation of model aerated sewage lagoon)
- Rudderfish, banded (*Seriola zonata*)
T 261 (bibliography for Gulf of St. Lawrence)
- Rudderfish, brown (*see* Medusafish)
- Ruff (*Acerina cernua*)
J 26(9): 2532 (polymorphic serum esterases suited for population analysis)
S 1442 (*Triaenophorus* parasitization in, L. Mälaren, Sweden)
- Ruff, black (*Centrolophus niger*) (blackfish)
J 23(8): 1161 (first Canadian Atl. record: description, distribution, morphometry)
26(10): 2698 (another Canadian Atl. specimen)
S 1667 (further records from NW Atl.; body proportions, behavior)
- Ruggieri, George Daniel
J 25(3): 597 (yellowtail flounder *Ichthyophonus* infection)
28(8): 1208 (killifish "hemagglutinogens")
S 1002 (studies on virus diseases of fishes)
- Ruggles, Charles Paul
A 84 (water pollution re fisheries of Canadian Atl. provinces)
- Runner, blue (*Caranx crysos*)
J 26(10): 2769 (first Gulf of St. Lawrence record)
T 261 (bibliography for Gulf of St. Lawrence)
- Runoff (*see also* Dilution effects; Estuary)
J 29(4): 357 (re fish catch, aquatic nutrients, etc., St. Margaret's Bay, N.S.)

- Rushton, Donald Kenneth
S 911 (barachois ponds in Bras d'Or L. area, N.S.)
- Russell, Howard Jamison, Jr.
J 29(12): 1731 (estimating hardshell clam population)
- Russia (*see* Union of Soviet Socialistic Republics (USSR))
- Rutherford, John Bow
B 157 (Canadian lobster fishery)
- Rutilus rutilus* (*see* Roach)
- Ruvettus pretiosus* (*see* Oilfish)
- Ryder, Richard Armitage
J 25(7): 1347 (walleye dynamics & exploitation)
27(5): 923 (walleye polymorphism)
29(6): 617 (limnology & fishes of N America oligotrophic glacial lakes as estimated for 1800 A.D.)
(6): 941 (future of salmonid communities in N American oligotrophic lakes)
- S**
- Saanich Inlet, Vancouver Island, B.C.
J 24(5): 909 (particulate matter continuous size spectrum)
T 99 (water movement features over sill)
110 (biological oceanography observations summary, 1965-68)
300 (physical oceanography & meteorology, May-June 1968)
S 1407 (wastes disposal re physical environment)
1594 (quantitative acoustic scattering measurements)
A 188 (marine biology)
211 (feed chain)
- Sabah (formerly North Borneo)
J 26(4): 793 (checklist of nematodes from fishes, amphibians, and reptiles)
- Sabinea septemcarinata* (a crangonid shrimp) (*see also* Shrimps)
J 25(2): 347; 26(7): 1899 (in Canadian Arctic marine waters)
- Sable Island, N.S.
J 26(5): 1390 (distribution of 4 insular fishes)
28(5): 755 (observations on whelping Atl. harbour seal colony)
S 1190 (mammals on)
1199 (ancient oyster & bay scallop shells)
1215 (sea surface temperatures, 1900-65)
- Sablefish (*Anoplopoma fimbria*) (blackcod)
J 22(1): 203 (biochemical systematics)
23(1): 153 (underwater observation in off-bottom trawl)
(5): 701 (partial freezing for preservation)
- 24(2): 357 (α -tocopherol & lipids in tissues of unfed held)
(12): 2653 (composition of low-iodine-value fatty acids)
25(4): 825 (feeding behavior in NE Pac.)
(10): 2237, 2247 (subcutaneous dart tag)
(12): 2665 (associations with other fishes off Oregon coast)
26(9): 2319 (parasites, B.C.)
(9): 2529 (in deep-sea line fishing off B.C.)
(10): 2633 (muscle protein polymorphism re population parameters)
27(5): 979 (mortality of dart-tagged, by infection)
(10): 1747 (adaptation of king crab type traps for capturing)
28(10): 1629 (first record of marine fish spontaneous furunculosis)
29(2): 207 (culture: a potential new B.C. industry; flavor of cultured vs. wild as smoked product)
(7): 1089 (subcutaneous hemorrhage in captive, re mortality)
B 180: 455 (full description, etc., B.C.)
CNG 73; 82 (in Hecate Strait exploratory fishing)
CNS 14; 24 (sampling & landings of B.C. commercial catches by areas)
28 (Canadian & U.S. trawl catches off B.C., 1954-65)
CVG 41 (weight changes during holding in refrigerated sea water vs. ice)
T 7; 11; 19; 22; 30; 46; 56; 62; 81; 89; 117; 131; 132; 144; 181; 205; 210; 216; 221; 257; 269; 278; 290; 302; 317; 328 (taken in FRB experimental trawling & groundfish surveys; taken in B.C. & U.S. Pac. coast commercial trawling)
74 (1964-65 biological & morphological study)
78 (octagonal pound for holding live)
107; 189; 243; 301; 309 (tank culture of)
183; 190 (feed)
246 (bibliography)
309 (mercury levels in, re feed of tank-cultured)
S 1088 (brief description of biology & B.C. fishery)
1416 (sea-frozen in prerigor, rigor, & postrigor, re quality of smoked product)
A 21 (description, biology, & handling, of B.C.)
37 (B.C. & U.S. trawl catches off B.C., 1956-63, & fisheries potential)
49 (description, habits, handling, age, & growth)
91 (observed in B.C. landings of fish for mink feed)
- Saccharides (*see also* Sugars)
S 1359 (chemical constitution of a manniopyranosyl glycerate from red seaweed *Rhodomela larix*)
1530; 1548 (*Rhodymenia pertusa* seaweed cell-wall glucan chemical structure)
1585 (amylopectin accumulation in *Clostridium botulinum*)
1598 (proton magnetic resonance determination of polymerization degree & anomeric configuration of 14 oligosaccharides)
- Sæther, Ole Anton

- B 170 (Nearctic Podonominae, Diamesinae, & Orthoclaadiinae)
 174 (Nearctic & Palearctic *Chaoborus*)
 T 124 (Nearctic Chironomidae classification)
 196 (bottom fauna survey, B.C.)
 S 1532 (distribution of invertebrates)
 1533 (chironomids & other invertebrates)
 1536 (deformed larvae in Canadian lakes)
 1588 (nomenclature & phylogeny of genus *Harnischia*)
 1615 (general morphology & terminology of Chironomidae)
 1617 (4 new & unusual Chironomidae)
- Safe, Lorna Margaret
 J 27(3): 601 (scallop sterols relative to cholesterol)
 S 1456 (methyl ether derivatives of sterols)
 1459; 1611 (2 new scallop sterols)
 1663 (separation of steryl acetates by silver-ion chromatography)
- Safe, S. H.
 S 1456 (methyl ether derivatives of sterols)
 1600 (some characteristics of chlorobiphenyls re their determination)
 1603 (synthesis of some chlorobiphenyls)
- Safsten, Gunnar Carl
 J 26(3): 671 (chum salmon scales re age)
- Sagamichthys abei* (see Tubeshoulder, shining)
- Sagavanirktok River system, Alaska
 J 28(1): 115 (meristic differences between anadromous & freshwater-resident Arctic char)
- Sagitta* (see Chaetognatha)
- Saha, Jadu Gopal
 J 28(1): 105 (residues of DDT, DDE, & DDD in Saskatchewan R. fish)
- Saila, Saul Bernhard
 J 22(4): 945 (juvenile winter flounder biomass, Rhode Is.)
 29(8): 1221 (temperature effects on inshore lobster fishery)
- Sailfish (*Istiophorus platypterus*) (*I. albicans*)
 CSG 49 (description & occurrences off Canadian Atl. coast)
- Saint (in addition to following heading, see St.)
- Saint-François, Saint-Joseph, and Saint-Louis Lakes, Que.
 J 25(9): 1831 (maskinonge age & growth)
- Saito, Akira
 J 23(6): 915 (vitamins B in dulse)
 26(8): 2234 (Atl. salmon color)
 28(4): 509 (brook trout pigmentation)
 CHN 32 (fish paste products)
- 36 (carotenoid pigments in trout & salmon flesh)
 S 1071 (cholesterol glucopyranosiduronate)
 1072 (sterols in Irish moss)
 1239 (red algae sterols)
- Sakagawa, Gary Toshio
 J 28(1): 65 (population biology of L. Superior lake trout)
- Sakamoto, Mitsuru
 J 28(2): 203 (phytoplankton production control in FRB Experimental Lakes, NW Ont.)
- Salamanders
 J 28(1): 49 (size, structure, & distributional patterns of *Taricha granulosa* & *Ambystoma gracile* populations in Marion L., B.C.)
 T 258 (toxicity tests of trisodium nitrilotriacetate detergent on larvae, re pollution)
 A 201 (mercury contamination, L. St. Clair, Ont.)
- Salinity (see also Chloride; Chlorinity; Hydrography; Lakes, tidal; Lakes, saline; Oceanography; Salinity, reactions to) (*Note: The numerous data for salinity of sea waters routine observations are not indexed unless having special significance*)
 J 22(1): 239 (deep water of Baker L., N.W.T.)
 (3): 823 (re ostracod distribution, Indian Arm, B.C.)
 (6): 1425 (re intertidal algae distribution)
 26(10): 2746 (in & off Gulf of Maine, 1968)
 29(3): 323 (continuous recording salinity-temperature-pressure oceanographic instrumentation)
 B 125R: 11; 167: 11, 17 (determination methods for sea water)
 CPO 1965-1 (salinometers modifications)
 1965-4 (monthly mean surface, at B.C. coastal stations)
 T 32; 70; 82 (B.C. coast)
 54 (NE Pac. Ocean, 1965 & 1966)
 120; 247 (Bedford Basin, N.S.)
 152 (computer programming salinity-temperature-pressure oceanographic data)
 (regime in St. Margaret's Bay, N.S.)
 S 1280 (St. John's-Flemish Cap section, Nfld.)
 1542 (& temperatures in E Nfld. waters)
 1729 (salinization of groundwater in arid zones)
 A 245 (in E Nfld. waters, 1970)
- Salinity, reactions to (see also Acclimation)
 J 23(2): 293 (re aggregations of chum salmon fry)
 (3): 319 (re Pac. cod embryonic development)
 (9): 1465 (tolerance levels of Atl. cod to low)
 (11): 1815 (re meristic numbers of fishes in saline lakes)
 24(6): 1403 (newly hatched lobster larvae)
 25(3): 495 (English sole early development; correction on J 27(8): 1499)
 (12): 2717 (re upper lethal temperatures of acclimated mummichog & banded killifish)
 26(2): 389 (Dungeness crab larvae growth & survival)
 (3): 639 (American eel renal physiology)

- (3): 701 (estuarine fauna mass mortality due to low salinity)
 (9): 2283 (5 haustoriid amphipod species)
 (11): 2807 (re oxygen consumption & swimming speed of *Tilapia nilotica*)
 (12): 3183 (of eggs of red vs. black threespine sticklebacks)
 (12): 3248 (re swordfish spawning in W Atl.)
 27(1): 193 (chloride regulation in burrowing mud eel during estuarine mudflat variations of)
 (4): 793 (preference development in presmolt coho salmon)
 (6): 1123 (lobster osmoregulation)
 (7): 1209 (*Tilapia nilotica* temperature preference re acclimation temperature & salinity)
 (9): 1569, 1579 (re bacteria depuration rate of quahaug & clam)
 28(3): 343 (re presmolt coho salmon survival & growth)
 (4): 527 (re upper lethal temperatures for ribbed mussel)
 (5): 727 (re petrale sole embryonic development)
 (6): 883 (effects on Pac. cod egg development re geographical distribution)
 (8): 1071 (*Clostridium botulinum* re toxin production in fish flesh)
 (9): 1345 (ability of carp to migrate through brackish B.C. coastal waters)
 (10): 1545 (effects on Pac. herring early development)
 (12): 1823 (effects on striped bass oxygen requirements)
 29(4): 399 (effects of various, on bairdiella, orange-mouth corvina, & sargo)
 (8): 1217 (influence on Atl. salmon plasma osmolality & ionic concentration)
 (10): 1491 (stress: effect on fiddler crab mercury uptake)
 T 136 (re swordfish spawning in W Atl.)
 147; 148; 149 (re Atl. salmon parr, fry, & smolts survival & growth)
 S 1360 (review re fishes body compartments and electrolytes distribution)
 1477 (identification & distribution of Leydig cell homolog in testis)
- Salmincola* (see Lernaeopodidae)
- Salmo* (see also Salmonidae)
aguabonito (see Trout, golden)
aguabonito aguabonito (see Trout, golden)
aguabonito gilberti (see Trout, Kern River)
carpio (see Trout, Lake Garda)
clarki (see Trout, cutthroat)
clarki clarki (see Trout, coastal cutthroat)
clarki henschawi (see Trout, Heenan Lake; Trout, Lahontan cutthroat)
clarki lewisi (see Trout, Yellowstone cutthroat)
copei (see Salmonidae)
fario (see Trout (a European))
gairdneri (see Trout, rainbow; Trout, steelhead)
gairdneri gilberti (see Trout, Kern River)
- trideus* (see Trout, rainbow (Norway))
ischehan (see Trout, Sevan)
leitnica (see Trout, Ohrid)
mykiss aguabonito (see Trout, golden)
perryi (see Salmonidae)
roosevelti (see Trout, golden)
rosei (see Hybrids)
salar (see Salmon, Atlantic; Salmon, Atlantic landlocked)
salar americanus (see J 29(2): 179)
salar europeus (see J 29(2): 179)
salar sebago (see Salmon, Atlantic landlocked)
trutta (see Trout, brown)
trutta trutta labrax (see Trout, brown)
trutta trutta macrostigma (see Trout, brown)
trutta trutta trutta (see Trout, brown)
whitel (see Trout, Kern River)
- Salmon (Pacific) *Note*: In addition to the publications referred to under the following Salmon headings for individual species of Pacific salmon (genus *Oncorhynchus*), a considerable number of additional publications describe some biological aspect of all five of the most important North American commercial species (chinook, chum, coho, pink, and sockeye) considered as a group. These general references have been collected under the heading Salmon (Pacific in general: biology) that follows this note. Principal references dealing with the *technology of Pacific salmon products* are collected under the second following heading Salmon (Pacific in general: technology of products). See also the heading Salmonidae for certain still more general references.)
- Salmon (Pacific in general: biology) (see also Kokanee)
 J 22(1): 203, 215 (biochemical systematics and speciation)
 (5): 1175 (*Piscicola* freshwater leech parasitism)
 (6): 1387 (parasites as information source re biology of)
 (6): 1563 (degradative digestive rate of feed)
 23(1): 101 (biochemical evidence re interspecies relationships)
 (7): 1089 (portable press for making scale impressions)
 24(10): 2201 (catches from Pac. Ocean weathership P)
 26(11): 2987 (parasitization by *Salmincola* copepods)
 27(3): 565 (olfactory bulb stimulation by home waters as guide during homing)
 (3): 596 (simultaneous plasma cortisol & cortisone determination method)
 (5): 947 (large floating structure for holding during behavior studies)
 (7): 1285, (8): 1385 (morphology of virus causing hematopoietic necrosis)
 (7): 1325 (hemoglobins with 3 & 4 different polypeptides)
 (12): 2179 (canthaxanthin derivative for direct pigmentation of canned)
 28(4): 573 (device for enumerating migrating fry)
 B 162: 400 (interspecies hybridization)
 173: 43 (family key), 129 (definition), 131-135 (key)

- to N America species), 164-185 (full descriptions of NW America species)
- 180: 106 (of B.C.)
- CNS 15; 20; 21; 22; 23 (stomach contents, NE Pac. Ocean, 1956-64)
- CPO 1965-10 (measurements associated with stomachs)
- T 11 (in FRB experimental B.C. midwater trawling)
- 24 (enumeration & sampling data, Babine R. counting fence, 1961-66)
- 123 (clearing & staining young, for skeletal studies)
- 140; 174; 177; 183; 190 (taken in B.C. offshore surveys; predator on herring)
- 177; 183; 190 (feed, length, weight, sex, & age, taken during B.C. offshore herring surveys, 1968-70)
- 215 (photoelectric fry counter)
- 283 (environmental-control tank for synchronous study of growth & metabolism of young)
- 312 (computer programming analysis of migratory orientation)
- S 899 (ocean stocks and fishery development)
- 925; 926; 1038; 1137 (annual reports on INPFC Canadian progress in high-seas salmon & oceanography research, 1962-65; *see also* A 86 below)
- 934 (angiography; radiography of cardiovascular system)
- 974 (catches & relative abundance; biological data; in NE Pac. Ocean)
- 1000 (sea life; E-W Pac. migration; feed; research gear)
- 1061 (as a resource of Cape Thompson region, Alaska)
- 1092 (brief descriptions; life history)
- 1230 (spawning populations of Canadian N Pac.)
- 1267 (3 Japanese nematode genera taxonomy, re parasitism of)
- 1298-1300 (parasitic nematodes of swimbladder)
- 1334 (limitations re stream populations production)
- 1335 (production & genetic factors in managed populations)
- 1401 (cyclic nucleotide phosphodiesterase in heart)
- 1502 (automatic wet-feed dispenser for fry)
- 1521 (proteins of soluble fraction of eggs of 5 species)
- 1571 (polypeptides re molecular basis for multiplicity of hemoglobins)
- A 7(F) (descriptions & life history)
- 52 (re oceanography)
- 86 (INPFC oceanic research results, 1966)
- 90; 103 (fishery trends along N America Pac. coast)
- 118 (swimming speed performance levels)
- 204 (& steelhead trout: INPFC studies, 1965)
- 214 (hormones to delay sexual maturity, as an advantage in fish farming to allow greater growth)
- 259 (hereditary & environmental factors affecting populations)
- Salmon (Pacific in general: technology of products)
- J 22(1): 53 (drip and rancidity inhibitors (chinook))
- (4): 955 (canning after holding partially frozen (coho & sockeye))
- 23(6): 917 (partial freezing effect, on oil of subsequently canned (sockeye))
- 24(6): 1203 (binding of oil in canned (sockeye))
- (7): 1613 (standardized color surfaces for grading canned (coho, chum, pink, & sockeye))
- 25(8): 1753 (preservatives effects on flesh (coho))
- 26(2): 357 (effects of adding canthaxanthin to feed of young pink, to enhance flesh color)
- (8): 2234 (color of canned chum, coho, pink, & sockeye flesh vs. color of raw & cooked Atl. salmon flesh)
- 27(12): 2179 (synthesis of pigment for enhancing flesh color of canned)
- (12): 2287 (feed effects on flesh color (sockeye))
- 29(5): 525 (dressing & cooking effects on DDT residues in L. Michigan coho)
- (12): 1769 (possible utilizations of cannery waste water)
- B 160 (chilling & freezing sockeye & coho in refrigerated sea water, & effects on color of canned)
- CHN 36 (determination of total carotenoid pigments in flesh)
- CVG 38 (clarification of cannery waste water for solids & oil recovery re pollution)
- 41; 43; 44 (weight changes of pink and sockeye during holding in refrigerated sea water vs. ice; effects of delayed chilling in refrigerated sea water vs. ice re quality of canned)
- 42 (cannery wastewater clarification & solids recovery)
- T 197; 286 (demonstration plant for cannery waste water treatment & solids recovery)
- 220; 242 (effects of storing sockeye salmon in ice vs. refrigerated sea water vs. salt-fortified sea water, & of mishandling, on quality of canned)
- S 947 (Na, K, Mg ion concentration and weight changes re rigor) (sockeye held in refrigerated sea water)
- 1011 (milt enzyme for nucleoside phosphate synthesis (sockeye))
- 1309 (color sorting of raw sockeye & coho flesh re subsequent color of canned)
- 1417 (partial freezing vs. chilling only, in refrigerated sea water while holding before canning)
- A 26 (weight changes during rigor while held in refrigerated sea water (sockeye))
- 30 (enzymic degradation of muscle glycogen & adenosine phosphate to inhibit flesh browning (sockeye))
- 63 (commercial uses of chum)
- 203 (handling for processing; flesh color enhancement)
- Salmon, Atlantic (*Salmo salar*) (*see also* Salmon, Atlantic landlocked)
- J 22(2): 335 (swimbladder size re buoyancy of parr and smolts)
- (2): 369 (behavior of young in light gradients)
- (2): 421 (toggle tag new design)
- (2): 425 (Cu-Zn solutions lethal levels for young)
- (2): 503 (DDT effect on temperature selection by young)

- (2): 599 (Humber R. and Bay of Islands, Nfld., investigations)
- (2): 625 (Canadian tagged recovery near Greenland)
- (3): 732 (unsuccessful transplant into Kananaskis R., Alta.)
- (6): 1567 (precocious sexual development in laboratory-reared male)
- 23(6): 813 (reducing pulp mill toxicants to young)
- (7): 947 (biology & tagging of parr in Nabisipi R., Que.)
- (7): 1007 (responses of young to light)
- (8): 1187 (effect of seasonal temperature acclimation on blood functions)
- (10): 1575 (hemolysis effect on hemoglobin oxygen affinity)
- (10): 1617 (parr adjustment of buoyancy re water velocity)
- (11): 1795 (hypoxanthine in muscle of chill-stored)
- (11): 1803 (estuarine spawning, P.E.I.)
- (12): 1977 (distribution in association with brook trout)
- 24(1): 21 (seasonal return pattern, Miramichi R., N.B.)
- (4): 701, 709, 731, 769, 807 (& their insect feed, as affected by spraying insecticides to combat spruce budworm in N.B. forests)
- (5): 955 (integument purines during parr-smolt)
- (7): 1507 (thermal acclimation & temperature selection)
- (7): 1515 (starvation effect on selected temperature)
- (9): 1911 (as parasite host, Nfld.)
- (12): 2595 (tagging vs. marking effects on growth & survival)
- (12): 2639 (caught in Irminger Sea re Europe-Greenland migration)
- 25(1): 1 (competitive & feeding behavior of hatchery vs. wild parr, in aquaria)
- (1): 189 (DDT residues & metabolites in)
- (2): 363, (6): 1295 (frozen preservation of sperm)
- (9): 1901 (temperature & photoperiod effect on guanine & hypoxanthine formation in parr-smolt transformation)
- (10): 2165 (smolt survival & adult utilization, Little Codroy R., Nfld.)
- (10): 2237 (subcutaneous dart tag)
- (11): 2321 (degradation of DDT in)
- (11): 2387 (aggression & social hierarchy in starved young)
- (11): 2439 (spawning history record from scales)
- (11): 2519 (marking by high-frequency electric sparks)
- (12): 2651 (hemoglobin multiplicity increase with fish length)
- 26(1): 47 (DDT in vitro degradation by intestinal bacteria)
- (1): 93 (temperature changes effects on activity & respiration)
- (2): 269 (migration of NW Margaree R., N.B., to various commercial & sport fishery areas)
- (2): 413 (cations, osmotic pressure, & pH of seminal constituents)
- (3): 695 (mass mortalities & behavior in pesticide-polluted stream)
- (4): 909 (*Pomphorhynchus laevis* acanthocephalan parasite used as distribution indicator)
- (4): 975 (*Bothrimonus* cestode parasite biology)
- (6): 1661 (scale characteristics during fifth & sixth spawning trips)
- (6): 1694 (muscle damage from nylon gillnetting)
- (7): 1867 (stream dispersal of wild vs. hatchery-reared juveniles)
- (8): 2093 (swimbladder, etc., re parr & smolt buoyancy)
- (8): 2234 (color in raw & cooked flesh vs. canned Pac. salmon flesh)
- (9): 2535 (bacterial kidney disease, re possible distinction between E & W Atl. Ocean populations)
- (11): 2987 (parasitization by *Salmincola* copepods)
- (11): 3055 (toxicity of a kraft mill effluent component to)
- (12): 3254 (freezing spermatozoa with extender)
- (12): 3259 (infectious pancreatic necrosis virus in hatchery-held young)
- 27(1): 21 (yellow phosphorus toxicity to)
- (4): 701 (transition metals ion effects on muscle extractable protein & lipids oxidation catalysis)
- (5): 961 (locating nematode parasites by ultraviolet fluorescence)
- (5): 983 (body size & water temperature re purine silvering of skin during parr-smolt transformation)
- (7): 1295 (photoperiod effect on smolt development & growth)
- (8): 1491 (occurrence of male predominance among repeat spawning)
- (9): 1617 (serum transferrin polymorphism re genetics)
- (10): 1894 (helminth parasites of Avon Peninsula, Nfld.)
- (11): 1927 (parr taste responses mechanism & types)
- (11): 2109 (muscle proteins electrophoretic patterns re landlocked Atl. salmon patterns)
- 28(1): 59 (DDT residues in N.B.)
- (3): 351 (from Miramichi R., N.B.: relative utilization rates by Miramichi sport fishery vs. Canadian commercial fisheries)
- (4): 565 (olfactory epithelium electrical responses)
- (5): 764 (fecundity in 2 Maine rivers)
- (7): 947 (blood pathway effects on blood-pressure drop in gills)
- (9): 1285 (trimethylmercury in N.B. fresh water)
- 29(1): 27 (effects of DDT vs. an organophosphate insecticide on young, re resultant vulnerability to predation by brook trout)
- (1): 85 (muscle cathetic activity)
- (2): 179 (biological factors indicating possible subspeciation between N American & European: *Salmo salar americanus* & *S. s. europeus*)
- (3): 311 (adrenocortical cell morphology & plasma

- hydrocorticosteroids reversible changes during freshwater spawning journey)
- (3): 315 (parr ability to learn & retain conditioned response, after subjection to acetone & 4 insecticides)
- (8): 1217 (salinity, temperature, & exercise influence on plasma osmolality & ionic concentration)
- (8): 1225 (spent sulfite liquor acute toxicity to)
- (9): 1295 (acute toxicity of yellow elemental phosphorus to)
- (10): 1373 (growth in NW Atl. Ocean)
- (10): 1397 (louver deflectors for guiding smolts from power turbines)
- (10): 1500 (copper toxicity reduced by presence of spent sulfite liquor)
- B 154: 99 (as Nfld. resource)
- 155: 107 (full description & illustration)
- 173: 131 (mention in key to NW America salmon & trout)
- 180: 131 (result of efforts to establish in B.C.; also description & illustration)
- CAR 1 (used in testing toxicity effects of elemental phosphorus)
- CHN 36 (determination of total carotenoid pigments in flesh)
- CJG 16 (W Greenland & high-seas fishery)
- 17 (illustrated keys to metazoan parasites, Nfld.)
- T 4 (analysis of 1965 smolt run, Miramichi R., N.B.)
- 5 (evaluating N.B. forest spraying effects on fisheries)
- 9 (retention of "grow-thru" tags)
- 29 (commercial Canadian catches, 1949-65)
- 38 (estuarine net counting fence for trapping)
- 83 (bibliography of parasites & diseases)
- 84 (captured & marked at Little Codroy R., Nfld., counting fence)
- 91 (analysis of 1966 smolt run in NW Miramichi R.)
- 93 (freezing sperm with extenders & protective agents)
- 130 (catches & weights angled in Nfld. streams)
- 134 (parasites as biological indicators)
- 147 (parr survival & growth re salinity)
- 148 (fry survival & growth re salinity & diet)
- 149 (smolt and postsmolt growth re salinity, temperature, & diet)
- 201 (for testing toxicity of dispersants for fuel oil spills)
- 206 (possible role of social & territorial behavior in parr-smolt stages)
- 208 (used in testing toxicity effects of elemental phosphorus)
- 217 (characterization of petroleum oils in spills causing pollutant toxicity to)
- 226 (grilse mortalities from *Aeromonas liquefaciens* bacteria disease, NW Miramichi R.)
- 261 (bibliography for Gulf of St. Lawrence)
- 270 (digest of Canadian catches by provinces 1910-70; by provincial fishery districts 1950-69; by months 1947-69; by gear types; by angling 1952-70)
- 272 (halogenated hydrocarbon residues detected in)
- 287 (synthetic surfactants influence on olfactory epithelium function)
- 325 (forest-based industries impact on, in N.B. rivers)
- MSP 14 (popular description in English & French)
- S 893; 905; 965; 1007; 1085 (Federal-Provincial investigation & management research programs, 1961-65)
- 920 (forest spraying re angling)
- 931 (avoidance of Cu-Zn solutions)
- 960 (apparatus for studying pollutant avoidance by young)
- 961 (Zn and Cu effects on migration)
- 999 (sublethal Cu-Zn pollution effect on young)
- 1035; 1082 (W Greenland fishery)
- 1083 (age, etc., from scales)
- 1101 (description, life history, etc.)
- 1115 (transcortin binding of cortisol in female plasma)
- 1131 (in vitro hormone synthesis by gonad materials)
- 1135 (metabolism of pyruvate & glyoxylate by sperm)
- 1196 (Cu & Zn mining pollution effects on spawning)
- 1206 (characteristics of, from Labrador Sea and off W Greenland)
- 1217 (revised growth rate estimates, Greenland to N.B. migratory)
- 1218 (tagging results, Maritime Provinces, 1964-66)
- 1236 (lipids biosynthesis from added substrates by sperm)
- 1242 (evaluation of 2 ways of attaching tags to smolts)
- 1257 (estuarine net counting fence for trapping)
- 1276-1278 (toxicity of kraft mill effluent to young)
- 1317 (distribution & characteristics, banks & deeps off Nfld.)
- 1322 (pyruvate & glyoxylate metabolism by eggs)
- 1342 (aminotransferases in eggs & sperm)
- 1397 (avoidance reactions to representative pollutants)
- 1406 (bacterial infection re mine-effluent pollution, Miramichi R.)
- 1409 (gill blood pathways)
- 1477 (identification & distribution of Leydig cell homolog in testis)
- 1489 (binding affinities of blood proteins for sex hormones & corticosteroids in)
- 1502 (automatic wet-feed dispenser for fry)
- 1545 (electrophoretic analysis of protein & esterase systems of hybrids with brown trout)
- 1552 (decrease of DDT residues in parr after N.B. forest spraying)
- 1556 (temperature effects on brain tissue oxygen consumption)
- 1562 (major androgens in testicular & peripheral plasma of sexually maturing)

- 1569 (determination of residual fuel oil contamination in)
- 1604 (chlorinated pesticide residues in, Miramichi R.)
- 1612 (serum esterase molecular weight heterogeneity re that of 3 other salmonids)
- 1710 (toxicity of polyoxyethylene ester & ether oil dispersants)
- 1711 (behavioral adjustment of population density to available feed of young)
- A 24 (description; biology; feed; value; culture)
- 25 (Canadian-tagged recovered near Greenland)
- 43; 108; 119; 152; 153; 181; 182; 241 (ICNAF Canadian research summaries)
- 56 (high-seas tagging)
- 83; 84 (effects of DDT forest spray residues on)
- 108 (1966 Canadian ICNAF studies: commercial catches; smolt tagging)
- 111 (combating mining effluents affecting)
- 123 (review of Nfld. research, biology, fishery, etc.)
- 142 (dams, foreign fisheries, & pollution as threat to Canadian)
- 155 (returns & utilizations of 1964-67 Miramichi R. taggings)
- 192 (recent marine fishery developments; effect of W Greenland fishery on Canadian fishery)
- 194 (Nfld. fishery)
- 202; 205 (summaries of A 192 above)
- 214 (hormones to delay sexual maturity, as an advantage in fish farming to allow greater growth)
- 222 (effects of pollutants on physiology & behavior)
- Salmon, Atlantic landlocked (*Salmo salar*) (*S. salar sebago*; lake Atlantic salmon; ouananiche; sebago salmon) (*see also* Salmon, Atlantic)
- J 23(10): 1575, 1581 (hemolysis effect on hemoglobin oxygen affinity)
- 26(6): 1585 (differences between 2 Nfld. populations)
- (11): 3091 (pugheadedness does not affect life of)
- 27(1): 1 (insecticides residues variation analysis)
- (9): 1656 (seasonal depth distribution in a small lake)
- (11): 2109 (muscle protein electrophoretic patterns re anadromous Atl. salmon patterns)
- 28(4): 505 (histology of adrenocortical cells of hatchery vs. wild)
- (4): 537 (jaw tagging effects on growth & scale characteristics)
- Salmon, biwa (*see* Salmon, redspot)
- Salmon, blueback (*see* Salmon, coho)
- Salmon, chinook (*Oncorhynchus tshawytscha*) (spring or tyee salmon; king or quinnat salmon in USA) (*see also* Salmon (Pacific in general: biology); Salmon (Pacific in general: technology of products))
- J 22(1): 167 (mass transfer theory for egg respiration)
- (3): 849 (myxosporidian parasite)
- 24(1): 209 (juvenile adipose fin pigmentation for distinction from juvenile coho salmon)
- (4): 843 (*Dermocystidium* fungus attack on pre-spawning adults)
- (4): 849 (marking by incorporating antibiotic in vertebrae)
- (4): 867 (histopathology of "gas bubble" diseased fingerlings)
- 25(1): 71 (fluorimetric method for blood plasma cortisol)
- (3): 473 (blood lactate re stress & mortality)
- (3): 611 (guanidine derivatives effect on skin pigment of young)
- (4): 690 (fingerling stocking of L. Michigan)
- (5): 867 (olfaction & vision role in spawning bed choice)
- (7): 1453 (station permanence of juvenile)
- (7): 1497 (pituitary extract effect on hypophysectomized goldfish)
- (9): 1971 (accuracy of aging from scales)
- (9): 2005 (social behavior among juvenile)
- (10): 2233 (fluorescent pigment tattoo marking of fingerlings)
- (11): 2467 (mortality from fungus attack)
- (11): 2519 (marking by high-frequency electric sparks)
- 26(8): 2111, 2123 (olfactory discrimination of natural waters)
- (9): 2319 (parasites, B.C.)
- (10): 2765 (branding young with tool cooled by liquid nitrogen)
- 27(7): 1215 (stream habitat utilization with cohabiting coho salmon underyearlings)
- (7): 1251 (biomass, Strait of Georgia)
- 28(4): 517 (first vibriosis records in Canadian cultured; correction on J 28(8): 1219)
- (5): 745 (egg fertilization by frozen sperm plus extenders)
- (8): 1173 (glycoprotein constituents levels in blood sera)
- (11): 1739 (susceptibility of young to columnaris disease)
- (12): 1921 (predation of young by Pac. herring)
- 29(1): 91 (habitat selection & spatial interaction with steelhead trout in 2 Idaho streams)
- (2): 167 (gill enzyme activity changes re parr-smolt transformation)
- (4): 435 (gonadotropin effect on catfish oocytes maturation)
- (11): 1513 (antibiotics toxicity & efficacy against bacterial kidney disease & furunculosis of adult chinook salmon; teratism of progeny)
- (12): 1737 (social interaction of fall, with young coho salmon, Sixes R., Oregon)
- B 162: 400 (hybridization with other salmon species)
- 173: 174 (full description, etc., of NW Canada & Alaska)
- 180: 124 (full description, etc., B.C.)
- CNG 90 (production by US hatcheries)
- T 11; 22; 62; 81; 205; 210 (taken during FRB groundfish surveys)
- 140; 174; 213 (taken during FRB herring surveys offshore B.C.)
- 174; 177; 183; 190; 213 (feed, size, etc.)

- 308 (observations on juvenile, Somass R. estuary, Port Alberni, B.C.)
- 331 (summary of counts & observations from Babine R., B.C., counting fence, 1967-71)
- S 962; 1245; 1249; 1292; 1336; 1535; 1593; 1630; 1670; 1682; 1695 (pituitary gonadotropin: effect on hastening gonads development of various immature fishes, or restoring gonadal functions of hypophysectomized fishes)
- 1080 (fatty acids positional distribution in triglycerides)
- 1153 (plasma cortisol changes after stress of freshwater adults)
- 1240 (goldfish spermiation as bioassay for gonadotropin in)
- 1308 (blood plasma protein binding of steroids)
- 1376 (gonadotropic activity of pituitary extract for male lizard)
- 1508 (purification & properties of testes acid deoxyribonuclease)
- 1571 (polypeptides re molecular basis for multiplicity of hemoglobins)
- A 106 (history of transplantations to L. Ontario & St. John R.)
- 235 (estimated biomass, Strait of Georgia)
- 259 (hereditary & environmental factors affecting populations; homing)
- Salmon, chum (*Oncorhynchus keta*) (dog salmon) (*see also* Salmon (Pacific in general: biology); Salmon (Pacific in general: technology of products))
- J 22(4): 919 (stream sediment rate effects on)
- (6): 1477 (supplementary checks on scales)
- 23(1): 85 (stomach contents in NE Pac. Ocean)
- (2): 293 (factors affecting fry schooling)
- (9): 1403 (times of scale annulus formation, Gulf of Alaska)
- 24(7): 1579 (as test for anesthesia & surgical techniques)
- 25(3): 599 (first report of fry feeding in B.C. freshwater)
- (5): 1067 (otolith age vs. scale age)
- (5): 1085 (feed in NE Pac. Ocean)
- 26(3): 671 (aging from scales)
- (4): 893 (maturation of 2 hemiurid trematode species in)
- (5): 1199 (aging from pectoral fin rays)
- (6): 1631 (growth of young on euphausiid vs. copepod feed)
- (8): 2219 (feed of juvenile in Chatham Sound area, B.C.)
- (9): 2319 (parasites, B.C.)
- 27(1): 196 (some environmental factors effects on, from egg to fry)
- (2): 371 (growth & chemical composition of fry in spawning channel vs. natural environments)
- (6): 991 (fry eaten by Dolly Varden smolts)
- (8): 1429 (evaluation of revised hatchery method for fry)
- (12): 2197 (egg size, incubation rate, & larval development of crosses with sockeye & pink salmons)
- 28(4): 517 (first vibriosis records in Canadian cultured; correction on J28(8): 1219)
- (10): 1629 (first spontaneous furunculosis record in marine environment of)
- (10): 1503 (fry size re predation by coho salmon)
- (10): 1511 (bacterial flora associated with surface of stream-incubating eggs, re egg mortality)
- 29(5): 567 (bacterial population of hatchery eggs)
- B 162: 400 (hybridization with other salmon species)
- 173: 178 (full description, etc., of NW Canada & Alaska)
- 180: 112 (full description, etc., B.C.)
- CNS 16; 26; 27 (age, size, & sex composition of B.C. commercial catches, 1957-67)
- T 177 (feed)
- 213 (size, feed, etc., taken during B.C. offshore herring surveys)
- 331 (summary of counts & observations from Babine R., B.C., counting fence, 1967-71)
- S 1064 (life history review of B.C.)
- 1297 (enzymic degradation of egg capsule during hatching)
- 1302 (in open N Pac. Ocean waters)
- 1305 (marine microorganisms associated with feed of young)
- 1308 (blood plasma protein binding of steroids)
- 1390 (origin in N Pac. offshore waters, from scale studies vs. tagging; ages; distribution)
- 1394 (feed of Strait of Georgia juvenile)
- 1571 (polypeptides re molecular basis for hemoglobins multiplicity)
- A 63 (description, migrations, reproduction, uses)
- 106 (history of transplantations to James Bay tributaries)
- 211 (re feed availability to different trophic levels in marine feed chain)
- 259 (hereditary & environmental factors affecting populations; homing)
- Salmon, coho (*Oncorhynchus kisutch*) (blueback salmon; silver salmon in USA) (*see also* Salmon (Pacific in general: biology); Salmon (Pacific in general: technology of products))
- J 22(1): 173 (environmental and behavioral ecology of juvenile)
- (3): 849 (myxosporidian parasite)
- (4): 1035 (behavior, ecology, interaction, re young steelhead)
- 23(1): 85 (stomach contents in NE Pac. Ocean)
- (1): 153 (underwater observations in off-bottom trawl)
- (2): 181 (swimming speed on spawning migration)
- (7): 1043 (ocean migration & distribution of fin-marked)
- (7): 1095 (pigments in belly skin)
- (9): 1439 (blood volume determination)
- 24(1): 209 (juvenile adipose fin pigmentation for distinction from juvenile chinook salmon)
- (5): 1173 (toxicity of formamidin & hexachlorocyclohexane to young)
- (6): 1421 (eating exotic earthworms)

- (8): 1833 (*Clostridium botulinum* spore germination in fillet extracts)
- (10): 2201 (catches from ocean weathership P)
- 25(1): 49 (dissolved O₂ & CO₂ re juvenile swimming performance)
- (1): 71 (fluorimetric method for blood plasma cortisol)
- (1): 101 (hematological changes on folic acid deficient diet)
- (4): 690 (fingerling stocking of L. Michigan)
- (4): 823 (fry-counting method in small streams)
- (4): 825, (5): 1085 (feeding behavior in NE Pac. Ocean)
- (6): 1247 (transaminases distribution & activity in various tissues)
- (8): 1745 (muscle homogenate as substrate for experimental growth of *Clostridium botulinum*)
- (10): 2233 (fluorescent pigment tattoo marking of fingerlings)
- (10): 2237 (subcutaneous dart tag for smolts)
- (11): 2403 (morphological & biochemical changes during parr-smolt transformation)
- (11): 2519 (marking by high-frequency electric sparks)
- 26(1): 63 (fry competitiveness re hypoxial stress of egg & fry)
- (1): 111 (anemia from folic acid deficiency in feed)
- (1): 115 (metabolic effects of bacterial endotoxins)
- (1): 133 (fry trap for estimating egg-to-fry-emergence survival)
- (5): 1185 (ultraviolet-absorbing & -fluorescing substances in fry belly skin)
- (6): 1619 (tests of fluorescent pigment marking vs. finclipping re fry survival)
- (8): 2111, 2123 (olfactory discrimination of natural waters)
- (8): 2219 (feed of juvenile in Chatham Sound area, B.C.)
- (9): 2319 (parasites, B.C.)
- (10): 2765 (branding of young with tool cooled by liquid nitrogen)
- (11): 3083 (detector for magnetized wire tags)
- (12): 3209 (DDT lack of effect on hepatic dehydrogenase activity)
- 27(2): 347 (body weight re chronic oral DDT toxicity)
- (4): 793 (salinity preference development at presmolt stage)
- (7): 1191 (factors affecting intragravel movement & alevin emergence)
- (7): 1215 (stream habitat utilization with cohabiting chinook salmon underyearlings)
- (7): 1251 (biomass, Strait of Georgia)
- (12): 2371 (blood transferrin polymorphism re potential use for identifying stocks)
- 28(3): 343 (salinity effects on presmolt survival & growth)
- (4): 533 (fish ladder role in transmitting columnaris disease, Columbia R.)
- (4): 606 (blood chemistry values for juvenile)
- (5): 745 (egg fertilization by frozen sperm plus extenders)
- (8): 1173 (glycoprotein constituents levels in blood sera)
- (9): 1253 (antibody production & immunity responses to columnaris disease)
- (10): 1503 (chum & pink salmon fry size re predation by)
- (12): 1899 (stresses caused by formalin disinfection of young)
- (12): 1853 (egg proteins classification)
- 29(2): 167 (gill enzyme activity changes re parr-smolt transformation)
- (2): 204 (virulence & persistence of *Aeromonas salmonicida* furunculosis inoculation by rough & smooth forms)
- (3): 251 (temperature acclimation experience effect on swimming speed)
- (5): 525 (dressing & cooking effects on DDT residues in L. Michigan)
- (5): 567 (bacterial population of hatchery eggs)
- (5): 601 (thermal stress effect on predator avoidance of young)
- (9): 1283 (cadmium content, in New York State waters)
- (9): 1351 (olfactory bulb electrical responses to various organic stimuli, & effect of mercuric & copper ion on)
- (12): 1737 (social interaction of young with fall chinook salmon, Sixes R., Oregon)
- (12): 1780 (physiological consequences of handling stress in young)
- B 162: 244 (predator on young sockeye salmon), 400 (hybridization with other salmon species)
- 173: 170 (full description, etc., of NW Canada & Alaska)
- 180: 115 (full description, etc., B.C.)
- CNG 90 (production by US hatcheries)
- CPO 1965-6 (NW Strait of Georgia commercial troll catches)
- T 140; 174 (taken during W coast Vancouver Is. herring surveys)
- 174: 62 (feed)
- 200 (X-ray spectrometric analysis for discrimination from different geographic areas)
- 210 (taken during B.C. groundfish surveys)
- 272 (halogenated hydrocarbon residues detected in L. Michigan)
- 321 (effect of fingerlings predation on pink salmon fry population growth)
- 323 (possible effects of logging on, in a Vancouver Is. stream)
- 331 (summary of 1967-71 counts & observations from Babine R. counting fence, B.C.)
- S 962 (pituitary hormones effect on immature trout gonads)
- 964 (mathematical treatment of toxic environment effect on young)
- 973 (life history, stocks, distribution, etc., in NE Pac. Ocean)
- 1184 (fatty acids composition of fingerlings)
- 1262 (gear modifications for electrofishing of underyearling)
- 1298 (inosinic & uridylic acids de novo biosyntheses in testes & liver)

- 1297 (enzymic degradation of egg capsule during hatching)
- 1299; 1300 (*Salvelinema walkeri* nematode parasite in swimbladder)
- 1305 (marine microorganisms associated with feed of young)
- 1308 (blood plasma binding of steroids)
- 1332 (ecological implications of diet of young in streams)
- 1389 (chloramphenicol antibiotic retention in tissues)
- 1571 (polypeptides re molecular basis for multiplicity of hemoglobins)
- 1605 (fry diet, re diel stream-drift of chironomids in artificial stream)
- 1668 (mercury in, Great Lakes)
- 1718 (pesticide residues in, Great Lakes)
- A 48 (brief description; fishery methods)
- 106 (history of transplantations to L. Michigan, Huron, & Superior)
- 200; 201 (mercury contamination, Great Lakes)
- 235 (estimated biomass, Strait of Georgia)
- 259 (hereditary & environmental factors affecting populations; homing)
- Salmon, dog (*see* Salmon, chum)
- Salmon, humpback (*see* Salmon, pink)
- Salmon, hybrid (*see* Hybridization)
- Salmon, king (*see* Salmon, chinook)
- Salmon, kokanee (*see* Kokanee)
- Salmon, landlocked (*see* Kokanee; Salmon, Atlantic landlocked)
- Salmon, masu (Japan) (*Oncorhynchus masou*) (*see also* Salmon (Pacific in general: biology))
- J 23 (1): 101 (biochemical evidence re *Oncorhynchus* interspecies relationships)
- S 899 (ocean stocks and fishery developments)
- 1267 (nematode parasites)
- A 106 (suitability for possible transplantation into the Great Lakes)
- Salmon, pink (*Oncorhynchus gorbuscha*) (humpback salmon) (*see also* Salmon (Pacific in general: biology); Salmon (Pacific in general: technology of products))
- J 22 (3): 849 (myxosporidian parasite.)
- (4): 919 (stream sedimentation rate effects on)
- (6): 1477 (supplementary checks on scales)
- (6): 1523 (sea mortality rate estimation)
- 23 (1): 85 (stomach contents in NE Pac. Ocean)
- (5): 747 (scale formation re age determination)
- (6): 939 (scale characteristics of B.C. to Nfld. transplants)
- (9): 1353 (chemical composition changes during early sea life)
- (9): 1403 (times of scale annulus formation, Gulf of Alaska)
- 24 (1): 77 (fry behavior in hatchery tank & after release)
- (7): 1573 (ova & sperm fertility duration)
- (7): 1629 (randomness in redds distribution)
- (11): 2321 (orientation during early marine migration)
- 25 (4): 757 (marine mortality schedules)
- (5): 1085 (feed habits in NE Pac. Ocean)
- (6): 1247 (transaminases distribution & activity in various tissues)
- (9): 1993 (another 3rd-year)
- (12): 2695 (chilled storage effect on ova & sperm)
- 26 (2): 357 (adding canthaxanthin to feed of young, to enhance flesh color)
- (4): 813 (early sea life parasites of Bella Coola, B.C.)
- (4): 893 (maturation of 2 hemiurid trematode species in)
- (4): 975 (*Bothrimonus* cestode biology in)
- (8): 2219 (feed of juveniles in Chatham Sound area, B.C.)
- (9): 2319 (parasites, B.C.)
- 27 (2): 317 (marked with coded embedded encapsulated metal oxides decodable by X-ray fluorescent spectroscopy)
- (6): 991 (fry eaten by Dolly Varden smolts)
- (8): 1429 (evaluation of revised hatchery method for fry)
- (12): 2197 (egg size, incubation rate, & larva development, of crosses with sockeye & chum salmons)
- 28 (4): 517 (first vibriosis records in Canadian cultured; correction on J28(8): 1219)
- (5): 647 (results for 3 generations from transplants of eggs to Qualicum R., B.C.)
- (6): 821 (gillnet selectivity re Skeena R. fishery, B.C.)
- (10): 1503 (fry size re predation by coho salmon)
- (10): 1511 (bacterial flora associated with surface of stream-incubating eggs, re egg mortality)
- 29 (1): 13 (accelerating male pink salmon maturation by salmon gonadotropin, & their fertilizing effectiveness for normal female pinks)
- (3): 295 (identifying major B.C. & Alaska even- & odd-year runs by scales)
- (8): 1151 (survival to adult stage from revised hatchery method vs. natural propagation)
- B 154: 102 (as possible Nfld. native re source, by introduction from B.C.)
- 162: 400 (hybridization with other salmon species)
- 173: 182 (full description, etc., of NW Canada & Alaska)
- 180: 108 (full description, etc., B.C.)
- CJG 14: 32; 15: 24; 16: 22 (increasing establishment in Nfld. through egg transplants from B.C.)
- CNS 16; 27 (age & length composition of B.C. commercial catches)
- T 17 (micromagnetic tags for fry)
- 111 (ova & milt re spawn collection)
- 117; 190 (feed)
- 213 (size, feed, etc., taken in B.C. offshore herring surveys)

- 234 (data & computations for racial analysis of N American, on basis of scale characteristics)
- 321 (model for fry population growth subjected to predation by coho salmon fingerlings)
- 331 (summary of 1967-71 counting & observations from Babine R. counting fence, B.C.)
- S 937 (parasitism by *Pentagramma petrowi* trematode)
- 951 (parasitism by *Caligus gurnardi* copepod)
- 952 (migration, composition, exploitation, & abundance, of odd-year Fraser R. run)
- 1007; 1085; 1105 (results of transplantation to North Harbour R., Nfld.)
- 1063 (life history review of B.C.)
- 1156 (distribution, area of origin, etc., in N Pac. Ocean)
- 1165 (microbial flora of stream-incubated eggs)
- 1394 (feed of Strait of Georgia juvenile)
- 1571 (polypeptides re molecular basis for multiplicity of hemoglobins)
- A 19 (forecast of runs by high-seas tagging)
- 106 (history of egg transplantations to Hudson Bay tributaries & L. Superior)
- 106; 108; 119; 123: 348; 152; 181 (egg transplantations from B.C. to Nfld., & results of these in establishing Nfld. native runs)
- 211 (egg culture, also feed availability for young re different trophic levels in feed chain)
- 258 (pollution effects on, in B.C. inshore waters)
- 259 (hereditary & environmental factors affecting populations; homing)
- Salmon, quinnat (*see* Salmon, chinook)
- Salmon, red (*see* Salmon, sockeye)
- Salmon, redspot (Japan) (*Oncorhynchus rhodurus*) (biwa salmon) (*see also* Salmon (Pacific in general: biology))
- S 1267 (nematode parasites)
- A 106 (suitability for possible transplantation into the Great Lakes)
- Salmon, seabago (*see* Salmon, Atlantic landlocked)
- Salmon, silver (*see* Salmon, coho)
- Salmon, sockeye (*Oncorhynchus nerka*) (blueback salmon in Columbia River; red salmon in Alaska; for landlocked variety *see* Kokanee) (*see also* Salmon (Pacific in general: biology); Salmon (Pacific in general: technology of products))
- J 22 (1): 33 (estimating ocean mortality; applications)
- (3): 755 (histology of postspawning death after maturing and spawning in captivity)
- (4): 891 (acetone bodies in blood of starved prespawning)
- (4): 1025 (recording smolt movements by time-lapse photography of sonar traces)
- (6): 1491 (size re swimming speed and O₂ consumption)
- (6): 1503 (egg and sperm holding time re fertility)
- 23 (1): 85 (stomach contents in NE Pac. Ocean)
- (2): 181 (swimming speed on spawning migration)
- (3): 459 (scale characteristics of Asian vs. Bristol Bay)
- (5): 689 (depensatory process based on hunger concept)
- (9): 1403 (times of scale annulus formation, Gulf of Alaska)
- (9): 1439 (blood volume determination)
- (12): 1965 (first record of *Cryptobia salmositica* flagellate in)
- 24 (1): 67 (effects of feeding on thyroid, kidney, & pancreas of sexually ripening)
- (2): 243 (flesh Na, K, & water content re sexual maturity & starvation)
- (2): 375 (ecology & behavior of Babine R. fry)
- (4): 849 (marking by incorporating antibiotic in vertebrae)
- (4): 893 (*Triaenophorus crassus* in Alaska smolts)
- (5): 1117, (8): 1731 (stamina of naturally vs. artificially reared fry, re predation vulnerability & swimming ability)
- (7): 1573 (ova & sperm fertility duration)
- (8): 1775 (cardiovascular dynamics of swimming adults)
- (8): 1791 (pituitary gland during sexual maturation & spawning)
- (9): 1955 (mate selection in mixed age-groups population)
- (9): 1999 (gill raker number & length plasticity)
- (10): 2069 (fry & smolts migratory behavior in SW Alaska lakes)
- (10): 2195 (unusual skin pigmentation)
- (12): 2613 (genetic control in fry lakeward migrations)
- 25 (1): 71 (fluorimetric method for blood plasma cortisol)
- (3): 473 (blood lactate re stress & mortality)
- (3): 485 (behavior & distribution when spawning on Alaskan lake beaches)
- (5): 1067 (otolith age vs. scale age)
- (5): 1085 (feed habits in NE Pac. Ocean)
- (6): 1115 (sounding response)
- (6): 1219 (ocean mortality estimation for Bristol Bay)
- (6): 1247 (transaminases distribution & activity in various tissues, & in kidney diseased)
- (7): 1465 (metopirone effect on pituitary-interrenal function)
- (10): 2237 (subcutaneous dart tag)
- (12): 2695 (chilled storage effect on ova & sperm)
- 26 (1): 15 (blood serum lactate dehydrogenase isozymes variants in different populations)
- (2): 229 (fry distribution, growth, & survival, from natural vs. artificial stream rearing, Babine L., B.C.)
- (3): 655 (variance components in estimating egg deposition potential, Bristol Bay)
- (4): 849 (*Cystidicola* nematode in swimbladder)
- (4): 941 (invasion route of dracunculoid nematode to swimbladder)
- (5): 1147 (pituitary cytology after gonadectomy)
- (5): 1199 (aging from pectoral fin rays)

- (5): 1263 (finclipping effect on survival)
- (5): 1363 (re primary productivity of Owikeno L., B.C.)
- (5): 1383 (swimming thrust re gillnet mesh selectivity)
- (7): 1789 (estrogens & cortisol injection effects on cortisol secretion of gonadectomized female)
- (7): 1837 (immunohistochemical localization of ACTH & prolactin in pituitary)
- (8): 2219 (feed of juvenile in Chatham Sound area, B.C.)
- (9): 2319 (parasites, B.C.)
- (9): 2363 (fingerling growth rate & body composition re temperature & ration size)
- (10): 2643 (oxygen metabolism re body weight)
- (10): 2741 (weight on length regression re rapid average weight estimation of young)
- (10): 2765 (branding young with tool cooled by liquid nitrogen)
- (11): 2975 (gonadectomy re interrenal tissue hypertrophy in sexually maturing)
- 27(2): 265 (control of infectious hematopoietic necrosis virus disease)
 - (2): 281 (diel vertical movements & feeding of young, re limnetic zooplankton, Babine L., B.C.; correction on J 27(8): 1499)
 - (2): 371 (growth & chemical composition of fry in spawning channel vs. natural environments)
 - (5): 929 (body composition changes estimable from growth parameters of young)
 - (5): 973 (tissue carotenoids in prespawning and spawning)
 - (6): 1169 (interrenal tissue response to mammalian ACTH, re sexual maturity)
 - (10): 1767 (fingerling digestion rate re temperature)
 - (11): 2003 (activators & inhibitors of 5-nucleotidase in testes of immature)
 - (12): 2197 (egg size, incubation rate, & larva development of crosses with pink & chum salmons)
 - (12): 2287, 2323 (cortisol & cortisone secretion rates re gonadectomy at & during sexual maturity)
 - (12): 2287 (feed & gonadectomy effects on flesh color)
- 28(1): 110 (rate of alevin evacuation from stomach of mountain whitefish)
 - (3): 369 (X-ray spectrometry & multivariant analysis for chemical element composition as indicator of geographic origin)
 - (3): 409 (satiation time, appetite, & maximum feed intake)
 - (4): 477, 485 (hormones & cortisol histological effects on various tissues of gonadectomized)
 - (4): 513 (hypothesis for alternation in age of return of successive generations of Skeena R.)
 - (4): 517 (first vibriosis records in Canadian cultured; correction on J 28(8): 1219)
 - (6): 821 (gillnet selectivity re Skeena R. fishery, B.C.)
 - (6): 861 (feeding level effects on scale circulus formation, also on fish length & weight)
 - (8): 1173 (glycoproteins constituents levels in blood sera)
 - (9): 1269 (integrated echo voltage re echo sounding for)
 - (9): 1319 (perception of polarized light by yearlings, re seaward migration)
 - (10): 1603 (ribonucleotide reductase in testes of immature)
 - (10): 1493 (Adams R., B.C.: abundance pattern since 1938 re year-classes dominance)
 - (10): 1629 (first spontaneous furunculosis record in marine environment for)
 - (10): 1635 (growth responses of young to different diets & nutrition planes)
 - (11): 1749, 1757 (response of young after starvation periods; effects on scale growth)
- 29(2): 151 (fry migration up lower Babine R. into Babine L., B.C.)
 - (3): 303 (prolactin & growth hormone in serum & pituitary of adult migratory)
 - (6): 699 (limnology & fish ecology of nursery lakes of the world)
 - (7): 1025 (adult B.C. coastal migratory movements shown by ultrasonic tracking)
 - (9): 1351 (olfactory bulb electrical responses to various organic stimuli, & effects of mercuric & copper ion on)
 - (10): 1431 (migration of yearling by time-lapse photography of sonar observations)
 - (11): 1555 (bleached kraft mill effluent effect on growth & feed conversion efficiency of underyearling)
- B 154: 102 (as possible Nfld. native resource)
- 162 (422 pages on all aspects of biology, etc., particularly in B.C.)
- 173: 164 (full description, etc., of NW Canada & Alaska)
- 180: 118 (full description, etc., B.C.)
- CNG 89 (improved artificial rearing by environmental control)
- CNS 16; 25; 27 (age, size, & length composition of B.C. commercial catches)
- T 10 (age, size, & sex composition of Lakelse L., B.C., 1965 & 1966 spawning run)
 - 111 (ova & milt re spawn collection)
 - 133 (scale characteristics, from Skeena R. system nurseries)
 - 167 (maternal influences on age at maturity of Skeena R.)
 - 177 (feed)
 - 200 (analysis of data from J 28(3): 369 reference above)
 - 223 (data & computations for racial analysis of N American on basis of scale characteristics)
 - 297 (fingerlings individual & group behavior in tank)
 - 301 (environment & bioenergetics re mariculture)
 - 324 (growth of young in Great Central L., Vancouver Is., re eventual adult production, before experimental nutrient enrichment of the lake)
 - 330 (body re scale growth of young reared under 2 light periods & in darkness)
 - 331 (summary of counts & observations from Babine R. counting fence, 1967-71)

- 335 (analysis of ultrasonic tracking of adult migration into Babine L.)
- S 896 (swimming energy of young)
- 937 (parasitism by *Pentagramma petrowi* trematode)
- 962 (pituitary hormones: effect on immature trout gonads)
- 982 (population abundance self-regulation mechanisms)
- 998 (swimming energetics)
- 1062 (life history review of B.C.)
- 1112 (testes tissue synthesis of nucleic acid derivatives)
- 1129 (distribution, area of origin, etc., in N Pac. Ocean)
- 1153 (plasma cortisol changes after stress of adult freshwater)
- 1166 (orientation of young during seaward migration from lakes)
- 1245 (pituitary extract promoting protamine in steelhead trout spermatogenesis)
- 1250 (sexual maturation effects on injected radioactive cortisol)
- 1271 (factors in population biology of Skeena R. system)
- 1296 (aluminum staple tag for smolt population estimates)
- 1308 (blood plasma binding of steroids)
- 1310; 1338 (changes in cortisol dynamics re sexual maturation)
- 1333 (adaptations associated with incubation in gravel streams)
- 1340 (interrenal activity suppression by dexamethasone corticosteroid injection)
- 1389 (chloramphenicol antibiotic retention in tissues)
- 1415 (the energy cost of living)
- 1560 (deoxyribonucleic acid polymerase from immature testes)
- 1571 (polypeptides re molecular basis for multiplicity of hemoglobins)
- 1635 (agglutinin response when injected with heat-killed salmonid kidney disease bacterium preparation)
- 1636 (thermal relations in physiology & freshwater ecology)
- 1653 (juvenile, as affected by enrichment of Great Central L., B.C.)
- A 19 (forecast of runs by high-seas tagging)
- 45 (description; migration; reproduction; fishing methods)
- 116 (fish respirometer for metabolism studies)
- 118 (swimming speed performance & metabolism)
- 212 (energy requirements for living, feeding, & migrating; review)
- 238 (growth acceleration by environmental manipulation)
- 259 (hereditary & environmental factors affecting populations; homing)
- Salmon, spring (*see* Salmon, chinook)
- Salmon, steelhead (*see* Trout, steelhead)
- Salmon, type (*see* Salmon, chinook)
- Salmon-lice (*see also* Amphipoda; Caligoida; Parasites; *also* species of salmon)
- J 22(6): 1387 (on Pac. salmon)
- T 83 (on Atl. salmon)
- S 1206 (*Lepeophtheirus salmonis* on Atl. salmon)
- Salmonella* (*see also* Bacteria)
- J 28(5): 643 (gamma irradiation effects on, in smoked lake whitefish; correction on J 29(8): 1241)
- (8): 1185 (bacteria counts in commercial fish diets)
- Salmonidae (*see also* Bloater; Char; Cisco; Dolly Varden; Grayling; Inconnu; Kiyi; Kokanee; Salmon; Splake; Trout; Trouts; Whitefish; *also* heading Hybrids)
- J 23(1): 101, (6): 929, (10): 1599 (myogen & hemoglobin characteristics)
- (10): 1537 (developmental rate & vertebral number)
- 25(1): 71 (fluorimetric method for blood plasma cortisol)
- (10): 2233 (fluorescent pigment tattoo marking of fingerlings)
- 28(5): 781 (improved vascular catheterization procedure)
- 29(6): entire issue (proceedings of international symposium on Salmonid Communities in Oligotrophic Lakes (N America & Europe))
- (6): 639 (systematics of, in recently glaciated lakes)
- (11): 1631 (*Parahucho* & *Parasalmo* as new subgenera, & *Salmo* (*Rhabdofario*) *copei* as new combination)
- CJG 17 (keys to metazoan parasites, Nfld.)
- T 298 (information supplementary to that in J 29(6): 741 reference above)
- S 1502 (automatic wet-feed dispenser for fry culture)
- A 259 (hereditary & environmental factors affecting populations)
- Salpa* (*see* next heading)
- Salpidae (*see also* Tunicata)
- J 28(12): 1831 (geographic distribution & abundance off Oregon, including new records)
- B 176: 82, 178 (synopsis of Canadian zooplanktonic)
- Salt (sodium chloride) (*see also* Salting)
- J 22(1): 53 (retards drip loss; accelerates rancidity)
- (4): 929 (rancidity promoter in lean cod muscle)
- 26(8): 2030 (content of fresh beach-spawning Nfld. capelin)
- T 114 (content of Atl. & Pac. herring meals)
- S 1161 (living bacteria in N.S. Carboniferous age rock salt)
- 1729 (re salinization of groundwater in arid zones; control; desalinization)
- Salting; Salted products (*see also* Brines; Marinating)
- J 22(1): 13 (salting effects on Atl. cod protein quality)
- (1): 17, 27 (carbonyl compounds re Atl. cod flavor)
- 23(5): 775 (equilibrium moisture values of Atl. cod)
- 24(8): 1693 (Atl. cod preparation by brining)

- 29(7): 1053 (yellow elemental phosphorus stability in Atl. cod edible muscle)
- T 335 (Pac. herring roe)
- S 990 (practical procedure for freshwater fishes)
- Salton Sea, California
- J 29(4): 399 (various salinity effects on 3 fishes of)
- Salts, metal (*Note*: For pollutive aspects, *see* note to heading Pollution and references under that heading; for other aspects, *see* names of metallic elements, *also* Toxicants)
- Salvelinema* (*see also* Nematoda)
- S 1298 (*S. salmonicola* & *S. walkerii* buccal structure)
- 1299; 1300 (parasites of Pac. salmon's swim bladder)
- Salvelinus* (= *Cristivomer*)
- alpinus* (*see* Char, Arctic)
- alpinus willughbii* (*see* Char, Windermere)
- fontinalis* (*see* Trout, brook)
- leucomaenis* (*see* Trouts)
- malma* (*see* Dolly Varden)
- namaycush* (*see* Char, lake; Trout, lake)
- namaycush namaycush* (*see* Char, lean lake)
- namaycush siscowet* (*see* Siscowet)
- Samarium derivative
- J 27(2): 317 (oxide for coding embedded encapsulated tags in animals)
- Sameoto, Douglas Daniel
- J 26(2): 361 (intertidal amphipods)
- (5): 1321 (sand-burrowing amphipods)
- (8): 2240 (otter surface sampler)
- (9): 2283 (physiology of Haustoriidae)
- 28(7): 971 (*Sagitta elegans* life history)
- 29(5): 507 (distribution, growth, & condition of herring larvae along N.S. south coast)
- (7): 987 (*Sagitta elegans* yearly respiration rate & energy budget)
- T 252 (herring along S N.S. coast)
- 282; 333 (macrozooplankton biomass measurements, Bedford Basin, N.S.)
- S 1482 (study of eutrophicated marine basin)
- Sammons, James Ira, III
- J 28(7): 1053 (tetrazolium oxidase in N Atl. tuna)
- Sampling (methods and devices) (*see also* Apparatus)
- J 23(7): 1083 (on deck from research vessel catches)
- 24(4): 883 (for planktonic oyster larvae)
- (6): 1187 (statistical, for research trawl catches at sea)
- (8): 1811 (small marine plankton)
- (11): 2461 (new plastic-bag water sampler)
- 25(6): 1169 (tidewater Atl. herring larvae with nets)
- (8): 1741 (for plankton from frozen lakes)
- 26(3): 479 (sampling bias effects on growth mortality, production, & yield estimates)
- (7): 1948 (2 useful devices for vertical, of water & plankton)
- (8): 1985 (re exploratory demersal fishing methods, NE Pac. Ocean)
- (8): 2005 (lake sediment sampler)
- (8): 2240 (net for zooplankton & ichthyoplankton)
- (10): 2581 (corer for bottom-sampling benthos & sediments; efficiency comparison with Ekman grab)
- (10): 2751 (sediment sampler attached to trawl board)
- 27(6): 1033 (yellow perch & walleye fry with high-speed Miller sampling net)
- (10): 1691 (efficiency of grabs & corers, for freshwater benthos)
- (10): 1867 (multiple corer for profundal benthos)
- 28(1): 113 (fish muscle for residues of applied anesthetics)
- (3): 365 (shallow-water benthos by simple corer vs. Ekman grab)
- (4): 573 (device for enumerating migrating kokanee fry)
- (6): 849 (minute benthos & substrate materials in shallow streams)
- (7): 1049 (interstitial water in intertidal mud)
- (8): 1203 (technique for muscle from living fish)
- (9): 1322 (quantitative sampler for aquatic phytomacrofauna)
- 29(3): 341 (diver-operated underwater plankton collector)
- (10): 1503 (benthos from deep arctic waters by improved dredge)
- (12): 1713 (use of commercial dredge to estimate quahaug population by stratified random sampling)
- B 162: 164, 219, 220 (tow & plankton nets)
- CNS 24 (B.C. commercial groundfish catches by areas, 1946-65)
- T 94-97 (Nfld. herring data & summary tabulations, 1964-65 to 1967-68)
- 166 (computer programming Nfld. herring data)
- 252 (plankton at high cruising speed)
- 256 (commercial scallop landings)
- 305 (shallow-water habitats with trapnet)
- S 1019 (random vs. stratified for Atl. cod age & growth)
- 1154 (for gases in bottom sediments)
- Sand dab (*see* Sanddab)
- Sand dollars (Echinoidea) (*see also* Echinodermata)
- J 26(7): 1965 (a hermaphrodite specimen of *Echinarachnis parma*)
- 27(3): 535 (*E. parma* density distribution on Atl. scallop beds)
- (10): 1898 (2 digestive tract enzymes of *E. parma*)
- T 225 (*E. parma* associated with Bay of Fundy scallop beds)
- Sand lance, American (*Ammodytes americanus*)
- J 28(4): 601 (fatty acid composition of oils & phospholipids)
- CSG 54 (underexploited on N.S. banks)
- T 252 (distribution off southern N.S. coast)

- 260 (standing crop, availability, lengths, weights, etc., from Scotian Shelf surveys, 1958-68)
 261 (bibliography for Gulf of St. Lawrence)
 S 1591 (pristane & other hydrocarbons in commercial oil)
 A 143(F) (French version of CSG 54 above)
 153; 182 (ICNAF Canadian research summaries)
 175 (same as CSG 54 above)
- Sand lance, northern (*Ammodytes dubius*)
 J 25(9): 1775 (morphometrics, distribution, growth, & maturity, off N.S. banks)
 27(11): 2104 (meristic & morphometric characters re Pac. sand lance in Nfld. area)
 29(12): 1667 (spawning season data from eggs found in flounder stomachs; larval growth, development, & melanophore counts from netted larvae; Scotian Shelf)
 (12): 1673 (morphological & meristic variations re *A. hexapterus* in NW Atl.)
 B 154: 116 (as Nfld. resource)
 T 164 (extensive length-weight data)
 261 (bibliography for Gulf of St. Lawrence)
 282 (larval biomass, Bedford Basin, N.S.)
 A 119; 241 (Canadian ICNAF research)
- Sand lance, Pacific (*Ammodytes hexapterus*) (*A. tobianus personatus*; sand launce; also inshore on Atlantic coast)
 J 26(8): 2219 (as juvenile Pac. salmon feed)
 (9): 2319 (parasites, B.C.)
 27(11): 2104 (meristic & morphometric characters re northern sand lance, both in Nfld. area)
 29(12): 1673 (morphological & meristic variations re *A. dubius* in NW Atl.)
 B 154: 116 (as Nfld. resource)
 180: 361 (full description, etc., B.C.)
 T 11; 46; 62; 89; 181; 221; 257; 317 (taken in FRB experimental or B.C. commercial trawling)
 S 1394 (feed of juvenile, Strait of Georgia)
- Sand lances (*Ammodytes* species)
 J 22(5): 1313 (description of postlarval stages from W. Atl.)
 26(8): 2219 (as feed of juvenile Pac. salmon)
 29(12): 1792 (as feed of Pac. hake)
 A 119. (ICNAF Canadian research report on probably *A. dubius*)
- Sand launce (see Sand lance; Sand lances)
- Sand worm (*Nereis*) (see Polychaeta)
- Sanddab, mottled (see Sanddab, Pacific)
- Sanddab, Pacific (*Citharichthys sordidus*) (mottled sanddab)
 J 25(12): 2665 (associations with other fishes off Oregon coast)
 B 180: 596 (full description, etc., B.C.)
 CNS 14; 19 (B.C. landings by areas, 1964, 1965)
 T 7; 11; 22; 56; 62; 81; 175; 181; 257; 317 (taken in B.C. commercial or FRB experimental trawling)
 246 (bibliography)
 A 91 (observed in B.C. landings of fish for mink feed)
- Sanddab, speckled (*Citharichthys stigmaeus*)
 J 25(12): 2665 (associations with other fishes off Oregon coast)
 26(9): 2319 (parasites, B.C.)
 B 180: 598 (full description, etc., B.C.)
 T 7; 56; 175 (in B.C. experimental & commercial trawling)
 246 (bibliography)
 A 91 (observed in B.C. landings of fish for mink feed)
- Sandeman, Edward John
 S 1100 (redfish)
 1380 (diurnal variation in availability of redfish)
 1382 (age determination & growth rate of redfish)
 A 179(F) (redfish habitat, reproduction, & fishery)
 253(F) (development of Canadian Atl. shrimp fishery)
- Sandeman, Ian Muir
 J 24(7): 1627 (kill of *Salvelinus fontinalis* involving *Echinorhynchus lateralis*)
 (9): 1911 (Nfld. freshwater fish parasites)
 26(4): 975; 29(10): 1381 (biology of *Bothrimonus cestode*)
- Sandercock, Frederick Keith
 J 24(5): 965 (lacc trout pyloric caeca and gill raker development)
- Sanders, Herman Otto
 J 28(5): 705 (pesticide accumulation in invertebrates)
- Sandfish (Pacific) (*Trichodon trichodon*)
 J 22(1): 203 (biochemical systematics)
 B 180: 316 (full description, etc., B.C.)
 T 181; 257; 317 (taken in B.C. trawl fishery)
- Sandnes, Arlene Mae
 T 173; 311 (nonlinear response surfaces computer program)
- Sandworm (*Nereis*) (see Polychaeta)
- Sangalang, Gloria Josefina Balolong
 S 1329 (steroid desmolase in a marine invertebrate)
 1479 (in vitro steroidogenesis in yellow bodies of American Atl. sturgeon)
 1562 (stages of sexual development in Atl. salmon)
 1576 (hormonal steroids in sturgeon plasma)
 1666 (are corticosteroids present in the blood of all fish?)
- Sanitation (see also Quality of fishery products)
 J 27(9): 1569, 1579 (deuration of bacteria by quahaug & clam)
 28(5): 783 (effects of washing slime off freshwater fish on keeping quality)
 S 889 (re quality preservation of fish products)
 A 203 (progress in, re seafoods quality)

- Saprolegnia parasitica* (see Fungi)
- Sarcina* (see also Bacteria)
S 1165 (on stream-incubated pink salmon eggs)
- Sarcoma (see Tumors)
- Sarcostigophora
J 26(4): 1075 (*Trypanosoma* in fishes blood)
- Sarcoplasm
J 25(8): 1581 (malic enzymes in fish muscle)
- Sarcosine
S 1152 (oxidation by marine bacteria)
- Sarda chiliensis* (see Bonito, Pacific)
lineolata (see Bonito, Pacific)
sarda (see Bonito, Atlantic)
- Sardine (as immature Atlantic herring, see Herring, Atlantic (biology); Herring, Atlantic (products))
- Sardine (Red Sea) (*Sardinella melanura*)
J 23(4): 601 (gamma irradiation as preservative)
- Sardine, California (see Sardine, Pacific)
- Sardine, Pacific (*Sardinops sagax*) (*Sardinia caerulea*, *Sardinops caerulea*; California sardine, pilchard)
J 26(11): 2843 (interpopulation dynamics model re predators & prey, & forecasting of resultant catches)
B 180: 100 (full description, etc., B.C.)
S 1080 (fatty acids positional distribution in oil triglycerides)
A 70; 72(F) (brief description)
90; 103 (theories of decline of fishery)
- Sardine, scaled (*Harengula pensacolae*)
J 29(11): 1605 (voltage & pulse rates for inducing electrotoxis)
- Sardine, Spanish (*Sardinella anchovia*)
J 29(11): 1605 (voltage & pulse rates for inducing electrotoxis)
- Sardinella anchovia* (see Sardine, Spanish)
melanura (see Sardine (Red Sea))
- Sardinia caerulea* (see Sardine, Pacific)
- Sardinops caerulea* (see Sardine, Pacific)
sagax (see Sardine, Pacific)
- Sargassum muticum* (see Phaeophyta)
- Sargo (*Anisotremus davidsoni*)
J 29(4): 399 (physiological responses to various salinities)
- Sarma, Anchal Harish Viswanatha
S 916 ("red water" phenomenon)
- Sarot, Daniel Arthur
J 28(1): 47 (erythropoiesis in *Trichogaster trichopterus*)
- Saskatchewan (see also Saskatchewan River, also other localities and bodies of water)
B 151; 151(F) (special products from freshwater fishes)
173 (full descriptions, etc., of fishes from arctic drainage system)
- Saskatchewan River, Alta., Sask., and Man.)
J 25(7): 1511 (age & growth of lake sturgeon in delta)
26(6): 1439 (fishes distribution re Missouri R. headwaters in Canada)
27(4): 830 (mercury contamination in fishes tissues)
28(1): 105 (DDT residues in fishes muscle)
29(9): 1329 (effects of dam on downstream benthic fauna)
A 200 (mercury contamination of fishes in river system)
- Satellite Channel, B.C.
T 25; 35; 59 (quantitative benthic investigations, 1965-67)
- Satomi, Masako
J 24(11): 2467 (aquatic invertebrate retention)
- Sauer, Charles Douglas
J 24(5): 1155 (digitized bathythermograph aperture cards)
- Sauger (*Stizostedion canadense*)
J 25(9): 2001 (F) (retinal structure re habitat turbidity)
26(2): 325 (S Alta. distribution)
(6): 1439 (distribution in Canadian Missouri R. headwaters)
(7): 1927 (purine sources of skin silvering)
27(1): 170 (in Hudson Bay drainage system, Man.)
(4): 830 (mercury contamination in organs, Saskatchewan R.)
(5): 923 (re walleye muscle myogen polymorphism)
28(1): 105 (DDT residues in muscle, of Saskatchewan R.)
29(3): 275 (21 parasites of, Lake of the Woods, Ont.)
(12): 1685 (mercury concentration re size, in 2 Man. lakes; corrections on J 30(8): 1257)
B 149: 19, 122 (Great Lakes, catches)
173: 341 (mention in key to NW Canada & Alaska perches)
T 161 (bibliography)
S 1668 (mercury contamination, in various Canadian waters)
1718 (organochlorine pesticide levels in Canadian commercially caught)
- Saunders, Claud Richard
J 28(5): 705 (pesticide accumulation in invertebrates)
- Saunders, John Wilfred
J 22(2): 395 (brook trout population)
23(11): 1803 (estuarine spawning of Atl. salmon)

- 24(8): 1743 (brook trout movements in an artificial pond)
 25(2): 209 (pond formation re brook trout catches)
 26(3): 695 (stream pollution by pesticides)
 T 325 (forest-based industries impact on freshwater-dependent N.B. fish resources)
- Saunders, Lloyd Harrell
 J 27(3): 413 (brook trout ecology; correction in J 30(7): 1033)
- Saunders, Richard Lee
 J 22(2): 335 (swimbladder of Atl. salmon)
 (2): 625 (Canadian salmon off Greenland)
 (6): 1567 (Atl. salmon development)
 23(10): 1617 (buoyancy in salmon)
 24(1): 21 (seasonal return of salmon)
 (12): 2595 (Atl. salmon tagging and fin-clipping)
 26(2): 269 (NW Miramichi R. salmon catches)
 27(7): 1295 (photoperiod re salmon smolting & growth)
 28(4): 491 (hypoxic responses in the sea raven)
 29(8): 1217 (factors affecting plasma osmolality & ionic concentration of Atl. salmon)
 (10): 1373 (marine growth of NW Atl. salmon)
 T 147; 148 (survival & growth of Atl. salmon parr in relation to salinity & diet)
 149 (Atl. salmon smolts growth in relation to salinity, temperature, & diet)
 S 999 (sublethal copper-zinc pollution in a salmon river)
 1035 (West Greenland salmon fishery)
 1082 (Greenland salmon fishery)
 1126 (Greenland salmon fishery effect on Miramichi R. salmon fishing, N.B.)
 1196 (copper-zinc mining pollution effect on spawning salmon)
 1242 (tagging salmon smolts)
 1550 (proprioceptors in gills of teleosts)
 1554 (responses of respiratory pumps to hypoxia in rainbow trout)
 A 25 (Atl. salmon near Greenland)
- Saury, Atlantic (*Scorpaenopsis scorpaenoides*)
 B 154: 115 (as Nfld. resource)
 T 261 (bibliography for Gulf of St. Lawrence)
- Saury, Pacific (*Cololabis saira*)
 J 24(5): 1101 (fatty acids composition)
 25(4): 825 (as feed in NE Pac.)
 B 180: 258 (full description, etc., B.C.)
 CHN 32 (used in Japanese fish paste)
 T 175 (in NE Pac. experimental trawling)
- Sausage, fish, and fish wiener
 B 151; 151(F) (equipment & recipe formulas for freshwater fishes)
 CCG 7 1 (bacterial counts re keepability, vs. meat sausage & wieners)
- Saux Head Lake, Michigan
 J 26(11): 3077 (sea lamprey larvicides tests)
- Savagaon, Kadayya Annayya
 J 25(10): 2071 (haddock preserved by ethylenediaminetetraacetic acid)
 T 114 (Atl. coast herring meals)
 S 1377 (nutrient content Atl. coast herring fish meals)
- Savage, Norman Lee
 J 29(2): 211 (indirect fluorescence for detecting antibodies to *Aeromonas liquefaciens* in fish)
- Savan, Milton
 J 28(7): 1064 (infectious pancreatic virus in brook trout)
- Savitz, Jan
 J 26(7): 1813 (sunfish nitrogen excretion)
 28(3): 449 (nitrogen excretion & protein consumption of bluegill sunfish)
- Sawpalate, crosstroat (*Serrivomer jespersenii*)
 J 24(10): 2101 (first record off B.C.)
 B 180: 86 (full description, etc., B.C.)
 T 11 (in FRB experimental trawling, B.C.)
- Saxidomus giganteus* (see Clam, butter)
- Sayce, Clyde Stanley
 J 27(11): 2095 (hyperplasia in an estuarine bryozoan)
- Scabbardfish, black (*Aphanopus carbo*)
 S 1409 (gill blood pathways)
- Scad, bigeye (*Selar crumenophthalmus*)
 J 26(10): 2769 (first Gulf of St. Lawrence record)
 T 261 (bibliography for Gulf of St. Lawrence)
- Scad, mackerel (*Decapterus macarellus*)
 J 26(10): 2698 (new Canadian specimen off N.S.)
- Scad, rough (*Trachurus lathami*)
 J 29(11): 1605 (electrotaxis of)
- Scad, round (*Decapterus punctatus*)
 J 29(11): 1605 (electrotaxis of)
- Scales, fish (see also Age)
 J 22(6): 1477 (supplementary checks on, in salmon)
 23(1): 149 (alkaline phosphatase in various fish)
 (3): 459 (characteristics of Asian vs. Bristol Bay sockeye salmon)
 (3): 463 (re Bay of Fundy capelin age)
 (5): 747 (characteristics re pink salmon aging)
 (6): 939 (characteristics of B.C. pink salmon transplants to Nfld.)
 (7): 1089 (portable press for making impressions)
 (9): 1403 (times of annulus formation on Gulf of Alaska salmon)
 (12): 1923 (bluegill sunfish, re growth characteristics)
 24(1): 47 (formation re growth in young carp)
 (2): 433 (regeneration in bluespot goby)

- (5): 939 (effects of partial removal from live rainbow trout)
- 25(5): 1067 (vs. otoliths for chum & sockeye aging)
- (7): 1333 (incorporation of Sr from Sr-rich diet for marking goldfish)
- (9): 1831(F) (maskinonge)
- (9): 1901 (guanine & hypoxanthine formation in Atl. salmon scales)
- (9): 1971 (re accuracy of aging chinook salmon)
- (9): 1993 (of a 3rd-year pink salmon)
- (10): 2111 (annulus formation in 4 coregonid species)
- (11): 2439 (as Atl. salmon spawning history record)
- (11): 2519 (marking fish by high-frequency electric spark modification of scales)
- 26(1): 175 (re distinguishing northern pike vs. maskinonge)
- (3): 633 (white sucker scales vs. fin rays for aging)
- (3): 671 (chum salmon aging from)
- (5): 1285 (annulus formation re age, longnose sucker)
- (6): 1585 (unreliability for aging landlocked Atl. salmon)
- (6): 1661 (erosion of repeatedly spawned Atl. salmon)
- (7): 1889 (vs. otoliths for Atl. herring aging)
- (8): 2082 (density, of herring)
- (10): 2754 (steelhead trout aging from, Babine R., B.C.)
- 27(1): 156 (computer program availability for fish scale measurements re fish length data)
- (5): 915 (validity for aging Hecate Strait Pac. cod)
- (11): 2063 (cutthroat growth re scale regeneration & analysis)
- 28(4): 537 (jaw tagging effects on landlocked Atl. salmon scale characteristics)
- (5): 749 (Arctic grayling lateral line scale counts re N American origin)
- (6): 861 (sockeye feeding level effects on circulus formation)
- (7): 987 (lateral series counts re systematics & evolution of western N America *Salmo* species & subspecies)
- (11): 1749, 1757 (effect on growth, of young sockeye after starvation periods)
- 29(3): 295 (re identification of major B.C. & Alaska runs of even- & odd-year)
- (11): 1647 (critique of use for aging Dover sole)
- B 161: 6 (for aging goldeye)
- 162: 9, 381 (re sockeye salmon age & stocks identification)
- CNG 91 (re rainbow trout anglers' catches, Vancouver Is.)
- T 49 (for Atl. herring aging)
- 74 (vs. otoliths for sablefish aging)
- 133 (characteristics, of Skeena R. system nursery areas sockeye salmon)
- 223 (data & computations for N American sockeye racial analysis from scale characteristics)
- 234 (as for T 223 above, for pink salmon)
- 330 (growth re body growth of young sockeye reared under 2 light periods & in darkness)
- MSP 10: 12 (age determination from)
- S 1083 (for age, etc., of Atl. salmon)
- 1129 (re sockeye salmon origins & distribution in N Pac. Ocean)
- 1156 (re pink salmon origins & distribution in N Pac. Ocean)
- 1302; 1390 (studies re origin of open N Pac. chum salmon)
- A 8(F) (for aging Atl. herring)
- 123: 351 (Nfld. salmon)
- Scallop (in addition to the following headings, see Scallops)
- Scallop, bay (*Aequipecten irradians sablensis*)
- J 29(9): 1367 (cadmium uptake from sea water containing added CdCl₂)
- S 1199 (ancient shells on Sable Is., N.S.)
- Scallop, giant (Atlantic) (see Scallop, sea)
- Scallop, giant sea (Pacific) (see Scallop, weathervane)
- Scallop, Iceland (*Chlamys islandicus*)
- B 154: 125 (as Nfld. resource)
- A 108 (1966 Canadian ICNAF studies: exploration for)
- Scallop, pink (*Chlamys rubida*)
- T 104 (B.C. resources)
- Scallop, purple hinged rock (*Hinnites multirugosis*)
- B 168: 31 (toxicity record, B.C.)
- T 104 (B.C. resources)
- Scallop, sea (*Placopecten magellanicus*) (giant scallop)
- J 22(2): 313 (comparative catches by drag-ring size)
- (3): 861 (orange-red meat due to zeaxanthin pigment)
- (5): 1137 (paralytic poison from *Gonyaulax*)
- 24(4): 873 (protein in striated muscle extracts)
- 25(2): 267 (occurrence & retention of thetin derivative from feed)
- (4): 639 (catalysis of muscle oxidative rancidity by metal ions)
- (5): 921 (nonbacterial trimethylamine production in frozen muscle)
- (7): 1339 (striated muscle ultrastructure)
- (10): 2123 (underwater observations of behavior & drag efficiency)
- 26(9): 2299 (promoters & inhibitors of muscle lipids oxidation)
- (9): 2523 (effect of seawater chilling on meats quality)
- 27(1): 83 (adductor muscle nucleotides & their degradation during iced storage)
- (3): 535 (apparatus for surveying populations from a submersible)
- (3): 601, (7): 1329 (sterols vs. cholesterol re chick hypocholesterolemia)
- (3): 604 (trigonelline & homarine occurrence in adductor muscle)
- (4): 701 (transition metals ion effects on muscle extractable protein & lipids oxidation catalysis)

- (10): 1898 (2 digestive tract enzymes)
- 28(1): 59 (DDT residues in N.B.)
 (6): 869 (octopine formation in stored adductor muscle as possible freshness index)
 (9): 1285 (methylmercury in, N.S. banks)
- B 154: 125 (as Nfld. resource)
 177 (re paralytic shellfish poisoning, E Canada)
- T 102: 4 (underwater observations from "cubmarine")
 168 (Bay of Fundy surveys, 1966 & 1967; also observations on commercial fishery)
 225 (fauna associated with Bay of Fundy scallop beds)
 256 (effects of recent recruitment on landed meat sizes of Georges Bank scallop fishery, 1970)
- S 887; 955; 1023; 1024 (ICNAF Canadian research reports)
 910 (natural and fishing mortality causes)
 1080 (fatty acids positional distribution in fat triglycerides)
 1176 (efficiency & selectivity of 3 types of drags)
 1226 (fatty acids positional distribution in hepatopancreas triglycerides)
 1272 (phospholipids; in vivo incorporation of radioactive bases into phospholipids)
 1284 (recent developments in Georges Bank fishery)
 1329 (gonadal tissue enzyme capable of converting a C-21 to a C-19 steroid in vitro)
 1459; 1506; 1611 (new & other sterol types isolated from)
- A 10(F); 64 (description; life history; Canadian fishery; use)
 43; 108; 119; 153; 182; 241 (ICNAF Canadian research reports & summaries)
 236 (landing prices re offshore stocks decline)
 251 (recent recruitment & apparent reduction in cull size in Canadian Atl. fishery)
- Scallop, spiny or rough (*Chlamys hastata hericia*)
 T 104 (B.C. resources)
- Scallop, weathervane (*Patinopecten caurinus*) (giant sea scallop)
 J 27(11): 2112 (reproductive cycle, maturity size, & sexual composition, commercially harvested in Alaska)
 28(4): 608 (Alaskan hermaphroditic specimen)
 (9): 1335 (age & growth, Strait of Georgia & outer Washington coast)
 T 104 (B.C. resources)
- Scallops
 J 24(5): 1165 (shell weight re age of *Pecten maximus*, Isle of Man)
 25(7): 1509 (*Cyclopecten carlottensis*, new NE Pac. Ocean species)
 29(4): 385 (review of sterols isolated from)
 S 1618 (occurrence & function of lip hypertrophy)
- Scandium derivatives
 J 27(4): 677 (traces in Great Lakes fishes & livers)
- Scanlan, Richard Anthony
 J 29(8): 1125 (volatile compounds formed in ice-stored canary rockfish muscle)
- Scaphopoda (*see also* Mollusca)
 J 22(4): 986 (records from NW Atl. Ocean, 1946-61)
 T 2 (distributional checklist & bibliography of B.C. marine)
 25; 35; 59; 60; 73 (in Strait of Georgia benthos biomass)
 225 (associated with Bay of Fundy scallop beds)
 S 1470 (checklist of B.C. coastal)
- Scarabaeidae (*see also* Colcoptera)
 J 27(1): 125 (re lake trout feed, L. Opeongo, Ont.)
- Scarratt, David Johnson
 J 22(2): 421 (new toggle tag)
 (4): 1103 (predation on lobsters by *Anonyx*)
 24(6): 1403 (lobster larvae low salinity avoidance)
 25(2): 427 (lobster larvae off N.S.)
 (12): 2683 (artificial reef for lobsters)
 26(7): 1931 (bleached kraft mill effluent re lobster larvae)
 27(2): 257 (laboratory & field tests on lobster tags)
 28(11): 1733 (productivity of seaweed-lobster communities)
 29(2): 161 (rock crab biology, Northumberland Strait, N.B.)
 (9): 1347 (Bunker C oil in sediments & benthos of Chedabucto Bay shallows, N.S.)
 T 102: 18 (survey of natural & artificial lobster grounds from a "cubmarine" submersible)
 295 (design & performance of diver-controlled towed underwater research plane)
 329 (effects on lobsters of raking Irish moss, P.E.I.)
- Scatophagus argus* (*see* Butterfish, spotted)
- Scattering layer (*see* Sounding, echo)
- Scenedesmus obliquus* (*see* Chlorophyta)
- Schafer, Charles Thomas
 S 1321 (foraminiferal tests, planktonic organisms, & lithogenic particles in Bedford Basin, N.S.)
- Scherer, Eberhard
 J 28(9): 1303 (photic behavior of walleye)
- Schindler, David William
 J 26(7): 1948 (devices for vertical plankton & water sampling)
 27(11): 2009 (Clear L. nutrient supply & primary production)
 28(2): 139 (geography & bathymetry of selected basins of FRB Experimental Lakes, NW Ont.)
 (2): 157 (light, temperature, & oxygen regimes of selected FRB Experimental Lakes)
 (2): 171 (chemical characterization of FRB Experimental Lakes)
 (2): 189 (primary production & phytoplankton of FRB Experimental Lakes)

- (2): 245 (zooplankton distribution & abundance in 2 FRB Experimental Lakes)
 (2): 295 (differences & similarities in FRB Experimental Lakes)
 (4): 559 (freshwater zooplankton calorific values)
 (11): 1763 (eutrophication of an FRB Experimental Lake; correction on J 29(8): 1241)
 29(11): 1627 (an alternative to filtration in ^{14}C determination of phytoplankton production)
 S 1646 (carbon, nitrogen, & phosphorus in freshwater lakes eutrophication)
- Schistobranchia* (see also Lernaepodidae)
 J 27(5): 865 (description of *S. tertia* as new species, parasitic on B.C. skates)
- Schistocephalus* (see also Cestoda)
 J 26(4): 741 (*S. solidus* culture, hosts, growth rate)
- Schitzonema* (see Chrysophyta)
- Schizophyta (see Bacteria; Spirochetes)
- Schizoporella* (see Bryozoa)
- Schizothaerus capax* (see Clam, horse)
nuttalli (see Clam, horse)
- Schmidt, Peter Joseph
 J 24(3): 527 (quality of Pac. dogfish during frozen storage)
 25(1): 71 (cortisol in salmonid plasma)
 26(2): 357 (Pac. salmon & trout pigmentation)
 S 962 (pituitary hormones of Pac. salmon)
 1309 (raw salmon color sorting)
- Schmidt, Russel Van
 J 29(11): 1627 (an alternative to filtration in ^{14}C determination of phytoplankton production)
- Schnare, Laraine Dianna
 T 293 (analysis of N.B. mine waste waters for ore-floatation agents)
- Schoettger, Richard Aaron
 J 25(1): 25 (rainbow trout anesthetic excretion)
- Schooling
 J 23(2): 293 (factors affecting chum salmon fry)
 (4): 547 (behavior analysis procedure)
 25(2): 393 (effect of light on jack mackerel)
 (4): 711 (seasonal effect on yellow perch)
 26(5): 1372 (theory of fish school size re migration navigation)
 (6): 1672 (aggregations of spottail shiners & yellow perch)
 27(7): 1225 (some aspects of Pac. pelagic fishes organization & interdistances in)
 28(7): 999 (spacing & density as criteria for distinguishing from aggregation of fish)
 (7): 1019 (effects on dispersal of introduced rainbow trout)
- (11): 1805 (estimating photographically distances between fish in an aquarium)
 A 150 (pattern, cooperative research re improving Atl. fisheries)
- Schreck, Carl Bernhard
 J 28(7): 987 (Kern R. trouts)
- Schroederella* (see also Polychaeta)
 J 28(10): 1483 (n.sp. *S. berkeleyi*, re *S. pauliani*)
- Schubel, Jerry Robert
 S 1688 (review of fine-grained suspended sediments size analysis)
- Schultz, David Michael
 J 29(10): 1482 (N Atl. surface particulate matter fatty acids)
- Schutz, David Charles
 J 29(5): 555 (coastal cutthroat trout & Dolly Varden feeding behavior)
- Schwartz, Erich
 J 23(9): 1331 (functions of lateral line)
- Sclerocrangon* (see also Shrimps)
 J 25(2): 347 (*S. ferox*, Queen Elizabeth Is., Canadian Arctic)
 26(7): 1899 (*S. ferox* & *S. boreas* in W Canadian Arctic)
- Scleroplax* (see Crabs, commensal)
- Scomber colias* (see Mackerel, chub)
japonicus (see Mackerel, chub)
scombrus (see Mackerel, Atlantic)
- Scomberesox saurus* (see Saury, Atlantic)
- Scomberomorus maculatus* (see Mackerel, Spanish)
sierra (see Sierra)
- Scopelengys tristis* (see Lanternfishes)
- Scopelosaurus harryi* (see Wearyfish, scaly)
- Scopes, Robert Kerry
 J 25(12): 2711 (fish creatine kinase in electrophoretic patterns)
 (12): 2715 (carp muscle creatine kinase)
- Scophthalmus aquosus* (see Windowpane)
- Scorpaena guttata* (see Scorpionfish, California)
- Scorpaenichthys marmoratus* (see Cabezon)
- Scorpaenidae (see also Rockfishes; also names of species)
 T 246 (bibliography of N America Pac. coast)
- Scorpaenodes xyris* (see Scorpionfish, rainbow)

- Scorpionfish, California (*Scorpaena guttata*)
 J 25(11): 2477 (proteins electropherograms re rockfishes systematics)
- Scorpionfish, rainbow (*Scorpaenodes xyris*)
 J 25(11): 2477 (muscle protein electropherograms re rockfishes systematics)
- Scotian Shelf waters, off Nova Scotia (see also Hydrography; Oceanography, Northwest Atlantic coastal)
 J 23(8): 1145 (biology of Atl. argentine)
 29(5): 507 (herring larvae biology)
 (12): 1667 (N sand lance spawning & larval development)
 T 86; 157 (cod & haddock catches)
 252 (herring larvae ecology & macrozooplankton biomass)
 260 (groundfish abundance & other data, 1958-68 surveys)
 S 1026 (1964 another cold sea temperature year)
 1142 (long-term temperature variations)
 1160 (trend-interpreting difficulties in cod & haddock landings from)
 1316 (size, age, & recruitment comparisons for haddock)
 1640 (vs. SW Nfld. herring biological characteristics)
 1642 (recent events in haddock fishery)
- Scotland
 S 1348 (rare fishes from Clyde sea area)
- Scotoplanes* (see Sea cucumbers)
- Scott, David Paul
 J 28(11): 1807 (mobilization of mercury into fish)
 29(12): 1685 (mercury concentration re size in several Man. & NW Ont. freshwater fishes; corrections on J 30(8): 1257)
- Scott, James Stuart
 J 25(9): 1775 (offshore sand lance)
 26(4): 879 (trematodes as biological indicators; correction on J 27(8): 1499)
 29(12): 1667 (Scotian Shelf northern sand lance eggs & larvae)
 (12): 1673 (NW Atl. sand lances morphological & meristic variation)
 CSG 54 (underexploited groundfish on N.S. banks)
 T 164 (length re weight of Canadian Atl. marine fishes)
 260 (abundance of Scotian Shelf groundfishes)
 S 1287 (*Lampritrema nipponicum* from W Atl. argentine)
 1354 (rostellar hooks of *Paricterotaenia paradoxa*)
 1483 (*Lecithophyllum botryophorum* in *Argentina silus*)
 A 143(F) (same as CSG 54 above)
 175 (same as CSG 54 above)
 182 (reports on researches in ICAAF area, 1969)
- Scott, Kenneth Randall
- J 26(1): 154 (fish storage facility)
 28(8): 1196 (monitoring fish tank oxygen)
 29(7): 1071; 1082 (compact recirculation unit for fish rearing & maintenance)
 (11): 1641 (efficiency comparison of various aquaria aeration devices)
 S 1461 (thermistor readout monitors cold storage)
 1473 (portable refrigerated fish holding unit)
 A 225 (interview based on S 1473 above)
- Scott, Margaret Anne
 J 23(7): 1025 (cod muscle lipids)
 (10): 1629 (blood lipids of the lobster)
- Scott, William Beverley
 J 22(5): 1303 (hatchfish range extension)
 23(9): 1457 (longear sunfish in W. Ont.)
 25(5): 903 (swordfish feeding habits)
 (5): 1075 (*Dasyatis violacea* in NW Atl.)
 26(10): 2691 (mesopelagic & other fishes from Canadian Atl.)
 27(1): 174 (manefish in Atl. waters off Canada)
 29(12): 1679 (expatriate *Myctophum punctatum* lanternfish populations in NW Atl.)
 B 155 (full descriptions of Canadian Atl. marine fishes)
 CSG 47 (Canadian Atl. sharks)
 49 (pelagic fishes of the NW Atl.)
 MSP 14 (English & French) (illustrations & popular descriptions of 18 common Canadian Atl. coast fishes)
- Screens
 T 264 (fluid mechanics of netting & low-solidity screens)
 S 1345 (retention of marine particles by)
- Scrivener, James Charles Edward
 J 28(7): 1062 (detecting burrowed lobster)
 T 182 (computer programs summarizing ethological data)
 235 (agonistic behavior of lobster)
 241 (bibliography of economically important shrimps)
- Sculpin, Arctic (*Myoxocephalus scorpioides*)
 T 261 (bibliography for Gulf of St. Lawrence)
- Sculpin, Arctic hookear (*Artediellus uncinatus*)
 J 28(7): 935 (occasional component of Passamaquoddy Bay fish communities, N.B.)
 T 261 (bibliography for Gulf of St. Lawrence)
- Sculpin, Arctic staghorn (*Gymnocanthus tricusps*)
 J 25(12): 2729 (in Nfld. waters)
 T 261 (bibliography for Gulf of St. Lawrence)
- Sculpin, bigmouth (*Hemitripterus bolini*)
 B 180: 505 (full description, etc., B.C.)
- Sculpin, blackfin (*Malacocottus kincaidi*)
 J 26(9): 2319 (parasites, B.C.)

- B 180: 519 (full description, etc., B.C.)
T 11 (in B.C. experimental midwater trawling)
- Sculpin, buffalo (*Enophrys bison*)
J 25(4): 807 (feed of)
(8): 1651 (plasma protein-bound inorganic iodide)
B 180: 499 (full description, etc., B.C.)
- Sculpin, calico (*Clinocottus embryun*) (mossy sculpin)
B 180: 494 (full description, etc., B.C.)
- Sculpin, coastrange (*Cottus aleuticus*)
B 173: 328 (full description, etc., of NW Alaska)
- Sculpin, comb (see Sculpin, northern)
- Sculpin, crested (*Blepsias bilobus*) (*Histiococcus bilobus*)
B 180: 487 (full description, etc., B.C.)
- Sculpin, darter (*Radulinus boleoides*) (see also Sculpin, slim)
B 180: 536 (full description, etc., B.C.)
- Sculpin, deepwater (see Sculpin, fourhorn)
- Sculpin, dusky (*Icelinus burchami*)
J 22(5): 1305 (first B.C. record)
B 180: 508 (full description, etc., B.C.)
- Sculpin, filamented (see Sculpin, threadfin)
- Sculpin, fluffy (*Oligocottus snyderi*)
J 28(6): 928 (feed in tidepools, cohabiting with tidepool sculpins)
B 180: 530 (full description, etc., B.C.)
- Sculpin, fourhorn (*Myoxocephalus quadricornis*) (*M. quadricornis thompsoni*; *M. thompsoni*; deepwater sculpin)
J 22(4): 969 (Algonquin Park, Ont., distribution)
25(4): 667 (re Great Lakes species succession & exploitation)
(12): 2733 (first record from Ottawa Valley, Que.)
29(3): 344 (first Alta. record extends SW range 450 miles)
(5): 545 (new E Ont. & W Que. distribution records, re postglacial dispersal)
B 173: 317 (mention in key to NW Canada & Alaska freshwater sculpins; 318: distribution)
S 1004 (re Canadian Arctic Islands marine-glacial relicts)
A 14 (Great Bear L., N.W.T.)
- Sculpin, frogmouth (*Icelinus oculatus*)
B 180: 511 (full description, etc., B.C.)
- Sculpin, giant marbled (see Cabezon)
- Sculpin, globe-headed (see Sculpin, mosshead)
- Sculpin, great (*Myoxocephalus polyacanthocephalus*)
J 25(2): 323 (host to parasitic chondracanthid copepod)
26(9): 2319 (parasites, B.C.)
B 180: 521 (full description, etc., B.C.)
- T 181; 257; 317 (taken in B.C. trawl fishery)
- Sculpin, grunt (*Rhamphocottus richardsoni*) (grunt-fish)
J 26(9): 2319 (parasites, B.C.)
B 180: 538 (full description, etc., B.C.)
- Sculpin, lesser filamented (see Sculpin, spotfin)
- Sculpin, little (see Grubby)
- Sculpin, longfin (*Jordania zonope*)
J 26(9): 2319 (parasites, B.C.)
B 180: 516 (full description, etc., B.C.)
- Sculpin, longhorn (*Myoxocephalus octodecemspinosus*)
J 23(3): 341 (swimming endurance re speed)
26(3): 597(F) (retinal structure re activity, etc.)
28(7): 935 (regular component of Passamaquoddy Bay fish communities, N.B., & length frequencies)
(9): 1285 (methylmercury in Bay of Fundy & N.S. banks)
29(1): 85 (muscle catheptic activity)
(7): 997 (feed resource division, Passamaquoddy Bay, N.B.)
(12): 1776 (first record of *Ichthyophonus hoferi* fungus infection in NW Atl. waters; corrections on J30(8): 1257)
CSG 54 (underexploited on N.S. banks)
T 164 (extensive length-weight data)
260 (standing crop, availability, lengths, weights, etc., from Scotian Shelf surveys, 1958-68)
261 (bibliography for Gulf of St. Lawrence)
288 (monthly changes in stomach contents, Passamaquoddy Bay)
S 1087 (reaction to otter trawl, observed photographically)
A 143(F) (French version of CSG 54 above)
175 (same as CSG 54 above)
- Sculpin, mailed (*Triglops nybelini*) (Nybelin's sculpin) (see also Sculpin, moustache)
T 261 (bibliography for Gulf of St. Lawrence)
- Sculpin, manacled (*Synchirus gilli*)
B 180: 542 (full description, etc., B.C.)
- Sculpin, mosshead (*Clinocottus globiceps*) (round-headed sculpin; globe-headed sculpin)
B 180: 496 (full description, etc., B.C.)
- Sculpin, mossy (see Sculpin, calico)
- Sculpin, mottled (*Cottus bairdi*)
J 23(5): 623 (association with brook trout in Pennsylvania streams)
24(5): 927 (limnetic larvae in N Wisconsin lakes)
26(2): 325 (in S Alta.)
(6): 1439 (distribution in Canadian Missouri R. headwaters)
27(6): 1165 (mortality caused by seiche of cold water, Georgian Bay, Ont.)

- 28(1): 45 (populations upstream & downstream of a dammed Ont. lake)
 29(3): 275 (15 parasites of, Lake of the Woods, Ont.)
 S 1128 (in 4 Lake Superior bays)
- Sculpin, moustache (*Triglops murrayi*) (see also Sculpin, mailed)
 J 26(2): 473 (Gulf of Maine occurrences & spawning)
 (3): 597(F) (retinal structure re activity, etc.)
 28(7): 935 (occasional component of Passamaquoddy Bay fish communities, N.B.)
 T 261 (bibliography for Gulf of St. Lawrence)
- Sculpin, northern (*Icelinus borealis*) (comb sculpin)
 B 180: 507 (full description, etc., B.C.)
 T 175 (larvae taken in NE Pac. experimental trawling)
- Sculpin, Pacific staghorn (*Leptocottus armatus*) (staghorn sculpin; cabezon)
 J 25(8): 1651 (plasma protein-bound inorganic iodide)
 26(9): 2319 (parasites, B.C.)
 28(10): 1563 (new host of *Holobomolochus spinulus* copepod)
 29(1): 107 (clarification of NW range limit)
 B 180: 518 (full description, etc., B.C.)
 T 7; 56; 181; 257; 317 (taken in B.C. commercial trawl fishery)
 A 91 (observed in B.C. landings of fish for mink feed)
- Sculpin, padded (*Artedius fenestralis*)
 J 26(9): 2319 (parasites, B.C.)
 B 180: 478 (full description, etc., B.C.)
- Sculpin, plumose (see Sculpin, scalyhead)
- Sculpin, polar (*Cottunculus microps*)
 T 261 (bibliography for Gulf of St. Lawrence)
- Sculpin, prickly (freshwater) (*Cottus asper*) (for marine, see Sculpin, saddleback)
 J 25(9): 1997 (diel limnetic occurrence of young)
 B 162: 245 (predation on young sockeye salmon)
 173: 324 (full description, etc., of NE B.C.)
- Sculpin, Puget Sound (*Artedius meanyi*)
 B 180: 483 (full description, etc., B.C.)
- Sculpin, ribbed (*Triglops pingeli*) (*T. beani*)
 J 26(9): 2319 (parasites, B.C.)
 B 180: 545 (full description, etc., B.C.)
 T 261 (bibliography for Gulf of St. Lawrence)
- Sculpin, rosylip (*Ascelichthys rhodorus*)
 B 180: 484 (full description, etc., B.C.)
- Sculpin, roughback (*Chitonotus pugetensis*)
 J 25(12): 2665 (associations with other fishes off Oregon coast)
 26(9): 2319 (parasites, B.C.)
 B 180: 491 (full description, etc., B.C.)
- Sculpin, roughspine (*Triglops macellus*)
 B 180: 543 (full description, etc., B.C.)
- Sculpin, round-headed (see Sculpin, mosshead)
- Sculpin, round-nosed (see Sculpin, smoothhead)
- Sculpin, saddleback (*Oligocottus rimensis*) (prickly sculpin)
 B 180: 529 (full description, etc., B.C.)
- Sculpin, sailfin (*Nautichthys oculofasciatus*) (sailorfish)
 J 26(9): 2319 (parasites, B.C.)
 B 180: 522 (full description, etc., B.C.)
- Sculpin, scalyhead (*Artedius harringtoni*) (plumose sculpin)
 J 26(9): 2319 (parasites, B.C.)
 B 180: 479 (full description, etc., B.C.)
- Sculpin, sharpnose (*Clinocottus acuticeps*)
 B 180: 493 (full description, etc., B.C.)
- Sculpin, shorthorn (*Myoxocephalus scorpius*) (see also Bullhead)
 J 26(3): 597(F) (retinal structure re activity, etc.)
 (4): 805 (*Phyllobothrium parvum* in intestine)
 27(11): 2037 (reproduction & associated behavior, Nfld. waters)
 (12): 2155 (age, growth, & sexual maturity, Nfld. waters)
 28(7): 935 (occasional component of Passamaquoddy Bay fish communities, N.B.)
 T 261 (bibliography for Gulf of St. Lawrence)
- Sculpin, silverspotted (*Blepsias cirrhosus*) (silver spot)
 J 26(9): 2319 (parasites, B.C.)
 B 180: 489 (full description, etc., B.C.)
- Sculpin, slim (*Radulinus asprellus*) (darter sculpin)
 J 25(12): 2665 (associations with other fishes off Oregon coast)
 B 180: 535 (full description, etc., B.C.)
- Sculpin, slimy (*Cottus cognatus*)
 J 23(5): 623 (association with brook trout in Pennsylvania streams)
 27(1): 125 (re lake trout feed, L. Opeongo, Ont.)
 B 173: 332 (full description, etc., of NW Canada & Alaska)
 S 1128 (in a L. Superior bay)
 A 14 (Great Bear L., N.W.T.)
- Sculpin, smallsail (*Nautichthys robustus*)
 B 180: 525 (full description, etc., B.C.)
- Sculpin, smoothhead (*Artedius lateralis*) (round-nosed sculpin)
 B 180: 481 (full description, etc., B.C.)
- Sculpin, soft (*Gilbertidia sigalutes*)
 J 26(9): 2319 (parasites, B.C.)
 B 180: 501 (full description, etc., B.C.)

- Sculpin, spatulate (*Icelus spatula*)
T 261 (bibliography for Gulf of St. Lawrence)
- Sculpin, spinyhead (*Dasycottus setiger*)
J 26(9): 2319 (parasites, B.C.)
B 180: 497 (full description, etc., B.C.)
- Sculpin, spinynose (*Asemichthys taylori*) (*Radulinus taylori*; Taylor's sculpin)
B 180: 485 (full description, etc., B.C.)
- Sculpin, spoonhead (*Cottus ricei*)
J 25(12): 2733 (first record from Ottawa Valley, Que.)
26(2): 325 (S Alta. distribution)
29(5): 545 (new E Ont. & W Que. distribution records re postglacial dispersal)
B 173: 336 (full description, etc., of NW Canada)
- Sculpin, spotfin (*Icelinus tenuis*) (lesser filamented sculpin)
J 25(12): 2665 (associations with other fishes off Oregon coast)
26(9): 2319 (parasites, B.C.)
B 180: 513 (full description, etc., B.C.)
T 11 (in B.C. experimental midwater trawling)
- Sculpin, staghorn (*see* Sculpin, Pacific staghorn)
- Sculpin, tadpole (*Psychrolutes paradoxus*)
J 26(9): 2319 (parasites, B.C.)
B 180: 533 (full description, etc., B.C.)
T 11 (in B.C. experimental midwater trawling)
- Sculpin, Taylor's (*see* Sculpin, spinynose)
- Sculpin, thornback (*Paricelinus hopliticus*)
J 25(12): 2665 (associations with other fishes off Oregon coast)
B 180: 532 (full description, etc., B.C.)
T 11 (in B.C. experimental midwater trawling)
- Sculpin, thorny (*Icelus spiniger*)
J 28(12): 1922 (first B.C. record)
B 180: 515 (full description, etc., B.C.)
- Sculpin, threadfin (*Icelinus filamentosus*) (filamented sculpin)
J 25(12): 2665 (associations with other fishes off Oregon coast)
26(9): 2319 (parasites, B.C.)
B 180: 510 (full description, etc., B.C.)
- Sculpin, tidepool (*Oligocottus maculosus*)
J 26(9): 2319 (parasites, B.C.)
28(3): 383 (high-tide movements & homing behavior)
(6): 928 (feed in tidepools, cohabiting with fluffy sculpins)
(10): 1563 (new host of *Holobomolochus spinulus* copepod)
B 180: 527 (full description, etc., B.C.)
- Sculpin, torrent (*Cottus rhotheus*)
- J 28(9): 1352 (increased predation on coho salmon fry on moonlight nights)
- Sculpin, twohorn (*Icelus bicornis*)
J 26(10): 2699 (range extension S to off S N.S.)
T 261 (bibliography for Gulf of St. Lawrence)
- Sculpin, wooly (*Clinocottus analis australis*)
J 26(4): 957(F) (*Opegaster cameroni*, new trematode species from)
- Sculpins (Cottidae) (*see also* Sculpin)
B 173: 45 (family key), 316 (general description), 316 (species key), & 318-319 (full descriptions, etc., of NW Canada & Alaska freshwater species)
B 180: 473 (key to B.C.)
T 7; 11; 22; 46; 56; 62; 81 (in B.C. experimental or commercial trawling)
208 (bioassays re elemental phosphorus toxicity to)
246 (bibliography of Pac. N America coast)
261 (bibliography for Gulf of St. Lawrence)
319 (sudden mortality from phytoplankton bloom & oxygen depletion, Nanoose Harbour, B.C.)
S 1658 (new nematode genus & species, *Ezonema bicornis*, from Japanese freshwater *Cottus pollux*)
- Scup (*Stenotomus chrysops*)
J 26(10): 2698 (off Grand Manan, N.B.)
- Scura, Edward Dennis
J 27(10): 1869 (glutamic oxaloacetic transaminase in *Poecilia latipinna*)
- Scyliorhinus stellaris* (*see* Sharks)
- Scyllium canicula* (*see* Dogfish (European))
- Scyphozoa (*see also* Jellyfishes; *also* Coelenterata)
B 176 (of Canadian marine zooplankton)
- Scytalina cerdale* (*see* Graveldiver)
- NOTE re headings commencing with "SEA" — Because some marine organisms have vernacular names commencing with "sea" but variously spelled by different authorities as two words, a single word, or as a hyphenated word, the headings for these are arranged below according to the alphabetical order of the letter that follows "sea", *except* for "Seal", "Seals", and "Seaweeds".
- Sea anemones (Actinaria) (*see also* Anthozoa; Coelenterata)
J 26(1): 145 (zinc content of a deep-sea)
28(10): 1677 (*Pachycerianthus fimbriatus* from B.C. & Washington; synonymy with *P. torreyi* & *P. plicatus*)
B 178: 20 (*Metridium senile* fouling oysters)
T 159 (in Canadian Arctic Archipelago)

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- S 1181 (nervous system responses & histology of *Cerianthus borealis*, *C. membranaceus*, & *C. solitarius*, also *Pachycerianthus*)
- 1401 (cyclic nucleotide phosphodiesterase in *Metridium* muscle)
- 1564 (*trans*-6-hexadecenoic acid & corresponding alcohol in lipid constituents of *M. dianthus*; also fatty-acids composition of lipids)
- Sea bass (in addition to the following heading, see Bass, black sea)
- Seabass, white (*Cynoscion nobilis*)
B 108: 295 (full description, etc., B.C.)
- Sea butterfly (*Clione*) (see Pteropoda)
- Sea cucumbers (Holothuroidea) (see also Echinodermata)
J 24(4): 833 (*Elpida glacialis* from a drifting ice island off E Greenland)
(5): 1101 (*Scotoplanes theeli* fatty acid composition)
25(9): 1803 (caloric & sulfur content of *Cucumaria frondosa*)
T 25; 35; 59; 60; 73 (in Strait of Georgia benthos biomass)
S 1401 (cyclic nucleotide phosphodiesterase in *Stichopus* muscle)
A 133 (caloric content of 3 species)
- Seadevil (a deep-sea) (*Cerattus holboelli*) (deep-sea angler)
T 261 (bibliography for Gulf of St. Lawrence)
- Seadevil, warted (*Cryptosaras couesi*) (lesser deep-sea angler)
T 261 (bibliography for Gulf of St. Lawrence)
- Sea elephant (see Seal, northern elephant)
- Sea grass (*Phyllospadix scouleri*) (see also Eelgrass)
J 22(6): 1425 (distribution re salinity & tidal factors, S end Vancouver Is.)
- Sea lettuce (*Ulva* seaweed) (see Chlorophyta)
- Sea level (see also Tides; Oceanography)
T 219 (analysis of variations, St. Margaret's Bay & Halifax harbour, N.S.)
S 918 (daily and seasonal oscillations, B.C. coast)
- Sea lion (fossil)
J 25(9): 1843 (new genus & species (*Imagotaria downsi*))
- Sea lion (Peru) (*Otaria byronia*)
J 26(4): 713 (*Diphyllobothrium* & other parasites in)
- Sea lion, California (*Zalophus californianus*)
J 24(7): 1623 (anomalous records from Nfld.)
29(12): 1764 (possibly some among northern sea lions wintering along W coast Vancouver Is.)
B 171: 42 (records, B.C.)
S 1681 (parasites of, W coast N America)
- Sea lion, northern or Steller (*Eumetopias jubatus*)
J 29(12): 1764 (aerial count of, wintering along W coast Vancouver Is.)
B 171: 41 (description, records, etc., of B.C.)
S 1046 (permanent canine teeth eruption)
1079 (faunal succession from extinct forms)
1681 (parasites of, W coast N America)
- Sea lion, Steller (see Sea lion, northern)
- Sea mount (see Bowie Seamount)
- Sea otter (*Enhydra lutris*)
J 23(12): 1897 (re Pleistocene fossil ancestors)
S 1681 (parasites of, W coast N America)
A 209 (transplantation from Alaska to B.C.)
- Seaperch, blue (see Seaperch, striped)
- Seaperch, brown (see Perch, kelp)
- Seaperch, dusky (see Perch, pile)
- Seaperch, kelp (see Perch, kelp)
- Seaperch, pile (see Perch, pile)
- Seaperch, pink (*Zalembeus rosaceus*)
J 24(10): 2161 (parasitization re other surfperches)
28(5): 767 (host of new trematode species)
- Seaperch, redtail (see Surfperch, redtail)
- Seaperch, rubberlip (*Rhacochilus toxotes*)
J 24(10): 2161 (parasitization re other surfperches)
- Seaperch, shiner (see Perch, shiner)
- Seaperch, striped (*Embiotoca lateralis*) (*Taeniotoca lateralis*; blue seaperch)
J 24(10): 2161 (parasitization re other surfperches)
25(8): 1651 (plasma protein-bound inorganic iodide)
(11): 2519 (marking by high-frequency electric sparks)
29(11): 1525, 1543 (respiratory adaptations of prenatal young in ovary)
B 180: 306 (full description, etc., B.C.)
- Seaperch, wall-eyed (see Surfperch, walleye)
- Seaperch, white (*Phanerodon furcatus*)
J 24(10): 2161 (parasitization re other surfperches)
28(7): 1051 (maturity & fecundity, Tomales Bay, Calif.)
B 180: 310 (full description, etc., B.C.)
- Sea-poacher, Atlantic (see Poacher, Atlantic)
- Sea-poacher, deep-pitted (see Rockhead)
- Sea-poacher, fourhorn (see Poacher, fourhorn)

- Sea-poacher, smooth (*see* Alligatorfish, smooth)
- Sea-poacher, sturgeon-like (*see* Poacher, sturgeon)
- Sea-poacher, window-tailed (*see* Poacher, northern spearnose)
- Sea raven (*see* Raven, sea)
- Seasnail (Atlantic) (*Liparis atlanticus*)
 T 225 (associated with Bay of Fundy scallop beds)
 261 (bibliography for Gulf of St. Lawrence)
- Seasnail, blacksnout (*Paraliparis copei*)
 T 261 (bibliography for Gulf of St. Lawrence)
- Seasnail, gelatinous (*Liparis koefoedi*)
 T 261 (bibliography for Gulf of St. Lawrence)
- Seasnail, Greenland (*Liparis tunicatus*)
 T 261 (bibliography for Gulf of St. Lawrence)
- Seasnail, longfin (*see* Snailfish, longfin)
- Seasnail, polka-dot (*see* Snailfish, polka-dot)
- Seasnail, striped (*Liparis liparis*)
 T 261 (bibliography for Gulf of St. Lawrence)
- Sea stars (*see* Starfishes)
- Sea tadpole (*Careproctus reinhardi*)
 T 261 (bibliography for Gulf of St. Lawrence)
- Sea urchins (Echinoidea) (*see also* Echinodermata; Heart urchins; Sand dollars)
 J 24(4): 833 (*Strongylocentrotus droebachiensis* from a drifting ice island off E Greenland)
 (6): 1385 (off Oregon, 10 species re bathymetric & geographic distribution)
 26(10): 2669 (ciliate & turbellarian parasites of *S. franciscanus*)
 28(11): 1733 (respiration rate)
 29(5): 603 (lobster abundance as control of seaweed overgrazing by *S. droebachiensis*)
 (9): 1347 (fuel oil residues in, 26 months after oil spill in Chedabucto Bay, N.S.)
 T 159 (*S. droebachiensis* in Canadian Arctic Archipelago)
 208 (bioassays re elemental phosphorus assimilation)
 217 (pollution by Atl. coast petroleum oil spills)
 225 (associated with Bay of Fundy scallop beds)
 S 1373 (lipids nature & metabolism; spermatozoa phosphatide utilization: review)
 1401 (cyclic nucleotide phosphodiesterase in *Strongylocentrotus* gonads & intestine)
 1569 (determination of residual fuel oil contamination in)
 A 133 (caloric content of *Strongylocentrotus*)
- Sea water (*see also* Nutrients, aquatic; Ocean; Oceanography; Oceanography (general); Salinity; Sea level; Sea water, artificial; Sea water, refrigerated; Tides; Waters, natural; *also* other cognate headings)
 J 22(5): 1107 (fatty acids in dissolved and particulate matter)
 23(11): 1635 (chemical composition, bacteria, & phytoplankton over P.E.I. oyster culture area)
 B 125R; 167 (chemical composition, physical properties, & methods of analysis)
 T 218 (effects on bacteria survival)
 S 912 (system and pumps for large aquarium tanks)
 1234; 1512; 1517 (isopiestic measurements of H₂O-NaCl-MgCl₂ (&-Na₂SO₄) ternary systems at 25 C)
 1273 (partial molal volumes of 16 salts in)
 1467 (automated measurement of dissolved nutrients)
 1472 (improved indicator for colorimetric chlorinity titrations)
 1627 (calcium carbonate monohydrate in)
 1667 (polychlorinated biphenyls in, & effects on *Gammarus* reproduction)
 1707 (calcium carbonate partial molal volume in)
- Sea water, artificial
 J 28(5): 788 (analysis method for ammonium-nitrogen in aquaria)
- Sea water, refrigerated (RSW) (for holding fishery catches) (*see also* Chilling; Freezing)
 J 22(4): 955 (normal and salt-fortified, for salmon before canning)
 23(6): 917 (effect of holding sockeye salmon on free oil of canned product)
 26(9): 2523 (for improving scallop meat quality)
 B 160 (for chilling & freezing salmon & tuna)
 CVG 41; 44 (weight changes of some B.C. fishes stored at sea in, vs. icing)
 44 (effect on yield prior to, & during canning of sockeye salmon)
 T 220; 242 (effects on sockeye salmon in normal & salt-fortified, re quality of canned product)
 280 (effects on shipboard-transported Atl. cod, redfish, & flounder whole fish & fillets; also description of shipboard equipment)
 S 935 (for chilling fish on board vessels)
 947 (Na, K, & Mg ion concentration in muscle after holding fish in)
 1031 (containing added antibiotic)
 A 26 (plus antibiotics for preserving fish quality)
 29 (quality changes in fish passing through rigor while held in)
 41 (review)
 77 (brief summary of use)
 138: 28 (for holding queen crab catches)
 203 (resume of T 220 & 242 above)
- Seaworm, boring (*see Polydora* references under Polychaeta; *also* Shipworms)
- Seagran, Harry L.

- J 29(5): 525 (dressing & cooking effects on DDT residues in 4 L. Michigan fishes)
- Seal, bearded (*Erignathus barbatus*)
 B 154: 127 (as Nfld. resource)
 MSP 13; 13(F) (actual & potential Canadian Arctic fishery)
 S 1681 (parasites of, W coast N America)
 A 231 (actual & potential Canadian Arctic fishery)
- Seal, gray (*Halichoerus grypus*)
 J 24(3): 635 (blubber oil fatty acids structure detail)
 27(5): 963 (locating nematode parasites by ultraviolet fluorescence)
 B 154: 127 (as Nfld. resource)
 S 932 (lactating female blubber fatty acid composition)
 972 (fatty acids types in blubber oil)
 1190 (population on Sable Is., N.S.)
 1202 (population, breeding, dispersal, & economy in E Canadian waters)
 1228 (isoprenoid fatty acids of blubber fat, re feed)
 1405 (lipoxidase reaction with polyenoic fatty acids of oil)
 A 75 (Canadian Arctic tagging, 1965)
 108 (tagging with cattle ear tags)
- Seal, harbour (eastern Pacific) (*Phoca vitulina richardi*)
 J 23(4): 607 (foetal & postpartum whitecoat pelage)
 24(2): 435 (molting of)
 (2): 451 (pelage patterns re populations distributions)
 26(2): 449 (regional differences in pupping season of 4 subspecies)
 B 162: 83 (sockeye salmon predator)
 171: 43 (description, records, etc., of B.C.)
 172 (life history of, in B.C.)
 S 1681 (parasites of, W coast N America)
- Seal, harbour (western Atlantic) (*Phoca vitulina concolor*)
 J 25(12): 2749 (possible effect of bounty re Atl. cod cod-worm infestation)
 28(5): 755 (observations on whelping colony, Sable Is., N.S.)
 B 154: 127 (as Nfld. resource)
 S 1080 (fatty acids positional distribution in depot fat triglycerides)
 1118 (fatty acids positional distribution in blubber oil)
 1188 (distribution in Canadian Arctic; possible identity with freshwater Ungava seal)
 1190 (population on Sable Is., N.S.)
 1220 (re Pinnipedia phylogeny)
 1226 (fatty acids positional distribution in blubber triglycerides)
 1573 (occurrence in lakes of Thlewiaza R., N.W.T., & improbability of being *P. v. mellonae*)
 1717 (fatty acids in lung & heart phospholipids & triglycerides)
- Seal harbour (western Pacific) (*Phoca vitulina largha*)
 J 23(4): 607 (foetal & postpartum whitecoat pelage)
- Seal, harp (*Phoca (Pagophilus) groenlandicus*)
 J 22(2): 433 (NW Atl. migrations)
 23(5): 757 (reproductive rates)
 25(11): 2419 (depot fat & milk lipids fatty acid composition)
 26(5): 1397 (blood protein polymorphism)
 29(4): 349 (pesticide residues in commercial oils)
 B 154: 127 (as Nfld. resource)
 MSP 13; 13(F) (actual & potential Canadian Arctic fishery)
 S 938 (NW Atl. industry)
 1008 (exploitation & conservation)
 1023; 1024 (ICNAF Canadian research reports)
 1080 (fatty acids positional distribution in depot fat triglycerides)
 1084 (netting & trapping on N shore of St. Lawrence R.)
 1203 (positional distribution of monoenoic fatty acids in blubber triglycerides)
 1220 (re Pinnipedia phylogeny)
 1226 (fatty acids positional distribution in blubber triglycerides)
 1228 (isoprenoid fatty acids of blubber fat, re feed)
 1581 (migration surveys in Gulf of St. Lawrence & Strait of Belle Isle, using various marking & tracking devices)
 1694 (blubber fatty acids re those of fin whale)
 A 43; 108; 119; 152; 153; 181; 182; 241; 247 (ICNAF Canadian studies: commercial catches; tagging; etc.)
 75 (Canadian Arctic studies, 1965)
 184 (population dynamics & exploitation of Canadian Arctic)
 194 (Nfld. fishery)
 231 (actual & potential Canadian Arctic fishery)
 247 (production calculation for western N Atl.)
- Seal, hooded (*Cystophora cristata*) (hood seal)
 J 25(11): 2419 (depot fat & milk lipids fatty acid composition)
 B 154: 127 (as Nfld. resource)
 S 938 (NW Atl. industry)
 1008 (exploitation & conservation)
 A 108; 119; 152; 153; 182; 241 (ICNAF Canadian studies: commercial catches; tagging; hunting mortality; etc.)
 194 (Nfld. fishery)
- Seal, monk (Hawaiian) (*Monachus schauinslandi*)
 J 26(4): 947 (3 *Diphyllbothrium* parasite species histology)
- Seal, northern elephant (*Mirounga angustirostris*)
 B 171: 44 (occurrences & sightings in B.C. waters)
 S 1681 (parasites of, W coast N America)
- Sea, northern fur (*Callorhinus ursinus*)
 J 28(10): 1663 (distribution off B.C. & stomach contents as clue to Pac. herring offshore distribution)
 B 171: 39 (description, records, etc., of B.C.)
 S 1681 (parasites of, W coast N America)

- Seal, ringed (*Phoca (Pusa) hispida*)
 J 23(5): 769 (analysis of aerial census)
 B 154: 127 (as Nfld. resource)
 T 224 (computer programs for population data analysis; some age-group data)
 MSP 13; 13(F) (actual & potential Canadian Arctic fishery)
 S 1004 (re Canadian Arctic Islands marine-glacial relicts)
 1681 (parasites of, W coast N America)
 A 184 (population dynamics & exploitation of Canadian Arctic)
 200 (mercury contamination, Hudson Bay)
 231 (actual & potential Canadian Arctic fishery)
- Seal, Ungava freshwater (*Phoca vitulina mellonae*)
 S 1188 (possible identity with Atlantic harbour seal)
- Seal pelts (see Fur)
- Seals (general)
 J 25(11): 2419 (fatty acids composition of commercial oils)
 S 1079 (faunal succession from extinct N. Pac. forms)
 1681 (parasites of unidentified, W coast N America)
- Seamount (see Bowie Seamount)
- Searcher (*Bathymaster signatus*)
 B 180: 318 (full description, etc., B.C.)
 T 81 (in experimental B.C. groundfish trawling)
- Season (see also Behavior; also biological & physical phenomena affected by seasons)
 J 27(9): 1656 (re depth distribution of fishes in a small lake)
 (10): 1669 (re iodine values & free fatty acid levels of commercial Atl. herring oils)
 (10): 1875 (re larval herring condition, Maine coast)
 28(4): 587 (effects on wild vs. hatchery rainbow trout metabolism)
 (7): 935 (effects on fish communities components, in Passamaquoddy Bay, N.B., & in warmer waters)
 (7): 1009 (discreteness of Gulf of St. Lawrence herring populations in spring & autumn fisheries)
 (10): 1549 (re polychaetes settlement on test panels, California)
 29(10): 1419 (re depth of sound-scattering layer in NE Pac. Ocean)
 B 168; 177 (re degree of paralytic shellfish toxicity, E Canada)
- Seawater (see the three Sea water headings that follow the heading Sea urchins)
- Seaweeds (see also Chlorophyta; Dulse; Eel grass; Irish moss; Phaeophyta; Prasinophyceae; Rhodophyta; Sea grass; also Algae; Flora, aquatic)
 J 24(1): 33 (vertical distribution re environment, Indian Arm B.C.)
- 28(11): 1733 (production potential of seaweed-lobster community)
 B 154: 7, 144 (as Nfld. resources)
 S 1580 (classification & ordination of many shallow benthic species, P.E.I.)
 1619; 1708 (zonation, biomass, & productivity of seaweed zone, St. Margaret's Bay, N.S.)
- Sebago (see Salmon, Atlantic landlocked)
- Sebago Lake, Maine
 J 27(1): 1 (insecticides residues variation analysis in landlocked Atl. salmon)
- Sebastes* (replacing *Sebastes*) (see B 180 for certain new nomenclature used below)
aleutianus (see Rockfish, rougheye)
alutus (see Perch, Pacific ocean)
auriculatus (see Rockfish, brown)
aurora (see Rockfish, aurora)
babcocki (see Rockfish, redbanded)
borealis (see Rockfish, shortraker)
brevispinus (see Rockfish, silvergray)
caenaemeticus (see Rockfish, shortraker)
caurinus (see Rockfish, copper)
ciliatus (see Rockfish, dusky)
crameri (see Rockfish, darkblotched)
dalli (see Rockfish, brown)
diploproa (see Rockfish, splitnose)
elongatus (see Rockfish, greenstriped)
emphaeus (see Rockfish, Puget Sound)
entomelas (see Rockfish, widow)
flavidus (see Rockfish, yellowtail)
goodei (see Chilipepper)
helvomaculatus (see Rockfish, rosethorn)
introniger (see Rockfish, shortraker)
jordani (see Rockfish, shortbelly)
levis (see Rockfish, cow)
maliger (see Rockfish, quillback)
marinus (see Redfish)
marinus marinus (see Redfish)
marinus mentella (see Redfish, deepwater)
melanops (see Rockfish, black)
melanostomus (see Rockfish, shortraker)
mentella (see Redfish, deepwater)
miniatus (see Rockfish, vermilion)
mystinus (see Rockfish, blue)
nebulosus (see Rockfish, china)
nigrocinctus (see Rockfish, tiger)
paucispinus (see Bocaccio)
pinniger (see Rockfish, canary)
polyspinis (see Rockfish, northern)
proriger (see Rockfish, redstripe)
reedi (see Rockfish, yellowmouth)
rosaceus (see Rockfish, rosethorn)
ruberrimus (see Rockfish, yelloweye)
rubrivinctus (see Rockfish, redbanded)
saxicola (see Rockfish, stripetail)
variegatus (see Rockfish, harlequin)
wilsoni (see Rockfish, pygmy)
zacentrus (see Rockfish, sharpchin)

- Sebastes* (see *Sebastes*)
- Sebastolobus alascanus* (see Thornyhead, shortspine)
altivelis (see Thornyhead, longspine)
 systematics (see T 34)
- Secchi disk (see Transparency of natural waters)
- Sediments; Sedimentation (see also Corer; Grab)
- J 22(2): 395 (sedimentation effect on brook trout stream population)
- (3): 801 (sedimentation re water exchange and pollution in an inlet)
- (4): 919 (rate in Alaskan salmon stream)
- 23(11): 1635 (phosphate, nitrate, & bacteria in P.E.I. oyster-bearing mud)
- 24(11): 2241 (bottom, of Kouchibouguac Bay, N.B.)
- 25(6): 1181 (of upper Great Lakes, re benthic environment subdivisions)
- (11): 2327 (Fe, Mn, & Ti in St. Lawrence R. estuarial)
- (12): 2665 (associations of Oregon coast fishes with types of)
- 26(1): 55 (particle size analysis, Washington coast)
- (6): 1667 (separation of invertebrates from, by fluorescent dyes)
- (7): 1959 (chemical estimation of caloric content of marine)
- (8): 2003 (epibenthic algae & community respiration in Marion L., B.C.)
- (9): 2283 (size preferences of 5 haustoriid amphipod species)
- (10): 2581 (bottom corer for sampling)
- (10): 2659 (bacteria & amino acids in Toronto harbour, as nutritional resources)
- (10): 2751 (bottom sampler attached to trawl board)
- 27(2): 213 (re Chironomidae in benthic fauna colonization)
- (4): 621 (re benthic infauna communities distribution, Washington coast)
- (4): 623 (phosphate, ferrous, & ammonium ion movement from & through lake muds, re eutrophication)
- (4): 653 (plastic layer over, to lessen release of phosphates, etc.)
- (4): 685 (microflora re amphipod *Hyaella azteca* feed, Marion L., B.C.)
- (5): 966 (re Pac. hagfish environment)
- (11): 1961, 1971 (oligochaetes biology in, Toronto harbour)
- (12): 2273 (re benthic infauna off Washington coast)
- 28(2): 139, 265, 277 (of many small NW Ont. lakes)
- (3): 335 (bacterial survival during ingestion of, by tubificid oligochaetes in Toronto harbour, Ont.)
- (6): 849 (assessing character by sampler)
- (6): 911 (re primary productivity, Chesapeake Bay, Md.)
- (7): 1049 (sampling receptacle for interstitial water in intertidal mud flats)
- (7): 1055 (mud fluoride nonfusion distillation assay method)
- (9): 1327 (of fuel oil from marine spills, through ingestion & defecation by zooplankton)
- (11): 1715 (re benthic macroinvertebrates community metabolism, L. Ontario bays)
- (11): 1807; 29(7): 1035 (mobilization of mercury derivatives from, into fish)
- (12): 1877 (DDT accumulation & persistence in)
- 29(3): 229 (volcanic ashfall effects on, of 2 Alaskan lakes)
- (4): 443 (*Clostridium botulinum* in, off Canadian Atl. coast)
- (9): 1347 (Bunker C fuel oil residues in Chedabucto Bay, N.S., 26 months after spill)
- B 169: 96 (re Pac. oyster culture)
- CVG 42 (solids recovery from salmon-canning & herring-pumping waste waters)
- T 233 (elemental phosphorus & fluoride content, re pollution of Long Bay, Nfld.)
- S 957 (St. Lawrence R. and Gulf recent depositional conditions)
- 959 (mathematical treatment of sedimentation, re pulp mill effluents)
- 1154 (apparatus for sampling gases from bottom)
- 1155; 1688 (Coulter electronic counter for estimating suspended)
- 1223 (re seasonal variations in marine benthos feed availability)
- 1254 (geologically ancient fatty acids in shale)
- 1303 (bacteria role in primary production from organic debris in marine)
- 1321 (current transport of marine sediment-forming materials, Bedford Basin, N.S.)
- 1353 (Gulf of St. Lawrence: types, minerals, geomorphology; iron, aluminum, sodium/potassium ratio values)
- 1426 (Magdalen Shelf, S Gulf of St. Lawrence)
- 1434 (sedimentary organic matter re paleolimnology; review)
- 1438; 1439 (Green L., N.Y.: precipitation & sedimentation of calcite; sediments interstitial water chemistry)
- 1500 (nature & amounts of gases from B.C. coastal water sediments close to pulp mills; also mathematics of bubble formation)
- 1519 (protein, amino acids, & ammonia determination in marine)
- 1528 (fatty acids indicative of geological fate of chlorophyll in 50,000,000-year-old lake shale)
- 1531 (flocculating reaction, re pollutants removal)
- 1688 (review of several methods for fine-grained suspended-sediment analysis)
- 1693 (re *Clostridium botulinum* distribution, Gulf of St. Lawrence)
- 1722; 1723 (phytol diagenesis & maturation re geochemistry of)
- A 108 (1966 Canadian ICNAF studies)
- 199 (marine geological investigations of Gulf of St. Lawrence)
- 232 (pollution from removal of radionuclides from sea water)
- Seeds; Seed oils (see Oils, seed)

- Segerstråle, Sven Gustaf
J 28(9): 1331 (population problems of glacial relict amphipod)
- Segregation
J 29(9): 1245 (between longnose & blacknose dace, Mink R., Man.)
- Seiches (*see also* Surges, oceanic)
J 23(2): 278 (Long Point Bay, L. Erie, Ont.)
27(6): 1165 (sudden cold water incursion cause of fish & crayfish mortality, Georgian Bay, Ont.)
- Seines; Seining (*see also* Nets; Selectivity of fishing gear)
CJG 18: 1 (recent developments in Nfld. herring fishery)
T 137 (catches & catch per unit effort, 1964-65 & 1967-68 Nfld. herring)
- Sekerak, Aaron Daniel
J 27(11): 1943 (*Sebastes alutus* parasitic copepods)
- Seki, Humitake
J 25(4): 625 (organic matter production and mineralization)
26(12): 3165 (zooplankton feed in winter in Strait of Georgia, B.C.)
S 1303 (marine sediment decomposition)
1305 (food of young salmon)
1326 (allochthonous bacteria and organic materials)
1369 (infection of marine copepods)
1413 (activity of microorganisms in sea water)
1428 (lobster introduction into Fatty Basin, B.C.)
1485 (organic matter in aquatic environments)
A 164 (automated techniques for detection characterization of seawater particles)
167 (microbial biomass in N Pac.)
- Selar crumenophthalmus* (*see* Scad, bigeye)
- Selectivity of fishing gear (*see also* Nets; Trawl; *also* names of International Commissions)
J 23(2): 246, (3): 423 (gill & pound nets for lake whitefish)
25(10): 2123 (underwater observation of scallop drag)
26(5): 1205 (re American plaice fishery)
(5): 1383 (gillnets, re sockeye salmon swimming thrust)
(10): 2681 (gillnets, re fish shape & structure)
28(6): 821 (sockeye & pink salmon gillnets)
29(11): 1636 (DeLury method of estimating, for gillnets)
B 161: 39 (gillnet mesh for goldeye)
S 1020 (otter-trawl re Atl. cod girth-length relations)
1176 (3 types of scallop drags)
1317 (Atl. salmon in experimental drift net fishing)
A 241 (Canadian ICNAF research)
250 (trawl mesh sizes increases re effects on Atl. cod fisheries)
- Selenium derivatives
J 27(4): 677 (traces in Great Lakes fishes & livers)
- 28(5): 786 (in dressed Canadian fishes from industrial area lakes)
- Semakula, Saul Nelson
J 25(12): 2589 (Fraser R. white sturgeon)
- Seman, John Peter, Jr.
J 26(10): 2651 (EDTA effect on spoilage of petrale sole & ocean perch fillets)
- Semen (*see* Gonads; Milt; Reproduction; Sperm; Testes)
- Semotilus atromaculatus* (*see* Chub, creek)
corporalis (*see* Fallfish)
margarita nachtriebi (*see* Dace, northern pearl)
- Sen Gupta, Achintya Kumar
S 1385 (phytanic acid menthyl esters re chromatographic diastereoisomers separation)
- Seneca Lake, N.Y.
J 29(6): 617 (limnology & fishes)
- Senecella* (*see* Calanoida; Copepoda)
- Sepia* (*see* Squids)
- Sepic, Kresimir
J 26(8): 2257 (heading & gutting capelin)
S 1368 (reprocessing & marketing of sea-frozen fish)
- Sepioteuthis sepioidea* (*see* Squids)
- Septibranchida (*see also* Pelecypoda; Clams (Pacific))
J 26(8): 2230 (description of 5 new NE Pac. species)
- Sergeant, David Ernest
J 22(2): 433 (harp seal migrations)
23(5): 757 (reproductive rates of harp seals)
26(8): 2201 (tagging white whales)
(10): 2561 (body size in white whales)
27(11): 1903 (E Canada inshore cetacean records)
CAG 9 (whale species in western N Atl.)
S 938 (sealing industry)
1008 (harp & hood seals)
1200 (age determination of land mammals from annuli)
1575 (feeding rates of Cetacea)
1581 (migration and orientation in harp seals)
A 229 (review of Russian book on age determination of mammals)
247 (calculation of harp seal production in NW Atl.)
- Sergeant major (*Abudefduf saxatilis*) (convict fish)
J 25(1): 197 (microorganisms isolated from diseased)
- Sergestes similis* (*see also* Shrimps)
J 23(8): 1135 (principal oceanic shrimp off Oregon coast)
(12): 1971 (feed & feeding apparatus)
25(7): 1311 (pressure effect on vertically migrating)

- Seriola dorsalis* (see Yellowtail)
dumerili (see Amberjack, greater)
zonata (see Rudderfish, banded)
- Serology (see Blood; Serum)
- Seromucoid
 J 28(8): 1173 (levels in Pac. salmon, trout, & bovine blood sera)
- Serpent River system lakes, Ont. (see Quirke Lake)
- Serpulidae (see Polychaeta)
- Serrivomer jespersenii* (see Sawpalate, crossthroat)
sector (see Snipe eels)
- Serum; Serology (see also Blood)
 J 23(12): 1957 (proteins & antibody production in rainbow trout)
 24(2): 443 (serology of 2 Atl. oyster populations, re disease)
 26(1): 15 (lactate dehydrogenase isozymes variants in, of sockeye salmon populations)
 (5): 1397 (polymorphism in harp seal blood protein)
 (8): 2101 (protein: changes in, during lobster molt & reproduction)
 (9): 2351 (Pac. halibut blood serum proteins)
 (9): 2532 (white bream & ruff polymorphic esterases)
 (12): 3268 (transferrin variants in Pac. hake)
 27(3): 596 (simultaneous cortisol & cortisone determination in salmonid plasma)
 (5): 969, (8): 1389 (furunculosis antibodies in trout)
 (9): 1617 (transferrin polymorphism in Atl. salmon)
 28(8): 1173 (glycoprotein constituents levels in Pac. salmon & trout)
 (11): 1745 (esterases, lactate dehydrogenases, & transferins, of large & dwarf white suckers & longnose sucker)
 29(2): 179 (serum proteins re possible *Salmo salar* subspeciation)
 (3): 303 (prolactin & growth hormone in adult migratory sockeye salmon)
 (11): 1519 (biochemical characteristics, of northern pike subjected to methylmercury; corrections on J 30(8): 1257)
 B 162: 380 (serology re sockeye stocks identification)
 177 (serology re paralytic shellfish poisoning)
 S 943 (effect on rainbow trout gonadal cell growth)
 1129 (re sockeye distribution in N Pac. Ocean)
 1204 (serum transferrins polymorphism of scombrid fishes re population units)
 1288 (serum protein concentration of hemolymph as index of lobster condition)
 1356; 1357; 1362 (skate blood serum testosterone levels & sex hormone binding agent)
 1612 (esterases of salmonids: molecular weight heterogeneity)
- Seston (see also Plankton)
 J 23(10): 1625 (efficiency of methods for determining)
 27(1): 180 (crop estimation by filtration with glass fiber discs as superior to centrifuging)
 (7): 1251 (monthly variation, Strait of Georgia, B.C.)
- Seuratidae (see Nematoda)
- Sevin (see Insecticides)
- Sewage treatment and disposal, re pollution (see also Pollution)
 J 27(8): 1493 (benefit of treatment for phosphate removal re particulate matter production in Great Lakes)
 29(8): 1203 (sodium nitritotriacetate biodegradation in model aerated sewage lagoon; enhancement by *Daphnia* as bacterial predator)
 T 263 (current flows off primary treatment plant at mouth of Fraser R., B.C.)
 294 (design & operation of model aerated sewage lagoon)
 S 1407 (disposal effects on S B.C. coastal waters)
 1709 (Thames R., England)
 A 52 (disposal at sea)
 187 (disposal in confined coastal waters)
 216 (re Great Lakes eutrophication)
 242 (application of oceanographic information to, B.C.)
 261 (biological effects of abatement of effluent, Biscayne Bay, Florida: book review)
- Sex determination (see Dimorphism)
- Sex effects (see also Hermaphroditism; Hormones; Ovary; Pigments; Testes)
 J 26(8): 2041 (of capelin re fat content & lipid hydrolysis)
 27(12): 2197 (of parents on early development of hybrids between pink, chum, & sockeye salmon)
 28(4): 587 (on rainbow trout metabolism)
 29(10): 1487 (mercury content of Strait of Georgia spiny dogfish)
 (12): 1725 (on captive lobster growth)
- Sex ratio (Note: The following is not an exhaustive list of references to this subject; data will also be found implied in references under the names of organisms)
 J 22(3): 681 (Nicola L., B.C., kokanee)
 (3): 695 (and sexual dimorphism, immature sea lampreys)
 23(5): 623 (brook trout in infertile Pennsylvania streams)
 (6): 797 (southern Nfld. herring population)
 (7): 947 (salmon parr in Nabisipi R., Que.)
 24(1): 53 (Atl. halibut re lengths & maturity)
 (2): 305 (*Ampelisca* amphipods sibling pairs)
 (7): 1425 (brook trout)
 25(7): 1377 (changes in L. Superior lake trout)
 (9): 1813(F) ("giant" smelts of Heney L., Que.)
 (10): 2091 (lake whitefish, Lac la Ronge, Sask.)

- 26(2): 361, (5): 1321 (sand-burrowing amphipods)
 (3): 655 (sockeye salmon escapement, Bristol Bay, Alaska)
 (10): 2754 (in steelhead trout sport fishery, Babine R., B.C.)
 (12): 3133 (cod in fishery off SW Nfld.)
 27(1): 418 (lake trout, L. Opeongo, Ont.)
 (3): 413 (brook trout, Matamek L., Que.)
 (8): 1491 (occurrence of male predominance among repeat spawning Atl. salmon)
 (11): 2112 (commercially harvested Alaskan weathervane scallops)
 (12): 2215 (Nfld. capelin)
 (12): 2261 (yellowtail flounder in waters off Nfld.)
 28(3): 417 (Pac. ocean perch, Washington & B.C. coast)
 (5): 771 (rainbow trout, Batchawana Bay, L. Superior)
 (6): 821 (Skeena R. pink & sockeye salmon re gill-net selectivity)
 29(7): 1061 (re Pac. ocean perch aggregations, Queen Charlotte Sound, B.C.)
 B 161: 22 (goldeye)
 162: 284 (seaward migrating sockeye salmon)
 CNS 25 (B.C. sockeye salmon 1912-63 catches)
 26 (in B.C. chum salmon catches, 1957-63)
 T 10 (of sockeye salmon, 1965 & 1966 spawning run escapement to Lakelse L., B.C.)
 16 (of Pac. ocean perch in experimental catches, 1966)
 140; 174 (B.C. offshore herring)
 S 1128 (L. Superior *Orconectes* crayfishes)
 1206 (of salmon from Labrador Sea & off W Greenland)
 1634 (adaptive significance of biased, in *Orchestia* amphipoda)
 A 193 (capelin)
- Sexual behavior (*see* Behavior; Courtship; Mating; Reproduction; Territorialism; etc.)
- Sexual dimorphism (*see* Dimorphism)
- Sexual maturity (*see* Hormones; Maturity; Ovary; Reproduction; Testes)
- Seymour, Allyn Henry
 S 1061 (Alaska salmon resource)
- Shad, American (*Alosa sapidissima*) (shad)
 J 25(4): 667 (re Great Lakes species succession & exploitation)
 27(1): 191 (inflammatory lesion in flesh)
 28(7): 1507 (effect of warm water of nuclear power plant discharge canal)
 (8): 1167 (net-avoidance behavior tracked ultrasonically)
 29(10): 1445 (adult behavior during sea-to-river migration tracked by ultrasonic tags)
 (10): 1495 (feed availability & habit of young Connecticut R.)
 B 180: 95 (full description, etc., of B.C.)
- CNS 14; 19 (B.C. landings by areas, 1964, 1965)
 T 7; 22; 56; 81; 256; 317 (taken during B.C. experimental & commercial trawling)
 164 (extensive length-weight data)
 261 (bibliography for Gulf of St. Lawrence)
 S 1069 (2 further records, Nfld.)
- Shad, gizzard (*Dorosoma cepedianum*)
 J 24(2): 429 (lethal endrin pollutant concentration in blood)
 27(10): 1842 (taken in L. Erie smelt surveys 1962-63)
 28(7): 957 (vulnerability to northern pike predation)
 29(9): 1283 (cadmium content, in New York State waters)
 T 261 (bibliography for Gulf of St. Lawrence)
- Shade (*see* Light, reactions to)
- Shah, Bhagwan G.
 J 28(6): 843 (zinc retention in young rats fed increasing levels of high-zinc oysters)
- Shale
 S 1254 (stereoisomerism of geologically ancient isoprenoid fatty acids in)
 1528 (isoprenoid fatty acids indicative of geological fate of chlorophyll in ancient lake sediments)
- Shand Dam (*see* Grand River, Ont.)
- Shanks, Warren Ernest
 J 27(2): 347 (body weight vs. DDT salmon toxicity)
- Shanny, Arctic (*Stichaeus punctatus*)
 J 26(5): 1375 (first Massachusetts Bay record; morphology, feed)
 T 261 (bibliography for Gulf of St. Lawrence)
- Shanny, daubed (*Lumpenus maculatus*) (*Leptoclinus maculatus*)
 J 23(8): 1277 (first B.C. record)
 28(7): 935 (occasional component of Passamaquoddy Bay fish communities, N.B.)
 B 180: 336 (full description, etc., B.C.)
 T 261 (bibliography for Gulf of St. Lawrence)
- Shanny, radiated (*Ulvaria subbifurcata*)
 J 28(7): 935 (occasional component of Passamaquoddy Bay fish communities, N.B.)
 T 261 (bibliography for Gulf of St. Lawrence)
- Shape, of fish (*see also* Morphology)
 J 26(10): 2681 (selectivity of gillnets, re)
 (11): 2823 (changes in steelhead trout during parr-smolt transformation)
- Shapley, Sanford Philip
 J 22(4): 919 (sediment in streams)
- Sharaf El Din, Sayed Hassan
 T 219 (physical oceanography of St. Margaret's Bay, N.S.)

- Shark, Atlantic sharpnose (*Rhizoprionodon* sp. (*terraenovae* ?))
J 25(7): 1441 (attraction with pulsed low-frequency sound)
- Shark, basking (*Cetorhinus maximus*)
B 180: 34 (full description, etc., B.C.)
T 193 (1961-69 Atl. tagging)
261 (bibliography for Gulf of St. Lawrence)
S 1696 (chlorinated pesticide contamination in muscle & liver, Bay of Fundy)
- Shark, bigeye thresher (*see* Thresher, bigeye)
- Shark, blue (*Prionace glauca*)
J 24(10): 2201 (in line fishing from Pac. Ocean weather-ship P)
25(4): 825 (feeding behavior in NE Pac.)
26(4): 805 (4 cestode species in Nfld.)
B 180: 41 (full description, etc., B.C.)
CSG 47 (identification)
T 193 (1961-69 Atl. tagging & returns)
261 (bibliography for Gulf of St. Lawrence)
S 1244 (a corticosteroid 1 α -hydroxylase in interrenal tissue)
- Shark, brown (*see* Shark, brown cat; Shark, sandbar)
- Shark, brown cat (*Apristurus brunneus*) (brown shark)
B 180: 38 (full description, etc., B.C.)
T 22; 81; 181; 205; 221; 257; 317 (taken during B.C. groundfish or trawl surveys)
- Shark, dogfish (*see* Dogfish, spiny (Pacific))
- Shark, dusky (*Carcharhinus obscurus*)
C 47 (identification)
T 193 (1961-69 Atl. tagging)
S 956 (Canadian research in Caribbean Sea)
1244 (a corticosteroid 1 α -hydroxylase in interrenal tissue)
- Shark, Greenland (*Somniosus microcephalus*) (sleepershark)
J 26(1): 143 (sex, lengths, feed, & parasite, N Baffin Is.)
T 261 (bibliography for Gulf of St. Lawrence)
- Shark, hammerhead (*see* Hammerhead, scalloped)
- Shark, mackerel (*see* Mako, shortfin; Shark, salmon)
- Shark, mako (*see* Mako, shortfin)
- Shark, mud (*see* Shark, sixgill)
- Shark, nurse (*Ginglymostoma cirratum*)
J 25(7): 1441 (attraction with pulsed low-frequency sound)
- Shark, oceanic whitetip (*Carcharhinus longimanus*) (*Pterolamiops longimanus*; whitetip shark)
CSG 47 (identification)
- T 193 (Atl. tagging, 1961-69)
S 956 (Canadian research in Caribbean Sea)
- Shark, Pacific angel (*Squatina californica*)
B 180: 26 (brief description in key to Elasmobranchii)
- Shark, Pacific sleeper (*Somniosus pacificus*) (sleepershark)
B 180: 43 (full description, etc., B.C.)
- Shark, reef (*Carcharhinus* sp. (*springeri*?))
J 25(7): 1441 (attraction with pulsed low-frequency sound)
- Shark, salmon (*Lamna ditropis*) (*Isurus nasus*; mackerel shark)
J 24(10): 2201 (in line fishing from Pac. Ocean weather-ship P)
B 180: 36 (full description, etc., B.C.)
- Shark, sandbar (*Carcharhinus milberti*) (brown shark)
CSG 47 (identification)
T 193 (1961-69 Atl. tagging)
S 956 (Canadian research in Caribbean Sea)
- Shark, sevengill (*Notorynchus maculatus*) (*N. cepedianus*; spotted cow shark)
B 180: 28 (full description, etc., B.C.)
- Shark, sickle (*see* Shark, silky)
- Shark, silky (*Carcharhinus falciformis*) (sickle shark)
CSG 47 (identification)
T 193 (1961-69 Atl. tagging)
S 956 (Canadian research in Caribbean Sea)
1244 (a corticosteroid 1 α -hydroxylase in interrenal tissue)
- Shark, sixgill (*Hexanchus griseus*) (*H. corinum*; mud shark)
J 22(3): 857 (description and morphometry, San Juan Is. specimen)
B 180: 27 (full description, etc., B.C.)
T 181 (taken during 1969 B.C. trawl fishery)
- Shark, sleeper (*see* Shark, Greenland; Shark, Pacific sleeper)
- Shark, soupfin (*Galeorhinus zyopterus*) (*G. galeus*; tope)
J 25(4): 825 (feeding behavior in NE Pac.)
(12): 2711 (muscle creatine kinase localization) (as tope)
B 180: 39 (full description, etc., B.C.)
- Shark, spotted (*see* Shark, sevengill)
- Shark, spotted cow (*see* Shark, sevengill)
- Shark, thresher (*Alopias vulpinus*)
B 180: 30 (full description, etc., B.C.)
T 261 (bibliography for Gulf of St. Lawrence)
- Shark, tiger (*Galeocerdo cuvieri*)
T 193 (1961-69 Atl. tagging)
S 956 (Canadian research in Caribbean Sea)

- Shark, white (*Carcharodon carcharias*)**
 J 29(8): 1213 (predation on harbour porpoise)
 B 180: 32 (full description, etc., B.C.)
 T 261 (bibliography for Gulf of St. Lawrence)
 MSP 14 (popular description (English & French))
 S 1696 (chlorinated pesticide contamination in muscle & liver)
- Shark, whitetip (see Shark, oceanic whitetip)**
- Sharks (see also above species; also Dogfish; Hammerhead; Mako; Porbeagle)**
 CSG 47 (Atlantic: identification & other data, including tagging)
 T 193 (mackerel (Lamnidae): 1961-69 Atl. tagging)
 S 1244 (*Scyliorhinus stellaris*: a corticosteroid α -hydroxylase in interrenal tissue)
 1660 (body temperature re environment, for many species)
 A 144 (Atlantic: ancient & fossil teeth, in fisheries catches)
- Shaw, Derek Humphrey**
 J 27(11): 1983 (bacteriological evaluation of frozen flounder)
 S 1411 (estimation of neutral sugars by gas-liquid chromatography)
 1612 (salmonids serum esterases molecular weight heterogeneity)
 1613 (bottlenose dolphin milk neutral carbohydrates)
- Shaw, Rosslyn**
 J 27(4): 743 (light effects on oyster spat settlement)
- Shaw, William Neil**
 J 24(6): 1413 (freeze-drying shellfish for solids)
- Shaykewich, Karen**
 S 1632 (training for measuring the taste of food)
- Shealy, Malcom Hughes, Jr.**
 J 29(4): 455 (larval largemouth bass radiostromium marking)
- Shearwater, sooty (*Puffinus griseus*)**
 T 210 (commonest bird observed during B.C. trawl survey off SW Vancouver Is.)
- Sheepshead (see Drum, freshwater)**
- Shehadeh, Ziad H.**
 S 1695 (salmon gonadotropin effect on ovarian & testicular development in immature gray mullet)
- Shelbourn, John Edward**
 J 23(2): 293 (schooling of chum salmon fry)
 26(9): 2363 (sockeye salmon growth and composition)
- Sheldon, Raymond Wilfred**
 J 24(3): 569 (feeding and migration patterns of pink shrimp)
 (5): 909 (size spectrum for particle size in the sea)
 (5): 1165 (shell weight and age in molluscs)
 26(1): 171 (Malpeque Bay, P.E.I., physiographic changes 1845-1955 re oyster production)
 (10): 2751 (trawl-board sediment sampler)
 27(11): 1917 (production & standing stock of particulate matter in the sea)
 S 1155 (Coulter Counter)
 1223 (food availability seasonal variations for benthos)
 1345 (marine particles retention)
 1503 (small particles in sea water)
 1537 (universal grade scale for particulate materials)
 1592 (relations between oceanic wind speed, Langmuir circulation, & particle concentration)
 1688 (review of fine-grained suspended sediments size analysis)
- Shelf, continental (see Continental shelf)**
- Shell (see also Mollusca; kinds of calcareous-shelled invertebrates, e.g. Clam; Oyster; Scallop; also Carapace; kinds of chitinous-shelled Crustacea, e.g. Crab; Lobster)**
 J 22(2): 281 (growth and structure, Atl. oyster, mussel, quahaug)
 (2): 631 (ancient oyster and quahaug in now-barren areas)
 (3): 851 (Mn deposits on mud snail, P.E.I.)
 24(5): 1165 (weight re age, of several British Isles aquatic molluscs)
 27(11): 2112; 28(9): 1335 (weathervane scallops, re age & maturity)
 29(11): 1565 (effect of environment & waves on morphology of *Lampsilis radiata* freshwater clam)
 B 169: 8, 40, 57, 106; 178 (Pac. oyster morphology, growth, uses, B.C.)
 T 168 (rings re sea scallop aging)
 S 910 (damage reparability of sea scallop)
 1199 (borer attack on ancient Sable Is. oyster & scallop)
 1315 (weight to total weight ratio re sexual dimorphism of *Polinices* drill)
 1440 (pyrolysis effects on amino acids in shell of modern, Pleistocene, & Miocene northern quahaug)
- Shell, moon (*Polinices*) (see Snails, marine; Drills, clam; Drills, oyster)**
- Shellfish (see also Gastropoda; Mollusca; Pelecypoda; and common names of species, e.g. Abalone; Clam; Clams; Cockle; Geoduck; Limpet; Mussel; Quahaug; Oyster; Scallop; Whelk, etc.; also Crustacea and common names of species, e.g. Crab; Crabs; Lobster; Prawn; Shrimp; Shrimps, etc. See also Paralytic shellfish poisoning; Shell)**
 S 190 (availability of Canadian)
- Shellfish occasional toxicity (see Paralytic shellfish poisoning)**

- Shelter
 J 29(5): 598 (effects of group housing on lobster aggressiveness)
 (9): 1356 (effect on bluegill resistance to lethal zinc concentration)
- Shepard, Michael Perry
 S 1230 (spawning populations of N Pac. salmon)
 1302 (N Pac. Ocean salmon)
 1390 (N Pac. chum salmon origin)
 A 19 (high-seas tagging of salmon runs)
 204 (INPFC Canadian report on Pac. salmon & steelhead trout research, 1965)
- Sheri, Ahmad Nadum
 J 25(10): 2225 (Bay of Quinte white perch)
- Shetter, David Sibley
 J 24(7): 1425 (*Salvelinus fontinalis* numerical changes and population regulation; correction on J 25(8): 1760)
- Shieh, Hang-shan
 S 933; 936 (choline degradation by marine bacterium)
 1042 (betaine oxidation by *Achromobacter*)
 1152 (formaldehyde production during bacterial action)
 1178 (choline or betaine utilization in microbial biosynthesis)
 1229 (¹⁴C-labelled betaine enzymic oxidation by *A. cholinophagum*)
 1272 (scallop phospholipids radioactive bases)
 1312 (marine microbe fatty acid synthesis)
 1346 (phospholipids in lobster)
 1602 (lobster synthesis of glycerides from ¹⁴C-labelled compounds)
 1720 (amino acids role in *Aeromonas salmonicida* nutrition re furunculosis)
- Shih, Chang-tai
 B 176: 1, 2 (Canadian marine zooplankton: preface & section on Atl. zooplankton)
- Shiner, blackchin (*Notropis heterodon*)
 J 23(12): 1845 (mouth & body form re feeding ecology)
- Shiner, blacknose (*Notropis heterolepis*)
 J 29(3): 275 (2 parasites of, Lake of the Woods, Ont.)
- Shiner, common (*Notropis cornutus*)
 J 25(6): 1199 (low temperature effects on feeding in 3 Ont. localities)
 28(1): 45 (populations upstream & downstream of a dammed Ont. lake)
 (9): 1285 (methylmercury in N.B.)
 T 226 (mortalities from pollution, & as possible immune carriers of *Aeromonas liquefaciens* bacteria disease to salmon & suckers, NW Miramichi R., N.B.)
 S 1128 (in 2 L. Superior bays)
- Shiner, emerald (*Notropis atherinoides*)
- J 24(5): 927 (limnetic larvae in N Wisconsin lakes)
 25(4): 667 (re Great Lakes species succession & exploitation)
 26(2): 325 (S Alta. distribution)
 27(1): 170 (in Hudson Bay drainage system, Man.)
 (10): 1842 (taken in L. Erie smelt surveys)
 29(3): 275 (5 parasites of, Lake of the Woods, Ont.)
 B 173: 258 (full description, etc., of NW Canada)
- Shiner, golden (*Notemigonus crysoleucas*)
 J 23(12): 1845 (mouth & body form re feeding ecology)
 25(6): 1199 (low temperature effects on feeding in 3 Ont. localities)
 (8): 1739 (spinal ganglia position taxonomy)
 27(12): 2343 (in tests of RNA-DNA ratios as indicators of recent fish growth rates)
 28(7): 957 (vulnerability to northern pike predation)
 (9): 1285 (methylmercury in N.B.)
 29(2): 211 (development of *Aeromonas liquefaciens* antibodies)
 (3): 275 (4 parasites of, Lake of the Woods, Ont.)
- Shiner, pugnose (*Notropis anogenus*)
 J 29(3): 275 (5 parasites of, Lake of the Woods, Ont.)
- Shiner, redside (*Richardsonius balteatus*)
 J 25(1): 81 (limnology re mortality in 3 SW B.C. lakes)
 (7): 1317 (muscle proteins inheritance in hybrids with peamouth chub)
 B 173: 220 (full description, etc., in NW Canada & Alaska)
- Shiner, river (*Notropis blennioides*)
 J 26(2): 325 (S Alta. distribution)
 B 173 (mention in key to NW American minnows)
- Shiner, spotfin (*Notropis spilopterus*)
 J 28(1): 45 (populations upstream & downstream of a dammed Ont. lake)
- Shiner, spottail (*Notropis hudsonius*)
 J 23(1): 149 (alkaline phosphatase in scales)
 (3): 455 (size re maturity)
 26(2): 325 (S Alta. distribution)
 (6): 1672 (aggregations with yellow perch; predators)
 27(1): 170 (in Hudson Bay drainage system, Man.)
 (4): 677 (7 trace elements in whole fish, Great Lakes)
 (10): 1842 (taken in L. Erie smelt surveys)
 28(7): 1507 (effect of warm water of nuclear power plant discharge canal)
 29(3): 275 (13 parasites of, Lake of the Woods, Ont.)
 B 173: 262 (full description, etc., of NW Canada)
- Shiners (*Notropis* species)
 S 1128 (*N. deliciosus*, etc., in L. Superior bays)
- Shinners, Claude Wayne
 CHN 20 (identification of filets)
- Ship (see Vessels)

- Shipping (*see also* Transportation)
 B 173 (preserved fish specimens)
 A 4(F) (precautions for, live lobsters)
- Shipworms (wood-boring molluscs) (*see also* Gribble)
 J 24(2): 261 (estimating attack of *Bankia setacea* on wood)
 25(5): 853 (glucose metabolism in *B. setacea* caecum)
 27(1): 201 (*Teredo navalis* & *Psiloteredo megotara* activity in test boards, Nfld.)
 (6): 1141 (glucose metabolism enzymes in *B. setacea* caecum)
 (6): 1151 (survey of distribution in Canadian Atl. waters)
 CSG 53 (new treatment to combat *T. navalis*)
 T 21 (tin compound for combating *T. navalis*)
 119 (combating attack of *T. navalis* on ship hull)
 A 114 (same as CSG 53 above)
 121 (tin compound for combating, in wood of lobster traps)
- Shoener, Gilles
 J 23(7): 947 (Nabisiipi R. salmon parr)
- Shoop, Clifford Thomas
 J 26(9): 2363 (sockeye salmon growth and composition)
 T 301 (a brief on B.C. mariculture)
 A 93 (Atl. lobsters in B.C. waters)
- Shrimp (in addition to the following headings, *see* Shrimps; *also* Crustacea; Decapoda; Pandalid; Prawn)
- Shrimp, brine
 J 23(9): 1291 (*Artemia salina* used in *Euphausia pacifica* feeding experiments)
 26(3): 557 (northern anchovy feeding habit on nauplii vs. adult *A. salina*)
 27(6): 1051 (use in testing accumulation of ⁶⁵Zn in euphausiids tissues)
 29(3): 285 (*Artemia* re biting vs. filtering feeding habit of northern anchovy)
- Shrimp, coonstripe (*Pandalus danae*) (*see also* Shrimp, humpback)
 T 241 (bibliography)
 319 (mortality from phytoplankton bloom causing oxygen depletion)
 A 50 (description)
- Shrimp, ghost
 J 28(10): 1527 (new B.C. range record for *Callinassa gigas* & *Calastacus quinqueseriatus*)
 B 169: 156 (*Callinassa californiensis* & *Upogebia pugettensis* as pest in Pac. oyster culture in B.C.)
- Shrimp, giant red (*see* Shrimp, sidestripe)
- Shrimp, glass (*see also* Shrimps)
 J 24(11): 2467 (assimilation from organic matter by *Palaemonetes pugio*)
 26(8): 1969 (*Pasiphaea multidentata* breeding, fecundity, feed, & growth)
 28(5): 705 (biological magnification & degradation of insecticides by *Palaemonetes kadiakensis*)
 (9): 1225 (cadmium toxicity tests using *Palaemonetes vulgaris*)
- Shrimp, humpback (*Pandalus hypsinotus*) (coonstripe, humpy, or king shrimp)
 J 28(1): 98 (spines characterizing females re spawning history)
 CNG 76; 85 (re FRB shrimp prospecting, B.C. coast)
 T 30 (taken during FRB experimental groundfish trawling)
 A 50 (description)
 104 (based on CNG 85 above)
- Shrimp, humpy (*Pandalus gonturus*) (name in Alaska; benttail pandalid proposed as name in B.C.; *see also* Shrimp, humpback)
 J 28(1): 98 (spines characterizing female re spawning history)
- Shrimp, king (*see* Shrimp, humpback)
- Shrimp, mud (*see* Shrimp, ghost)
- Shrimp, northern (*see* Shrimp, pink)
- Shrimp, pink (*Pandalus borealis*) (northern shrimp)
 J 22(2): 307 (nucleotides, sugars, homarine)
 24(2): 467 (fatty acids composition)
 (8): 1833 (botulinum spore germination in tissue extracts)
 25(2): 267 (occurrence & retention of thetin derivative from feed)
 27(4): 669 (diel vertical migration, Kachemak Bay, Alaska)
 28(1): 98 (spines characterizing females re spawning history)
 (4): 509 (carotenoids, re use of processing wastes for improving brook trout pigmentation)
 B 154: 121 (as Nfld. resource)
 CHN 33 (suggestions for commercial handling)
 34 (re 1968 Maine shrimp industry)
 CNG 76; 85 (re FRB shrimp prospecting, B.C. coast)
 T 18 (catches in Gulf of Alaska & Bering Sea exploratory fishing, 1957-64)
 61 (in B.C. exploratory fishing, 1966 & 1967)
 22; 30; 81; 269; 278; 290 (in B.C. experimental groundfish trawling)
 241 (bibliography)
 S 1260 (adaptation re striped pink shrimp in NW Atl.)
 1527 (muscle & egg sterols)
 A 50 (description)
 89 (same as CHN 33 above)
 104 (based on CNG 85 above)
- Shrimp, sand (*Crangon septemspinosa*) (*see also* Shrimps)
 J 28(9): 1225 (cadmium toxicity tests)
- Shrimp, sidestripe (*Pandalopsis dispar*) (giant red shrimp)

- J 28(1): 98 (spines characterizing females re spawning history)
 29(4): 464 (egg number re carapace length, Dabob Bay, Washington)
 CNG 76; 85 (re FRB shrimp prospecting, B.C. coast)
 T 18 (catches in Gulf of Alaska & Bering Sea exploratory fishing, 1957-64)
 22; 30; 61; 81; 221 (taken in B.C. exploratory fishing or trawling)
 A 50 (description)
 104 (based on CNG 85 above)
- Shrimp, smooth pink (*Pandalus jordani*)
 CNG 76; 85 (re FRB shrimp prospecting, B.C. coast)
 T 30 (in FRB experimental groundfish trawling)
 61 (in B.C. exploratory fishing)
 241 (bibliography)
 A 50 (description)
 104 (based on CNG 85 above)
- Shrimp, spot (see Prawn (*Pandalus platyceros*))
- Shrimp, striped pink (*Pandalus montagui*)
 J 24(3): 569 (feeding & migration in a British river)
 (9): 1873 (in Hudson Bay)
 25(9): 1803 (sulfur & caloric content)
 27(7): 1177 (digestion rate by Atl. cod)
 B 154: 122 (as Nfld. resource)
 CHN 33 (suggestions for commercial handling)
 T 121 (used as example in computer program for predation study)
 241 (bibliography)
 S 1260 (adaptation re pink shrimp in NW Atl.)
 A 89 (same as CHN 33 above)
 123 (caloric content)
- Shrimpm meal
 J 28(4): 509 (for feeding brook trout to improve pigmentation)
- Shrimps (no definitely assigned common name; or treated as a group; or treated in general; see also Decapoda; *Lebbeus*; Prawn; Shrimp)
 J 22(1): 1 (description of *Calocaris templemani* (n.sp.) & of *C. macandreae*)
 (1): 69 (*Argis dentata* larvae & megalopa from Ungava Bay, Que.)
 (1): 117 (bacteriology & antibiotic preservation of processed B.C. commercial)
 23(8): 1135 (depth distribution of oceanic *Natantia* off Oregon coast, particularly *Sergestes similis*)
 (12): 1971 (feed & feeding apparatus of *Pasiphaea pacifica* & *S. similis*)
 24(3): 689 (pot for experimental fishing, Alaska)
 (5): 1101 (fatty acids composition of *Acanthephyra curtirostris*, *Pleuroncodes planipes*, & a *Pasiphaea* species)
 (9): 1873 (list of species collected in Hudson Bay)
 25(2): 347 (10 species of hippolytid & crangonid, Queen Elizabeth Is. coast, Canadian Arctic)
 (7): 1311 (pressure effect on vertically migrating *S. similis* respiration)
 (9): 1803 (*Argis dentata* sulfur & caloric content)
 26(3): 704 (nucleotides & related compounds in canned Arabian Sea *Metapenaeus dobsoni*)
 (7): 1899 (hippolytid, crangonid, etc., species of Beaufort Sea to Cambridge Bay, Canadian Arctic)
 (8): 2211 (*S. similis* & *Pas. pacifica* as yellowtail rockfish feed)
 (11): 2969 (*Parapenaeus* spp. chemical composition & nutritive value)
 27(3): 606 (*Periclimenes americanus* growth rate re ribonucleic acid content)
 (6): 1051 (distribution of ⁶⁵Zn in *Pas. pacifica* tissues)
 (9): 1661 (as flathead sole feed)
 28(10): 1615 (n.sp. *Eualus berkeleyorum*, also first records of *Parapasiphaë sulcatifrons*, *Acanthephyra curtirostris*, *A. quadrispinosa*, & *Systellaspis braueri* caridean species, off B.C. coast)
 29(2): 187 (*Crangon vulgaris* caloric content)
 (12): 1792 (pandalid, as Pac. hake feed)
 CNG 76; 85 (FRB prospecting for, B.C. coast)
 79 (Japanese catches in N Pac.)
 84 (popular description of some NE Pac. Ocean)
 T 18; 61 (exploration in Gulf of Alaska & Bering Sea)
 22; 30; 81; 269 (taken in B.C. experimental groundfish trawling)
 241 (general bibliography of Pandalidae)
 319 (*C. alaskensis* mortality from phytoplankton bloom causing oxygen depletion, Nanoose Harbour, B.C.)
 S 1260 (adaptation among NW Atl. species)
 1328 (B.C. industry)
 A 50 (B.C. fishery landing, 1939-65; fishery methods)
 60 (same as CNG 79 above)
 104 (based on CNG 85 above)
 133 (*Argis dentata* caloric content)
 253 (development of fisheries on Canadian Atl. coast)
- Shrinkage
 J 24(3): 691 (effect of ice storage on groundfish length measurements)
 S 1027 (effect of formalin preservation on length of Atl. herring)
- Shucking
 B 169: 104 (Pac. oyster, B.C.)
 179: 35 (mechanical, B.C. clams)
- Shumway, Dean Lee
 J 24(3): 475 (oxygen re largemouth bass growth)
 25(1): 49 (dissolved O₂ & CO₂ re bass & salmon swimming)
- Sialic acid
 J 28(8): 1173 (levels in salmon, trout, & bovine blood sera)
- Sibbaldus musculus* (see Whale, blue)

- Sibert, John
 T 307 (pulpmill effluent effect on O₂ levels in an estuary)
 316 (pulpmill effluent effects on O₂ supply in Alberni Inlet, B.C.)
 321 (computer model simulation of pink salmon fry population growth under predation by coho salmon fingerlings in an estuary)
- Sicklefish (*Drepane punctata*) (concertinafish)
 J 25(1): 197 (microorganisms isolated from diseased)
- Sicyogaster maeandricus* (see Clingfish, northern)
- Siegesmund, Kenneth August
 J 25(5): 863 (trout cornea ultrastructure)
- Sierra (*Scomberomorus sierra*) (Sierra mackerel)
 J 25(9): 1987 (red & white muscle temperature of recently caught)
- Sigalionidae (see Polychaeta)
- Sight (see Vision)
- Silicate (for general data re content in natural waters see Nutrients, aquatic; see also Limnology; Oceanography; Sediments)
 J 25(12): 2739 (NE Pac. Ocean surface distributions)
 26(5): 1133 (re marine phytoplankton growth)
 27(3): 425 (in lakes affected by uranium ore milling wastes)
 (5): 837 (as pollution criterion of natural waters)
 (7): 1251 (monthly variations, Strait of Georgia)
 (11): 2022 (in inflow, outflow, rain, & snow, Clear L., Ont.)
 28(2): 203 (in waters of many small NW Ont. lakes)
 (2): 277 (in sediments of 16 small NW Ont. lakes)
 (11): 1763 (concentration in a NW Ont. lake; correction on J29(8): 1241)
 B 125R: 67; 167: 65, 137 (determination methods for sea water)
 T 77: 203; 327 (re primary productivity, St. Margaret's Bay, N.S.)
 120; 247 (in Bedford Basin waters, N.S.)
 255 (fluosilicic acid toxicity tests on brook trout)
 314 (re primary production, Petpeswick Inlet, N.S.)
 S 957 (in St. Lawrence R. and Gulf sediments)
 1437; 1439 (in Green L., N.Y.)
 1467; 1609 (automated measurement of, in sea water)
- Silicone
 S 1275 (an organic, to produce nonwetting glass surface)
- Siliqua patula* (see Clam, razor (Pacific))
- Silliman, Ralph Parks
 J 26(1): 161 (growth in weight of fishes)
 28(8): 1211 (experiments re fishery models)
- Silt (see Matter, particulate; Sediments)
- Silver derivatives
 J 27(2): 317 (oxide for coding embedded encapsulated tags in animals)
 (2): 383 (toxicity to 5 liver enzymes of mummichog)
 (4): 677 (traces in Great Lakes fishes & livers)
 29(4): 450 (amount in Atl. oyster soft tissue)
- Silver-rag (*Ariomna bondi*)
 J 26(10): 2769 (first Canadian record: Gulf of St. Lawrence)
- Silver spot (see Sculpin, silverspotted)
- "Silvering" (see also Scales; Skin; also references to guanine under heading Purines)
 J 25(9): 1901; 27(5): 983 (formation in Atl. salmon skin & scales)
 26(7): 1927 (formation in eye, skin, scales, & swimbladder of freshwater fishes)
- Silverside, Atlantic (*Menidia menidia*)
 T 261 (bibliography for Gulf of St. Lawrence)
- Silverside, brook (*Labidesthes sicculus*)
 J 23(12): 1845 (mouth & body form re feeding ecology)
- Simard, André
 J 25(7): 1501(F) (*S. namaycush* in marine waters)
 (9): 1831(F) (*Esox masquinongy* age & growth in 4 Que. lakes)
- Simon, Raymond Charles
 J 25(3): 473 (salmon blood lactate after exercise)
- Simpson, Kent Steven
 T 312 (computer programs for analysis of Pac. salmon migration orientation data)
 335 (computer analysis of ultrasonic tracking sockeye salmon, Babine L., B.C.)
- Simpson, S. L.
 A 138 (queen crab industry on Canadian Atl. coast)
- Simpson, Sylvia Geraldine
 J 25(4): 817 (redfish muscle hypoxanthine accumulation)
- Simuliidae (blackflies) (see also Diptera; Insects; Insecticides; Invertebrates)
 J 24(4): 769, 823 (affected by N.B. forest insecticide sprays, re their role as salmon & trout feed)
 25(11): 1157 (re insect communities in a small Que. stream)
 26(5): 1157 (feed, habits, ecology, in small Que. stream)
 27(12): 2356 (abundance re rainbow trout feeding)
 28(1): 35 (differences upstream & downstream of a dammed Ont. lake)
 (1): 105 (*Simulium arcticum* control in Saskatchewan R. leaves DDT residues in fish flesh)

- S 999 (as indicators of Cu-Zn toxicity in Atl. salmon streams)
1532; 1533 (of a high Colorado mountain creek)
- Sinclair, Donald Coll
J 25(9): 1997 (*Cottus asper* limnetic occurrence)
- Sinclair, Ruth Estella
J 25(10): 2071 (haddock preserved by ethylenediaminetetraacetic acid (EDTA))
T 67 (volumetric determination of EDTA)
68 (colorimetric determination of EDTA salts on haddock, cod, & flounder)
S 1367 (characteristics of cod stored at superchill temperatures)
- Sinclair, Sol
B 158 (fisheries of District of Mackenzie)
- Sinistrality (see also Bothidae; Flounder)
J 26(1): 191 (S to N percentage increase in B.C. starry flounders)
- Siphon ("neck") (of clams)
J 29(11): 1657 (paralytic toxin re melanin pigment in butter clam)
B 168: 22; 177: 28 (re localization of paralytic shellfish poisoning toxin)
- Siphonophora (see also Coelenterata)
B 176 (synopsis of Canadian marine zooplanktonic)
T 55: 17 (identification of B.C.)
- Sipos, John Charles
J 23(11): 1809 (fatty acid composition of Atl. cod lipids)
24(3): 613 (seasonal changes in cod fatty acid composition)
(3): 635 (marine fatty acids)
25(8): 1561 (jellyfish fatty acids)
27(3): 513 (krill lipids & fatty acids)
CHN 37 (recognition of bunker oils by thin-layer chromatography)
T 233 (possible toxic materials in Nfld. bottom deposits)
S 921 (response of fatty acids and esters in gas chromatography)
972 (isolation of saturated fatty acids of some marine lipids)
1136 (fatty acid methyl esters storage)
1177 (cod liver lipids fatty acid esters)
1608 (isovaleroyl triglycerides from beluga whale blubber & head oils)
1721 (fatty acids distribution in Atl. leatherback turtle tissues & organs)
A 170 (bunker oils recognition by thin-layer chromatography)
- Sipunculoidea
T 25; 35; 59; 60; 73 (in Strait of Georgia benthos biomass)
- Siscowet (*Salvelinus (Cristivomer) namaycush siscowet*) (see also Char, lean lake; Trout, lake)
J 27(1): 161 (as claimed subspecies of *C. namaycush* in L. Superior)
- Sixes River, Oregon
J 29(12): 1737 (social interaction between young coho salmon & fall chinook salmon)
- Sixteenmile Lake, B.C.
J 23(11): 1761 (life history & inlet stream spawning of longnose & white suckers)
- Size; Size distribution (of organisms) (see also Growth; Length; Weight; also names of organisms; also next two headings)
J 22(2): 465 (trends in Nfld. longlined cod)
(2): 573 (mature American plaice)
(2): 605 (re age composition of Nfld. salmon)
(3): 679 (Nicola L., B.C., kokanee)
(4): 1083 (seasonal distribution of *Mytilicola*, re parasitism on Pac. oyster)
(6): 1372 (of northern pike re size of feed)
(6): 1491 (of sockeye salmon re swimming speed and O₂ consumption)
(6): 1565 (new record for witch flounder)
23(3): 455 (re maturity of spottail shiner)
(4): 511 (limit regulations for Strait of Georgia lemon sole)
(5): 729 (fishery effect on king crab populations structure)
(7): 947 (salmon parr in Nabisipi R., Que.)
(8): 1209 (re feed & growth efficiency of fishes)
24(1): 53 (Atl. halibut at maturity)
(2): 375 (Babine R. sockeye salmon fry)
(5): 909 (continuous size spectrum for marine particulate matter)
(9): 1945 (composition of n.sp. *Sebastes reedi*)
26(1): 83 (hierarchy in coho salmon fry)
(1): 165 (gill dimensions re fishes size)
(3): 479 (effects of size-selective mortality & sampling bias on growth, mortality, production, & yield estimates)
(3): 543 (variations re polyteny of *Pseudocalanus* in Ogac L., N.W.T.)
(5): 1205 (changes in exploited American plaice stock)
(9): 2339 (& age of female shiner perch re embryo number & size)
(10): 2561 (of white whale body)
(10): 2754 (& age of steelhead trout, Babine R., B.C.)
(12): 3133 (of cod in fishery off SW Nfld.)
27(1): 132 (lake trout, L. Opeongo, Ont.)
(2): 393 (record for Atl. capelin)
(4): 685 (*Hyaella azteca* amphipod, Marion L., B.C.)
(5): 976 (re rainbow trout swimming speed)
(6): 991 (Dolly Varden smolts, SE Alaska)
(7): 1215 (coho vs. chinook under-yearlings re spatial habitat in a river)
(9): 1607 (queen crab at maturity)
(10): 1781 (Pac. ocean perch in NE Pac. surveys, 1963-66)

- (10): 1811 (eelgrass leaves in various populations)
 (11): 2112 (at maturity, commercially harvested Alaskan weathervane scallops)
 (12): 2143 (trumpet worm, St. Margaret's Bay, N.S.)
 28(1): 49 (in populations of 2 salamander species, Marion L., B.C.)
 (4): 616 (giant female brook lampreys in upper Great Lakes, re average adult size)
 (6): 821 (Skeena R. sockeye & pink salmon, re gill-net selectivity)
 (7): 947 (teleosts, re gill blood circulation & respiration)
 (7): 957 (re vulnerability of fishes to predation by northern pike)
 (10): 1503 (pink & chum salmon fry, re predation by coho salmon)
 (10): 1545 (Pac. herring early larvae raised under various temperature-salinity combinations)
 (10): 1621 (northern rockfish, re age & sex)
 29(2): 161 (rock crab, Northumberland Strait)
 (4): 423 (mature, of tanner crab, re legal size)
 (5): 535 (re L. Ontario American eel life history)
 (7): 1061 (re sex ratio of different Pac. ocean perch aggregations, B.C.)
 (8): 1181 (effect of, on walleye energetics)
 (8): 1193 (of prey, effect on predation by rainbow trout)
 (12): 1685 (re mercury concentration & fishery, of 11 fish species from various Man. & NW Ont. lakes; corrections on J30(8): 1257)
 (12): 1784 (device for rapidly measuring fish girth & length)
 B 152 (arctic N America sea stars)
 153: 116 (& age of petrale sole at maturity)
 155 (Canadian Atl. marine fishes)
 157: 21 (distribution, of lobster)
 161 (goldeye)
 169; 178 (B.C. oysters)
 171 (average & record, of B.C. marine mammals)
 172 (B.C. harbour seal)
 173 (NW Canada & Alaska freshwater fishes)
 180 (B.C. marine fishes)
 CHN 30 (re flesh discoloration of gillnetted Greenland halibut)
 CNG 91 (steelhead trout, in Vancouver Is. stream-anglers' catches)
 CNS 25 (composition, of B.C. sockeye salmon 1912-63 catches)
 26 (composition, of B.C. chum salmon catches, 1957-63)
 T 10 (composition, of sockeye 1965 & 1966 spawning run escapement to Lakelse L., B.C.)
 16; 81 (composition, of Pac. ocean perch experimental catches)
 105 (B.C. commercial groundfishes)
 107 (definition of commercial, for sablefish)
 113 (composition, & length-weight data, Pac. ocean perch)
 121 (computer program for analysis of feeding heterogeneities re predator body size)
 167 (sockeye eggs re age of females, also growth & maturity of progeny, Skeena R.)
 168 (change with depth, Bay of Fundy sea scallop)
 172 (optoelectronic apparatus for determining plankton size)
 206 (Atl. salmon during parr-smolt stages)
 251; 281 (girth re length of Pac. ocean perch off B.C. & SE Alaska)
 S 1039 (limit regulations for lobster)
 1235 (mathematics of quick methods for estimating size limit changes effect on catches)
 1282 (recent changes in composition, Canadian Atl. swordfish catches)
 1316 (& age & recruitment comparisons for Scotian Shelf haddock)
 1345 (particulate matter retention by screens & filters)
 1378 (body size re gill area of 3 tuna species)
 1380 (redfish: diurnal variation in availability of different sizes)
 1414 (particle size spectra re plankton community structure)
 A 99 (& age composition of Atl. cod)
 138; 256; 263 (queen crab, at maturity & in different areas)
 197 (& weight of fish re metabolic energy requirements: reviews)
 207 (composition, N.B. & N.S. herring)
 211 (particulate matter, re feed availability to different trophic levels in marine feed chain)
 251 (apparent reduction in Atl. sea scallop re Canadian fishery)
 Size (other than of organisms) (*see also* Selectivity of fishing gear)
 J 24(5): 909 (continuous size spectrum for marine particulate matter)
 29(7): 1075 (optoelectronic automatic counter-sizer for plankton)
 T 172 (optoelectronic apparatus for determining plankton size)
 S 908 (size-depth relation of lakes)
 1503 (re occurrence & formation of small particles in sea water)
 1537 (comparison of several grade scales, & proposed universal grade scale for particulate materials)
 1688 (analysis, of fine-grained suspended sediments: review)
 Size limit regulations (*see also* Fisheries; Management; *also* names of International Commissions)
 J 23(4): 511 (Strait of Georgia lemon sole)
 T 107 (definition of commercial, for sablefish)
 S 1039 (lobster)
 1235 (mathematics of quick methods for estimating size-limit changes effect on catches)
 Skaha Lake, B.C.
 T 196 (limnology & bottom fauna survey)
 S 1536 (deformed chironomids larvae possibly caused by synthetic chemical pollutants)
 Skate, Arctic (*Raja hyperborea*)

- J 22(2): 262 (description & occasional capture off Nfld.)
24(1): 215 (predation by amphipod)
- 288 (monthly changes in feed, Passamaquoddy Bay)
S 1244 (a corticosteroid 1 α -hydroxylase in interrenal tissue)
1325 (biosynthesis of 1 α -hydroxycorticosterone by)
1372 (interrenalectomy & hypophysectomy re liver glycogen levels)
- Skate, barndoor (*Raja laevis*)**
J 22(1): 237 (snout abnormality)
(4): 910 (denticles re identification aid)
28(7): 935 (occasional component of Passamaquoddy Bay fish communities)
B 154: 114 (as Nfld. resource)
T 261 (bibliography for Gulf of St. Lawrence)
S 967 (triglyceride-hydrolyzing lipase from pancreas)
1080; 1226 (fatty acids positional distribution in triglycerides)
1244 (a corticosteroid 1 α -hydroxylase in interrenal tissue)
1325 (biosynthesis of 1 α -hydroxycorticosterone by)
- Skate, longnose (*Raja rhina*)**
B 180: 59 (full description, etc., B.C.)
T 7; 56; 181; 257; 317 (taken in B.C. commercial trawling)
91 (observed in B.C. landings for mink feed)
246 (bibliography)
- Skate, big (Atlantic) (*see* Skate, winter)**
- Skate, big (Pacific) (*Raja binoculata*)**
J 25(8): 1651 (plasma protein-bound inorganic iodide)
(12): 2665 (associations with other Oregon coast fishes)
28(1): 95 (differential tail growth in embryo, re respiration mode)
B 180: 56 (full description, etc., B.C.)
T 7; 56; 91; 181; 257; 317 (taken in B.C. commercial trawling)
246 (bibliography)
- Skate, prickly (*see* Skate, starry (Pacific))**
- Skate, roughtail (*Raja trachura*) (*Bathyraja trachura*)**
J 25(12): 2665 (associations with other coast fishes)
B 180: 48 (reported taken off B.C. coast)
- Skate, round (*Raja fyllae*)**
J 22(4): 910 (denticles re identification aid)
- Skate, smooth (*Raja senta*)**
J 22(4): 910 (denticles re identification aid)
28(7): 935 (occasional component of Passamaquoddy Bay fish communities, N.B.)
B 154: 115 (as Nfld. resource)
T 261 (bibliography for Gulf of St. Lawrence)
- Skate, black (*Raja kincaidii*)**
J 25(12): 2665 (associations with other Oregon coast fishes)
B 180: 58 (full description, etc., B.C.)
T 246 (bibliography)
- Skate, soft (*Raja mollis*)**
J 22(2): 268 (description & occasional occurrence off Nfld.)
- Skate, California (*Raja inornata*)**
T 246 (bibliography)
- Skate, spinytail (*Raja spinacauda*)**
J 22(4): 910 (denticles re identification aid)
B 154: 114 (as Nfld. resource)
- Skate, deep-sea (*Raja abyssicola*)**
B 180: 54 (full description, etc., B.C.)
- Skate, starry (Atlantic) (*see* Skate, thorny)**
- Skate, Jensen's (*Raja jenseni*)**
J 22(2): 264 (description & occasional occurrence off Nfld.)
(4): 911 (denticles re identification aid)
- Skate, starry, (Pacific) (*Raja stellulata*) (prickly skate)**
B 180: 61 (full description, etc., B.C.)
T 7; 56; 181; 257; 317 (taken in B.C. commercial trawling)
91 (observed in B.C. landings of fish for mink feed)
- Skate, little (*Raja erlnacea*)**
J 22(2): 260 (Nfld. distribution and scarcity)
(4): 899 (distinguishing from winter skate)
27(12): 2339 (rapid partial hypophysectomy method for)
28(7): 935 (winter periodic component of Passamaquoddy Bay fish communities, N.B., & length frequencies)
(11): 1727 (movements in & out of intertidal zone, Passamaquoddy Bay)
29(1): 85 (muscle catheptic activity)
(7): 997 (feed resource division, Passamaquoddy Bay)
T 261 (bibliography for Gulf of St. Lawrence)
- Skate, thorny (*Raja radiata*) ((Atlantic) starry skate)**
J 22(1): 237 (various abnormalities)
(4): 910 (denticles re identification aid)
23(4): 615 (new adrenal steroid from blood)
(10): 1587 (lipid oxidation test)
24(1): 205 (mineralocorticoid activity of blood steroid for rat)
25(12): 2549 (1 α -hydroxycorticosterone function)
26(4): 805 (parasites, Nfld.)
27(4): 701 (transition metals ion effects on muscle extractable protein & lipids oxidation catalysis)
(12): 2339 (rapid partial hypophysectomy method for)
28(7): 935 (regular component of Passamaquoddy Bay fish communities, N.B., & length range)

- (9): 1285 (methylmercury in Bay of Fundy & N.S. banks)
 29(7): 997 (feed resource division, Passamaquoddy Bay)
 T 164 (extensive length-weight data)
 261 (bibliography for Gulf of St. Lawrence)
 288 (monthly changes in stomach contents, Passamaquoddy Bay, N.B.)
 S 1114; 1141 (hormones in blood plasma)
 1167; 1168 (in vitro biosynthesis of 1α -hydroxycorticosterone by interrenal tissue)
 1205 (biological activity of interrenal 1α -hydroxycorticosterone)
 1244 (corticosteroid 1α -hydroxylase of interrenal tissue)
 1308 (blood plasma binding of steroids)
 1313 (steroids in body fluids)
 1356 (blood testosterone production & metabolic clearance rates)
 1357; 1362 (blood serum protein as testosterone & other sex hormone binding protein)
 1489 (binding affinities of blood proteins for sex hormones & corticosteroids in)
 A 11(F) (hormones in blood plasma)
- Skate, white (*Raja lintea*)
 J 22(2): 265 (description & occasional occurrence off Nfld.)
- Skate, winter (*Raja ocellata*) ((Atlantic) big skate)
 J 22(4): 899 (distinguishing from little skate)
 23(4): 615 (new adrenal steroid from blood)
 24(1): 205 (mineralocorticoid activity of blood steroid for rat)
 27(12): 2339 (rapid partial hypophysectomy method for)
 28(7): 935 (winter periodic component of Passamaquoddy Bay fish communities, N.B., & length range)
 29(7): 997 (feed resource division, Passamaquoddy Bay)
 B 154: 114 (as Nfld. resource)
 T 261 (bibliography for Gulf of St. Lawrence)
 S 1114 (testosterone in blood plasma)
 1167; 1168 (in vitro biosynthesis of 1α -hydroxycorticosterone by interrenal tissue)
 1205 (biological activity of interrenal 1α -hydroxycorticosterone)
 1325 (biosynthesis of 1α -hydroxycorticosterone by)
 A 11(F) (hormones in blood plasma)
- Skates (Atlantic: general, or indefinite identification)
 CSG 54 (underexploited on N.S. banks)
 T 260 (standing crop, availability, sizes, lengths, etc., from Scotian Shelf surveys, 1958-68)
 S 1087 (behavior toward otter trawl, observed photographically)
 1244 (a corticosteroid 1α -hydroxylase in interrenal tissue)
 1412 (fluoride content of fish protein concentrate from whole)
 A 124 (use for fish protein concentrate)
 143(F) (French version of CSG 54 above)
- 175 (same as CSG 54 above)
- Skates (Pacific: general, or incomplete identification)
 J 22(1): 203 (biochemical systematics)
 25(12): 2665 (*Psammobatis spinosissimus* associations with other fishes off Oregon coast)
 CNG 73 (in Hecate Strait exploratory fishing)
 CNS 14; 19 (B.C. landings by areas, 1964, 1965)
 T 11; 22; 30; 46; 81; 144; 205; 221; 269; 278; 290; 328 (taken during FRB experimental or B.C. commercial trawling)
 246 (bibliography)
- Skauen, Donald Matthew
 J 28(5): 769 (simple, reliable method for assaying ^{14}C -labelled benthic microflora)
- Skeena River System, B.C. (see also Babine Lake; also Pacific salmon species)
 J 28(4): 513 (hypothesis for age of return alternation in successive sockeye salmon generations)
 (6): 821 (gillnet selectivity re sockeye & pink salmon fisheries)
 T 133 (scale characteristics of sockeye from nurseries)
 167 (maternal influences on age at maturity of sockeye)
 S 1230 (spawning populations of sockeye & other salmon)
 1271 (population biology factors of sockeye)
- Skelding, James Richard
 S 1303 (marine sediment decomposition)
- Skeleton (see also Bone; Cranium; Osteology; Vertebrae)
 J 26(1): 175 (re identifying northern pike vs. maskinonge)
 (9): 2431 (geographical variations in brook stickleback)
 (10): 2561 (vertebrae & ribs weight in white whales)
 T 123 (clearing & staining Pac. salmon for study of)
- Skeletonema* (see Bacillariophyta; Phytoplankton)
- Skidmore, John Frederick
 J 23(7): 1037 (zebrafish embryos)
 24(6): 1253 (zebrafish oxygen uptake and zinc sulfate resistance)
- Skilfish (*Erilepis zonifer*)
 J 24(10): 2201 (in line fishing from Pac. Ocean weather-ship P)
 B 180: 458 (full description, etc., B.C.)
- Skin (see also Fur; Pigments; Scales; "Silvering")
 J 22(6): 1345 (lymphocystis disease of American plaice)
 23(7): 1095 (pigments of coho salmon belly)
 (12): 1981 (unusual pigmentation of a bocaccio)
 24(5): 955 (purines in Atl. salmon integument during parr-smolt transformation)
 (10): 2195 (unusual pigmentation of sockeye salmon)

- 25(3): 611 (guanidine compounds induction of pallor in young salmonids)
- (9): 1797 (dieldrin accumulation in goldfish, after aldrin ingestion)
- (9): 1901 (guanine & hypoxanthine formation in Atl. salmon)
- (11): 2403 (guanine level changes during coho salmon development)
- 26(5): 1185 (ultraviolet-absorbing & -fluorescing substances in coho salmon belly)
- (7): 1927 (silvering by purines of freshwater fishes)
- 27(5): 973 (carotenoids in prespawning & spawning sockeye salmon)
- (5): 983 (temperature re purine silvering of, on Atl. salmon during parr-smolt transformation)
- 28(1): 104 (morphology of bacterium causing lesions on rainbow trout)
- (4): 485 (histological effects of hormones & cortisol on gonadectomized adult sockeye salmon)
- (4): 509 (attractiveness of brook trout enhanced by feeding crab & shrimp wastes)
- (9): 1241 (incidence & comparison of tumors on Pleuronectidae of Bellingham Bay, Wash.)
- (10): 1672 (ambicoloration of a petrale sole)
- 29(9): 1351 (human hand rinse effect on salmonid olfactory bulb electrical responses)
- S 938 (NW Atl. seal industry)
- 1140 (bacterial lesions on rainbow trout)
- 1258 (proteolytic pseudomonad from rainbow trout lesions)
- 1454 (pigmentation patterns of dolphins & porpoises)
- 1697 (freezing & canning muktuk from white whale blubber & skin)
- A 58 (cause, control, & treatment of "swimmers' itch", from dermatitis on human)
- Skipjack (tuna) (*see* Tuna, skipjack)
- Skipjack, black (*Euthynnus lineatus*)
- J 25(9): 1987 (red & white muscle temperature of recently caught)
- Skjervold, Harald
- J 29(3): 237 (genetic & environmental sources of rainbow trout length & weight variations)
- Skototaxis
- J 26(2): 279 (re benthic invertebrates river stream movements)
- Skull (*see* Cranium; Jaw; Osteology; Otoliths; Teeth)
- Slack, Harry Dawson
- J 24(5): 1017 (profundal benthic fauna of Man. lakes)
- Slavin, Joseph William
- J 25(2): 299 (refrozen Atl. cod storage quality)
- S 935 (chilling and freezing fish on board vessels)
- Sled
- T 292 (design & performance of towed underwater automatic camera sled ("TUACS"))
- 295 (design & performance of diver-controlled towed underwater research plane ("TURP"))
- 310 (design of underwater collapsible camera sled for use from drifting vessel ("DUCCS"))
- Slickhead (*Bajacalifornia burraei*)
- J 24(5): 1101 (fatty acids composition)
- Slickhead, California (*Alepocephalus tenebrosus*) (*A. convexifrons*)
- J 22(5): 1151 (description & taxonomy of deepwater specimens off Oregon coast)
- 25(12): 2665 (associations with other Oregon coast fishes)
- Slime (mucus) (on fish)
- J 24(5): 939 (effects of partial removal from live rainbow trout)
- 28(5): 783 (effects of washing off from freshwater fish, re keeping quality)
- A 29 (effects of removal on weight changes of trout held in refrigerated sea water)
- Sloan, Phillip Reid
- J 22(4): 1083 (phytoplankton photosynthesis)
- Slope waters (*see* Hydrography; Oceanography)
- Slusar, Isabel Marie
- J 24(1): 9 (whitefish preservation by radiation)
- S 1698 (appraising smoked whitefish with sensory panels)
- Small, Lawrence Frederick
- J 25(7): 1311 (pressure re crustacean respiration)
- (11): 2461 (⁶⁵Zn in marine crustaceans)
- 26(1): 145 (marine organisms zinc requirements)
- 27(6): 1051 (ingested ⁶⁵Zn in marine crustaceans)
- 29(9): 1253 (chlorophyll *a* concentration diel periodicity in Oregon coastal waters)
- (9): 1261 (chlorophyll-light estimates of primary production off Oregon)
- (9): 1269 (solar radiation & upwelling effects on daily primary production off Oregon)
- Smart, Michael John
- S 934 (in vivo angiography)
- Smell (*see* Odors; Odors, perception of, Quality of fishery products)
- Smelt (boreal) (*see* Smelts)
- Smelt (deep-sea) (*see* Smoothtongue, California; Smoothtongue, northern)
- Smelt, lake (*see* Smelt, rainbow)
- Smelt, longfin (*Spirinchus thaleichthys*) (*S. dilatus*)
- B 173: 188 (full description, etc., of NW Canada & Alaska)
- 180: 146 (complete description, etc., B.C.)

- T 175 (taken in NE Pac. experimental trawling)
S 937 (*Pentagramma petrowi* trematode parasitism)
- Smelt, night (*Spirinchus starksi*)
B 180: 145 (complete description, etc., B.C.)
- Smelt, pond (*Hypomesus olidus*)
B 173: 200 (full description, etc., of NW Canada & Alaska)
- Smelt, rainbow (*Osmerus mordax*) (*O. eperlanus mordax*; *O. dentex*; Arctic smelt; lake smelt (commercially); toothed smelt) (*see also* Smelts)
J 23(1): 149 (alkaline phosphatase from scales)
26(3): 597(F) (retinal structure re activity, etc.)
27(4): 677 (6 trace elements in livers, Great Lakes)
(8): 1379 (yellow phosphorus toxicity to)
(9): 1656 (seasonal depth distribution in a small lake)
(10): 1823 (distribution & fishery, L. Erie, early 1960s)
28(1): 95 (DDT residues in N.B. & P.E.I.)
(5): 786 (heavy-metal concentrations in dressed, from L. Erie)
(7): 935 (regular component of Passamaquoddy Bay fish communities, N.B., & length frequencies)
29(1): 85 (muscle catheptic activity)
(11): 1639 (increasing incidence of *Glugea hertwigi* parasite)
B 149: 20, 122 (Great Lakes, catches)
151; 151(F) (freshwater: smoked; canned smoked; sausage)
154 (as Nfld. resource)
180: 143 (complete description, etc., B.C.)
CCG 7 27 (tank truck for chilling bulk quantities)
T 164 (extensive length-weight data)
208 (results of elemental phosphorus assimilation)
255 (toxicity tests with yellow phosphorus)
261 (bibliography for Gulf of St. Lawrence)
MSP 14 (popular description (English & French))
S 1098 (brief description; life history in Miramichi R., N.B., and in Lake Ontario)
1128 (in a Lake Superior bay)
1474 (exceptional occurrence of odd-chain fatty acids, also fatty acid composition of triglycerides, cephalins, & lecithins in)
1668 (mercury & 12 other metals content, in Canadian waters)
1718 (organochlorine pesticide levels in Canadian commercially caught)
A 13(F) (description; value; distinction from other similar fishes)
39 (description; life history in L. Erie & Miramichi R.; fisheries)
- Smelt, silver (*see* Smelt, surf)
- Smelt, surf (*Hypomesus pretiosus pretiosus*) (silver smelt)
J 24(3): 629 (heterogeneity of Washington State populations)
25(1): 203 (range extension in Alaska)
- B 180: 139 (complete description, etc., B.C.)
T 46; 62 (in experimental B.C. groundfish trawling)
S 937: 394 (*Pentagramma petrowi* trematode parasitism)
- Smelt, toothed (*see* Smelt, rainbow; *also* Smelts)
- Smelt, whitebait (*Allosmerus elongatus*)
J 28(10): 1681 (first record from Juan de Fuca Strait, B.C.)
B 180: 138 (full description, etc., B.C.)
- Smelts (Osmeridae) (*see also* Capelin; Eulachon; *also* Smoothtongue)
J 25(9): 1813(F) (sympatric populations of "giant" & "dwarf" rainbow smelts (*Osmerus eperlanus mordax*))
B 173: 43 (family key), 187 (species key), 192 (full description, etc., of NW Canada & Alaska (boreal) rainbow smelt subspecies *Osmerus eperlanus mordax & dentex*)
180: 137 (full descriptions, etc., of B.C. marine species)
S 1442 (*Triaenophorus* parasitism of, in L. Mälaren, Sweden)
- Smith, Barbara
J 27(4): 701 (fish muscle protein)
(10): 1685 (frozen fish dimethylamine (DMA))
28(1): 1(DMA in muscle of gadoid fish)
- Smith, Cathy A.
J 29(9): 1359 (effect of 2 iodophors on bacterial & fungal fish pathogens)
- Smith, Charlie Edward
J 25(1): 151 (coho salmon hematological changes)
26(1): 111 (coho folic acid anemia)
28(1): 112 (leukemia in *Salmo clarki*)
29(3): 328 (pathological effects in formalin-treated rainbow trout)
- Smith, George Francis Maurice
S 900 (availability of fish)
901 (exploration for fisheries resources)
902 (fish population management)
- Smith, Howard Donald
J 24(9): 1955 (sockeye salmon mate selection)
28(4): 573 (enumerating kokanee fry)
29(2): 151 (sockeye fry migration, Lower Babine R., B.C.)
T 133 (sockeye scale characteristics)
331 (summary of salmon counts, etc., at Babine R. counting fence, 1967-71)
S 1061 (Alaska salmon resources)
1296 (population estimates of salmon smolts)
- Smith, Ian Donaldson
J 29(12): 1764 (sea lions wintering along Vancouver Is. outer coast)

- Smith, James Benson
 J 25(11): 2257 (L. Manitou, Ont., marked lake trout survival)
- Smith, Janice Elaine (*see also* Prest, Janice Elaine)
 T 131; 181; 216; 257; 302; 317 (B.C. trawl fishery catch & effort statistics)
 259 (commercial landings of W Canadian rock sole)
- Smith, Jim Ross
 J 26(11): 3083 (detecting device for magnetized wire tags in migrating salmon)
- Smith, John William
 J 24(8): 1763 (*Aporocotyle margolisi*, new trematode species)
- Smith, Lloyd Lyman, Jr.
 J 29(9): 1309 (factors influencing hydrogen sulfide toxicity to goldfish)
- Smith, Lynwood Stephen
 J 23(9): 1439 (blood volumes of salmonids)
 24(7): 1579 (Pac. salmon anesthetic and surgical techniques)
 (8): 1775 (sockeye salmon cardiovascular dynamics)
 26(1): 115 (endotoxins in salmonids)
 27(7): 1321 (Blazka respirometer modified version)
 S 978 (dorsal aortic pressures in trout)
- Smith, Manning Amison
 S 1484 (molecular structure & biological activity among mononitrophenols containing halogens)
- Smith, Michael
 J 22(3): 775 (postspawning death of sockeye salmon)
 S 895 (deoxyribonucleic acids of Crustacea)
 914 (deoxyribonucleoside cyclic phosphate synthesis)
 962 (pituitary hormones of salmon)
 1041 (nucleotides in *Daphnia* embryos)
 1245 (protamine biosynthesis during salmonid spermatogenesis)
 1246; 1247 (nucleotide derivatives synthesis)
- Smith, Michael Stuart
 J 28(10): 1672 (ambicoloration in petrale sole)
 CNG 85 (1967 B.C. coast shrimp exploration)
 T 61 (shrimp sampling & temperature data off B.C., 1966 & 1967)
 113; 132; 144; 205; 221; 269; 278; 290; 328 (FRB experimental groundfish cruises, B.C. coast & NE Pac. Ocean)
 243; 309 (1970 sablefish culture progress)
 A 104 (good shrimping areas discovered)
- Smith, Morden Whitney
 J 22(2): 395 (brook trout population)
 23(11): 1799 (organic matter lost by migrating eels)
- 24(8): 1743 (brook trout movements in an artificial pond)
 25(2): 209 (pond formation re brook trout catches)
 (10): 2011 (fertilization & predator control of trout)
 26(12): 3101 (natural lake changes after fertilization)
- S 911 (barachois ponds)
 1101 (Atl. salmon)
 1132 (fish-eating birds and mammals at Crecy Lake, N.B.)
 1133 (hatchery-reared trout movement from a natural lake)
- A 24 (Atl. salmon)
 57(F) (artificial trout ponds)
- Smith, Ralph Gordon, Jr.
 J 29(4): 450 (distribution of Fe, Mg, Cu, Zn, & Ag in Georgia coast oysters; corrections on J 30(8): 1257)
- Smith, Reginald Jan Frederick
 J 27(10): 1889 (small fish marking technique)
 (12): 2350 (aggression & nest building in brook stickleback)
- Smith, Roderick M.
 J 27(12): 2374 (chlorinated hydrocarbon residues in winter flounder)
- Smith, Stanford Henry
 J 25(4): 667 (Great Lakes species succession & fishery exploitation)
 29(6): 717 (ecological succession factors in oligotrophic Great Lakes fish communities)
 (6): 951 (future of salmonid communities in the Great Lakes)
- Smith, Thomas Georges
 T 224 (computer programs for ringed seal population data)
 322 (preliminary study of small artificially heated arctic lake)
 S 1573 (harbour seal in Thlewiaza R., N.W.T.)
- Smith Inlet, B.C. (*see also* Salmon)
 S 1230 (spawning populations of sockeye & other salmon)
- Smith Lake, Alaska
 J 25(10): 2101 (atmospheric & inorganic nitrogen utilization by algae)
- Smoker, William
 J 27(7): 1265 (lanternfish development)
- Smoking; Smoked products (*see also* Delicatessen)
 J 22(1): 13 (smoking effects on cod protein quality)
 27(7): 1201 (lake whitefish: flavor effects of different woods used in controlled kiln)
 28(5): 643 (killing *Salmonella* bacteria by ⁶⁰Co irradiation during lake whitefish processing; correction on J 29(8): 1241)
 29(2): 207 (flavor of wild vs. cultured sablefish)

- (5): 525 (effects on DDT residues in L. Michigan bloaters)
 (9): 1365 (effect on muddy odor & taste in rainbow trout)
- B 151; 151(F) (equipment & recipe formulas, for freshwater fishes & fillets)
 161: 35 (goldeye)
 166: 41 (American eels in Canada)
 169: 138 (& canned smoked Pac. oyster, B.C.)
 S 980 (brining & smokehouse data for freshwater fishes)
 1081 (sweet-cured smoked sliced products from freshwater fishes)
 1416 (from sablefish sea-frozen in various rigor stages)
 1433 (techniques for goldeye)
 1697 (from N.W.T. fishes)
 1698 (sensory panel appraisal of smoked whitefish)
- Smolts (*see* names of adult fish, e.g. Salmon; Trout)
- Smoothtongue, California (*Bathylagus stibius*) (*Leuroglossus stibius*; a deep-sea smelt)
 J 24(5): 1101 (fatty acids composition)
- Smoothtongue, northern (*Leuroglossus stibius schmidti*) (a deep-sea smelt)
 B 180: 156 (full description, etc., B.C.)
 T 11; 62; 175 (in NE Pac. experimental trawling)
- "Smut"
 CHN 22 (nature and control in canned products)
- Snail, moon (*Lunatia*; *Polinices*) (*see* Snails; also Drills, clam; Drills, oyster)
- Snailfish, abyssal (*Careproctus ovigerum*) (abyssal liparid)
 B 180: 575 (full description, etc., B.C.)
- Snailfish, blacktail (*Careproctus melanurus*) (black-tailed liparid)
 J 25(12): 2665 (associations with other fishes off Oregon coast)
 B 180: 574 (full description, etc., B.C.)
- Snailfish, lobefin (*Polypera greeni*) (Green's liparid)
 B 180: 594 (full description, etc., B.C.)
- Snailfish, longfin (*Careproctus longipinnis*) (longfin seasnail)
 T 261 (bibliography for Gulf of St. Lawrence)
- Snailfish, marbled (*Liparis dennyi*) (Denny's liparid)
 B 180: 582 (full description, etc., B.C.)
- Snailfish, polka-dot (*Liparis cyclostigma*)
 T 261 (bibliography for Gulf of St. Lawrence)
- Snailfish, prickly (*Paraliparis deani*) (prickly liparid)
 B 180: 593 (full description, etc., B.C.)
- Snailfish, ribbon (*Liparis cyclopus*) (Günther's liparid)
 B 180: 580 (full description, etc., B.C.)
- Snailfish, ringtail (*Liparis rutteri*) (ring-tailed liparid)
 B 180: 590 (full description, etc., B.C.)
- Snailfish, shorttail (*see* Snailfish, showy)
- Snailfish, showy (*Liparis pulchellus*) (shorttail snailfish; continuous-finned liparid)
 B 180: 588 (full description, etc., B.C.)
- Snailfish, slimy (*Liparis mucosus*)
 J 23(2): 313 (first B.C. coastal record)
 B 180: 586 (full description, etc., B.C.)
- Snailfish, slipskin (*Liparis fucensis*) (Juan de Fuca liparid)
 B 180: 585 (full description, etc., B.C.)
 T 11; 175 (in B.C. experimental midwater trawling)
- Snailfish, smalldisk (*Careproctus gilberti*) (small-disked liparid)
 B 180: 573 (full description, etc., B.C.)
- Snailfish, spotted (*Liparis callyodon*) (Pallas's liparid)
 B 180: 579 (full description, etc., B.C.)
- Snailfish, tadpole (*Nectoliparis pelagicus*) (tadpole liparid)
 B 180: 591 (full description, etc., B.C.)
- Snailfish, tidepool (*Liparis florae*) (shore liparid)
 B 180: 583 (full description, etc., B.C.)
- Snailfishes (species not specified)
 T 11; 22; 30; 46; 81 (in B.C. experimental trawling)
- Snails, freshwater (*see also* Gastropoda)
 J 27(7): 1277 (copper salts effects on *Campeloma decisum* & *Physa integra* in soft water, re pollution)
 28(11): 1683 (associations in Bay of Quinte & L. Ontario)
 29(4): 363 (feed & feeding habits of several USSR freshwater genera)
 A 58; 58(F) (*Lymnea emarginata*, *L. stagnalis*, & *Physa* as carriers of fluke larvae causing "swimmers' itch" dermatitis on human beings)
- Snails, marine (*see also* Dogwinkle; Drills, clam; Drills, oyster; Gastropoda; Pteropoda; Whelk)
 J 22(3): 851 (manganese deposits on *Nassarius obsoletus* shells, P.E.I.)
 28(9): 1225 (cadmium toxicity tests on *N. obsoletus*)
 T 2 (distributional checklist & bibliography of B.C.)
 155 (*N. obsoletus* zonation in Bideford R. tidal flats, P.E.I.)
 S 1401 (cyclic nucleotide phosphodiesterase in *Thais*)
 1470 (checklist & bibliography of B.C. marine)
 A 58; 58(F) (*N. obsoletus* carrier of fluke larvae causing "clam-diggers' itch" dermatitis on humans)
- Snakeblenny (*Lumpenus lumpretaeformis*)

- J 28(7): 935 (regular component of Passamaquoddy Bay fish communities, N.B., & length frequencies)
 T 164 (extensive length-weight data)
 261 (bibliography for Gulf of St. Lawrence)
- Snakeblenny, fourline (*Eumesogrammus praecisus*)
 J 26(3): 597(F) (retinal structure re activity, etc.)
 T 261 (bibliography for Gulf of St. Lawrence)
- Snakeblenny, Pacific (*see* Prickleback, Pacific snake)
- Snakes, (*see also* Reptiles)
 J 25(10): 2157 (venom effect on solubilization of fish muscle homogenate)
 S 1016 (of P.E.I.)
- Snapper, raspshead (*see* Rockfish, yellow)
- Snapper, red (*see* Rockfish, yellow)
- Snapper, mutton (*Lutjanus analis*)
 J 25(7): 1441 (attraction with pulsed low-frequency sound)
- Snapper, yellowtail (*Ocyurus chrysurus*)
 J 25(7): 1441 (attraction with pulsed low-frequency sound)
- Snappers (*Lutjanus* species)
 S 956 (Canadian research in Caribbean Sea)
- Snipe eel, bobtail (*Cyema atrum*)
 J 23(2): 305 (new NE Pac. Ocean record)
- Snipe eel, closespine (*Avocettina infans*) (*Borodinula infans*)
 J 24(10): 2101 (first record off B.C.; correction on J 27(8): 1499)
 B 180: 89 (full description, etc., B.C.)
 T 11 (in FRB experimental trawling, B.C.)
- Snipe eel, slender (*Nemichthys scolopaceus*) (*N. avocetta*; threadfish)
 J 26(10): 2697 (recent catches off N.S.)
 B 180: 90 (full description, etc., B.C.)
 T 11 (in FRB experimental trawling, B.C.)
- Snipe eel, spaced (*Avocettina gilli*)
 B 180: 88 (full description, etc., B.C.)
 T 11 (in FRB experimental trawling, B.C.)
- Snipe eels
 J 24(5): 1101 (*Serrivomer sector* & *Avocettina bowersi* fatty acids composition)
- Snipes, Robert Leroy
 J 29(5): 531 (largemouth bass liver morphology & enzyme histochemistry)
- Snout (*see also* Mouth)
 J 22(1): 237 (abnormality in barndoor skate)
- Snow, Charles Dale
 J 23(9): 1319 (mating behavior of crab)
- Snow (*see also* Precipitation)
 J 29(8): 1209 (brook trout gonad maturation re decreased illumination caused by deep snow on high mountain lake)
 S 1655 (contribution to nutrient budget of small NW Ont. lake)
- Snowdrift, N.W.T. (on Great Slave Lake)
 J 22(6): 1571 (fall domestic fishery)
- Snowflake Lake (*see* Banff National Park, Alta.)
- Sodium derivatives (*see also* Composition, chemical; Salinity; Salt)
 J 22(4): 885 (Na ion activity coefficient in sea water)
 (4): 929 (re oxidative rancidity promotion in cod flesh)
 (4): 955 (Na ion increase in Pac. salmon held in refrigerated sea water)
 (6): 1455 (in goldfish blood plasma)
 24(2): 243 (in sockeye salmon flesh re sexual maturity & starvation)
 (10): 2169 (sulfite effect on rainbow trout blood serum proteins)
 25(7): 1475 (Na uptake in tripolyphosphate-dipped Atl. cod muscle)
 26(2): 413 (cation concentration in Atl. salmon semen)
 27(8): 1405 (ion concentration & ratios in 70 S Ont. lakes)
 (11): 2022 (in inflow, outflow, rain, & snow, Clear L., Ont.)
 28(2): 171, 203 (in waters of many small NW Ont. lakes)
 (2): 277 (in sediments of 14 small NW Ont. lakes)
 (5): 625, 635 (level changes in brook trout from handling, anesthetization, & surgery)
 29(12): 1691 (chloride, re toxicity to *Daphnia magna*)
 T 114 (content of Atl. & Pac. herrings meals)
 225 (Na sulfide toxicity tests on brook trout)
 280 (changes, in Atl. fish held in refrigerated sea water)
 S 947 (Na ion changes in fish held in refrigerated sea water)
 957 (in St. Lawrence R. and Gulf sediments)
 1162 (sulfate activity coefficient in sea water)
 1234 (activity coefficient of H₂O-NaCl-Na₂SO₄ system re sea water)
 1273 (partial molal volumes of chloride, sulfate, bicarbonate, & nitrate in sea water)
 1377 (content of Atl. & Pac. herring meals)
 1437; 1439 (in Green L., N.Y.)
 1512; 1515 (isopiestic measurements on ternary system solutions, re NaCl & Na₂SO₄ activity coefficients)
 A 29 (changes in flesh of fish held in refrigerated sea water)
 85 (in freshwater fishmeals)

- Softpout, Pacific (*Melanostigma pammelas*)
 B 180: 247 (full description, etc., B.C.)
- Solarolo, E. B.
 J 22(1): 243 (acid-fast bacteria)
- Sole (B.C.)
 J 24(1): 211 (desiccation of stored cartoned frozen fillets)
- Sole (hybrid) (*Inopsetta ischyra*) (forkline sole)
 J 25(8): 1539 (postmortem muscle glycogen & starch degradation)
 B 180: 617 (full description, as reputed hybrid between B.C. English sole & starry flounder)
- Sole, arrowtooth (*see* Flounder, arrowtooth)
- Sole, butter (*Isopsetta isolepis*)
 J 22(1): 203 (biochemical systematics)
 25(5): 1077 (range extension into Bering Sea)
 (8): 1743 (fertilized eggs: observations on)
 (12): 2665 (associations with other fishes off Oregon coast)
 B 180: 619 (full description, etc., B.C.)
 CNS 14; 19 (B.C. landings by areas, 1964, 1965)
 24 (sampling of B.C. commercial catches by areas, 1946-65)
 28 (B.C. commercial landings for animal feed)
 T 7; 19; 56; 62; 81; 89; 181; 257; 317 (in experimental or commercial B.C. trawling)
 105 (life history, feed, etc.)
 246 (bibliography)
 A 91 (1951-66 B.C. landings for mink feed)
- Sole, C-O (*Pleuronichthys coenosus*)
 J 22(1): 203 (biochemical systematics)
 25(8): 1651 (plasma protein-bound inorganic iodide)
 B 180: 633 (full description, etc., B.C.)
 T 7; 56; 62; 81; 257; 317 (taken in B.C. experimental or commercial trawling)
 246 (bibliography)
 A 91 (observed in B.C. landings of fish for mink feed)
- Sole, common (England) (*Solea solea*)
 J 22(2): 513 (retinomotor changes)
- Sole, curlfin (*Pleuronichthys decurrens*)
 J 25(12): 2665 (associations with other fishes off Oregon coast)
 B 180: 635 (full description, etc., B.C.)
 T 7; 22; 30; 56; 62; 81; 181; 257; 317 (taken in experimental or commercial B.C. trawling)
 246 (bibliography)
 A 91 (observed in B.C. landings of fish for mink feed)
- Sole, deep-sea (*Embassichthys bathybius*)
 J 25(12): 2665 (associations with other fishes off Oregon coast)
 B 180: 605 (full description, etc., B.C.)
- T 246 (bibliography)
- Sole, Dover (*Microstomus pacificus*)
 J 22(1): 53 (drip and rancidity inhibitors)
 (1): 203 (biochemical systematics)
 25(12): 2665 (associations with other fishes off Oregon coast)
 26(8): 1985 (stock & yield forecast, N Pac. Ocean)
 29(11): 1647 (critique of scales for aging)
 B 180: 626 (full description, etc., B.C.)
 CNG 73; 82 (in Hecate Strait exploratory fishing)
 CNS 14; 19 (B.C. landings by areas, 1964, 1965)
 24 (sampling of B.C. commercial catches by areas, 1946-65)
 28 (Canadian & US trawl catches off B.C., 1954-65)
 T 7; 11; 19; 22; 30; 46; 56; 62; 81; 89; 117; 131; 132; 144; 181; 205; 210; 216; 221; 257; 269; 278; 290; 302; 317; 328 (catches during B.C. experimental or commercial trawling; also (216; 257) during US Pac. coast commercial trawling)
 246 (bibliography)
 A 37 (B.C. & US landings, 1956-63, & fisheries potential)
 91 (observed in B.C. landings of fish for mink feed)
- Sole, English (*Parophrys vetulus*) (lemon sole)
 J 22(1): 203 (biochemical systematics)
 (3): 755 (browning of freeze-dried flesh)
 23(4): 511 (appropriate size limits, Strait of Georgia)
 (5): 701 (partial freezing for preservation)
 24(3): 691 (shrinkage factor in measuring lengths)
 (8): 1833 (botulinum spore germination in fillet extracts)
 25(3): 495 (salinity & temperature effects on development & survival; correction on J 27(8): 1499)
 (8): 1539 (postmortem glycogen & starch degradation in muscle)
 (8): 1745 (flesh homogenate as substrate for experimental growth of *Clostridium botulinum*)
 (8): 1753 (preservatives effects on flesh)
 (10): 2237 (subcutaneous dart tag)
 (11): 2519 (marking by high-frequency electric sparks)
 26(8): 2215 (pathology of *Glugea hertwigi* microsporidial infection)
 (9): 2319 (parasites, B.C.)
 27(4): 777 (percentage hatch of eggs: mathematical analysis for)
 28(9): 1241 (comparison of skin tumors in other flounder species)
 B 180: 628 (full description, etc., B.C.)
 CNG 73; 82 (in FRB exploratory fishing, Hecate Strait, B.C.)
 CNS 14; 19 (B.C. landings by areas, 1964, 1965)
 24 (sampling of B.C. commercial catches by areas, 1946-65)
 28 (Canadian & US trawl catches off B.C., 1954-65)
 T 7; 11; 19; 22; 30; 46; 56; 62; 81; 89; 117; 131; 144; 181;

- 205; 216; 221; 257; 290; 317; 328 (catches during FRB experimental, or B.C. commercial trawling; also (216, 257) during US Pac. coast commercial trawling)
- T 19: 27 (experimental egg hatching)
- 105 (life history, feed, etc.)
- 135 (length-weight relations)
- 246 (bibliography)
- S 1319 (tagging results, B.C. waters)
- 1487 (infection with *Philometra americana* nematode)
- A 37 (B.C. & US landings, 1956-63, & fishery potential)
- 46; 51(F) (brief description)
- 91 (observed in B.C. landings of fish for mink feed)
- Sole, fantail (*Xystreurus tirolepis*)
- T 246 (bibliography)
- Sole, flathead (*Hippoglossoides elassodon*)
- J 22(1): 203 (biochemical systematics)
- 26(8): 1985 (stock & yield forecast, N Pac. Ocean)
- 27(9): 1661 (feed, East Sound, Orcas Is., Wash.)
- 28(9): 1241 (comparison of skin tumors in other flounder species)
- B 180: 612 (full description, etc., B.C.)
- CNS 14; 19 (B.C. landings by areas, 1964, 1965)
- 24 (sampling of B.C. commercial landings by areas, 1946-65)
- T 7; 11; 22; 30; 46; 56; 62; 81; 144; 181; 205; 210; 257; 290; 317 (catches during FRB experimental or B.C. commercial trawling)
- 34 (distribution, stocks, populations, synonymy, systematics)
- 100 (embryonic development)
- 246 (bibliography)
- A 91 (observed in B.C. landings of fish for mink feed)
- Sole, forkline (see Sole (hybrid))
- Sole, gray (see Flounder, winter; Flounder, witch)
- Sole, hybrid (see Sole (hybrid))
- Sole, lemon (see Flounder, winter; Sole, English)
- Sole, merry (*Microstomus kitt*) (England)
- J 22(2): 513 (retinomotor changes)
- Sole, petrale (*Eopsetta jordani*) (Pacific brill)
- J 24(3): 691 (shrinkage factor in measuring lengths)
- 25(12): 2665 (associations with other fishes off Oregon coast)
- 26(10): 2651 (EDTA effect on fillet spoilage characteristics)
- 28(5): 727 (salinity & temperature effects on embryonic development)
- (10): 1672 (ambicoloration & anatomy of a)
- B 153 (population dynamics, B.C.)
- 180: 607 (full description, etc., B.C.)
- CNG 73; 82 (in Hecate Strait exploratory fishing)
- CNS 14; 19 (B.C. landings by areas, 1964, 1965)
- 17 (age & length composition off Vancouver Is.)
- 24 (sampling of B.C. commercial catches by areas, 1946-65)
- 28 (Canadian & US trawl catches off B.C., 1954-65)
- T 7; 11; 19; 22; 30; 46; 56; 62; 81; 89; 117; 131; 144; 181; 205; 210; 216; 221; 257; 269; 290; 302; 317; 328 (taken during FRB experimental or B.C. commercial trawling; also (216; 257) during US Pac. coast commercial trawling)
- 19: 28 (experimental egg hatching)
- 41 (embryonic development)
- 105 (life history, feed, etc.)
- 135 (length-weight relations)
- 246 (bibliography)
- S 922 (abundance measures from fisheries for several species)
- A 37 (B.C. & US landings, 1956-63, & fishery potential)
- 46; 51(F) (brief description)
- 91 (observed in B.C. landings of fish for mink feed)
- Sole, rex (*Glyptocephalus zachirus*)
- J 22(1): 203 (biochemical systematics)
- 25(12): 2665 (associations with other fishes off Oregon coast)
- B 180: 610 (full description, etc., B.C.)
- CNS 14; 19 (B.C. landings by areas, 1964, 1965)
- 24 (sampling of B.C. commercial catches by areas, 1946-65)
- 28 (Canadian & US trawl catches off B.C., 1954-65)
- T 7; 11; 19; 22; 30; 46; 56; 62; 81; 89; 117; 131; 132; 144; 181; 205; 210; 216; 221; 257; 278; 290; 302; 317; 328 (catches during FRB experimental, or B.C. commercial trawling; also (216; 257) during US Pac. coast commercial trawling)
- 246 (bibliography)
- A 91 (observed in B.C. landings of fish for mink feed)
- Sole, rock (*Lepidopsetta bilineata*) (*L. b. lineata*, *L. b. mochigarei*, *L. b. perarquatius*)
- J 22(1): 203 (biochemical systematics)
- (5): 1311 (catch contaminated by pelagic snail)
- 24(3): 691 (shrinkage factor in measuring lengths)
- 25(12): 2665 (associations with other fishes off Oregon coast)
- 26(8): 1985 (stock & yield forecast, N Pac. Ocean)
- (9): 2319 (parasites, B.C.)
- B 180: 621 (full description, etc., B.C.), 622 (subspecies intergradation around N Pac. coast)
- CNG 73; 82 (in Hecate Strait exploratory fishing)
- CNS 14; 19 (B.C. landings by areas, 1964, 1965)
- 18 (length & age composition in Hecate Strait)
- 24 (sampling of B.C. commercial catches by areas, 1946-65)
- 28 (Canadian & US trawl catches off B.C., 1954-65)

- T 7; 11; 19; 22; 30; 46; 56; 62; 81; 89; 117; 131; 144; 181; 216; 220; 257; 290; 302; 317 (taken during FRB experimental or B.C. commercial trawling; also (216; 257) during US Pac. coast commercial trawling)
- T 34 (distribution, stocks, populations, synonymy, & systematics of 3 subspecies)
- 36 (NE Pac. growth rate comparisons)
- 105 (life history, feed, etc.)
- 108 (population studies, B.C.)
- 135 (length-weight relations)
- 246 (bibliography)
- 259 (length & age composition of B.C., also commercial landings from Cape Scott Bank, 1959-69)
- S 1002 (virus tumors in skin of B.C.)
- 1416 (sea-freezing in prerigor, rigor, & postrigor, re products quality)
- A 37 (B.C. & US catches, 1956-63, & fishery potential)
- 46; 51(F) (brief description)
- 91 (observed in B.C. landings of fish for mink feed)
- Sole, roughscale (*Clidoderma asperrimum*)
- B 180: 604 (full description, etc., B.C.)
- Sole, sand (*Psettichthys melanostictus*)
- J 22(1): 203 (biochemical systematics)
- 24(12): 2515 (stomach contents of adult)
- 28(9): 1241 (incidence of skin tumors, Bellingham Bay, Wash.)
- B 180: 636 (full description, etc., B.C.)
- CNS 14; 19 (B.C. landings by areas, 1964, 1965)
- 24 (sampling of B.C. commercial catches by areas, 1946-65)
- T 7; 22; 30; 46; 56; 62; 81; 181; 257; 317 (taken in FRB experimental or B.C. commercial trawl fishing)
- 246 (bibliography)
- S 1002 (virus tumors in skin of B.C.)
- A 91 (observed in B.C. landings of fish for mink feed)
- Sole, slender (*Lyopsetta exilis*)
- J 25(12): 2665 (associations with other fishes off Oregon coast)
- 28(10): 1563 (host of a new copepod species)
- B 180: 625 (full description, etc., B.C.)
- CNS 24 (sampling of commercial B.C. catches by areas, 1946-65)
- T 7; 11; 22; 30; 46; 56; 81; 144; 181; 205; 210; 221; 257; 269; 290; 317; 328 (taken during FRB experimental or B.C. commercial trawl fishing)
- 246 (bibliography)
- A 91 (observed in B.C. landings of fish for mink feed)
- Sole, yellowfin (*Limanda aspera*) (yellowfin flounder)
- J 26(8): 1985 (stock size & yield forecast, NE Pac.)
- B 180: 623 (full description, etc., B.C.)
- CNS 14; 19 (B.C. landings by areas, 1964, 1965)
- 24 (sampling of B.C. commercial catches by areas, 1946-65)
- T 7; 56; 62; 89; 181; 257; 317 (taken during FRB experimental or B.C. commercial trawling)
- 109 (age & growth, Hecate Strait, B.C.)
- 146 (bibliography)
- A 90; 103 (Japan & USSR Bering Sea fishery)
- 91 (observed in B.C. landings of fish for mink feed)
- Solea solea* (see Sole, common (England))
- Solemya velum* (a pelecypod)
- S 1679 (sterols)
- Solitude (see also Behavior)
- J 27(9): 1653 (effect on lobster larval molting periods)
- Solomon, John
- S 1728 (rapid semimicro determination of methylmercury in fish tissue)
- Solubles, condensed
- A 98 (Pac. herring, re Atl. herring use)
- Somass River, B.C. (see Alberni Inlet, B.C.)
- Somniosus microcephalus* (see Shark, Greenland)
- pacificus* (see Shark, Pacific sleeper)
- Sonar (see Sounding, echo; Ultrasonics)
- Sonis, Stephen
- J 27(2): 383 (metal poisoning effects on killifish liver enzymes)
- Sonstegard, R. A.
- J 28(9): 1350 (infectious pancreatic necrosis of salmonids)
- Sorbitol (see also Sugars)
- S 1624 (in urine of child with Alports syndrome)
- Sorting (see Size headings)
- Sound
- J 23(7): 1101 (production by American eel)
- Sound (swimbladder) (see Swimbladder)
- Sound, reactions to
- J 24(11): 2309 (Atl. cod audiogram)
- 25(6): 1155 (Atl. cod)
- (7): 1441 (fish attraction to pulsed low-frequency sound)
- 26(5): 1113 (auditory masking & critical band in Atl. cod)
- T 102 (observed from "cubmarine")
- A 136 (observed from "cubmarine")
- Sound-scattering layers (see Sounding, echo)

- Sound, speed of (for general data re natural waters see Limnology; Oceanography. See also Echolocation; Sounding, echo; Ultrasonics)
- Sound, ultrasonic (see Echolocation; Sounding, echo; Ultrasonics)
- Sounding, echo (see also Ultrasonics)
- J 22(4): 1025 (time-lapse photography of, for tracing migrating smolt movements)
- 23(4): 499 (for yellow perch vertical distribution under ice)
- 25(3): 457 (B.C. coast sound-scattering layers re mid-water trawl catches)
- (11): 2349 (for direct estimation of hake populations)
- 27(2): 281 (for tracing diel vertical movements of young salmon & limnetic zooplankton in lake)
- (4): 737 (comparison of 2 methods for estimating abundance of demersal fish stocks)
- (10): 1781 (surveys for Pac. ocean perch & other rockfishes, NE Pac.; correction on J 28(8): 1219)
- 28(3): 446 (electronic processing of acoustical data from fishery research)
- (7): 1035 (quick statistical methods for analyzing digital echo fish counter sequences)
- (9): 1269 (integrated echo voltage re echo sounding for fish density)
- (9): 1275 (integrated echo voltage re Puget Sound Pac. hake population estimates)
- (9): 1293 (mathematical treatment of fish abundance variance estimates using fish echo integrator)
- 29(10): 1419 (biomass, diel & seasonal depth changes, NE Pac. Ocean)
- T 11 (B.C. coast sound-scattering layers re midwater trawl catches)
- S 1386 (high-frequency, for assessing zooplankton biomass sound-scattering layers in subarctic Pac.)
- 1426 (for geomorphology of Magdalen Shelf, Gulf of St. Lawrence)
- 1594 (quantitative measurements of acoustic scattering from zooplankton)
- A 36 (for B.C. herring)
- 220 (bio-acoustical program during C.S.S. *Hudson* oceanographic survey circumnavigating N & S America)
- Sounding response of fish
- J 25(6): 1115 (response of kokanee & sockeye salmon)
- South America (see Argentina; Chile; Peru)
- South Bay, Manitoulin Is. (Lake Huron, Ont.)
- J 24(1): 87 (smallmouth bass growth re temperature)
- (1): 101 (thermal regime re growth of various fishes)
- (10): 2117 (white sucker population re lamprey invasion)
- 26(9): 2413 (planted lake trout survival)
- Southcott, Burnett Anne
- J 22(1): 53 (drip loss of frozen fish)
- (1): 117 (tetracycline antibiotics)
- 23(8): 1281 (thermal resistance of bacteria)
- 24(1): 211 (desiccation of frozen fish)
- (3): 527 (quality of dogfish during frozen storage)
- 25(8): 1745 (fish homogenates as substrates)
- (8): 1753 (ethylenediaminetetraacetic acid & chlortetracycline in fish preservation)
- 28(8): 1071 (salt tolerance of type E *Clostridium botulinum*)
- T 336 (B.C. herring roe retrieval & processing)
- S 1431 (extraction procedure for plants: red algae extracts)
- Soviet Union (see Union of Soviet Socialist Republics (USSR))
- Soybean oil
- S 1029 (fatty acids positional distribution in triglycerides)
- Spalding, David Joseph
- S 1046 (eruption of northern sea lion permanent canine teeth)
- Spangler, George Russell
- J 25(6): 1145 (*Esox masquinongy* harvest & mortality)
- 27(6): 1017 (F₁ splake in L. Huron)
- 29(6): 877 (exploitation, introductions, & eutrophication effects on salmonid community, L. Huron)
- (6): 975 (eutrophication effects on oligotrophic lakes salmonid communities)
- Sparks, Albert Kirk
- J 22(4): 1099 (*Mytilicola orientalis* parasitic effects on Pac. oyster)
- 23(12): 1913 (inflammation in Pac. oyster)
- 24(10): 2155 (*Ostrea lurida* & *Crassostrea* chromosomes)
- Sparks, Richard Edward
- J 28(8): 1107 (computer simulation of pollution minnow deaths)
- 29(9): 1356 (effect of shelters on resistance of dominant & submissive bluegills to lethal zinc concentration)
- Sparling, John Henry
- J 27(8): 1405 (S Ont. lakes chemistry; correction on J 28(8): 1219)
- Sparrow, Roger Arthur Hugh
- J 23(12): 1875 (comparative limnology of some B.C. lakes)
- 25(3): 599 (B.C. chum salmon fry feeding in fresh water)
- Spat (see Oyster, Atlantic; Oyster, Pacific)
- Spawning (see also Eggs; Fecundity; Life history; Mating;

- Migration; Reproduction; Territorialism; *also* names of oviparous organisms, particularly herring and salmon)
- J 22(2): 574 (Magdalen Shallows American plaice)
- (3): 665 (factors affecting kokanee migration)
- (3): 775 (histology after death of postspawning sockeye salmon)
- 23(5): 651 (Nfld. & Grand Banks American plaice)
- (8): 1145 (Atl. argentine on Scotian Shelf)
- (11): 1761 (inlet stream, of longnose & white suckers, B.C.)
- (11): 1803 (estuarine, of Atl. salmon in P.E.I.)
- 24(1): 21 (migration seasonal pattern, N.B. salmon)
- (1): 53 (re size, Atl. halibut)
- (7): 1629 (randomness in pink salmon redds distribution)
- (8): 1791 (of sockeye re pituitary)
- (9): 1955 (mate selection, sockeye salmon)
- (12): 2573 (& development of Atl. cod in Ogac L., Baffin Is.)
- 25(3): 485 (behavior & distribution of sockeye on Alaska lake beaches)
- (5): 867 (odor & vision role in chinook salmon choice of site)
- (10): 2143 (orientation of American eels toward spawning area)
- (11): 2439 (history of Atl. salmon, from scales)
- (12): 2589 (Fraser R., B.C., white sturgeon)
- 26(2): 229 (artificial channels for Babine L. sockeye)
- (2): 473 (mailed sculpin, Gulf of Maine)
- (3): 655 (variance components in estimating Bristol Bay sockeye potential)
- (6): 1585 (time differences between 2 Nfld. populations of landlocked Atl. salmon)
- (6): 1661 (repeated spawning effect on Atl. salmon scales)
- (7): 1889 (otolith nuclei similarity re distinguishing Atl. herring spring vs. autumn spawners)
- (8): 2061 (behavior of blackspotted stickleback)
- (12): 3133 (time, cod off SW Nfld.)
- (12): 3248 (swordfish: probable W Atl. area)
- (12): 3252 (behavior, western brook lamprey)
- 27(3): 587 (northern pike ova atresia)
- (3): 613 (rainbow trout extended season in a L. Huron tributary)
- (6): 1005 (courtship & behavior of lake chub)
- (6): 1154 (largescale sucker, Stave L., B.C.)
- (8): 1491 (occurrence of male predominance among repeat spawning Atl. salmon)
- (9): 1607 (mating & egg-laying behavior, queen crab)
- (10): 1872 (behavior of chestnut lamprey)
- (11): 2037 (behavior, shorthorn sculpin)
- (12): 2125 (behavior as deterrent to hybridization of 2 dace species; correction on J 28(8): 1289)
- (12): 2261 (yellowtail flounder, waters off Nfld.)
- (12): 2350 (feed availability re brook stickleback aggression & nest building)
- 28(1): 98 (*Pandalus goniurus* shrimp)
- (4): 513 (egg size re age of successive generations of Skeena R. sockeye)
- (4): 553 (meristic differences between spring- & autumn-spawning SW Nfld. herring)
- (5): 727 (salinity & temperature effects re petrale sole embryonic development in B.C. coastal waters)
- (6): 821 (escapement, re gillnet efficiency of Skeena R. sockeye & pink salmon fishery)
- (6): 849 (beds: assessing silt characteristics by sampler)
- (7): 935 (period re seasonal abundance of different fishes in communities, Passamaquoddy Bay, N.B.)
- (7): 1009 (period, re S Gulf of St. Lawrence seasonal herring stocks discreteness)
- (7): 1051 (season of white perch, Tomales Bay, Calif.)
- (12): 1857 (kokanee transplanted into L. Huron)
- 29(3): 295 (identifying major B.C. & Alaska even- & odd-year runs of pink salmon by scales)
- (3): 311 (reversible hormone changes in Atl. salmon vs. nonreversibility in Pac. salmon re spawning survival of former vs. latter)
- (3): 330 (longnose dace off island in L. Winnipeg)
- B 161: 23, 25 (goldeye)
- 162 (several chapters on habits, etc., of sockeye salmon)
- 165: 2 (carp)
- 169: 28; 178 (B.C. Pac. oyster, general & re raft culture)
- 173 (courtship & behavior of NW Canada & Alaska freshwater fishes)
- CJG 14; 15; 16 (Nfld. herring)
- 18: 25 (seasonal, of NE Nfld. & Labrador herring)
- CNG 74; 77; 83; 86; 88 (B.C. herring spawn deposition)
- T 10 (age, size, & sex composition of 1965 & 1966 sockeye escapement to Lakelse L., B.C.)
- 88 (Atl. herring re Bay of Fundy hydrography)
- 111 (pink & sockeye salmon re spawn collection)
- 136 (swordfish: probable W Atl. area)
- 138 (otolith nuclei variations re Nfld. herring spring & autumn spawning)
- 232 (razor clam, Queen Charlotte Is. & W coast Vancouver Is., B.C.)
- 252 (herring off southern N.S. coast)
- 296 (extent of herring, in B.C., 1951-70)
- S 1230 (populations of Canadian N Pac. salmon)
- 1255 (NW Atl. capelin)
- 1318 (W Nfld. cod stock)
- 1468 (behavior of *Pacifastacus trowbridgii* crayfish)
- 1557 (temperature & photoperiod effects on crayfish subsequent)
- 1590: 555 (of various fishes re temperature: review)
- 1645 (retention in Bay of Fundy of herring larvae spawned off SW coast of N.S.)
- A 36 (habits, Pac. herring)
- 59 (of B.C. herring in 1966 lowest on record)
- 62 (same as A 59 above)
- 102 (B.C. herring: 1967 scanty spawning)
- 105 (miles of B.C. herring spawn re catches, 1955-67)
- 108 (1966 Canadian ICNAF studies on various Atl. fishes)
- 193 (Atl. & Pac. capelin)

- Spear; Spearing**
 B 166: 21 (in American eel fishery)
- Spears, Doris Mae** (*see also* Bishop, Doris Mae)
 J 23(9): 1325 (incidence of *Gaffkya homari*)
 25(4): 639 (heavy metal ions & fish muscle rancidity)
 S 1178 (choline or betaine utilization in microbial biosynthesis)
- Speciation; Subspeciation** (*see also* Genetics; Hybrids; Keys; Phylogeny; Populations; Racial studies; Systematics; Taxonomy; *also* Species headings that follow) (*Note*: EP = electrophoresis)
 J 22(1): 203, 215 (by EP of fishes myogen & hemoglobin)
 (3): 767 (by EP of *Salmo*, *Salvelinus*, & *Cristivomer* parental & hybrid myogen, plasma, & protein)
 (4): 899 (distinguishing winter skate from little skate)
 (5): 1293 (distinction between *Bathymaster* ronquils)
 23(1): 101 (*Oncorhynchus* & *Salmo gairdneri* interspecies relationships through muscle myogen & blood plasma protein EP)
 (1): 141 (*Coregonus autumnalis* & *C. laurettae*)
 (10): 1599 (lake whitefish & 3 *Salvelinus* species by muscle myogens & blood proteins EP)
 (11): 1663 (Petromyzontidae, Esocidae, Centrarchidae, & Percidae by muscle myogens & blood hemoglobins EP)
 24(1): 1 (N Pac. prickleback; correction on J 24(12): 2641)
 (2): 299 (Catostomidae by muscle myogen EP)
 (6): 1315 (Gadidae subfamily origins through cranium osteology)
 (6): 1377 (*Brisaster latifrons* vs. *B. townsendi*)
 (8): 1637 (marine vs. freshwater threespine sticklebacks & their hybrids re muscle proteins EP)
 (9): 1945 (*Sebastes reedi* vs. other *Sebastes* by hemoglobins & muscle myogens EP; correction on J 25(8): 1760)
 25(2): 415 (kokanee vs. anadromous sockeye salmon)
 (3): 607 (differing susceptibilities of Atl. crabs to lobster disease)
 (5): 877 (*Halargyreus johnsonii* vs. *H. brevipes* & *H. affinis*)
 (5): 943 (N American Atl. & Arctic coasts *Anonyx* amphipods)
 (7): 1317 (muscle protein EP re reidside shiner & peamouth chub hybrid inheritance)
 (7): 1323 (lactate dehydrogenase differentiation in 3 trout species by EP)
 (9): 1843 (sea lions)
 (11): 2477 (protein EP of 33 rockfish species re systematics)
 (12): 2711 (muscle creatine kinase EP re rabbit & various fishes)
 26(1): 175 (distinguishing between northern pike & muskellunge remains)
 (2): 221 (distinguishing *Dugesia lugubris* from *Cura foremanii*)
 (4): 741 (problems re *Schistocephalus cestode*)
 (4): 1063 (*Diclidophora* monogenetic gill-parasitic trematodes re gadid hosts)
 (12): 3183 (uncertain, of red vs. black threespine sticklebacks)
 27(1): 147 (claimed validity of two subspecies of Pac. coast threespine stickleback: *Gasterosteus aculeatus leiurus* & *G. a. trachurus*)
 (1): 161 (claimed validity of two subspecies of L. Superior lake char: *Cristivomer namaycush namaycush* & *C. n. siscowet*)
 (10): 1757 (of *Lota lota*: review)
 (11): 2104 (sand lances: *Ammodytes dubius* as offshore species, & *A. hexapterus* as inshore species, in Nfld. area)
 (11): 2109 (muscle protein EP re distinguishing E Canada *Salmo* species)
 (11): 2167 (4 *Tilapia* species & their hybrids, by EP)
 (12): 2233 (analysis of *Sebastes aleutianus*-*S. melanostomus* complex; *also* EP of hemoglobins)
 28(1): 23 (*Calanus finmarchicus* vs. *C. glacialis*)
 (3): 391 (*Mesodinium* ciliate species)
 (4): 465 (lake char intraspecific variations & post-glacial distribution)
 (7): 987 (& subspeciation of *Salmo* in Upper Kern R. basin, Calif.)
 (10): 1403 (re amphipacific distribution of polychaetes)
 (10): 1469 (re *Syllides* polychaetes)
 (10): 1583 (possibilities of radioisotope X-ray fluorescence spectroscopy: review)
 (10): 1621 (hemoglobin EP re northern rockfish taxonomy)
 29(2): 179 (biological factors indicating possible subspeciation between N American & European *Salmo salar*)
 (8): 1173 (johnny & tessellated darters re intermediate hybrid-like forms; key)
 (8): 1211 (pectoral fin length re *Squalus acanthias acanthias* vs. *S. a. suckleyi*)
 B 173: 28, etc. (validity of, for some species & subspecies of NW Canada & Alaska freshwater fishes)
 174 (Nearctic & Palaeartic *Chaoborus* diptera)
 CCG 7: 16 (identifying freshwater fish species by EP)
 CHN 20 (distinguishing cod & haddock fillets by EP)
 S 1204 (scombroid fishes by EP of serum transferrin)
 1451 (zoogeography & protein variation re *Coregonus clupeaformis* whitefish species complex)
- Species, group analysis of assemblages**
 J 25(7): 1405 (recurrent, of Gulf of Guinea demersal fishes)
 27(4): 621 (of benthic infauna communities, Washington coast, USA)
- Species, indicator** (*see* Indicator species)
- Species, introduced** (*see also* Transplantation)
 J 22(3): 721 (into Kananaskis and Bow Rivers systems, Alta.)
 24(10): 33 (*Sargassum* seaweed from Japan into B.C.)
 25(12): 2527; 27(4): 811 (re brown trout worldwide distribution)

- 26(2): 221 (European triclad turbellarian found in St. Lawrence R.)
 (7): 1699; 28(3): 452 (re brook trout worldwide distribution)
- 27(10): 1847, (11): 2095 (*Schizoporella unicornis* bryozoan into Strait of Georgia & Puget Sound from Japan with oyster seed)
- 28(5): 663; 29(12): 1788 (re rainbow trout worldwide distribution)
 (11): 1811 (survival of some introduced freshwater fishes in alkaline eutrophic lakes)
 (12): 1857 (kokanee into L. Huron)
 29(6): most papers in this special issue (re salmonid communities in N American & European oligotrophic lakes: effects on salmonids, fisheries, etc.)
- B 169: 159 (oyster drills from Atl. & Japanese oysters transplanted into B.C.)
- T 44; 301 (effort to culture lobster in B.C.)
 188 (P.E.I. oysters to W Nfld.)
- S 948 (*Limnoria punctata* wood borer to B.C. coastal waters)
 1096; 1428 (effort to culture lobster in B.C.)
- A 93 (effort to culture lobster in B.C.)
 152; 181 (summaries of 1968 & 1969 results of pink salmon introduction from B.C. to Nfld. waters)
- Species, new (see also Family; Genera; Speciation; Systematics; Taxonomy)
- J 22(1): 1 (decapod *Calocaris templemani*)
 (1): 139 (lamprey *Lampetra richardsoni*)
 (2): 475 (various Plecoptera stoneflies)
 (5): 1293 (ronquill *Bathymaster leurolepis*)
- 23(6): 805 (*Bradydium saanichi* calanoid copepod)
- 24(2): 231 (*Gaidius columbiae* & *Tharybis fultoni* copepods)
 (8): 1763 (*Aporocotyle margolisi* parasitic trematode)
 (9): 1911 (trematode *Phyllostomum limnosa*; parasitic copepod *Salmonicola exsanguinata*)
 (9): 1945 (yellowmouth rockfish (*Sebastes reedi*) from NE Pac.)
 (9): 2003 (bryozoa *Figularia quaylei* from NE Pac.)
 (12): 2629 (clam *Cuspidaria cowani* off Queen Charlotte Is.)
- 25(2): 321 (*Chondracanthus irregularis* & *Acanthochondria holocephalarum* parasitic copepods from B.C. fishes)
 (5): 943 (*Anonyx sarsi* as distinct from similar *Anonyx*)
 (7): 1423 (*Taeniopteryx burksi*, *T. lonicera*, *T. metequi*, & *T. ugola* stoneflies)
 (7): 1509 (*Cyclopecten carlottensis* from NE Pac.)
 (9): 1843 (& genus of fossil sea lion, *Imagotaria downsi*)
 (11): 2269 (*Stomachetosella hincksi* bryozoan, arctic Canada)
 (11): 2365 (*Gyrocotyle major* & *G. abyssicola* tapeworms)
- 26(2): 311 (*Clavellomimus macruri* parasitic copepod)
 (4): 753 (10 strigeoid digenetic trematodes from S American fishes)
 (4): 787 (& genera, of 3 Australian fishes hemiurid trematodes)
 (4): 799 (*Lepidophyllum cameroni* digenetic trematode, B.C.)
 (4): 865 (*Pellucidhaptor catostomi* & *P. nasalis* trematodes from suckers; correction on J 28(8): 1219)
 (4): 947 (*Diphyllobothrium cameroni* cestode from monk seal)
 (4): 957(F) (*Opegaster cameroni* trematode from Californian fishes)
 (4): 965 (*Acanthosentis cameroni* acanthocephalan from an India fish)
 (4): 997 (*Ergasilus arthrosis* parasitic copepod)
 (4): 1037(F) (*Mustelicola woodsholei* new cestode genus)
 (4): 1075 (*Haemogregarina mavori* hematozoan Protozoa)
 (4): 1103 (*Capillaria thomascameroni* nematode from Australian bird)
 (5): 1237 (*Acantholiparis caecus* off N Oregon coast)
 (8): 2231 (5 bivalve species from NE Pac. Ocean)
 (10): 2595 (*Acrocirrus trisetus* & *Macrochaeta pege* polychaetes)
 (11): 3044 (*Chondracanthus narium* parasitic copepod)
- 27(5): 865 (*Schistobranchia tertia* copepod on B.C. skates)
 (6): 1109 (*Ocella impi* poacher, off Queen Charlotte Is., B.C.)
 (7): 1320 (possible, of *Minchinia* sporozoan)
 (11): 1943 (*Chondracanthus triventricosus* & *Colobomatus kyphosus* copepods parasitic to Pac. ocean perch)
 (12): 2233 (*Sebastes (Sebastes) caenaemeticus* blackgill rockfish)
 (12): 2362 (*Bryozoichthys marjorius* stickleback, off SE Alaska)
- 28(5): 767 (*Labrifer balli*, trematode parasite of pink seaperch)
 (10): 1373 (*Metavermlia annobonensis*, *M. taena*, & *M. nates* serpulid polychaetes)
 (10): 1393 (*Sthenelais berkeleyi* sigalionid polychaete from E Pac.)
 (10): 1429 (*Macellicephaloides berkeleyi* aphroditid polychaete from Aleutian Trench)
 (10): 1437 (*Dodecaceria berkeleyi* cirratulid polychaete from New Zealand)
 (10): 1445 (*Magelona berkeleyi* polychaete from Puget Sound)
 (10): 1469 (*Syllides benedicti* syllid polychaete)
 (10): 1483(F) (*Schroederella berkeleyi* polychaete from off Massachusetts)
 (10): 1527 (*Pagurus caurinus*, *P. quaylei*, & *P. stevensae* hermit crabs, B.C.)
 (10): 1563 (*Holobomolochus venustus* & *H. occultus* parasitic copepods)
 (10): 1615 (*Eualis berkeleyorum* caridean shrimp, off B.C. coast)
 (10): 1645 (*Rhabdochona canadensis* nematode, parasitic in dace & chubs, Alta.)

- B 170 (33 species of N American chironomids)
 174: 8 (new subgenus *Peusomyia*), & 18, 21 (n.sp. *Chaoborus cooki*, & *C. brunskilli*, of diptera aquatic insects)
- S 933; 936 (choline-fermenting *Achromobacter cholinophagum*)
 963 (& genus of Nymphomyiidae found in N.B.)
 1002 (*Kofoidinium arcticum* dinoflagellate)
 1139 (*Discoasteromonas calciferus* flagellate as arctic relict)
 1301 (*Praeicidochondria galatheae* parasitic copepod)
 1306 (*Shiinoa oclusa* parasitic copepod)
 1307 (4 lernaepodid copepods parasitic on Australian fishes)
 1358 (genus & species, *Neobrachiochondria quadrata* on Australian fish)
 1375 (6 new *Zealeuctra* stoneflies)
 1391 (new genus & species, *Plicobothrium globicephalae*, of cestode, from pilot whale)
 1429 (*Chondracanthus lepidionis* & *Clavella* parasitic copepods)
 1488 (*Actiniscus canadensis*, n.sp.; *A. pentasterias*, new variety *arcticus*; *Pseudoactiniscus apentasterias* new genus & species (dinoflagellates))
 1496 (*Proclavellodes pillaii*, new genus & species of parasitic copepod, from S India)
 1501 (*Hemibaphes intermedius* copepod parasitic on Strait of Georgia sculpins)
 1533 (*Hesperophylax oreades* trichopteran, & *Cressoniella montana* (new genus) of Ephydriidae in a high Colorado mountain creek)
 1566 (parasitic copepod *Lernanthropus togatus* on gills of Kenyan marine fish *Gaterin*)
 1577 (*Dinamoebidium coloradense* & *Katodinium auratum* dinoflagellates from Como Creek, Colorado)
 1578 (*Dinamoebidium hyperboreum* from Ellesmere Is. coastal waters, N.W.T.)
 1589 (*Dinoasteromonas tribrachiatus*, *D. pentaradiatus*, *D. deflanderi*, & *D. brouweri* (flagellates))
 1610 (*Eubrachiella mugilis* lernaepodid copepod, parasitic on Tunisian mullets)
 1617 (Chironomidae: *Phycoidella dentolatens*, *Cricotopus macraei*, *C. flannagani*, & *Lenziella cruscula*)
 1658 (Nematoda: new genus & species, *Ezonema bicornis*, from Japanese freshwater fishes)
 1677 (*Onuphis longibranchiata* polychaete, from B.C.)
- Species, new records or range extensions of (see also Introduced species; Transplantation)
- J 22(1): 231 (4 rockfishes in N Pac.)
 (4): 977 (many NW Atl. Mollusca)
 (5): 1303 (hatchetfish in W. Atl.)
 (5): 1305 (dusky sculpin into B.C. coast waters)
 (6): 1559 (window rockfish into B.C. coast waters)
 23(2): 305 (ogrefish & bobtail snipe-eel off Oregon & Washington)
 (2): 309 (twoline eelpout, Greenland halibut, & shortbelly rockfish off Vancouver Is. W coast)
- (2): 313 (red gunnel & slimy snailfish off Vancouver Is. W coast)
 (5): 715 (notch feelerfish on Grand Bank)
 (6): 935 (spiny-cheek liparid off Oregon)
 (8): 1161 (black ruff & Cornish blackfish in NW Atl.)
 (8): 1257 (*Pyrgopsis lemur* squid from NW Atl.)
 (8): 1277 (silver surfperch, brown Irish lord, shanny, & kelp clingfish, from B.C. coast; review of 1961-66 other B.C. coast new records)
 (9): 1455 (copper rockfish & greenstriped rockfish Pac. range extension)
 (9): 1469 (yellowtail rockfish, canary rockfish, & bocaccio Pac. range extensions)
 (12): 1967 (pigmy rockfish in B.C.)
 24(1): 213 (fawn cusk-eels N to southern N.S.)
 (1): 215 (amphipod *Eurythenes gryllus* W in Baffin Bay)
 (5): 1177 (gempylid fish *Nealotus tripes* off Sable Is. Bank)
 (6): 1385 (echinoids off Oregon)
 (6): 1421 (earthworms in B.C.)
 (7): 1623 (California sea lion off Nfld.)
 (9): 1873 (decapod crustacean *Eualus macilentus* in Hudson Bay)
 (10): 2101 (first & second records of various deep-sea fishes off B.C.; correction on J 27(8): 1499)
 (12): 2631 (Atlantic walrus into Nfld. waters)
 25(1): 181 (2 *Macdonaldia challengerii* specimens from NE Pac. Ocean)
 (1): 203 (surfsmelt in W Alaska)
 (1): 205 (*Lumbricus* earthworm species records from near Vancouver, B.C.)
 (2): 347 (hippolytid & crangonid shrimps, Queen Elizabeth Is., Canadian Arctic)
 (2): 421 (longnose greeneye N to N.S.)
 (5): 1075 (NW Atl. extension for pelagic stingray)
 (5): 1077 (butter sole extension in Bering Sea)
 (7): 1423 (eastern N American *Taeniopteryx* stoneflies)
 (7): 1501(F) (lake trout in E Canadian Arctic marine or saline waters)
 (8): 1644 (*Cyphocaris bouvieri* amphipod to NE Greenland waters)
 (11): 2269 (8 Bryozoa species in arctic Canada)
 (11): 2509 (3 rockfish species new to B.C.)
 (12): 2707 (new *Conchoderma virgatum* barnacle records in NW Atl.)
 (12): 2721 (Greenland halibut in Bay of Fundy)
 (12): 2733 (first Que. records of spoonhead & deep-water sculpins)
 26(2): 221 (*Dugesia lugubris* European turbellarian in St. Lawrence R.)
 (2): 311 (*Lernaepodina longibranchia* parasitic copepod new to Canada)
 (2): 325 (S Alta. fishes)
 (2): 460 (Nfld. blackspotted stickleback E range extension)
 (2): 469 (shortnose greeneye NE range extension, N.S.)
 (3): 709 (first P.E.I. northern redbelly dace)
 (4): 1075 (various haematozoan Protozoa)

- (5): 1237 (spinycheek liparid, S to Oregon coast)
 (5): 1371 (N range extension, California whitefish & ocean halibut)
 (5): 1375 (first Massachusetts Bay Arctic shanny record)
 (6): 1680 (deep-sea cusk-eel E to Oregon coast)
 (7): 1955 (flag rockfish westward to Aleutian Is.)
 (10): 2691 (mesopelagic & other fishes, Gulf of St. Lawrence & N.S. banks)
 (10): 2769 (*Ariomma bondi* first Canadian record; bigeye scad & blue runner first Gulf of St. Lawrence records)
 (11): 3088 (*Manayunkia aestuarina* extension to N America)
 (12): 3246 (first B.C. black hagfish)
 27(1): 170 (stonecat, from Hudson Bay drainage system)
 (1): 174 (manefish, from Atl. waters off Canada)
 (2): 391 (*Halargyreus johnsonii* westward in Atl.)
 (3): 457 (*Lepidion eques* first record from NW Atl.)
 (3): 610 (Atl. mackerel N to Black Is., Labrador)
 (4): 804 (transparent hatchetfish N to NE Grand Bank)
 (5): 865 (first record of 2 Lernaepodidae copepod parasites on B.C. fishes)
 (5): 901 (*Diplostomulum spathaceum* & *Protocephalus fillicollis* parasitic helminths in Nfld. threespine sticklebacks)
 (9): 1501 (new N America records of 6 thecate hydroids)
 (10): 1892 (*Sepioteuthis sepioidea* squid N to Massachusetts)
 (11): 2097 (juvenile & spawning Atl. mackerel to SE Nfld.)
 (12): 2159 (first *Brachiella lageniformis* record for B.C. coast)
 (12): 2297 (new N Pac. records for 9 calanoid copepods)
 28(3): 461 (Atlantic menhaden about 100 miles NE to Northumberland Strait)
 (4): 620 (*Abraliopsis felix* squid 300 miles N on Pac. coast)
 (6): 927 (masked greenling, from Alaska SE to B.C. coast)
 (9): 1347 (bluespotted poacher 250 miles N into B.C.)
 (9): 1349 (fifth known specimen of *Macdonaldia challengerii* spiny eel extends range to Oregon coast)
 (10): 1469 (several Syllidae polychaete species)
 (10): 1491 (*Chloëia entypa* & *Drilonereis falcata minor* polychaetes off Washington coast)
 (10): 1527 (20 hermit crab species in waters adjacent to B.C.)
 (10): 1563 (*Holobomolochus sptnulus* parasitic copepod in Canadian waters)
 (10): 1615 (*Parapasiphaë sulcatifrons*, *Acanthephyra curtirostris*, *A. quadrispinosa*, & *Systellaspis braueri* caridean shrimps off B.C.)
 (12): 1831 (*Pegea confoederata*, *Thalia democratica*, & *Helicosalpa virgula* salps N to Oregon coast)
 (12): 1922 (first S extension of *Icelus spiniger* sculpin to B.C. coast)
 29(1): 107 (S range extension of Bering poacher to Chignik, Alaska; clarification of NW range of Pac. staghorn sculpin)
 (2): 213 (first *Eukrohnia bathypelagica* chaetognath record in Canadian Atl. waters)
 (3): 217 (athecate hydroids from N Canadian shelf waters: 5 new to N American waters, plus 2 more new to N Canadian waters)
 (3): 337 (first striped bass records in B.C. waters)
 (3): 344 (first Alta. record, & 450-mile SW range extension)
 (5): 545 (spoonhead sculpin, fourhorn sculpin, ninespine stickleback, & trout-perch in E Ont. & W Que., re postglacial dispersal)
 (5): 606 (S range extension of shorttraker rockfish)
 (7): 1084 (first Alta. record of American eel)
 (7): 1093 (first NE Pac. Ocean record of deep-sea fish *Bathysaurus mollis*)
 (11): 1655 (2 brook stickleback caught above arctic circle in Mackenzie R.)
 (12): 1772 (pygmy whitefish in Yukon & S Alta.)
 B 170 (distributional, of 18 N American chironomid species)
 171 (B.C. cetaceans & pinnipeds)
 174 (some 40 Nearctic & Palaeartic *Chaoborus* diptera)
 T 30: 4 (*Sprontocaris sica* shrimp, off B.C.)
 202 (diatoms new to Canadian Atl. provinces, from NW Miramichi R.)
 225 (first NW Atl. record of *Yvesia* sp., *Plocamionida ambigua* & *Sphaerotylus borealis* (sponges))
 S 1001 (B.C. Risso dolphin; feed, parasitization)
 1067 (B.C. Polychaeta)
 1138 (polychaetes, B.C. waters)
 1533 (1 genus, 3 species, & several forms, of chironomids new to N America, from a high Colorado mountain creek)
 1544(F) (*Loligo peali* squid N range reduced from Nfld. to N.S.)
 1677 (Polychaeta: first N America record of *Laetmonice pellucida*; first B.C. record of *Leanira* & *Ehlersileanira*)
 A 75 (first Bering flounder & third Bering wolffish recorded from central Canadian Arctic)
 Species, origin of
 J 23(1): 141 (Arctic ciscoes)
 (12): 1897 (palaeontology of some marine mammals)
 Species, relict
 J 22(4): 969 (Crustacea and fish in Algonquin Park, Ont.)
 28(9): 1331 (zoogeographic problem re presence of relict *Pontoporeia affinis* amphipod in L. Washington, USA)
 S 1004 (Canadian Arctic Islands marine-glacial)
 1139 (*Discoasteromonas calciferus* flagellate)

- 1191 (*Distephanus speculum* silicoflagellate & *Gymnaster pentasterias* dinoflagellate in Great Bear Lake, N.W.T.)
- 1488 (new genus, species, & variety of dinoflagellates in Canadian Arctic lakes)
- Species succession
 J 25(4): 667 (& fishery exploitation in Great Lakes)
 26(6): 717, 899, 913, 959, & some other papers in this special issue (re international symposium on Salmonid Communities in Oligotrophic Lakes (N America & Europe))
- S 1079 (faunal succession of extinct N Pac. marine mammals)
- Specific gravity (*see* Density)
- Specificity
 J 29(9): 1291 (*Cryptobia dahl*i protozoan parasite for lumpfish)
- Spectrometry (*see* Analysis methods (chemical); Apparatus)
- Speed of swimming (*see* Swimming)
- Spence, John Andrew
 J 28(1): 35 (differences in benthos caused by an impoundment)
 (1): 45 (differences in fish populations caused by mainstream impoundment)
- Sperm (*see also* Gonads; Milt; Reproduction; Testes)
 J 22(6): 1503 (fertility retention from expressed sockeye salmon milt)
 24(7): 1573 (fertility duration, of sockeye & pink salmon)
 25(2): 363, (6): 1295 (frozen preservation of Atl. salmon)
 (12): 2623 (cryogenic preservation of Atl. cod)
 (12): 2695 (chilled storage effect on sockeye & pink salmon)
 26(2): 413 (major cations, osmotic pressure, & pH of Atl. salmon)
 (5): 1400 (steelhead trout fertilization results with cryopreserved)
 (12): 3254 (freezing Atl. salmon spermatozoa with extender)
 28(5): 745 (cryogenic preserved, for fertilizing coho & chinook salmon eggs)
 (12): 1915 (cryogenic preserved, for fertilizing steelhead trout eggs)
 29(1): 13 (fertilizing effectiveness of, from gonadotropin-injected pink salmon)
 T 93 (freezing Atl. salmon sperm with extenders & protective agents)
 111 (& ova of sockeye & pink salmon re spawn collection)
- S 1135 (pyruvate & glyoxylate metabolism by Atl. salmon & cod sperm)
 1231 (uticolytic enzymes in Atl. cod)
 1236 (lipids biosynthesis from added substrates by Atl. salmon)
 1237 (CO₂ fixation by Atl. cod)
- 1245 (protamine biosynthesis during steelhead trout spermatogenesis)
- 1249 (goldfish spermiation as bioassay for salmon gonadotropin)
- 1342 (aminotransferases in Atl. fishes)
- 1373 (sea urchin spermatozoa phosphatide utilization: review)
- 1376 (salmon gonadotropin activation effect on spermatogenesis in hypophysectomized lizard)
- 1593; 1630 (chinook salmon hormones effect spermiation resumption in hypophysectomized catfish)
- Spermatogenesis (*see* Sperm)
- Spermatozoa (*see* Sperm)
- Sperosoma giganteum* (sea urchin)
 J 24(6): 1385 (off Oregon coast)
- Sphaeriidae (*see* Clams)
- Sphaerotylus* (*see* Sponges)
- Sphingomyelins
 T 198 (content of queen crab muscle & viscera lipids)
- Sphyaena argentea* (*see* Barracuda, Pacific)
barracuda (*see* Barracuda, great)
ensis (*see* Barracuda (Mexican))
- Sphyrna lewini* (*see* Hammerhead, scalloped)
zygaena (*see* Hammerhead, smooth)
- Spinachia spinachia* (*see* Sticklebacks)
- Spinal cord; Spinal ganglia (*see* Nerve system)
- Spindle shell (*see* Whelk, Stimpson's)
- Spine (*see* Skeleton; Vertebrae)
- Spines (*see* Fins; Sea urchin)
- Spiratella* (*see* Pteropoda; *also* Dimethyl sulfide)
- Spirinchus dilatus* (*see* Smelt, longfin)
starksii (*see* Smelt, night)
thaleichthys (*see* Smelt, longfin)
- Spirochetes
 B 169: 20 (*Cristispira* associated with Pac. oyster crystalline style)
 S 1469 (*Cristispira* occurrence in 12 of 62 W Canada marine bivalve species)
- Spirogyra* (algae)
 J 26(12): 3101 (blooms after fertilization of a lake)
- Spirontocaris* (hyppolytid shrimps) (*see also* Shrimps)
 J 25(2): 347 (Queen Elizabeth Is., Canadian Arctic)
 26(7): 1899 (*S. phipp*i & *S. spin*us in W Canadian Arctic)

- T 30: 63-3 (*S. sica* range extension off B.C.)
S 1260 (adaptation re other shrimps in NW Atl.)
- Spirula* (cephalopods)
S 1327 (of Canada)
- Spisula falcata* (see Clam, hooked surf)
polynyma (see Clam, Pacific surf)
solidissima (see Clam, Atlantic surf)
- Splake (hybrid from brook (speckled) and lake trout)
J 23(1): 149 (alkaline phosphatase from scales)
25(4): 690 (success in Great Lakes)
27(6): 1017 (population dynamics, L. Huron)
29(2): 129 (recovery of planted, in selected Ont. lakes, re competitive other species)
(9): 1283 (cadmium content, in New York State waters)
- Spleen
J 25(12): 2643 (furunculosis bacteria in brook trout)
28(1): 47 (hemosiderin bodies re erythropoiesis in blue gourami)
(1): 112 (histology of cutthroat trout with leukemia condition)
(7): 1064 (vs. feces re presence of pancreatic necrosis virus in brook trout)
S 1073 (enzymes of Atl. herring)
- Spoilage, of fishery products (see Bacteria; Preservatives; Quality of fishery products; Trimethylamine)
- Spondylidae
S 1618 (occurrence & function of lip hypertrophy)
- Sponge, boring (*Cliona celata*)
B 169: 154 (predator of Pac. oyster in B.C.)
- Sponge, freshwater
J 27(1): 125 (re lake trout feed, L. Opeongo, Ont.)
- Sponges
T 73 (in Strait of Georgia benthos biomass)
159 (marine: *Holichondria* in Canadian Arctic Archipelago)
225 (associated with Bay of Fundy scallop beds, including first NW Atl. record for *Yvesia* sp., *Plocamionida ambigua*, & *Sphaerotylus borealis*)
290 (taken during B.C. experimental trawling)
- Spookfish, winged (*Dolichopteryx* sp.)
B 180: 158 (full description, etc., B.C.)
- Spores (see also Bacteria; also next heading)
J 25(3): 547 (*Clostridium botulinum* growth & spore production in chemically defined media)
- Sporozoa (see also Microsporidia; Myxosporidia; Protozoa)
J 26(4): 725 (review of taxonomy & life cycles, particularly re infections in fishes)
(4): 1075 (*Haemogregarina* in fishes blood)
- 27(7): 1320 (sporulation of possible new species of *Minchinia* haplosporidan in a California Pac. oyster)
- Sport fishery (see Angling; Salmon; Trout)
J 25(7): 1355 (walleye)
26(6): most papers in this issue (nature, extent, & management, re salmonid communities in N American & European oligotrophic lakes)
B 149: 107 (Great Lakes)
165: 60 (carp)
173 (species among NW Canada & Alaska fresh-water fishes)
S 1015 (& facilities, Great Slave L.)
A 16 (summary of symposium on economics of)
108 (statistics re bluefin tuna, 1966)
- Sporulation (see Spores; Sporozoa)
- Spot (*Leiostomus xanthurus*)
J 29(11): 1605 (voltage & pulse rates for inducing electrotaxis in)
- Sprague, John Booty
J 22(2): 425 (toxicity of metal salt mixtures to Atl. salmon)
28(1): 59 (DDT in Atl. fishes & shellfishes)
T 201 (oil dispersant toxicity tests at Chedabucto Bay, N.S.)
S 913 (alkaline contamination of tank water supply)
931 (avoidance reactions of fish)
960 (apparatus for studying pollutant avoidance)
961 (determination of safe levels of toxicants)
999 (sublethal copper-zinc pollution in a salmon river)
1196 (copper-zinc mining pollution on spawning salmon)
1241 (aquatic insect DDT tolerance disproved)
1252 (rainbow trout avoid zinc sulfate)
1276; 1277 (toxicity of kraft mill effluent to lobsters & salmon)
1278 (kraft pulpmill effluent toxicity to 2 aquatic animals)
1291 (NTA protects fish from copper and zinc)
1397 (salmonid fish avoidance to pollutants)
1510 (measurement of pollutant toxicity to fish)
1552 (decrease in DDT residues in young salmon)
A 84 (water pollution re fisheries of Atl. provinces)
145 (measurement of pollutant toxicity to fish)
223 (combating pollution on Canada's E coast)
268 (sublethal effects & "safe" concentrations of pollution toxicants towards fish)
- Spread, fish (see Delicatessen)
- Springs, thermal
J 25(10): 2037 (algal growth in a thermal stream; correction on J 26(8): 2263)
28(1): 73 (ecological energetics & natural history of biota, also chemistry of waters, Mt. Rainier Nat. Park, USA)

- Springtails (*see* Collembola)
- Sprules, William Memberry
B 161 (goldeye in Canada)
- Squalene (*see also* Hydrocarbons)
S 1286 (content of eulachon lipids)
- Squalus acanthias* (*see* Dogfish, spiny (Atlantic); Dogfish, spiny (Pacific))
suckleyi (*see* Dogfish, spiny (Pacific))
- Squaretail (*see* Squaretail, small-eye)
- Squaretail, small-eye (*Tetragonurus cuvieri*) (squaretail)
B 180: 384 (full description, etc., B.C.)
T 205: (taken during FRB groundfish survey)
- Squatina californica* (*see* Shark, Pacific angel)
- Squawfish, northern (*Ptychocheilus oregonis*)
J 29(2): 173 (seasonal distribution of *Chondrococcus columnaris* disease in, Columbia R.)
B 162: 234 (predator of young sockeye salmon)
173: 224 (full description of N Alta. & B.C.)
- Squid, Arctic (*Gonatus fabricii*) (*see also* Squids)
CJG 13: 45 (strandings of young, Nfld.)
S 1206 (as feed of northern Atl. salmon)
1327 (re synopsis of Canadian squids)
- Squid, giant (*Architeuthis dux*)
S 1520 (*Hepatoxylon trichiuri* cestode from, Nfld., as clue to squid's feed)
- Squid, longfinned (Atlantic) (*Loligo pealei*)
T 103; 122 (in experimental Atl. otter trawling)
199 (in survey off US Atl. coast)
S 1327 (re synopsis of Canadian squids)
1544(F) (previously reported N range (Nfld.) reduced to N.S.)
1546 (NW Atl. resources & fisheries)
- Squid, longfinned (Pacific) (*Loligo opalescens*)
CNG 84 (popular description)
T 7; 56; 62; 181; 257; 290; 317 (taken in experimental or commercial B.C. trawling)
S 1327 (re synopsis of Canadian squids)
- Squid, short-finned (*Illex illecebrosus* (*illecebrosus*))
J 22(1): 131 (lipids and component fatty acids)
24(6): 1209 (growth & hypothetical age, of Nfld. bait)
25(5): 910 (as swordfish feed in NW Atl.)
B 154: 122 (as Nfld. resource)
CJG 13: 41 (life history; Nfld. abundance, catches, & tagging)
15: 29 (drying in Nfld.)
CSG 54 (underexploited on N.S. banks)
T 103; 122 (in experimental W Atl. otter trawlings)
199 (in survey off US Atl. coast)
S 906 (1964 fishery prospects)
- 972 (fatty acids types in liver oil)
1023 (ICNAF Canadian research report)
1130 (feeding habits)
1226 (fatty acids positional distribution in liver triglycerides)
1327 (re synopsis of Canadian squids)
1379 (biological characteristics, Nfld. area)
1546 (NW Atl. resources & fisheries)
A 43; 108; 119; 152; 153; 181 (ICNAF Canadian research summaries)
143(F); 175 (*see* CSG 54 above)
194 (Nfld. fishery)
- Squids
J 23(1): 85 (in feed of NE Pac. Ocean salmon & steel-head trout)
(8): 1257 (first NW Atl. record of *Pyrgopsis lemur*)
26(6): 1676 (*Lolliguncula brevis* pen length re mantle length & total volume)
27(10): 1892 (range extension of tropical *Septoteuthis sepioidea* N to Massachusetts)
28(4): 620 (300-mile N range extension of *Abraliopsis (Watasenia) felis* on Pac. coast, as identified by beak shape)
(11): 1796 (2 Pac. specimens of unusual type, similar to *Gonatus & Berryteuthis*; discussion of these genera)
29(4): 385 (cholesterol in *Sepia officinalis*)
CHN 32 (*Omnastrephes sloani pacificus* used in Japanese fish paste)
CNS 14; 19 (B.C. landings by areas, 1964, 1965)
15; 20; 21; 22; 23 (in NE Pac. Ocean salmonid stomachs)
T 260 (standing crop, availability, weights, etc., from Scotian Shelf surveys, 1958-68)
S 1327 (Canadian, with synopsis)
- Squires, Hubert Jacob
J 22(1): 1 (new species of *Calocaris*)
(1): 69 (larvae of *Argis dentata*)
23(4): 521 (reproduction in *Sphyrion lumpi*)
24(6): 1209 (growth and age of *Illex illecebrosus illecebrosus*)
(9): 1873 (Crustacea in Hudson Bay)
25(2): 347 (decapod Crustacea)
(9): 1763 (lobster ecdysis)
(12): 2723 (lobsters from 95 fath off Nfld.)
26(7): 1899 (decapod Crustacea of Beaufort Sea)
S 1107 (Crustacea distribution in NW Atl.)
1130 (squid feeding habits)
1260 (aspects of adaptation in decapod Crustacea)
1311 (NW Atl. decapod Crustacea)
A 1 (marine invertebrates)
- Squirrelfish, longspine (*Holocentrus rufus*)
S 1409 (gill blood pathways)
- Sreedharan, Ayyappan
T 256 (Georges Bank scallop meat sizes)
A 159 (age-length key studies)
- Srivastava, Vivien Mavis (*see also* Brawn, Vivien Mavis)

- T 261 (fish of Gulf of St. Lawrence)
- St. (in addition to the following headings, *see* Saint-)
- St. Andrews, N.B. (*see also* Passamaquoddy Bay)
- J 28(1): 59 (DDT residues in marine shellfishes)
- S 1142; 1143; 1148 (surface seawater temperatures & forecasts of)
- A 82(F) (marine climate of nearby waters)
- St. Andrews Biological Station, N.B. (*see also* Fisheries Research Board of Canada)
- T 20 (computer programming facilities at Biological Station)
- MSP 12 (brochure on facilities for visiting scientists)
- St. Clair, Lake (Ontario and Michigan) (*see also* Great Lakes)
- J 28(8): 1133 (adult & juvenile walleye migrations through)
- St. Lawrence, Gulf of (*see also* Belle Isle, Strait of; Hydrography; International Commission for the Northwest Atlantic Fisheries; Magdalen Islands Shelf and Shallows; Northumberland Strait; Oceanography, Northwest Atlantic coastal; St. Lawrence River; *also* names of important fisheries)
- J 22(2): 433 (harp seal migration)
- 23(9): 1411 (electrical analog model for wind-driven circulation)
- 25(3): 555 (analysis of cod population in southern)
- (12): 2749 (possible effect of harbour seal bounty re cod codworm infestation)
- 26(5): 1273 (comparison of cod & haddock feed)
- (7): 1889 (otolith nuclei similarity, in spring & autumn spawning herring)
- (10): 2691 (mesopelagic & other fishes)
- 27(11): 2053 (depth distribution of witch flounder stages)
- 28(7): 1009 (discreteness of herring populations of spring & autumn fisheries in S)
- 29(5): 595 (winter geostrophic circulation)
- B 155 (descriptions of fishes)
- 177 (paralytic shellfish toxicity in) CGS 44 (distribution of cod catches) 46 (changes in cod fishery)
- T 26 (1965 summer oceanography of southern)
- 80 (fish stocks)
- 139 (catch statistics, age, & length composition, of herring)
- 157 (cod & haddock catches by otter trawlers, 1967)
- 204 (tagging & movements of male queen crabs)
- 261 (bibliography for 145 fishes)
- 271 (circulation patterns, June 1968 & Sept. 1969)
- 315 (larval herring & capelin distribution & size, in S)
- 318 (larval herring distribution, relative abundance, & growth, in S)
- 332 (feasibility of fluorimetric mapping of chlorophyll distribution)
- S 950 (water temperatures re herring fishery)
- 953 (marine geology)
- 957 (and St. Lawrence River: recent depositional conditions)
- 1026 (1964 another cold sea temperature year)
- 1075 (evolution of cod fishery in southern part)
- 1353 (sediments mineralogical composition)
- 1464 (critique of aging herring by otoliths)
- 1693 (*Clostridium botulinum* distribution re physical environment)
- A 82(F) (marine climate)
- 199 (marine geological investigations of sediments)
- St. Lawrence River (*see also* St. Lawrence, Gulf of)
- J 25(11): 2327 (Fe, Mn, & Ti in estuarial glacial marine sediments)
- 29(9): 1283 (cadmium content of several freshwater fishes)
- S 957 (recent depositional conditions)
- 1084 (trapping & netting harp seals on N shore)
- St. Louis, Lac, Que.
- J 29(5): 517 (yellow perch weight-length-growth relations)
- St. Margaret's Bay, N.S.
- J 25(9): 1803 (caloric content of benthic & epibenthic invertebrates)
- 27(5): 887 (primary production measurements on a natural plankton bloom)
- (8): 1453 (phytoplankton spatial heterogeneity)
- (12): 2143 (biomass, productivity, & predatory losses of *Pectinaria hypoborea* polychaete)
- 28(7): 971 (ecological production & mathematical model of population for *Sagitta elegans* chaetognath)
- (11): 1733 (production potential of seaweed-lobster community)
- 29(4): 357 (relations of land drainage, nutrients, particulate material, & fish catch)
- (5): 507 (herring larvae biology)
- (7): 987 (*Sagitta elegans* yearly respiration rate & energy budget)
- T 77; 203; 327 (primary productivity measurements)
- 219 (physical oceanography)
- 252 (herring larvae ecology)
- 333 (macrozooplankton biomass measurements)
- S 1399 (energy coefficient concept in primary production)
- 1482 (comparison with eutrophicated Bedford Basin, N.S.)
- 1539 (capacity to accept pollutants)
- 1579 (phytoplankton annual production)
- 1619; 1708 (ecological energetics of seaweed zone: zonation, biomass, & productivity)
- St. Mary's Bay (*see* Placentia Bay, Nfld.)
- St. Pierre, Lac, Que.
- J 28(5): 786 (heavy-metal concentrations in dressed northern pike)

- Staffs, Fisheries Research Board of Canada (*see lists in Board's Biennial Reviews*)
- Stains
 J 25(2): 255 (types of, for marking small fish re population estimation)
 26(3): 707 (2 modified, for oyster tissue pathology)
 T 123 (for young Pac. salmon's skeletal study)
- Stainton, Michael Paul
 J 27(4): 805 (mercury determination in fish samples)
 28(2): 277 (surface sediment chemistry of FRB Experimental Lakes, NW Ont.)
 S 1534 (mercury vapor for atomic absorption)
 A 178 (determination of residual mercury in fish tissue)
- Staleness (*see Quality of fishery products*)
- Stallworthy, Wilson Burnett
 J 27(4): 743 (light effect on oyster spat settlement)
- Stamina (*see Stress*)
- Stanley, Daniel Jean
 S 1199 (ancient oyster & bay scallop shells from Sable Is.)
- Stanley-Jones, Arthur Roland
 CPO 1965-1 (modifications to salinometers)
- Stannius, corpuseles of
 J 23(8): 1249 (steroid transformations by, in Atl. cod)
 26(3): 639 (re American eel renal physiology)
 29(9): 1362 (probable function of secretions, in American eel)
- Star (*see Brittle stars; Starfishes*)
- Starch (*see also Carbohydrates*)
 J 25(6): 1269 (origin, description, & fate, in oceanic waters)
 (8): 1539 (postmortem degradation in fish muscle)
- Starfishes (Asteroidea; sea stars) (*see also Brittle stars; Echinodermata*) (*Note: Vernacular names of starfishes vary so with locality that they are not indexed*)
 J 23(11): 1673 (bathymetric distribution off Oregon coast)
 24(4): 833 (4 species from a drifting ice island off E Greenland)
 25(9): 1803 (caloric & sulfur content of *Asterias vulgaris* & *Ctenodiscus crispatus*)
 26(1): 145 (zinc content of various species)
 (3): 701 (*Asterias* mass mortality from abnormally low estuarine salinity, P.E.I.)
 27(3): 535 (*A. vulgaris* density distribution on Atl. scallop beds)
 (10): 1898 (*Leptasterias polaris* 2 digestive tract enzymes)
 28(5): 793 (yellow phosphorus concentration by *A. vulgaris*, N.S.)
 (9): 1225 (cadmium toxicity tests on *A. forbesi*)
 (9): 1285 (methylmercury in *A. vulgaris* off N.S.)
 (11): 1733 (*A. vulgaris* respiration rate)
 29(9): 1347 (fuel oil residues in *A. vulgaris* 26 months after a N.S. oil spill)
 B 152 (of arctic & subarctic N America, with key)
 169: 161 (*Dermasterias*, *Evasterias*, *Pisaster*, & *Pycnopodia* predation on Pac. oysters, B.C.)
 179: 10 (*Pisaster*, *Pycnopodia*, & *Evasterias* predation on B.C. clams)
 T 43 (*Asterias* on Irish moss)
 217 (oil uptake from petroleum oil spills)
 225 (associated with Bay of Fundy scallop beds)
 S 1017 (of Labrador coast)
 1108 (N American, from N Alaska to Strait of Belle Isle).
 1373 (lipids nature & metabolism: review)
 1569 (determination of residual fuel oil contamination in *A. vulgaris*)
 A 133 (*A. vulgaris* calorific content as Atl. cod feed)
- Starostka, Victor Joseph
 J 25(8): 1741 (water core plankton sampler)
- Starsnout, bigeye (*see Poacher, bigeye*)
- Starsnout, gray (*Asterotheca alascana*)
 B 180: 553 (full description, etc., B.C.)
- Starsnout, spinycheek (*Asterotheca infraspinata*)
 J 25(12): 2665 (associations with other fishes off Oregon coast)
 B 180: 554 (full description, etc., B.C.)
 T 11 (in B.C. experimental midwater trawling)
- Starvation effect (*see also Feed; Hunger concept; Stress*)
 J 23(7): 975 (& refeeding, on Atl. cod liver & blood constituents)
 (9): 1353 (on chemical composition of early sea life pink salmon)
 (9): 1461 (& severe exercise effects on rainbow trout glycogen metabolism)
 24(2): 243 (re sockeye salmon sexual maturity & flesh Na, K, & water content)
 (2): 357 (on muscle α -tocopherol & lipids in unfed fish & shellfish)
 (7): 1515 (on salmonids selected temperature)
 25(8): 1555 (on rainbow trout blood & muscle)
 (11): 2443 (on resistance of DDT-fed brook trout)
 26(12): 3209 (re DDT effect on rainbow trout hepatic dehydrogenase)
 28(4): 587 (on rainbow trout metabolism)
 (11): 1749, 1757 (response of young sockeye salmon after)
 29(4): 439 (on some lobster physiological parameters)
 (4): 461 (on gaffkemia-infected lobsters time to death)
- Stasko, Aivars B.
 J 29(7): 1025 (ultrasonic tracking of adult migrating sockeye salmon, B.C. coast)
 S 1675 (review of field studies on fish orientation)

- A 239 (bibliography re underwater telemetry for tracking organisms; by investigators, projects, & species, with references)
- Stations and Establishments, Fisheries Research Board of Canada (*see* the Annual Reports, *also* Biennial Reviews, of the Board) (*see also* list of, with addresses, page *vi* of this present publication)
- Statistical analysis (*see* Computer programming; Mathematical treatment of data)
- Statistical treatment of data (*see* Mathematical treatment of data)
- Statistics (*Note*: Because of the great many FRB publications that deal with, or contain statistics, it is not feasible to reference them all under this heading; only the references to the Pacific Biological Station's Statistical Circulars series are given hereunder. *See also* Computer programming; Fisheries; Mathematical treatment of data; *also* topics leading to statistics)
- CNS 14; 19 (B.C. trawled groundfish landings, hours of effort, & dispositions, 1964; 1965)
- 15 (stomach contents of 1958 catches of NE Pac. Ocean salmonids)
- 16; 27 (age & length composition of 1964 & 1965 B.C. sockeye, pink, & chum salmon catches)
- 17 (length & age composition of petrale sole off Vancouver Is.)
- 18 (length & age composition of Hecate Strait rock sole)
- 20; 21; 22; 23 (stomach contents of NE Pac. salmonid catches, 1956-57, 1959-60, 1962, & 1963-64)
- 24 (inventory of 1946-65 samples of commercial B.C. groundfish landings)
- 25 (age, size, & sex composition of B.C. sockeye salmon catches, 1912-63)
- 26 (age, size, & sex composition of B.C. chum salmon catches, 1957-63)
- 28 (trawl production by Canadian & US vessels off B.C., 1954-65)
- Stauffer, Thomas Miel
J 27(10): 1735 (landlocked sea lamprey metamorphosis)
- Stave Lake, B.C.
J 27(6): 1154 (largescale sucker spawning habits)
- Steaks, fish
J 24(7): 1461 (freeze-drying Atl. cod)
28(7): 1061 (practical small-scale commercial dryer)
29(5): 525 (DDT residues & oil content of L. Michigan coho salmon & lake trout)
- S 1697 (canned, from N.W.T. fishes)
- A 203 (precooked in batter)
- Steele, Donald Harold
J 25(5): 943 (NW Atl. & Arctic coast *Anonyx* amphipoda)
26(3): 683 (additional comments on *Anonyx*)
- 28(8): 1153 (Nfld. winter flounder)
29(9): 1337 (*Gammarellus angulosus* biology in NW Atl. Ocean)
(9): 1340 (*Gammarellus homari* biology in NW Atl. Ocean)
- T 47 (tabular data from *Anonyx* species)
- Steele, V. J.
J 29(9): 1337 (*Gammarellus angulosus* biology in NW Atl. Ocean)
- Steer (*Bos taurus*) (*see also* Beef)
J 25(8): 1651 (plasma protein-bound inorganic iodide)
- Stein, David
J 28(9): 1349 (notacanthid collected off Oregon coast)
29(7): 1093 (first *Bathysaurus mollis* records from NE Pac. Ocean)
- Stein, Roy Allen, Jr.
J 29(12): 1737 (social interaction between young coho & fall chinook salmon in an Oregon river)
- Stellerina* (*see also* Agonidae)
xyosterna (*see* Poacher, pricklebreasted)
- Stendall, Rey Carl
J 24(4): 833 (E Greenland echinoderms)
- Stenella coeruleoalba* (*see* Dolphin, striped)
dubia (*see* Dolphin, spotted)
euprosyne (*see* Dolphin, striped)
graffmani (*see* Dolphin, Pacific spotted)
longirostris (*see* Dolphin, spinner)
- Stenobranchius leucopsarus* (*see* Lampfish, northern)
- Stenodus leucichthys* (*see* Inconnu)
- Stenotomus caprinus* (*see* Porgy, longspine)
chrysops (*see* Scup)
- Stephan, Charles Eugene
J 26(9): 2449 (toxicity of copper to minnows)
- Stephens, Kenneth Valentine Cory
J 22(6): 1563 (degradation of consumed organisms)
(6): 1575 (phytoplankton pigment nomographs)
CPO 1965-1 (modifications to salinometers)
T 110 (Strait of Georgia biological oceanographic observations)
- S 1223 (food availability seasonal variations for benthos)
1326 (allochthonous bacteria and organic materials)
1355 (NE Pac. Ocean nitrate)
1392 (production in the Strait of Georgia, part I)
1467 (dissolved nutrients automated measurement)
1504 (continuous measurement of turbidity)
1651 (fertilization effect on primary production, Great Central L., B.C.)
- Sterilization (*see also* Irradiation)

- J 23(8): 1281 (resistance of bacteria to, in fish spread delicatessen)
- Sternoptyx diaphana* (see Hatchetfish, transparent)
- Steroids; Sterones (see also Cortisol; Hormones)
- J 23(4): 615 (new adrenal steroid from skates blood)
(8): 1249 (steroid transformations by Atl. cod Stan-
nius corpuscles)
- 24(1): 205 (mineralocorticoid activity of skate blood
hydroxycorticosterone for rat)
- 25(2): 431 (interrenal tissue biosynthesis of sterones in
Atl. herring)
(12): 2549 (1 α -hydroxycorticosterone function in
skate)
- 26(7): 1823 (1 α -hydroxycorticosterone assay by so-
dium transport across toad bladder)
- 28(4): 477, 485 (histological effects on tissues of go-
nadectomized sockeye salmon)
- 29(3): 311 (plasma hydroxycorticosteroids concentra-
tion changes during Atl. salmon freshwater
spawning journey)
(steroid destruction during silica-gel
chromatography)
- S 1121 1167; 1168 (in vitro biosynthesis of 1 α -hydroxycortic-
osterone by skate tissues)
- 1205 (biological activity of 1 α -hydroxycorticoster-
one in skates)
- 1244 (corticosteroid 1 α -hydroxylase in elasmob-
ranch interrenals)
- 1251 (recovery of microquantities of steroids after
thin-layer chromatography)
- 1308 (testosterone, 1 α -hydroxycorticosterone & corti-
sol binding by fish plasma proteins)
- 1313 (testosterone & 1 α -hydroxycorticosterone in
body fluids of thorn skate)
- 1325 (biosynthesis of 1 α -hydroxycorticosterone by 4
skate species)
- 1329 (conversion of a C-21 to a C-19 steroid by scal-
lop gonadal enzyme in vitro)
- 1340 (adult sockeye salmon interrenal activity sup-
pression by dexamethasone corticosteroid
injection)
- 1356 (skate testosterone production & clearance
rates re blood plasma testosterone levels)
- 1357; 1362 (skate serum proteins re testosterone & other
sex hormone binding protein)
- 1372 (interrenal steroids re skate liver glycogen
deposition)
- 1404; 1432 (aspects of steroidogenesis in fish (reviews),
& demonstrations of biosynthesis of cortisol in
ratfish interrenal tissue)
- 1410 (re presence of corticosterone in Atl. hagfish &
sea lamprey blood)
- 1432 (protein binding of, in blood of various fishes:
review)
- 1477 (identification & distribution of steroid-produc-
ing Ledig cell homolog in Atl. salmon testis)
- 1478; 1479 (interrenal histology & steroidogenesis in
Atl. sturgeon)
- 1489 (blood proteins binding affinities for corti-
costeroids in 3 Atl. fishes)
- 1576 (corticosteroids & testosterone in Atl. sturgeon
plasma)
- 1628 (cortisol & cortisone re corticosteroids in Atl.
halibut)
- 1665 (some comparative aspects of corticosteroids in
fishes, birds, reptiles, amphibians, & mammals;
also protein binding of corticosteroids: review)
- 1666 (are corticosteroids present in the blood of all
fish?)
- A 214 (corticosterone sex hormones to accelerate mat-
uration in fish farming)
- Sterols; Sterol esters (see also Cortisol; Lipids; Hormones;
Steroids)
- J 23(7): 1025 (cholesterol in fresh vs. frozen Atl. cod
muscle)
- 25(10): 2083 (fatty acids distribution in Atl. cod flesh)
- 27(3): 601, (7): 1329 (from scallop vs. cholesterol re
chick hypocholesterolemia)
(6): 1162 (rainbow trout blood cholesterol & corti-
sol content)
- 28(4): 477, 485 (histological effects on tissues of go-
nadectomized sockeye salmon)
- (4): 606 (cholesterol content of juvenile coho
salmon blood)
(10): 1675 (of *Terebratalia transversa* brachiopod)
- 29(4): 385 (extensive review of molluscan sterols &
their biosynthesis; also sterol nomenclature)
- T 198 (esters content of queen crab muscle & viscera
lipids)
- S 1071 (cholesterol glucopyranosiduronate synthesis)
- 1072 (cholesterol & related compounds in Irish
moss)
- 1239 (desmosterol, etc., of red seaweeds)
- 1264 (cholesterol, desmosterol, & other sterols in
king crab & queen crab)
- 1373 (of echinoderms re metabolism: review)
- 1456 (mass spectrometric studies of methyl ether
derivatives)
- 1457 (desmosterol, cholesterol, & minor sterols con-
tent of dulce & 3 other red seaweeds)
- 1459; 1611 (new sterol types isolated from sea scallop)
- 1506 (identification of various sea scallop muscle)
- 1527 (of 14 crustacean species)
- 1663 (separation & identification facilitated by sil-
ver-ion chromatography of steryl acetates)
- 1679 (of a chiton, 7 Pelecypoda species, 10 Gastrop-
oda species, & a brachiopod)
- Stevens, Ernest Donald
- J 23(4): 471 (metabolism in trout)
- 29(2): 202 (fish body weight changes caused by han-
dling & exercise)
- Stevenson, James Cameron
- J 28(2): 121 (editorial foreword to this special issue on
FRB Northwest Ontario Experimental Lakes
Area investigations)
- (10): 1360 (Edith and Cyril Berkeley — An
Appreciation)
- 29(6): 611 (editorial foreword to this special issue on

- proceedings of an international symposium on Salmonid Communities in Oligotrophic Lakes)
 (12): 1665 (editorial announcement re forthcoming amalgamation of 1965-72 annual subject-author indexes & lists of titles of FRB and associated publications)
 B 161; 162; 164; 167; 177; 180 (editorial foreword or preface to these Bulletins)
 A 254 (communication between scientists through primary journals)
- Stew
 B 169: 139 (canned Pac. oyster)
- Stewart, Donald
 J 29(5): 525 (dressing & cooking effects on DDT residues in 4 L. Michigan fishes)
- Stewart, Gene Lloyd
 J 24(8): 1811 (pumping system for plankton)
 (10): 2053 (microzooplankton in euphotic zone across California Current)
- Stewart, Heather Clare
 S 1404 (steroidogenesis in fish)
- Stewart, James Edward
 J 23(1): 155 (fatty acids in Atl. cod livers)
 (4): 595 (cultivation of oyster cells)
 (9): 1325 (incidence of *Gaffkya homari*)
 (9): 1451 (hemolymph of lobster)
 24(2): 443 (serological differences between 2 Atl. oyster populations)
 (11): 2339 (lobster muscle weight)
 (12): 2623 (gaffkemia susceptibility)
 25(3): 607 (hemolymph characteristics of *Cancer irroratus*, *C. borealis*, & *Hyas coarctatus*)
 (4): 695 (*Gaffkya homari* interaction with *Homarus americanus* defense mechanisms)
 (4): 795 (*Gaffkya homari* pathogenicity for *Cancer irroratus*)
 (9): 1763 (lobster ecdysis)
 26(1): 1 (*Gaffkya homari* in lobster)
 (5): 1385 (lobster gaffkemia)
 (5): 1392 (lobster hemolymph)
 (9): 2503 (effects of temperature on gaffkemia)
 29(4): 439 (temperature, feed, & starvation effects on lobster physiological parameters)
 (4): 461 (feed & starvation re *Gaffkya homari* infection effecting lobster death)
- CHN 21 (lobster display unit)
 40 (gaffkemia & storage temperatures re red crab)
 41 (gaffkemia among stored lobsters)
 42 (gaffkemia control in lobster storage facilities)
 43 (procedure for detecting gaffkemia in lobsters)
- S 898 (blood of aquatic vertebrates)
 943 (growth of rainbow trout)
 1030 (anesthetics for lobster studies)
 1119 (*Homarus americanus* hemolymph constituents)
 1125 (lobster triglyceride digestion)
 1144 (lobster hemocytes)
- 1288 (study of lobster using serum protein concentration)
 1344 (gaffkemia in lobsters)
 1726 (natural & induced bactericidal activities in lobster hemolymph, re gaffkemia)
 1727 (*Gaffkya homari* effects on lobster hemolymph constituents)
 A 180 (gaffkemia of lobsters)
- Stewart, Kenneth William
 J 25(5): 1091 (permanent dry-mounted teleost chromosomes)
 27(1): 170 (stonecat, *Noturus flavus*, from Hudson Bay drainage)
- Stewart, Nelson Eugene
 J 24(3): 475 (oxygen re largemouth bass growth)
 25(8): 1621 (Sevin effects on clams)
 27(1): 93 (effects of Sevin on crabs)
- Sthenelais* (see also Polychaeta)
 J 28(10): 1393 (*S. fusca*, & n.sp. *S. berkeleyi*, from E. Pac.)
- Stichaeus punctatus* (see Shanny, Arctic)
- Stickland, John Allan
 T 169; 178; 191 (Strait of Georgia velocity measurements)
 253 (velocity and water temperature records, Strait of Georgia)
- Stickleback, blackspotted (*Gasterosteus wheatlandi*) (twospine stickleback) (see also Sticklebacks)
 J 25(12): 2703 (reproductive isolating mechanisms)
 26(2): 460 (E range extension, Nfld.)
 (5): 1390 (distribution, Sable Is., N.S.)
 (8): 2061 (reproductive behavior)
 28(3): 427 (phylogeny, diagnostic features, & range)
 T 261 (bibliography for Gulf of St. Lawrence)
- Stickleback, brook (*Culaea inconstans*) (*Eucalia inconstans*)
 J 22(3): 744 (in Kananaskis R. system, Alta.)
 25(6): 1199 (low temperature effects on feeding in 3 Ont. localities)
 26(2): 325 (S Alta. distribution)
 (6): 1439 (distribution in Canadian Missouri R. headwaters)
 (7): 1927 (purine sources of skin silvering)
 (9): 2431 (geographic variation; distribution; nomenclature)
 27(10): 1889 (marking with fluorescent dyes)
 (12): 2350 (feed availability re aggression & nest building)
 (12): 2365 (furunculosis)
 28(3): 427 (phylogeny, diagnostic features, & range)
 (6): 919 (temperature & light effects on prespawning)
 (11): 1811 (suitable for introduction into alkaline eutrophic lakes)
 29(3): 275 (11 parasites of, Lake of the Woods, Ont.)
 (11): 1655 (unusual occurrence in Mackenzie R., N.W.T.)

- B 173: 302 (full description, etc., of NW Canada)
S 1128 (in 2 L. Superior bays)
- Stickleback, fourspine (*Apeltes quadracus*)
J 26(4): 975 (*Bothrimonus* cestode biology in)
(5): 1390 (distribution, Sable Is., N.S.)
28(3): 427 (phylogeny, diagnostic features, & range)
T 261 (bibliography for Gulf of St. Lawrence)
- Stickleback, ninespine (*Pungitius pungitius*) (see also Sticklebacks)
J 25(4): 667 (re Great Lakes species succession & exploitation)
26(5): 1391 (distribution, Sable Is., N.S.)
27(10): 1889 (marking with fluorescent dyes)
28(3): 427 (phylogeny, diagnostic features, & range)
29(3): 275 (6 parasites of, Lake of the Woods, Ont.)
(5): 545 (new E Ont. & W Que. distribution records, re postglacial dispersal)
B 173: 306 (full description, etc., of NW Canada & Alaska)
T 180 (Lac la Martre, N.W.T.)
261 (bibliography for Gulf of St. Lawrence)
S 1128 (in 2 Lake Superior bays)
A 14 (Great Bear Lake, N.W.T.)
- Stickleback, threespine (*Gasterosteus aculeatus*) (see also Sticklebacks)
J 24(8): 1637 (reproductive isolating mechanisms; marine & freshwater)
26(2): 405 (4 phenotypic variations, Alaska)
(4): 741 (experimental infection with *Schistocephalus solidus* cestode)
(9): 2319 (parasites, B.C.)
(12): 3183 (predation & evolution; pigmentation, etc.)
27(1): 147 (claimed validity of 2 subspecies in B.C.: *G. a. leiurus* & *G. a. trachurus*)
(4): 749 (spectral photoperiod mechanism controlling sexual maturation)
(5): 901 (parasites of, Nfld. & Labrador)
28(3): 427 (phylogeny, diagnostic features, & range)
(7): 999 (schooling vs. aggregation spacing & density)
(10): 1563 (new host of *Bomolochus cuneatus* copepod)
B 162: 235 (as food competitor of young sockeye salmon)
173: 310 (full description, etc., of Hudson Bay & NW Alaska)
180: 276 (full description, etc., of B.C. (marine))
T 261 (bibliography for Gulf of St. Lawrence)
- Stickleback, twospine (see Stickleback, blackspotted)
- Sticklebacks (speciation)
J 26(2): 405; 27(1): 147 (*Gasterosteus aculeatus* complex)
28(3): 427 (osteology re phylogenetic relations of N hemisphere sticklebacks to tubenouts; *Aulorhynchus*, *Aulichthys*, *Spinachia*, *Apeltes*, *Gasterosteus*; subspeciation in "*Gasterosteus aculeatus* complex": *G. a. aculeatus*, *G. a. aculeatus*, *G. a. trachurus*, *G. a. leiurus*, *G. a. semiarmatus*; also "*Pungitius pungitius* complex" & *Spinachia spinachia*)
B 173: 45 (*Gasterosteidae* key), 301 (general description & species key), 302-315 (full descriptions of NW Canada & Alaska species)
- Stickwater (see also Fish processing wastes; Fishmeal)
T 197 (proposed demonstration plant for antipollutant treating, & recovery of solids)
A 98 (concentrate, from Atl. & Pac. herring processing)
- Stingray, diamond (*Dasyatis dipterura*)
B 180: 63 (full description, etc.)
- Stingray, pelagic (*Dasyatis violacea*)
J 25(5): 1075 (range extension in NW Atl.)
B 180: 64 (full description, etc., B.C.)
S 1244 (a corticosteroid α -hydroxylase in interrenal tissue)
- Stingray, roughtail (*Dasyatis centroura*)
T 261 (bibliography for Gulf of St. Lawrence)
- Stipe (see also Phaeophyta)
J 28(5): 778 (length & presence of cavity re taxonomy of *Laminaria* seaweeds)
- Stizostedion canadense* (see Sauger)
vitreum glaucum (see Pike, blue)
vitreum vitreum (see Walleye)
- Stock; Standing stock (see also Abundance; Fisheries; Mortality; Populations; Recruitment; Rehabilitation; Stocking; also names of organisms)
J 22(2): 591 (delineation for American plaice, Magdalen Shallows)
(4): 945 (estimating theoretical biomass for a winter flounder fishery)
24(2): 249 (Ricker method of predicting yield per recruitment)
(5): 1117 (swimming stamina as quality test)
(12): 2527 (mathematical treatment of exploitation of multiple)
25(7): 1389 (changes in L. Superior juvenile lake trout)
(12): 2701 (simplified computation of recruitment rates)
26(5): 1205 (exploitation effects on American plaice)
(6): 1605 (reduction of zooplankton, in a lake by predaceous *Cyclops*)
(7): 1699 (native vs. introduced brook trout throughout world)
(8): 1985 (analytical approach to size, NE Pac. Ocean demersal fishing)
(10): 2715 (stock recruitment systems re environmental fluctuations effects)

- (12): 3133 (SW Nfld. cod)
 27(3): 413 (brook trout, Matamek L., Que.)
 (4): 737 (comparison of 2 sonic methods for estimating abundance of demersal fish stocks)
 (10): 1811 (eelgrass, Alaska coast)
 (11): 1917 (estimation & extent, for particulate matter in NW Atl. surface waters)
 (12): 2371 (coho salmon transferrin polymorphism re potential use for stock identification)
 28(2): 215 (of periphyton in 4 small NW Ont. lakes)
 (7): 1009 (discrete spring & autumn, in S Gulf of St. Lawrence herring fishery)
 29(2): 161 (standing, of Northumberland Strait rock crab)
 (5): 477 (size & fishing intensity, L. Michigan alewives)
 (8): 1113 (otoliths for identifying Atl. herring)
 B 152 (B.C. petrale sole)
 157: 19 (of legal-size lobsters re Canadian fishery economics)
 162 (sockeye salmon)
 CJG 16 (distribution & migration of Nfld. herring, 1967-68)
 18: 1 (Nfld. herring)
 CSG 48 (further rehabilitation of Maritimes oyster)
 55 (NW Atl. herring)
 T 31 (recruitment in Atl. mackerel)
 58 (Nfld. herring, re catches)
 80 (of N.S. banks & Gulf of St. Lawrence fishes)
 92 (computer program for equilibrium yield per recruitment to a fish stock)
 134 (parasitic indicator species, for Atl. salmon)
 246 (bibliography of N American Pac. coast trawl fishery)
 256 (Georges Bank scallops)
 248 (zooplankton, re marine productivity)
 326 (status of Pac. ocean perch off B.C., Washington, & Oregon, 1970)
 S 899; 925; 926 (ocean, of Pac. salmon, and fishery developments)
 973 (offshore NE Pac. Ocean coho salmon, & intermingling of E & W)
 1025 (& recruitment, ICNAF area)
 1126 (effect of Greenland salmon fishery on N.B. salmon stocks & fishery)
 1129 (sockeye salmon in offshore N Pac. Ocean)
 1147 (haddock off E Canada coast)
 1156 (pink salmon in offshore N Pac. Ocean)
 1230 (of Canadian N Pac. spawning salmon)
 1302 (chum salmon, N American & Asian)
 1318 (biology & fishery of W Nfld. cod)
 1513 (zooplankton, re marine productivity)
 1540 (Atl. cod; ICNAF Subareas 2 & 3)
 1546 (probable underexploitation of NW Atl. squids)
 1607 (world fisheries, re food for man)
 1652 (standing, of zooplankton, as affected by enrichment of Great Central L., B.C.)
 A 18 (unexploited, re challenge of exploration & new fishing methods)
 35 (rehabilitation of Atl. oyster)
 102; 105 (recent changes in B.C. herring)
 163; 163(F) (NW Atl. herring)
 206 (ICNAF 1970-72 forecast for haddock)
 236 (decline of offshore sea scallop, Georges Banks)
 246 (status of SW Nfld. herring, 1965-70)
 259: 31 (diversity of Pac. salmon & trouts)
 Stocking (*see also* Stock; Rehabilitation; Species, introduced; Transplantation)
 J 22(2): 721 (past, in Kananaskis R. system, Alta.)
 25(12): 2527; 27(4): 811 (brown trout)
 26(7): 1699; 28(3): 452 (brook trout)
 28(5): 663; 29(12): 1788 (rainbow trout)
 T 165 (rainbow trout farming in central Canada)
 Stockner, John Gary
 J 25(10): 2037 (thermal stream algal growth & productivity; correction on J 26(8): 2263)
 28(1): 73 (*Hedriodiscus truquii* (Diptera) energetics & history)
 (2): 215 (periphyton in FRB Experimental Lakes, NW Ont.)
 (2): 265 (diatoms in FRB Experimental Lakes, NW Ont.)
 29(1): 31 (algae on natural & artificial substrates, L. Winnipeg, Man.)
 Stoddard, Judith Helen
 T 5 (Atl. herring condition (fatness))
 79 (fat contents of Atl. herring)
 Stolzenberg, Ernest William
 CNS 16 (age composition of B.C. salmon)
 27 (age composition of 1965 B.C. sockeye, chum, & pink salmon)
 Stomach (*see also* Digestion; Feed; for stomach contents *see* next heading)
 J 22(3): 775 (histology, of postspawned sockeye salmon)
 23(9): 1353 (weight of pink salmon at various sea-life stages)
 (10): 1607 (Atl. cod morphology)
 26(1): 1 (lobster gastric secretion as defense against *Gaffkya homari* infection)
 (10): 2561 (weight in white whales)
 28(4): 485 (histological effects of hormones & cortisol on gonadectomized adult sockeye salmon)
 29(2): 149 (histopathology in channel catfish hemorrhagic virus disease)
 B 177 (paralytic shellfish toxin in E Canada scallops)
 Stomach contents (*Note*: Details of feed observed in stomach contents are not indexed in detail here or in separate headings, with few exceptions; general references will be found under Feed and names of organisms. *See also* Digestion; Predation)
 J 25(7): 1505 (wet vs. dry weight determination methods for walleye)
 (9): 1797 (dielidrin accumulation in goldfish, after aldrin ingestion)
 CNS 15; 20; 21; 22; 23 (salmonids in NE Pac. Ocean, 1956-64)

- Stomias boa ferox* (see Dragonfish, boa) 25(3): 473 (re blood lactate concentration in salmon)
(9): 1983 (rainbow trout fingerlings reaction to thermal)
(11): 2443 (DDT effect on resistance of brook trout to)
(12): 2549 (interrenalectomy re skate blood components)
26(1): 63 (effects of hypoxia in coho salmon eggs & fry)
27(5): 909 (of anesthesia in rainbow trout)
28(4): 527 (osmotic, in ribbed mussel re upper lethal temperatures)
(7): 1064 (effect of, in detecting masked bacterial & viral infections in fish)
(8): 1215 (changes in blood lactic acid concentration of alewives passing through fishway)
(12): 1899 (from formalin disinfection of young salmonids)
29(5): 576 (failure of bluegill to habituate to handling)
(5): 601 (effect of thermal, on sockeye salmon predator avoidance)
(7): 1005 (hatchery-reared rainbow trout re stamina tunnel ratings)
(10): 1491 (temperature-salinity: effect on fiddler crab mercury uptake)
- Stonflies (see Plecoptera)
- Stones, "holed" (see Geology)
- Storage (see also Chilling; Holding; Ice; Sea water, refrigerated; Shipping; Transportation; for cold storage see Refrigeration)
B 169: 109 (of live & shucked Pac. oysters)
CHN 40 (recommended red crab live storage temperatures)
T 242: (harmful effects of mishandling on quality of sockeye salmon stored at sea for canning)
A 138 (queen crab)
- Storms (see also Wind)
J 26(8): 2223 (rate of growth effect on subsequent ocean surge elevations)
- Strait of... (see name of strait)
- Strandings (see also names of marine mammals for other records of)
J 24(12): 2503 (description of a Cuvier's beaked whale stranded in N. California)
27(11): 1903 (& shooting (other than commercial) records of whale, dolphin, & porpoise species, Canadian Atl. coast, 1949-68)
S 1240 (distribution of Cuvier's beaked whales in NE Pac.)
- Strasdine, George Alfred
J 24(3): 595 (*Clostridium botulinum* type E spores)
(8): 1833 (*C. botulinum* type E in fish & shellfish extracts)
25(3): 547 (*C. botulinum* growth)
28(11): 1817 (phosphatase activity in *C. botulinum* spores & cells)
29(12): 1769 (salmon-canning waste water as microbial growth medium)
S 1270; 1585 (amylopectin accumulation in *C. botulinum*)
1657 (intracellular glucan role in *C. botulinum* fermentation & spore maturation)
A 151 (fermenting spent sulfite liquor to produce acid)
- Streams and stream beds (see Benthos; Limnology; Sampling; Sediments; Spawning)
- Stress; Fatigue; Stamina (see also Activity; Handling; Swimming; also other stress causes)
J 24(8): 1775 (cardiovascular dynamics of swimming adult sockeye salmon)
(10): 2169 (serum protein of rainbow trout after various)
- Strickland, John Douglas Hipwell
J 24(8): 1811 (pumping system for plankton)
28(4): 599 (obituary of)
B 122 (measuring marine phytoplankton production)
125R; 167 (manuals of seawater analysis)
S 923 (determination of plant pigments)
- Strigeatoidea (see Trematodes)
- Stringer, George Everett
J 24(2): 463 (*Mysis relicta* in B.C.)
- Strongylocentrosus purpuratus*, *S. franciscanus*, *S. echinoides*, *S. droebachiensis* (see also Sea urchins)
J 24(6): 1385 (off Oregon coast)
- Strontium derivatives
J 25(7): 1333 (lactate in diet for marking goldfish by incorporation into scales)
27(2): 317 (oxide for coding embedded encapsulated tags in animals)
29(4): 455 (⁸⁵Sr for marking larval largemouth bass)
(12): 1691 (chloride, re toxicity to *Daphnia magna*)
S 941 (radioactive ⁹⁰Sr seawater contaminant)
1437; 1439 (in Green L., N.Y.)
1529 (distribution in L. Ontario)
A 85 (in freshwater fishmeals)

- 232 (^{90}Sr as radioactive marine pollutant)
- Stunkard, Horace Wesley
J 26(4): 725 (Sporozoa re fishes inspections)
- Sturgeon, Atlantic (*Acipenser oxyrinchus*)
J 29(1): 85 (muscle catheptic activity)
T 261 (bibliography for Gulf of St. Lawrence)
S 1409 (gill blood pathways)
1478; 1479 (interrenal histology & steroidogenesis studies)
1576 (plasma corticosteroids & testosterone)
1666 (blood plasma steroids)
- Sturgeon, green (*Acipenser medirostris*)
B 173: 60 (mention in key to NW America sturgeons)
180: 82 (full description, etc., B.C.)
T 7; 56; 181; 317 (in commercial B.C. trawling)
257 (in B.C. & US Pac. coast commercial trawling, 1970)
- Sturgeon, lake (*Acipenser fulvescens*)
J 25(4): 667 (re Great Lakes species succession & exploitation)
(7): 1511 (age & growth in Saskatchewan R. delta)
29(3): 275 (3 parasites of, Lake of the Woods, Ont.)
B 149: 20, 120 (Great Lakes, catches)
173: 61 (mention in key to NW America sturgeons)
T 261 (bibliography for Gulf of St. Lawrence)
A 201 (mercury contamination, Great Lakes)
- Sturgeon, Siberian (*Acipenser baeri*)
B 173: 61 (mention in key to NW America sturgeons)
- Sturgeon, white (*Acipenser transmontanus*)
J 25(12): 2589 (age, growth, food, & fishery yield, of Fraser R.)
27(7): 1313 (river resident, parasitized by a marine trematode)
29(2): 173 (*Chondrococcus columnaris* disease seasonal distribution, Columbia R.)
B 173: 60 (mention in key to NW America sturgeons)
180: 83 (full description, etc., B.C.)
T 7; 56 (in commercial B.C. trawling)
- Sturgeon Lake, Ont.
J 25(6): 1145 (maskinonge angling harvest re mortality)
- Sturgeons (*see also* above species)
J 25(12): 2711 (muscle creatine kinase localization of a European species *Acipenser sturio*)
29(9): 1283 (*Acipenser* sp. cadmium content, in New York State waters)
B 173: 42 (family), 60 (key to NW America species)
CNS 14; 19 (B.C. landings by areas, 1964, 1965)
- Sturrock, Sheila
S 1624 (human urine mannitol & sorbitol)
- Stutz, Sherwood Simpson
J 23(4): 607 (pelage of *Phoca vitulina*)
- 24(2): 435 (molt in the Pac. harbour seal)
(2): 451 (Pac. harbour seal pelage patterns and distribution)
- Style, crystalline
B 169: 20 (function, & *Cristispira* spirochaete, in Pac. oyster)
- Subba Rao, Durvasula Venkata
J 26(6): 1625 (extraction of chlorophylls; correction on J 26(8): 2264)
27(5): 887 (natural plankton bloom)
S 1387 (*Asterionella japonica* bloom and discoloration)
1538 (marine energy flow)
- Submarines (*see* Submersibles)
- Submersibles; Submarines; "Cubmarine" (*see also* Photography, underwater)
J 27(3): 535 ("cubmarine" surveying of Atl. scallop populations)
T 102 (equipment & observations from "cubmarine")
159 (*Pisces* surveying of Canadian Arctic Archipelago bottom flora & fauna)
A 136 (observations from, and possibilities of "cubmarine")
- Subramanian, Annamalai
J 27(1): 193 (chloride regulation in burrowing worm eel)
- Subspeciation (*see* Speciation)
- Succession of species (*see* Species, origin of; Species succession)
- Sucker, common (*see* Sucker, white)
- Sucker, largescale (*Catostomus macrocheilus*)
J 25(1): 101 (hybridization with white sucker, morphometry)
27(6): 1154 (spawning habits, Stave L., B.C.)
28(4): 533 (*Chondrococcus columnaris* disease re fish ladders)
29(2): 173 (*C. columnaris* disease seasonal distribution, Columbia R.)
B 173: 276 (full description, etc., of NW Canada)
- Sucker, longnose (*Catostomus catostomus*) (red sucker)
J 22(3): 740 (in Kananaskis R. system, Alta.)
23(1): 149 (alkaline phosphatase in scales)
(1): 1761 (life history & inlet stream spawning, Sixteenmile L., B.C.)
24(2): 299 (muscle myogen electropherograms re speciation)
26(2): 325 (S Alta. distribution)
(4): 865 (new monogenetic trematode species from nasal cavity)
(5): 1289 (age, growth, & maturity, W L. Superior)

- (6): 1439 (distribution in Canadian Missouri R. headwaters)
 27(4): 830 (mercury contamination in organs, Saskatchewan R.)
 (7): 1317 (helminth parasites in Labrador)
 28(1): 45 (populations upstream & downstream of a dammed Ont. lake)
 (1): 105 (DDT residues in muscle, of Saskatchewan R.)
 (11): 1745 (biochemical & cytological study)
 29(2): 173 (*Chondrococcus columnaris* disease seasonal distribution, Columbia R.)
 (3): 275 (3 parasites of, Lake of the Woods, Ont.)
 B 173: 284 (full description of, NW Canada & Alaska)
 CCG 7: 16 (protein electropherogram)
 T 33 (in Great Slave L. fishery)
 180 (Lac la Martre, N.W.T.)
 261 (bibliography for Gulf of St. Lawrence)
 A 200; 201 (mercury contamination in Canadian waters)
- Sucker, mountain (*Catostomus platyrhynchus*) (*Pantosteus platyrhynchus*; northern mountain sucker)
 J 26(2): 325 (S Alta. distribution)
 (6): 1439 (distribution in Canadian Missouri R. headwaters)
 B 173: 275 (mention in key to NW America suckers)
- Sucker, quillback (*see* Quillback)
- Sucker, red (*see* Sucker, longnose)
- Sucker, spotted (*Minytrema melanops*) (*Moxostoma melanops*)
 J 24(2): 299 (muscle myogen electropherograms re speciation)
- Sucker, white (*Catostomus commersoni* (common sucker))
 J 22(1): 219 (fin anomalies, Heming L., Man.)
 (3): 742 (in Kananaskis R. system, Alta.)
 23(1): 149 (alkaline phosphatase in scales)
 (11): 1761 (life history & inlet stream spawning, Sixteenmile L., B.C.)
 24(2): 299 (muscle myogen electropherograms re speciation)
 (5): 927 (limnetic larvae in N Wisconsin lakes)
 (10): 2117 (effects of sea lamprey on a L. Huron population)
 25(1): 101 (hybridization with largescale sucker; morphometry)
 (6): 1199 (low temperature effects on feeding in 3 Ont. localities)
 (8): 1651 (plasma protein-bound inorganic iodide)
 26(2): 325 (S Alta. distribution)
 (3): 633 (aging from scales vs. fin rays)
 (4): 865 (new monogenetic trematode species from nasal cavity)
 (5): 1368 (fluorescence of white muscle nucleotides)
 (6): 1439 (distribution in Canadian Missouri R. headwaters)
 (10): 2643 (oxygen metabolism re body weight)
 (10): 2681 (shape & structure re selectivity of gillnets)
- (12): 3266 (diel activity, judged by gillnet catchability)
 27(1): 125 (re lake trout feed, L. Opeongo, Ont.)
 (4): 830 (mercury contamination in organs, Saskatchewan R.)
 (7): 1317 (helminth parasites in Labrador)
 (11): 1997 (postmortem glycolytic & other biochemical changes in white muscle at 0 C)
 28(1): 105 (DDT residues in muscle, of Saskatchewan R.)
 (7): 957 (vulnerability to northern pike predation)
 (7): 1061 (practical drying equipment for fillets & steaks; proximate analysis of dried steaks)
 (9): 1325 (postmortem changes in muscle glycogen phosphorylase activity)
 (11): 1745 (biochemical & cytological study of large & dwarf forms)
 29(2): 199 (necessary exposure times to eliminate by antimycin & rotenone)
 (3): 275 (35 parasites of, Lake of the Woods, Ont.)
 (3): 339 (simple tag for long-term experiments)
 (7): 1091 (diel downstream migration in a brown-water stream)
 (8): 1131 (mortality from sulfur dioxide lowering of lake pH)
 (9): 1283 (cadmium content, in New York State waters)
 (12): 1685 (mercury concentration re size, in 3 Man. & 1 NW Ont. lake; corrections on J 30(8): 1257)
 B 151; 151(F) (canned; smoked; sausage; wiener; fishballs)
 173: 280 (full description of, NW Canada)
 CCG 7: 16 (protein electropherograms)
 T 33 (in Great Slave L. fishery)
 226 (mortalities from *Aeromonas liquefaciens* disease in NW Miramichi R., N.B.)
 261 (bibliography for Gulf of St. Lawrence)
 S 1081 (sweet-cured smoked sliced products; recipes)
 1128 (in 2 L. Superior bays)
 1406 (bacterial infection re mine-effluent pollution, Miramichi R., N.B.)
 A 6(F) (marinated fillets & similar products)
 14 (Great Bear L., N.W.T.)
 262 (prerigor muscle fluorescence re quality test)
- Suckers (Catostomidae)
 J 25(4): 667 (*Catostomus* & *Moxostoma* re Great Lakes species succession & exploitation)
 B 149: 23, 123 (Great Lakes, catches)
 173: 44 (family key), 274 (general description), 275 (species key), 276-287 (full descriptions, etc., of NW Canada & Alaska)
- Suctorina (*see also* Protozoa)
 J 24(9): 1911 (parasitic on Nfld. freshwater fishes)
- Sugars; Sugar derivatives (*see also* Carbohydrates; Glucan; Glucose; Saccharides)
 J 22(2): 307 (of pink shrimp)
 (3): 755 (ribose and glucose re browning of fish flesh)

- 25(8): 1539 (postmortem degradation of muscle glycogen to)
- 28(8): 1173 (hexose, hexosamine, & fucose levels in Pac. salmon, trouts, & bovine blood sera)
- B 150: 21 (ribose & glucose re "greening" of tuna & albacore flesh)
- S 1036 (phosphates of, in fish)
- 1110; 1183 (re algae photosynthesis)
- 1117; 1124 (review of postmortem changes in fish muscles)
- 1197 (aldolase activity in marine planktonic algae re their phylogeny)
- 1359; 1431 (in extracts from *Rhodomela larix* seaweed)
- 1411 (quantitative estimation of neutral, by gas-liquid chromatography)
- 1624 (sorbitol & mannitol in urine of child with Alports syndrome)
- 30; 32 (enzymic degradation of sugars & sugar phosphates in fish flesh to inhibit browning)
- Sulfate (for general data re natural waters, see Limnology; Oceanography; Waters, natural)
- J 27(5): 837 (as pollution criterion in natural waters)
- S 1234 (activity coefficient of H₂O-NaCl-Na₂SO₄ system re sea water)
- 1377 (sulfate sulfur content of Atl. & Pac. herring meals)
- 1437 (in Green L., N.Y.)
- 1512; 1515 (isopiestic measurements on ternary system solutions, re NaCl & Na₂SO₄ activity coefficients)
- Sulfides (see also Dimethyl sulfide; Hydrogen sulfide; Sulfur derivatives; Thetin derivative; also names of metals)
- B 167: 41 (determination method for sea water)
- T 255 (sodium sulfide toxicity tests on brook trout)
- 314 (in waters of Petpeswick Inlet, N.S.)
- S 1561 (sulfhydryl content of rabbit & rainbow trout myosins re protein stability)
- Sulfite; Sulfur dioxide (see also Pulpmill effluents)
- J 29(8): 1131 (dioxide fallout from smelters into lakes as cause of fish mortality)
- T 255 (toxicity tests on brook trout)
- S 1180 (dioxide, for removal of brown stain in fish tanks)
- Sulfur derivatives (see also preceding three headings; also Thetin derivative)
- J 25(9): 1803 (content of various marine invertebrates)
- 26(12): 3254 (dimethyl sulfoxide suitable extender for freezing salmon sperm)
- CHN 22 (cause of "smut" in canned products)
- T 114 (content of Atl. & Pac. herring meals)
- S 1040 (content in algae)
- Sulfur dioxide (see Sulfite)
- Sundararaj, Bangalore Inamti
- J 29(4): 435 (salmon gonadotropin effect on in vivo maturation of catfish oocytes)
- S 1593; 1630 (salmon hormones gonadotropin effects on testes & seminal vesicles of hypophysectomized catfish)
- 1670 (salmon pituitary gonadotropin effects on hypophysectomized catfish ovulation)
- Sunde, Leif Axel
- T 165; 165(F) (central Canada rainbow trout farming)
- Sunfish, bluegill (see Bluegill)
- Sunfish, green (*Lepomis cyanellus*)
- J 22(6): 1379 (photoperiod influence on growth)
- 24(3): 695 (blood low-mobility proteins)
- 28(4): 610 (dieldrin pesticide concentration in blood & brain)
- (7): 957 (vulnerability to northern pike predation)
- (11): 1811 (alkali tolerance in Nebraska eutrophic lakes & ponds)
- (11): 1811 (suitable for introduction into alkaline eutrophic lakes)
- 29(2): 199 (necessary exposure times to eliminate by antimycin & rotenone)
- Sunfish, longear (*Lepomis megalotis*)
- J 23(9): 1457 (northern range extension into W Ont.)
- Sunfish, ocean (*Mola mola*)
- J 28(3): 323 (morphology of *Lepeophtheirus* copepod parasites)
- B 180: 640 (full description, etc., B.C.)
- T 181 (taken during 1969 B.C. trawl fishery)
- 193 (Atl. tagging, 1961-69)
- 261 (bibliography for Gulf of St. Lawrence)
- Sunfish, redbreast (*Lepomis aurochrysus*)
- J 28(9): 1285 (methylmercury in N.B.)
- Sunfish Lake, Ont.
- J 27(5): 847 (meromixis re phytoplankton)
- Superchilling; Supercooling (see also Chilling; also Sperm)
- J 27(11): 2101 (definition of superchilling; accurate labeling of superchilled vs. fresh fish products)
- 28(5): 745, (12): 1915 (cryopreserved sperm for fertilizing salmonid eggs)
- (8): 1217 (re ultrasonic method for distinguishing thawed frozen fish from fresh fish)
- T 242 (effects of storing sockeye salmon in refrigerated sea water re quality of canned product)
- S 1590: 533 (survival of fishes after supercooling; review)
- A 41 (re B.C. fish products)
- 203 (resume of T 242 above)
- Superior, Lake (see also Apostle Islands; Great Lakes; Nipigon Bay)
- J 22(4): 999 (movements of hatchery-reared lake trout)
- 24(2): 281 (hatchery-reared lake trout returns)
- (2): 299 (Catostomidae speciation)
- (4): 887 (rainbow trout phenotypic characteristics)
- 26(5): 1289 (longnose sucker age, growth, maturity)

- 27(1): 161 (morphological differences in lake charrs re claimed subspeciation)
 (4): 677 (15 trace elements in 13 fish species)
 (10): 1735 (lamprey metamorphosis morphology)
- 28(1): 65 (lake trout population biology before lamprey invasion)
 (5): 771 (rainbow trout life history, Batchawana Bay)
- 29(6): 617, 717, 765, 951, 975 (various factors affecting fishes, particularly salmonid communities)
 (10): 1451 (crustacean plankton abundance re eutrophication)
 (12): 1691 (content of 17 metals in water)
- CCG-7: 21 (extension of sea lamprey control to lower lakes)
- S 1128 (benthos of 4 bays)
 1668 (mercury contamination in various commercial fishes)
 1718 (pesticide levels in fishes)
 A 106 (transplants of *Oncorhynchus* salmonids into)
- Surfactants
 J 28(4): 565 (effects of some organic, on Atl. salmon olfactory epithelium)
 T 287 (influence of synthetic on Atl. salmon olfactory epithelium functions)
- Surfperch, barred (*Amphistichus argenteus*)
 J 24(10): 2161 (parasitization on other surfperches)
- Surfperch, calico (*Amphistichus koelzi*)
 B 180: 300 (full description, etc.)
- Surfperch, redtail (*Amphistichus rhodoterus*) (*Holconotus rhodoterus*; porgy; redtail seaperch)
 B 180: 301 (full description, etc., B.C.)
- Surfperch, silver (*Hyperprosopon ellipticum*)
 J 23(8): 1277 (first B.C. record)
 B 180: 309 (full description, etc., B.C.)
- Surfperch, spotfin (*Hyperprosopon anale*)
 J 24(10): 2161 (parasitization re other surfperches)
- Surfperch, walleye (*Hyperprosopon argenteum*) (walleyed seaperch)
 J 24(10): 2161 (parasitization re other surfperches)
 B 180: 307 (full description, etc., B.C.)
- Surfperches (Embiotocidae) (see also Perch; Seaperch)
 J 24(10): 2161 (parasitization ecological specificity in several species including those above, also *Brachyistius aletes*)
- Surgery, (see also Anesthesia)
 J 24(7): 1579 (techniques for Pac. salmon)
 28(5): 635 (physiological effects on brook trout)
- Surges, in lakes (see Seiches)
- Surges, oceanic
 J 26(8): 2223 (rate of storm growth effect on subsequent elevations)
- Surveys (see also Census; Exploration; Trawling) (Note: In addition to the following representative references to biological surveys many more will be found under the names of aquatic organisms, particularly the following commercial fishes for some of which references to annual surveys are listed: Cod, Atlantic (biology); Groundfishes (Canadian Atlantic); Groundfishes (Canadian Pacific); Haddock; Herring, Atlantic (biology); Herring, Pacific (biology); Perch, Pacific ocean; Plaice, American; Redfish; also under International Commission for the Northwest Atlantic Fisheries; International North Pacific Fisheries Commission. See also Photography, underwater; Submersibles)
 J 26(12): 3248 (larval swordfish, Cape Hatteras to Virgin Is. in Caribbean Sea)
 27(3): 535 (Atl. scallops from a submersible)
 (6): 1151 (marine borers in Canadian Atl. waters)
 (10): 1823 (smelt, L. Erie)
 28(2): entire issue (limnology of many small lakes in FRB Experimental Lakes Area, NW Ont.)
- B 179: 60 (B.C. deepwater clams)
 CNG 73; 82 (Hecate Strait fishes, B.C.)
 76; 85 (shrimps, B.C. coast)
- T 3 (bios of Oozy Creek, P.E.I.)
 11 (experimental midwater trawl, Queen Charlotte Is. region)
 18; 61 (B.C. shrimps)
 76 (prefertilization benthic, of tidal *Ostrea* L., N.S.)
 103; 122; 199 (otter trawling, offshore from N.S. to Florida)
 136 (swordfish & tuna, Cape Hatteras to Virgin Is.)
 168 (scallops, Bay of Fundy)
 180 (gillnet fishes, Lac la Martre, N.W.T.)
 199 (otter-trawl, USA Atl. coast: over 100 species taken (not individually indexed))
 225 (fauna associated with scallops, Bay of Fundy)
 291 (herring on N.S. bank, 1971)
- S 956 (similar to T 136 above)
 1076 (lobster, off Canadian & US Atl. coast, using trawls)
- A 104 (shrimp prospecting, B.C. coast)
 184; 247 (aerial, of harp seal, & general, of ringed seal, in Canadian Arctic)
 204 (origin of N Pac. Ocean salmonids & steelhead trout)
 206 (re haddock)
 207; 219 (Atl. herring egg distribution & abundance)
 220 (C.S.S. *Hudson* oceanographic cruise circumnavigating N & S America)
 247 (aerial, of NW Atl. harp seals)
- Survival (see also Lethal limits; Life history; Mortality; Pollution; Predation; Tolerance; also names of individual species)
 J 22(2): 385 (lobsters out of water)
 (4): 919 (stream sedimentation rate effect on young salmon)
 24(12): 2595 (effects of tagging vs. marking on young Atl. salmon)
 25(3): 495 (of early-stage English sole; correction on J 27(8): 1499)
 (8): 1621 (insecticide effect on cockle clam)

- (10): 2165 (Atl. salmon smolts, Little Codroy R., Nfld.)
 (10): 2213 (factors affecting marking of Atl. salmon smolts)
 (11): 2257 (marked lake trout)
 26(1): 133 (fry trap for estimating salmonid egg-to-fry)
 (2): 229 (Babine L. sockeye salmon fry, from natural vs. artificial stream rearing)
 (2): 389 (temperature & salinity effects on Dungeness crab larvae)
 (5): 1227 (discarded American plaice)
 (5): 1263 (finclipping effect on sockeye salmon)
 (6): 1473 (overwinter, of wild brook trout fingerlings)
 (6): 1619 (effect of fluorescent pigment vs. finclipping on coho salmon fry)
 (7): 1867 (of wild vs. hatchery-reared young Atl. salmon)
 (7): 1931 (lobster larvae unaffected by bleached kraft mill effluent)
 (9): 2283 (of 5 haustoriid amphipod species to 4 environmental factors)
 (9): 2413 (planted lake trout, South Bay, L. Huron)
 27(1): 196 (some environmental effects on chum salmon egg)
 (6): 1027 (L. Huron splake)
 (7): 1191 (factors affecting coho salmon alevins)
 (8): 1335 (crustacean zooplankton, after rotenone treatment of 2 alpine lakes)
 (8): 1429 (pink & chum salmon eggs & fry in revised hatchery method)
 28(3): 335 (of bacteria ingested by tubificid oligochaetes)
 (3): 343 (salinity effects on presmolt coho salmon)
 (4): 465 (lake char during Pleistocene glaciation in N America)
 (4): 527 (of ribbed mussels during low-tide exposures)
 (5): 647 (pink salmon eggs transplanted to Qualicum R., B.C.)
 (6): 924 (temperature requirements for larval lake cisco)
 (7): 1057 (larval & young fish in warm discharge canal of nuclear power plant)
 (8): 1119 (low oxygen concentration effects on fathead minnow fry)
 (11): 1811 (freshwater fishes in alkaline eutrophic Nebraska lakes & ponds)
 29(2): 129 (of planted brook trout, rainbow trout, & splake in selected Ont. lakes, re competitive other species)
 (3): 311 (reversible hormone changes in spawning Atl. salmon vs. nonreversibility in Pac. salmon re spawning survival of former vs. latter)
 (4): 458 (Floy anchor tag effects on brook trout)
 (5): 583 (long-term effects of Sevin insecticide on fathead minnow)
 (7): 1005 (hatchery-reared rainbow trout re stamina ratings)
 (8): 1107 (temperature effect on young brook trout)
 (8): 1119 (intertidal exposure effect on Pac. herring spawn)
 (8): 1151 (of pink salmon to adult stage from revised hatchery method vs. natural propagation)
 (12): 1691 (effect of 21 metal ions on *Daphnia magna*)
 T 88 (Atl. herring larvae re Bay of Fundy hydrography)
 147 (Atl. salmon parr re salinity)
 148 (Atl. salmon fry re salinity & diet)
 188 (P.E.I. oysters transplanted to W Nfld.)
 S 1448 (marine planktonic algae axenic cultures re prolonged exposure to darkness)
 1590: 533 (of fishes after supercooling: review)
 A 184 (harp seal in Canadian Arctic)
 Suryanarayana Rao, S. V.
 J 26(3): 704 (canned shrimp compounds)
 Susquehanna River, Pennsylvania and Maryland
 J 28(6): 911 (contribution of particulate carbon & nitrogen to Chesapeake Bay, Md.)
 Sutcliffe, William Humphrey, Jr.
 J 27(3): 606 (growth rate & ribonucleic acid concentration in some invertebrates)
 (11): 1917 (production & standing stock of particulate matter in the sea)
 29(4): 357 (land drainage, nutrients, particulate material, & fish catch relations in 2 Canadian Maritime bays)
 S 1345 (marine particles retention)
 1592 (relations between oceanic wind speed, Langmuir circulation, & particle concentration)
 Sutherland, Donald Bain
 J 22(2): 405 (pumpkinseed respiration)
 23(9): 1447 (holding tank for fish)
 CNS 89 (sockeye salmon artificial rearing)
 T 283 (environmental-control tank for synchronous growth & metabolism study of young salmon)
 Sutherland, Kenneth
 J 23(7): 1089 (salmon scales impression equipment)
 Sutterlin, Arnold Martin
 J 27(11): 1917 (Atl. salmon taste responses)
 28(4): 491 (hypoxic responses in the sea raven)
 (4): 565 (olfactory epithelial responses)
 T 287 (synthetic surfactants influence on Atl. salmon olfactory epithelium)
 S 1550 (proprioceptors in gills of teleosts)
 Sutterlin, Natalie
 J 27(11): 1917 (Atl. salmon taste responses)
 28(4): 565 (olfactory epithelial responses)
 T 287 (synthetic surfactants influence on Atl. salmon olfactory epithelium)
 Sutton, Anthony Hubert
 J 25(7): 1475 (cod muscle polyphosphates)

- Suzuki, Beverly Miyuki
CNS 24 (market samples of B.C. groundfish landings)
- Sweden
S 1442 (*Trianaophorus* infection of several L. Mälaren fish species)
- Swee, U Boon
J 24(1): 47 (young carp scale formation)
- Sweers, Henk Ejgill
J 25(9): 1911 (vertical temperature distribution)
- Swift, Donald Josiah Palmer
S 1688 (review of fine-grained suspended sediments size analysis)
- Swift, Donald Robert
J 22(4): 913 (char egg development and mortality)
- Swiftsure Bank (off Vancouver Is., B.C.) (*see also* Oceanography, Northeast Pacific east coastal)
J 24(8): 1827, (11): 2207 (oceanographic studies of)
- Swimbladder (airbladder) (*see also* Swimming)
J 22(2): 335 (volume re young Atl. salmon and trout buoyancy)
(6): 1555 (volume determination method)
23(10): 1617 (Atl. salmon parr buoyancy adjustment to stream velocity)
25(3): 469 (re sound-scattering layers of fishes)
(6): 1115 (histology re sounding response of kokanee & sockeye salmon)
(7): 1485 (function in longnose dace buoyancy adjustment)
(8): 1698 (gas re respiratory quotient errors)
26(4): 849 (*Cystidicola* nematode infection, various N American fishes)
(4): 941 (sockeye salmon: invasion route by dracunculoid nematode)
(7): 1927 (purine source of silvery layer in pike, walleye, & channel catfish)
(8): 2077 (re buoyancy adjustment of Atl. & Pac. herring)
(8): 2093 (re buoyancy of Atl. salmon parr & smolt)
27(1): 39 (gas retention re selecting trout hybrids for deep-swimming ability)
(10): 1855 (re blacknose dace buoyancy adjustment rate)
29(2): 119 (adaptive variation in length & volume, of 4 *Rhinichthys* species)
(3): 330 (volume, of longnose dace)
(8): 1145 (morphology, of 8 myctophids off Oregon coast)
S 1299 (nematode parasites of Pac. salmon)
1299; 1300 (*Salvelinema walkeri* nematode parasite of coho salmon)
- Swimmers' itch
A 58; 58(F) (cause, control, & treatment)
- Swimming; Swimming speed (*see also* Activity; Buoyancy; Stress; Swimbladder)
J 22(2): 405 (speed re pumpkinseed respiratory metabolism)
(2): 523 (effort re growth and feed)
(6): 1491 (speed of sockeye salmon re size and O₂ consumption)
23(2): 181 (speed of spawning migratory sockeye & coho salmon)
(3): 341 (endurance of some NW Atl. Ocean fishes re temperature & swimming speed)
24(5): 1117, (8): 1731, 1775 (of migrant sockeye fry as stamina test)
(6): 1241 (new apparatus for measuring for small fishes)
25(1): 49 (dissolved O₂ & CO₂ effect on juvenile large-mouth bass & coho salmon)
(5): 837 (effect on Atl. cod muscle & blood lactic acid & glycogen)
(8): 1689 (re goldfish & rainbow trout respiratory quotient)
(10): 2123 (of sea scallops)
26(2): 361 (of 3 Haustoriidae amphipod species)
(5): 1383 (thrust of sockeye re gillnet mesh selectivity)
(6): 1429 (re stream fishes ecology)
(6): 1647 (sustained ability of walleye & yellow perch larvae)
(11): 2807 (speed of *Tilapia nilotica* re oxygen consumption & salinity)
27(4): 715 (cutthroat trout homing speed by ultrasonic tracking, Yellowstone L.)
(4): 780 (mathematical analysis of goldfish speed data)
(5): 976 (speed of rainbow trout re size)
(9): 1637 (speed re hydraulic ram effect in gill ventilation)
(11): 2071 (& depth of ultrasonically tracked skipjack tuna)
(12): 2337 (thyroxin injection effect on Atl. cod speed)
28(4): 587 (rainbow trout speed re metabolism)
(8): 1143 (parasitic copepods locomotory mechanisms)
29(1): 67 (re respiration, salinity, & feed consumption of aholehole)
(3): 251 (temperature acclimation experience effect on young coho salmon)
(7): 1005 (stress re hatchery-reared rainbow trout survival)
(7): 1025 (speed of adult migratory sockeye tracked ultrasonically)
(8): 1234 (trapping & classification of upward-swimming benthos in a river estuary)
MSP 10: 14 (re water temperature in respirometer)
S 896 (energy of young sockeye salmon compared with drag force of dead fish)
998 (energetics of sockeye)
1166 (activity re orientation of seaward migrating young sockeye)
1590: 548 (speed, of various fishes re temperature; review)

- 1660 (body temperature of tunas & sharks re speed ability)
 A 116 (re water temperature in respirometer)
 118 (sockeye metabolism for)
- Swordfish (*Xiphias gladius*)
 J 23(12): 1821; 26(6): 1597 (nucleotide degradation of ordinary & red iced & frozen muscle, re quality)
 25(5): 903 (feed & feeding habits in NW Atl.)
 (12): 3248 (larval, from 3 localities in W Atl., re probable spawning area)
 28(1): 31 (cestode & trematode parasites in N Atl.)
 (7): 947 (blood pathways effects on blood-pressure drop in gills)
 29(12): 1777 (contaminant mercury removal during processing of fish protein concentrate from)
 B 154: 97 (as Nfld. resource)
 T 136 (origin & distribution of larval, in W Atl.)
 193 (Atl. tagging & returns, 1961-69)
 261 (bibliography for Gulf of St. Lawrence)
 273 (halogenated hydrocarbon residues detected in)
- MSP 14 (popular description: English & French)
 S 956 (Canadian research in Caribbean Sea)
 1024 (ICNAF Canadian research report)
 1099 (brief description; life history)
 1282 (recent changes in size composition of Canadian Atl. catches)
 1361 (re gill filament & lamellae fusion)
 1409 (gill blood pathways)
 1668 (mercury contamination)
- A 43; 108; 119; 153; 182; 241 (ICNAF Canadian research reports & summaries: commercial catches; weights; tagging; distribution)
 120 (longline lures for)
 131(F) (life cycle; fishery)
- Sydney Harbour, N.S.
 S 1584 (herring mortality from coke-oven intermediate oil pollution in N)
- Syllides* (see also Polychaeta)
 J 28(10): 1459 (seasonal settlement on test panels)
 (10): 1469 (n.sp. *Syllides benedicti*, descriptions of 6 other species, & key to genus)
- Sylvester, Joseph R.
 J 29(5): 601 (thermal discharge stress effect on sockeye salmon predator avoidance)
- Symbionts (see also Commensalism)
 J 28(3): 391 (incomplete, of red-water ciliate *Mesodinium rubrum*)
- Symbolophorus californiense* (see Lanternfish, bigeye)
veranyi (see Lanternfish, largescale)
- Symons, Philip Edward Kyrle
 J 25(11): 2387 (Atl. salmon deprived of food)
 26(7): 1867 (dispersal of juvenile Atl. salmon)
 28(7): 999 (spacing in schooling fish)
- (11): 1805 (estimating distances in schooling aquarium fish)
 T 9 (young salmon Pletcher "grow-thru" tags retention)
 206 (Atl. salmon parr role in smolt production)
 S 1555 (claw-shuddering behavior of shore crab)
 1711 (young Atl. salmon behavioral adjustment of population density to available feed)
- Sympatry (see also Allopatry)
 J 25(9): 1813(F) ("giant" and "dwarf" smelts of Heney L., Que.)
 26(10): 2659 (of 3 oligochaete species re nutritional resources in sediments)
 (12): 3183 (of different colored threespine sticklebacks)
 27(12): 2125 (re reproductive isolation of 2 dace species)
 28(9): 1259 (vs. allopatry re feed & habits of Dolly Varden & cutthroat trouts in 3 B.C. lakes)
 29(1): 91 (young chinook salmon & steelhead trout in 2 Idaho streams)
 (3): 243 (*Arctogadus* & *Gadus* arctic codfishes)
- B 173 (various NW Canada & Alaska freshwater fishes)
 S 1547 (brown & brook trout ecology in a Nfld. stream)
- Symphurus atricauda* (see Tonguefish, California)
- Synchaeta* (see Rotifera)
- Synchirus gilli* (see Sculpin, manacled)
- Syndesmis franciscana* (see Turbellaria)
- Synecology (see also aspects of, e.g. Associations; Communities)
 J 27(4): 621 (benthic infauna communities, Washington coast)
- Syngnathus fuscus* (see Pipefish, northern)
griseolineatus (see Pipefish, bay)
- Synodus* (see Lizardfishes)
- Synonymy (see Nomenclature; Taxonomy; Systematics)
- Synthesis (see also Biosynthesis) (Note: Various references under Acids, fatty and Enzymes also pertain to chemical synthesis)
 S 1603 (of some individual chlorobiphenyls)
 1712 (tetramethyl hepta- & octa-decanoic acid stereoisomers)
- Syrett, Roll Frederick
 J 28(6): 924 (temperature requirements for larval ciscos)
- Syringe
 S 1400 (for collecting volatile compounds for gas-liquid chromatography)

- 1534 (for transferring mercury vapor in mercury assays)
- Stellaspis braueri* (see Shrimps)
- Systematics (see also Classification; Genera; Keys; Nomenclature; Phylogeny; Speciation; Species; Taxonomy)
- J 29(6): 639 (Salmonidae & Coregonidae of recently glaciated lakes)
- S 1037 (imperfections in international)
- 169F (Thyasira bivalves)
- Szeplaki, B. J.
- J 25(12): 2549 (elasmobranch interrenalectomy & stress)
- Szidat, Lothar
- J 26(4): 753 (structure, development, & behavior of new strigeatoid metacariae)
- T**
- Tabata, Susumu
- J 23(6): 825 (Pac. oceanographic conditions)
- T 163 (measuring surface flow in Strait of Georgia)
- 169; 178; 191 (Strait of Georgia velocity measurements of 1967-69)
- 253 (velocity & water temperature records, Strait of Georgia)
- 263 (current velocities near a Vancouver, B.C., sewage & drainage outfall)
- S 919 (insolation and cloud amount)
- 977 (isothermal surface layer of water)
- 1033 (variability of oceanographic conditions)
- Tables, mathematical
- B 125R; 167 (oceanographic)
- T 45 ($\phi = 2 \arcsin \sqrt{X}$)
- A 189: 267 (exponentials from e^{-3} to e^3)
- Tacretter, Wanda Danuta
- S 1125 (lobster triglyceride digestion)
- Tactostoma macropus* (see Dragonfish, longfin)
- Tadenac Lake, Ont.
- J 27(2): 395 (limnology; growth, reproduction, & sport fishery of smallmouth bass)
- Tadpole, sea (*Careproctus reinhardi*)
- T 261 (bibliography for Gulf of St. Lawrence)
- Taeniopteryx* (see Stoneflies)
- Taeniotoca lateralis* (see Seaperch, striped)
- Tagging methods, returns, losses, and interpretation (see also Marking; Migration; Ultrasonics; for "biological tags" see Indicator species)
- J 22(2): 421 ("sphyron" type tag for fish)
- (2): 435 (4 tag types for harp seals)
- (2): 585 (American plaice, Magdalen Shallows)
- (2): 625 (Canadian Atl. salmon recapture near Greenland)
- 23(2): 253 (losses: lake whitefish, Georgian Bay, Ont.)
- (7): 947 (re juvenile Atl. salmon in Nabisipi R., Que.)
- 24(1): 21 (Atl. salmon grilse returns, Miramichi R., N.B.)
- (3): 495 (2 sunfish species, re interspecific breeding)
- (9): 1991 (re young bluefin tuna transatlantic migrations)
- (10): 2011 (cutthroat trout with attached floats)
- (10): 2117 (L. Huron white suckers)
- (12): 2595 (vs. marking effects on young Atl. salmon survival & growth)
- 25(1): 177 (harpoon adapted for tagging surface-swimming fish)
- (4): 783 (pink salmon with rubber bands for marine mortality estimation)
- (7): 1348, 1361 (walleye in Nipigon Bay, Ont.)
- (10): 2237, 2247 (subcutaneous "grow-thru" dart tag for fishes)
- (11): 2257 (survival of tagged vs. marked lake trout)
- 26(2): 269 (re NW Miramichi R., N.B., salmon contribution to other fishery areas)
- (5): 1301 (Nfld. American plaice)
- (8): 2201 (white whales in Canadian Arctic)
- (11): 3083 (detecting devices for magnetized wire tags on coho salmon)
- 27(2): 257 (modified sphyron tag for lobsters)
- (2): 317 (encapsulated metal oxides that can be coded)
- (4): 715 (electrical, for ultrasonic tracking of homing cutthroat trout)
- (5): 961 (discussion of, re fishery management optimization experiments)
- (5): 979 (mortality of dart-tagged sablefish by infection)
- (6): 1017 (re splake movements, L. Huron)
- (6): 1147 (electrical, for sonic tracking of lobsters)
- (11): 2072 (ultrasonic, for tracking skipjack tuna diel movements)
- 28(1): 49 (salamanders with toe clips)
- (3): 351 (Miramichi R., N.B., salmon to ascertain relative utilization rates by angling vs. Canadian commercial fisheries)
- (3): 369 (multivariate analysis of X-ray spectroscopic chemical element composition as "natural tag")
- (3): 383 (re homing of tidepool sculpin)
- (4): 537 (jaw tagging effects on landlocked Atl. salmon growth & scale characteristics)
- (8): 1133 (adult & juvenile walleye re migrations between L. Huron & L. Erie)
- (10): 1583 (possibilities of radioisotope X-ray fluorescence spectrometry: review)
- 29(2): 143 (growth per molt of tagged Nfld. lobsters)
- (3): 339 (spaghetti-tubing type, for long-term marking (of basses))
- (4): 458 (Floy anchor tag effects on brook trout growth & survival)

- (5): 469 (effects of 2 types on northern pike mortality, condition, growth, dispersal, & vulnerability)
- (5): 535 (jaw tagging re American eel life history in L. Ontario)
- B 153: 16 (B.C. petrale sole)
- 162: 13, 373 (sockeye salmon)
- CJG 18: 20 (herring: results in SW Nfld. waters)
- T 9 (retention of Pletcher "grow-thru" tags by Atl. salmon)
- 17 (micromagnetic for pink salmon fry)
- 31 (Atl. mackerel)
- 62 (Pac. cod)
- 74 (sablefish)
- 107 (for identifying sablefish reared in tanks)
- 193 (FRB swordfish, shark, & tuna tagging with darts & barbs, W Atl., 1961-69)
- 204 (male queen crabs, Gaspé region of Gulf of St. Lawrence)
- 246 (bibliography of N America Pac. coast trawled fishes)
- 250 (computer programming history data)
- 279 (abalone, B.C.)
- 289 (lobster, Bonavista Bay, Nfld.)
- S 925; 926 (NE Pac. salmon)
- 1038 (1964 INPFC Canadian high-seas research on salmon)
- 1129 (sockeye salmon in N Pac. Ocean re distribution)
- 1137 (salmon in N Pac. Ocean re distribution)
- 1156 (pink salmon in N Pac. Ocean re distribution)
- 1218 (Maritime Provinces, 1964-66)
- 1242 (evaluation of 2 ways of attaching tags to Atl. salmon smolts)
- 1296 (aluminum staple tag for salmon smolts)
- 1302 (chum salmon re origin, open N Pac.)
- 1319 (English sole: results from B.C. tagging)
- 1390 (vs. scale studies, re chum salmon distribution & origin in N Pac. offshore waters)
- 1492 (haddock movements off Digby, N.S.)
- 1581 (harp seal)
- 1643 (white hake, S Gulf of St. Lawrence)
- 1675 (review of tagging sensory-impaired fishes re orientation & homing)
- A 19 (forecasting pink & sockeye runs by high-seas tagging)
- 25 (recovery of Atl. salmon near Greenland)
- 56 (on high seas re Atl. salmon movements)
- 75 (gray seals & Greenland cod in Canadian Arctic, 1965)
- 86 (returns for ICNAF 1966 Pac. salmon & steelhead trout)
- 107 (9 species of whales in N Atl., 1966-67)
- 108 (1966 Canadian ICNAF studies: various species; use of cattle cartags for swordfish)
- 123: 358 (Nfld. salmon)
- 138; 176(F); 256 (queen crab)
- 155 (returns & utilizations of Miramichi R. Atl. salmon tagged in 1964-67)
- 174 (request for information on tagged N Atl. whales)
- 192 (Atl. salmon off Greenland)
- 204 (Pac. salmon & steelhead trout during INPFC studies, 1965)
- Tail (*see also* Fins)
- J 22(1): 237 (abnormalities in thorny skate)
- 28(1): 95 (differential growth in big skate embryos, re respiration mode)
- Tait, James Simpson
- J 27(1): 39 (trout ability to retain swimbladder gas)
- (10): 1729 (lake trout preferred temperature)
- Takahashi, Masayuki
- S 1651 (fertilization effect on primary production, Great Central L., B.C.)
- Tam, Kai Chiu
- S 1705 (check sample study of determining mercury in fish tissues)
- Tanaka, Syoiti
- S 1390 (N Pac. chum salmon origin)
- Tanichthys albonubes* (*see* Minnow, White Cloud Mountain)
- Tanks (*see also* Aquaria; Sea water, refrigerated)
- J 26(7): 1956 (experimental to simulate reservoir conditions)
- (8): 2227 (experimental, to simulate rapids environment)
- 27(1): 167 (proportional controlling of water temperatures in)
- (6): 1103 (re testing goldfish vision)
- (6): 1172 (oxygenating device for live-bait wells & holding tanks)
- 28(8): 1196 (digital recorder monitoring of dissolved oxygen in)
- 29(2): 207 (for sablefish culture)
- CCG 7: 27 (truck for chilling freshwater smelt in bulk)
- CHN 42 (disinfecting lobster-holding, against gaffkemia lobster disease bacteria)
- T 107; 189; 243 (for sablefish culture)
- 283 (environmental-control, for synchronous study of young Pac. salmon growth & metabolism)
- 297 (size effect on individual & group behavior of young sockeye salmon)
- S 1180 (use of sulfur dioxide to remove brown stains in)
- Tanquary Fjord, Ellesmere Island (Canada Arctic)
- J 24(3): 555 (zooplankton, especially calanoid copepods)
- 29(9): 1319 (depth distribution of benthic polychaetes)
- Tanypleuris alcornis* (*see also* Caligoida)
- J 26(6): 1407 (first Canadian record, & assignment to new family Tanypleuridae)
- Tanypodinae (*see also* Chironomidae)
- J 29(4): 363 (feed & feeding habits of 4 USSR species)
- T 124 (classification of Nearctic)

- Tapeworms (*see* Cestoda) 79 (freezing fish)
80 (nutritive value of fish)
97 (herring meal nutritive value)
130 (preservation problems of fish muscle)
147 (contrasts between fish & warm-blooded vertebrates in enzyme systems intermediary metabolism)
160 (antibiotic preservation of fish at sea)
203 (seafood sanitation and quality)
218 (fisheries research)
- Tapirfish, largescale (*see* Eel, spiny)
- Tapirfish, longnose (*Macdonaldia challengerii*) (deep-sea spiny eel)
J 25(1): 181 (2 new NE Pac. Ocean specimens)
28(9): 1349 (fifth known specimen extends range to Oregon coast)
B 180: 92 (full description, etc., B.C.)
- Tardigrada
S 1532 (of a high Colorado mountain creek)
- Taricha granulosa* (*see* Newt)
- Tarletonbeania crenularis* (*see* Lanternfish, blue)
taylori (*see* Lanternfish, blue)
- Tarpon (a tropical) (*Megalops cyprinoides*)
J 25(1): 197 (microorganisms isolated from diseased)
- Tarr, Hugh Lewis Aubrey
J 22(2): 307 (Pac. shrimp nucleotides)
(3): 755 (freeze-dried fish)
23(3): 395 (nutritive value of fish meals)
25(8): 1539 (glycogen & starch degradation)
27(1): 117 (DNA polymerase of trout liver nuclei)
28(10): 1603 (ribonucleotide reductase in salmon testes)
B 160 (chilling and freezing salmon and tuna in refrigerated sea water)
CVG 34 (effect of antioxidants on herring meal)
S 889 (fish microbiology)
894 (lingcod muscle enzymes)
897 (salmon milt extract)
969 (antioxidant treatment of herring meal)
1011 (phosphorylation in salmon milts)
1031 (preservation of fish by antibiotics)
1036 (phosphorus compounds in fish)
1112 (incorporation of radioactive compounds)
1117 (fish muscle postmortem changes)
1124 (sugars in fish muscles postmortem)
1221 (fishmeal supplementation of chicken breeder rations on hatchability)
1289 (biosynthesis of inosinic and uridylic acids)
1408 (purine nucleoside phosphorylases)
1418 (ribonucleic acid synthesis)
1419 (Pac. cod muscle 5'-nucleotidase)
1523 (fish muscle phosphorylases)
1525 (fish liver enzymes)
1560 (deoxyribonucleic acid polymerase from salmon testes)
A 15 (flavor of flesh foods)
26 (fish preservation by antibiotics)
30 (fish muscle degradation of glycogen & adenosine 5'-triphosphate)
32 (carbohydrate removal from fish muscle)
38 (fish phosphorus compounds)
41 (Pac. coast fisheries technological developments)
78 (fish bacterial spoilage & its control)
- Taste (*see* Flavor; Quality of fishery products; *also* Odors; *also* next two headings)
- Taste, reactions to (*see also* Homing; Odors; Quality of fishery products; *also* next heading)
J 26(3): 583 (Atl. cod re fish vs. stale feed)
27(11): 1927 (mechanism of, in Atl. salmon parr)
- Taste panels (*see also* Flavor; Odors; Quality of fishery products)
S 1632; 1698 (training of)
- Tattooing (*see also* Marking)
J 25(10): 2233 (salmonid fingerlings)
- Tautog (*Tautoga onitis*)
J 25(8): 1739 (spinal ganglia position re taxonomy)
29(1): 111 (distinguishing eggs from cunner eggs, by immunodiffusion)
- Tautoglabrus adspersus* (*see* Cunner)
- Tautz, Arthur
J 26(10): 2715 (simulated long-term environmental fluctuations effects on maximum sustained yield)
- Taxonomy; Systematics (*Note*: Many references to these subjects occurring in descriptions of organisms are not included hereunder; some will be found under the names of organisms. *See also* Classification; Electropherograms; Family; Genera; Keys; Nomenclature; Phylogeny; Speciation; Species)
J 22(1): 203, 215 (biochemical applications to fishes)
(2): 475 (stoneflies)
(3): 767 (biochemical applications to salmonids and their hybrids)
(5): 1151 (2 species of NE Pac. Alepocephalidae)
23(5): 715 (*Bathypterois dubius*)
24(1): 1 (North Pac. pricklebacks)
(6): 1385 (Oregon Echinoides)
25(7): 1323 (lactate dehydrogenase re trout speciation)
(8): 1603 (marine phytoplankters fatty acids re taxonomic relations)
(8): 1667 (cytotaxonomic relations of Great Lakes coregonids)
(8): 1739 (re spinal ganglia position in teleosts)
(11): 2269 (93 arctic Canada Bryozoa species)
(11): 2365 (*Gyrocotyle* tapeworms)

- (11): 2477 (protein electropherograms of 33 rockfish species re systematics)
 26(2): 311 (revision of Clavellinae parasitic copepods)
 (3): 683 (arctic & Atl. N American *Anonyx* amphipods)
 (4): 725 (Sporozoa re fish infections)
 (4): 741 (*Schistocephalus solidus* cestode)
 (4): 753 (strigatoid digenetic trematodes from S American fishes)
 (4): 799 (*Lepidophyllum* monogenetic trematodes)
 (4): 849 (*Cystidicola* nematodes from fish swimbladders)
 (4): 975 (*Bothrimonus* cestode genus)
 (4): 997 (*Ergasilus* parasitic copepods)
 (4): 1013 (*Caligus elongatus* parasitic copepod re *C. rapax*)
 (6): 1407 (Tanypleuridae: new family of caligid Copepoda)
 (7): 1727 (Washington & S B.C. Ophiuroidea)
 (10): 2595 (new family of Polychaeta Sedentaria)
 (10): 2669 (nonsynonymy of *Syndesmis franciscana* & *S. antillarum* turbellarian)
 (11): 2987 (revision of *Salmincola* copepod genus)
 (12): 3279 (*Haploscoloplos* vs. *Scoloplos* oligochaetes; synonymy of *S. acutus* & *S. armiger*)
 27(2): 251 (re Chlorophyta fatty acids)
 (3): 457 (genus *Lepidion*)
 (5): 865 (9 Lernaepodidae copepods parasitic on B.C. fishes)
 (5): 981 (*Ocella* proposed for superseding *Occa* for genus of poachers)
 (12): 2233 (*Sebastes* (*Sebastodes*) *aleutianus*-*S. melanostomus* complex, re n.sp. *S. caenaematicus*, also synonymy)
 28(1): 23 (status of adult male *Calanus finmarchicus* re *C. glacialis* copepods)
 (3): 323 (*Lepeophtheirus* vs. *Dentigryps* parasitic caligid copepods)
 (3): 391 (red-water *Mesodinium* ciliates, & key)
 (3): 427 (osteology of tube-snouts & sticklebacks re their phylogeny & speciation)
 (4): 517 (*Vibrio anguillarum* bacterium; correction on J 28(8): 1219)
 (5): 778 (*Laminaria* seaweeds re stipe length & environment)
 (7): 987 (western N America *Salmo* species & subspecies)
 (10): 1373 (revision of *Metavermilia* serpulid polychaetes)
 (10): 1583 (possibilities of radioisotope X-ray fluorescent spectrometric analysis: review)
 (10): 1595 (arguments for classifying *Velella* as hydroids)
 (10): 1621 (northern rockfish)
 (10): 1645 (*Rhabdochona* parasitic nematode species in N & Central America)
 (11): 1796 (need for redefinition of gonatid squid family)
 29(6): 639 (Salmonidae & Coregonidae of recently glaciated lakes)
 (9): 1291 (*Cryptobia dahli* hemoflagellate)
 (12): 1772 (new complexities of pygmy whitefish, re zoogeography)
 B 162: 1 (sockeye salmon)
 169: 3 (B.C. oysters)
 170 (N American chironomids, including 33 new species)
 173: 26, 52, etc. (NW Canada & Alaska freshwater fishes)
 174 (Nearctic & Palaearctic *Chaoborus* mysid species)
 T 34 (arrowtooth & spinycheek flounder; rock & flathead sole; Pac. cod)
 124 (classification of Nearctic Chironomidae)
 200 (possibilities of X-ray fluorescence spectrophotometry of elemental composition of organisms re their classification)
 231 (arctic chars)
 S 937 (Trematoda genera *Bacciger* & *Pentagramma*)
 1037 (imperfections in international systematics)
 1263 (*Caligus* copepods)
 1384 (scientific name for blue ling)
 1391 (diphyllbothriid cestodes)
 1499 (caligid copepod *Caligus rapax*)
 1533 (chironomids in a high mountain brook, Colorado)
 1588 (*Harnischia* chironomids)
 1589 (fossil & contemporary Dinophyta secreting discoasters)
 1647 (*Allocapnia* stoneflies, with key)
 1691 (*Thyasira* bivalves)
Taxus cuspidata (see Yew, Japanese)
 Taylor, Frank John Rupert
 J 23(8): 1265 (*Gonyaulax acatenella*)
 25(10): 2241 (parasitism of *Gonyaulax catenella*)
 28(3): 391 (red-water ciliate *Mesodinium rubrum*)
 S 1403 (heterotrophic growth of *Chroomonas*)
 Taylor, Frederick Henry Carlyle
 J 24(10): 2101 (unusual fishes trawled off B.C.; correction on J 27(8): 1499)
 25(3): 457 (trawl catches re sound scattering layers)
 (3): 589 (herring school behavior re midwater trawl)
 28(10): 1663 (recorded distribution of herring from seal stomachs)
 CNG 80 (B.C. herring)
 T 11 (Queen Charlotte Sound & Is. midwater trawl catches)
 140; 174; 177; 183; 190; 213 (B.C. offshore herring surveys)
 S 1606 (experimental factors affecting Pac. herring egg hatching success)
 A 105 (what happened to the Pac. herring?)
 Teal, John Moline
 S 1660 (warm-bodied fishes)
 Tedla, Shibu
 J 26(4): 833 (yellow perch parasites)
 27(6): 1045 (yellow perch gill parasites)
 Teeth (see also Jaw; Tusk)

- J 22(2): 259 (comparisons in rare Nfld. skates)
 24(5): 1067 (of lampreys, & key based on teeth)
 (12): 2503 (of stranded Cuvier's beaked whale)
 27(11): 1903 (from whales stranded, etc., other than commercially caught, Canadian Atl. coast 1949-68)
 28(9): 1309 (formation & use for aging, in white whale)
- S 1046 (eruption of northern sea lion permanent canine)
 1078 (walrus age determination from)
 1200 (annuli for land mammals age determination)
- A 144 (shark: ancient & fossil, in Atl. fisheries catches)
 229 (aging whales & other mammals by layered structure of: book review)
- Telemetry, underwater (*see* Tracking)
- Teleostomi
 J 22(1): 203, 215 (electropherograms re biochemical systematics)
- Tellina agilis* (*see* Clams (Atlantic and Eastern Canadian Arctic))
- Telmatogtoninae (*see also* Chironomidae)
 T 124 (classification of nearctic)
- Temora* (*see* Calanoida)
- Temperature (*Note*: The many temperature data for natural waters are indicated in references under Hydrography; Limnology; Oceanography; Springs, thermal; names of various lakes, rivers, oceans, and other bodies of water. For effects of power-plant hot effluents on receiving natural waters *see* Nuclear power plants; Thermal power plants. *See also* the following Temperature headings)
- Temperature, reactions to and effects of (biological) (*see also* Acclimation; Lethal limits; Tolerance)
 J 22(2): 503 (selection by DDT-treated young Atl. salmon)
 (3): 825 (re marine ostracod distribution)
 (4): 913 (re char eggs mortality and development rate)
 (5): 1213 (re pygmy whitefish biology)
 (6): 1455 (re goldfish acclimation and ionic regulation)
 23(1): 1 (brook trout blood respiratory function)
 (1): 15 (yellow perch total annual growth)
 (1): 157 (downstream migrating brown trout)
 (2): 293 (aggregations of chum salmon fry)
 (3): 319 (Pac. cod embryonic development)
 (3): 341 (swimming endurance of some NW Atl. fishes).
 (6): 869, (8): 1209 (& feed effects on fish metabolism re body weight)
 (8): 1109 (hematological responses of goldfish to sublethal cooling)
 (8): 1121 (re oxygen in trouts embryo development)
 (8): 1187, (10): 1581 (Atl. salmon respiratory function)
 24(1): 87 (re smallmouth bass adult total annual growth)
 (1): 101 (re growth of various fishes, Georgian Bay, Ont.)
 (1): 191 (re electronarcosis of trout)
 (7): 1507 (acclimation & selection by rainbow trout and Atl. salmon)
 (7): 1515 (starvation effect on, Atl. salmon & rainbow trout)
 (8): 1731 (re sockeye salmon fry swimming stamina)
 (10): 2069 (migrating sockeye fry & smolts)
 (11): 2372 (re mathematical model for fish growth)
 25(1): 9 (re hatchery vs. wild Atl. salmon parr feeding behavior)
 (3): 495 (English sole early development; correction on J27(8): 1499)
 (6): 1199 (re Great Lakes fishes feeding)
 (6): 1229 (re phytoplankton ecology in an Ont. reservoir)
 (8): 1729 (crab & lobster O₂ consumption at low temperature)
 (8): 1733 (temperature resistance of crabs, crayfish, & lobster)
 (9): 1901 (effect on Atl. salmon guanine & hypoxanthine formation)
 (9): 1983 (physiological interaction among rainbow trout fingerlings)
 (10): 2037 (algal growth & primary productivity in a thermal stream; correction on J26(8): 2263)
 (10): 2111 (effect on coregonids scale annulus formation)
 (12): 2717 (upper lethal temperatures at various salinities after acclimation of mummichog & banded killifish)
 26(1): 93 (temperature-acclimated Atl. salmon activity & respiration as affected by temperature changes)
 (2): 389 (Dungeness crab larvae growth & survival)
 (2): 399 (deforestation effects on stream)
 (2): 461 (in vitro cultured rainbow trout ovary cells)
 (7): 1813 (re bluegill sunfish endogenous nitrogen excretion)
 (8): 2093 (re Atl. salmon parr & smolt buoyancy)
 (9): 2283 (5 haustoriid amphipod species)
 (9): 2363 (re growth rate & body composition of young sockeye)
 (9): 2493 (re lead effect on brook trout growth)
 (9): 2503 (re lobster susceptibility to gaffkemia)
 (9): 2517 (of Pac. halibut re rabbit, as caused by temperature effect on dehydrogenase enzyme activity)
 (12): 3133 (bottom, re SW Nfld. cod growth, etc.)
 (12): 3248 (re swordfish spawning, W Atl.)
 27(2): 404 (effects on mummichog blood serum components)
 (5): 983 (re skin silvering during Atl. salmon parr-smolt transformation)
 (6): 1165 (sudden cold-water seiche cause of fish & crayfish mortality, Georgian Bay, Ont.)

- (7): 1177 (re Atl. cod digestion rate)
 (7): 1209 (*Tilapia nilotica* temperature preferenda re acclimation to temperature & salinity)
 (9): 1569, 1579 (re bacterial depuration rate of quahaug & clam)
 (10): 1729 (lake trout preferred temperature)
 (10): 1767 (re digestion rate in fingerling sockeye salmon)
 (10): 1875 (re condition of larval Atl. herring)
 (11): 2047 (upper tolerance, juvenile & young bloater)
 28(1): 73 (ecological energetics & natural history of biota in a thermal spring)
 (4): 527 (upper lethal temperatures re osmotic stress in ribbed mussel)
 (4): 587 (re rainbow trout active & standard metabolism)
 (5): 727 (re petrale sole embryonic development)
 (6): 883 (effects on Pac. cod eggs development re geographical distribution)
 (6): 919 (prespawning brook sticklebacks, Roseau R., Man.)
 (6): 924 (re larval lake cisco growth & survival)
 (7): 935 (effects on seasonal components of fish communities in Passamaquoddy Bay, N.B., & in warmer waters)
 (7): 971 (re *Sagitta elegans* chaetognath life history, St. Margaret's Bay, N.S.)
 (7): 1057 (mortality vs. survival of larval & young fish in warm water of nuclear power plant discharge canal)
 (10): 1459 (re polychaetes settlement on test panels)
 (10): 1545 (effects on Pac. herring early development)
 (11): 1739 (young rainbow trout & chinook salmon re columnaris disease susceptibility)
 (11): 1801 (rainbow trout fingerlings preferences in horizontal & vertical temperature gradients)
 (12): 1883 (winter kill of fish in Manitoulin Is. lakes, Ont.)
 (12): 1907 (re winter flounder respiration rate)
 29(3): 251 (re experience effect on young coho salmon swimming speed)
 (4): 439 (effects on some lobster physiological parameters)
 (5): 601 (thermal stress effects on sockeye predator avoidance)
 (8): 1107 (young brook trout growth & survival)
 (8): 1181 (walleye bioenergetics)
 (8): 1217 (Atl. salmon plasma osmolality & ionic concentration)
 (8): 1221 (inshore lobster fishery)
 (9): 1309 (re bioassay for hydrogen sulfide toxicity to goldfish)
 (9): 1329 (thermal regime changes in river below a dam, as cause of reduction in insect fauna)
 (10): 1491 (fiddler crab mercury uptake)
 (10): 1505 (on % un-ionized ammonia in aqueous ammonia solutions)
 (12): 1701 (*Mysis relicta* life history in an arctic vs. a temperate lake)
 (12): 1725 (captive lobster growth)
 B 162: 288 (seaward migrating sockeye salmon)
 CHN 40 (recommended red crab live storage temperatures)
 T 136 (re swordfish spawning, W Atl.)
 149 (Atl. salmon smolts & postsmolts re growth)
 231 (re Arctic char in a small arctic lake)
 236 (re mud dab egg & larvae development)
 243 (tank-cultured sablefish)
 262 (ecological problems re hot effluent water from steamelectric power plants)
 274 (re Greenland turbot distribution in Nfld.-Labrador area)
 322 (thermal power plant coolant water effects on lake plankton)
 S 950 (Iles-de-la-Madeleine herring in commercial fishery)
 983 (lethal heat shock effect on goldfish water balance)
 1051; 1053; 1055; 1057; 1058 (haddock in Nfld. areas)
 1052; 1053; 1055; 1059; 1060 (cod in Nfld. areas)
 1053 (mass mortalities of various Nfld. area fishes due to low sea temperatures)
 1147 (bottom, re haddock distribution)
 1148 (re Atl. cod recruitment off N.S.)
 1149 (re herring fishery off Magdalen Is.)
 1430 (re environment of fishes)
 1556 (effects on Atl. salmon & brook trout brain tissue oxygen consumption)
 1557 (effects on crayfish ovarian maturation & egg laying)
 1590 (habitat temperature re body temperature of fishes: review)
 1636 (re sockeye physiology & freshwater ecology)
 1660 (body temperature of tuna & sharks re temperature of environment)
 1671 (thermal power plant coolant water effects on lake plankton)
 A 92 (abnormal Atl., affecting herring fishery)
 222 (acclimation to, by salmonids, as affected by DDT pollutant)
 Temperature control (*see* Thermostat)
 Temperature effects on fishery products (*see* Canning; Chilling; Cooking; Cooling; Freezing; Ice; Quality of fishery products; Refrigeration; Sea water, refrigerated; Smoking; Supercooling; Thawing; etc.)
 Temperature measurement
 J 24(5): 1155 (digitizing system for bathythermograph cards)
 (11): 2473 (simulation in model of a lake)
 (11): 2491 (computer vs. manual calculations for oceanic)
 25(9): 1911 (mathematical treatment for average vertical temperatures in lakes)
 28(1): 102 (plotting bathythermograph transect data on a computer printer)
 29(3): 323 (continuous recording temperature-salinity-pressure oceanographic instrumentation)
 B 125R: 183; 167: 283 (temperature corrections for chlorosity determinations)

- 125R: 194; 167; 295 (temperature corrections for pH measurements)
- T 152 (computer programming salinity-temperature-pressure data)
- 207 (shipboard computer programming of bathythermograph data)
- 253 (observations from moored instruments, with examples of records, Strait of Georgia, 1968-70)
- Templeman, Wilfred
- J 22(1): 237 (abnormalities in skates)
 (2): 259 (rare skates of Nfld.)
 (4): 899 (distinguishing *Raja* species)
 (6): 1345 (lymphocystis disease in American plaice)
- 23(5): 715 (*Bathypterois dubius*)
 (8): 1161 (family Centrolophidae)
- 24(1): 215 (predation on living fishes by *Eurythenes gryllus*)
 (6): 1275 (adult redfish in Labrador Sea)
- 25(5): 877 (*Halargyreus* from NW Atl. and review)
 (11): 2365 (2 new species of *Gyrocotyle*)
- 27(3): 457 (a review of N Atl. *Lepidion*)
 (3): 499 (*Anotopterus pharao* in the N Atl.)
 (9): 1549 (meristic characteristics of Greenland halibut)
- B 140(F) (distribution of Canadian Atl. sharks)
- 154 (marine resources of Nfld.)
- T 160 (additional data on Atl. *Lepidion*)
- 192 (additional data on characteristics of Greenland halibut)
- S 886; 949; 1023; 1127 (reports on Canadian ICNAF research by FRB)
- 1018 (ICNAF area conservation actions)
- 1025 (maximum yield of fishes)
- 1053 (mass mortality of fishes)
- 1054 (cod and haddock behavior in Nfld. areas)
- 1055 (successful year-classes of cod, haddock, and herring)
- 1056 (anomalies of sea temperature)
- 1057 (haddock distribution on Grand Bank)
- 1058 (haddock distribution on St. Pierre Bank)
- 1059 (cod catches in Hamilton Inlet Bank)
- 1060 (cod availability in St. Mary's Bay, Nfld.)
- 1089 (fisheries situation in NW Atl.)
- 1206 (Atl. salmon from Labrador Sea and off W Greenland)
- 1216 (anomalies of Station 27 sea temperature & Torbay-St. John's air temperature)
- 1255 (capelin biology in NW Atl.)
- 1280 (St. John's-Flemish Cap temperatures & salinities)
- 1317 (distribution & characteristics of Atl. salmon)
- 1381 (experimental snella fishing for cod)
- 1384 (distribution & characteristics of the blue ling)
- 1542 (eastern Nfld. area temperatures and salinities)
- A 43; 108; 119; 152; 181 (reports on FRB Canadian research in ICNAF areas)
- 137 (importance of groundfish in ICNAF areas)
- 154; 245 (temperatures & salinities of E Nfld. waters)
- J 25(8): 1637 (NE Greenland amphipods)
- Tench (*Tinca tinca*)
- J 24(11): 2355 (oxygen consumption re weight loss in fasting)
- 25(12): 2711 (muscle creatine kinase localization)
- Tenebrio molitor* (see Coleoptera)
- Tennant, Alan Dawson
- B 177 (E Canada paralytic shellfish poisoning; corrections on J30(8): 1257)
- Tentacles
- J 28(10): 1595 (concert behavior of *Verella*)
- Teratogenesis; Teratology (see Abnormality)
- Terebellids (see also Polychaeta)
- J 25(9): 1803 (caloric & sulfur content)
- 29(9): 1319 (depth distribution of 7 species in 2 Canadian Arctic fiords)
- Terebratalia* (see Brachiopoda)
- Teredo* (see Shipworms; also Mollusca)
- Terhune, Lorne Donald Bruce
- J 24(4): 883 (plankton sampler for oyster larvae)
- 28(7): 1062 (detecting burrowed lobster)
- T 85 (free-floating current followers)
- 172 (optoelectronic plankton sizer)
- 195 (water tunnel design for fisheries research)
- Terminology (see Glossary; also Nomenclature)
- Terns (see also Birds)
- J 26(4): 1103 (nematodes & other helminths from Australian)
- Terphenyl pesticides (see Pesticides; Polychlorinated biphenyls)
- Terranova decipiens* (codworm) (see *Phocanema* entries under Nematoda)
- Territorialism (see Aggression; Behavior; Spawning)
- J 25(7): 1453 (juvenile chinook salmon & steelhead trout)
- 26(1): 82 (hypoxially stressed coho salmon fry behavior)
 (6): 1429 (re stream fishes ecology)
- 27(12): 2125 (deterrent to hybridization of 2 dace species)
 (12): 2350 (re feed availability during brook stickleback nest building)
- T 206 (re Atl. salmon parr-smolt stages)
- S 1334 (re production limitations in salmonid stream populations)
- Tessarabrachion oculatus* (see Euphausiacea)

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- Testes (*see also* Hermaphroditism; Hormones; Maturity; Milt; Reproduction; Sperm)
- J 25(9): 1797 (dieldrin accumulation in goldfish, after aldrin ingestion)
- (9): 1813(F) (to body weights of "giant" vs. "dwarf" smelts)
- (12): 2643 (furunculosis bacteria in brook trout)
- 26(5): 1146 (castration effects on adult sockeye salmon pituitary cytology)
- (9): 2521 (re lake whitefish hermaphroditism)
- (11): 2975 (re interrenal tissue hypertrophy of sexually maturing sockeye salmon)
- 27(4): 749 (photoperiodism effects on threespine stickleback sexual maturation)
- (11): 2003 (activators & inhibitors of nucleotidase in immature sockeye salmon)
- (12): 2287, 2323 (gonadectomy effects on cortisol & cortisone secretion rates in sockeye salmon)
- 28(4): 477, 485 (hormones effects on gonadectomized sockeye salmon)
- (8): 1191 (fatty acids & amino acids of Dungeness crab)
- (10): 1603 (ribonucleotide reductase in immature sockeye salmon)
- S 1112 (trout & salmon tissue synthesis of nucleic acid derivatives)
- 1131 (in vitro hormone synthesis by material from Atl. salmon)
- 1173 (pyruvate metabolism in rabbit & Atl. cod)
- 1224 (conversion of androstenedione to testosterone by lobster)
- 1289 (de novo biosynthesis of inosinic & uridylic acids in Pac. salmon & rainbow trout)
- 1292; 1336 (goldfish spermatogenesis restored by salmon pituitary extract)
- 1338 (androgens effect on cortisol distribution & secretion in castrated sockeye salmon)
- 1477 (identification & distribution of Leydig cell homolog in sexually mature Atl. salmon)
- 1508 (purification & properties of acid deoxyribonuclease from chinook salmon)
- 1560 (deoxyribonucleic acid polymerase from sockeye salmon)
- 1562 (major hormones in plasma of sexually maturing Atl. salmon)
- 1593; 1630 (catfish spermatogenesis restored by chinook salmon hormones)
- 1650 (carbon dioxide fixation by rabbit & Atl. cod)
- 1695 (salmon gonadotropin effect on promoting development in striped mullet)
- J 24(5): 1067 (in key based on teeth characteristics of holarctic lamprey genera)
- Tetrapterus albidus* (*see* Marlin, white)
- audax* (*see* Marlin, striped)
- Tetraselmis* (*see* Chlorophyta)
- Teuthis vermiculatus* (*see* Triggerfish)
- Texture (of flesh) (*see* Firmness; Quality of fishery products)
- Thacker, Colin Lindsay
- J 29(11): 1633 (*Vibrio parahaemolyticus* pathogen incidence in some Canadian Atl. shellfishes)
- Thais* (sp.) (*see* Snails, marine)
- lamellosa* (*see* Drills, clam)
- lapillus* (*see* Dogwinkle, Atlantic)
- Thalassiosira nordenskioldii* (a phytoplankter)
- J 26(6): 1625 (chlorophylls extraction procedure)
- A 244 (coastal waters humic substances effect on growth)
- Thaleichthys pacificus* (*see* Eulachon)
- Thaliacea (*see also* Salpidae; Tunicata)
- J 28(12): 1831 (range extension of *Thalia democratica* N to Oregon)
- B 176: 82, 178 (synopsis of Canadian zooplanktonic)
- Thames River and Estuary, England
- S 1709 (history of water utilization; primary, secondary, & fish productivity; satisfactory contending with pollutive inflows)
- Tharybis fultoni* (*see also* Calanoida)
- J 24(2): 231 (n.sp., B.C.)
- Thawing (*see also* Drip; Freezing; Refrigeration)
- J 22(3): 783 (re thaw-drip of Atl. cod filets)
- 24(1): 127 (effect of water vs. dielectric on shelf life of cod & redfish filets)
- 25(2): 299 (effect on storage quality of refrozen Atl. cod)
- (2): 318 (microwave vs. water thawing; engineering considerations)
- (3): 605 (ultrasonic effects as quality test for flesh after)
- (4): 733 (effects on trap-caught Atl. cod flesh quality)
- (5): 829 (effects on drip in American plaice filets)
- 26(12): 3217 (of fish frozen whole or gutted at sea)
- 27(11): 1983 (bacterial evaluation of plaice frozen at sea, thawed by water immersion, & of filets prepared therefrom)
- 28(8): 1217 (distinguishing thawed frozen fish from fresh fish)
- 29(7): 1053 (elemental yellow phosphorus stability in Atl. cod muscle)
- Testosterone and derivatives (*see* Hormones; Steroids)
- Tetrachloro-*o*-benzoquinone (*see* Pulpmill effluents)
- Tetracycline derivatives (*see* Antibiotics)
- Tetragonurus cuvieri* (*see* Squaretail, smalleye)
- Tetranarce californica* (*see* Ray, Pacific electric)
- Tetrapleurodon*

- S 1363; 1364; 1366; 1368 (of frozen fish & fillets: drip & effect on quality)
 1364 (dielectric vs. seawater thawing of frozen fish)
 1649 (effects of fish products quality)
 1686 (quality aspects of industrial water thawing of fish)
 A 69 (effects on frozen fish muscle & on refrozen muscle)
 173 (technical-economic assessment of electronic vs. water immersion, for Atl. cod and plaice)
- Theragra chalcogrammus* (see Pollock, walleye)
- Therapon jaruba* (see Tigerfish)
- Thermal effects (in addition to following Therm... headings, see Canning; Cooking; Drying; Lethal limits; Temperature, reactions to; Tolerance; Springs, thermal; Sterilization)
- Thermal power plants (see also Nuclear power plants)
 T 262 (ecological problems re effluent disposal from steamelectric plants)
 322 (limnology & zooplankton of a small lake prior to inflow of hot coolant water from diesel generator)
 S 1671 (primary & secondary production in a Poland lake heated by coolant water)
- Thermal springs (see Springs, thermal)
- Thermocline (*Note*: The numerous data for thermoclines in natural waters routine observations are not indexed unless having special significance. See also Limnology; Oceanography; Temperature)
 J 28(2): 163 (in numerous small NW Ont. lakes)
 S 1014 (possibility of estimating depth of oceanic, from satellite data)
 A 52 (description & significance of oceanic)
- Thermocouple (see Thermostat)
- Thermograph (see Apparatus; Bathythermograph; Limnology; Oceanography; Temperature)
- Thermophilism (see Springs, thermal)
- Thermostat; Thermocouple
 J 26(1): 154 (precise temperature control system for low-temperature fish refrigeration)
 J 27(1): 167 (proportional controlling of water temperatures in aquaria & tanks)
 29(7): 1071, 1082 (temperature control for compact recirculation unit for fish rearing)
 S 1461 (thermistor readout monitoring system for cold storage temperatures)
- Thetin derivative (dimethyl- β -propiothetin as precursor of dimethyl sulfide; see also Dimethyl sulfide)
 J 22(4): 875 (determination in marine tissues)
 23(3): 357 (occurrence in green algae)
 25(2): 267 (biological origin)
- S 1009; 1044; 1110; 1159; 1183 (production or presence in green algae; relation to dimethyl sulfide causing unusual odor in fish flesh)
 A 40 (same as S 1159 above)
- Thetys vagina* (Salpidae)
 J 28(12): 1831 (range extension N to Oregon)
- Thiamin (see Vitamin B group)
- Thiel, Vern
 J 27(1): 167 (controlling of water temperature in tanks & aquaria)
- Thiobarbituric acid acidity test
 J 23(5): 737, (10): 1587 (effect of inorganic iron salts on)
- Thlewiaza River, N.W.T.
 S 1573 (occurrence of harbour seals in upper lakes of)
- Thomas, Gethin
 J 26(10): 2769 (first records of *Ariomma bondi*, *Caranx crysos*, & *Selar crumenophthalmus* in Gulf of St. Lawrence)
- Thomas, Martin Lewis Hall
 J 22(3): 695 (migrating sea lampreys)
 (3): 851 (manganese deposits on molluscs)
 25(12): 2725 (American lobster overwintering in P.E.I.)
 26(3): 701 (mass mortality of fauna, Bideford R., P.E.I.)
 (5): 1121 (*Urosalpinx* distribution & importance)
 29(8): 1234 (trapping upward-swimming benthos in Bideford R.) CDG I (control of eelgrass by 2,4-D)
 CSG 52 (antifouling boat coatings)
 53 (Atl. Canada wood borers)
 T 3 (Oozy Creek, P.E.I., biotic survey)
 21 (shipworm *Teredo* species control)
 76 (*Ostrea* L., N.S., prefertilization benthic survey)
 119 (antifouling paints & wood preservatives)
 155 (zonation of shore biota in Bideford R.)
 158 (fouling organisms settlement at Bideford)
 S 981 (observations on the common limpet)
 1016 (snake fauna of western P.E.I.)
 1122 (eelgrass control in oyster growing areas)
 1128 (benthos of 4 L. Superior bays)
 1169 (*Thracia conradi*)
 1210 (butoxyethanol ester of 2,4-D)
 1580; 1620 (classification of P.E.I. benthic samples)
 A 88 (antifouling coating for boats)
 109; 109(F) (eelgrass control with 2,4-D)
 114 (protection from marine borers)
- Thomas, William Hewitt
 J 26(5): 1133 (phytoplankton nutrient enrichment)
- Thompson, Bruce Hunter
 J 26(4): 871 (*Diphylllobothrium* in trout)

- Thomson, John Arthur Collingwood
 J 26(1): 123 (weight-length regression model)
 CNG 73; 82 (groundfish from Hecate Strait, B.C.)
 CNS 14; 19 (B.C. landings of trawl-caught groundfish)
 T 40 (multiple discriminant analysis program)
 45 (extended tables of the transformation $\phi = 2 \arcsin \sqrt{X}$)
 50-52; 63-66; 127; 128; 230; 238-240 (N Pac. ocean water mass transport charts & computations, 1946-70; 128 is review for 1946-48))
 92 (1130 FORTRAN version of equilibrium yield per recruitment program)
 94-97 (Nfld. herring sampling data 1964-68)
 108 (studies on rock sole)
 112 (multiple discriminant analysis (FORTRAN 1130) extended version)
 135 (groundfish length-weight relations)
 212 (IBM programs for multiple discrimination analysis)
 A 74 (Dixon Entrance groundfish area, B.C.)
- Thomson, Richard Edward
 J 29(1): 103 (explanation for warmwater intrusion off B.C. coast)
- Thomson, William Kenneth
 J 29(11): 1633 (*Vibrio parahaemolyticus* pathogen incidence in some Canadian Atl. shellfishes)
- Thorium derivatives
 J 27(4): 677 (in whole fish or livers of 13 Great Lakes species)
- Thorne, Richard Eugene
 J 28(9): 1269 (investigations re echo voltage and fish density)
 (9): 1275 (estimation of hake population by echo integrator)
- Thornyhead, longspine (*Sebastolobus altivelis*) (longspine channel rockfish)
 J 25(11): 2477 (proteins electropherograms re rockfishes systematics)
 (11): 2509 (first B.C. record)
 (12): 2665 (associations with other fishes off Oregon coast)
 B 180: 453 (full description, etc., B.C.)
 T 22; 81; 278; 328 (in FRB experimental trawling)
 246 (bibliography)
- Thornyhead, shortspine (*Sebastolobus alascanus*) (shortspine channel rockfish, spinycheeked rockfish)
 J 22(1): 203 (biochemical systematics)
 25(8): 1539 (postmortem muscle glycogen & starch degradation)
 (11): 2477 (proteins electropherograms re rockfishes systematics)
 (12): 2665 (associations with other fishes off Oregon coast)
 27(10): 1781 (taken in Pac. ocean perch surveys, NE Pac.)
 B 180: 451 (full description, etc., B.C.)
- T 7; 22; 46; 56; 81; 144; 181; 205; 221; 257; 278; 317; 328 (in FRB experimental or B.C. commercial trawling)
 34 (distribution, stocks, populations, synonymy, systematics)
 246 (bibliography)
- Thorson, Kenneth Norman
 J 29(7): 1089 (subcutaneous hemorrhage in captive sablefish re mortality)
- Thracia conradi* (see S 1169 under Pelecypoda)
- Threadfish (see Snipe eel, slender)
- Threlfall, William
 J 26(4): 805 (parasites from Nfld. elasmobranchs)
 27(5): 901 (*Gasterosteus aculeatus* parasites)
 (7): 1317 (parasites from longnose & white suckers)
 (10): 1894 (metazoan parasites of salmonids & coregonids)
- Threonine dehydratase (see also Enzymes)
 S 1626 (activity in 7 species of unicellular algae)
- Thresher, bigeye (*Alopias superciliosus*) (bigeye thresher shark)
 T 193 (Atl. tagging)
- Thrombocytes (see Blood)
- Thunersee, Switzerland
 J 29(6): 755 (exploitation & eutrophication effects on salmonid communities)
- Thunnus alalunga* (see Albacore)
albacares (see Tuna, yellowfin)
obesus (see Tuna, bigeye)
saliens (see Tuna, bluefin)
thynnus (see Tuna, bluefin)
- Thurston, Robert Vance
 J 24(10): 2169 (trout blood serum proteins electrophoretic patterns)
- Thyasira* (bivalve)
 S 1691 (review of systematics & anatomy of 4 W Canada species)
- Thymallidae (see Graylings)
- Thymallus arcticus* (see Grayling, Arctic)
- Thyroid gland (see also Thyroxin)
 J 24(1): 67 (effect of feeding on, in sexually ripening sockeye salmon)
 25(8): 1651 (re iodide in fish plasma proteins)
 27(7): 1307 (function re Atl. salmon photoperiod regime)
 28(4): 477 (histological effects of hormones & cortisol on gonadectomized sockeye salmon)

- Thyroxin
J 27(12): 2337 (injection effect on Atl. cod swimming speed)
- Thysanoëssa* (see Euphausiacea)
- Thysanote gymnobranchiata* (lernaepodid copepod)
S 1307 (n.sp., from Australian fishes)
- Tibbles, John James
CCG 7 (sea lamprey control in lower Great Lakes)
- Tibbo, Simcon Noel
J 23(3): 463 (capelin in Bay of Fundy)
25(5): 903 (swordfish feeding habits)
(5): 1075 (*Dasyatis violacia* in NW Atl.)
26(12): 3248 (larval swordfish from W Atl.)
27(1): 21 (toxicity of yellow phosphorus)
28(7): 1009 (Atl. herring populations)
CSG 47 (Canadian Atl. sharks)
49 (pelagic fishes of the NW Atl.)
55 (herring golden goose of sea)
T 57 (Bay of Fundy herring length & age distribution)
136 (larval swordfish in W Atl.)
139 (Gulf of St. Lawrence herring catch statistics)
277 (larval herring distribution, abundance, & growth, Bay of Fundy & Gulf of Maine)
S 950 (water temperature and herring fishing)
956 (fisheries research in Caribbean Sea)
1099 (swordfish)
1103 (Atl. herring)
1104 (Atl. mackerel)
1149 (Magdalen Is. herring fishery)
1150 (light effect on Atl. herring movement)
1282 (swordfish catches size composition changes)
1464 (use of otoliths for aging herring)
1584 (fish kill from coke-oven oil)
A 8(F) (Atl. herring)
9(F) (Atl. mackerel)
67 (bluefin tuna)
92 (abnormal water temperatures affect herring fisheries)
94 (Canadian Atl. herring fishery)
131(F) (swordfish)
163 (same as CSG 55 above)
207 (Atl. herring fisheries)
- Tides; Tidal effects (see also Currents; Oceanography)
J 22(6): 1425 (re intertidal algae distribution)
24(11): 2321 (effect on pink salmon fry early marine migration)
25(6): 1097 (natural oscillations in Bay of Fundy)
26(9): 2477, (11): 2775 (tidal barriers effect on Bay of Fundy M₂ tide, re tidal power projects)
(11): 2887 (theory of tidal energy exploitation re Bay of Fundy)
27(1): 401 (shore submersion-emersion sensor for intertidal biological studies)
(10): 1701 (tidal resonance & barriers in Bay of Fundy system)
B 156: 29 (mechanism, Dixon Entrance, B.C.)
- T 146 (in Pictou harbour & road, N.S., re flushing of pulp mill effluents)
155 (effects on shore biota zonation, Bideford R., P.E.I.)
156 (one-dimensional hydrodynamical numerical model, Juan de Fuca & Georgia straits)
219 (St. Margaret's Bay, N.S.)
S 979 (flushing rates re pulp mill effluent into channels near Nanaimo, B.C.)
1341 (re eutrophication of inlet extension of Victoria harbour, B.C.)
1407 (re sewage & other wastes disposal, B.C. coast: review)
1539 (re capacity of estuaries to accept pollutants; use of dyes to follow flushing action)
- "Tiger muskie" (see J 29(5): 579 reference under Muskellunge)
- Tigerfish (*Therapon jarbua*)
J 25(1): 197 (microorganisms isolated from diseased)
- Tigerstrom, Richard von
A 32 (carbohydrate removal from fish muscle)
- Tilapia (various species of *Tilapia*) (Note: *T. mossambica*, as introduced into certain US fresh waters, is known as the Mozambique mouthbrooder; several other *Tilapia* species have also been experimentally reared in N America. Most of the following references are to *Tilapia* from their native African habitat, or as reared in Asia)
J 23(1): 149 (alkaline phosphatase in scales of *T. mossambica*)
25(1): 197 (microorganisms isolated from diseased *T. mossambica*)
(12): 2715 (muscle creatine kinase polymorphism in *T. mossambica*, *T. guineensis*, & several other *Tilapia* species)
26(11): 2807 (oxygen consumption re swimming speed & salinity, of *T. nilotica*)
27(4): 801 (glucose levels in fresh *T. nilotica* muscle)
(7): 1209 (*T. nilotica* temperature preference re acclimation temperature & salinity)
(12): 2167 (proteins electrophoretic studies re taxonomy & hybridization of *T. hornorum*, *T. melanopleura*, *T. mossambica*, & *T. zilli*)
28(9): 1342 (measuring CO₂ production & respiratory quotient of *T. mossambica*)
(11): 1811 (*T. aurea*, *T. gallaea* suitable for introduction into alkaline eutrophic lakes)
29(2): 202 (changes in body weight by handling & exercise after acclimation to fresh water vs. sea water)
- Timms, Arthur Murray
J 27(6): 1103 (blinded goldfish locomotor response)
- Tin derivatives
J 27(2): 317 (oxide for coding embedded encapsulated tags in animals)
(4): 701 (ion effects on marine muscles extractable protein)

- 28(5): 786 (in dressed Canadian fishes from industrial area lakes)
 29(12): 1691 (SnCl₂, re toxicity to *Daphnia magna*)
 CSG 52 (in antifouling coatings for boats)
 53 (for protection against wood borers)
 T 21 (for protection against shipworms)
 119 (for antifouling paints for ships hulls)
 A 88 (same as CSG 52 above)
 114 (same as CSG 53 above)
 121 (for protecting lobster traps from shipworms)
- Tinca tinca* (see Tench)
- Tintinnidae (see also Ciliata)
 J 26(6): 1485 (*Ptychocylis obtusa* ecology, Ogac L., Baffin Is.)
- Tipulidae (craneflies) (see also Diptera; Insects; Insecticides; Invertebrates)
 J 24(4): 769, 823 (affected by N.B. forest insecticide sprays, re their role as salmon & trout feed)
 26(2): 279 (upstream movements of river larvae)
 (5): 1157 (re insect communities in a small Que. stream)
 28(1): 35 (differences upstream & downstream of a dammed Ont. lake)
- Titanium derivatives
 J 25(11): 2327 (in St. Lawrence R. estuary glacial marine sediments)
 28(2): 277 (in sediments of 13 small NW Ont. lakes)
- Toad (*Bufo marinus*)
 J 26(7): 1823 (sodium transport across bladder as 1 α -hydroxycorticosterone assay method)
- Toadfish, oyster (*Opsanus tau*)
 J 25(8): 1739 (spinal ganglia position re taxonomy)
 26(4): 1075 (hematozoan parasites)
- Tocher, Carol Ann Shipton
 J 23(3): 357 (dimethyl- β -propiothetin in algae)
 24(3): 635 (marine fatty acids)
 25(8): 1603 (phytoplankter fatty acids)
 S 1044 (dimethyl- β -propiothetin in algae)
 1110 (photosynthesis in green algae)
 1159 (dimethyl- β -propiothetin)
 1183 (photosynthesis in algae)
 A 40 (dimethyl- β -propiothetin)
- Tocopherol (vitamin E)
 J 24(2): 357 (in Atl. fish & shellfish muscle after unfed holding)
 T 198 (content of queen crab tissues & meal products)
 S 1175 (re lipid changes effects on frozen fish quality)
 1480 (composition of *Porphyridium cruentum* unicellular red alga)
- Todd, Ian St. Pierre
 J 28(6): 821 (gillnet selectivity on sockeye & pink Skeena R. salmon)
- Todd, Wilbert Remington
 J 25(3): 611 (juvenile salmonid skin pallor by guanidine compounds)
- Toivonen, Jorma
 J 29(6): 629 (fishes & limnology of European large glacial lakes as estimated for 1800 A.D.)
 (6): 937 (future of salmonid communities in Fennoscandian lakes)
- Tolerance (see also Lethal limits; also factors involving tolerance reactions, e.g. Desiccation; Environment; Oxygen, dissolved; Salinity, reactions to; Survival; Temperature, reactions to; also pollutants such as indicated in heading Pollution)
 J 26(9): 2283 (of 5 haustoriid amphipod species to 5 environmental factors)
 28(8): 1071 (*Clostridium botulinum* to sodium chloride)
 (9): 1327 (of copepods to particulate oil from fuel oil marine spills)
 (10): 1545 (Pac. herring eggs & early larvae to temperature & salinity combinations)
 (11): 1811 (of freshwater fishes to alkalinity in eutrophic Nebraska lakes & ponds)
 B 168; 177 (human, to paralytic shellfish poison)
 T 202 (river diatoms towards heavy-metal pollution)
 S 1590: 518 (fishes to environmental temperature: review)
 1725 (marine poikilotherms towards environmental factors acting in concert: review)
 A 138 (of queen crab to environment)
- Tomales Bay, California
 J 28(7): 1051 (white seaperch maturity & fecundity)
- Tomcod, Atlantic (*Microgadus tomcod*)
 J 26(4): 975 (*Bothrimonus* cestode biology in)
 28(1): 59 (DDT residues in N.B.)
 (7): 935 (occasional component of Passamaquoddy Bay fish communities, N.B.)
 (11): 1727 (movements in & out of Passamaquoddy Bay intertidal zone)
 29(12): 1709 (male gonad morphology re 11 other Gadidae species)
 T 261 (bibliography for Gulf of St. Lawrence)
 S 1370; 1616 (lactate dehydrogenase multiple forms in tissues)
- Tomcod, Pacific (*Microgadus proximus*)
 J 25(12): 2665 (associations with other Oregon coast fishes)
 29(12): 1709 (male gonad morphology re 11 other Gadidae species)
 B 180: 226 (full description, etc., B.C.)
 T 7; 22; 30; 56; 62; 81; 181; 257; 317 (taken during FRB experimental or B.C. commercial trawling)
 246 (bibliography)
 A 91 (observed in B.C. landings of fish for mink feed)
- Tomlinson, Neil

- J 22(3): 653; 25(5): 673, (6): 925 (chalkiness in Pac. halibut)
 (3): 775 (postspawning death of sockeye salmon)
 (3): 849 (myxosporidian parasite)
 (4): 955 (partial freezing of salmon)
 23(5): 701 (fish preservation by partial freezing)
 (6): 917 (salmon oil binding)
 24(2): 243 (flesh of salmon)
 (8): 1701; 25(3): 603 (trout catecholamine & carbohydrate concentrations)
- B 150 (greening in tuna)
 160 (chilling & freezing salmon & tuna in refrigerated sea water)
- CVG 41 (weight changes in Pac. coast fish stored at sea)
 43; 44 (storage of Pac. salmon at sea)
 45 (cod & halibut stored in ice at sea)
- T 220; 242 (storage of Pac. salmon at sea)
- S 947 (sodium, potassium, & magnesium in fish)
 1416 (quality of sea-frozen fish from the NE Pac.)
 1417 (partial freezing of Pac. salmon intended for canning)
- A 29 (fish in rigor mortis in refrigerated sea water)
- Tomlinson, Patrick Keith
 J 27(4): 821 (generalization of Murphy catch equation)
- Toner, E. D.
 S 1441 (biological data on pike)
- Tonguefish, California (*Symphurus atricauda*)
 J 24(5): 1101 (fatty acids composition)
- Tooth (*see* Teeth)
- Tope (*see* Shark, soupfin)
- Topminnow, blackstripe (*Fundulus notatus*)
 J 23(9): 1331 (surface waves perception by lateral line organs)
- Topography (*see also* Geomorphology; Hydrography)
 J 25(1): 33 (of SW B.C. streams)
 (1): 81 (of 3 SW B.C. lakes re trout mortality)
 (6): 1181 (upper Great Lakes re benthic environment subdivisions)
- Topp, Robert William
 J 25(6): 1299 (winter flounder fecundity)
- Topsmelt (*Atherinops affinis affinis*)
 J 27(7): 1225 (some aspects of school organization)
 B 180: 260 (full description, etc., B.C.)
- Toronto Harbour, Lake Ontario
 J 26(10): 2659 (nutritional resources of 3 oligochaete species in sediments)
 27(11): 1961, 1971 (distribution, abundance, & defecation rates of tubificid oligochaetes)
- Torpedo californica* (*see* Ray, Pacific electric)
- Towers, George Hugh Neil
 S 1491 (fission of phenylalanine by marine algae)
- Townsley, Philip MacNair
 J 25(5): 853 (marine borer caecum glucose metabolism)
- Toxaphene (*see* Piscicides)
- Toxicants; Toxicity; Toxins (*see also* Herbicides; Insecticides; Pesticides; Piscicides; *also* Copper derivatives; Mercury and derivatives; Phosphorus, yellow elementary; *and* names of other toxic elements; *also* Antifouling treatments; Cyanide; Hydrogen sulfide; Oils, petroleum; Paralytic shellfish poisoning; Pollution; Pulpmill effluents; Sulfite, etc.)
- J 22(2): 635 (probable toxicity of mummichogs to warm-blooded animals)
 26(1): 115 (coho salmon & rainbow trout resistance to bacterial endotoxins)
 (8): 2208 (moray eel ciguatera activity re anticholinesterase action)
 27(2): 383, (12): 2185 (various metal salts to mummichog)
 28(8): 1071 (sodium chloride effects on *Clostridium botulinum* toxin production in Pac. cod flesh homogenates)
 (12): 1841 (chloramine, to an amphipod & to fathead minnow)
 29(8): 1099 (cadmium sulfate acute & chronic toxicity to fathead minnow)
 (9): 1309 (bioassay factors for hydrogen sulfide, re goldfish)
 (10): 1505 (% un-ionized NH₃ in ammonia aqueous solutions, re ammonia toxicity to fish)
 (12): 1691 (effects of 21 metal ions on *Daphnia magna* survival, growth, reproduction, & metabolism)
- T 201 (oil dispersants, re Bunker fuel oil spill at Chedabucto Bay, N.S.)
 218 (antibacterial effects of sea water)
 255 (fluosilicic acid; cyanide; also other production wastes: toxicity to fish)
 258 (trisodium nitrilotriacetate as replacement for phosphate detergents: tests on aquatic life)
 272 (halogenated hydrocarbons to fishes & birds)
 293 (ore flotation agents)
 S 964 (mathematical analysis of, re juvenile coho salmon environment)
 1510 (applying bioassay results to pollutant toxicities towards fish: review)
 1668 (mercury toxicity to man)
 1678 (hydroxamate flotation agents)
 1710 (polyoxyethylene esters & ethers' fuel oil dispersants, re Atl. salmon & an amphipod)
- A 145 (bioassay methods for pollutants acute or lethal: review)
 201 (*Botulinus* toxin transmitted from fishes to their predators)
 203 (developed by fish-spoiling organisms)
 268 (sublethal effects & "safe" concentrations of pollutants to fish: review)
- Toxins (*see* Toxicants)

- Trace elements (*see* Analysis methods (chemical); Composition, chemical; Nutrients, aquatic; Pollution; *also* names of elements)
- Tracer elements (radioactive isotopes) (*see* Irradiation; Isotopes; Marking; Radiation; Tagging) (*Note*: Data on ^{14}C are not indexed separately because of its frequent use; *see* Biosynthesis, etc.)
- Trachinotus ovatus* (*see* Panpano)
- Trachipterus altivelis* (*see* King-of-the-salmon)
rex-salmonorum (*see* King-of-the-salmon)
- Trachtenberg, Samuel
B 158 (fisheries of District of Mackenzie, N.W.T.)
- Trachurus lathami* (*see* Scad, rough)
symmetricus (*see* Mackerel, jack)
trachurus (*see* Mackerel, horse)
- Tracking (*see also* Currents; Drift; Echolocation; Marking; Migration; Sounding, echo; Tagging)
J 26(8): 2173 (white bass by ultrasonic transmitter in stomachs)
27(4): 715 (homing cutthroat trout by ultrasonic tags)
(6): 1147 (lobsters by ultrasonic tags)
29(7): 1025 (adult sockeye salmon B.C. coastal migratory movements tracked ultrasonically)
(10): 1445 (adult American shad sea-to-river migration behavior tracked by ultrasonic tags)
T 335 (homing sockeye salmon by ultrasonic transmitter in stomachs)
S 1539 (currents with dyes, re ability to flush away pollutants)
1581 (harp seals)
1675 (review of various methods, re fish orientation & homing)
A 184 (harp seals)
239 (list of research groups, projects, & organisms re underwater telemetry)
- Transaminases (*see* Enzymes)
- Transferases (*see* Enzymes; Genetics)
- Transferrins (*see also* Genetics; Serum)
J 26(5): 1397 (distribution of groups in harp seal blood serum)
(9): 2351 (of Pac. halibut serum)
(12): 3268 (variants in Pac. hake)
27(12): 2167 (blood electrophoresis re *Tilapia* hybrids)
(12): 2371 (polymorphism in coho salmon)
28(11): 1745 (re suckers cytology)
- Transformation (*see* Metamorphosis)
- Translation indexes
T 246 (bibliography re N America Pac. coast trawled fishes)
- Transparency of natural waters (*see also* Limnology; Oceanography; Radiation; Turbidity)
J 27(6): 1165 (sudden decrease during seiche, Georgian Bay, Ont.)
(7): 1251 (Strait of Georgia re primary productivity)
28(2): 129, 157, 231 (small lakes in NW Ont.)
T 265 (Frobisher Bay, Baffin Is., N.W.T.)
316 (effect of kraft mill effluent on, Alberni Inlet, B.C.)
- Transplantation (*see also* Species, introduced)
J 23(6): 939 (pink salmon from B.C. to Nfld.: scale characters)
25(12): 2527; 27(4): 811 (re worldwide distribution of brown trout)
(12): 2633 (barnacle: differences resulting from)
26(2): 325 (kokanee & various trouts into Alta.)
(7): 1699; 28(3): 452 (re worldwide distribution of brook trout)
28(5): 647 (results for 3 generations from pink salmon eggs, from B.C. mainland to Vancouver Is.)
(5): 663; 29(12): 1788 (re worldwide distribution of rainbow trout)
(7): 1019 (role of social behaviors when hatchery rainbow trout are released into a stream)
(12): 1857 (B.C. & USA kokanee into L. Huron)
29(2): 129 (recovery of brook trout, rainbow trout, & splake from selected Ont. lakes, re competitive other species)
B 165: 19 (carp into Canadian waters)
CJG 14: 32; 15: 24 (pink salmon eggs from Pac. coast to Nfld.)
CJG 16 22 (1968 returns from 1966 pink salmon egg transplantation to Nfld. from B.C.)
16: 24 (results of oyster, from P.E.I. to Nfld.)
CSG 48 (Atl. Canada oyster spat)
T 44; 301 (progress report on Atl. lobsters in Fatty Basin, B.C.)
MSP 16 (considerations & recommendations for control of fish disease in Canada)
S 1007; 1085; 1105 (pink salmon from B.C. to Nfld.: spawning returns)
1096 (lobsters to B.C.)
A 93 (Atl. lobsters to B.C. coast)
106 (*Oncorhynchus* salmon species to Great Lakes, Hudson Bay, & Nfld.)
108: 12; 113 (success of pink salmon egg transplants to Nfld.)
119; 123: 348 (pink salmon to Nfld.)
181 (research summary on success of B.C. pink salmon, to Nfld.)
209 (sea otters from Alaska to B.C.)
- Transport, mass (of waters) (*see also* Currents; Oceanography)
J 23(6): 852 (NE Pac. Ocean)
24(3): 581 (Ekman, re NE Pac. zooplankton concentration)
B 156: 15 (Ekman, in Dixon Entrance, B.C.)
T 50-53; 63-66; 126-128; 230; 238-240 (surface & other

- charts & computations for Ekman mass transport of N Pac. Ocean waters, 1946-71 (T 128 is a review for 1946-68))
- 71; 72 (mass transport computations for Norwegian Sea, 1950-60)
- Transportation of fishery products (*see also* Handling; Pumps; Sea water, refrigerated)
- B 166: 40 (eels in E Canada)
- 173: 357 (of preserved fish specimens for study)
- T 69 (mechanical unloading of Atl. fish from fish holds)
- A 138 (queen crab)
- 203 (fish to processing plants, including frozen fish by air)
- Traps; Trapping; Pots
- J 25 (4): 733 (condition of trap-caught Atl. cod re quality of frozen)
- 26 (1): 133 (for estimating salmonid fry survival)
- (2): 279 (for river benthic invertebrates)
- (6): 1685 (for collecting emerging stream insects)
- 27(10): 1747 (adaptation of king crab type for capturing sablefish)
- 28(8): 1209 (2 simple durable collectors for epifauna)
- 29(8): 1234 (for collecting upward-swimming invertebrate benthos)
- B 166: 7 (for commercial eel fishery)
- CNG 87 (experimental B.C. prawn trap fishing)
- T 38 (estuarine net counting fence for Atl. salmon)
- 84 (Atl. salmon & brown trout captured & marked at fence in T 38)
- 305 (trapnet design for sampling shallow-water habitats)
- S 1039 (lobster: legal lath spacing)
- 1084 (harp seals on N shore of St. Lawrence R.)
- 1257 (estuarine net counting fence for Atl. salmon)
- 1518 (for prawns)
- 1724 (for emerging aquatic insects)
- A 121 (treating lobster, against shipworm attack)
- 128; 128(F) (condensed version of CNG 87 above)
- 138 (vessels & types of traps for queen crab fishery)
- Trawling; Trawls (*see also* Catches; Exploration; Fisheries; Surveys) (*Note:* In addition to the following representative references to trawling gear, experimental, and commercial catches, many more such references will be found under the names of commercially bottom- or midwater-trawled fishes such as Cod, Atlantic (biology); Groundfishes (Canadian Atlantic); Groundfishes (Canadian Pacific); Haddock; Herring, Atlantic (biology); Herring, Pacific (biology); Perch, Pacific ocean; Plaice, American; Redfish; *also* under International Commission for the Northwest Atlantic Fisheries; International North Pacific Fisheries Commission. *See also* Photography, underwater; Submersibles)
- J 23 (1): 153 (underwater observation of fish behavior towards)
- (4): 611 (design of side-trawling type)
- (10): 1507 (causing haddock mortality from fatigue)
- 24 (6): 1187 (sampling research catches at sea)
- 25 (3): 457 (B.C. coast midwater trawl catches re sound-scattering layers)
- (3): 589 (Pac. herring schools behavior in response to midwater trawl)
- 26 (5): 1205 (mesh size re ecological dominance of Atl. cod over American plaice & their conservation)
- (10): 2751 (bottom sediment sampler attached to trawl board)
- B 154 (re Nfld. marine resources)
- 159 (photographic equipment for underwater observation of gear)
- 163 (instrumentation for study of otter trawls)
- CNG 73: 1 (for Hecate Strait groundfish exploration)
- 76 (gear for B.C. shrimps exploration)
- 78 (review of B.C. Pacific cod fishery & 1967 forecast)
- 79 (groundfish catches by different nations off B.C.)
- 82 (in B.C. groundfish exploratory fishing, 1966)
- 85 (semiballoon type for B.C. shrimp exploration)
- CNS 28 (Canadian & American production from grounds off B.C., 1954-65)
- CSG 57 (mechanics & performance of Canadian E coast otter trawls)
- T 11 (midwater: exploratory off Queen Charlotte Is.)
- 12; 23 (catch statistics for commercial B.C. & US Pac. cod)
- 13 (types of B.C. trawlers & gear)
- 69; 162 (improved mechanical unloading techniques for trawling vessels)
- 102: 12, 23 (underwater observations from "cubmarine")
- 125 (engineering performance data on Canadian E coast groundfish otter trawls)
- 140; 174 (type used in B.C. offshore herring surveys)
- 144; 205 (gear evaluation during B.C. groundfish survey)
- 246 (bibliography of fishery & groundfish, N American Pac. coast)
- 250 (assessment of effects of increases in mesh sizes on Atl. cod fisheries)
- 260 (catch availability & 1958-68 surveys data, Scotian Shelf groundfish)
- S 928 (catch size effect on selectivity for flatfish)
- 954 (minimum mesh sizes for different materials)
- 1020 (selectivity re Atl. cod girth-length relations)
- 1076 (offshore lobster investigations, Canadian & American)
- 1087 (reaction of Atl. fish to, observed photographically)
- 1279 (comparison of catches by 2 research vessels trawling together off S Labrador)
- 1380 (mesh size re availability of different redfish sizes)
- 1381 (Atl. cod catches on snella hook gear vs. trawling in same area)
- 1421 (handling Atl. fishes aboard chill-freezer trawlers)
- 1493 (assessment of effects of Atl. cod nets mesh size increases)
- A 2 (B.C. trawl fishery)
- 60 (same as CNG 79 above)

- 61(F) (underwater photography of fish movements into nets & trawls)
 74 (summary of CNG 82 above)
 91 (B.C. landings for mink feed)
 104 (based on CNG 85 above)
 136 (underwater observations from a "cubmarine")
 241; 250 (Canadian ICNAF research on mesh selectivity)
- Traxler, Garth Stanley
 J 28(1): 104 (skin lesions of rainbow trout)
 29(5): 501 (tissue culture bioassay for mercuric chloride in water pollution)
 S 1398 (effect of elemental phosphorus on L-cells)
 1443 (rainbow trout ovary cells infected with amphibian virus LT-1)
 1654 (antiviral activity of *Mya* clam extract on amphibian virus LT-1)
- Tredwell, S. J.
 J 24(5): 939 (scale loss in rainbow trout)
- Trefethen, Parker Scott
 J 25(5): 867 (olfaction & vision in spawning site choice)
- Tremaine, Jack Harold
 S 1253 (virus structure & subunit amino acid composition)
- Trematoda (flukes) (see also Helminths; Parasites; Platyhelminthes)
 J 22(6): 1387 (re Pac. salmon biological information)
 24(8): 1763 (*Aporocotyle margolisi* (n.sp.) found in Pac. hake)
 (9): 1911 (descriptions of parasitic on Nfld. freshwater fishes)
 (10): 2161 (monogenetic & digenetic found in surfperches)
 26(4): 753 (description of metacercariae of 18 species (10 new) of strigeatoid digenetic, from S America)
 (4): 787 (3 new genera species of hemiurid, from Australian fishes)
 (4): 799 (*Lepidophyllum cameroni* n.sp. from red Irish lord, B.C.)
 (4): 805 (mono- & digenetic, of Nfld. fishes)
 (4): 813 (3 species from early sea life pink salmon)
 (4): 833 (mono- & digenetic, in Bay of Quinte yellow perch)
 (4): 845 (*Anenterotrema* spp. nutrition modes)
 (4): 865 (*Pellucidhapter catostomi* & *P. nasalis* n.sp.; corrections on J 28(8): 1219)
 (4): 879 (in Atl. argentine, & uses as biological indicators; correction on J 27(8): 1499)
 (4): 893 (biology of *Tubulovesicula lindbergi* & *Lecithaster gibbosus* in pink & chum salmon)
 (4): 957(F) (*Opegaster cameroni* n.sp. & *Otodistomum veliporum* from S California fishes)
 (4): 1063 (*Diclidophora* speciation re gadid fish hosts speciation; *Flexiphora aphidii* description)
 (9): 2319 (list of monogenetic & digenetic found in B.C. marine fishes)
 27(6): 1045 (*Urocleidius adspectus* parasitic on yellow perch gills)
 (7): 1313 (marine *Tubulovesicula lindbergi* parasitic on river-resident white sturgeon)
 (7): 1317 (2 digenetic species parasitic in longnose & white suckers, Labrador)
 (10): 1894 (parasites of Nfld. salmonids & coregonids)
 28(1): 31 (*Tristoma coccinium* & *T. integrum* in N Atl. swordfish, also their possible use as indicator species)
 (5): 767 (*Labrifer balli*, n.sp., from pink seaperch)
 (6): 903 (habitat segregation of *Aporocotyle macfarlani* & *Psettarium sebastodorum* in blood system of N Pac. rockfishes, also infection incidence re those fishes habitat)
 (10): 1385 (various Polychaeta as intermediate hosts of)
 29(3): 275 (parasites of Lake of the Woods fishes, Ont.)
 CJG 17 (*Apophallus* & *Crepidostomum* in Nfld. Salmonidae: key)
 T 48 (parasitic to lampreys)
 134 (digenetic, as indicators for distinguishing Atl. salmon stocks)
 160 (3 species parasitic in *Lepidion eques*)
 185 (bibliography re Canadian fishes parasitization by)
 S 937 (review of *Bacciger* & *Pentagramma*; *P. petrowi* from B.C. marine fishes)
 981 (*Cercaria patellae* larvae infesting limpet)
 1287 (digenetic *Lampritrema nipponicum* parasitic in Atl. argentine)
 1450 (parasitic to northern world coregonid fishes: review)
 1483 (morphometric variation in *Lecithophyllum botryophorum* in Atl. argentine)
 1681 (revised annotated list of, from W coast N America sea mammals)
 A 58; 58(F) (parasitic larvae causing human "swimmers' itch" dermatitis)
 224 (parasitic to N American, USSR, & European coregonid fishes)
- Tresus capax*; *T. nuttalli* (see Clam, horse)
- Tretiak, Daniel Nicholas
 J 28(7): 1005 (walleye malate dehydrogenase)
 29(8): 1169 (amine-citrate buffers for starch-gel electrophoresis)
- Trevithick, J. R.
 S 1245 (protamine biosynthesis during salmonid spermatogenesis)
- Triaenophorus crassus*; *T. nodulosis* (see Cestoda)
- Trichodon trichodon* (see Sandfish (Pacific))
- Trichogaster trichopterus* (see Gourami, blue)

- Trichoptera (caddisflies) (*see also* Insects; Insecticides; Invertebrates)
- J 24(4): 769, 807, 823 (affected by N.B. forest insecticide sprays, re their role as salmon & trout feed)
- 26(2): 279 (upstream movements of river larvae)
- (5): 1157 (feed, habits, & ecology in small Que. stream)
- (8): 2016 (partitioning community respiration in a lake sediment)
- 27(1): 125 (re lake trout feed, L. Opeongo, Ont.)
- (12): 2356 (abundance re rainbow trout feeding)
- 28(1): 35 (differences upstream & downstream of a dammed Ont. lake)
- (6): 849 (samplings from shallow stream bed)
- (11): 1683 (in L. Ontario bays benthos)
- 29(4): 363 (feed & feeding habit of *Phryganea*)
- T 196 (in bottom fauna of Okanagan Valley lakes, B.C.)
- 258 (toxicity tests of trisodium nitrilotriacetate detergent on, re pollution)
- S 966 (effect of DDT forest spraying in N.B.)
- 999 (as indicators of Cu-Zn pollution in Atl. salmon streams)
- 1128 (in benthos of 4 Lake Superior bays)
- 1532; 1533 (of a high Colorado mountain creek, including n.sp., *Hesperophylax oreades*)
- 1631 (seasonal emergence dates & sex ratios of several species, Heming L., Man.)
- 1065 (fatty acids distribution determination by Grignard reagent deacylation)
- 1125 (digestive hydrolysis by lipase of lobster)
- 1170 (alternative method for stereospecific analysis of)
- 1186 (conversion of dietary into depot fat by fish & lobster)
- 1203 (positional distribution of monoenoic fatty acids in animal)
- 1226 (positional distribution of fatty acids in aquatic animal depot fat)
- 1233 (marine fatty acids incorporation into mink & rat adipose tissue & liver fats)
- 1330 (separation from free fatty acids, by a suitable chromatographic procedure)
- 1474 (fatty acid composition in rainbow smelts)
- 1514 (fatty acid composition of Amazon R. sturgeon jaw & blubber)
- 1564 (*trans*-6-hexadecenoic acid & other fatty acids of sea urchin *Metridium dianthus*)
- 1572 (amounts & fatty acids of, in periwinkle, Atl. oyster, & quahaug lipids)
- 1596 (fatty acid composition of bottlenose dolphin milk)
- 1602 (lobster biosynthesis of, from various labelled organic compounds)
- 1608 (isovaleroyl, in beluga whale forehead, jaw, & blubber oils)
- 1637 (review of stereospecific analysis)
- 1717 (fatty acids of Atl. harbour seal lung & heart)
- Triclad (see Turbellaria)
- Triggerfish (*Teuthis vermiculatus*)
- J 25(1): 197 (microorganisms isolated from diseased)
- Trigla gurnardus* (see Gurnet)
- Triglops beani* (see Sculpin, ribbed)
- macellus* (see Sculpin, roughspine)
- murrayi* (see Sculpin, moustache)
- nybelini* (see Sculpin, mailed)
- pingeli* (see Sculpin, ribbed)
- Triglycerides (*Note*: Many additional references to fatty acid structure of triglycerides re various aspects of fats and lipids will be found under Acids, fatty; Lipids; Oils and fats)
- J 25(8): 1561 (of jellyfish & turtle)
- (10): 2083 (fatty acids distribution in Atl. cod flesh)
- 26(6): 1577 (source of free fatty acids in Atl. herring oils)
- (7): 1857 (lipolytic activity toward long-chain, in rainbow trout muscle)
- (8): 2037 (in capelin lipids)
- 27(3): 513 (of 2 euphausiid species)
- 28(4): 601 (fatty acid composition of sand lance)
- (7): 1015 (rainbow trout lysosomal triglyceride lipase action on)
- S 985; 1028 (fatty acids positional distribution in fat triglycerides of various organisms)
- 1029 (fatty acids positional distribution in fat triglycerides of various vegetables)
- 1047 (unsolved analysis problem)
- 1065 (fatty acids distribution determination by Grignard reagent deacylation)
- 1125 (digestive hydrolysis by lipase of lobster)
- 1170 (alternative method for stereospecific analysis of)
- 1186 (conversion of dietary into depot fat by fish & lobster)
- 1203 (positional distribution of monoenoic fatty acids in animal)
- 1226 (positional distribution of fatty acids in aquatic animal depot fat)
- 1233 (marine fatty acids incorporation into mink & rat adipose tissue & liver fats)
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- 1637 (review of stereospecific analysis)
- 1717 (fatty acids of Atl. harbour seal lung & heart)
- Trigonelline (N-methyl nicotinic acid) (*see* Betaines)
- Trigonulina hancocki* (*see* *Verticordia hancocki*)
- Trimethylamine (TMA); Trimethylamine oxide (TMAO) (*see also* Amines; Dimethylamine)
- J 24(2): 221 (values of irradiated cooked lobster meat)
- 25(5): 921 (nonbacterial production in frozen Atl. cod & scallop muscle)
- (8): 1753, (10): 2071 (suppression by preservatives)
- 26(9): 2523 (values re quality of scallop meats chilled in ice vs. refrigerated sea water)
- (10): 2651 (suppression by EDTA dip for fish fillets)
- 28(1): 1 (possible precursor of dimethylamine in stored frozen fish muscle)
- (3): 305 (production from TMA oxide by bacteria in chilled haddock fillets)
- 29(8): 1125 (development in ice-stored canary rockfish muscle)
- B 150: 18 (re "greening" of tuna & albacore flesh)
- CHN 38 (current status of TMA test vs. dimethylamine test for fish quality)
- T 280 (content of fish held in refrigerated sea water)
- A 162 (same as CHN 38 above)
- Trimethylamine oxide (*see* Trimethylamine)
- Trinity Bay, Nfld.
- CJG 16 (coastal capelin migrations)

- Tripe, Robert Leslie King
T 106; 145; 184 (Pac. Ocean Station P oceanographic observations)
- Triphoturus mexicanus* (see Lampfish, Mexican)
- Trites, Ronald Wilmot
J 27(8): 1453 (phytoplankton heterogeneity)
T 219 (physical oceanography of St. Margaret's Bay, N.S.)
271 (Gulf of St. Lawrence circulation patterns)
S 1539 (capacity of an estuary to accept pollutants)
- Tritium (see Hydrogen isotope)
- Trolling
CPO 1965-6 (Strait of Georgia commercial coho catches)
- Tropocyclops* (see Cyclopoida; *Cyclops*)
- Tropomyosin* (see also Muscle; Myosin)
S 1349 (isolation from Atl. cod muscle by heat treatment)
- Trout (in addition to the following headings, see Dolly Varden; Hybrids; Salmonidae; Splake; Trout)
- Trout (a European) (*Salmo fario*)
J 25(12): 2711 (muscle creatine kinase localization)
- Trout, alpine (see Char, Arctic)
- Trout, Apache
J 28(7): 987 (probable ancestry; meristic characters re western N America *Salmo*)
- Trout, brook (*Salvelinus fontinalis*) (speckled trout) (see also Splake)
J 22(2): 335 (swimbladder size re buoyancy of young)
(2): 395 (stream population changes re silt)
(3): 738 (in Kananaskis R. system, Alta.)
(3): 767 (& hybrids biochemical differentiation)
23(1): 1 (blood respiratory function after seasonal temperature acclimation)
(5): 623 (maturation & fecundity in infertile Pennsylvania streams)
(7): 1007 (responses of young to light)
(8): 1121 (oxygen re temperature in embryo development)
(10): 1537 (development rate & vertebral number)
(10): 1599 (electropherograms of myogen & hemoglobin)
(11): 1799 (production in Crecy L., N.B., as affected by eels)
(12): 1977 (distribution in association with young Atl. salmon)
24(2): 447 (urinary & genital systems anatomy)
(3): 695 (blood low-mobility proteins)
(4): 701, 709, 769, 823 (& their insect feed, as affected by spraying DDT & other insecticides to combat spruce bud worm in N.B. forests)
- (7): 1425 (numerical changes & population regulation in Hunt Creek, Michigan; correction on J 25(8): 1760)
(7): 1515 (starvation effect on selected temperature)
(7): 1627 (death from *Echinorhynchus lateralis* spiny headed worm parasite)
(8): 1743 (movements re artificial pond en route to sea)
(9): 1911 (as parasite host, Nfld.)
(11): 2402 (mathematics of oxygen consumption)
25(1): 81 (limnology re mortality in 3 SW B.C. lakes)
(1): 189 (DDT residues & metabolites in)
(2): 209 (effect of ponding on catches in Ellerslie Brook, P.E.I.)
(2): 423 (infection by *Norcardia asteroides* bacteria)
(3): 579 (dissolved O₂ fluctuations effect on growth)
(5): 863 (cornea ultrastructure)
(7): 1323 (lactate dehydrogenase comparison with lake & rainbow trouts, also with albino brook trout & brook-brown hybrids)
(7): 1521 (infection by *Aeromonas*)
(9): 1787 (reproduction after DDT insecticide ingestion)
(10): 2011 (lake fertilization & predator control to increase yield of)
(11): 2443 (growth & stress resistance when fed DDT)
(12): 2643 (experimental plantings of furunculosis-infected stock)
(12): 2677 (lateral line response affected by DDT)
26(2): 325 (S Alta. distribution)
(3): 695 (mass mortality & behavior in pesticide-polluted stream)
(4): 849 (*Cystidicola* nematodes in swimbladder)
(6): 1439 (distribution in Canadian Missouri R. headwaters)
(6): 1459 (detection of infectious pancreatic necrosis virus in carriers)
(6): 1473 (wild fingerling overwinter survival)
(7): 1699; 28(3): 452 (world distribution: native or introduced)
(7): 1847 (physiological consequences of aortic catheterization)
(7): 1927 (purine sources of skin silvering)
(9): 2493 (effects of lead, temperature, & dissolved oxygen fluctuations on growth)
(10): 2643 (oxygen metabolism re body weight)
(12): 3259 (infectious pancreatic necrosis virus in hatchery-held young Atl.)
27(1): 39 (hybrids with lake trout re swimbladder gas retention for deep-swimming ability)
(2): 331 (sublethal DDT effects on conditioned reflex, & recovery)
(3): 413 (population ecology, Matamek L., Que.; correction in J 30(7): 1033)
(5): 969 (naturally acquired antibodies against furunculosis)
(6): 1087 (exploitation of self-sustaining Ont. stream population)

- (8): 1379 (yellow phosphorus toxicity to seawater-maintained)
 (8): 1496 (feed chain re DDT accumulation by)
 (9): 1656 (seasonal depth distribution in a small lake)
 (10): 1883 (blood changes after exposure to copper pollution)
 (10): 1894 (helminth & an *Ergasilus* copepod parasites of Nfld.)
 28(1): 100 (device for rapidly removing embryos from eggs)
 (3): 458 (response of populations to a fishery)
 (4): 509 (skin & flesh color enhancement when fed shrimp & crab wastes plus carotenoid)
 (5): 625, 635 (physiological effects of handling, tricaine methane sulfonate anesthetization, & surgery)
 (5): 655 (long-term effects of copper sulfate concentrations on adults, eggs, & fry)
 (6): 801 (re fish growth efficiency analysis)
 (7): 1064 (infectious pancreatic necrosis virus in feces vs. organs; effect of stress)
 (8): 1113 (calorie-protein ratio of rations re energy requirements)
 (9): 1285 (methylmercury in N.B.)
 (12): 1877 (DDT accumulation & persistence in)
 29(1): 27 (predation on young Atl. salmon treated with insecticides)
 (2): 129 (recovery of planted, in selected Ont. lakes, re competitive other species)
 (3): 265 (habitat utilization re cutthroat trout, in small N Idaho streams)
 (4): 458 (Floy anchor tag effects on growth & survival)
 (8): 1107 (temperature effects on growth & survival of young)
 (8): 1209 (gonad maturation in high mountain lake under modified photoperiod caused by deep snow)
 (9): 1283 (cadmium content, in New York State waters)
 (9): 1344 (blood concentration of tricaine anesthetic during branchial irrigation)
 (10): 1405 (re controlled flow reduction effects on a stream)
 (11): 1615 (feed specialization by individuals; corrections on J 30(8): 1257)
 B 154: 103 (as Nfld. resource)
 173: 154 (full description, etc.)
 CAR 1 (toxicity effects of elemental phosphorus)
 CJG 17 (keys to metazoan parasites, Nfld.)
 T 255 (toxicity tests with yellow phosphorus production wastes)
 261 (bibliography for Gulf of St. Lawrence)
 325 (forest-based industries impact on, N.B.)
 S 893; 905; 965; 1007; 1085 (investigation and management research program, 1961-64)
 911 (suitability of barachois ponds for)
 1028; 1080; 1226 (fatty acids positional distribution in fat triglycerides)
 1132 (predation by birds, Crecy L., N.B.)
 1133 (movements of planted hatchery-reared, from Crecy L.)
 1186 (biosynthesis of depot fat from dietary triglycerides)
 1291 (antipollutant agent protecting from zinc & copper)
 1324 (DDT sublethal effect on nervous system)
 1547 (ecological interactions with brown trout in a Nfld. stream)
 1556 (temperature effects on brain tissue oxygen consumption)
 1612 (serum esterase molecular weight heterogeneity re those of 3 other salmonids)
 1678 (acute toxicity of iron ore flotation agent)
 A 57(F) (establishment & management of rearing in artificial ponds in Atl. Canada)
 222 (pollutants effects on physiology & behavior)
 Trout, brown (*Salmo trutta*)
 J 22(3): 738 (in Kananaskis R. system, Alta.)
 (3): 767 (& hybrids biochemical differentiation)
 23(1): 157 (downstream migration re temperature & light)
 (5): 623 (association with brook trout in Pennsylvania streams)
 24(1): 191 (response factors in fresh- & saltwater electric field)
 (2): 447 (urinary & genital systems anatomy)
 (3): 695 (blood low-mobility proteins)
 (9): 1911 (as parasite host, Nfld.)
 25(4): 813 (sexual dimorphism in anal fin of *S. t. trutta*, *S. t. labrax*, & *S. t. macrostigma*)
 (5): 863 (cornea ultrastructure)
 (6): 1285 (light influence on activity)
 (7): 1323 (lactate dehydrogenase in hybrid with brook trout)
 (12): 2527; 27(4): 811 (world distribution)
 26(2): 325 (S Alta. distribution)
 (6): 1439 (distribution in Canadian Missouri R. headwaters)
 (8): 2165 (seasonal activity & feeding pattern re food availability)
 (10): 2643 (oxygen metabolism re body weight)
 (12): 3259 (infectious pancreatic necrosis virus in Atl. hatchery young)
 (12): 3275 (night feeding in experimental stream channel)
 27(5): 969 (naturally acquired antibodies against furunculosis)
 (6): 1087 (exploitation of self-sustaining Ont. stream population)
 (10): 1894 (helminth & an *Ergasilus* copepod parasites of Nfld.)
 (11): 2109 (muscle protein electrophoretic patterns re rainbow trout patterns, E Canada)
 28(9): 1285 (methylmercury in, N.B.)
 29(9): 1283 (cadmium content, from New York State waters)
 B 154: 103 (as Nfld. resource)
 173: 130 (mention in key to NW America trouts)
 180: 133 (full description, etc., B.C.)
 CJG 17 (keys to metazoan parasites, Nfld.)
 T 84 (numbers captured & marked at Little Codroy R. (Nfld.) counting fence)

- S 1308 (blood plasma protein binding of steroids)
 1545 (electrophoretic analysis of protein & esterase systems of hybrids with Atl. salmon)
 1547 (ecological interaction with brook trout in a Nfld. stream)
 1612 (serum esterase molecular weight heterogeneity re those of 3 other salmonids)
 A 57(F) (establishment & management of rearing in artificial ponds in Atl. Canada)
- Trout, coastal cutthroat (*Salmo clarki clarki*) (see also Trout, cutthroat)
 J 23(6): 929 (electropherograms of multiple hemoglobins)
 28(7): 987 (re systematics & evolution of western N America *Salmo*)
 29(5): 555 (experimental study of feeding behavior & interaction with Dolly Varden)
 B 180: 127 (full description, etc., B.C.)
 S 1563 (& rainbow trout, re multiple hemoglobins subunit structures & molecular basis)
- Trout, cutthroat (*Salmo clarki*) (see also Trout, coastal cutthroat; Trout, Lahontan cutthroat; Trout, Yellowstone cutthroat)
 J 22(3): 739 (in Kananaskis R. system, Alta.)
 23(10): 1475 (open-water movements in Yellowstone L., Wyoming)
 24(10): 2011 (olfaction & vision re homing & orientation)
 25(1): 33 (vs. steelhead trout juvenile distribution in SW B.C. streams)
 26(2): 325 (S Alta. distribution)
 (2): 357 (adding canthaxanthin to feed of young, to enhance flesh color)
 (5): 1243 (movements & homing of blinded & anismic vs. normal, Yellowstone L.)
 (6): 1439 (distribution in Canadian Missouri R. headwaters)
 27(4): 715 (ultrasonic tracking of homing, Yellowstone L.)
 (5): 955 (first case of whirling disease in W US)
 (11): 2063 (growth in Chef Creek, Vancouver Is., B.C., re scale analysis)
 28(1): 112 (leukemia manifestations in)
 (7): 987 (meristic characters re systematics & evolution of western N America *Salmo*)
 (8): 1173 (glycoproteins constituents levels in blood sera)
 (9): 1259 (sympatry & allopatry with Dolly Varden, re feed & habits in 3 B.C. lakes)
 29(3): 265 (habitat utilization re brook trout, in small N Idaho streams)
 (11): 1615 (feed specialization by individuals; corrections on J 30(8): 1257)
 B 162: 243 (predator on young sockeye salmon)
 173: 130 (mention in key to NW America trouts)
 T 323 (possible effects of logging on, in a Vancouver Is. stream)
- Trout, Dolly Varden (see Dolly Varden)
- Trout, golden (*Salmo aguabonito*; *S. a. aguabonito*; *S. mykiss aguabonito*; *S. "roosevelti"*)
 J 26(2): (*S. aguabonito* transplanted into Alta.)
 28(7): 987 (meristic characters in Kern R. Basin, Calif., re systematics & evolution of western N America *Salmo*; also hybridization)
- Trout, gray (see Trout, lake)
- Trout, Heenan Lake (*Salmo clarki henshawi*)
 J 28(7): 987 (re systematics & evolution of western N America *Salmo*)
- Trout, hybrid (see Trout, "tiger"; Splake; also Hybrids)
- Trout, Kamloops (see Trout, rainbow)
- Trout, Lahontan cutthroat (*Salmo clarki henshawi*)
 J 25(11): 2519 (marking by high-frequency electric sparks)
- Trout, lake (*Salvelinus namaycush*) (*Cristivomer namaycush*; char; lake char) (see also Char, lean lake; Siscowet; Splake)
 J 22(3): 744 (in Bow R. system, Alta.)
 (3): 761 (corneal lesions in hatchery-reared)
 (3): 767 (& hybrids biochemical differentiation)
 (4): 999 (movements of hatchery-reared in L. Superior)
 (6): 1571 (in fall domestic fishery at Snowdrift, Great Slave L.)
 23(10): 1599 (electropherograms of muscle myogen & hemoglobin)
 24(2): 281 (returns of hatchery-reared, S L. Superior)
 (2): 447 (urinary & genital systems anatomy)
 (5): 965 (pyloric caeca & gill raker development)
 (6): 1407 (morphological comparison of 3 populations)
 25(4): 667 (re Great Lakes species succession & exploitation)
 (7): 1323 (lactate dehydrogenase comparison with rainbow & brook trouts)
 (7): 1377 (rehabilitation in Apostle Is. region of L. Superior)
 (7): 1501(F) (range extensions in E Canadian Arctic marine or saline waters)
 (7): 1521 (infection by *Aeromonas*)
 (11): 2257 (survival of marked vs. tagged)
 26(2): 325 (S Alta. distribution)
 (4): 843 (*Cystidicola* nematodes in swimbladder)
 (4): 871 (*Diphyllotrichium* transmission to)
 (9): 2413 (survival of planted, South Bay, L. Huron)
 27(1): 39 (hybrids with brook trout re swimbladder gas retention for deep-swimming ability)
 (1): 125 (long-term effect of natural feed, L. Opeongo, Ont.)
 (1): 161 (re *Cristivomer namaycush* subspecies)
 (4): 677 (8 trace elements in livers, Great Lakes)
 (10): 1729 (preferred temperature)
 28(1): 65 (population biology in L. Superior before lamprey invasion)

- (3): 448 (subcutaneous fibroma in Que. lake trout)
 (4): 465 (intraspecific variations & postglacial distribution)
 (6): 815 (mathematical simulation model for growth efficiency)
 (9): 1285 (methylmercury in N.B.)
 29(3): 275 (7 parasites of, Lake of the Woods, Ont.)
 (5): 525 (dressing & cooking effects on DDT residues in, L. Michigan)
 (9): 1283 (cadmium content, in New York State waters)
 (12): 1685 (mercury concentration re size, in a NW Ont. lake; corrections on J30(8): 1257)
- B 149: 18, 121 (Great Lakes, catches)
 151; 151(F) (smoking; canning)
 158 (physical & economic organization of N.W.T. fishery)
 173: 136 (full description, etc.)
 CCG 7: 16 (protein electropherogram)
 7: 33 (freezing rate; latent heat of freezing)
- T 33 (Great Slave L. fishery)
 176 (bibliography, 1929-69)
 180 (Lac la Martre, N.W.T.)
- S 946 (Great Slave L. fishery)
 980 (brining time before smoking)
 1015 (Great Slave L. sport fishery)
 1409 (gill blood pathways)
 1490 (history of Great Lakes fishery re lamprey invasion)
 1668 (mercury contamination, in lake by Pinchi Lake Mine, B.C.)
 1718 (organochlorine pesticide levels in Canadian commercially caught)
- A 14 (Great Bear L., N.W.T.)
 200 (mercury contamination, Pinchi L., B.C.)
 201 (mercury contamination, Great Lakes)
- Trout, Kern River (*Salmo aguabonito gilberti*) (*Salmo gairdneri gilberti*; *Salmo whitei*)
 J 28(7): 987 (meristic characters in Kern R. Basin, Calif., re systematics & evolution of western N America *Salmo*; also hybridization)
- Trout, Lake Garda (*Salmo carpio*) (Italy)
 J 25(4): 813 (anal fin re sexual dimorphism)
- Trout, Ohrid (*Salmo letnica*) (Yugoslavia-Albania)
 J 25(4): 813 (sexual dimorphism in anal fin)
- Trout, rainbow (*Salmo gairdneri*) (Kamloops trout) (for anadromous, see Trout, steelhead; see also Trout, Kern River; Trout, rainbow (Norway))
 J 22(3): 713 (oral immunization against "redmouth disease")
 (3): 740 (in Kananaskis R. system, Alta.)
 (3): 767 (& hybrids biochemical differentiation)
 (4): 891 (ketone bodies in blood of starved prespawning)
 (4): 955 (canning after holding partially frozen)
 23(1): 65, (4): 471, (6): 783, (9): 1461 (effect of physical conditioning on metabolism)
- (2): 207, (11): 1811 (muscle lecithinase activity, distribution)
 (4): 563 (myosin preparation & properties)
 (6): 929 (electropherograms of multiple hemoglobins)
 (7): 983 (light intensity re seeking overhead cover)
 (8): 1121 (oxygen re temperature in embryo development)
 (9): 1439 (blood volume determination)
 (10): 1487 (response to bacterial antigens)
 (10): 1537 (development rate & vertebral number)
 (12): 1957 (serum proteins and antibody production)
- 24(2): 273 (choline derivatives of muscle stored at -4 C)
 (2): 447 (urinary & genital systems anatomy)
 (2): 463 (*Mysis relicta* introduced into lakes as feed)
 (3): 695 (blood low-mobility proteins)
 (4): 849 (marking by incorporating antibiotic in vertebrae)
 (4): 887 (phenotypic characteristics in Great Lakes)
 (5): 939 (effect of partial scale & slime removal from live)
 (7): 1507 (thermal acclimation & temperature selection)
 (7): 1515 (starvation effect on selected temperature)
 (7): 1607 (muscle myogen amino acids)
 (8): 1701 (catecholamine & carbohydrate concentrations in, re physical disturbance of)
 (9): 1911 (as parasite host, Nfld.)
 (10): 2169 (blood serum proteins after various stresses)
 (11): 2267 (hematology of thermoacclimation)
 (12): 2539 (parasitism by Georgian Bay sea lampreys)
 (12): 2555 (muscle phospholipase A activity)
- 25(1): 25 (M.S. 222 anesthetic excretion in urine)
 (1): 71 (fluorimetric method for blood plasma cortisol)
 (1): 81 (limnology re mortality in 3 SW B.C. lakes)
 (1): 173 (hematological correlations)
 (2): 383 (infectious pancreatic necrosis; selection of virus-free stock)
 (3): 591 (growth effect on ⁶⁵Zn retention time)
 (3): 603 (adrenaline concentrations in, re physical disturbance of)
 (3): 611 (guanidine compounds effect on skin pigment of young)
 (5): 863 (cornea ultrastructure)
 (7): 1323 (lactate dehydrogenase comparison with brook & lake trouts)
 (7): 1465 (metopirone effect on pituitary-interrenal function)
 (7): 1521 (infection by *Aeromonas*)
 (8): 1539 (postmortem glycogen & starch degradation in muscle)
 (8): 1555 (starvation effects on blood plasma & muscle tissue)
 (8): 1651 (plasma protein-bound inorganic iodide)
 (8): 1689 (respiratory quotient)

- (9): 1983 (thermal stress physiological interaction among fingerlings)
- (10): 2011 (lake fertilization & predator control to increase yield of)
- (10): 2157 (dissolution of muscle homogenates by lysolecithin)
- (10): 2233 (fluorescent pigment tattoo marking of fingerlings)
- (11): 2519 (marking by high-frequency electric sparks)
- 26(1): 33 (lakeward migration, Lardeau R., B.C.)
- (1): 115 (metabolic effects of bacterial endotoxins)
- (2): 325 (S Alta. distribution)
- (2): 357 (adding canthaxanthin to feed to enhance flesh color)
- (2): 456 (upper lethal temperature uniformity in phenotypes from Great Lakes watershed streams)
- (2): 461 (factors affecting in vitro cultured ovary cells)
- (3): 687 (age & vision as bottom color selection factors)
- (6): 1439 (distribution in Canadian Missouri R. headwaters)
- (7): 1801 (digestive response to pellet diets)
- (7): 1857 (muscle lipolytic activity toward long-chain triglycerides)
- (7): 1939 (uptake of dieldrin pesticide by gills)
- (8): 2193 (Dylox organophosphate insecticide effect on larvae)
- (8): 2237 (cryoprotective agents re muscle lipid hydrolysis)
- (8): 2247, (9): 2511 (infectious pancreatic necrosis virus disease)
- (9): 2311 (disinfection against *Aeromonas liquefaciens* transmission)
- (12): 3209 (effect of feeding & DDT on activity of hepatic dehydrogenase)
- (12): 3233 (response to overhead light, re age & intensity)
- (12): 3259 (infectious pancreatic necrosis virus in hatchery-held young Atl.)
- (12): 3275 (night feeding in experimental stream channel)
- 27(1): 117 (DNA polymerase isolation from liver nuclei)
- (3): 613 (population vital statistics re extended spawning season in a L. Huron tributary)
- (5): 857 (coenzyme A & carnitine effects on fatty acid oxidation by tissue mitochondria)
- (5): 909 (anesthesia stress by M.S. 222 & benzocaine)
- (5): 955 (first case of whirling disease in W US)
- (5): 976 (size re swimming speed)
- (6): 1069 (gas exchange with varying blood oxygen capacity)
- (6): 1162 (some blood chemistry values)
- (8): 1389 (precipitating antibody against *Aeromonas salmonicida* in serums of albino)
- (9): 1563 (lactate dehydrogenases in liver & gills)
- (9): 1627 (sampling expired water for oxygen tension)
- (10): 1860 (blood circulation time estimation)
- (11): 1987 (meristic & lactate dehydrogenase genotype differences in stream populations below & above a waterfall)
- (11): 2109 (muscle protein electrophoretic patterns re brown trout patterns, E Canada)
- (12): 2356 (feeding, re abundance of drifting invertebrates in a mountain stream)
- 28(1): 104 (morphology of proteolytic pseudomonad from skin lesions)
- (4): 587 (factors influencing scope for activity & active & standard metabolism, for wild vs. hatchery)
- (5): 663; 29(12): 1788 (world distribution)
- (5): 771 (life history in Batchawana Bay, E Lake Superior)
- (6): 875 (Egtved virus antibody development in)
- (7): 947 (blood pathway effects on blood-pressure drop in gills)
- (7): 987 (meristic characters re systematics & evolution of western N America *Salmo*)
- (7): 1015 (lysosomal triglyceride lipase from lateral line tissue)
- (7): 1019 (role of social behavior in dispersal of introduced)
- (8): 1173 (glycoproteins constituents levels in blood sera)
- (8): 1181 (growth & fecundity after eyed-embryo exposure to X-rays)
- (9): 1253 (antibody production & immunity responses to columnaris disease)
- (10): 1609 (circulatory & ventilatory responses to gills artificial manipulation)
- (11): 1739 (susceptibility to columnaris disease)
- (11): 1801 (fingerlings temperature selection in vertical & horizontal gradients)
- (12): 1837 (lysolecithin solubilizing effect on tissues extractability)
- (12): 1847 (experience effect on predation by)
- (12): 1899 (stresses caused by formalin disinfection of young)
- (12): 1918 (abnormal body curvatures in Norwegian fry)
- 29(1): 61 (virucidal activity of 2 iodophor disinfectants)
- (2): 129 (recovery of planted, in selected Ont. lakes, re competitive other species)
- (2): 199 (necessary exposure times for elimination by antimycin & rotenone)
- (3): 237 (genetics & environment effects on length & weight variations)
- (3): 328 (pathological effects in formalin-treated)
- (7): 1005 (survival of hatchery-reared, re stamina)
- (7): 1071, 1082 (compact temperature-controlled recirculation unit for rearing)
- (8): 1193 (influence of hunger, prey density, & prey size on predation by)
- (9): 1283 (cadmium content, in New York State waters)
- (9): 1351 (olfactory bulb electrical responses to various organic stimuli, & effect of mercuric & copper ion on)
- (9): 1365 (smoking effect on muddy odor & taste)

- (10): 1463 (tissue hypoxia re acute zinc toxicity)
 (10): 1467 (tissue oxidation of lactate to CO₂)
 (11): 1615 (feed specialization by individuals; corrections on J 30(8): 1257)
- B 154: 103 (as Nfld. resource)
 173: 158 (full description, etc.)
 180: 128 (full description, etc., of B.C. anadromous)
- CJG 17 (keys to metazoan parasites, Nfld.)
 T 165; 165(F) (farming in central Canada)
 245 (mortality, from uncertain cause, Lardeau R., B.C.)
 261 (bibliography for Gulf of St. Lawrence)
 323 (possible effects of logging on, in 2 Vancouver Is. streams)
- S 893; 905; 965 (investigation and management research program, 1961-64)
- S 911 (suitability of barachois ponds for)
 943 (gonadal cell culture stimulation by serum)
 947 (Na, K, & Mg ion concentration and weight changes re rigor)
 962 (effect of salmon pituitary hormones on gonads of immature)
 978 (dorsal aortic blood pressures)
 1112 (testes tissues synthesis of nucleic acid derivatives)
 1132 (predation by birds, Crecy L., N.B.)
 1133 (movement of planted hatchery-reared, from Crecy L.)
 1140 (skin lesions caused by unidentified pseudomonad bacteria)
 1187 (hypophysectomy effect on pituitary-interrenal axis)
 1252 (avoidance reactions to zinc sulfate solutions)
 1258 (proteinase of proteolytic pseudomonad from skin lesions)
 1289 (inosinic & uridylic acids de novo biosynthesis in testes & liver)
 1335 (production & genetic factors in managed populations)
 1397 (avoidance reactions to representative pollutants)
 1401 (cyclic nucleotide phosphodiesterase in brain)
 1402 (glycogen phosphorylase in muscle)
 1418 (ribonucleic acid synthesis by liver nuclei)
 1443 (ovary cells infected with amphibian virus)
 1447 (liver transferase preparation)
 1458 (liver glycosyl transferase re liver glycogen structure)
 1484 (molecular structure of halogenated mononitrophenols re their toxicity to fingerlings vs. sea lamprey larvae)
 1509 (accelerated denaturation of muscle myosin in frozen solution)
 1525 (liver pyrimidine deoxynucleoside phosphorylase & deoxyribosyltransferase)
 1554 (respiratory pumps responses to hypoxia)
 1561 (sulfhydryl content of myosins re protein stability)
 1563; 1571 (polypeptides re multiple hemoglobins subunit structures & molecular basis)
 1668 (mercury contamination, B.C.)
- 1718 (organochlorine pesticide residues in Canadian commercially caught)
 A 30 (enzymic degradation of muscle glycogen & adenosine phosphate re quality)
 57(F) (establishment & management of rearing in artificial ponds in Canadian Maritimes)
 200 (mercury contamination)
- Trout, rainbow (Norway) (*Salmo irideus*) (see also Trout, rainbow (*Salmo gairdneri*))
 J 28(12): 1918 (abnormal body curvatures in inbred)
- Trout, Sevan (*Salmo ischchan*) (USSR)
 J 25(4): 813 (sexual dimorphism in anal fin)
- Trout, speckled (see Trout, brook; Splake)
- Trout, steelhead (*Salmo gairdneri*) (steelhead salmon, as anadromous rainbow trout; see also Trout, rainbow)
 J 22(1): 167 (mass transport theory for egg respiration)
 (1): 203 (biochemical systematics)
 (4): 1035 (behavior, ecology, & interaction, re young coho salmon)
 (5): 1175 (*Piscicola* freshwater leech parasitism)
 23(1): 85 (stomach contents in NE Pac. Ocean)
 (1): 101 (biochemical evidence in interspecies relationships with *Oncorhynchus*)
 (3): 365 (life history characteristics variability)
 (9): 1439 (blood volume determination)
 24(5): 917 (fecundity in an Oregon river)
 25(1): 33 (vs. cutthroat trout juvenile distribution in SW B.C. streams)
 (4): 690 (planting in L. Michigan tributaries)
 (5): 1085 (feed habits in NE Pac. Ocean)
 (7): 1453 (station permanence of juvenile)
 26(5): 1400; 28(12): 1915 (cryopreserved sperm fertilization effectiveness)
 (10): 2754 (age from scales, sex ratio, & size, Babine R., B.C.)
 (10): 2765 (branding young with tool cooled by liquid nitrogen)
 (11): 2823 (morphological & biochemical changes in parr-smolt transformation)
 29(1): 91 (habitat selection & spatial interaction with young chinook salmon in 2 Idaho streams)
 (2): 167 (gill enzyme activity changes re parr-smolt transformation)
 (12): 1780 (some physiological consequences of handling stress)
- B 173: 159 (full description, etc.)
 180: 128 (full description, etc., B.C.)
 CNG 91 (age & size in Vancouver Is. stream-anglers' catches)
 92 (B.C. research needs for intensive management)
- CNS 15; 20; 21; 22; 23 (stomach contents, NE Pac. Ocean, 1956-64)
- T 24; 331 (enumeration & sampling data, Babine R. counting fence, 1961-71)
- S 897 (mononucleotide synthesis by milt extract)
 925; 926 (INPFC Canadian research reports, 1962, 1963)

- 1011; 1036 (milt enzyme for nucleoside phosphate synthesis)
 1245 (protamine biosynthesis during spermatogenesis)
 1297 (enzymic degradation of egg capsule during hatching)
 1305 (marine microorganisms associated with feed of young)
 A 29 (weight changes during rigor while held in refrigerated sea water)
 86; 204 (INPFC oceanic research results)
 259 (hereditary & environmental factors affecting populations)
- Trout, "tiger" (brook × brown trout hybrid)
 J 25(7): 1323 (muscle lactate dehydrogenase electrophoretic pattern)
- Trout, Yellowstone cutthroat (*Salmo clarki lewisi*) (see also Trout, cutthroat)
 J 22(1): 203 (biochemical systematics)
 23(10): 1475 (open-water movements)
- Trout Brook (see Miramichi River, N.B.)
- Trout Lake (see Lardeau River, B.C.)
- Trout-perch (*Percopsis omiscomaycus*)
 J 22(3): 744 (in Bow R. system, Alta.)
 (4): 969 (Algonquin Park, Ont., distribution)
 25(2): 255 (population estimation by stain marking)
 26(2): 325 (S Alta. distribution)
 (7): 1927 (purine source of skin silvering)
 27(4): 677 (7 trace elements in whole fish, Great Lakes)
 (6): 1165 (unaffected by sudden seiche of cold water, Georgian Bay, Ont.)
 (10): 1842 (taken in L. Erie smelt surveys, 1962-63)
 29(3): 275 (11 parasites of, Lake of the Woods, Ont.)
 (5): 545 (new distribution records in E Ont. & W Que., re postglacial dispersal)
 B 173: 290 (full description, etc., of NW Canada & Alaska)
 A 14 (Great Bear L., N.W.T.)
- Trouts (in general) (Salmonidae: *Salmo*)
 J 26(11): 2987 (parasitization by *Salmincola* copepods)
 28(7): 987 (systematics & evolution of western N America *Salmo*)
 (12): 1877 (DDT accumulation & persistence in)
 29(1): 61 (iodophor disinfectants against viral infections)
 (6): most papers of this special issue (re salmonid communities of N American & European oligotrophic lakes)
 B 173: 43 (family key), 129 (definition), 130, 133 (key to NW America species), 158 (full description of rainbow or steelhead trout)
 CHN 36 (determination of total carotenoid pigments in flesh)
 S 1334 (limitations on stream populations production)
- 1335 (production & genetic factors in managed populations)
 1502 (automatic wet-feed dispenser for fry)
 1658 (new nematode genus & species from Japanese *Salvelinus leucomaenis*)
- Truscott, Beryl
 J 23(4): 615 (1 α -hydroxycorticosterone)
 24(1): 205 (1 α -hydroxycorticosterone)
 25(2): 363 (Atl. salmon sperm subzero preservation)
 (2): 431 (teleost biosynthesis)
 26(12): 3254 (improved extender for freezing Atl. salmon spermatozoa)
 27(12): 2339 (rapid method for partial hypophysectomy in skate)
 T 93 (freezing Atl. salmon sperm)
 S 1114 (skate plasma testosterone)
 1121 (steroid destruction by thin-layer chromatography)
 1141 (*Raja* 1 α -hydroxycorticosterone)
 1167; 1168; 1325 (1 α -hydroxycorticosterone biosynthesis in vivo & in vitro)
 1205 (1 α -hydroxycorticosterone activity)
 1244 (steroid 1 α -hydroxylation in elasmobranchs)
 1313 (cartilaginous fish body fluids)
 1404 (steroidogenesis in fish)
- Trussell, Paul Chandos
 J 24(2): 261 (marine-borer attack on wooden surfaces)
- Trussell, Richard Paul
 J 29(10): 1505 (% un-ionized ammonia in aqueous ammonia solutions re pH & temperature)
- Trust, Trevor John
 J 28(8): 1185 (commercial fish diet bacterial counts)
 29(4): 429 (microbial burden of 25 aquarium fish feeds; correction on J 30(8): 1257)
 (5): 567 (vertical-flow-tray hatchery coho & chum salmon eggs bacteria)
 (10): 1425 (antibacterial formulations for aquarium freshwater fishes inadequate for inhibiting potential pathogens)
- Try, Kenneth
 S 1266 (distereoisomers of phytanic acid)
- Trypanosoma rajae* (see Sarcomastigophora)
- Tsolum River, Vancouver Is., B.C.
 J 29(8): 1151 (survival to adult stage of pink salmon from revised hatchery method vs. natural propagation)
- Tsuyuki, Hiroshi
 J 22(1): 203 (muscle myogens of vertebrates)
 (1): 215 (*Oncorhynchus* species identification)
 (3): 767 (salmonid hybrids)
 23(1): 101 (*Oncorhynchus* muscle myogens)
 (6): 929 (micro starch gel electrophoresis)
 (10): 1599 (muscle myogen patterns)
 (11): 1663 (comparative electropherograms)

- 24(2): 299 (Catostomidae electropherograms)
 (6): 1269 (lamprey electropherograms)
 (9): 1945 (*Sebastes reedi* in NE Pac.; corrections on J 25(8): 1760)
- 25(7): 1317 (hybrid fish protein)
 (11): 2477 (protein electropherograms re rockfish systematics)
- 26(9): 2351 (halibut transferrin systems)
 (10): 2633 (sablefish muscle protein polymorphism)
- 27(7): 1325 (molecular species in salmonid hemoglobins)
 (9): 1563 (rainbow trout lactate dehydrogenase systems)
 (11): 1987 (genotype differences in stream populations of rainbow trout)
 (12): 2167 (zone electrophoretic studies on proteins of *Tilapia mossambica* & *T. hornorum*)
 (12): 2233 (analyses of 3 N Pac. scorpaenids)
- 28(10): 1621 (taxonomy, distribution, & biology of northern rockfish)
 (11): 1745 (biochemical & cytological study of suckers)
- 29(5): 606 (*Sebastes caenaeamicus* & *S. borealis* synonymy, & range extension record)
 (8): 1173 (morphology & myogen of 2 darter species re hybridization)
- S 962 (pituitary hormones of salmon)
 1146 (insect oxidase-peroxidase system)
 1204 (scombroid fishes serum transferrin polymorphism)
 1563 (trout hemoglobins)
 1571 (molecular basis for multiplicity of Pac. salmon hemoglobins)
- Tube-building**
 J 28(10): 1433 (re feeding motions of mouth in a terebellid polychaete)
- Tuberculosis**
 B 162: 92 (of sockeye salmon)
- Tubeshoulder, shining (*Sagamichthys abei*)**
 J 24(10): 2101 (first record off B.C.)
 B 180: 173 (full description, etc., B.C.)
 T 11 (taken in midwater trawling off Queen Charlotte Is.)
- Tube-snout (*Aulorhynchus flavidus*)**
 J 26(9): 2319 (parasites, B.C.)
 28(3): 427 (phylogeny, diagnostic features, & range)
 B 180: 273 (full description, etc., B.C.)
 T 62 (in experimental B.C. groundfish trawling)
- Tube-snouts**
 J 28(3): 427 (osteology re phylogenetic relations to sticklebacks; *Aulichthys japonicus* diagnostic characters & range)
- Tubeworms (*Nereis*, etc.) (see Polychaeta)**
- Tubiash, Haskell Solomon**
- J 24(6): 1413 (freeze-drying shellfish for solids determination)
- Tubifex (see Oligochaeta)**
- Tubificidae (see also Oligochaeta)**
 J 28(11): 1683 (associations in Bay of Quinte & L. Ontario)
 S 1543 (of Great Lakes; key to)
- Tubularoidea**
 J 28(10): 1595 (proposed inclusion of *Veleva* chondrophore in)
- Tubulovesicula lindbergi (see Trematoda)**
- Tucker, Harold Herbert**
 J 23(1): 1, (8): 1187, (10): 1581 (blood oxygen dissociation curves of brook trout; anadromous Atl. salmon; landlocked Atl. salmon)
 (10): 1575 (hemolysis effect hemoglobin oxygen affinity in anadromous & landlocked Atl. salmon)
- Tufts, Dennis Fitzpatrick**
 J 27(11): 2095 (hyperplasia in an estuarine bryozoan)
- Tullibee (see Cisco)**
- Tully, Christine Margaret**
 J 26(4): 1063 (monogean gill parasites)
- Tully, John Patrick**
 S 917 (oceanographic region in the North Pacific)
 1014 (estimating depth of the thermocline)
 1032 (time series in oceanography)
 A 52 (weather of the sea)
- Tumors (see also Disease)**
 J 24(3): 679 (on freshwater mussel foot)
 (9): 2007 (on snake pricklyback snout)
 28(1): 112 (in cutthroat trout re leukemic condition)
 (3): 448 (subcutaneous fibroma in lake trout)
 (9): 1241 (incidence and comparisons of, in Pleuronectidae of Bellingham Bay, Wash.)
 T 62 (on Pac. cod gill cavity)
 185 (bibliography of Canada fishes having)
- Tuna, bigeye (*Thunnus obesus*)**
 T 193 (Atl. tagging, 1961-69)
 S 1409 (gill blood pathways)
 A 108 (1966 Canadian, ICNAF studies: weights caught by sports fishermen)
 182 (ICNAF Canadian 1969 research summary)
- Tuna, bluefin (*Thunnus thynnus*) (*T. saliens*)**
 J 24(9): 1991 (transatlantic migrations of young)
 28(5): 995 (blood pathway effects on blood-pressure drop in gills)
 (7): 1053 (genic polymorphism of blood & tissues tetrazolium oxidase)
 B 154: 95 (as Nfld. resource)

- 160 (brine freezing at sea)
 180: 379 (full description, etc., B.C.)
 T 193 (Atl. tagging & returns, 1961-69)
 261 (bibliography for Gulf of St. Lawrence)
 272 (halogenated hydrocarbon residues detected in)
- MSP 14 (popular description (English & French))
 S 1024 (ICNAF Canadian research report)
 1204 (population units study by serum transferrin polymorphism)
 1367 (gill lamellae fusion variations)
 1378 (gill area re body size & weight)
 1409 (gill blood pathways)
 1696 (chlorinated pesticide contamination in muscle, Gulf of Maine & Bay of Fundy)
- A 43; 108; 182; 241 (ICNAF Canadian research summaries)
 67 (description, distribution, behavior, life history, & fishery, Canadian Atl.)
 90; 103 (fishery trend along N America Pac. coast)
 108 (1966 Canadian ICNAF studies: weight of tagged; weights caught by sports fishermen)
- Tuna, little (*see* Tunny, little)
- Tuna, skipjack (*Euthynnus (Katsuwonus) pelamis*) (skipjack)
 J 27(9): 1637 (hydraulic ram effect in gill ventilation)
 (11): 2071 (diel migration tracked ultrasonically)
 28(7): 947 (blood pathway effects on blood-pressure drop in gills)
 B 160 (brine freezing at sea)
 180: 371 (full description, etc., B.C.)
 T 193 (Atl. tagging & returns, 1961-69)
 272 (halogenated hydrocarbon residues detected in)
 S 1024 (ICNAF Canadian research report)
 1204 (population units study by serum transferrin polymorphism)
 1361 (re gill lamellar fusion)
 1378 (gill area re body size & weight)
 1409 (gill blood pathways)
 A 90; 103 (fishery trend along N America Pac. coast)
 182 (ICNAF Canadian 1969 research summary)
- Tuna, yellowfin (*Thunnus albacares*)
 J 24(3): 683 (feed of, in Barbados waters)
 28(7): 947 (blood pathway effects on blood-pressure drop in gills)
 T 193 (Atl. tagging & returns, 1961-69)
 272 (halogenated hydrocarbon residues detected in)
 S 1204 (population units study by serum transferrin polymorphism)
 1378 (gill area re body size & weight)
 A 90; 103 (fishery trend along N America Pac. coast)
 108 (1966 Canadian ICNAF studies: weights caught by sports fishermen)
 182 (ICNAF Canadian 1969 research summary)
- Tunas (general, or species not stated)
- B 150 ("greening" of flesh during precooking before canning)
 160 (brine-spray freezing at sea)
 S 935 (chilling and freezing on board vessels)
 956 (Canadian research in Caribbean Sea)
 1660 (body temperature re environment)
 1668 (mercury contamination, Canadian Atl. coast)
- Tunicata (*see also* Salpidae)
 J 25(2): 267 (occurrence & retention of thetin derivative from feed)
 26(8): 2219 (*Oikopleura* in young Pac. salmon feed)
 B 176: 82, 178, 225 (synopsis of Canadian zooplanktonic)
 T 55: 139 (identification of B.C.)
 225 (associated with Bay of Fundy scallop beds)
 266 (Frobisher Bay, Baffin Is., N.W.T.)
- Tunnel, water
 T 195 (design, for fish respiration rate, stamina, also for calibration tests of equipment)
- Tunny, little (*Euthynnus alletteratus*) (little tuna)
 T 193 (Atl. tagging, 1961-69)
- Turbellaria (flatworms) (*see also* Parasites)
 J 24(11): 2467 (measuring organic feed retained by *Dugesia dorotocephala*)
 25(11): 2521 (*Urastoma cyprinae* gillworm association with Atl. oyster)
 26(2): 221 (*D. lugubris* found in St. Lawrence R.; triclads distribution in E Ont.)
 (10): 2669 (*Syndesmis franciscana* parasitic in sea urchin; & nonsynonymy with *S. antillarum*)
 28(1): 7 (chemical composition & food reserves seasonal changes in freshwater triclad *D. tigrina*)
 (6): 849 (sampling from shallow stream bed)
 (8): 1198 (supernumerary copulatory organs in *D. tigrina*)
 (11): 1683 (associations in Bay of Quinte, Ont.)
 T 25; 35; 59; 60; 73 (in Strait of Georgia benthos biomass)
 43 (on Irish moss)
 185 (bibliography re Canada fishes parasitization by)
 S 1532 (*Polycelis coronata* of a high Colorado mountain creek)
- Turbidity (*see also* Sediments; Transparency)
 J 23(2): 281 (Long Point Bay, L. Erie, Ont.)
 25(9): 2001(F) (of habitat re walleye & sauger retinal structure)
 B 167: 259 (determination in sea water)
 T 300 (changes in Saanich Inlet, B.C., May-June 1968)
 S 1504 (continuous nephelometric measurement of sea water)
- Turbot (Atlantic) (*see* Turbot, diamond; Turbot, Greenland; Turbot, hornyhead)
- Turbot (Pacific) (*see* Flounder, arrowtooth)

- Turbot, diamond (*Hypsopsetta guttulata*)
T 246 (bibliography)
- Turbot, Greenland (*Reinhardtius hippoglossoides*) (Greenland halibut)
J 23(2): 309 (first B.C. coastal record)
24(12): 2563 (composition of low-iodine-value fatty acids)
25(12): 2721 (first record in Bay of Fundy)
27(9): 1549 (vertebrae vs. fin rays re meristic characteristics, NW Atl.)
(10): 1880 (fecundity, Nfld. & Labrador area)
28(7): 935 (regular component of Passamaquoddy Bay fish communities, N.B., & length frequencies)
(9): 1285 (methylmercury in, N.S. banks)
B 154: 89, 154 (as Nfld. resource)
180: 638 (full description, etc., B.C.)
CHN 30 (discolored flesh problem in gillnetted)
CJG 13: 27; 14: 13, 44; 15: 36; 16 (Nfld. investigations, landings, & length distributions)
T 179 (catches, length, & age composition in Nfld. area)
192 (vertebral & other meristic characteristics)
246 (bibliography, W Arctic coast)
261 (bibliography, Gulf of St. Lawrence)
274 (distribution re depth & temperature in Nfld.-Labrador area)
S 1053 (mass mortality re low sea temperatures)
1383 (length-weight ratios of commercial)
A 43; 108; 119; 152; 181; 182 (ICNAF Canadian research summaries; catches; distribution)
190 (general biology)
194 (Nfld. fishery)
- Turbot, hornyhead (*Pleuronichthys verticalis*)
T 246 (bibliography)
- Turbulence (see also Currents; Tides)
S 1669 (re local phytoplankton abundance variation)
- Turkey
S 1028; 1080 (fatty acids positional distribution in pygostyle fat triglycerides)
- Turner, Christopher Edward
J 25(9): 1993 (3rd-year pink salmon)
T 335 (computer analysis of ultrasonic tracking of sockeye salmon in Babine L., B.C.)
A 204 (INPFC Canadian report on Pac. salmon. & steelhead trout research, 1965)
- Turner, Gary Edward
J 27(2): 395 (smallmouth bass reproduction & growth)
- Tursiops truncatus* (see Porpoise, bottlenose)
- Turtle, leatherback (*Dermochelys coriacea coriacea*)
J 25(8): 1561 (influence of jellyfish feed on lipid fatty acids)
S 945 (dermal oil fatty acids)
- 1226 (fatty acids positional distribution in dermal fat triglycerides)
1425 (*trans*-6-hexadecenoic acid in depot fat)
1625 (depot fat fatty acids)
1721 (fatty acids distribution in tissues & organs)
- Turtle, loggerhead (*Caretta caretta caretta*)
S 1425 (*trans*-6-hexadecenoic acid in depot fat)
1625 (depot fat fatty acids)
- Turtle, painted (*Chrysemys picta*)
J 25(8): 1651 (plasma protein-bound inorganic iodide)
- Turtle, ridley (*Lepidochelys olivacea kempii*)
S 1425 (*trans*-6-hexadecenoic acid in depot fat)
1625 (depot fat fatty acids)
- Turtles, freshwater
S 1625 (depot fat fatty acids of male & female of 6 species)
- Tusks
S 1078 (walrus age determination from)
A 110 (very old walrus tusk recovered from sea off N.S.)
- Twines
A 129 (synthetic fibers used for fishing)
- Tyler, Albert Vincent
J 26(7): 1943 (anatomy of winter flounder ovary)
27(7): 1177 (gastric rates in Atl. cod; correction on J 28(8): 1219)
28(7): 935 (fish community components)
(11): 1727 (movement of flounder into intertidal zone)
29(7): 997 (food resources division among northern marine demersal fishes)
T 102: 23 (submersible operations observations)
116 (observations on *Clymenella torquata*)
121 (analysis of feeding heterogeneities)
164 (marine fishes of Canadian Atl. region)
288 (monthly changes in demersal fishes stomach contents, Passamaquoddy Bay, N.B.)

U

Uca pugilator (see Crab, fiddler)

Ulcer (see Pathology)

Ulothrix (see Chlorophyta)

Ultrasonics

- J 25(3): 605 (backscatter effect as quality test for fresh & frozen flesh)
26(8): 2173 (tracking method for displaced white bass)
27(2): 271 (detection of parasite distribution in whitefish flesh)
(4): 715 (tracking electrically tagged homing cutthroat trout, Yellowstone L.)

- (6): 1147 (tracking electrically tagged large crustaceans)
 (11): 2071 (tracking electrically tagged skipjack tuna diel movements)
 28(8): 1167 (tracking net-avoidance by fish)
 (8): 1217 (re distinguishing thawed frozen fish from fresh fish)
 29(7): 1025 (tracking B.C. coastal adult sockeye salmon migratory movements)
 (10): 1431 (yearling sockeye migration followed by time-lapse photography of sonar observations)
 (10): 1445 (adult American shad migration from sea to river followed by ultrasonic transmitter tags)
 T 335 (transmitter in stomachs, for tracking homing sockeye salmon)
 S 1269 (high frequency for parasite detection in whitefish)
 1599 (possible use by blue whale to echolocate its stenophagous diet)
 1675 (review of uses for tracking fishes re orientation & homing)
 A 220 (bio-acoustic program during C.S.S. *Hudson* oceanographic survey circumnavigating N & S America)
 239 (list of research groups, projects, & organisms re underwater telemetry)
 243 (for inspection of parasitization in whole fish)
- Ultraviolet radiation (*see also* Fluorescence; Radiation)
 T 120 (absorbance of Bedford Basin waters, N.S.)
- Ulva lactuca* (*see* Chlorophyta)
- Ulvaria subbifurcata* (*see* Shanny, radiated)
- Umbra limi* (*see* Mudminnow, central)
- Umminger, Bruce Lynn
 J 27(2): 404 (serum protein components in killifish)
- Underwater observation (*see* Periscope; Photography, underwater; Submersibles)
- Ungava and Ungava Bay, Que.
 J 22(1): 69 (decapod *Argis dentata* larvae and megalopa)
 25(4): 657 (age & growth of round whitefish; correction on J26(8): 2263)
- Unio pictorium*; *U. tumidus* (*see* Mussels, freshwater)
- Union of Soviet Socialist Republics (USSR)
 J 29(4): 363 (review of feed & feeding habits of freshwater invertebrates)
 CNG 79 (recent developments in groundfish fishery off Canadian & US Pac. coast)
 T 210 (observation of trawling catches off B.C. & Washington coasts, by FRB groundfish surveys)
 246 (bibliography of trawl fishery off N America Pac. coast)
 302 (flatfish trawling off B.C. coast)
- 326 (Pac. ocean perch catches off B.C., Washington, & Oregon)
 S 1642 (haddock catches, E Scotian Shelf)
 A 90; 103 (extension of fisheries into NE Pac.)
- United States of America (*see also* certain names of States, bodies of water, and localities)
 T 246 (bibliography of trawl fishery off N America Pac. coast)
- Unloading (of fish from vessels)
 T 69; 162 (by mechanical means)
 S 1006 (by air-lift pump, etc.)
 A 34 (same as S 1006 above)
 203 (by pumping)
- Unsaponifiable matter (*see* Oils and fats; *also* Hydrocarbons; Lipids; Sterols)
- Upogebia pugettensis* (*see* Shrimp, ghost)
- Upwelling (*see also* Oceanography)
 J 29(9): 1269 (re daily primary production off Oregon coast)
- Uranium derivatives
 J 27(3): 425 (ore milling wastes effects on physicochemical limnology of 2 affected vs. 1 unaffected Ont. lake)
 (4): 677 (in whole fish or livers of 13 Great Lakes species)
 28(5): 786 (in dressed Canadian fishes from industrial area lakes)
- Urastoma cyprinae* (*see* Turbellaria)
- Urclins (*see* Echinodermata; Heart urchins; Sea urchins)
- Urea (*see also* Urinary system; Urine)
 J 25(12): 2549 (interrenalectomy effect on skate blood level of)
 27(6): 1162 (nitrogen content of rainbow trout blood)
 28(4): 606 (juvenile coho salmon blood urea nitrogen content)
 S 1198 (re *Hemiselmis virescens* cryptomonad phototrophic growth)
 1453 (effect on Atl. cod muscle cathepsin activity determination)
- Urechinus loveni* (sea urchin)
 J 24(6): 1385 (off Oregon coast)
- Uria aalgae* (*see* Guillemot, common)
- Uric acid
 S 1231 (uricolytic enzymes in Atl. cod sperm)
- Uridylic acid
 S 1289 (biosynthesis in Pac. salmon & rainbow trout)
- Urinary system and tract (*see also* Excretion; Kidney; Urea; Urine)

- J 24(2): 447 (anatomy, in trouts)
26(3): 639 (American eel renal physiology)
- Urine (*see also* Excretion; Urea; Urinary system)
S 1624 (sorbitol & mannitol in, from child with Alports syndrome)
- Urochordata (*see also* Tunicata)
B 176: 82, 178, 225 (synopsis of Canadian zooplanktonic)
- Urocleidius adspetus* (*see* Trematoda)
- Uronema* (*see* Ciliata)
- Urophycis chesteri* (*see* Hake, longfin)
chuss (*see* Hake, red)
regius (*see* Hake, spotted)
tenuis (*see* Hake, white)
- Urosalpinx cinerea* (*see* Drill, oyster)
- Ursin, Erik
J 24(11): 2355 (mathematical model of fish growth)
- Ursus arctos* (*see* Bear, polar)
- Uschakov, P. V.
J 28(10): 1403 (amphipacific polychaetes distribution)
- USSR (*see* Union of Soviet Socialistic Republics)
- Uthe, John Frederick
J 22(4): 955 (partial freezing of salmon)
23(10): 1599 (muscle myogen patterns)
(11): 1663 (comparative electropherograms)
24(2): 299 (Catostomidae electropherograms)
(6): 1269 (lamprey electropherograms)
27(4): 805 (mercury determination in fish samples)
(5): 923 (walleye polymorphism)
28(5): 786 (heavy-metal contamination of freshwater fish)
(8): 1203 (obtaining muscle from live fish)
29(11): 1519 (biochemistry of methylmercury-contaminated northern pike; correction on J 30(8): 1257)
- CCG 7 (method of identifying species of fish)
S 1614 (semiautomated mercury assay of animal tissue)
1684 (extraction of organochlorine pesticides from water by absorbents)
1685 (determination of total & organic mercury levels in fish tissue)
1705 (check sample study of determining mercury in fish tissues)
1718 (organochlorine pesticide residues in commercial fish in Canada, 1970)
1728 (rapid semimicro determination of methylmercury in fish tissue)
A 178 (determination of residual mercury in animal tissue)
- Utilizations of fishes (*see also* fish processing methods and types of fish products)
B 155 (Canadian Atl. coast marine fishes)
173 (most freshwater species of NW Canada & Alaska)
180 (Canadian Pac. coast marine fishes)
- Utter, Fred Madison
J 26(1): 15 (isozymes in sockeye salmon sera)
(12): 3268 (Pac. hake transferrin variants)
27(5): 943 (L- α -glycerophosphate dehydrogenase electrophoretic variants)
(12): 2371 (coho salmon transferrin polymorphism)
- Uyeno, Fukuzo
J 23(11): 1635 (nutrients in an estuarine area; correction on J25(8): 1759)

V

Vaccination

- J 28(9): 1253 (of rainbow trout against columnaris disease)
S 1635 (sockeye salmon response to, re salmonid kidney disease)

Vaisey, Florence Marion

- J 24(1): 9 (whitefish preservation with radiation)
27(7): 1201 (whitefish smoked with different woods)
S 1632 (training for assessing the taste of food)
1698 (appraising smoked whitefish with sensory panels)

Valentine, James William

- S 1587 (Pleistocene paleoecology & biostratigraphy, Santa Barbara Is., California)

Vallentyne, John Reuben Way

- J 24(11): 2473 (simplified lake model)
27(8): 1493 (phosphate removal in lakes Erie & Ontario)
28(2): 123 (background of FRB Experimental Lakes, NW Ont.)
S 1434 (sedimentary organic matter and paleolimnology)
1440 (amino acids pyrolysis in shells)
1597 (limnology of Hutchinson L., Ont.)
1719 (population growth effects on man's freshwater supplies & their pollution)
A 216 (phosphorus & control of eutrophication)
233 (ecology & our pollution problem)

Van Cleve, Richard

- J 23(11): 1789 (obituary of W. F. Thompson)

Van Olst, Jon Charles

- J 27(7): 1225 (fish schools organization)

van Overbeeke, Abraham Pieter

- J 28(4): 477 (gonadal hormones effects on sockeye salmon organs)
(4): 485 (effects of hormones on sockeye)

- 29(3): 303 (hormones concentration in adult migratory sockeye serum & pituitary gland)
- Van Vliet, William Hauk
J 25(12): 2733 (first records of sculpins from Ottawa Valley)
- Vanadium derivatives
J 25(4): 639 (catalyzing marine flesh oxidative rancidity)
27(4): 701 (ion effects on marine muscles extractable protein)
S 1529 (distribution in L. Ontario)
- Vancouver Island, B.C. (*see also* Fisheries; Georgia, Strait of; Juan de Fuca Strait; Oceanography, Northeast Pacific coastal; Surveys; Trawling; *also* names of localities and bodies of water)
J 24(11): 2207 (oceanography off W coast)
29(12): 1764 (aerial count of sea lions wintering along W coast)
(12): 1792 (Pac. hake feed on bank offshore SW)
CNG 86 (1968 coastal herring spawn deposition)
91 (steelhead trout age & size in stream-anglers' catches)
B 169; 178 (oyster bed and raft culture)
T 232 (razor clam breeding & growth, Long Beach)
- Vanstone, William Edward
J 22(1): 203 (muscle myogens of vertebrates)
(1): 215 (*Oncorhynchus* species identification)
23(7): 1095 (pigment in Pac. salmon skin)
(9): 1353 (composition of young pink salmon)
25(11): 2403 (Pac. salmon metamorphosis)
26(5): 1185 (salmon skin purines & pteridines)
27(2): 371 (salmon growth & composition)
28(8): 1173 (Pac. salmon glycoprotein constituents)
(12): 1853 (proteins in salmon eggs; correction on J 29(8): 1241)
S 1521 (egg proteins of Pac. salmon)
1584 (soluble fractions of Pac. salmon eggs)
- Varga, Sandor
J 26(9): 2523 (landed scallop meat quality)
- Vas deferens (*see* Testes)
- Vascular system (*see also* Blood; Heart)
J 29(1): 109 (infrared photography of fish gills vascularization)
S 934 (radiography of Pac. salmon cardiovascular system)
- Vättern, Lake (Sweden)
J 29(6): 629, 807, 937, 975 (various factors affecting salmonid communities)
- Vaucheria* (*see* Xanthophyceae)
- Vegetables (*see also* Oils, seed)
S 1253 (subunit amino acid composition re viruses structure)
- Vegetation (*see* Flora, aquatic; Flora, terrestrial)
- Veella* (*see also* Hydraszoa)
J 28(10): 1595 (proposed inclusion in superfamily Tubularoidea)
- Velsen, Frank Peter John
J 24(5): 1173 (insecticide effect on coho salmon)
25(3): 585 (fish egg incubator)
28(10): 1545 (salinity & temperature re Pac. herring)
- Venerupis japonica* (*see* Clam, Manila)
- Venno, Paul Maurice William
J 25(6): 1169 (sampling larval herring with buoyed & anchored nets)
- Venom
J 25(10): 2157 (snake: effect on solubilization of fish muscle homogenate)
- Ventilation (*see* Gills; Oxygen, dissolved; Respiration; Stress)
- Venus mercenaria* (*see* Quahaug, northern)
- Vermiliopsis* (*see* *Metavermlia*)
- Vernberg, Winona Bortz
J 29(10): 1491 (temperature-salinity stress & mercury uptake in fiddler crab)
- Vernon, Edwin Herman
S 952 (odd-year pink salmon in the IPSFC convention area)
- Vertebrae
J 22(1): 237 (abnormalities in thorny skate)
23(10): 1537 (number re salmonids development rate)
(11): 1815 (number in yellow perch re lakes salinity)
24(4): 849 (incorporation of antibiotic for marking salmon)
26(12): 3133 (count averages of cod off SW Nfld.)
27(9): 1549 (number re NW Atl. Greenland turbot meristic characteristics)
28(4): 465 (counts of N America lake char re postglacial distribution)
(4): 553 (counts of spring vs. autumn spawning SW Nfld. herring)
(7): 987 (counts re systematics & evolution of western N America *Salmo* species & subspecies)
(9): 1235 (count re egg size of medaka)
T 94-97 (counts, Nfld. herring, 1964-65 to 1967-68)
192 (number data for Greenland turbot)
S 1255 (number in NW Atl. capelin)
A 192 (number, Atl. & Pac. capelin)
208 (Bay of Fundy herring)
- Verticordia* (*Haliris*) *spinosa* (septibranchid bivalve)
J 26(8): 2230 (new NE Pac. species)
- Verticordia* (*Trigonalina*) *hancocki* (septibranchid bivalve)

- J 26(8): 2230 (new NE Pac. species)
- Vervoort, Willem
S 1010 (rediscovery of *Parabomolochus cuneatus* cyclo-
poid copepod)
- Vessels; Boats; Ships (*see also* Fishery; Surveys; Trawling;
etc.)
J 23(4): 611 (design of side-trawling gear for FRB re-
search vessel *G. B. Reed*)
(7): 1083 (deck sampling of catches on research
vessel)
CSG 52 (antifouling coatings for)
T 246 (bibliography of operations re N America Pac.
coast research trawling)
S 935 (preservation of catch aboard fishing boats)
946 (types of boats in Great Slave L. fishing fleet,
1945-63)
1086 (launching of FRB research vessel *E. E. Prince*)
A 88 (same as CSG 52 above)
138 (types of boats for queen crab fishing)
220 (Canadian research vessel *Hudson* circumnav-
igation of N & S America)
- Viability (*see* Eggs; Reproduction; Sperm)
- Vibriosis
J 28(4): 517 (first records in Pac. salmon cultured in
Canada; morphology & taxonomy of causative
bacterium *Vibrio anguillarum*; correction on J
28(8): 1219)
29(3): 333 (*Vibrio* in bluefish intestine)
(9): 1359 (effect of 2 iodophor disinfectants on *V.*
anguillarum)
(11): 1633 (*V. parahemolyticus* incidence in shellfish
from 8 Canadian Atl. coast areas)
A 203 (*V. parahemolyticus* re fish products toxicity)
- Victoria harbour, B.C.
S 1341 (eutrophication of the Gorge & Portage Inlet)
1407 (wastes disposal re physical environment)
A 187; 242 (sewage re pollution)
- Victoria Island, Canadian Arctic (*see* Keyhole Lake)
- Vinciguerria lucetia* (*see* Lightfishes)
- Vine, Richard N.
J 27(1): 185 (device for measuring submarine light
energy)
- Viperfish (*Chauliodus sloani*)
J 26(10): 2691 (new Canadian Atl. records; diurnal
depth distribution)
T 103 (taken in Atl. otter trawl survey, 1967)
- Viperfish, fanged (*see* Viperfish, Pacific)
- Viperfish, Pacific (*Chauliodus macouni*) (fanged viperfish)
J 25(3): 457 (in N B.C. coast mid water trawl catches)
B 180: 171 (full description, etc., B.C.)
T 11; 81 (in experimental B.C. trawling)
- Virulence (*see* Disease)
- Viruses (*see also* Disease)
J 25(2): 383 (pancreatic necrosis in young trout; virus-
free stock)
26(2): 461 (amphibian, affecting rainbow trout ovary
cells)
(6): 1459, (8): 2247, (9): 2511, (12): 3259 (re in-
fectious pancreatic necrosis, in trouts & Atl.
salmon)
27(2): 265, (7): 1285, (8): 1385 (cause of infectious
hematopoietic necrosis disease in Pac. salmon:
control & morphology)
28(6): 875 (Egved virus antibody development in ar-
tificially infected rainbow trout)
(7): 1064 (infectious pancreatic necrosis, in brook
trout feces & organs)
(9): 1350 (infectious pancreatic necrosis, in brook
trout in 2 Ont. hatcheries)
(11): 1809 (new records of lymphocystic viral infec-
tion in gobiid & diodontid fishes, E Pac. coast)
29(1): 61 (effectiveness of 2 iodophor disinfectants
against 2 salmonid necroses & septicemia
viruses)
(2): 149 (histopathology in tissues re channel catfish
hemorrhagic virus disease)
T 185 (bibliography re Canada fishes infection by)
MSP 16: 46 (detection procedure for certain virus patho-
gens of salmonids)
S 1253 (structure of plant viruses re their subunit
amino acid composition)
1443 (rainbow trout ovary cells infection with
amphibian)
1654 (soft-shell clam aqueous extract protects fat-
head minnow against amphibian virus
infection)
- Viscera (*see also* organs of)
J 22(1): 131 (lipids and component fatty acids of squid)
25(9): 1797 (die/drin in fat of goldfish, after aldrin
ingestion)
T 198 (lipids, fatty acids, & tocopherol in queen crab)
208 (bioassays of various Nfld. fishes, re elemental
phosphorus assimilation & concentration in)
S 1412 (fluoride content, of several Atl. commercial
fishes)
- Vision (*see also* Darkness; Diel habits; Eye; Light, reactions
to)
J 25(5): 867 (role in chinook salmon choosing spawning
site)
26(1): 21 (responses of smallmouth bass to shade)
(3): 583 (re Atl. cod offered moving vs. nonmoving
feed)
(3): 687 (as rainbow trout bottom color selection
factor)
(5): 1243 (homing of blinded vs. normal cutthroat
trout)
27(4): 715 (role in cutthroat trout homing, Yellow-
stone L.)
(6): 1103 (role in goldfish perception & reaction to
turning corners in tank)

- 28(9): 1352 (moonlight effect on torrent sculpin predation)
 (12): 1847 (re experience effect on predation by rainbow trout)
- Vitamin A (*see* references to carotenoids under heading Pigments)
- Vitamin B group or complex
 J 23(6): 915 (in dulse seaweed)
 24(6): 1291 (in various freshwater fish meals)
 26(1): 150 (B₁₂, biotin, & thiamin for calanoid copepod culture)
 (5): 1133 (B₁₂, biotin, & thiamin for enriching phytoplankton growth)
 (5): 1347 (mixture, for calanoid copepod culture)
 B 167: 159, 165, 169 (B₁₂, biotin, & B₁ determination in sea water)
 T 114 (in Canadian Atl. herring meals)
 S 915 (B₁₂ re structure & reactions of cobamide coenzymes)
 929 (in fish protein concentrate from Atl. cod)
 996 (synthesis of coenzyme B₁₂ analogs)
 1377 (in Canadian Atl. herring meals)
 A 85 (in various freshwater fishmeals)
 125 (in fish protein concentrate from Canadian Atl. cod)
 151 (B₁₂ production from bacterial fermentation of pulpmill sulfite liquor)
- Vitamin C (*see* Ascorbic acid)
- Vitamin D (*see* Steroids; Sterols)
- Vitamin E (*see* Tocopherol)
- Vitamin K
 T 114 (in Canadian Atl. herring meals)
 S 1480 (& tocopherol, in *Porphyridium cruentum* red seaweed)
- Vitamins (in addition to the above vitamin headings, *see* Choline; Folic acid)
- Vitellins; Vitins (*see also* Eggs; Proteins)
 J 28(12): 1853 (classification of, in coho salmon eggs)
- Vladykov, Vadim Dmitrovich
 J 22(1): 139 (*Lampetra richardsoni*)
 J 24(5): 1067 (terminology of lamprey teeth re key to holarctic lamprey genera)
 25(4): 813 (brown trout anal fin sexual dimorphism)
 29(11): 1631 (new Salmonidae subgenera)
 (12): 1709 (male gonads morphological differences among 9 Gadidae species)
- Volatiles (*see* Alcohols; Aldehydes; Amines; Sulfides, etc., also Odors; Quality of fishery products)
- Volcanic effects
 J 29(3): 229 (ashfall effects on chemistry & sedimentation of 2 Afognak Is. lakes, Alaska)
- Vollenweider, Richard Albert
 S 1446 (elementary models concerning lake substances)
 1529 (trace elements & chlorophyll in L. Ontario)
 1703 (manual on methods for measuring primary production in aquatic environments: editor, & author of various sections)
- Volsella demissa* (*see* Mussel, ribbed)
modiolus (*see* Mussel, red)
- Volume
 J 23(8): 1285 (of various phytoplankton species)
 (9): 1439 (determination of salmonids blood)
 29(1): 31 (cell-volumes of L. Winnipeg diatoms)
- Volume, molal
 S 1273; 1707 (of salts in sea water)
- Von Bertalanffy growth curves
 J 23(2): 163 (fitting to observed data; correction on J 26(8): 2263)
- Vose, John Randal
 S 1491 (fission of phenylalanine by marine algae)
- Voyer, Richard Alan
 J 28(12): 1907 (respiration in flounder)
- Vulnerability
 J 29(3): 265 (of cutthroat & brook trout to angling, re aggressive behavior)
 (5): 469 (of northern pike to angling, after tagging)

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- Wadley, Gerald Weldon
 J 28(8): 1181 (X-rays effects on trout embryos)
- Wagner, Harry Henry
 J 26(11): 2823 (steelhead trout morphological & biochemical changes during parr-smolt change)
- Wahle, Roy Joseph
 J 26(5): 1263 (sockeye salmon survival re finclipping)
- Wahoo (*Acanthocybium solanderi*)
 J 28(7): 947 (blood pathways effects on blood-pressure drop in gills)
 S 1361 (re gill lamellar fusion)
 1409 (gill blood pathways)
- Wainio, Allan Arthur
 J 24(12): 2539 (lamprey parasitism of trout)
- Walden, Cecil Craig
 J 24(2): 261 (marine borer attack on wooden surfaces)
 27(6): 1141 (marine borer enzymes)
 (6): 1151 (marine borers in Canada Atl. waters)
- Waldichuk, Michael
 J 22(3): 801 (water exchange and waste disposal)

- S 892 (water pollution)
 907 (foams in kraft pulp and newsprint effluents)
 918 (sea-level oscillations)
 941 (radioactive contamination)
 979 (estimation of flushing rates from tide height)
 1066 (sulfite wastes)
 1120 (currents in coastal pollution studies)
 1154 (bottom sediment gases sampler)
 1304 (water pollution biological effects)
 1341 (Vancouver Is. inlet eutrophication studies)
 1407 (waste disposal in the sea)
 A 81 (water pollution detection & measurement, chemical analysis)
 139 (pollutant effect on marine organisms)
 166 (oceanography in Canada)
 187 (coastal sewage pollution)
 232 (introduction to report on radioactivity in the marine environment)
 242 (application of oceanographic information to design of sewer & industrial wastes outfalls)
 258 (conserving the ocean as source of natural resources, re pollution)
 260 (review of book: The Biological Aspects of Water Pollution)
 261 (review of book on domestic sewage pollution re benthos, zooplankton, & fouling organisms of a Florida bay)
- Waldron, Kenneth David
 J 25(4): 801 (*Sebastes pinniger* early larvae)
- Walker, Allan Giles
 T 125 (otter trawl performance)
- Walker, Brian Lawrence
 S 1455 (intestinal mucosal lipids in rats)
- Walker, Charles Edward
 J 28(5): 647 (pink salmon in Quailicum R.)
- Wallen, Donald George
 J 25(10): 2219 (radioactivity loss of ¹⁴C-labelled phytoplankton on filters)
- Waller, William Thomas
 J 28(8): 1107 (computer simulation of pollution minnow deaths)
 29(9): 1356 (effect of shelters on resistance of dominant & submissive bluegills to lethal zinc concentration)
- Walleye (*Stizostedion vitreum vitreum*) (Doré; yellow pickerel; yellow pike; yellow pikeperch; yellow walleye; wall-eyed pike)
 J 23(1): 149 (alkaline phosphatase in scales)
 (6): 941 (feeding re introduced smallmouth bass in a Manitoba lake)
 (11): 1663 (muscle myogens & blood hemoglobin electropherograms)
 24(5): 927 (limnetic larvae in N Wisconsin lakes)
 (11): 2229 (hypoxanthine in muscle of iced; corrections on J 25(8): 1760)
- 25(4): 667 (re Great Lakes species succession & exploitation)
 (7): 1347 (dynamics & exploitation in Nipigon Bay region, Ont.)
 (7): 1505 (wet vs. dry weight determination of stomach contents)
 (8): 1651 (plasma protein-bound inorganic iodide)
 (9): 2001(F) (retinal structure re habitat turbidity)
 26(2): 325 (S Alta. distribution)
 (6): 1439 (distribution in Canadian Missouri R. headwaters)
 (6): 1647 (larvae sustained swimming ability)
 (7): 1877 (maturity & fecundity in E & W L. Erie)
 (7): 1927 (purine sources of skin "silvering", eye, & swimbladder silvery layer)
 (12): 3266 (diel activity, judged by gillnet catchability)
 27(1): 170 (in Hudson Bay drainage system, Man.)
 (3): 445 (currents effects on larvae distribution, Oneida L., N.Y.)
 (4): 677 (8 trace elements in livers, Great Lakes)
 (4): 830 (mercury contamination in organs, Saskatchewan R.)
 (5): 923 (muscle myogen polymorphism regional variation re morphology)
 (6): 1033 (sampling fry by high-speed towed Miller net)
 (8): 1475 (L. Erie fishery, 1943-62)
 28(1): 105 (DDT residues in flesh, Saskatchewan R.)
 (5): 783 (slime as bacterial medium re keeping quality)
 (7): 1005 (genetics of skeletal muscle multiple malate dehydrogenase isozymes)
 (8): 1133 (migrations of adult & juveniles between L. Huron & L. Erie)
 (9): 1303 (effects of oxygen depletion & carbon dioxide accumulation on photic behavior)
 (11): 1181 (suitable for introduction into alkaline eutrophic lakes)
 29(3): 275 (23 parasites of, Lake of the Woods, Ont.)
 (7): 1043 (biological study of an unexploited population, West Blue L., Man.)
 (8): 1181 (conversion, maintenance, & assimilation as affected by size, diet, & temperature)
 (9): 1283 (cadmium content, in New York State waters)
 (12): 1685 (mercury concentration re size, in 8 Man. & 5 NW Ont. lakes; corrections on J 30(8): 1257)
- B 149: 19, 122 (Great Lakes, catches)
 151; 151(F) (smoked)
 158 (in economics of N.W.T. commercial fisheries)
 173: 346 (full description, etc., of NW Canada)
 CCG 7: 16 (protein electropherogram)
 7: 33 (latent heat of freezing)
 T 161 (bibliography)
 261 (bibliography for Gulf of St. Lawrence)
 S 980 (brining time before smoking)
 1015 (Great Slave L. sport fishing)
 1668 (mercury contamination, in various Canadian waters)

- 1718 (organochlorine pesticide levels in Canadian commercially caught)
 A 14 (re Great Bear L., N.W.T., sport fishing)
 200; 201 (mercury contamination, in various Canadian waters)
- Walleye, blue (*see* Pike, blue)
- Walleye, yellow (*see* Walleye)
- Walrus, Atlantic and Pacific (*Odobenus rosmarus*)
 J 24(12): 2631 (Nfld. records)
 25(9): 1875 (cranial comparison with fossil sea lions)
 MSP 13; 13(F) (actual & potential Canadian Arctic fishery)
 S 1078 (biology & economics in Canadian Arctic)
 1079 (faunal succession from extinct N Pac. forms)
 1190 (skulls as evidence of presence on Sable Is., N.S.)
 1681 (parasites of, W coast N America)
 A 110 (very old tusk dragged from sea off N.S.)
 231 (actual & potential Canadian Arctic fishery)
 265 (distribution, biology, hunting, & utilization by Eskimos)
- Walsh, Brenda
 J 24(6): 1299 (guanotrophy in Rostherne Mere)
- Walsh, Urban Joseph
 A 121 (organic tin derivative as preservative for lobster traps)
- Walton, Anthony
 J 26(5): 1372 (fish school size & migration)
- Warbonnet, Atlantic (*Chirolophis ascanii*) (Yarrel's blenny)
 T 261 (bibliography for Gulf of St. Lawrence)
- Warbonnet, decorated (*Chirolophis decoratus*) (*P. Polyactcephalus*; decorated blenny)
 B 180: 332 (full description, etc., B.C.)
 T 46 (in B.C. experimental groundfish trawling)
- Warbonnet, mosshead (*Chirolophis nugator*) (ornamented blenny; mosshead prickleback)
 B 180: 333 (full description, etc., B.C.)
- Ward, Fredrick James
 J 25(7): 1505 (measuring walleye stomach contents by wet weight)
 (11): 2505 (¹⁴C in *Daphnia pulex*)
 29(7): 1043 (unexploited walleye population data in West Blue L., Man.)
 (12): 1761 (size selection of *Daphnia pulicaria* by yellow perch)
- Ward, John Clifton
 J 29(3): 344 (deepwater sculpin new to Alta. waters)
- Ware, Daniel Morris
 J 28(12): 1847 (learning by rainbow trout)
 29(8): 1193 (hunger, prey density, & prey size influence on rainbow trout predation)
- Warner, Kendall
 J 28(4): 537 (jaw tagging Atl. salmon)
- Warner, Ronald Walter
 J 27(1): 191 (inflammatory lesion in an American shad)
 (7): 1320 (sporulation of haplosporidan in Pac. oyster)
- Warren, Peter James
 J 24(3): 569 (feeding & migration patterns of pink shrimp)
- Washing of fishery products (*see* Quality of fishery products; Sanitation)
- Washington, Lake, Washington, USA
 J 28(9): 1331 (zoographic problem re presence of relict *Pontoporeia affinis* amphipod)
- Washington State, USA (*see also* Puget Sound; Catches; Groundfish; Trawling; *also* preceding heading and other localities and bodies of water)
 J 24(3): 629 (surf smelt populations heterogeneity)
 (12): 2515 (Puget Sound starry flounder & sand sole stomach contents)
 26(1): 55 (benthic infauna standing crop off coast)
 (2): 299 (planktonic & benthic bacteriovorous Protozoa)
 (7): 1727 (synopsis & key to Ophiuroidea)
 27(4): 621, (12): 2273 (identification & distribution of benthic infaunal communities)
 28(9): 1331 (W distribution of peamouth)
 (9): 1335 (age & growth of coastal weathervane scallop)
 T 326 (status of Pac. ocean perch stocks off, 1970)
- Waste disposal (*see* Fish processing wastes; Pollution; *also* topics listed in heading Pollution)
- Wastewater (stickwater) (*see* Fish processing wastes; Fishmeal; Stickwater)
- Watanabe, Takeshi
 T 334 (unicellular algal lipids effect on Atl. oyster lipids & fatty acids)
- Watasenia felis* (*Abraliopsis felis*) (*see* Squids)
- Water balance
 S 983 (lethal heat shock effect on goldfish)
- Water content (*see* Composition, chemical; Drip; Moisture content)
- Waters, natural (*see also* Lakes; Limnology; Oceanography; Ponds; Springs, thermal; *also* names of bays, lakes, oceans, rivers, straits, etc.)
 S 1719 (pollution re man's effect on global freshwater supplies)
 1729 (salinization of groundwater in arid zones; control of; desalination)

- Watershed
J 26(6): 1439 (Missouri-Saskatchewan R., re fishes distribution)
- 1564 (*trans*-6-hexadecenol & corresponding acid in sea anemone)
1700 (barracudina lipid wax esters as potential replacement for sperm whale oil)
- Waterton Lakes National Park, Alta.
J 28(3): 311 (crustacean plankton of a subalpine lake & pond)
29(12): 1772 (pygmy whitefish recorded in)
- Wearyfish, scaly (*Scopelosaurus harrisi*) (scaly paperbone)
J 24(10): 2101 (first record off B.C.)
B 180: 184 (full description, etc., B.C.)
T 11 (in FRB experimental midwater trawling)
- Watson, Jeffrey
J 25(8): 1729 (oxygen consumption of spider crab & American lobster)
27(6): 1158 (gauge for carapace measurements of crabs)
(9): 1607 (spider crab reproduction)
29(4): 447 (spider (queen) crab mating behavior)
T 102: 26 ("cubmarine" submersible in queen crab research)
204 (adult male snow crabs tag recaptures & movements)
S 1676 (snow crab ecdysis)
A 136 (submersibles for fisheries research)
138 (queen crab industry in Atl. Provinces)
176(F) (tagging indicates high snow crab exploitation)
217(F) (biological study of queen crab)
255 (foreign fisheries for *Chionoectes* crabs; *C. opilio* in Labrador)
256 (biological investigations of *C. opilio*)
263 (Atl. snow (queen) crab)
- Weather (see Climate; Precipitation; Storms)
- WeatherShip Station P (see also Oceanography, North Pacific)
J 24(10): 2201 (line fishing results at)
S 1137 (oceanography re salmon distribution)
- Webb, Deirdre
J 23(12): 1845 (mouth & body form in fish)
- Webb, Donald Wayne
J 22(5): 1123 (limnology of Cedar L., Man.)
- Webb, N. A.
T 210 (*G. B. Reed* groundfish cruise 70-2)
- Webb, Paul Walters
J 29(11): 1525, 1543 (respiratory characteristics of young within ovary of viviparous pile perch & striped seaperch)
(11): 1555 (kraft mill effluent effects on young sockeye salmon growth & feed conversion efficiency)
- Watson, Nelson Herbert Frank
J 22(6): 1335 (natural infections of cyclopid copepods)
- Watt, Alexander
J 22(3): 793 (phytoplankton enzymes)
S 1040 (algae enolase)
- Weber, Douglas Duane
J 24(4): 849 (marking Pac. salmon with tetracycline antibiotics)
25(3): 473 (salmon blood lactate after exercise)
26(5): 1263 (sockeye salmon survival re finclipping)
- Watters, Kenneth
J 27(9): 1627 (expired water sampling in fish)
- Wedemeyer, Gary
J 26(1): 115 (endotoxins in salmonids)
27(5): 909 (trout anesthesia stress)
(6): 1162 (rainbow trout blood chemistry values)
28(4): 606 (blood chemistry values for juvenile coho salmon)
(12): 1899 (stress of formalin treatment in fish)
29(12): 1780 (physiological effects of handling stress in young coho salmon & steelhead trout)
- Waugh, Donald Lloyd
J 28(4): 527 (ribbed mussel upper lethal temperatures)
- Weight (see also Growth; Length; Size)
J 22(2): 465 (trends in Nfld. longlined cod)
23(6): 869, (8): 1209 (re metabolism of fishes: effect of feed & water temperature)
(8): 1285 (dry, of various planktonic algae)
(9): 1353 (body, of pink salmon at various sea-life stages)
24(5): 1165 (as criterion of growth, particularly molluscan shell-weight re age)
(7): 1531 (vs. fecundity, Atl. cod)
(11): 2355, 2414, 2417 (mathematics of losses in fasting fishes)
- Waves
J 23(9): 1331 (perception mechanism of topminnow, for surface ripples)
27(2): 401 (inclusion of surf effects on tidal sensor for intertidal biological studies)
29(1): 19 (mathematics of empirical wave force coefficients)
(11): 1565 (effect on *Lampsilis radiata* freshwater clam shell morphology)
- Wavre, Mina
J 28(3): 335 (tubificid oligochaetes & bacteria)
- Wawreszuk, Helena
J 23(11): 1653 (chemical composition of crayfish)
- Waxes
S 1514 (wax esters of Amazon R. dolphin jaw fat, re echolocation ability)

- 25(4): 657 (re age & length of Ungava round whitefish)
 (4): 730 (as fish growth-determining factor)
 (11): 2403 (re morphology of coho salmon parr-smolt transformation)
 (12): 2743 (estimating mean weight from length statistics)
- 26(1): 123 (allometric weight-length regression model)
 (1): 161 (comparison of 2 fish growth in weight equations)
 (7): 1813 (bluegill body weight effect on endogenous nitrogen secretion)
 (10): 2561 (of white whale organs & other components)
 (10): 2643 (re oxygen consumption metabolism: mathematical relations for several fishes)
 (10): 2741 (on length regression for rapid average length determination of young sockeye salmon)
 (12): 3133 (cod off SW Nfld.; also weight-length relation for round & gutted)
- 27(1): 135 (re length & age of lake trout, L. Opeongo, Ont.)
 (2): 347 (coho salmon, re chronic oral DDT toxicity)
 (2): 371 (re length of chum & sockeye salmon fry in spawning channel vs. natural environments)
 (4): 685 (dry, of *Hyalella azteca* amphipods, Marion L., B.C.)
 (5): 929 (live, re young sockeye salmon body composition)
 (7): 1295 (re photoperiod regime of Atl. salmon smolts)
 (8): 1429 (of pink & chum salmon fry in revised hatchery method)
 (8): 1475 (L. Erie walleye, 1943-62)
 (10): 1811 (dry, per square meter, of eelgrass standing stocks)
 (12): 2143 (re growth, trumpet worm, St. Margaret's Bay, N.S.)
 (12): 2215 (re length, Nfld. capelin)
- 28(4): 513 (of Skeena R. sockeye salmon eggs re length & age of parents)
 (6): 861 (feeding level effects on young sockeye salmon)
 (7): 1061 (reduction on drying white sucker steaks)
 (12): 1907 (re factors affecting winter flounder respiration rates)
- 29(2): 161 (rock crab, in Northumberland Strait fishery)
 (2): 202 (changes in body, caused by handling & exercise of *Tilapia mossambica* acclimated to fresh water vs. sea water)
 (3): 237 (genetics & environment effects on rainbow trout)
 (5): 477 (changes of average, L. Michigan alewives)
 (5): 517 (re growth & length of yellow perch, Lac Saint-Louis, Que.)
 (7): 1079 (length-weight formula for Gulf of Alaska pomfret)
- (11): 1651 (average of individuals in population biomass, re linear surplus-production mathematical model)
 B 155 (maximum or average, of Canadian Atl. marine fishes)
 160 (changes in fish held in refrigerated sea water)
 161 (round weights of goldeye; shrinkage)
 173 (average, of freshwater fishes species, NW Canada & Alaska)
 180 (maximum or average, of some Canadian Pac. marine fishes)
 CHN 27 (gain & loss of fillets during processing & storage)
 CVG 41 (changes of some B.C. fishes held at sea in refrigerated sea water vs. ice)
 45 (changes in Pac. cod & halibut stored in ice at sea)
 T 74 (dressed, vs. fork length, of sablefish)
 94-97 (Nfld. herring data, 1964-65, 1967-68)
 135 (weight-length relations for 6 B.C. groundfish species)
 137 (weight-age ratios, Nfld. seined herring catches)
 147 (Atl. salmon parr re salinity)
 148 (Atl. salmon fry re salinity & diet)
 149 (Atl. salmon smolts re salinity, temperature, & diet)
 164 (length re weight of Canada Atl. marine fishes)
 160 (of 4 *Lepidion* morid fish species)
 237; 281 (re length of Pac. ocean perch off B.C. & SE Alaska)
 250 (computer programming fish data)
 260 (at mean length, of Scotian Shelf groundfish species)
 291 (re length, N.S. banks herring)
 S 947 (changes of fish held in refrigerated sea water re rigor)
 1027 (changes in Atl. herring frozen vs. stored in formalin)
 1206 (of salmon from Labrador Sea & off W Greenland)
 1317 (re length, Atl. salmon off Nfld.)
 1378 (body weight re gill area of 4 tuna species)
 1383 (re length, commercial Greenland turbot)
 1575 (of Cetacea & their hearts, re their feeding rates)
 A 12(F); 65 (gains & losses in Atl. cod fillets immersed in tap water or brines)
 29 (changes in fish passing through rigor while held in refrigerated sea water)
 156 (effects of icing & freezing on biological measurements for various Atl. commercial fishes)
 197; 212 (& size of fish re metabolic energy requirements: reviews)
- Weiner, Catherine
 S 1519 (protein, amino acids, and ammonia determination in marine sediments)
- Weinsieder, Allan
 A 132 (F RB, what it does to help fishermen)

- Weinstein, Harvey Marvin
 J 22(1): 83 (glycolytic activity in Atl. cod muscle)
 S 1043 (glycolytic metabolites in cod muscle) 1157 (hydrogen sulfide oxidation kinetics apparatus)
 1500 (gases from sediments in polluted coastal waters)
- Weir, John Robert
 A 161 (1969 FRB activities)
 230 (food from a northern environment)
 West Blue Lake, Man.
 J 29(7): 1043 (biological study of an unexploited wall-eye polulation)
 (12): 1761 (yellow perch mouth gape re size selection of *Daphnia pulicaria* feed)
- Weirs
 B 166: 29 (for catching eels commercially)
- Weis, Judith S.
 J 25(8): 1739 (spinal ganglia position in taxonomy)
- Weisbart, Melvin
 S 1410 (corticosteroids in cyclostomes)
 1576 (hormonal steroids in sturgeon plasma)
 1628 (Atl. halibut corticosteroids identification & qualification)
 1666 (are corticosteroids present in the blood of all fish?)
- Welander, Arthur Donovan
 J 28(8): 1181 (X-ray effects on trout embryos)
- Wellings, Sefton Robert
 J 24(9): 2007 (neurofibroma in *Lumpenus sagitta*)
 26(8): 2215 (microsporidial infection of English sole)
 28(9): 1241 (flounder skin tumors)
- Wells, LaRue
 J 29(6): 889 (exploitation, introductions, & eutrophication effects on salmonid community, L. Michigan)
- Wells, Peter Geoffrey
 J 27(6): 1158 (gauge for carapace measurements of crabs)
- Wells, Richard
 S 1052 (cod growth & temperature in Nfld. area)
 1507 (haddock length conversion factors)
 1540 (catch/effort assessment of major cod stocks)
 A 158 (haddock fork length-head girth relations)
 191 (American plaice eggs and larvae)
 250 (assessments of effects of increases in Nfld. cod trawls mesh sizes)
- Welsh, Linda
 J 25(6): 1133 (lake fishes feeding & consumption)
- Wendt, Curt
 J 29(6): 807 (exploitation, eutrophication, & introductions effects on salmonid community of L. Vättern, Sweden)
 (6): 937 (future of salmonid communities in Fennoscandian lakes)
- Werner, Arthur Eugene
 J 24(10): 2137 (kraft mill effluent in B.C. harbour)
 S 959 (suspended solids from mill effluents)
 1154 (bottom sediment gases sampler)
- Westlake, Garson Frederick
 J 29(1): 45 (goldfish orientation to sublethal copper ion concentration gradient)
- Westrheim, Sigurd Jergen
 J 22(1): 231 (northern range of rockfish)
 (6): 1559 (widow rockfish)
 23(2): 309 (new B.C. fishes)
 (4): 611 (groundfish trawl net)
 (9): 1455 (W Pac. range extension for 2 rockfish species)
 (9): 1469 (northern range of rockfish)
 24(6): 1187 (research trawl catches at sea)
 (9): 1945 (*Sebastes reedi* in NE Pac.; correction on J 25(8): 1760)
 25(11): 2477 (protein electropherograms re rockfish systematics)
 (11): 2509 (first records of 3 rockfish species off B.C.)
 27(10): 1781 (Pac. rockfishes survey; correction on J 28(8): 1219)
 (12): 2233 (analyses of 3 N Pac. scórpaenids)
 28(10): 1621 (taxonomy, distribution, & biology of northern rockfish)
 29(5): 606 (*Sebastes caenaeamicus* & *S. borealis* synonymy, & range extension record)
 T 16; 237; 251; 278; 281; 326; 328 (Pac. ocean perch biological data taken during FRB experimental groundfish cruises in NE Pac. Ocean)
 22; 30; 46; 81; 113; 132; 205; 210; 269; 278; 290; 328 (FRB experimental cruises, B.C. coast & NE Pac. Ocean)
- Weweantie River, Massachusetts
 J 27(12): 2374 (insecticides residues in winter flounder in estuary)
- Whale, Baird's beaked (*Berardius bairdi*) (North Pacific giant bottlenose whale)
 B 171: 5 (description, records, etc., of B.C.)
 S 1681 (parasites of, N coast N America)
- Whale, black right (*Balaena glacialis*) (*Eubalaena glacialis*; right whale (of North Atlantic and North Pacific))
 J 27(11): 1903 (strandings, etc., other than commercially caught, Canadian Atl. coast, 1949-68)
 29(10): 1477 (sight records, lower Bay of Fundy)
 B 154: 138 (as Nfld. resource)
 171: 38 (description, records, etc., of B.C.)

- CAG 9 (NW Atl. populations)
 S 1681 (parasites of, W coast N America)
 A 107 (1966-67 marking of, in N Atl.)
- Whale, blue (*Balaenoptera musculus*) (*Sibbaldus musculus*)
 J 27(11): 1903 (strandings, etc., other than commercially caught, Canadian Atl. coast, 1949-68)
 29(4): 349 (pesticide residues in commercial oil)
 B 154: 138 (as Nfld. resource)
 171: 36 (description, records, etc., of B.C.)
 CAG 9 (NW Atl. populations, catches)
 S 1190 (an 85-ft, washed ashore on Sable Is., N.S.)
 1599 (possible use of ultrasonics to locate euphausiid feed)
 1681 (parasites of, W coast N America)
 A 107 (1966-67 marking of, in N Atl.)
 122 (an 80-ft, at B.C. whaling station)
- Whale, bottlenose (*Hyperoodon ampullatus*)
 J 27(11): 1903 (strandings, etc., other than commercially caught, Canadian Atl. coast, 1949-68)
 29(4): 349 (pesticide residues in commercial oil)
- Whale, bowhead (*Balaena mysticetus*) (Greenland right whale)
 J 28(12): 1873 (Canadian recovery after previous exploitation; Canadian Arctic distribution)
 MSP 13; 13(F) (actual & potential Canadian Arctic fishery)
 S 1681 (parasites of, W coast N America)
 A 231 (Canadian Arctic native fishery)
- Whale, Cuvier's beaked (*Ziphius cavirostris*) (goose-beaked whale)
 J 24(12): 2503 (description of one stranded in N California)
 B 171: 11 (description, records, etc., of B.C.)
 S 1240 (NE Pac. stranding distribution & seasonality)
 1681 (parasites of, W coast N America)
- Whale, dense-beaked (*Mesoplodon densirostris*)
 J 27(11): 1903 (strandings, etc., other than commercially caught, Canadian Atl. coast, 1949-68)
- Whale, false killer (*Pseudorca crassidens*) (a dolphin)
 B 171: 24 (record from Puget Sound, Wash., though not yet from B.C.)
 S 1575 (body & heart weight, re feeding rate)
 1681 (parasites of, W coast N America)
- Whale, fin (*Balaenoptera physalus*) (finback whale)
 J 27(3): 513 (fatty acids & lipids of euphausiid feed)
 (11): 1903 (strandings, etc., other than commercially caught, Canadian Atl. coast, 1949-68)
 29(4): 349 (pesticide residues in commercial oil)
 (10): 1477 (sight records, lower Bay of Fundy)
 B 154: 138 (as Nfld. resource)
 171: 33 (description, records, etc., of B.C.)
 CAG 9 (NW Atl. populations, catches; description)
 S 927; 975; 976 (fatty acids types in blubber oils, & possible physiological function of blubber)
 1111 (oil fatty acids re zooplankton feed fatty acids)
- 1193 (pristanic & phytanic fatty acids of blubber oil)
 1203 (positional distribution of monoenoic fatty acids in milk triglycerides)
 1227 (fatty acid composition of milk lipids)
 1228 (isoprenoid fatty acids of blubber, commercial, & milk fats, re feed)
 1405 (lipoxidase reaction with polyenoic fatty acids of oil)
 1574 (oral remnants of nasopalatine canals)
 1668 (mercury contamination)
 1681 (parasites of, W coast N America)
 1794 (blubber fatty acids re those of harp seal)
 A 75 (Canadian Arctic studies, 1965)
 107 (1964-67 catches off E Canada; 1966-67 marking research)
- Whale, finback (see Whale, fin)
- Whale, goose-beaked (see Whale, Cuvier's beaked)
- Whale, gray (*Eschrichtius gibbosus*)
 B 171: 30 (description, records, etc., of B.C.)
 S 1681 (parasites of, W coast N America)
- Whale, Greenland right (see Whale, bowhead)
- Whale, humpback (*Megaptera novaeangliae*)
 J 27(11): 1903 (strandings, etc., other than commercially caught, Canadian Atl. coast, 1949-68)
 B 154: 138 (as Nfld. resource)
 171: 37 (description, records, etc., of B.C.)
 CAG 9 (NW Atl. populations)
 S 1668 (mercury contamination)
 1681 (parasites of, W coast N America)
 A 107 (1966-67 marking of, in N Atl.)
- Whale, killer (*Orcinus orca*) (*Grampus orca*; *O. rectipinna*) (an Atlantic and Pacific dolphin)
 J 27(11): 1903 (strandings, etc., other than commercially caught, Canadian Atl. coast, 1949-68)
 B 154: 144 (as Nfld. resource)
 171: 19 (description, records, etc., of B.C.)
 S 1115 (unusual group behavior)
 1454 (skin pigmentation pattern)
 1575 (body & heart weight, re feeding rate)
 1681 (parasites of, W coast N America)
 A 107 (1966-67 marking of, in N Atl.)
 267 (conservation re demand for, by aquaria)
- Whale, little piked (see Whale, minke)
- Whale, minke (*Balaenoptera acutorostrata*) (rorqual; little piked whale)
 J 27(11): 1903 (strandings, etc., other than commercially caught, Canadian Atl. coast, 1949-68)
 B 154: 144 (as Nfld. resource)
 171: 34 (description, records, etc., of B.C.)
 S 1681 (parasites of, W coast N America)
 A 107 (1966-67 marking of, in N Atl.)
 194 (Nfld. fishery)

- Whale, North Pacific giant bottlenose (*see* Whale, Baird's beaked) 1700 (barracudina lipid wax esters as possible replacement for oil)
A 107 (1966-67 marking of, in N Atl.)
122 (a 56-ft, at B.C. whaling station)
- Whale, North Sea beaked (*Mesoplodon bidens*)
J 27(11): 1903 (strandings, etc., other than commercially caught, Canadian Atl. coast, 1949-68)
- Whale, pilot (Atlantic) (*Globicephala melaena*) (blackfish; pothead whale)
J 24(11): 2481 (wintering in Nfld. inshore waters)
27(11): 1903 (strandings, etc., other than commercially caught, Canadian Atl. coast 1949-68)
29(4): 349 (pesticide residues in commercial oil)
B 154: 141 (as Nfld. resource)
S 1080 (fatty acids positional distribution in depot fat triglycerides)
1190 (on Sable Is., N.S.)
1391 (new cestode genus & species from)
1668 (mercury contamination)
A 107 (1966-67 marking of, in N Atl.)
194 (Nfld. fishery)
- Whale, pilot (Atlantic and Pacific) (*see* Whale, short-finned pilot)
- Whale, pilot (Pacific) (*Globicephala scammoni*)
S 1575 (body & heart weight, re feeding rate)
- Whale, pothead (*see* Whale, pilot (Atlantic))
- Whale, pygmy sperm (*Kogia breviceps*) (*see also* Whales)
J 27(11): 1903 (strandings, etc., other than commercially caught, Canadian Atl. coast, 1949-68)
- Whale, right (*see* Whale, black right; Whale, bowhead)
- Whale, sei (*Balaenoptera borealis*)
J 29(4): 349 (pesticide residues in commercial oil)
B 154: 138 (as Nfld. resource)
171: 34 (description, records, etc., of B.C.)
CAG 9 (NW Atl. populations, catches)
S 1226 (fatty acids positional distribution in blubber triglycerides)
1681 (parasites of, W coast N America)
A 107 (1966-67 marking of, in N Atl.)
- Whale, short-finned pilot (*Globicephala macrorhyncha*) (Atlantic and Pacific)
B 171: 24 (description, records, etc., of B.C.)
S 1575 (body & heart weight, re feeding rate)
1681 (parasites of, N coast N America)
- Whale, sperm (*Physeter catodon*)
J 27(11): 1903 (strandings, etc., other than commercially caught, Canadian Atl. coast, 1949-68)
29(4): 349 (pesticide residues in commercial oil)
B 154: 138 (as Nfld. resource)
171: 13 (description, records, etc., of B.C.)
CAG 9 (NW Atl. populations)
S 1079 (faunal succession from extinct form)
1190 (on Sable Is., N.S.)
1681 (parasites of, W coast N America)
- Whale, white (*Delphinapterus leucas*) (beluga) (*see also* Muktuk)
J 26(8): 2201 (tagging in Canadian Arctic)
(8): 2205 (wintering in James Bay)
(10): 2561 (body size; weight of organs & other components)
27(11): 1903 (strandings, etc., other than commercially caught, Canadian Atl. coast, 1949-68)
28(9): 1309 (growth, reproduction, & behavior, Cumberland Sound, Baffin Is., N.W.T.)
29(4): 349 (pesticide residues in commercial oil)
MSP 13; 13(F) (actual & potential Canadian Arctic fishery)
S 1575 (body & heart weight, re feeding rate)
1608 (isovaleroyl triglycerides in oils)
1668 (mercury contamination, Hudson Bay)
1681 (parasites of, W coast N America)
A 75 (aerial census, Hudson Bay, 1965)
200 (mercury contamination, Hudson Bay)
231 (actual & potential Canadian Arctic fishery)
- Whalemeal (*see also* Blubber; Fish processing wastes; Oils and fats)
B 154: 138 (from fin whales, as Nfld. resource)
171 (re B.C. whaling industry)
- Whales (*see also* names of species; *also* Whalemeal; Whaling)
J 25(12): 2561 (feeding habits of *Kogia simus*, a Japanese pygmy whale, from fish otoliths in stomach)
26(1): 179 (computer programming data re estimation of unexploited populations)
27(11): 1903 (inshore records, Canadian Atl. coast, 1949-68)
B 171: 9 (*Mesoplodon* records from B.C., including *M. carlhubbsi*)
S 1079 (faunal succession of N Pac.)
S 1575 (body lengths, & heart weight re body weight, of various species)
1681 (parasites of, W coast N America)
A 174 (request for information on tagged N Atl.)
194 (Nfld. minor fishery species)
229 (aging by teeth & bone layered structure: book review)
- Whalesucker (*Remora australis*) (*Remilegia australis*)
B 180: 285 (full description, etc., B.C.)
- Whaling (*see also* names of whale species; *also* Whales; Whalemeal)
B 171: 49 (B.C. catches, 1905-67)
A 122 (pictorial review of B.C. industry)
- Wheeler, Chester Othello

- J 29(12): 1784 (device for measuring length & girth of fish)
- Whelk (in addition to following headings, *see* Drills; Gastropoda; Snails)
- Whelk, channelled (*Busycon canaliculatum*)
S 1679 (sterols)
- Whelk, rough (*Buccinum undatum*) (common northern whelk)
J 27(3): 535 (distribution density on Atl. scallop beds)
(10): 1898 (2 digestive tract enzymes)
B 177 (re paralytic shellfish poisoning, E Canada)
S 1255 (experimentally induced accumulation of paralytic shellfish poison)
1679 (sterols)
- Whelk, Stimpson's (*Colus stimpsoni*) (spindle shell)
B 177 (re paralytic shellfish poisoning, E Canada)
- Whelk, ten-banded (*Neptunea decemcostata*) (ten-ridged neptune)
B 177 (re paralytic shellfish poisoning, E Canada)
- Whelping (*see* Reproduction)
- Whirling disease (*see also* Disease)
J 27(5): 955 (occurrence in western USA trout hatcheries, from *Myxosoma cerebralis*)
MSP 16 (re fish diseases in Canada)
- Whitaker, R. S.
J 26(6): 1694 (Atl. salmon muscle damage in gillnets)
- White, D. R. L.
J 26(6): 1694 (Atl. salmon muscle damage in gillnets)
- White, Edwin Graeme
J 28(3): 443 (computer analyses of capture-recapture data using Jolly's model)
- White, G. N.
J 26(3): 701 (mass mortality of fauna at Bideford, P.E.I.)
T 76 (*Ostrea* L., N.S., prefertilization benthic survey)
- White, Harley Clifford
J 22(2): 635 (killifish)
25(11): 2439 (Atl. salmon scales re spawning)
- White, Wesley James
J 29(3): 339 (simple fish tag for long-term marking experiments)
- White Lake, B.C.
J 26(7): 1763 (meromixis & other characteristics)
- Whitefish (white-fleshed commercial marine species)
A 85 (nutrient values of meal as poultry feed)
- Whitefish, broad (*Coregonus nasus*)
J 26(8): 2252 (age & growth, Mackenzie & Coppermine R., N.W.T.)
B 173: 86 (full description, etc.)
- Whitefish, humpback (*Coregonus pidschian*) (also applied to *C. clupeaformis* and *C. nelsoni*; *see also* Whitefish, lake)
B 173: 78 (taxonomy, full description, etc.)
- Whitefish, lake (*Coregonus clupeaformis*) (*see also* Whitefish, humpback; for discussion of the "*Coregonus clupeaformis* complex" *see* B 173: 79)
J 22(3): 732 (in Bow R. system, Alta.)
(3): 865 (candling fillets for tapeworm cysts)
(5): 1197 (populations year-class fluctuations in L. Erie, and other large lakes)
(6): 1571 (in fall domestic fishery at Snowdrift, Great Slave L.)
23(1): 149 (alkaline phosphatase in scales)
(2): 221 (dynamics & exploitation, Georgian Bay, Ont.)
(3): 423 (selectivity of gillnets for)
(6): 929, (10): 1599 (electropherogram of multiple hemoglobins)
24(1): 9 (preservation by gamma radiation)
(9): 1911 (as parasite host, Nfld.)
(11): 2229 (hypoxanthine formation in iced muscle)
25(3): 605 (ultrasonic effects as test for fillet quality)
(4): 667 (re Great Lakes species succession & exploitation)
(8): 1651 (plasma protein-bound inorganic iodide)
(8): 1667 (cytotaxonomic relation to other Great Lakes coregonids)
(10): 2091 (growth & reproduction in Lac la Ronge, Sask.)
(10): 2111 (scales annulus formation in artificially reared)
26(2): 325 (S Alta. distribution)
(4): 849 (*Cystidicola* nematodes in swimbladder)
(9): 2521 (hermaphroditism)
(12): 3266 (diel activity judged by gillnet catchability)
27(1): 125 (re lake trout feed, L. Opeongo, Ont.)
(2): 271 (distribution of *Triaenophorus crassus* in flesh re ultrasonic detection)
(4): 677 (8 trace elements in livers, Great Lakes)
(6): 1115 (genetics of multiple lactate dehydrogenase isozymes in muscle tissue)
(7): 1201 (flavor effects of different woods used for smoking)
(10): 1894 (helminth parasites of Nfld.)
28(5): 643 (killing *Salmonella* bacteria by ⁶⁰Co irradiation during smoking; correction on J 29(8): 1241)
(5): 783 (beneficial effect of washing off slime re keeping quality)
(5): 786 (heavy-metal concentrations in dressed, from Moose L., Man., & L. Ontario)
29(3): 275 (14 parasites of, Lake of the Woods, Ont.)
(9): 1283 (cadmium content, in New York State waters)

- (12): 1685 (mercury concentration re size, in 3 Ont. lakes; corrections on J 30(8): 1257)
- B 149: 18, 118 (Great Lakes, landings)
- 151; 151(F) (canned; smoked; sausage; wiener; fishballs)
- 158 (physical & economic organization of N.W.T. fisheries)
- 162: 234 (as food competitor of young sockeye salmon)
- 173: 79 (as member of *C. clupearformis* complex)
- CCG 7: 1 (keepability of sausage & wiener)
- 7: 9 (improvement by pike & *Triaenophorus* control)
- 7: 16 (protein electropherogram)
- 7: 33 (freezing rate; latent heat of freezing)
- CJG 17 (illustrated keys to parasitic metazoa, Nfld.)
- T 33 (Great Slave L. fishery)
- 180 (Lac la Martre, N.W.T.)
- 261 (bibliography for Gulf of St. Lawrence)
- S 946 (Great Slave L. fishery)
- 980 (brining time before smoking)
- 1269 (parasite detection by ultrasound)
- 1409 (gill blood pathways)
- 1450 (incidence of *Triaenophorus* parasitization, Heming L., Man.)
- 1668 (mercury contamination, & content of 12 other metal elements, Great Lakes & other Canadian waters)
- 1697 (canned & smoked products from Eskimo processing plant, N.W.T.)
- 1698 (quality appraisal with sensory panels)
- 1718 (organochlorine pesticide residues in Canadian commercially caught)
- A 14 (Great Bear L., N.W.T.)
- 200; 201 (mercury contamination in various Canadian waters)
- 224 (parasites)
- Whitefish, mountain (*Prosopium williamsoni*)
- J 22(3): 733 (in Kananaskis R. system, Alta.)
- 23(1): 45 (hematological study)
- 26(2): 325 (S Alta. distribution)
- (6): 1439 (distribution in Canadian Missouri R. headwaters)
- 28(1): 110 (stomach evacuation rate when fed sockeye salmon alevins)
- 29(2): 173 (*Chondrococcus columnaris* disease resistivity, Columbia R.)
- B 173: 114 (full description, etc.)
- T 245: 1 (unknown cause of severe mortality, Kootenay L., B.C.)
- A 224 (parasites)
- Whitefish, ocean (*Caulolatilus princeps*)
- J 26(5): 1371 (N range extension)
- B 180: 283 (full description, etc., B.C.)
- Whitefish, pygmy (*Prosopium coulteri*)
- J 22(5): 1229 (growth and morphometry of 4 B.C. populations)
- 29(12): 1772 (new complexities in zoogeography & taxonomy re postglacial distribution; new northern Canada watershed records)
- B 173: 118 (full description, etc.)
- Whitefish, round (*Prosopium cylindraceum*) (*P. quadrilaterale*; menominee)
- J 23(1): 149 (alkaline phosphatase in scales)
- 25(4): 657 (age & growth, in Ungava; corrections on J 26(8): 2263)
- (8): 1667 (cytotaxonomic relation to other Great Lakes coregonids)
- 26(10): 2681 (shape & structure re gillnet selectivity)
- 27(4): 677 (8 trace elements in livers, Great Lakes)
- 29(4): 452 (otolith aging, Leaf R., Ungava, Que.)
- B 149: 22 (Great Lakes catch (as *P. quadrilaterale*))
- 173: 110 (full description, etc.)
- T 180 (Lac la Martre, N.W.T.)
- A 14 (Great Bear L., N.W.T.)
- Whitefishes (Coregonidae) (see also *Coregonus* (= *Leucichthys*); *Prosopium*)
- J 25(8): 1667 (cytotaxonomic relations of Great Lakes coregonids)
- B 173: 43 (family), 69 (taxonomy), 70 (key), & 74 (descriptions of NW America species)
- T 151 (bibliography)
- S 1442 (*Triaenophorus* in *Coregonus lavaretus*, L. Mälaren, Sweden)
- 1451 (zoogeography & protein variation re species complex)
- A 224 (world distribution; parasites of many European *Coregonus* species)
- Whiting (Pacific) (see Pollock, walleye)
- Whitworth, Walter Richard
- J 25(3): 579 (dissolved oxygen re brook trout growth)
- 26(9): 2493 (lead, temperature, & dissolved oxygen re brook trout growth)
- Whyte, John Nimmo Crosby
- S 1359 (magnetic resonance & mass studies on derivatives of sodium and related compounds)
- 1431 (extraction procedure for plants: red alga extracts)
- 1530 (polysaccharides of red alga)
- 1548 (polysaccharides of red seaweed)
- 1598 (oligosaccharides anomeric configuration & degree of polymerization)
- 1624 (human urine mannitol & sorbitol)
- Wickett, William Percy
- J 24(3): 581 (Ekman transport & zooplankton concentrations)
- (6): 1421 (earthworms eaten by coho salmon)
- CNG 80 (B.C. herring)
- CPO 1965-6 (coho commercial troll catches)
- T 50; 51; 52; 63; 64; 65; 66; 127; 230; 240 (surface transport charts, N Pac. Ocean, 1968-70)
- 53; 126; 238; 239 (transport computations, N Pac. Ocean, 1967-70)
- 71; 72 (transport computations for the Norwegian Sea, 1950-60)
- 128 (N Pac. Ocean Ekman transport, 1946-68)

- Widdowson, Thomas Benjamin
J 22(6): 1425 (distribution of intertidal algae)
- Wieners, fish (*see* Sausage, fish)
- Wilder, Donald George
B 147(F) (lobster storage & shipment)
157 (Canadian lobster fishery)
CSG 45 (message to lobster fishermen)
50 (Canadian Atl. crab resources)
S 1039 (lobster conservation in Canada)
1106 (American lobster)
A 4(F) (lobster fishery potential)
5(F) (American lobster)
33 (lobster fishery potential)
76 (Canada's lobster fishery)
121 (organic tin derivative as preservative for lobster traps)
149 (trends in Canada's lobster fishery)
213; 213(F) (artificial rearing of lobsters)
- Wildish, David John
J 28(9): 1285 (methylmercury in fish)
S 1558; 1662 (effects of polychlorinated biphenyls (PCB) in sea water on *Gammarus oceanicus*)
1570 (uptake of PCB from sea water by *G. oceanicus*)
1634 (adaptive significance of *Orchestia* amphipod biased sex ratio)
1687 (*Orchestia* postembryonic growth & age)
1710 (toxicity of polyoxyethylene esters & ethers to Atl. salmon & *Gammarus* amphipod)
- Wiles, Michael
J 25(12): 2749 (harbour seal bounty re Atl. cod codworm infestations)
26(12): 3242 (Atl. cod ovaries fibrous and cystic lesions)
S 1318 (biology & fishery of the W Nfld. cod stock)
- Wiley, William Lloyd
J 22(4): 1025 (recording fish movements)
- Wilimovsky, Norman Joseph
T 34 (N Pac. Ocean systematics of 6 demersal fishes)
- Wilkius, Noël Patrick
J 25(12): 2651 (Atl. salmon multiple hemoglobins)
- Willford, Wayne Allan
J 25(1): 25 (rainbow trout M.S. 222 anesthetic excretion)
- Williams, Peter Montague
J 22(5): 1107 (marine fatty acids)
23(4): 575 (iron in natural waters)
- Willis, Douglas Edwin
J 29(5): 592 (Aroclor 1221 polychlorinated biphenyl mixture components)
- Willis, James Newman, III
J 28(11): 1783 (distribution of radioactive zinc in marine ecosystem)
- Williscroft, Stuart Neil
J 27(9): 1563 (rainbow trout lactate dehydrogenase systems)
(11): 1987 (genotype differences in stream populations of rainbow trout)
- Willock, Thomas Andrew
J 26(6): 1439 (Missouri R. drainage fishes)
- Wilson, A. J.
T 102: 36 ("cubmarine" submersible operations in lobster research)
- Wilson, Dennis Carl
J 26(9): 2339 (reproduction of shiner perch)
- Wilson, Geoffrey Gordon
J 23(6): 813 (toxicity of kraft mill wastes)
- Wilson, Kerry Alexander
T 48 (checklist of parasites of lampreys)
- Wilson, Robert Clifton Henniker
J 29(8): 1225 (acute toxicity of spent sulfite liquor to Atl. salmon)
(10): 1500 (prediction of copper toxicity in receiving waters)
- Wilson, Robert McNair
J 28(10): 1681 (whitebait smelt recorded in B.C. waters)
29(3): 337 (first B.C. record of striped bass)
T 144 (*G. B. Reed* groundfish cruise)
- Wind; Wind effects
J 23(6): 850 (NE Pac. Ocean)
(9): 1411 (on Gulf of St. Lawrence currents: electrical analog model for)
26(8): 2223 (rate of storm growth effect on subsequent ocean surge elevations)
28(2): 163 (effect on thermoclines in several small NW Ont. lakes)
29(12): 1767 (on upper layers of inlet waters, by automatic recording of electrical conductivity profiles)
B 156: 12, 38, 47 (re Dixon Entrance, B.C., physical oceanography)
T 85 (effect on free-floating current followers)
S 977 (speed re NE Pac. Ocean summer isothermal surface layer)
1592 (speed, re Langmuir circulation & particle concentration in ocean)
- Windell, John Thomas
J 26(7): 1801 (rainbow trout on pellet diets)
29(5): 576 (bluegill sunfish reaction to handling)
- Windermere, Lake (England)
J 23(10): 1495, 1523 (pike feed consumption studies)

- 29(6): 629, 819, 975 (various factors affecting fish communities, particularly salmonid)
- Windom, Herbert Lynn
 J 29(4): 450 (distribution of Fe, Mg, Cu, Zn, & Ag in Georgia coast oysters; corrections on J 30(8): 1257)
- Windowpane (*Scophthalmus aquosus*) (brill)
 T 225 (associated with Bay of Fundy scallop beds)
 261 (bibliography for Gulf of St. Lawrence)
- Winnipeg, Lake, Man.
 J 24(5): 1017 (& nearby lakes: profundal benthic fauna)
 29(1): 31 (attached algae on artificial & natural substrates)
 (3): 330 (ecological notes on longnose dace)
 S 900 (availability of fishes)
 908 (limnology)
 1668 (mercury contamination in commercial fishes)
 A 200 (mercury contamination of fishes by species & locality)
- Winnipegosis, Lake
 S 900 (availability of fishes)
 1668 (mercury contamination in several commercial fishes)
- Winters, George Henry
 J 27(2): 393 (Atl. capelin record size & age)
 (4): 804 (hatchetfish from Grand Bank)
 (11): 2105 (sand lance in Nfld. area)
 (12): 2215 (coastal capelin biological changes)
 28(7): 1029 (fecundity of capelin)
 CJG 18: 20 (herring tagging in SW Nfld. waters)
 T 315 (herring & capelin larvae distribution & size, S Gulf of St. Lawrence & SW Nfld.)
 A 185 (Nfld. capelin)
 193 (capelin (*Mallotus villosus*))
- Wisconsin
 J 24(5): 927 (limnetic larval fish in N lakes)
- Wise, John P.
 J 26(6): 1676 (*Lolliguncula brevis* measurements)
- Wiseman, Phyllis Maxwell
 J 28(10): 1675 (sterols of a brachiopod)
 29(4): 385 (review of molluscan sterols in light of modern structural analysis techniques)
 S 1239 (red algae sterols)
 1264 (Alaskan king crab & N Atl. queen crab sterols)
 1457 (desmosterol content of dulce red algae sterols)
 1459 (new marine sterol)
 1506 (identification of scallop sterols)
 1527 (sterols of Crustacea)
 1679 (molluscan sterols)
- Wissing, Thomas Edward
 J 25(11): 2515 (invertebrates calorific values)
- Witch (see Flounder, winter; Flounder, witch)
- Withler, Frederick Curtis
 J 24(7): 1573 (sockeye & pink salmon ova & sperm fertility)
 25(12): 2695 (sockeye & pink salmon chilled ova & sperm)
 27(12): 2197 (parental influences on salmon development)
 29(1): 13 (pink salmon ova fertilization by sperm from treated juveniles)
 CNG 91 (Vancouver Is. steelhead trout age & size)
 92 (research needs for intensive steelhead trout management, B.C.)
 T 111 (salmon ova & milt)
- Withler, Ira Louis
 J 23(3): 365 (characteristics of steelhead trout)
- Wittenberger, Carol
 J 22(6): 1397 (carp metabolism)
- Wobeser, Gary Arthur
 J 27(4): 830 (mercury concentrations in fish tissues)
- Wojtowicz, Maria Barbara
 J 29(1): 85 (muscle catheptic activity of some marine species)
 S 1453 (cathepsin activity measurement with hemoglobin substrate)
- Wold, Finn
 J 28(6): 879 (enolase from lobster)
- Wolf, Harold
 J 27(5): 955 (whirling disease of trout)
- Wolf, Ken
 J 25(2): 383 (infectious pancreatic necrosis virus-free trout selection)
 26(6): 1459 (infectious pancreatic necrosis detection methods)
 (9): 2511 (trout re infectious pancreatic necrosis)
 29(2): 149 (channel catfish virus disease histopathology)
- Wolf Creek, Vancouver Island, B.C.
 T 323 (survey of possible effects of logging on salmon & trout)
- Wolf-eel (Atlantic) (*Lycenchelys paxillus*)
 T 261 (bibliography for Gulf of St. Lawrence)
- Wolf-eel (Pacific) (*Anarrhichthys ocellatus*)
 B 180: 351 (full description, etc., B.C.)
 T 11; 46; 81; 175; 181; 257; 290; 317 (taken in FRB experimental or B.C. commercial trawling)
- Wolfe, Douglas Arthur
 J 27(1): 47 (zinc and ⁶⁵Zn in *Crassostrea virginica*)
 (1): 59 (zinc enzymes in *C. virginica*)
- Wolfert, David Richard
 J 26(7): 1887 (L. Erie walleyes)

- Wolffish, Atlantic (*Anarhichas lupus*)**
 J 23(10): 1587 (lipid oxidation test) (as "sea catfish")
 24(1): 207 (description of eggs off N.S.)
 26(2): 311 (copepod parasitic on gills)
 27(4): 701 (transition metals ion effects on muscle extractable protein & lipids oxidation catalysis)
 28(1): 1 (amine production in stored frozen muscle)
 (9): 1285 (methylmercury in, N.S. banks)
 B 154: 111, 154 (as Nfld. resource)
 CJG 14; 15; 16 (Nfld. landings, 1952-68)
 CSG 54 (underexploited on N.S. banks)
 T 80 (stocks, Gulf of St. Lawrence & N.S. banks)
 164 (extensive length-weight data)
 225 (associated with Bay of Fundy scallop beds)
 260 (standing crop, availability, lengths, weights, etc., from Scotian Shelf surveys, 1958-68)
 261 (bibliography for Gulf of St. Lawrence)
 A 43 (in Canadian ICNAF area)
 143(F) (French version of CSG 54 above)
 175 (same as CSG 54 above)
- Wolffish, Bering (*Anarhichas orientalis*)**
 A 75 (third specimen known from central Canadian Arctic)
- Wolffish, northern (*Anarhichas denticulatus*)**
 B 154: 111, 154 (as Nfld. resource)
- Wolffish, spotted (*Anarhichas minor*)**
 B 154: 111, 154 (as Nfld. resource)
 T 261 (bibliography for Gulf of St. Lawrence)
- Wolmark, Norman**
 S 1028 (fatty acid distribution in animal depot fat triglycerides)
- Wolotira, Robert John, Jr.**
 J 25(5): 1077 (*Isopsetta isolepis* in Bering Sea)
- Wong, Bryan**
 J 29(12): 1761 (size selection of *Daphnia pulex* by yellow perch)
- Wong, Chi Chang**
 J 29(10): 1487 (B.C. dogfish mercury content)
- Wong, How Kin**
 S 1426 (sedimentary environments on Magdalen Shelf)
- Wong, James**
 T 153 (Pac. Ocean Station P oceanographic observations)
 169; 178; 191 (Strait of Georgia velocity measurements 1967-69)
- Wong, Joseph**
 CVG 38; 42 (B.C. salmon canning wastewater clarification)
- Woo, Patrick Tung Kee**
 J 23(12): 1965 (records of *Cryptobia salmositica* from sockeye salmon)
- Wood, Albert Lewis**
 J 24(7): 1461 (freeze-drying of Atl. cod steaks)
 26(12): 3271 (freeze-dried cod steaks quality)
 CHN 24 (freeze-drying of Atl. fishes)
 35 (fillet freezing time & weight loss)
- Wood borers** (*see* Gribbles; Isopoda; Shipworms)
- Woodhead, Peter Mervyn Jaynes**
 J 27(12): 2337 (thyroxine effect on Atl. cod swimming)
- Woodland, Gladstone Bruce**
 S 1086 (research vessel *E. E. Prince*)
 1096 (B.C. lobster transplant)
 1102 (Greenland salmon fishery)
 A 3 (FRB Annual Review)
 56 (Atl. salmon high seas tagging)
 68 (career of FRB scientist)
- Woodley, James Carter**
 J 23(12): 1965 (records of *Cryptobia salmositica* flagellate from sockeye salmon)
- Woods, C. S.**
 T 151 (bibliography of coregonid fishes)
- Woods, for smoking fish**
 J 27(7): 1201 (flavor effects of different, for smoking lake whitefish)
 S 1698 (as above)
- Woods, Lake of the** (*see* Lake of the Woods, Ont.)
- Woods, Robert John**
 J 28(5): 625 (handling & anesthetization effects on brook trout)
 (5): 635 (brook trout variations re surgery)
 29(9): 1344 (tricaine methane sulfonate levels in brook trout blood during & after anesthesia)
- Woods, Susan Madeleine**
 J 26(3): 543 (polyteny in *Pseudocalanus* sp.)
- Workburn Lake, B.C.**
 J 24(10): 2189 (primary productivity)
- Worlund, Donald Duane**
 J 25(9): 1971 (aging chinook salmon from scales)
 27(10): 1747 (king crab pots for sablefish capture)
- Worms** (*Note:* The references to "worms" are indexed herein as follows; *see also* Annelida; Helminths; Parasites)
 Arrowworms — *see* Chaetognatha
 Budworm — *see* Budworm, spruce
 Clamworms — *see* *Nereis* references under Polychaeta; *also* Nemertea
 Codworm — *see* *Phocanema* references under Nematoda
 Earthworms (Oligochaeta) — *see* Earthworms
 Flatworms — *see* Cestoda; Trematoda; Turbellaria

- Flukes — see Trematoda
 Gillworms — see Turbellaria
 Hookworms — see Nematoda
 Leeches (Hirudinea) — see Leeches
 Mealworm — see Mealworm
 Pileworms (Mollusca) — see Shipworms
 Ribbonworms — see Nemertea
 Roundworms — see Nematoda
 Sandworms — see *Nereis* references under Polychaeta
 Seaworm, boring — see *Polydora* references under Polychaeta
 Shipworms (Mollusca) — see Shipworms
 Spiny-headed worms — see Acanthocephala
 Tapeworms — see Cestoda
 Trumpetworm — see Polychaeta
 Tubeworms — see Polychaeta
- Woronecki, David E.
 J 26(3): 709 (northern redbelly dace occurrence)
- Worthington, Robert Earl
 J 29(1): 113 (channel catfish fatty acids)
- Wowchuk, Robert Michael
 T 113; 211; 290 (FRB experimental groundfish cruises, off B.C. coast)
- Wrymouth (*Cryptacanthodes maculatus*)
 J 28(7): 935 (occasional component of Passamaquoddy Bay fish communities, N.B.)
 T 261 (bibliography for Gulf of St. Lawrence)
- Wrymouth, dwarf (*Lyconectes aleutensis*) (red devil)
 B 180: 356 (full description, etc., B.C.)
- Wrymouth, giant (*Delolepis gigantea*)
 B 180: 355 (full description, etc., B.C.)
 T 181; 257; 317 (taken in B.C. trawl fishery)
- Wydoski, Richard Stanley
 J 23(5): 623 (fecundity of brook trout)
- X**
- Xanthates
 T 293 (analysis of mine wastes for, re pollution)
- Xanthin derivatives (see Pigments)
- Xanthine derivatives (see Hypoxanthine; Purines)
- Xanthine oxidase (see also Enzymes)
 J 27(2): 383 (metal salts poisoning effects on)
- Xanthochroism (see also Pigments; Skin)
 J 23(12): 1981 (of bocaccio color variant)
- Xanthophyceae (see also Chrysophyta)
 J 25(8): 1603 (*Olisthodiscus* sp. fatty acids)
 26(10): 2703 (*Vaucheria* sp. vertical distribution off Halifax, N.S.)
- 27(3): 436 (acid mine wastes effects on *Botryococcus* in small NW Ont. lakes)
 S 1159 (*Olisthodiscus* photosynthetic thetin)
 A 40 (similar to S 1159 above)
- Xanthophylls (see also Pigments; Skin)
 J 24(10): 2195 (in unusual sockeye salmon skin pigmentation)
- Xeneretmus latifrons* (see Poacher, blacktip)
letops (see Poacher, cutfin)
triacanthus (see Poacher, bluespotted)
- Xenomystax atrarius* (eel-like fish)
 J 29(1): 1 (redescription, distribution in E Pac. Ocean)
 B 180: 71 (brief description in key to B.C. fishes)
- Xenon
 A 232 (¹³³Xe as radioactive marine pollutant)
- Xererpes fucorum* (see Gunnel, rockweed)
- Xiphias gladius* (see Swordfish)
- Xiphister atropurpureus* (see Prickleback, black)
mucosus (see Prickleback, rock)
- X-rays (see also Morphology for applications of)
 J 23(12): 1969 (northern pike accessory fin)
 27(2): 317 (decoding embedded encapsulated metal oxides used for marking animals)
 28(3): 369 (fluorescence X-ray spectrometry of salmonids for elemental composition as indicator of geographical origin)
 (8): 1181 (rainbow trout growth & fecundity after eyed-embryo exposure to)
 (10): 1583 (radioisotope X-ray fluorescence spectrometry in aquatic biology: review)
 T 200 (multiple discrimination analysis of data from J 28(3) reference above)
 212 (computer programming of data such as from T 200 reference above)
 S 934 (angiography of Pac. salmon)
- Xystreurus liolepis* (see Sole, fantail)
- Y**
- Yamaguti, Satyu
 J 26(4): 845 (digenetic trematode nutrition)
- Yamamoto, Masanobu
 S 1401 (nucleotide phosphodiesterase of fish brain)
 1402 (fish muscle glycogen phosphorylase)
 1508 (acid deoxyribonuclease from salmon testes)
 1525 (fish liver enzymes)
 A 226 (nucleoside cyclic phosphate diesterases)
 227 (nucleotide phosphomonoesterases)
- Yamazaki, Fumio
 J 25(7): 1497 (Pac. salmon pituitary "prolactin")
 S 1249 (spermiation bioassay for gonadotropin)

- 1292 (salmon pituitary gonadotropin in goldfish)
1336 (hormones & spermiation in goldfish)
- Yasutake, William Toshio
J 27(5): 955 (whirling disease of trout)
- Yates, Arthur Nelson
CNG 87 (experimental prawn trap fishing)
A 128; 128(F) (B.C. prawn trap fishing)
- Year-class (*see* Age; *also* names of certain fishes, particularly Salmon)
- Yeasts
J 26(12): 3165 (as winter zooplankton feed, Strait of Georgia, B.C.)
29(3): 333 (in bluefish intestine)
S 1305 (biomass re marine feeding of young Pac. salmon & trout)
1369 (*Metschnikowia krissii* infection of Strait of Georgia *Calanus plumchrus* copepods)
1428 (*M. krissii* infection of crab & possible threat to lobster, Fatty Basin, B.C.)
- Yellow Lake, B.C.
J 26(7): 1763 (moromixis & other characteristics)
- Yellowstone Lake, Wyoming
J 24(10): 2011 (cutthroat trout homing & orientation)
26(5): 1243 (cutthroat trout movements & homing)
27(4): 715 (ultrasonic tracking of homing cutthroat trout)
- Yellowtail (*Seriola dorsalis*) (*see also* Flounder, yellowtail)
A 90; 103 (fishery trend along N America Pac. coast)
- Yesaki, Mitsuo
J 25(5): 1077 (*Isopsetta isolepis* in Bering Sea)
- Yevich, Paul Peter
J 26(2): 433 (cyprinodontiform blood morphology)
27(12): 2185 (responses of estuarine teleost to cadmium)
- Yew, Japanese (*Taxus cuspidata*)
J 24(11): 2497 (insect molt-hormone activity of extract from branches)
- Yield (*see also* Angling; Catches; Fisheries; Management)
J 23(2): 263 (re lake whitefish standing crop)
(4): 511 (re Strait of Georgia lemon sole size limit)
24(2): 249 (equilibrium, per recruitment; computerized)
(12): 2527 (maximum sustained, re exploitation of multiple stocks)
25(10): 2011 (fertilizing lake to increase trout)
(12): 2589 (Fraser R. white sturgeon)
26(3): 479 (size-selective mortality & sampling bias effects on estimates of)
(5): 1205 (equilibrium, in exploited American plaice stock)
- (8): 1985 (analytical approach to forecasts, NE Pac. ocean demersal fishing)
(10): 2715 (effects of simulated long-term environmental fluctuations on maximum sustained)
(11): 2969 (meat, from *Parapenaeus* Atl. shrimps)
27(2): 395 (smallmouth bass sport fishery, Tadenac L., Ont.)
B 169: 120 (meat, from Pac. oyster)
T 92 (computer programming for equilibrium, per recruitment of a fish stock)
165; 165(F) (in rainbow trout farming, central Canada)
260 (maximum sustainable, Scotian Shelf groundfishes)
S 1025 (maximum sustained: lack of research data for calculations re ICNAF area)
1366 (effect of drip, etc., on yield from processed fish)
1699 (forecasting fisheries production in ICNAF area)
A 184 (sustained, of Canadian Arctic harp & ringed seals)
- Yoho National Park, B.C.
J 28(3): 311 (crustacean plankton of 20 alpine & subalpine lakes and ponds)
- Yoldia limatula* (*see* Clams (Atlantic and Eastern Canadian Arctic))
- Yonemori, Tamotsu
S 1302 (N Pac. Ocean salmon)
- Yoshihara, Harvey Toshio
J 27(4): 818 (deepwater king crab parasitism)
- Youngs, William Durwood
J 29(6): 787 (exploitation & introductions effects on salmonid community, Cayuga L., N.Y.)
(9): 1283 (total cadmium content survey of New York State freshwater fishes)
- Y-prickleback (*see* Prickleback, Y-)
- Yu, Man-Lim
J 28(1): 47 (erythropeiosis in *Trichogaster trichopterus*)
- Yuen, Heeny Sheu Heen
J 27(11): 2071 (behavior of skipjack tuna by tracking)
- Yuen, Kenneth Buck
J 26(9): 2477 (tidal barrier effects on M₂ tide, Bay of Fundy)
- Yukon River, Yukon and Alaska
B 173 (descriptions of fishes in drainage system)
- Yurkowski, Michael
J 22(1): 17, 27 (carbonyl compounds in Atl. cod)
(3): 643 (lysolecithinase of cod)
S 986 (preparation of L- α -glyceryl phosphoryl choline)
1029 (stereospecific analyses of vegetable fats)

- 1065 (determining glycerides fatty acids distribution)
 1455 (intestinal mucosal lipids in rats)
- Yusa, Tatsuo
 T 236 (eggs & larvae of *Limanda yokohamae*)
- Yvesia* (see Sponges)
- Z**
- Zalembius rosaceus* (see Seaperch, pink)
- Zalophus californianus* (see Seal Lion, California)
- Zaniolepis latiplnnis* (see Combfish, longspine)
- Zaprora silenus* (see Prowfish)
- Zarogian, G. E.
 J 29(9): 1367 (cadmium uptake by marine organisms)
- Zaugg, Waldo S.
 J 29(2): 167 (gill adenosinetriphosphatase activity during salmonids parr-smolt transformation)
- Zealeuctra* (see also Plecoptera)
 S 1375 (descriptions of 6 new species)
- Zeaxanthin* (see Pigments)
- Zebrafish (*Brachydanio rerio*)
 J 23(7): 1037 (resistance of immature embryos to zinc sulfate)
 24(6): 1253 (oxygen uptake re resistance to zinc sulfate)
 25(8): 1739 (spinal ganglia position re taxonomy)
- Zibrowius, Helmut W.
 J 28(10): 1373 (revision of *Metavermilina*)
- Zinc and derivatives (see also Mineral content)
 J 22(2): 425 (lethal levels of Zn-Cu pollutants to young Atl. salmon)
 (4): 929 (re oxidative rancidity promotion in cod flesh)
 23(7): 1037; 24(6): 1253 (resistance of immature zebrafish embryos to sulfate)
 25(3): 591 (⁶⁵Zn retention effect on trout growth)
 (4): 639 (catalyzing fatty fish flesh oxidative rancidity)
 (11): 2461 (distribution of natural ⁶⁵Zn in small Crustacea)
 (12): 2691 (⁶⁵Zn metabolism in freshwater mussel)
 26(1): 145 (marine organisms requirement estimates)
 (5): 1347 (re calanoid copepods culture)
 27(1): 47 (zinc & ⁶⁵Zn levels in North Carolina oysters from industrial- or fallout-polluted waters)
 (1): 59 (role of zinc enzyme re zinc-protein association in zinc uptake by Atl. oyster)
 (4): 677 (in livers of 8 Great Lakes fish species)
- (4): 701 (ion effects on marine muscles extractable protein)
 (4): 731 (effect on lobster behavior)
 (5): 847 (concentration in Sunfish L., Ont.)
 (6): 1051 (autoradiograph distribution of ingested ⁶⁵Zn in tissues of some marine euphausiids & shrimp tissues)
 28(2): 277 (in sediments of 4 small NW Ont. lakes)
 (5): 786 (in dressed Canadian fishes from industrial area lakes)
 (6): 843 (biological activity of, as occurring in P.E.I. oysters fed to rats)
 (8): 1107 (mathematical model of effects on mortality in fathead minnow populations)
 (11): 1783 (distribution of ⁶⁵Zn vs. Zn in experimental marine ecosystem)
 29(4): 450 (amount in Atl. oyster shell & soft tissue)
 (9): 1356 (effect of shelters on bluegill resistance to lethal concentration)
 (10): 1463 (rainbow trout tissue hypoxia re acute zinc toxicity)
 (12): 1691 (chloride, re toxicity to *Daphnia magna*)
 B 169: 149 (in Pac. oyster)
 T 114 (content of Atl. & Pac. herring meals)
 202(F) (diatoms as indicators of, & effects of, in NW Miramichi R. basin, N.B.)
 S 931; 961 (toxicity for Atl. salmon)
 941 (radioactive ⁶⁵Zn seawater contamination)
 999 (sublethal Cu-Zn pollution re young Atl. salmon & insect larvae)
 1007; 1085 (toxicity to Atl. salmon & trout, re mining pollution)
 1196 (re mining pollution effects on spawning Atl. salmon)
 1252 (rainbow trout avoidance reactions to sulfate solutions)
 1291 (antipollutant agent for protecting fish from)
 1377 (content of Atl. & Pac. herring meals)
 1406 (re bacterial disease of salmon & suckers, NW Miramichi R., N.B.)
 1529 (distribution in L. Ontario)
 1553 (re mining effluent effects on NW Miramichi R. vascular plants)
 A 85 (in freshwater fishmeal)
 111 (NTA sequestering agent to combat pollution from)
 222 (avoidance reaction sensitivity to sublethal levels by Atl. salmon & brook trout)
 232 (⁶⁵Zn as radioactive marine pollutant)
- Zinck, Maurice Evans
 J 29(4): 349 (DDT, dieldrin, & polychlorinated biphenyls residues in commercial Canadian marine oils)
 T 303 (elemental phosphorus monitoring program results, Long Harbour, Nfld., July 1970-Apr. 1971)
 S 1701 (ecdysterone estimation from induced fluorescence)
- Ziphius cavirostris* (see Whale, Cuvier's beaked)

- Zitko, Vladimir (*Note*: PCB = polychlorinated biphenyls)
 J 27(1): 21 (toxicity of yellow phosphorus)
 28(9): 1285 (methylmercury in fish)
 29(9): 1347 (Bunker C oil in sediments & benthos of Chedabucto Bay shallows, N.S.)
- T 217 (characterization of petroleum oils)
 272 (PCB & other industrial halogenated hydrocarbons in the environment)
 325 (forest-based industries impact on freshwater-dependent N.B. fish resources)
- S 1452 (PCB solubilized in water for toxicity studies to aquatic animals)
 1463 (identification of PCB & DDT)
 1569 (fuel oil contamination of aquatic animals)
 1570 (uptake of PCB from sea water by *Gammarus oceanicus*)
 1584 (fish kill from coke-oven oil)
 1595; 1661 (substances interfering with PCB & other pesticides chromatographic determination)
 1600 (PCB characteristics & determination)
 1603 (synthesis of some PCB)
 1604 (PCB & other pesticide residues in freshwater & marine fishes)
 1633 (PCB & DDT found in Bay of Fundy marine birds eggs)
 1656 (chlorinated dibenzodioxins & dibenzofurans residues not detectable in marine animals)
 1659 (polychlorinated terphenyls in the environment)
 1696 (Bay of Fundy & Gulf of Maine contamination with various pesticides)
- Zoarcas viviparus* (*see* Eelpouts)
- Zonation (*see also* Distribution)
 T 155 (of shore biota in subtidal Bideford R., P.E.I.)
 S 1619 (various seaweeds, St. Margaret's Bay, N.S.)
- Zoobenthos (*see* Benthos)
- Zoogeography (*see also* Distribution (biological); Glaciation)
 J 27(12): 2159 (*Merluccius* hakes)
 28(7): 987 (re systematics & evolution of western N America *Salmo*)
 (9): 1331 (re glacial relict *Pontoporeia affinis* amphipod in L. Washington, USA)
 (10): 1403 (re amphipacific distribution of polychaete species)
 29(12): 1772 (new complexities re pygmy whitefish taxonomy)
- B 173: 15-26 (re distribution of freshwater fishes in NW Canada & Alaska)
- S 1451 (problems re *Coregonis clupeaformis* whitefish species complex)
 1532; 1533 (re invertebrates in high mountain North Boulder Creek, Colorado)
 1647 (*Allocaupnia* stoneflies)
- Zooplankton (*see also* Feed; Plankton; Productivity, secondary; *also* classifications of)
- J 22(2): 543 (Canadian Arctic, NW Canadian Atlantic, Beaufort Sea)
 (5): 1107 (lipid fatty acids of marine)
 23(1): 85 (in feed of NE Pac. Ocean salmon & steelhead trout)
 (2): 189, (3): 415 (free-swimming copepod nauplii)
 24(3): 555 (particularly calanoid copepods, Tanquary Fjord, Ellesmere Is.)
 (3): 581 (concentration in NE Pac. re Ekman water mass transport)
 (10): 2053 (micro, in California Current euphotic zone)
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 (7): 1948 (vertical sampler)
 (8): 2240 (sampling net for surface)
 (9): 2345 (caloric & carbon equivalents of biomass)
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 (12): 3165 (bacteria & other heterotrophs as winter feed for, Strait of Georgia, B.C.)
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JOURNAL OF THE FISHERIES RESEARCH BOARD OF CANADA

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BULLETINS OF THE FISHERIES RESEARCH BOARD OF CANADA

Abbreviation: B

149. FRICK, H. C. 1965. Economic aspects of the Great Lakes fisheries of Ontario. 160 p.
150. TOMLINSON, N. 1966. Greening in tuna and related species. 21 p.
151. LANTZ, A. W. 1966. Special products from freshwater fish. 45 p.
- 151f. LANTZ, A. W. 1969. Produits spéciaux des poissons d'eau douce. ix + 59 p.
152. GRAINGER, E. H. 1966. Sea stars (Echinodermata: Asteroidea) of arctic North America. 70 p.
153. KETCHEN, K. S., AND C. R. FORRESTER. 1966. Population dynamics of the petrale sole, *Eopsetta jordani*, in waters off western Canada. 195 p.
154. TEMPLEMAN, W. 1966. Marine resources of Newfoundland. 170 p.
155. LEIM, A. H., AND W. B. SCOTT. 1966. Fishes of the Atlantic coast of Canada. 485 p. (Indexed, including names of described fishes, in Bulletin 164.)
- 155f. LEIM, A. H., AND W. B. SCOTT. 1972. Poissons de la côte atlantique du Canada. 527 p.
156. CREAN, P. B. 1967. Physical oceanography of Dixon Entrance, British Columbia. 66 p.
157. RUTHERFORD, J. B., D. G. WILDER, AND H. C. FRICK. 1967. An economic appraisal of the Canadian lobster fishery. 126 p.
158. SINCLAIR, S., S. TRACHTENBERG, AND M. L. BECKFORD. 1967. Physical and economic organization of the fisheries of the District of Mackenzie, Northwest Territories. 70 p.
159. CARROTHERS, P. J. G. 1967. Automatic underwater photographic equipment for fisheries research. 34 p.
160. ROACH, S. W., H. L. A. TARR, N. TOMLINSON, AND J. S. M. HARRISON. 1967. Chilling and freezing salmon and tuna in refrigerated sea water. 40 p.
161. KENNEDY, W. A., AND W. M. SPRULES. 1967. Goldeye in Canada. 45 p.
162. FOERSTER, R. E. 1968. The sockeye salmon, *Oncorhynchus nerka*. xv + 422 p.
163. CARROTHERS, P. J. G. 1968. Instrumentation for the engineering study of otter trawls. vii + 45 p.
164. CARTER, N. M. 1968. Index and list of titles, Fisheries Research Board of Canada and associated publications, 1900–1964. xviii + 649 p. (French edition of preface available separately.)
165. MCCRIMMON, H. R. 1968. Carp in Canada. ix + 93 p.
- 165f. MCCRIMMON, H. R. 1972. La carpe au Canada.
166. EALES, J. G. 1968. The eel fisheries of eastern Canada. x + 79 p.
- 166f. EALES, J. G. 1972. La pêche de l'anguille dans l'est du Canada.
167. STRICKLAND, J. D. H., AND T. R. PARSONS. 1968. A practical handbook of seawater analysis. xi + 311 p. (Revised and reprinted 1972.)
168. QUAYLE, D. B. 1969. Paralytic shellfish poisoning in British Columbia. x + 68 p.
169. QUAYLE, D. B. 1969. Pacific oyster culture in British Columbia. xii + 192 p.
170. SÆTHER, O. A. 1969. Some Nearctic Podonominae, Diamesinae, and Orthocladiinae (Diptera: Chironomidae). ix + 154 p.
171. PIKE, G. C., AND I. B. MACASKIE. 1969. Marine mammals of British Columbia. ix + 54 p.
172. BIGG, M. A. 1969. The harbour seal in British Columbia. viii + 33 p.
173. MCPHAIL, J. D., AND C. C. LINDSEY. 1970. Freshwater fishes of northwestern Canada and Alaska. x + 381 p.
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175. MORSE, N. H. 1971. An economic study of the oyster fishery of the Maritime Provinces. viii + 81 p.
176. SHIH, C.-T., A. J. G. FIGUEIRA, AND E. H. GRAINGER. 1971. A synopsis of Canadian marine zooplankton. viii + 264 p.
177. PRAKASH, A., J. C. MEDCOF, AND A. D. TENNANT. 1971. Paralytic shellfish poisoning in eastern Canada. viii + 88 p.
178. QUAYLE, D. B. 1971. Pacific oyster raft culture in British Columbia. vi + 34 p.
179. QUAYLE, D. B., AND N. BOURNE. 1972. The clam fisheries of British Columbia. vii + 70 p.
180. HART, J. L. 1973. Pacific fishes of Canada. xii + 740 p.

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Post-1964 Reprints, Revisions, and Translations of Pre-1965 Bulletins

(Indexed in Bulletin 164)

68. CLEMENS, W. A., AND G. V. WILBY. 1946. Fishes of the Pacific coast of Canada. 443 p. (Reprinted without revision.)
119. RICKER, W. E. 1958. Handbook of computations for biological statistics of fish populations. 300 p. (Reprinted with corrections 1963; reprinted without revision 1968.)
122. STRICKLAND, J. D. H. 1960. Measuring the production of marine phytoplankton. 172 p. (Reprinted 1972.)
125. STRICKLAND, J. D. H., AND T. R. PARSONS. 1960. A manual of sea water analysis with special reference to the more common micronutrients and to particulate organic material. 203 p. (2nd ed., revised 1965.)*
131. MEDCOF, J. C. 1961. Oyster farming in the Maritimes. 158 p. (Reprinted without revision.)
- 131f. MEDCOF, J. C. L'ostréiculture dans les provinces Maritimes. xi + 178 p.
137. MANSFIELD, A. W. 1963. Seals of arctic and eastern Canada. 35 p. (2nd ed., revised 1967.)
- 140f. TEMPLEMAN, W. 1963. Répartition des requins dans l'Atlantique canadien (et plus particulièrement dans les eaux de Terre-Neuve). 83 p. (English edition published in 1963.)
- 147f. MCLEESE, D. W., AND D. G. WILDER. 1967. Le homard: entreposage et expédition. 75 p. (English edition published in 1964.)
148. BELL, G. R. 1964. A guide to the properties, characteristics, and uses of some general anaesthetics for fish. 9 p. (2nd ed., revised.)

*Revisions necessitated some new indexing in this bulletin.

ANNUAL REPORTS OF THE FISHERIES RESEARCH BOARD OF CANADA

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| AR 1964. Annual Report Fisheries Research Board of Canada 1964. 24 p. (combined English and French) | 1968. Annual Report Fisheries Research Board of Canada 1968. 35 p. (combined English and French) |
| 1965. Annual Report Fisheries Research Board of Canada 1965. 36 p. (combined English and French) | 1969. Annual Report Fisheries Research Board of Canada 1969. 40 p. (combined English and French) |
| 1966. Annual Report Fisheries Research Board of Canada 1966. 26 p. (combined English and French) | 1970. Annual Report Fisheries Research Board of Canada 1970. 52 p. (combined English and French) |
| 1967. Annual Report Fisheries Research Board of Canada 1967. 36 p. (combined English and French) | 1971. Annual Report Fisheries Research Board of Canada 1971. 47 p. (combined English and French) |

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| 1965/66. Review of the Fisheries Research Board of Canada 1965-66. 148 p. | 1969/70. Review of the Fisheries Research Board of Canada 1969-70. 237 p. |

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CIRCULARS OF THE FISHERIES RESEARCH BOARD OF CANADA

ARCTIC BIOLOGICAL STATION

P.O. Box 400, Ste. Anne de Bellevue, Qué.

Abbreviation: CAG

9. SERGEANT, D. E. 1966. Populations of large whale species in the western North Atlantic with special reference to the fin whale. 30 p.

(A continuing series)

OFFICE OF THE ATLANTIC REGIONAL DIRECTOR, RESEARCH

1 Sackville Place, P.O. Box 159, Halifax, N.S.

Abbreviation: CAR

1. JANGAARD, P. M. 1970. The role played by the Fisheries Research Board of Canada in the "red" herring phosphorus pollution crisis in Placentia Bay, Newfoundland. 20 p.

(A continuing series)

FRESHWATER INSTITUTE

510 University Crescent, Winnipeg, Man.
R3T 2N6.

*(formerly the Biological Station, London, Ontario;
relocated in Winnipeg in 1966 as the Freshwater Institute)*

Abbreviation: CCG

7. 43 p., September 1965.
BOGOSLOWSKI, A. S. The keeping qualities of fish sausages and wieners, p. 1-8.
LAWLER, G. H. Whitefish improvement — pike control, p. 9-15.
UTHE, J. F. A new method of identifying various species of fish, p. 16-20.
TIBBLES, J. J. Preparation for the advance of sea lamprey control from Lake Superior into the lower Great Lakes, p. 21-26.
LANTZ, A. W. A method for chilling bulk quantities of freshwater smelt, p. 27-32.
LANTZ, A. W. Air blast freezers for freshwater fish, p. 38-40.
Literature for the fishing industry, p. 41-43.

(A continuing series)

MARINE ECOLOGY LABORATORY, BEDFORD INSTITUTE

P.O. Box 1006, Dartmouth, N.S.

Abbreviation: CDG

1. THOMAS, M. L. H. 1968. Control of eelgrass using 2,4-D in oyster-growing areas. 4 p. (Also listed as Interpretative Article No. 109)

(A continuing series)

HALIFAX LABORATORY

(NEW SERIES)

P.O. Box 429, Halifax, N.S.

Abbreviation: CHN

20. ODENSE, P. H., C. W. SHINNERS, AND T. C. LEUNG. 1965. Report to the fishing industry on the identification of fresh and frozen fillets of cod, haddock, and other species. 2 p.
21. STEWART, J. E., AND H. E. POWER. 1965. A unit suitable for holding and displaying live lobsters. 6 p.
22. JANGAARD, P. M. 1965. A note to the fishing industry and general public on sulphide discoloration ("smut") in canned fishery products. 1 p.
23. POWER, H. E., AND M. L. MORTON 1965. A note to the industry on superchilled storage of cod. 2 p.
24. WOOD, A. L. 1965. A note to the industry on freeze-drying. 2 p.
25. ACKMAN, R. G. 1965. The "blackberry" or "black feed" odour problem. 2 p.
26. JANGAARD, P. M. 1965. Salt water fish farming. 1 p.
27. CASTELL, C. H. 1966. Gain and loss in the weight of fillets during processing and storage. 5 p.
28. JANGAARD, P. M. 1966. The care and treatment of seal pelts. 2 p.
29. JANGAARD, P. M. 1967. Fish meal plants in eastern Canada. 5 p.
30. KAMRA, S. K. 1967. A report to the fishing industry on the problem of discolored flesh in gillnet turbot (Greenland halibut). 3 p.
31. JANGAARD, P. M. 1967. Frozen storage of whole lobsters. 2 p.

32. JANGAARD, P. M., AND A. SAITO. 1968. Japanese frozen minced fish (fish paste) products. 2 p.
33. JANGAARD, P. M. 1968. Suggestions for handling shrimp caught off the Atlantic coast of Canada. 2 p.
34. JANGAARD, P. M. 1968. The Maine shrimp industry, March, 1968. 3 p.
35. WOOD, A. L., AND L. W. REGIER. 1969. Freezing time and weight loss for fillets and bite-size pieces in air blast at -17°F . 2 p.
36. SAITO, A., AND L. W. REGIER. 1970. Determination of total carotenoid pigments in trout and salmon flesh. 3 p.
37. SIPOS, J. C., R. G. ACKMAN, AND R. F. ADDISON. 1970. Recognition of Bunker oils by thin-layer chromatography. 6 p.
38. CASTELL, C. H. 1970. Current status of the TMA test as a measure of spoilage in fish. 5 p.
39. DAMBERGS, N., AND L. W. REGIER. 1970. Method for extraction and colorimetric determination of isopropanol in fish protein concentrates. 5 p.
40. STEWART, J. E., AND J. W. CORNICK. 1970. Red crab, *Geryon quinquedens*: 1) recommended live storage temperatures; 2) resistance to gaffkemia, the lobster disease. 2 p.
41. STEWART, J. E., AND J. W. CORNICK. 1970. Disease among stored lobsters (gaffkemia). 5 p.
42. CORNICK, J. W., AND J. E. STEWART. 1970. Disinfection procedures for the control of blood disease (gaffkemia) in lobster storage facilities. 3 p.
43. STEWART, J. E. 1972. The detection of *Gaffkya homari*, the bacterium pathogenic to lobsters (Genus *Homarus*). 5 p.

(A continuing series)

ST. JOHN'S BIOLOGICAL STATION

St. John's, Nfld.

Abbreviation: CJG

12. HODDER, V. M. [ed.] [various authors.] 1965. Fishery investigations and groundfish landings - Newfoundland, 1964. 28 p.
13. FLEMING, A. M. [ed.] [various authors.] 1966. Fishery investigations and groundfish landings in Newfoundland, 1965. 57 p.
14. FLEMING, A. M. [ed.] [various authors.] 1967. Fishery investigations and groundfish landings in Newfoundland, 1966. 47 p.
15. FLEMING, A. M. [ed.] [various authors.] 1968. Fishery investigations and groundfish landings in Newfoundland, 1967. 44 p.
16. FLEMING, A. M. [ed.] [various authors.] 1969. Fishery investigations and groundfish landings in Newfoundland, 1968. 35 p.
17. PIPPY, J. H. C. 1970. Illustrated keys to the metazoan parasites of the Salmonidae of insular Newfoundland. 20 p.
18. HODDER, V. M. 1970. Recent developments in the Newfoundland herring fishery, p. 1-19.
- WINTERS, G. H. 1970. Preliminary results of herring tagging in southwest Newfoundland coastal waters, p. 20-24.
- PARSONS, L. S. 1970. Herring investigations in northeast Newfoundland and Labrador, p. 25-28.

(A continuing series)

NANAIMO BIOLOGICAL STATION

(GENERAL SERIES)

P. O. Drawer 100, Nanaimo B.C.

Abbreviation: CNG

73. THOMSON, J. A. 1965. Results of exploratory fishing for groundfish in Hecate Strait in 1965. 37 p.
74. OUTRAM, D. N. 1966. 1965 herring spawn deposition in the coastal waters of British Columbia. 8 p.
75. QUAYLE, D. B. 1966. Paralytic shellfish poisoning - safe shellfish. 9 p.
76. HERITAGE, G. D., AND T. H. BUTLER. 1967. Shrimp exploration in Hecate Strait and Queen Charlotte Sound, June to August 1966. 39 p.
77. OUTRAM, D. N. 1966. Herring spawn abundance in British Columbia 1966. 17 p.
78. KETCHEN, K. S. 1967. A review of the trawl fishery for Pacific cod with a forecast for 1967. 22 p.
79. KETCHEN, K. S. 1967. Recent developments in the domestic and foreign fisheries for groundfish in the northeastern Pacific. 13 p.
80. TAYLOR, F. H. C., AND W. P. WICKETT. 1967. Recent changes in abundance of British Columbia herring, and future prospects. 17 p.
81. BOURNE, N. 1967. A new method for digging butter clams. 9 p.
82. THOMSON, J. A. 1967. Results of exploratory fishing for groundfish in Hecate Strait in 1966. 34 p.
83. OUTRAM, D. N. 1967. Herring spawn production in British Columbia in 1967. 8 p.
84. LEBRASSEUR, R., AND J. FULTON. 1967. A guide to zooplankton of the northeastern Pacific Ocean. 34 p.
85. SMITH, M. S., AND T. H. BUTLER. 1968. Shrimp exploration on the British Columbia coast 1967. 41 p.
86. OUTRAM, D. N. 1968. The 1968 herring spawn deposition in the coastal waters of British Columbia. 9 p.
87. YATES, A. N. 1968. Experimental prawn trap fishing December 1, 1967, to March 22, 1968. 29 p.
88. OUTRAM, D., AND C. HAEGELE. 1969. The time and extent of herring spawning along the British Columbia coast in 1969. 15 p.
89. BRETT, J. R., AND D. B. SUTHERLAND. 1970. Improvement in the artificial rearing of sockeye salmon by environmental control. 14 p.

90. GODFREY, H. 1971. Production of chinook and coho salmon by United States hatcheries. 31 p.
91. NARVER, D. W., AND F. C. WITHLER. 1971. Age and size of steelhead trout (*Salmo gairdneri*) in anglers' catches from Vancouver Island, British Columbia, streams. 26 p.
92. WITHLER, F. C. 1972. Research needs for intensive management of British Columbia steelhead. 41 p.

(A continuing series)

NANAIMO BIOLOGICAL STATION

(STATISTICAL SERIES)

P.O. Drawer 100, Nanaimo, B.C.

Abbreviation: CNS

14. THOMSON, J. A., E. J. R. LIPPA, AND D. M. HOLMBERG. 1965. British Columbia landings of trawl-caught groundfish by month, by major and minor statistical area; and total hours of effort by month, by major area. Vol. 13, 1964. 75 p.
15. LEBRASSEUR, R. J. 1965. Stomach contents of salmonids caught in the northeastern Pacific Ocean — 1958. Vol. 1, 1965.
16. BILTON, H. T., D. W. JENKINSON, E. W. STOLZENBERG, S. A. M. LUDWIG, AND M. M. AARTS. 1965. Age composition of 1964 British Columbia sockeye, chum, and pink salmon catches. 125 p.
17. FORRESTER, C. R. 1966. Length and age composition of petrale sole (*Eopsetta jordani*) in western Canadian waters. 1. Lower west coast of Vancouver Island (P.M.F.C. Area 3C). 44 p.
18. FORRESTER, C. R. 1966. Length and age composition of rock sole (*Lepidopsetta bilineata*) in Western Canadian waters. 1. Butterworth-Warrior area of Hecate Strait (P.M.F.C. Area 5D). 40 p.
19. THOMSON, J. A., AND D. M. HOLMBERG. 1966. British Columbia landings of trawl-caught groundfish by month, by major and minor statistical area; and total hours of effort by month, by major area. Vol. 14, 1965. 66 p.
20. LEBRASSEUR, R. J., AND D. A. DOIDGE. 1966. Stomach contents of salmonids caught in the northeastern Pacific Ocean — 1956 & 1957. Vol. 2, 1966. 27 p.
21. LEBRASSEUR, R. J., AND D. A. DOIDGE. 1966. Stomach contents of salmonids caught in the northeastern Pacific Ocean — 1959 & 1960. Vol. 3, 1966. 68 p.
22. LEBRASSEUR, R. J., AND D. A. DOIDGE. 1966. Stomach contents of salmonids caught in the northeastern Pacific Ocean — 1962. Vol. 4, 1966. 81 p.
23. LEBRASSEUR, R. J., AND D. A. DOIDGE. 1966. Stomach contents of salmonids caught in the northeastern Pacific Ocean — 1963 & 1964. Vol. 5, 1966. 47 p.

24. FORRESTER, C. R., AND B. M. SUZUKI comp. 1966. An inventory of market samples of groundfish landed at British Columbia ports, 1946–1965. 46 p.
25. BILTON, H. T., E. A. R. BALL, AND D. W. JENKINSON. 1967. Age, size, and sex composition of British Columbia sockeye salmon catches from 1912 to 1963. 4 p. + 163 tables.
26. BILTON, H. T., E. A. R. BALL, AND D. W. JENKINSON. 1967. Age, size, and sex composition of British Columbia chum salmon catches from 1957 to 1963. 2 p. + 192 tables.
27. BILTON, H. T., D. W. JENKINSON, E. W. STOLZENBERG, AND M. M. AARTS. 1966. Age composition of 1965 British Columbia sockeye, chum, and pink salmon catches. 121 p.
28. FORRESTER, C. R. 1967. Trawl production by Canadian and United States vessels from grounds adjacent to British Columbia during the years 1954 to 1965, inclusive. 26 p. + 12 tables.

(A continuing series)

PACIFIC ENVIRONMENT INSTITUTE

4160 Marine Drive, West Vancouver, B.C.

Abbreviation: CPO

- 1965-1. STANLEY-JONES, A. R., AND K. STEPHENS. 1965. Modifications to salinometers in use at P.O.G. 6 p.
- 1965-2. HOLLISTER, H. J. 1965. Surface seawater temperatures along the British Columbia coast in 1964. 9 p.
- 1965-3. ANON. 1965. Cruise report: *Ehkoli*, March 1–21. 5 p.
- 1965-4. HOLLISTER, H. J. 1965. Seawater salinities at British Columbia coastal stations during 1964. 12 p.
- 1965-5. ANON. 1965. Cruise report: *Ehkoli*, April 5–14. 6 p.
- 1965-6. WICKETT, W. P. 1965. Coho commercial troll catches in Area 14, the northwestern portion of the Gulf of Georgia. 6 p.
- 1965-7. ANON. 1965. Cruise report: *Whitethroat*, July 19–31. 6 p.
- 1965-8. ANON. 1965. Cruise report: *Whitethroat*, Aug. 23–Sept. 3. 9 p.
- 1965-9. ANON. 1965. Cruise report: *Whitethroat*, Oct. 4–22. 5 p., 3 fig.
- 1965-10. ANON. 1965. Measurements associated with salmon stomachs. 5 p., 2 fig.

(A discontinued series)

ST. ANDREWS BIOLOGICAL STATION**(GENERAL SERIES)****St. Andrews, N.B.****Abbreviation: CSG**

44. MOUSETTE, M., F. D. McCRACKEN, AND A. MARCOTTE 1965. Distribution of cod catches by commercial vessels in the Gulf of St. Lawrence 1960-1962. 15 p.
45. WILDER, D. G. 1965. Wanted — alive not dead! A message to lobster fishermen. 7 p.
46. KOHLER, A. C. 1965. Changes in the southern Gulf of St. Lawrence cod fishery. 2 p.
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53. THOMAS, M. L. H. 1968. Test new treatment to protect wood from marine borers. 5 p.
54. SCOTT, J. S. 1969. Under-exploited groundfish on the Nova Scotia banks. 3 p.
55. TIBBO, S. N. 1970. Herring — the 'Golden Goose' of the sea. 5 p.
56. [Not yet issued]
57. CARROTHERS, P. J. G., AND T. J. FOULKES. 1972. Trawl measurements — How Canadian east coast otter trawls behave. 11 p.

(A continuing series)

(Note: This Station's Statistical Series of Circulars was discontinued with issue No. 9 in 1957; the nine issues were indexed and listed in FRB Bulletin No. 164.)

VANCOUVER LABORATORY**6640 N.W. Marine Drive, Vancouver, B.C.****Abbreviation: CVG**

34. MARCH, B. E., JACOB BIELY, H. L. A. TARR, AND F. G. CLAGGETT. 1965. Favourable effect of antioxidants

on metabolizable energy and protein value of British Columbia herring meal. 9 p.

35. CLAGGETT, F. G. 1965. Control of spontaneous heating in British Columbia herring meals. 20 p.
36. CLAGGETT, F. G. 1966. The effectiveness of some antioxidants in controlling spontaneous heating in British Columbia herring meal. 11 p.
37. CLAGGETT, F. G. 1966. The preservation of summer herring aboard the fishing vessel. 15 p.
38. CLAGGETT, F. G., AND J. WONG. 1968. Salmon canning waste-water clarification. Part I. Flotation by total flow pressurization. 9 p.
39. CLAGGETT, F. G. 1968. Fish meal pilot plant for research. 3 p.
40. CLAGGETT, F. G. 1968. The use and application of antioxidants for control of spontaneous heating in Canadian herring meal. 14 p.
41. TOMLINSON, N., D. E. KRAMER, S. E. GEIGER, AND S. W. ROACH. 1969. Weight changes in some species of Pacific coast fish while stored at sea in refrigerated sea water or in ice. 26 p.
42. CLAGGETT, F. G., AND J. WONG. 1969. Salmon canning waste-water clarification. Part II. A comparison of various arrangements for flotation and some observations concerning sedimentation and herring pump water clarification. 25 p.
43. TOMLINSON, N., D. E. KRAMER, S. E. GEIGER, S. W. ROACH, AND J. H. MANN. 1969. Storage of Pacific salmon at sea. 1. Influence of delay in chilling the catch on quality of the canned product. 15 p.
44. TOMLINSON, N., D. E. KRAMER, S. E. GEIGER, AND S. W. ROACH. 1969. Storage of Pacific salmon at sea. 2. Influence of delay in chilling the catch and of the method of chilling (ice or refrigerated sea water) on the yield at various steps in the handling, storage, and canning of sockeye salmon (*Oncorhynchus nerka*). 12 p.
45. TOMLINSON, N., D. E. KRAMER, S. E. GEIGER, AND S. W. ROACH. 1969. Weight changes in Pacific cod and halibut stored in ice at sea. Influence of the amount of ice used. 12 p.
46. CLAGGETT, F. G. 1970. A compact deodorizer for fishmeal plant flame driers. 8 p.

(A continuing series)

TECHNICAL REPORTS OF THE FISHERIES RESEARCH BOARD OF CANADA

Abbreviation: T

(Note: The numeral in parentheses at the end of each reference indicates the name of the Fisheries Research Board of Canada establishment from which the Report originated and to which request for a copy can be made. See page vi for addresses corresponding to these numerals.)

1. BUTLER, T. H. 1967. A bibliography of the Dungeness crab, *Cancer magister* Dana. 12 p. (1)
2. BERNARD F. 1967. Prodrôme for a distributional check-list and bibliography of the recent marine Mollusca of the west coast of Canada. 261 p. (1)
3. THOMAS, M. L. H., AND M. J. PARKS. 1967. A biotic survey of Oozy Creek, a small arm of Bideford River, Prince Edward Island. 15 p. + 4 tables + 3 fig. (6)
4. FORSYTHE, M. G. 1967. Analysis of the 1965 smolt run in the northwest Miramichi River, New Brunswick. 73 p. (6)
5. STODDARD, J. H. 1967. Studies of the condition (fatness) of herring. 7 p. + 4 tables + 5 fig. (6)
6. ELSON, P. F., AND J. R. MACDONALD. 1967. Methods for evaluating damage, by New Brunswick forest spraying programs, to salmon fisheries. 33 p. + 6 tables + 6 fig. (6)
7. HOLMBERG, D. 1967. Catch and effort statistics of the British Columbia trawl fishery in 1966. 87 p. (1)
8. [NEVER ISSUED]
9. SYMONS, P. E. K. 1967. Retention of Pletcher growth thru tags applied to young salmon. 6 p. + 2 fig. (6)
10. COBURN, A. S., AND H. T. BILTON. 1967. The age, size, and sex composition of sockeye in the escapements to Schulbuckhand and Williams creeks, Lakelse Lake, B.C., in 1965 and 1966. 19 p. (1)
11. TAYLOR, F. H. C. 1967. Midwater trawl catches from Queen Charlotte Sound and the open ocean adjacent to the Queen Charlotte Islands. 44 p. (1)
12. KETCHEN, K. S., AND D. M. HOLMBERG. 1967. Catch statistics of the Canadian and United States trawl fishery for Pacific cod (*Gadus macrocephalus*), 1935-65. 23 p. (1)
13. LIPPA, E. J. R. 1967. British Columbia trawlers and trawl gear. 47 p. (1)
14. CLAGGETT, F. G. 1967. Clarification of waste water other than stickwater from British Columbia fishing plants. 8 p. (2)
15. BOURNE, N. 1967. Digging efficiency trials with a hydraulic clam rake. 23 p. (1)
16. WESTRHEIM, S. J. 1967. Catch rates, size composition, and sex ratio of Pacific ocean perch (*Sebastes alutus*) caught in the eastern North Pacific Ocean (Vancouver Island, B.C., to southeastern Alaska) by the *G. B. Reed*, August-October 1966. 32 p. (1)
17. PARKER, R. R. 1967. Results of preliminary testing of the application of micro-magnetic tags to pink salmon fry. 21 p. (1)
18. BUTLER, T. H. 1967. Shrimp exploration and fishing in the Gulf of Alaska and Bering Sea. 49 p. (1)
19. FORRESTER, C. R., AND D. M. HOLMBERG. 1967. A summary report of the British Columbia trawl fishery in 1966 and some aspects of its investigation. 32 p. (1)
20. ALLEN, K. R. 1967. Computer programmes available at St. Andrews Biological Station. 32 p. + 11 app. (6)
21. THOMAS, M. L. H. 1967. Experiments in the control of shipworm *Teredo* sp. using bis(tri-N-butyltin) oxide. 13 p. + 1 fig. + 10 tables. (6)
22. HARLING, W. R., D. DAVENPORT, AND S. J. WESTRHEIM. 1967. *G. B. Reed* groundfish cruise No. 67-1, February 1 to April 24, 1967. 56 p. (1)
23. KETCHEN, K. S. 1967. Length composition of Pacific cod (*Gadus macrocephalus*) in landings by Canadian trawlers 1951-66. 27 p. (1)
24. JORDAN, F. P. 1967. Summary of salmon enumeration and sampling data, Babine River counting fence, 1961-1966. 29 p. (1)
25. ELLIS, D. V. 1967. Quantitative benthic investigations. I. Satellite Channel biomass summaries and major taxon rank orders. February 1965-May 1967. 49 p. + 2 fig. (1)
26. BLACKFORD, B. L. 1967. Some oceanographic observations in the southern Gulf of St. Lawrence - summer, 1965. 34 p. (7)
27. MAY, A. W. 1968. Biological data on cod from the summer fishery on the north shore, Strait of Belle Isle. 21 p. (9)
28. EALES, J. GEOFFREY. 1967. A bibliography of the eels of the genus *Anguilla*. 171 p. (6)
29. ALLEN, K. R., AND J. K. LINDSEY. 1967. Commercial catches of Atlantic salmon in the Maritimes area 1949-1965. 143 p. (6)
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31. MACKAY, K. T. 1967. An ecological study of mackerel, *Scomber scombrus* (Linnaeus), in the coastal waters of Canada. 127 p. (6)
32. HOLLISTER, H. J. 1967. Sea surface temperature and salinity at shore stations along the British Columbia coast during 1965. 45 p. (3)
33. KELEHER, J. J. 1967. The number of fishermen in relation to production in the Great Slave Lake winter fishery, 1957-1963. 15 p. (4)
34. WILIMOVSKY, N. J., A. PEDEN, AND J. PEPPAR. 1967. Systematics of six demersal fishes of the North Pacific Ocean. 95 p. (1)

35. ELLIS, D. V. 1967. Quantitative benthic investigations. II. Satellite Channel species data February 1965-May 1965. 7 p. + 169 tables + 2 fig. (1)
36. LEVINGS, C. D. 1967. A comparison of the growth rates of the rock sole, *Lepidopsetta bilineata* Ayres, in northeast Pacific waters. 43 p. (1)
37. LEBRASSEUR, R. J., C. D. McALLISTER, J. D. FULTON, AND O. D. KENNEDY. 1967. Selection of a zooplankton net for coastal observations. 13 p. (1)
38. MURRAY, A. R. 1968. A counting fence of netting for Atlantic salmon in the estuary of the Little Codroy River, Newfoundland. 19 p. (9)
39. KELEHER, J. J. 1967. Description of a computer tape system for processing fisheries data. 26 p. (4)
40. PIENAAR, L. V., AND J. A. THOMSON. 1967. A program for multiple discriminant analysis (Fortran 1130). 32 p. (1)
41. FORRESTER, C. R., AND D. F. ALDERDICE. 1967. Preliminary observations on embryonic development of the petrale sole (*Eopsetta jordani*). 21 p. (1)
42. BERNARD, F. R. 1967. Studies on the biology of the naticid clam drill *Polinices lewisi* (Gould) Gastropoda Prosobranchiata. 41 p. (1)
43. LILLY, G. R. 1968. Some aspects of the ecology of Irish moss, *Chondrus crispus* (L.) Stack., in Newfoundland waters. 44 p. (9)
44. GHELARDI, R. J. 1967. Progress report on the 1965 and 1966 lobster introductions at Fatty Basin, Vancouver Island, British Columbia. 40 p. (1)
45. DRYBURGH, J. R., J. A. THOMPSON, AND D. F. ALDERDICE. 1967. Extended tables of the transformation $\phi = 2 \arcsin \sqrt{X}$. 20 p. (1)
46. WESTRHEIM, S. J., W. R. HARLING, AND D. DAVENPORT. 1968. *G. B. Reed* groundfish cruise No. 67-2, September 6 to October 4, 1967. 45 p. (1)
47. STEELE, D. H., AND P. BRUNEL. 1968. Collections of amphipods of the genus *Anonyx*, mainly from the Atlantic and Arctic coasts of North America. 73 p. (9)
48. RONALD, K., AND K. A. WILSON. 1968. A check list of the parasites of the order Petromyzontiformes (lampreys). 23 p. (4)
49. HOURSTON, A. S. 1968. Age determination of herring at the Biological Station, St. John's, Newfoundland. 24 p. (9)
50. WICKETT, W. P., J. A. C. THOMSON, AND L. V. PIENAAR. 1968. Surface transport charts for the North Pacific Ocean, 1946-1949. 3 p. + 94 charts. (1), (3)
51. WICKETT, W. P., J. A. C. THOMSON, AND L. V. PIENAAR. 1968. Surface transport charts for the North Pacific Ocean, 1963-1966. 3 p. + 86 charts. (1), (3)
52. WICKETT, W. P., J. A. C. THOMSON, AND L. V. PIENAAR. 1968. Surface transport charts for the North Pacific Ocean, 1967. 3 p. + 24 charts. (1), (3)
53. WICKETT, W. P. 1968. Transport computations for the North Pacific Ocean, 1967. 92 p. (1), (3)
54. DODIMEAD, A. J. 1968. Temperatures and salinities of the northeast Pacific Ocean during 1965 and 1966 with appendix data record of bathythermograms April-August, 1965 and 1966. 80 p. (3)
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56. PREST, J. 1968. Catch and effort statistics of the British Columbia trawl fishery in 1967. 85 p. (1)
57. MESSIEH, S. N., C. D. BURNETT, AND S. N. TIBBO. 1968. Length and age distribution - Bay of Fundy herring. 64 p. (6)
58. HOURSTON, A. S., AND R. CHAULK. 1968. Herring landings and catches in Newfoundland and their implications concerning the distribution and abundance of the stocks. 77 p. (9)
59. ELLIS, D. V. 1968. Quantitative benthic investigations. III. Locality and environmental data for selected stations (mainly from Satellite Channel, Straits of Georgia and adjacent inlets), February 1965 - December 1967. viii + 10 p. + 6 fig. + 61 tables. (1)
60. ELLIS, D. V. 1968. Quantitative benthic investigations. IV. Biomass summaries and major taxon rank orders for selected stations (mainly Straits of Georgia and adjacent inlets), May 1965 - December 1967. 6 p. + 2 fig. + 81 tables. (1)
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896. BRETT, J. R. 1963. The energy required for swimming by young sockeye salmon with a comparison of the drag force on a dead fish. *Trans. Roy. Soc. Can., Ser. 4, Sect. III, 1:* 441-457.
897. TARR, H. L. A. 1964. Formation of purine and pyrimidine nucleosides, deoxynucleosides, and the corresponding mononucleotides by salmon milt extract nucleoside phosphorylase and nucleoside kinase enzymes. *Can. J. Biochem.* 42: 1535-1545.
898. RONALD, K., H. C. MACNAB, J. E. STEWART, AND B. BEATON. 1964. Blood properties of aquatic vertebrates. I. Total blood volume of the Atlantic cod, *Gadus morhua* L. *Can. J. Zool.* 42: 1127-1132.
899. NEAVE, F. 1961. Pacific salmon: ocean stocks and fishery developments. Proceedings of the Ninth Pacific Science Congress, 1957, Vol. 10, p. 59-62.
900. SMITH, G. F. M., AND W. E. RICKER. 1964. Availability of fish. [Federal-Provincial Conference on Fisheries Development, January 20-24, 1964, Ottawa.] *Can. Fish. Rep.* 3: 25-29.
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912. MANN, D. S., D. W. McLEESE, AND L. R. DAY. 1964. Salt-water system at the St. Andrews Biological Station of the Fisheries Research Board of Canada, p. 125-130. *In* Sea-water systems for experimental aquariums. U.S. Fish Wildl. Serv. Res. Rep. No. 63.
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915. HOGENKAMP, H. P. C. 1964. Structure and chemical reactions of the cobamide coenzymes. *Ann. N.Y. Acad. Sci.* 112: 552-564.
916. PRAKASH, A., AND A. H. V. SARMA 1964. On the occurrence of 'red water' phenomenon on the west coast of India. *Curr. Sci.* 33(6): 168-170.
917. TULLY, J. P. 1964. Oceanographic regions and processes in the seasonal zone of the North Pacific Ocean, p. 68-84. *In* Studies on oceanography, 1964. Hidaka Anniversary Volume, 560 p. International Academic Printing Company, Ltd., Tokyo.
918. WALDICHUK, M. 1964. Daily and seasonal sea-level oscillations on the Pacific coast of Canada, p. 181-201. *In* Studies on oceanography, 1964. Hidaka Anniversary Volume, 560 p. International Academic Printing Company, Ltd., Tokyo.
919. TABATA, S. 1964. Insolation in relation to cloud amount and sun's altitude, p. 202-210. *In* Studies on oceanography, 1964. Hidaka Anniversary Volume, 560 p. International Academic Printing Company, Ltd., Tokyo.
920. ELSON, P. F., AND C. J. KERSWILL. 1964. Forest spraying and salmon angling. *Atl. Salmon J.* 3: 20-29.
921. ACKMAN, R. G., AND J. C. SIPOS. 1964. Flame ionization detector response for the carbonyl carbon atom in the carboxyl group of fatty acids and esters. *J. Chromatogr.* 16: 298-305.
922. KETCHEN, K. S. 1964. Measures of abundance from fisheries for more than one species. *Rapp. Proces-Verbaux Reunions Cons. Perma. Int. Explor. Mer* 155: 113-116.
923. PARSONS, T. R., AND J. D. H. STRICKLAND. 1963. Discussion of spectrophotometric determination of marine-plant pigments, with revised equations for ascertaining chlorophylls and carotenoids. *J. Mar. Res.* 21(3): 155-163.
924. PARSONS, T. R. 1963. A new method for the microdetermination of chlorophyll *c* in sea water. *J. Mar. Res.* 21(3): 164-171.
925. ANON. 1964. The research program. A. Progress in 1962 in Canadian research on problems raised by the Protocol. *Int. N. Pac. Fish. Comm. Annu. Rep.* 1962, p. 30-53.
926. ANON. 1964. The research program. A. Progress in 1963 in Canadian research on problems raised by the Protocol. *Int. N. Pac. Fish. Comm. Annu. Rep.* 1963, p. 40-59.
927. McLEESE, D. W. 1964. Oxygen consumption of the lobster, *Homarus americanus* Milne-Edwards. *Helgolander Wiss. Meeresunters.* 10: 7-18.
928. HODDER, V. M., AND A. W. MAY. 1964. The effect of catch size on the selectivity of otter trawls. *ICNAF Res. Bull. No. 1*, p. 28-35.
929. POWER, H. E. 1964. Fish protein concentrate - Its processing and characteristics. *J. Can. Diet. Ass.* 26(1): 12-13.
930. MCCrackEN, F. D. 1965. The future of the groundfishing industry. *Can. Fish., Jan.*, p. 25-27.
931. SPRAGUE, J. B. 1964. Avoidance of copper-zinc solutions by young salmon in the laboratory. *J. Water Pollut. Contr. Fed.* 36: 990-1004.
932. ACKMAN, R. G., AND P. M. JANGAARD. 1965. The grey (Atlantic) seal; fatty acid composition of the blubber from a lactating female. *Can. J. Biochem.* 43: 251-255.
933. SHIEH, H. S. 1964. Aerobic degradation of choline. I. Fermentation of choline by a marine bacterium, *Achromobacter cholinophagum* n. sp. *Can. J. Microbiol.* 10: 837-842.
934. BELL, G. R., AND M. J. SMART. 1964. *In vivo* angiography of the Pacific salmon (*Oncorhynchus*). *J. Can. Ass. Radiol.* 15: 200-201.
935. SLAVIN, J. W., AND W. A. MACCALLUM. 1964. North American experience in chilling and freezing fish on board vessels. *Proc. Int. Congr. Refrig.* 11: 931-940.
936. SHIEH, H. S. 1965. Aerobic degradation of choline. II. Some properties of whole cells and cell-free extracts of *Achromobacter cholinophagum*. *Can. J. Microbiol.* 11: 375-379.
937. MARGOLIS, L., AND H. L. CHING. 1965. Review of the trematode genera *Bacciger* and *Pentagramma* (Fellodistomatidae) and description of *P. petrowi* (Layman, 1930) n. comb. from marine fishes from the Pacific coast of Canada. *Can. J. Zool.* 43: 381-405.
938. SERGEANT, D. E. 1965. The sealing industry in the Northwest Atlantic. *Fisheries Council of Canada Annual for 1965*, p. 48, 50-51.
939. LEE, A. J., D. F. BUMPUS, AND L. L. LAUZIER. 1965. Le "dériveur de fond." Nouveau modèle de matériel dérivant sous l'influence des courants près du fond. *Cah. Oceanogr.* 17: 123-125.
940. HENNEMUTH, R. C., M. D. GROSSLEIN, AND F. D. MCCrackEN. 1964. Abundance, age composition of landings, and total mortality of haddock caught off southern Nova Scotia, 1956-1961. *ICNAF Res. Bull. No. 1*, p. 43-73.
941. WALDICHUK, M. 1963. The marine environment and fisheries along the Pacific coast of Canada with respect to possible radioactive contamination from nuclear detonations. *Proceedings of a Symposium on Nuclear Detonations and Marine Radioactivity*. Norwegian Defence Research Establishment, Kjeller, Norway, September 16-20, 1963, p. 163-166.

942. ACKMAN, R. G. 1965. Effect of relative concentration on retention times of minor components of mixtures. *J. Gas Chromatogr.* 3: 15-17.
943. LI, M. F., AND J. E. STEWART. 1965. A quantitative study of the effects of naturally occurring supplements on the growth of rainbow trout (*Salmo gairdneri*) gonadal cells. *Can. J. Microbiol.* 11: 9-14.
944. BROCKERHOFF, H. 1965. A stereospecific analysis of triglycerides. *J. Lipid Res.* 6: 10-15.
945. ACKMAN, R. G., AND R. D. BURGHER. 1965. Cod liver oil fatty acids as secondary reference standards in the GLC of polyunsaturated fatty acids of animal origin: analysis of a dermal oil of the Atlantic leatherback turtle. *J. Amer. Oil Chem. Soc.* 42:38-42.
946. KELEHER, J. J. 1965. Great Slave Lake fishing fleet, 1945-63. *Can. Fish.* 52: 28-31.
947. TOMLINSON, N., S. E. GEIGER, AND W. W. KAY. 1965. Sodium, potassium, and magnesium concentration and weight changes in fish stored in refrigerated sea water in relation to biochemical changes associated with rigor mortis. *J. Food Sci.* 30(1): 126-134.
948. QUAYLE, D. B. 1964. Dispersal of introduced marine wood borers in British Columbia waters. *Congrès international de la corrosion marine et des salissures*, June 8-12, 1964, Cannes, France, p. 409-412.
949. TEMPLEMAN, W. 1964. Canadian research report, 1963. A. Subareas 2 and 3. ICNAF Redb. 1964, Part II, p. 3-21.
950. LAUZIER, L. M., AND S. N. TIBBO. 1964. Température de l'eau et pêche au hareng aux Iles-de-la-Madeleine. *Actual. Mar.* 8(2): 3-6.
951. PARKER, R. R. 1965. A review and redescription of *Caligus gurnardi* Krøyer 1863 (Copepoda: Caligidae). *Crustaceana*, Vol. 9, Pt. 1, p. 93-103.
952. HOURSTON, A. S., E. H. VERNON, AND G. A. HOLLAND. 1965. The migration, composition, exploitation, and abundance of odd-year pink salmon runs to the Fraser River Convention Area. *Int. Pac. Salmon Fish. Comm. Bull.* No. XVII, 296 p.
953. LORING, D. 1965. Résumé of marine geological investigations carried out by the Atlantic Oceanographic Group in the Gulf of St. Lawrence - 1963-1964. *Mar. Sediments* 1(1): 8-9.
954. MCCracken, F. D. 1964. Minimum mesh sizes and equivalents for different materials to meet ICNAF regulations. ICNAF Redb. 1964, Part II, p. 143-150.
955. MEDCOF, J. C. 1964. Canadian research report, 1963. B. Subareas 4 and 5. ICNAF Redb. 1964, Part II, p. 21-34.
956. TIBBO, S. N., L. M. LAUZIER, AND A. C. KOHLER. 1965. Canadian fisheries research extends to Caribbean Sea. *Trade News* 17(11, 12): 3-9.
957. NOTA, D. J. G., AND D. H. LORING. 1964. Recent depositional conditions in the St. Lawrence River and Gulf - a reconnaissance survey. *Mar. Geol.* 2: 198-235.
958. IDLER, D. R., AND H. C. FREEMAN. 1965. A demonstration of an impaired hormone metabolism in moribund Atlantic cod (*Gadus morhua* L.). *Can. J. Biochem.* 43: 620-623.
959. WERNER, A. E. 1965. Suspended solids from mill effluents. *Can. Pulp Pap. Ind.* (Apr.), p. 109-114.
960. SPRAGUE, J. B. 1965. Apparatus used for studying avoidance of pollutants by young Atlantic salmon. *Biological problems in water pollution. Third Seminar. 1962. Robt. A. Taft Sanitary Engineering Center, United States Public Health Service, Publ. No. 999-WP-25, p. 315.*
961. SPRAGUE, J. B. 1965. Effects of sublethal concentrations of zinc and copper on migration of Atlantic salmon. *Biological problems in water pollution. Third Seminar. 1962. Robt. A. Taft Sanitary Engineering Center, United States Public Health Service, Publ. No. 999-WP-25, p. 332-333.*
962. SCHMIDT, P. J., B. S. MITCHELL, M. SMITH, AND H. TSUYUKI. 1965. Pituitary hormones of the Pacific salmon. I. Response of gonads in immature trout (*Salmo gairdnerii*) to extracts of pituitary glands from adult Pacific salmon (*Oncorhynchus*). *Gen. Comp. Endocrinol.* 5: 197-206.
963. IDE, F. P. 1964. A fly of the archaic family Nymphomyiidae found in New Brunswick in 1961. *Can. Entomol.* 96(1-2): 119-120.
964. ALDERDICE, D. F. 1965. Analysis of experimental multivariable environments related to the problem of aquatic pollution. *Biological problems in water pollution. Transactions of the Third Seminar, August 13-17, 1962, p. 320-325. U.S. Dep. Health Educ. Welf.*
965. ANON. 1962. The research program. Summary of 1961-62 reports. *Atlantic salmon (Salmo salar). Trade News* 15: 4-12.
966. IDE, F. P. 1961. Effects of forest spraying with DDT on aquatic insects, food of salmon and trout, in New Brunswick. *Proc. Entomol. Soc. Ont.* 91: 39-40.
967. BROCKERHOFF, H., AND R. J. HOYLE. 1965. Hydrolysis of triglycerides by the pancreatic lipase of a skate. *Biochim. Biophys. Acta* 98: 435-436.
968. RICKER, W. E. 1964. Distribution of Canadian stoneflies. *Gewässer und Abwasser, Heft 34/35, S. 50-71/ Verh. 3. Int. Symp. Plecopteren (1964) Pögel, Dusseldorf.*
969. MARCH, B. E., J. BIELY, H. L. A. TARR, AND F. CLAGGETT. 1965. The effect of antioxidant treatment on the metabolizable energy and protein value of herringmeal. *Poultry Sci.* 44: 679-685.
970. MAY, A. W. 1965. New cod fishing grounds off Labrador and the northeast coast of Newfoundland. *Trade News* 16(12): 3-6.
971. ACKMAN, R. G. 1965. How oxygen and metallic oxides affect GLC analysis of polyunsaturated fatty acid esters. *Facts and Methods* 6(4): 6-7.
972. ACKMAN, R. G., AND J. C. SIPOS. 1965. Isolation of the saturated fatty acids of some marine lipids with particular reference to normal odd-numbered fatty acids and branched-chain fatty acids. *Comp. Biochem. Physiol.* 15: 445-456.
973. GODFREY, H. 1965. *Salmon of the North Pacific*

- Ocean — Part IX. I. Coho salmon in offshore waters. *Int. N. Pac. Fish. Comm. Bull.* 15: 39 p.
974. MANZER, J. I., T. ISHIDA, A. E. PETERSON, AND M. G. HANAVAN. 1965. Salmon of the North Pacific Ocean — Part V. Offshore distribution of salmon. *Int. N. Pac. Fish. Comm. Bull.* 15: 129 p.
975. ACKMAN, R. G., C. A. EATON, AND P. M. JANGAARD. 1965. Lipids of the fin whale (*Balaenoptera physalus*) from North Atlantic waters. I. Fatty acid composition of whole blubber and blubber sections. *Can. J. Biochem.* 43: 1513-1520.
976. ACKMAN, R. G., C. A. EATON, AND P. M. JANGAARD. 1965. Lipids of the fin whale (*Balaenoptera physalus*) from North Atlantic waters. II. Fatty acid composition of the liver lipids and gas-liquid chromatographic evidence for the occurrence of 5,8,11,14-nonadecatetraenoic acid. *Can. J. Biochem.* 43: 1521-1530.
977. TABATA, S., N. E. J. BOSTON, AND F. M. BOYCE. 1965. The relation between wind speed and summer isothermal surface layer of water at Ocean Station P in the eastern subarctic Pacific Ocean. *J. Geophys. Res.* 70: 3867-3878.
978. RANDALL, D. J., L. S. SMITH, AND J. R. BRETT. 1965. Dorsal aortic blood pressures recorded from the rainbow trout (*Salmo gairdneri*). *Can. J. Zool.* 43: 863-872.
979. WALDICHUK, M. 1965. Estimation of flushing rates from tide height and current data in an inshore marine channel of the Canadian Pacific coast. *Proc. Second Int. Water Pollut. Res. Conf., Tokyo 1964*, p. 133-166.
980. LANTZ, A. W. 1964. A practical method for brining and smoking fish. *Trade News* 16(12): 14-17.
981. THOMAS, M. L. H. 1965. Observations on the occurrence of *Cercaria patellae* Lebour in *Patella vulgata* L. on the Inner Farne. *Trans. Natur. Hist. Soc. Northumberland, Durham and Newcastle upon Tyne* 15(3): 140-146.
982. JOHNSON, W. E. 1965. On mechanisms of self-regulation of population abundance in *Oncorhynchus nerka*. *Mitt. Int. Ver. Limnol.* 13: 66-87.
983. HEINICKE, E. A., AND A. H. HOUSTON. 1965. A note on water balance in the goldfish, *Carassius auratus* L., during lethal heat shock. *Can. J. Zool.* 43: 847-852.
984. ACKMAN, R. G. 1965. Effect of relative concentration on retention times of minor components of mixtures. *J. Gas Chromatogr.* 3: 15-17.
985. BROCKERHOFF, H. 1965. Stereospecific analysis of triglycerides: an analysis of human depot fat. *Arch. Biochem. Biophys.* 110: 586-592.
986. BROCKERHOFF, H., AND M. YURKOWSKI. 1965. Simplified preparation of L- α -glyceryl phosphocholine. *Can. J. Biochem.* 43: 1777.
987. JANGAARD, P. M. 1965. A rapid method for concentrating highly unsaturated fatty acid methyl esters in marine lipids as an aid in their identification by GLC. *J. Amer. Chem. Soc.* 42: 845-847.
988. LANTZ, A. W. 1965. Fish cannery in Northwest Territories. *Trade News* 18(4): 12-13.
989. PARSONS, T. R. 1965. An automated technique for determining the growth rate of chain-forming phytoplankton. *Limnol. Oceanogr.* 10: 598-602.
990. LANTZ, A. W. 1965. A practical method for salting fish. *Trade News* 17(9): 6-8.
991. LANTZ, A. W. 1965. A practical method for canning freshwater fish. *Trade News* 17(8): 3-8.
992. LANTZ, A. W. 1964. A practical method for cleaning and dressing fish. *Trade News* 16(11): 6-8.
993. LANTZ, A. W. 1964. A practical method for freezing dressed and filleted fish. *Trade News* 17(3): 8-9.
994. PALOHEIMO, J. E., AND L. M. DICKIE. 1964. Abundance and fishing success. *Rapp. Procès-Verbaux Réunions Cons. Perma. Int. Explor. Mer* 155: 152-163.
995. ACKMAN, R. G. 1964. Fundamental groups in the response of flame ionization detectors to oxygenated aliphatic hydrocarbons. *J. Gas Chromatogr.* 2: 173-179.
996. HOGENKAMP, H. P. C., AND T. G. OIKAWA. 1964. The synthesis and properties of 2',5'-dideoxyadenosylcobalamin and 5'-deoxythymidylcobalamin. *J. Biol. Chem.* 239: 1911-1916.
997. KOHLER, A. C. 1964. 1963 ICNAF cod otolith exchange. *ICNAF Res. Bull. No. 1*, p. 22-27.
998. BRETT, J. R. 1965. The swimming energetics of salmon. *Sci. Amer.* 213(2): 80-85.
999. SPRAGUE, J. B., P. F. ELSON, AND R. L. SAUNDERS. 1965. Sublethal copper-zinc pollution in a salmon river — a field and laboratory study. *Int. J. Air Water Pollut.* 9: 531-543.
1000. MANZER, J. I. 1966. The sea life of Canada's Pacific salmon. *Can. Geogr. J.* 72(1): 2-15.
1001. GUIGUET, C. J., AND G. C. PIKE. 1965. First specimen record of the gray grampus or Risso dolphin, *Grampus griseus* (Cuvier) from British Columbia. *Murrelet* 46(1): 16.
1002. NIGRELLI, R. F., K. S. KETCHEN, AND G. D. RUGGIERI, S.J. 1965. Studies on virus diseases of fishes. Epizootiology of epithelial tumors in the skin of flatfishes of the Pacific coast, with special reference to the sand sole (*Psettichthys melanostictus*) from northern Hecate Strait, British Columbia, Canada. *Zoologica (New York)* 50(3): 115-122.
1003. BURSA, A. S. 1964. *Kofoidinium arcticum*, a new dinoflagellate. *Phycologia* 4(1): 8-14.
1004. JOHNSON, L. 1964. Marine-glacial relicts of the Canadian Arctic Islands. *Syst. Zool.* 13(2): 76-91.
1005. JOHNSON, L. 1964. Temperature regime of deep lakes. *Science* 144: 1336-1337.
1006. ROACH, S. W. 1965. New methods for unloading fish. *Trade News* 18(6): 4-7.
1007. ANON. 1965. Investigation and management of Atlantic salmon and trout. *Trade News* 18(2-3): 3-9.

1008. SERGEANT, D. E. 1965. Exploitation and conservation of harp and hood seals. *Polar Rec.* 12: 541-551.
1009. ACKMAN, R. G. 1965. Occurrence of odd-numbered fatty acids in the mullet *Mugil cephalus*. *Nature* 208: 1213-1214.
1010. VERVOORT, W., AND H. P. ARAI. 1966. The rediscovery of *Parabomolochus cuneatus* (Fraser) from *Cymatogaster aggregata* Gibbons. *Crustaceana* 10(w): 222-223.
1011. TARR, H. L. A., AND J. ROY. 1966. Synthesis of nucleoside diphosphates and triphosphates by a salmon milt enzyme preparation. *Can. J. Biochem.* 44: 197-207.
1012. MCLAREN, I. A. 1964. A list of vascular plants from around Ogac Lake, south of Frobisher Bay, N.W.T. *Can. Field-Natur.* 87: 70-76.
1013. MCLAREN, I. A. 1964. Zooplankton of Lake Hazen, Ellesmere Island, and a nearby pond, with special reference to the copepod *Cyclops scutifer* Sars. *Can. J. Zool.* 42: 613-629.
1014. TULLY, J. P. 1964. The positive use of satellite data in estimating the depth of the thermocline. *Proceedings of Conference on the Feasibility of Conducting Oceanographic Explorations from Aircraft, Manned Orbital and Lunar Laboratories*. Woods Hole, Mass., Aug. 24-28, 1964, p. 153-157.
1015. KELEHER, J. J. 1966. A survey of Great Slave Lake fishing. *North* 13(1): 50-53.
1016. THOMAS, M. L. H. 1965. The snake fauna of western Prince Edward Island. *Can. Field-Natur.* 79: 208-209.
1017. GRAINGER, E. H. 1964. Asteroidea of the *Blue Dolphin* expeditions to Labrador. *Proc. U.S. Nat. Mus.* 115: 31-46.
1018. TEMPLEMAN, W., AND I. GULLAND. 1965. Review of possible conservation actions for the ICNAF area. *ICNAF Annu. Proc.* 15: 47-56.
1019. PINHORN, A. T., AND A. M. FLEMING. 1965. A comparison of random and stratified sampling methods for age and growth studies in the Newfoundland inshore cod fishery. *ICNAF Res. Bull.* No. 2, p. 25-40.
1020. HODDER, V. M., AND A. W. MAY. 1965. Otter-trawl selectivity and girth-length relationships for cod in ICNAF Subarea 2. *ICNAF Res. Bull.* No. 2, p. 8-18.
1021. MAY, A. W. 1965. The validity of otolith ages of southern Grand Bank cod. *ICNAF Res. Bull.* No. 2, p. 19-24.
1022. HODDER, V. M. 1965. Trends in the cod fishery off the east coast of Newfoundland and Labrador. *ICNAF Res. Bull.* No. 2, p. 31-41.
1023. TEMPLEMAN, W. 1965. Reports on researches in the ICNAF area in 1964. A. Subareas 2 and 3. *ICNAF Redb.* 1965, Part II, p. 3-19.
1024. HART, J. L. 1965. Reports on researches in the ICNAF area in 1964. B. Subareas 4 and 5. *ICNAF Redb.* 1965, Part II, p. 20-35.
1025. TEMPLEMAN, W. 1965. Some of the unknowns in research information necessary for calculations of maximum sustained yields of commercial fishes in the ICNAF area. *ICNAF Redb.* 1965, Part III, p. 153-163.
1026. LAUZIER, L. M. 1965. Another cold year: 1964. *ICNAF Redb.* 1965, Part III, p. 167-171.
1027. HUMPHREYS, R. D. 1965. The effect of storage on the length and weight of herring. *ICNAF Redb.* 1965, Part III, p. 190-193.
1028. BROCKERHOFF, H., R. J. HOYLE, AND N. WOLMARK. 1966. Positional distribution of fatty acids in triglycerides of animal depot fats. *Biochem. Biophys. Acta* 116: 67-72.
1029. BROCKERHOFF, H., AND M. YURKOWSKI. 1966. Stereospecific analysis of several vegetable fats. *J. Lipid Res.* 7: 62-64.
1030. FOLEY, D. M., J. E. STEWART, AND R. A. HOLLEY. 1966. Isobutyl alcohol and methyl pentynol as general anesthetics for the lobster, *Homarus americanus* Milne-Edwards. *Can. J. Zool.* 44: 141-143.
1031. TARR, H. L. A. 1965. Preservation of fish by antibiotics. *Proc. Indo-Pac. Fish. Council.* 11: 265-273.
1032. TULLY, J. P. 1965. Time series in oceanography. *Trans. Roy. Soc. Can.* 3: 337-366.
1033. TABATA, S. 1965. Variability of oceanographic conditions at Ocean Station "P" in the Northeast Pacific Ocean. *Trans. Roy. Soc. Can.* 3: 367-418.
1034. ACKMAN, R. G. 1966. "Blackberry" or "black feed" odour problem. *Trade News* 18(8): 11.
1035. SAUNDERS, R. L. 1966. The west Greenland salmon fishery. *Trade News* 18(8): 3-6.
1036. TARR, H. L. A. 1966. Phosphorus compounds in fish. *Bull. Jap. Soc. Sci. Fish.* 32: 213-223.
1037. LARKIN, P. A. 1966. International fisheries. *Trans. Amer. Fish. Soc.* 95: 122-126.
1038. ANON. 1966. The research program. A. Progress in 1964 in Canadian research on problems raised by the Protocol. *Int. N. Pac. Fish. Comm. Annu. Rep.* 1964, p. 29-47.
1039. WILDER, D. G. 1965. Lobster conservation in Canada. *Rapp. Proces-Verbaux Reunions Cons. Perma. Int. Explor. Mer* 156: 21-29.
1040. ANTIA, N. J., J. KALMAKOFF, AND A. WATT. 1966. Enolase activity in marine planktonic algae. *Can. J. Biochem.* 44: 449-454.
1041. OIKAWA, T. G., AND M. SMITH. 1966. Nucleotides in the encysted embryos of *Daphnia magna*. *Biochemistry* 5: 1517-1521.
1042. SHIEH, H. S. 1966. Further studies on the oxidation of betaine by a marine bacterium, *Achromobacter cholinophagum*. *Can. J. Microbiol.* 12: 299-302.
1043. FRASER, D. I., W. J. DYER, H. M. WEINSTEIN, J. R. DINGLE, AND J. A. HINES. 1966. Glycolytic metabolites and their distribution at death in the white and red muscle of cod following various degrees of antemortem muscular activity. *Can. J. Biochem.* 44: 1015-1033.
1044. TOCHER, C. S., R. G. ACKMAN, AND J. MCLACHLAN. 1966. The identification of dimethyl- β -propiothetin in the algae *Syracosphaera*

- carterae* and *Ulva lactuca*. Can. J. Biochem. 44: 519-522.
1045. ACKMAN, R. G. 1966. Empirical relationships between iodine value and polyunsaturated fatty acid content in marine oils and lipids. J. Amer. Oil Chem. Soc. 43: 385-389.
1046. SPALDING, D. J. 1966. Eruption of permanent canine teeth in the northern sea lion. J. Mammal. 47(1): 157-158.
1047. BROCKERHOFF, H. 1966. An unsolved problem of triglyceride analysis. Lipids 1: 162.
1048. ACKMAN, R. G. 1966. Simplified gas-liquid chromatography of marine oil fatty acid esters on EGSP-Z organosilicone polyester. J. Gas Chromatogr. 4: 256-259.
1049. ROY, J. E. 1966. Lingcod muscle guanine deaminase. Can. J. Biochem. 44: 1093-1098.
1050. ALLEN, K. R. 1966. Determination of age distribution from age-length keys and length distributions, IBM 7090, 7094, Fortran IV. Trans. Amer. Fish. Soc. 95: 230-231.
1051. HODDER, V. M. 1965. The possible effects of temperature on the fecundity of Grand Bank haddock. ICNAF Spec. Publ. No. 6, p. 515-522.
1052. MAY, A. W., A. T. PINHORN, R. WELLS, AND A. M. FLEMING. 1965. Cod growth and temperature in the Newfoundland area. ICNAF Spec. Publ. No. 6, p. 545-556.
1053. TEMPLEMAN, W. 1965. Mass mortalities of marine fishes in the Newfoundland area presumably due to low temperature. ICNAF Spec. Publ. No. 6, p. 137-148.
1054. TEMPLEMAN, W. 1965. Some instances of cod and haddock behaviour and concentrations in the Newfoundland and Labrador areas in relation to food. ICNAF Spec. Publ. No. 6, p. 449-462.
1055. TEMPLEMAN, W. 1965. Relation of periods of successful year-classes of haddock on the Grand Banks to periods of success of year-classes for cod, haddock, and herring in areas to the north and east. ICNAF Spec. Publ. No. 6, p. 523-534.
1056. TEMPLEMAN, W. 1965. Anomalies of sea temperature at Station 27 off Cape Spear and of air temperature at Torbay-St. John's. ICNAF Spec. Publ. No. 6, p. 795-806.
1057. TEMPLEMAN, W., AND V. M. HODDER. 1965. Distribution of haddock on the Grand Bank in relation to season, depth, and temperature. ICNAF Spec. Publ. No. 6, p. 171-188.
1058. TEMPLEMAN, W., AND V. M. HODDER. 1965. Distribution of haddock on St. Pierre Bank (ICNAF Division 3Ps) by season, depth, and temperature. ICNAF Spec. Publ. No. 6, p. 189-198.
1059. TEMPLEMAN, W., AND A. W. MAY. 1965. Research vessel catches of cod in the Hamilton Inlet Bank area in relation to depth and temperature. ICNAF Spec. Publ. No. 6, p. 149-166.
1060. TEMPLEMAN, W., AND A. M. FLEMING. 1965. Cod and low temperature in St. Mary's Bay, Newfoundland. ICNAF Spec. Publ. No. 6, p. 131-136.
1061. SMITH, H. D., A. H. SEYMOUR, AND L. R. DONALDSON. 1966. The salmon resource. Environment of the Cape Thompson region, Alaska. Ch. 32, p. 861-876. U.S. Atomic Energy Comm., Div. Tech. Information, Oak Ridge, Tenn.
1062. RICKER, W. E. 1966. Salmon of the North Pacific Ocean - Part III. A review of the life history of North Pacific salmon. 4. Sockeye salmon in British Columbia. Int. N. Pac. Fish. Comm. Bull. No. 18, p. 59-70.
1063. NEAVE, F. 1966. Salmon of the North Pacific Ocean - Part III. A review of the life history of North Pacific salmon. 5. Pink salmon in British Columbia. Int. N. Pac. Fish. Comm. Bull. No. 18, p. 71-79.
1064. NEAVE, F. 1966. Salmon of the North Pacific Ocean - Part III. A review of the life history of North Pacific salmon. 6. Chum salmon in British Columbia. Int. N. Pac. Fish. Comm. Bull. No. 18, p. 81-86.
1065. YURKOWSKI, M., AND H. BROCKERHOFF. 1966. Fatty acid distribution of triglycerides determined by deacylation with methyl magnesium bromide. Biochim. Biophys. Acta 125: 55-59.
1066. WALDICHUK, M. 1966. Effects of sulfite wastes in a partially enclosed marine system in British Columbia. J. Water Pollut. Contr. Fed., p. 1484-1505.
1067. BERKELEY, C. 1966. Records of some species of Polychaeta new to British Columbia and of extensions in distribution of some others. Can. J. Zool. 44: 839-849.
1068. ACKMAN, R. G., AND J. D. CASTELL. 1966. Isomeric monoethylenic fatty acids in herring oil. Lipids 1: 341-348.
1069. HODDER, V. M. 1966. Two further records of the American shad in Newfoundland waters. Trans. Amer. Fish. Soc. 95: 228-229.
1070. KNIGHT, W. R. 1966. A computer method for calculating Kendall's *tau* with ungrouped data. J. Amer. Stat. Ass. 67(1): 436-439.
1071. NAGAYAMA, F., A. SAITO, AND D. R. IDLER. 1966. The synthesis of cholesterol glucopyranosiduronate. Can. J. Biochem. 44: 1109-1114.
1072. SAITO, A., AND D. R. IDLER. 1966. Sterols in Irish moss (*Chondrus crispus*). Can. J. Biochem. 44: 1195-1199.
1073. ODENSE, P. H., T. M. ALLEN, AND T. C. LEUNG. 1966. Multiple forms of lactate dehydrogenase and aspartate aminotransferase in herring (*Clupea harengus harengus* L.). Can. J. Biochem. 44: 1319-1326.
1074. ACKMAN, R. G. 1966. Analysis of the monoethylenic fatty acids of rapeseed oil by open tubular gas chromatography. J. Amer. Oil Chem. Soc. 43: 483-486.
1075. KOHLER, A. C. 1966. Evolution de la pêche à la morue dans le secteur sud du golfe Saint-Laurent. Actual. Mar. 9(3): 21-24.
1076. MCKENZIE, R. A. 1966. Offshore lobster investigations, 1965. Can. Fish. Rep. 6: p. 4-32.

1077. LANTZ, A. W. 1966. Eutectic brine freezer for Eskimo fishermen. *Can. Fish. Rep.* 6: 33-38.
1078. MANSFIELD, A. W. 1966. The walrus in Canada's Arctic. *Can. Geogr. J.* 73(3): 88-95.
1079. MITCHELL, E. 1966. Faunal succession of extinct North Pacific marine mammals. *Norsk Hvalfangst-Tidende* 3: 47-60.
1080. BROCKERHOFF, H. 1966. Fatty acid distribution patterns of animal depot fats. *Comp. Biochem. Physiol.* 19: 1-12.
1081. LANTZ, A. W., AND D. G. IREDALE. 1966. Sweet cured freshwater fish slices. *Trade News* 18(10-11): 8-9.
- *1082. SAUNDERS, R. L. 1966. Some biological aspects of the Greenland salmon fishery. *Atl. Salmon J., Summer*, p. 17-23.
- *1083. ELSON, P. F. 1966. Salmon's scales, a diary. *Atl. Salmon J., Summer*, p. 29-30.
1084. BECK, B. 1966. Seal net fisheries along the north shore of the St. Lawrence River. *Trade News* 18(2-3): 18-19.
1085. ANON. 1966. Investigation and management of Atlantic salmon and trout. *Fish. Can.* 19(5): 4-8.
- *1086. WOODLAND, B. 1966. Research vessel honours Dr. E. E. Prince. *Fish. Can.* 19(5): 16-17.
1087. BEAMISH, F. W. H. 1966. Reaction of fish to otter trawls. *Fish. Can.* 19(5): 19-21.
- *1088. ANON. 1966. The Pacific blackcod. *Fish. Can.* 19(4): 20.
1089. TEMPLEMAN, W. 1966. The fisheries situation in the Northwest Atlantic. *Fish. Can.* 19(3): 3-10.
- *1090. HUNTER, J. G. 1966. The Arctic char. *Fish. Can.* 19(3): 17-19.
- *1091. ANON. 1966. The Pacific halibut. *Fish. Can.* 19(3): 23-24.
- *1092. ANON. 1966. Life history, migration, and reproduction of Pacific salmon. *Fish. Can.* 19(2): 10-11.
- *1093. ANON. 1966. Rockfish of British Columbia. *Fish. Can.* 19(2): 19.
- *1094. ANON. 1966. The Pacific herring. *Fish. Can.* 19(1): 19-20.
- *1095. ANON. 1966. The clams of British Columbia. *Trade News* 18(12): 15-16.
- *1096. WOODLAND, B. 1966. Lobster transplant in B.C. *Trade News* 18(10-11): 3-6.
- *1097. ANON. 1966. The Pacific oyster. *Trade News* 18(10-11): 13-14.
- *1098. HART, J. L., AND R. G. FERGUSON. 1966. The American smelt. *Trade News* 18(9): 22-23.
- *1099. TIBBO, S. N. 1966. The swordfish. *Trade News* 18(8): 16-18.
- *1100. SANDEMAN, E. J. 1966. Redfish. *Trade News* 18(8): 19-21.
- *1101. SMITH, M. W. 1965. Atlantic salmon. *Trade News* 18(6): 15-17.
- *1102. WOODLAND, B. 1965. Greenland salmon fishery. *Trade News* 18(5): 5,17.
- *1103. TIBBO, S. N., AND R. D. HUMPHREYS. 1965. The Atlantic herring. *Trade News* 18(5): 6-9.
- *1104. HUMPHREYS, R. D., AND S. N. TIBBO. 1965. The Atlantic mackerel. *Trade News* 18(5): 15-17.
- *1105. QUIGLEY, J. J. 1965. Pacific salmon survive in Atlantic. *Trade News* 17(6-7): 3-5.
- *1106. WILDER, D. G. 1965. The American lobster. *Trade News* 18(4): 6-11.
- *1107. SQUIRES, H. J. 1966. Distribution of decapod Crustacea in the Northwest Atlantic. *Amer. Geogr. Soc. Serial Atlas of the Marine Environment*, Folio 12, 4 p.
- *1108. GRAINGER, E. H. 1966. North American sea stars (Echinodermata: Asteroidea) from north Alaska to the Strait of Belle Isle. *Amer. Geogr. Soc. Serial Atlas of the Marine Environment*, Folio 5.
- *1109. BUMPUS, D. F., AND L. M. LAUZIER. 1966. Surface circulation on the continental shelf off eastern North America between Newfoundland and Florida. *Amer. Geogr. Soc. Serial Atlas of the American Environment*, Folio 7.
1110. CRAIGIE, J. S., J. MCLACHLAN, W. MAJAK, R. G. ACKMAN, AND C. S. TOCHER. 1966. Photosynthesis in algae. II. Green algae with special reference to *Dunaliella* spp. and *Tetraselmis* spp. *Can. J. Botany* 44: 1247-1254.
1111. ACKMAN, R. G., AND C. A. EATON. 1966. Lipids of the fin whale (*Balaenoptera physalus*) from North Atlantic waters. III. Occurrence of eicosenoic and docosenoic fatty acids in the zooplankter *Meganyctiphanes norvegica* (M. Sars) and their effect on whale oil composition. *Can. J. Biochem.* 44: 1561-1566.
1112. TARR, H. L. A., AND J. ROY. 1966. Incorporation of radioactive compounds into the purine and pyrimidine bases and 2-deoxyribose of salmon testes deoxyribonucleic acid. *Can. J. Biochem.* 44: 1435-1446.
1113. DUFF, D. C. B., D. L. BRUCE, AND N. J. ANTIA. 1966. The antibacterial activity of marine planktonic algae. *Can. J. Microbiol.* 12: 877-884.
1114. IDLER, D. R., AND B. TRUSCOTT. 1966. Identification and quantification of testosterone in peripheral plasma of skate. *Gen. Comp. Endocrinol.* 7: 375-383.
1115. MACASKIE, I. B. 1966. Unusual example of group behaviour by killer whales (*Orcinus rectipinna*). *Murrelet* 47(2): 38.
1116. FREEMAN, H. C., AND D. R. IDLER. 1966. Transcortin binding of cortisol in Atlantic salmon (*Salmo salar*) plasma. *Gen. Comp. Endocrinol.* 7(1): 37-43.
1117. TARR, H. L. A. 1966. Post-mortem changes in glycogen, nucleotides, sugar phosphates, and sugars in fish muscles - A review. *J. Food Sci.* 31: 846-854.
1118. BROCKERHOFF, H., R. J. HOYLE, AND P. C. HUANG. 1966. Positional distribution of fatty acids in the fats of a polar bear and a seal. *Can. J. Biochem.* 44: 1519-1525.

*Articles thus asterisked were not included in full in the bound series of Studies; they are indicated therein only by the title of the publication, author(s), name of originating Board establishment, and publication reference.

1119. STEWART, J. E., J. R. DINGLE, AND P. H. ODENSE. 1966. Constituents of the hemolymph of the lobster, *Homarus americanus* Milne Edwards. Can. J. Biochem. 44: 1447-1459.
1120. WALDICHUK, M. 1966. Currents from aerial photography in coastal pollution studies. Third Int. Conf. Water Pollut. Res., Sect. III, Paper No. 13. 22 p.
1121. IDLER, D. R., N. R. KIMBALL, AND B. TRUSCOTT. 1966. Destruction of micro quantities of steroids on silica gel as shown by repeated thin-layer chromatography. Steroids 8: 865-876.
1122. THOMAS, M. L. H. 1966. Experimental control of eelgrass (*Zostera marina* L.) in oyster growing areas. Proc. 21st Ann. Northeastern Weed Contr. Conf. p. 524-549.
1123. PETTIBONE, M. H. 1967. Type-specimens of polychaetes described by Edith and Cyril Berkeley (1923-1964). Proc. U.S. Nat. Mus. 119: 1-23.
- *1124. TARR, H. L. A. 1962. The origin and quantitative distribution of sugars and sugar phosphates in fish muscles post mortem and the role of these in Maillard browning. Food Sci., Proc. First Int. Congr. Food Sci. Technol., London, 1962. p. 197-202.
1125. BROCKERHOFF, H., J. E. STEWART, AND W. TACREITER. 1967. Digestion of triglycerides by lobster. Can. J. Biochem. 45: 421-422.
1126. ALLEN, K. R., AND R. L. SAUNDERS. 1967. A preliminary study of the influence of the Greenland salmon fishery on the salmon stocks and fishery of the Miramichi River system, New Brunswick, Canada. ICNAF Redb. 1967, Part III, p. 159-180.
1127. TEMPLEMAN, W. 1967. Hydrographic observations on Subarctic 1, 2, and 3 July-August 1965. ICNAF Redb. 1967, Part III, p. 143-158.
1128. THOMAS, M. L. H. 1966. Benthos of four Lake Superior bays. Can. Field-Natur. 80: 200-212.
1129. MARGOLIS, L., F. C. CLEAVER, Y. FUKUDA, AND H. GODFREY. 1966. Salmon of the North Pacific Ocean. Part VI. Sockeye salmon in offshore waters. Int. N. Pac. Fish. Comm., Bull. No. 20, 70 p.
1130. SQUIRES, H. J. 1966. Feeding habits of the squid, *Illex illecebrosus*. Nature 211: 1321.
1131. IDLER, D. R., AND H. C. MACNAB. 1967. The biosynthesis of 11-ketotestosterone and 11 β -hydroxytestosterone by Atlantic salmon tissues in vitro. Can. J. Biochem. 45: 581-589.
1132. SMITH, M. W. 1967. Observations of fish-eating birds and mammals at Crecy Lake, New Brunswick, over a 12-year period. Can. Fish Cult. 39: 41-46.
1133. SMITH, M. W. 1967. Movement of planted hatchery-reared trout from a natural lake. Can. Fish Cult. 39: 35-40.
1134. DRINNAN, R. E., AND J. P. PARKINSON. 1967. Progress in Canadian oyster hatchery development. Can. Fish Cult. 39: 3-16. (Also: Circular No. 51, St. Andrews General Series.)
1135. MOUNIB, M. S. 1967. Metabolism of pyruvate, acetate, and glyoxylate by fish sperm. Comp. Biochem. Physiol. 20: 987-992.
1136. SIPOS, J. C., AND R. G. ACKMAN. 1967. Storage of oxidizable fatty acid methyl esters in glass capillary tubing. J. Gas Chromatogr. 5: 215-216.
1137. ANON. 1967. The research program. A. Progress in 1965 in Canadian research on problems raised by the Protocol. Int. N. Pac. Fish. Comm. Annu. Rep. 1965, p. 27-41.
1138. BERKELEY, C. 1966. Records of some species of Polychaeta new to British Columbia and of extensions in distribution of some others. Can. J. Zool. 44: 839-849.
1139. BURSA, A. S. 1964. *Discoasteromonas calciferus* n.sp., an arctic relict secreting *Discoaster* Tak Sin Hok 1927. Grana Palynologica 6(1): 147-165.
1140. LI, M. F., AND C. FLEMMING. 1967. A proteolytic pseudomonad from skin lesions of rainbow trout (*Salmo gairdnerii*). I. Characteristics of the pathogenic effects and the extracellular proteinase. Can. J. Microbiol. 13: 405-416.
1141. IDLER, D. R., AND B. TRUSCOTT. 1966. 1 α -Hydroxycorticosterone from cartilaginous fish (*Raja*). Excerpta Med. Int. Congr. Ser. No. 111, 1 p.
1142. LAUZIER, L. M. 1965. Long-term temperature variations in the Scotian Shelf area. ICNAF Spec. Publ. No. 6, p. 807-816.
1143. LAUZIER, L. M. 1965. Foreshadowing of surface water temperatures at St. Andrews, N.B. ICNAF Spec. Publ. No. 6, p. 859-867.
1144. STEWART, J. E., J. W. CORNICK, AND J. R. DINGLE. 1967. An electronic method for counting lobster (*Homarus americanus* Milne Edwards) hemocytes and the influence of diet on hemocyte numbers and hemolymph proteins. Can. J. Zool. 45: 291-304.
1145. ANTIA, N. J. 1965. The optical activity of fucoxanthin. Can. J. Chem. 43: 302-303.
1146. PENNELL, J. T., AND H. TSUYUKI. 1965. An oxidase-peroxidase system in various insects. Can. J. Zool. 43: 587-588.
1147. MCCracken, F. D. 1965. Distribution of haddock off the eastern Canadian mainland in relation to season, depth, and bottom temperature. ICNAF Spec. Publ. No. 6, p. 113-129.
1148. MARTIN, W. R., AND A. C. KOHLER. 1965. Variation in recruitment of cod (*Gadus morhua* L.) in southern ICNAF waters, as related to environmental changes. ICNAF Spec. Publ. No. 6, p. 833-846.
1149. LAUZIER, L. M., AND S. N. TIBBO. 1965. Water temperature and the herring fishery of Magdalen Islands, Quebec. ICNAF Spec. Publ. No. 6, p. 591-596.
1150. TIBBO, S. N. 1965. Effect of light on movements of herring in the Bay of Fundy. ICNAF Spec. Publ. No. 6, p. 579-582.

*See footnote on page 559.

1151. CASTELL, J. D., AND R. G. ACKMAN. 1967. Ozonolysis of unsaturated fatty acids. II. Esterification of the total products from the oxidative decomposition of ozonides with 2,2-dimethoxypropane. *Can. J. Chem.* 45: 1405-1410.
1152. SHIEH, H. S. 1966. Isolation of formaldehyde from betaine, dimethylglycine, and sarcosine. *Nature* 212: 1608.
1153. FAGERLUND, U. H. M. 1967. Plasma cortisol concentration in relation to stress in adult sockeye salmon during the freshwater stage of their life cycle. *Gen. Comp. Endocrinol.* 8: 197-207.
1154. WERNER, A. E., AND M. WALDICHUK. 1967. A sampler for gases in bottom sediments. *Limnol. Oceanogr.* 12: 158-161.
1155. SHELDON, R. W., AND T. R. PARSONS. 1967. A practical manual on the use of the Coulter Counter in marine research. Coulter Electronics Sales Company, Canada, Toronto, Ont. 66 p.
1156. NEAVE, F., T. ISHIDA, AND S. MURAL. 1967. Salmon of the North Pacific Ocean. Part VII. Pink salmon in offshore waters. *Int. N. Pac. Fish. Comm., Bull.* No. 22, 39 p.
1157. WERNER, A. E. 1965. An apparatus for studying hydrogen sulfide oxidation kinetics. *Can. J. Chem.* 43: 3096-3099.
1158. DICKIE, L. M., AND J. E. PALOHEIMO. 1965. Heterogeneity among samples of the length and age compositions of commercial groundfish landings. *ICNAF Res. Bull. No. 2*, p. 48-52.
- *1159. ACKMAN, R. G., C. S. TOCHER, AND J. McLACHLAN. 1966. Dimethyl- β -propiothetin: Determination by reactor gas-liquid chromatography, occurrence in algae, and implications in fisheries. *Proc. Fifth Int. Seaweed Symp.* 1965, p. 235-242.
1160. DICKIE, L. M. 1965. Difficulties in interpreting trends in cod and haddock landings from the eastern Scotian Shelf. *ICNAF Res. Bull. No. 2*, p. 80-82.
1161. DOMBROWSKI, H. C., G. I. FRIEDLAENDER, R. KÜHN, AND D. H. LORING. 1965. Bacteriological investigation of carboniferous rock salt from Pugwash, Nova Scotia. *Eclogae Geol. Helv.* 58(2): 967-974.
1162. PLATFORD, R. F., AND T. DAFOE. 1965. The activity coefficient of sodium sulfate in seawater. *J. Mar. Res.* 23(2): 63-68.
1163. ACKMAN, R. G. 1967. Calculation of ECL values in the gas-liquid chromatography of multiple-branched fatty acids. *J. Chromatogr.* 28: 225-231.
1164. CLEUGH, T. R. 1966. *Caligus vicarius* Hewitt, 1963 (Caligidae: Copepoda), an invalid name. *Can. J. Zool.* 44: 771-772.
1165. BELL, G. R. 1966. On the microbial flora of stream-incubated eggs of the Pacific salmon (*Oncorhynchus*). *Bull. Off. Int. Epizoot.* 65: 769-776.
- *1166. GROOT, C. 1965. On the orientation of young sockeye salmon (*Oncorhynchus nerka*) during their seaward migration out of lakes. *Behaviour, Suppl.* XIV, 198 p.
1167. IDLER, D. R., AND B. TRUSCOTT. 1966. The biosynthesis of 1α -hydroxycorticosterone by cartilaginous fish (*Raja*). *Excerpta Med. Int. Congr. Ser. No. 132. Proc. Second Int. Congr. Hormonal Steroids*, p. 1041-1046.
1168. IDLER, D. R., AND B. TRUSCOTT. 1967. 1α -hydroxycorticosterone: Synthesis in vitro and properties and properties of an interrenal steroid in the blood of cartilaginous fish (genus *Raja*). *Steroids* 5: 457-477.
1169. THOMAS, M. L. H. 1967. *Thracia conradi* in Malpeque Bay, Prince Edward Island. *Nautilus* 80(3): 84-87.
1170. BROCKERHOFF, H. 1967. Stereospecific analysis of triglycerides: an alternative method. *J. Lipid Res.* 8: 167-169.
1171. ANTIA, N. J., AND V. CHORNEY. 1967. Nature of the aldolase activity in a unicellular red alga. *Nature* 214: 1028-1029.
1172. PARSONS, T. R., R. J. LEBRASSEUR, AND J. D. FULTON. 1967. Some observations on the dependence of zooplankton grazing on the cell size and concentration of phytoplankton blooms. *J. Oceanogr. Soc. Japan* 23(1): 10-17.
1173. MOUNIB, M. S. 1967. Metabolism of pyruvate in testes of fish and rabbits with particular reference to *p*-nitrophenol and 2,4-dinitrophenol. *Comp. Biochem. Physiol.* 22: 539-548.
1174. MOUNIB, M. S. 1967. Metabolism of pyruvate by the ovarian tissue of cod. *Exp. Cell Res.* 46: 610-612.
1175. ACKMAN, R. G. 1967. The influence of lipids on fish quality. *J. Food Technol.* 2: 169-181.
1176. BOURNE, N. 1966. Relative fishing efficiency and selection of three types of scallop drags. *ICNAF Res. Bull. No. 3*, p. 15-25.
1177. ACKMAN, R. G., J. C. SIPOS, AND P. M. JANGAARD. 1967. A quantitation problem in the open tubular gas chromatography of fatty acid esters from cod liver lipids. *Lipids* 2: 251-257.
1178. SHIEH, H. S., AND D. SPEARS. 1967. Utilization of choline or betaine for phospholipid synthesis in an aerobic marine microbe. *Can. J. Biochem.* 45: 1255-1261.
- *1179. MARGOLIS, L., AND R. R. PARKER. 1966. *Caligus japonicus* Gussev in Isakova-Keo, 1952, a synonym of *Caligus orientalis* Gussev, 1951 (Copepoda, Caligidae). *Crustaceana* 10: 311.
- *1180. DUGAL, L. C. 1966. Removal of fish tank stain with sulphur dioxide. *Progr. Fish-Cult.* 28(4): 231.
- *1181. ARAI, M. N. 1965. The Cerantharian nervous system. *Amer. Zool.* 5: 425-429.
1182. MEDCOF, J. C., AND J. S. MACPHAIL. 1964. Fishing efficiency of clam hacks and mortalities incidental to fishing. *Proc. Nat. Shellfish. Ass.* 55: 53-72.
1183. CRAIGIE, J. S., J. McLACHLAN, R. G. ACKMAN, AND C. S. TOCHER. 1967. Photosynthesis in algae. III.

*See footnote on page 559.

- Distribution of soluble carbohydrates and dimethyl- β -propiothetin in marine unicellular chlorophyceae and prasinophyceae. *Can. J. Bot.* 45: 1327-1334.
1184. ACKMAN, R. G. 1967. Fatty acids of coho salmon fingerlings. *J. Amer. Oil Chem. Soc.* 44: 372.
1185. HODDER, V. M. 1966. Trends in the haddock fishery of ICNAF Subarea 3. *ICNAF Res. Bull.* No. 3, p. 55-63.
1186. BROCKERHOFF, H., AND R. J. HOYLE. 1967. Conversion of a dietary triglyceride into depot fat in fish and lobster. *Can. J. Biochem.* 45: 1365-1370.
1187. DONALDSON, E. M., AND J. R. MCBRIDE. 1967. The effects of hypophysectomy in the rainbow trout *Salmo gairdneri* (Rich.) with special reference to the pituitary-interrenal axis. *Gen. Comp. Endocrinol.* 9(1): 93-101.
1188. MANSFIELD, A. W. 1967. Distribution of the harbour seal, *Phoca vitulina* Linnaeus, in Canadian Arctic waters. *J. Mammal.* 48: 249-257.
1189. ACKMAN, R. G. 1967. Characteristics of the fatty acid composition and biochemistry of some fresh-water fish oils and lipids in comparison with marine oils and lipids. *Comp. Biochem. Physiol.* 22: 907-922.
1190. MANSFIELD, A. W. 1967. The mammals of Sable Island. *Can. Field-Natur.* 81: 40-49.
1191. BURSA, A. S., AND L. JOHNSON. 1967. Nannoplankton of marine origin from Great Bear Lake in the Northwest Territories of Canada. *Nature* 214: 528-529.
1192. ACKMAN, R. G., AND J. D. CASTELL. 1967. A generalized study of the effect of structure and other factors in open tubular gas chromatography of fatty acids on a polyester liquid phase with particular reference to monoethylenic fatty acid isomers. *J. Gas Chromatogr.* 5: 489-496.
1193. ACKMAN, R. G., AND R. P. HANSEN. 1967. The occurrence of diastereomers of phytanic and pristanic acids and their determination by gas-liquid chromatography. *Lipids* 2: 357-362.
1194. BRUCE, D. L., D. C. B. DUFF, AND N. J. ANTIA. 1967. The identification of two antibacterial products of the marine planktonic alga *Isochrysis galbana*. *J. Gen. Microbiol.* 48: 293-298.
1195. BUTTKUS, H. 1967. The reaction of myosin with malonaldehyde. *J. Food Sci.* 32: 432-434.
1196. SAUNDERS, R. L., AND J. B. SPRAGUE. 1967. Effects of copper-zinc mining pollution on a spawning migration of Atlantic salmon. *Water Res.* 1: 419-432.
1197. ANTIA, N. J. 1967. Comparative studies on aldolase activity in marine planktonic algae, and their evolutionary significance. *J. Phycol.* 3(2): 81-85.
1198. ANTIA, N. J., AND V. CHORNEY. 1968. Nature of the nitrogen compounds supporting phototrophic growth of the marine cryptomonad *Hemiselmis virescens*. *J. Protozool.* 15(1): 198-201.
1199. CLARKE, A. H., D. J. STANLEY, J. C. MEDCOF, AND R. E. DRINNAN. 1967. Ancient oyster and bay scallop shells from Sable Island. *Nature* 215: 1146-1148.
1200. SERGEANT, D. E. 1967. Age determination of land mammals from annuli. *Z. Säugetierk.* 32: 297-300.
1201. MAY, A. W. 1967. Occurrence of ptarmigan off northern Labrador. *Can. Field-Natur.* 81: 227-228.
1202. MANSFIELD, A. W. 1966. The grey seal in eastern Canadian waters. *Canadian Audubon Magazine*, Nov.-Dec. Canadian Audubon Society, Toronto, Ont., p. 161-166.
1203. BROCKERHOFF, H., AND R. G. ACKMAN. 1967. Positional distribution of isomers of monoenoic fatty acids in animal glycerolipids. *J. Lipid Res.* 8: 661-666.
1204. BARRETT, I., AND H. TSUYUKI. 1967. Serum transferrin polymorphism in some scombroid fishes. *Copeia* 1967: 551-557.
1205. IDLER, D. R., H. C. FREEMAN, AND B. TRUSCOTT. 1967. Biological activity and protein-binding of 1α -hydroxycorticosterone: an interrenal steroid in elasmobranch fish. *Gen. Comp. Endocrinol.* 9: 207-213.
1206. TEMPLEMAN, W. 1967. Atlantic salmon from the Labrador Sea and off West Greenland, taken during *A. T. Cameron* cruise, July-August 1965. *ICNAF Res. Bull.* No. 4, p. 5-40.
1207. PITT, T. K. 1967. Diurnal variation in the catches of American plaice, *Hippoglossoides platessoides* Fabr., from the Grand Bank. *ICNAF Res. Bull.* No. 4, p. 53-58.
1208. MAY, A. W. 1967. Otolith age validation in Labrador cod. *ICNAF Res. Bull.* No. 4, p. 116-120.
1209. MAY, A. W. 1967. Effect of offshore fishing on the inshore Labrador cod fishery. *ICNAF Res. Bull.* No. 4, p. 67-75.
1210. THOMAS, M. L. H., AND J. R. DUFFY. 1968. Butoxyethanol ester of 2,4-D in the control of eelgrass (*Zostera marina* L.) and its effects on oysters (*Crassostrea virginica* Gmelin) and other benthos. *Proc. Northeastern Weed Control Conf.*, Vol. 22, p. 186-194.
1211. KOHLER, A. C. 1967. Changes in the fishery for Atlantic halibut, *Hippoglossus hippoglossus* L., in ICNAF Subareas 3 and 4, 1954-64. *ICNAF Res. Bull.* No. 4, p. 87-90.
1212. POWLES, P. M., AND V. S. KENNEDY. 1967. Age determination of Nova Scotia greyscale, *Glyptocephalus cynoglossus* L., from otoliths. *ICNAF Res. Bull.* No. 4, p. 91-100.
1213. POWLES, P. M. 1967. Length-weight relationships for American plaice, witch, and yellowtail, in ICNAF Subarea 4. *ICNAF Res. Bull.* No. 4, p. 121-123.
1214. LI, M. F., AND C. FLEMMING. 1967. Hemagglutinins from oyster hemolymph. *Can. J. Zool.* 45: 1225-1234.
1215. LAUZIER, L. M. 1967. Recent trends in temperature variations in ICNAF Subarea 4. *ICNAF Redb.* 1967, Part IV, p. 24-32.

1216. TEMPLEMAN, W. 1967. Anomalies of sea temperature at Station 27 off Cape Spear and of air temperature at Torbay-St. John's. ICNAF Redb. 1967, Part IV, p. 69-75.
1217. ALLEN, K. R. 1967. A revised estimate of the rate of growth between Greenland and home waters of salmon from the Miramichi River, New Brunswick, Canada. ICNAF Redb. 1967, Part III, p. 66-68.
1218. ALLEN, K. R. 1967. Results of Atlantic salmon tagging in the Maritime Provinces of Canada, 1964-66. ICNAF Redb. 1967, Part III, p. 69-73.
1219. BERKELEY, C. 1967. A checklist of Polychaeta recorded from British Columbia since 1923, with references to name changes, descriptions, and synonymies. I. Errantia. Can. J. Zool. 45: 1049-1059.
1220. MITCHELL, E. 1967. Controversy over diphyly in pinnipeds. Syst. Zool. 16: 350-351.
1221. MARCH, B. E., J. BIELY, AND H. L. A. TARR. 1967. The effect of fish meal supplementation of chicken breeder rations on hatchability. Poultry Sci. 46: 1532-1536.
1222. ADDISON, R. F., AND R. G. ACKMAN. 1968. Flame ionization detector molar responses for methyl esters of some polyfunctional metabolic acids. J. Gas Chromatogr. 6: 135-138.
1223. STEPHENS, K., R. W. SHELDON, AND T. R. PARSONS. 1967. Seasonal variations in the availability of food for benthos in a coastal environment. Ecology 48: 852-855.
1224. GILGAN, M. W., AND D. R. IDLER. 1967. The conversion of androstenedione to testosterone by some lobster (*Homarus americanus* Milne Edwards) tissues. Gen. Comp. Endocrinol. 9: 319-324.
1225. ACKMAN, R. G. 1967. The chain-length overlap problem in gas-liquid chromatography with polyester liquid phases. Lipids 2: 502-505.
1226. BROCKERHOFF, H., R. J. HOYLE, P. C. HUANG, AND C. LITCHFIELD. 1968. Positional distribution of fatty acids in depot triglycerides of aquatic animals. Lipids 3: 24-29.
1227. ACKMAN, R. G., C. A. EATON, AND S. N. HOOPER. 1968. Lipids of the fin whale (*Balaenoptera physalus*) from North Atlantic waters. IV. Fin whale milk. Can. J. Biochem. 46: 197-203.
1228. ACKMAN, R. G., AND S. N. HOOPER. 1968. Examination of isoprenoid fatty acids as distinguishing characteristics of specific marine oils with particular reference to whale oils. Comp. Biochem. Physiol. 24: 549-565.
1229. SHIEH, H. S. 1968. Enzymatic oxidation of C-labeled betaine by the marine microbe *Achromobacter choltinophagum*. Can. J. Biochem. 46: 21-23.
1230. ARO, K. V., AND M. P. SHEPARD. 1967. Salmon of the North Pacific Ocean - Part IV. Spawning populations of North Pacific salmon. 5. Pacific salmon in Canada. Int. N. Pac. Fish. Comm., Bull. No. 23, p. 225-327.
1231. MOUNIB, M. S., AND J. S. EISAN. 1968. Uricolytic enzymes in cod sperm. Can. J. Physiol. Pharmacol. 46: 283-284.
1232. GOLDSACK, D. E. 1968. Volume fraction of the polypeptide chain in proteins and the concentration of protein denaturants. Biopolymers 6: 164-165.
1233. BROCKERHOFF, H., R. J. HOYLE, AND P. C. HUANG. 1967. Incorporation of fatty acids of marine origin into triglycerides and phospholipids of mammals. Biochim. Biophys. Acta 144: 541-548.
1234. PLATFORD, R. F. 1968. Isopiestic measurements on the system HO-NaCl-NaSO at 25°C. J. Chem. Eng. Data 13(1): 46-48.
1235. ALLEN, K. R. 1967. Some quick methods for estimating the effect on catch of changes in the size limit. J. Cons. Cons. Perma. Int. Explor. Mer 31(1): 111-126.
1236. MOUNIB, M. S., AND J. S. EISAN. 1968. Biosynthesis of lipids by salmon sperm from pyruvate, acetate, and glyoxylate. Comp. Biochem. Physiol. 25: 193-200.
1237. MOUNIB, M. S., AND J. S. EISAN. 1968. Carbon dioxide fixation by spermatozoa of cod. Comp. Biochem. Physiol. 25: 703-709.
1238. ACKMAN, R. G. 1968. Prediction of retention times in the GLC of diastereoisomers of methyl-branched fatty acids. J. Chromatogr. 34: 165-173.
1239. IDLER, D. R., A. SAITO, AND P. WISEMAN. 1968. Sterols in red algae (Rhodophyceae). Steroids 11: 465-473.
1240. MITCHELL, E. 1968. Northeast Pacific stranding distribution and seasonality of Cuvier's beaked whale *Ziphius cavirostris*. Can. J. Zool. 46: 265-279.
1241. SPRAGUE, J. B. 1968. Apparent DDT tolerance in an aquatic insect disproved by test. Can. Entomol. 100: 279-284.
1242. SAUNDERS, R. L. 1968. An evaluation of two methods of attaching tags to Atlantic salmon smolts. Progr. Fish-Cult. 30(2): 104-109.
1243. BERKELEY, C. 1968. A checklist of Polychaeta recorded from British Columbia since 1923, with references to name changes, descriptions, and synonymies. II. Sedentaria. Can. J. Zool. 46: 557-567.
1244. TRUSCOTT, B., AND D. R. IDLER. 1968. The widespread occurrence of a corticosteroid 1 α -hydroxylase in the interrenals of Elasmobranchii. J. Endocrinol. 40: 515-526.
1245. INGLES, C. J., J. R. TREVITHICK, M. SMITH, AND G. H. DIXON. 1966. Biosynthesis of protamine during spermatogenesis in salmonid fish. Biochem. Biophys. Res. Commun. 22(6): 627-634.
1246. BORDEN, R. K., AND M. SMITH. 1966. Nucleotide synthesis. III. Preparation of nucleoside-3',5' cyclic phosphates in strong base. J. Org. Chem. 31: 3247-3253.
1247. BORDEN, R. K., AND M. SMITH. 1966. Nucleotide synthesis. II. Nucleotide *p*-nitrophenyl and 2,4-dinitrophenyl esters. J. Org. Chem. 31: 3241-3246.

1248. BILINSKI, E., N. J. ANTIA, AND Y. C. LAU. 1968. Characterization of phospholipase C from a marine planktonic alga (*Monochrysis lutheri*). Biochim. Biophys. Acta 159: 496-502.
1249. YAMAZAKI, F., AND E. M. DONALDSON. 1968. The spermiation of goldfish (*Carassius auratus*) as a bioassay for salmon (*Oncorhynchus tshawytscha*) gonadotropin. Gen. Comp. Endocrinol. 10: 383-391.
1250. BROCKERHOFF, H. 1968. Substrate specificity of pancreatic lipase. Biochim. Biophys. Acta 159: 296-303.
1251. IDLER, D. R., AND D. A. HORNE. 1968. Recovery of microquantities of steroids from silica gel following repeated thin-layer chromatography. Steroids 11: 909-914.
1252. SPRAGUE, J. B. 1968. Avoidance reactions of rainbow trout to zinc sulphate solutions. Water Res. 2: 367-372.
1253. TREMAINE, J. H., AND D. E. GOLDSACK. 1968. The structure of regular viruses in relation to their subunit amino acid composition. Virology 35: 227-237.
1254. MACLEAN, I., G. EGLINTON, K. DOURAGHI-ZADEH, R. G. ACKMAN, AND S. N. HOOPER. 1968. Correlation of stereoisomerism in present day and geologically ancient isoprenoid fatty acids. Nature 218: 1019-1023.
1255. TEMPLEMAN, W. 1968. Review of some aspects of capelin biology in the Canadian area of the north-west Atlantic. Rapp. Proces-Verbaux Reunions Cons. Perma. Int. Explor. Mer 158: 41-53.
1256. CADDY, J. F., AND R. A. CHANDLER. 1968. Accumulation of paralytic shellfish poison by the rough whelk (*Buccinum undatum* L.). Proc. Nat. Shellfish. Ass. 58: 46-50.
1257. MURRAY, A. R. 1968. Estuarine net counting fence for trapping Atlantic salmon. Trans. Amer. Fish. Soc. 97: 282-286.
1258. LI, M. F., AND C. JORDAN. 1968. A proteolytic pseudomonad from skin lesions of rainbow trout (*Salmo gairdnerii*). II. Some properties of the proteinase. Can. J. Microbiol. 14: 875-880.
1259. DONALDSON, E. M., AND U. H. M. FAGERLUND. 1968. Changes resulting from sexual maturation, in the half life ($T_{1/2}$) and volume of distribution (V) of radioactivity after injection of C (14 C) into salmon. Excerpta Med. Int. Congr. Ser. 157, Item No. 348.
1260. SQUIRES, H. J. 1968. Some aspects of adaptation in decapod Crustacea in the north-west Atlantic. Proc. Symp. Crustacea, Part III, p. 987-995.
1261. DINGLE, J. R., J. A. HINES, AND D. I. FRASER. 1968. Postmortem degradation of adenine nucleotides in muscle of the lobster, *Homarus americanus*. Food Sci. 33(1): 100-103.
1262. NEATE, H. 1968. Gear modifications for the electrofishing of underyearling coho salmon. Progr. Fish-Cult. 30(3): 181-182.
1263. PARKER, R. R. 1968. *Caligus longicaudatus* Brady, 1899 (Caligidae: Copepoda). Bull. Brit. Mus. (Natur. Hist.) 15: 353-368.
1264. IDLER, D. R., AND P. WISEMAN. 1968. Desmosterol and other sterols of the Alaskan king crab and the North Atlantic queen crab. Comp. Biochem. Physiol. 26: 1113-1117.
1265. ACKMAN, R. G. 1968. The flame ionization detector: further comments on molecular breakdown and fundamental group responses. J. Gas Chromatogr. 6: 497-501.
1266. ELDJARN, L., K. TRY, R. G. ACKMAN, AND S. N. HOOPER. 1968. Different ratios of the LDD and DDD diastereoisomers of phytanic acid in patients with Refsum's disease. Biochem. Biophys. Acta 164: 94-100.
1267. MARGOLIS, L. 1968. Review of the Japanese species of *Cystidicola*, *Metabronema*, and *Rhabdochona* (Nematoda) from salmonid fishes. Res. Bull. Meguro Parasitol. Mus. 2: 23-44.
1268. RICKER, W. E., R. MALOUIN, P. HARPER, AND H. H. ROSS. 1968. Distribution of Quebec stoneflies (Plecoptera). Natur. Can. 95: 1085-1123.
1269. FREESE, M., AND D. MAKOW. 1968. High-frequency ultrasonic properties of freshwater fish tissue. J. Acoust. Soc. Amer. 44: 1282-1289.
1270. STRADINE, G. A. 1968. Amylopectin accumulation in *Clostridium botulinum* type E. Can. J. Microbiol. 14: 1059-1062.
1271. LARKIN, P. A., AND J. G. McDONALD. 1968. Factors in the population biology of the sockeye salmon of the Skeena River. J. Anim. Ecol. 37: 229-258.
1272. SHIEH, H. S. 1968. The characterization and incorporation of radioactive bases into scallop phospholipids. Comp. Biochem. Physiol. 27: 533-541.
1273. DUEDALL, I. W. 1968. Partial molal volumes of 16 salts in sea water. Environ. Sci. Technol. 2: 706-707.
1274. DUEDALL, I. W. 1968. A mercury dispenser. J. Chem. Educ. 45: 393.
1275. DUEDALL, I. W. 1967. A nonwetting surface on glass. Amer. J. Phys. 35: iii-iv.
1276. SPRAGUE, J. B., AND D. W. McLEESE. 1968. Toxicity of bleached kraft mill effluent to larval and adult lobsters and Atlantic salmon. Pulp Pap. Mag. Can. Dec. 1968: T431-T433.
1277. SPRAGUE, J. B., AND D. W. McLEESE. 1968. Toxicity of kraft mill effluent for larval and adult lobsters, and juvenile salmon. Water Res. 2: 753-760.
1278. SPRAGUE, J. B., AND D. W. McLEESE. 1968. Different toxic mechanisms in kraft pulp mill effluent for two aquatic animals. Water Res. 2: 761-765.
1279. MAY, A. W., AND J. MESSTORFF. 1968. Comparative fishing by research vessels *A. T. Cameron* and *Walther Herwig*. ICNAF Redb. 1968, Part III, p. 21-27.
1280. TEMPLEMAN, W. 1968. Temperatures and salinities, 1967, at Station 27 and in the St. John's-Flemish Cap section. ICNAF Redb. 1968, Part III, p. 37-39.

1281. CARROTHERS, P. J. G. 1968. Field identification of synthetic fibres used in fish nets. ICNAF Redb. 1968, Part III, p. 49-52.
1282. BECKETT, J. S., AND S. N. TIBBO. 1968. Recent changes in size composition of Canadian Atlantic swordfish catches. ICNAF Redb. 1968, Part III, p. 62-66.
1283. HOURSTON, A. S. 1968. The Newfoundland herring fishery and its implications concerning the resource. ICNAF Redb. 1968, Part III, p. 67-73.
1284. CADDY, J. F., AND E. I. LORD. 1968. Recent developments in the Georges Bank scallop fishery. ICNAF Redb. 1968, Part III, p. 89-93.
1285. KHOUW, B. T., H. D. MCCURDY, AND R. E. DRINAN. 1968. The axenic cultivation of *Hexamita inflata* from *Crassostrea virginica*. Can. J. Microbiol. 14: 184-185.
1286. ACKMAN, R. G., R. F. ADDISON, AND C. A. EATON. 1968. Unusual occurrence of squalene in a fish, the eulachon *Thaleichthys pacificus*. Nature 220: 1033-1034.
1287. SCOTT, J. S. 1969. *Lampritrema nipponicum* (Trematoda) from west Atlantic argentines. Can. J. Zool. 47: 139-140.
1288. STEWART, J. E., AND M. F. LI. 1969. A study of lobster (*Homarus americanus*) ecology using serum protein concentration as an index. Can. J. Zool. 47: 21-28.
1289. TARR, H. L. A. 1969. *De novo* biosynthesis of inosinic and uridylic acids by salmon testes and liver. Can. J. Biochem. 47: 197-201.
1290. DYER, W. J. 1968. Deterioration and storage life of frozen fish, p. 429-447. In Prof. J. Hawthorne [ed.] Low temperature biology of foodstuffs. Pergamon Press, Oxford, New York.
1291. SPRAGUE, J. B. 1968. Promising anti-pollutant: chelating agent NTA protects fish from copper and zinc. Nature 220: 1345-1346.
1292. YAMAZAKI, F., AND E. M. DONALDSON. 1968. The effects of partially purified salmon pituitary gonadotropin on spermatogenesis, vitellogenesis, and ovulation in hypophysectomized goldfish (*Carassius auratus*). Gen. Comp. Endocrinol. 11: 292-299.
1293. PARKER, R. R. 1968. *Caligus appendiculatus* F. Müller, 1852 (Crustacea: Copepoda): a request for suppression under the plenary powers. Z. N. (S.) 1839. Bull. Zool. Nomencl. 25: 105-106.
1294. PARSONS, T. R., AND D. J. BLACKBOURN. 1968. Pigments of the ciliate *Mesodinium rubrum* (Lohmann). Neth. J. Sea Res. 4: 27-31.
1295. PARSONS, T. R., AND R. J. LEBRASSEUR. 1968. A discussion of some critical indices of primary and secondary production for largescale ocean surveys. Calif. Mar. Res. Comm. CalCOFI Rep. 12: 54-63.
1296. JORDAN, F. P., AND H. D. SMITH. 1968. An aluminum staple tag for population estimates of salmon smolts. Progr. Fish-Cult. 30: 230-234.
1297. BELL, G. R., G. E. HOSKINS, AND J. W. BAGSHAW. 1969. On the structure and enzymatic degradation of the external membrane of the salmon egg. Can. J. Zool. 47: 146-148.
1298. MARGOLIS, L., AND Z. KABATA. 1967. The structure of the buccal region of *Salvelinema* Trofimenko, 1962 (Nematoda: Cystidicolinae). Can. J. Zool. 45: 1067-1072.
1299. MARGOLIS, L. 1967. The swimbladder nematodes (Cystidicolinae) of Pacific salmon (genus *Oncorhynchus*). Can. J. Zool. 45: 1183-1199.
1300. MARGOLIS, L. 1967. Blood feeding in *Salvelinema walkeri* (Nematoda: Cystidicolinae), a parasite of coho salmon (*Oncorhynchus kisutch*). Can. J. Zool. 45: 1295-1296.
1301. KABATA, Z. 1968. *Praeacidochondria galathea* gen. et sp. nov. (Copepoda, Chondracanthidae) from a Malayan fish. Vidensk. Medd. Dansk. Naturhist. Foren. 131: 99-103.
1302. SHEPARD, M. P., A. C. HARTT, AND T. YONEMORI. 1968. Salmon of the North Pacific Ocean. Part VIII. Chum salmon in offshore waters. Int. N. Pac. Fish. Comm. Bull. 25: 69 p.
1303. SEKI, H., J. SKELDING, AND T. R. PARSONS. 1968. Observations on the decomposition of a marine sediment. Limnol. Oceanogr. 13: 440-447.
1304. WALDICHUK, M. 1968. Biological effects of water pollution. Chem. Can. 20: 1-4.
1305. SEKI, H. 1969. Marine microorganisms associated with the food of young salmon. Appl. Microbiol. 17: 252-255.
- *1306. KABATA, Z. 1968. Copepoda parasitic on Australian fishes. VII. *Shiinoa oclusa* gen. et sp. nov. J. Natur. Hist. 2: 497-504.
- *1307. KABATA, Z. 1968. Copepoda parasitic on Australian fishes. VIII. Families Lernaeopodidae and Naobranchiidae. J. Natur. Hist. 2: 505-523.
1308. IDLER, D. R., AND H. C. FREEMAN. 1968. Binding of testosterone, 1 α -hydroxycorticosterone, and cortisol by plasma proteins of fish. Gen. Comp. Endocrinol. 11: 366-372.
1309. SCHMIDT, P. J., AND R. M. CUTHBERT. 1969. Color sorting of raw salmon. Food Technol. 23: 98-100.
1310. DONALDSON, E. M., AND U. H. M. FAGERLUND. 1968. Changes in the cortisol dynamics of sockeye salmon (*Oncorhynchus nerka*) resulting from sexual maturation. Gen. Comp. Endocrinol. 11: 552-561.
- *1311. SQUIRES, H. J. 1966. Distribution of decapod Crustacea in the Northwest Atlantic. Serial Atlas of the Marine Environment, Folio 12. 4 p. + 4 pl.
1312. SHIEH, H. S. 1969. Use of choline or betaine for fatty acid synthesis in a marine microbe. Can. J. Microbiol. 15: 307-308.
1313. IDLER, D. R., AND B. TRUSCOTT. 1968. 1 α -Hydroxycorticosterone and testosterone in body fluids of a cartilaginous fish (*Raja radiata*). J. Endocrinol. 42: 165-166.
1314. BUTTKUS, H. 1969. Reaction of cysteine and methionine with malonaldehyde. J. Amer. Oil Chem. Soc. 46: 88-93.

*See footnote on page 559.

1315. BERNARD, F. R. 1968. Sexual dimorphism in *Po-linices lewisi* (Naticidae). *Nautilus* 82: 1-3.
1316. MCCracken, F. D. 1968. Size, age, and recruitment comparisons for haddock of the central Scotian Shelf. ICNAF Res. Bull. 5: 99-109.
1317. TEMPLEMAN, W. 1968. Distribution and characteristics of Atlantic salmon over oceanic depths and on the bank and shelf slope areas off Newfoundland, March-May, 1966. ICNAF Res. Bull. 5: 62-85.
1318. WILES, M., AND A. W. MAY. 1968. Biology and fishery of the west Newfoundland cod stock. ICNAF Res. Bull. 5: 5-43.
1319. FORRESTER, C. R. 1967. Results of English sole tagging in British Columbia waters. Bull. Pac. Mar. Fish. Comm. 7: 1-10.
1320. PRAKASH, A., AND M. A. RASHID. 1968. Influence of humic substances on the growth of marine phytoplankton: dinoflagellates. *Limnol. Oceanogr.* 13: 598-606.
1321. SCHAFER, C. T., AND M. A. PRAKASH. 1968. Current transport and deposition of foraminiferal tests, planktonic organisms, and lithogenic particles in Bedford Basin, Nova Scotia. *Mar. Sediments* 4: 100-103.
1322. MOUNIB, M. S., AND J. S. EISAN. 1969. Metabolism of pyruvate and glyoxylate by eggs of salmon (*Salmo salar*). *Comp. Biochem. Physiol.* 29: 259-264.
1323. ACKMAN, R. G., M. KATES, AND R. P. HANSEN. 1969. Diastereoisomeric composition of pristanic acids of marine and terrestrial origin. *Biochim. Biophys. Acta* 176: 673-675.
1324. ANDERSON, J. M., AND M. R. PETERSON. 1969. DDT: sublethal effects on brook trout nervous system. *Science* 164: 440-441.
1325. IDLER, D. R., AND B. TRUSCOTT. 1969. Production of 1 α -hydroxycorticosterone *in vivo* and *in vitro* by elasmobranchs. *Gen. Comp. Endocrinol. Suppl.* 2: 325-330.
1326. SEKI, H., K. V. STEPHENS, AND T. R. PARSONS. 1969. The contribution of allochthonous bacteria and organic materials from a small river into a semi-enclosed sea. *Arch. Hydrobiol.* 66: 37-47.
1327. MERCER, M. C. 1968. A synopsis of the recent Cephalopoda of Canada. *Proc. Symp. Mollusca* 1: 265-276.
1328. BUTLER, T. H. 1968. The shrimp fishery of British Columbia. *FAO Fish. Rep.* 2: 521-526.
1329. IDLER, D. R., G. B. SANGALANG, AND A. KANAZAWA. 1969. Steroid desmolase in gonads of a marine invertebrate, *Placopecten magellanicus* Gmelin. *Gen. Comp. Endocrinol.* 12: 222-230.
1330. ADDISON, R. F., AND R. G. ACKMAN. 1969. Separation of triglycerides and free fatty acids on Sephadex LH-20. *Anal. Biochem.* 28: 515-522.
1331. ACKMAN, R. G. 1969. Temperature effects in the calculation of equivalent chain length values for multiple-branched fatty acid esters and ketones on polar and non-polar open tubular columns. *J. Chromatogr.* 42: 170-175.
1332. MUNDIE, J. H. 1969. Ecological implications of the diet of juvenile coho in streams. *H. R. MacMillan Lectures in Fisheries, Symp. Salmon Trout Streams* 1968: 135-152.
1333. BAMS, R. A. 1969. Adaptations of sockeye salmon associated with incubation in stream gravels. *H. R. MacMillan Lectures in Fisheries, Symp. Salmon Trout Streams* 1968: 71-87.
1334. ALLEN, K. R. 1969. Limitations on production in salmonid populations in streams. *H. R. MacMillan Lectures in Fisheries, Symp. Salmon Trout Streams* 1968: 3-18.
1335. CALAPRICE, J. R. 1969. Production and genetic factors in managed salmonid populations. *H. R. MacMillan Lectures in Fisheries, Symp. Salmon Trout Streams* 1968: 377-388.
1336. YAMAZAKI, F., AND E. M. DONALDSON. 1969. Involvement of gonadotropin and steroid hormones in the spermiation of the goldfish (*Carassius auratus*). *Gen. Comp. Endocrinol.* 12: 491-497.
- *1337. BUTLER, D. G., W. C. CLARKE, E. M. DONALDSON, AND R. W. LANGFORD. 1969. Surgical adrenalectomy of a teleost fish (*Anguilla rostrata* LeSueur): effect on plasma cortisol and tissue electrolyte and carbohydrate concentrations. *Gen. Comp. Endocrinol.* 12: 503-514.
- *1338. FAGERLUND, U. H. M., AND E. M. DONALDSON. 1969. The effect of androgens on the distribution and secretion of cortisol in gonadectomized male sockeye salmon (*Oncorhynchus nerka*). *Gen. Comp. Endocrinol.* 12: 438-448.
1339. KE, P. J., L. W. REGIER, AND H. E. POWER. 1969. Determination of fluoride in biological samples by a nonfusion distillation and ion-selective membrane electrode method. *Anal. Chem.* 41: 1081-1084.
1340. FAGERLUND, U. H. M., AND J. R. MCBRIDE. 1969. Suppression by dexamethasone of interrenal activity in adult sockeye salmon (*Oncorhynchus nerka*). *Gen. Comp. Endocrinol.* 12: 651-657.
1341. WALDICHUK, M. 1969. Eutrophication studies in a shallow inlet on Vancouver Island. *J. Water Pollut. Contr. Fed.* 41: 745-764.
1342. MOUNIB, M. S., AND J. S. EISAN. 1969. Alanine and aspartate aminotransferases in eggs and sperm of fish. *Life Sci.* 8: 531-534.
1343. MEDCOF, J. C. 1969. Fishermen's reports of freshwater and saltwater migrations of Nova Scotia eels (*Anguilla rostrata*). *Can. Field-Natur.* 83: 132-138.
1344. STEWART, J. E., B. ARIE, B. M. ZWICKER, AND J. R. DINGLE. 1969. Gaffkemia, a bacterial disease of the lobster, *Homarus americanus*: effects of the pathogen, *Gaffkya homari*, on the physiology of the host. *Can. J. Microbiol.* 15: 925-932.
1345. SHELDON, R. W., AND W. H. SUTCLIFFE, JR. 1969.

*See footnote on page 559.

- Retention of marine particles by screens and filters. *Limnol. Oceanogr.* 14: 441-444.
1346. SHIEH, H. S. 1969. The biosynthesis of phospholipids in the lobster, *Homarus americanus*. *Comp. Biochem. Physiol.* 30: 679-684.
1347. GOLDSACK, D. E. 1969. Relation of amino acid composition and the Moffitt parameters to the secondary structure of proteins. *Biopolymers* 7: 299-313.
1348. HALLIDAY, R. G. 1969. Rare fishes from the Clyde sea area. *J. Natur. Hist.* 9: 309-320.
1349. ODENSE, P. H., T. C. LEUNG, W. A. GREEN, AND J. R. DINGLE. 1969. The isolation of cod muscle tropomyosin by heat treatment. *Biochim. Biophys. Acta* 188: 124-131.
1350. DROZDOWSKI, B., AND R. G. ACKMAN. 1969. Isopropyl alcohol extraction of oil and lipids in the production of fish protein concentrate from herring. *J. Amer. Oil Chem. Soc.* 46: 371-376.
1351. ACKMAN, R. G., AND S. N. HOOPER. 1969. The "load effect" in open-tubular GLC: relationships among methyl trans-11-octadecenoate and cis isomers with similar retention times. *J. Chromatogr. Sci.* 7: 549-553.
- *1352. IDLER, D. R., AND P. M. JANGAARD. 1969. Cod fishery, p. 129-135. *In* Frank E. Firth [ed.] *The encyclopedia of marine resources*. Van Nostrand Reinhold Company, New York, N.Y.
1353. LORING, D. H., AND D. J. G. NOTA. 1969. Mineral dispersal patterns in the Gulf of St. Lawrence. *Rev. Geogr. Montr.* 23: 289-305.
1354. SCOTT, J. S. 1969. Development of rostellar hooks in *Paricterotaenia paradoxa* (Cestoda: Cyclophyllidea). *Can. J. Zool.* 47: 1011-1013.
1355. ANDERSON, G. C., T. R. PARSONS, AND K. STEPHENS. 1969. Nitrate distribution in the subarctic Northeast Pacific Ocean. *Deep-Sea Res.* 16: 329-334.
1356. FLETCHER, G. L., D. C. HARDY, AND D. R. IDLER. 1969. Testosterone production and metabolic clearance rates in sexually mature male and female skate (*Raja radiata*). *Endocrinology* 85: 552-560. (8)
1357. IDLER, D. R., AND H. C. FREEMAN. 1969. Sex hormone binding proteins I. Binding of steroids by serum of an elasmobranch (*Raja radiata*). *Gen. Comp. Endocrinol.* 13: 75-82. (8)
1358. KABATA, Z. 1969. Copepoda parasitic on Australian fishes IX. Family Chondracanthidae. *J. Natur. Hist.* 3: 497-507. (1)
1359. WHYTE, J. N. C. 1969. Proton magnetic resonance and mass spectrometric studies on derivatives of sodium 2-O- α -D-mannopyranosyl-D-glycerate and related compounds. *Can. J. Chem.* 47: 4083-4086. (2)
1360. HOLMES, W. N., AND E. M. DONALDSON. 1969. The body compartments and the distribution of electrolytes. *Fish. Physiol.* 1: 1-89. (2)
1361. MUIR, B. S. 1969. Further observations on gill modifications of oceanic fishes. *Copeia* 1969: 629. (7)
1362. FREEMAN, H. C., AND D. R. IDLER. 1969. Sex hormone binding proteins II. Isolation from serum of an elasmobranch (*Raja radiata*). *Gen. Comp. Endocrinol.* 13: 83-91. (8)
1363. MACCALLUM, W. A., J. I. JAFFRAY, D. A. CHALKER, AND D. R. IDLER. 1969. Condition of Newfoundland offshore fish and its influence on quality after single and double freezing, p. 56-63. *In* R. Kreuzer [ed.] *Freezing and irradiation of fish*. Fishing News (Books) Limited, London. (8)
1364. MACCALLUM, W. A., AND D. R. IDLER. 1969. Influence of thawing and thawing methods on the immediate and refrozen storage quality of fish, p. 213-223. *In* R. Kreuzer [ed.] *Freezing and irradiation of fish*. Fishing News (Books) Limited, London. (8)
1365. DYER, W. J., AND J. PETERS. 1969. Factors influencing quality changes during frozen storage and distribution of frozen products, including glazing, coating, and packaging, p. 317-322. *In* R. Kreuzer [ed.] *Freezing and irradiation of fish*. Fishing News (Books) Limited, London. (8)
1366. DYER, W. J. 1969. Effect of brining and polyphosphate on yield and quality, p. 167-171. *In* R. Kreuzer [ed.] *Freezing and irradiation of fish*. Fishing News (Books) Limited, London. (8)
1367. POWER, H. E., M. L. MORTON, AND R. E. SINCLAIR. 1969. The chemical and physical characteristics of cod stored at superchill temperatures, p. 104-113. *In* R. Kreuzer [ed.] *Freezing and irradiation of fish*. Fishing News (Books) Limited, London. (8)
1368. MACCALLUM, W. A., AND K. SEPIC. 1969. Commercial aspects of reprocessing and marketing of sea frozen fish, p. 240-251. *In* R. Kreuzer [ed.] *Freezing and irradiation of fish*. Fishing News (Books) Limited, London. (8)
1369. SEKI, H., AND J. FULTON. 1969. Infection of marine copepods by *Metschnikovia* sp. *Mycopathol. Mycol. Appl.* 38: 61-70. (1)
1370. ODENSE, P. H., T. C. LEUNG, T. M. ALLEN, AND E. PARKER. 1969. Multiple forms of lactate dehydrogenase in the cod, *Gadus morhua* L. *Biochem. Genet.* 3: 317-334. (8)
1371. BROCKERHOFF, H. 1969. Esters of phenols as substrates for pancreatic lipase. *Biochim. Biophys. Acta* 191: 181-183. (8)
1372. IDLER, D. R., M. J. O'HALLORAN, AND D. A. HORNE. 1969. Interrenalectomy and hypophysectomy in relation to liver glycogen levels in the skate (*Raja erinacea*). *Gen. Comp. Endocrinol.* 13: 303-306. (8)
1373. FAGERLUND, U. H. M. 1969. Lipid metabolism, p. 123-134. *In* *Chemical zoology*, Vol. III. Academic Press, Inc., New York, N.Y. (2)
1374. BROCKERHOFF, H. 1969. Action of pancreatic lipase on emulsions of water-soluble esters. *Arch. Biochem. Biophys.* 134: 366-371. (8)
1375. RICKER, W. E., AND H. H. ROSS. 1969. The genus

*See footnote on page 559.

- Zeuleuctra* and its position in the family Leuctridae (Plecoptera, Insecta). Can. J. Zool. 47: 1113-1127. (1)
1376. LICHT, P., AND E. M. DONALDSON. 1969. Gonadotropic activity of salmon pituitary extract in the male lizard (*Anolis carolinensis*). Biol. Reprod. 1: 307-314. (2)
1377. POWER, H. E., K. A. SAVAGAON, B. E. MARCH, AND J. BIELY. 1969. Assessment of the nutrient content of Atlantic coast herring fish meals. Feed-stuffs 41: 48-49. (8)
1378. MUIR, B. S., AND G. M. HUGHES. 1969. Gill dimensions for three species of tunny. J. Exp. Biol. 51: 271-285. (7)
1379. MERCER, M. C. 1969. Biological characteristics of migrant omastrephid squid, *Illex illecebrosus* (LeSueur), in the Newfoundland area. Amer. Zool. 9: 505. (9)
1380. SANDEMAN, E. J. 1969. Diurnal variation in availability of different sizes of redfish, *Sebastes mentella*. ICNAF Res. Bull. 6: 35-46. (9)
1381. TEMPLEMAN, W. 1969. Experimental snella fishing for cod, *Gadus morhua* L., on West Greenland Bank, August 1965, and comparison of a snella and an otter-trawl catch of cod from the same locality of Store Hellefiske Bank. ICNAF Res. Bull. 6: 53-64. (9)
1382. SANDEMAN, E. J. 1969. Age determination and growth rate of redfish, *Sebastes* sp., from selected areas around Newfoundland. ICNAF Res. Bull. 6: 79-106. (9)
1383. LEAR, W. H. 1969. Length-weight relationship of commercial-size Greenland halibut, *Reinhardtius hippoglossoides* (Walbaum). ICNAF Res. Bull. 6: 119-121. (9)
1384. TEMPLEMAN, W. 1969. The scientific name, distribution, and characteristics of the blue ling, *Molva dyptergia* (Pennant), from West Greenland and Newfoundland areas. Fiskeridir. Skr. Ser. Havunders. 15: 145-162. (9)
1385. ACKMAN, R. G., S. N. HOOPER, M. KATES, A. K. SEN GUPTA, G. EGLINTON, AND I. MACLEAN. 1969. Phytanic acid L-menthyl esters gas-liquid chromatographic separation of diastereoisomers. J. Chromatogr. 44: 256-261. (8)
1386. BARRACLOUGH, W. E., R. J. LEBRASSEUR, AND O. D. KENNEDY. 1969. Shallow scattering layer in the subarctic Pacific Ocean: detection by high-frequency echo sounder. Science 166: 611-613. (1)
1387. SUBBA RAO, D. V. 1969. *Asterionella japonica* bloom and discoloration off Waltair, Bay of Bengal. Limnol. Oceanogr. 14: 632-634. (7)
1388. MANN, K. H. 1969. The dynamics of aquatic ecosystems. Advan. Ecol. Res. 6: 1-81. (7)
1389. EVELYN, T. P. T. 1968. Tissue levels of chloramphenicol attained in sockeye (*Oncorhynchus nerka*) and coho (*O. kisutch*) salmon by feeding. Bull. Off. Int. Epizoot. 69: 1453-1463. (1)
1390. TANAKA, S., M. P. SHEPARD, AND H. T. BILTON. 1969. Origin of chum salmon (*Oncorhynchus keta*) in offshore waters of the North Pacific in 1956-1958 as determined from scale studies. Int. N. Pac. Fish. Comm. Bull. 26: 57-155. (1)
1391. RAUSCH, R. L., AND L. MARGOLIS. 1969. *Plicobothrium globicephalae* gen. et sp. nov. (Cestoda: Diphyllobothriidae) from the pilot whale, *Globicephala melana* Traill, in Newfoundland waters. Can. J. Zool. 47: 745-750. (1)
1392. PARSONS, T. R., K. STEPHENS, AND R. J. LEBRASSEUR. 1969. Production studies in the Strait of Georgia. Part I. Primary production under the Fraser River plume, February to May, 1967. J. Exp. Mar. Biol. Ecol. 3: 27-38. (1), (3)
1393. PARSONS, T. R., R. J. LEBRASSEUR, J. D. FULTON, AND O. D. KENNEDY. Production studies in the Strait of Georgia. Part II. Secondary production under the Fraser River plume, February to May, 1967. J. Exp. Mar. Biol. Ecol. 3: 39-50. (1), (3)
1394. LEBRASSEUR, R. J., W. E. BARRACLOUGH, O. D. KENNEDY, AND T. R. PARSONS. 1969. Production studies in the Strait of Georgia. Part III. Observation on the food of larval and juvenile fish in the Fraser River plume, February to May, 1967. J. Exp. Mar. Biol. Ecol. 3: 51-61. (1), (3)
1395. ACKMAN, R. G., AND S. N. HOOPER. 1970. Branched-chain fatty acids of four freshwater fish oils. Comp. Biochem. Physiol. 32: 117-125. (8)
1396. ACKMAN, R. G. 1969. Gas-liquid chromatography of fatty acids and esters, p. 329-381. In J. M. Lowenstein [ed.] Methods in enzymology. Vol. 14. Academic Press, Inc., New York and London. (8)
1397. SPRAGUE, J. B., AND D. E. DRURY. 1969. Avoidance reactions of salmonid fish to representative pollutants, p. 169-179. In S. H. Jenkins [ed.] Advances in water pollution research. Pergamon Press, Oxford and New York. (6)
1398. LI, M. F., G. S. TRAXLER, AND L. M. LANGILLE. 1970. Toxic effect of elemental phosphorus on L-cells cultivated in suspension. Can. J. Zool. 48: 133-136. (8)
1399. PLATT, T. 1969. The concept of energy efficiency in primary production. Limnol. Oceanogr. 14: 653-659. (7)
1400. HURST, R. E. 1970. A gas chromatography collection syringe for volatile compounds. Chem. Ind. 1970: 90-92. (2)
1401. YAMAMOTO, M., AND K. L. MASSEY. 1969. Cyclic 3',5'-nucleotide phosphodiesterase of fish (*Salmo gairdnerii*) brain. Comp. Biochem. Physiol. 30: 941-954. (2)
1402. YAMAMOTO, M. 1968. Fish muscle glycogen phosphorylase. Can. J. Biochem. 46: 423-432. (2)
1403. ANTIA, N. J., J. Y. CHENG, AND F. J. R. TAYLOR. 1969. The heterotrophic growth of a marine photosynthetic cryptomonad (*Chroomonas salina*). Proc. Int. Seaweed Symp. 6: 17-29. (2)
1404. IDLER, D. R., B. TRUSCOTT, AND H. C. STEWART. 1968. Some distinctive aspects of steroidogenesis in fish. Excerpta Medica Int. Congr. Ser. 184: 724-729. (8)

1405. BEARE-ROGERS, J. L., AND R. G. ACKMAN. 1969. Reaction of lipoxidase with polyenoic acids in marine oils. *Lipids* 4: 441-443. (8)
1406. PIPPY, J. H. C., AND G. M. HARE. 1969. Relationship of river pollution to bacterial infection in salmon (*Salmo salar*) and suekers (*Catostomus commersoni*). *Trans. Amer. Fish. Soc.* 98: 685-690. (6)
1407. WALDICHUK, M. 1968. Waste disposal in relation to the physical environment - oceanographic aspects. *Syesis* 1: 4-27. (1), (3)
1408. TARR, H. L. A. 1967. Purine nucleoside phosphorylases, p. 113-118. *In* L. Grossman and W. Moldave [ed.] *Methods in enzymology*, Vol. XII. Academic Press, Inc., New York, N.Y. (2)
1409. MUIR, B. S. 1970. Contribution to the study of blood pathways in teleost gills. *Copeia* 1970: 19-28. (7)
1410. WEISBART, M., AND D. R. IDLER. 1970. Re-examination of the presence of corticosteroids in two cyclostomes, the Atlantic hagfish (*Myxine glutinosa* L.) and the sea lamprey (*Petromyzon marinus* L.). *J. Endocrinol.* 46: 29-43. (8)
1411. SHAW, D. H., AND G. W. MOSS. 1969. Quantitative estimation of neutral sugars by gas-liquid chromatography. *J. Chromatogr.* 41: 350-357. (9)
1412. KE, P. J., H. E. POWER, AND L. W. REGIER. 1970. Fluoride content of fish protein concentrate and raw fish. *J. Sci. Food Agr.* 21: 108-109. (8)
1413. SEKI, H., AND D. G. ROBINSON. 1969. Effect of decompression on activity of microorganisms in seawater. *Int. Rev. Ges. Hydrobiol.* 54: 201-205. (1)
1414. PARSONS, T. R. 1969. The use of particle size spectra in determining the structure of a plankton community. *J. Oceanogr. Soc. Jap.* 25: 172-181. (1), (3)
1415. BRETT, J. R. 1970. Fish - the energy cost of living, p. 37-52. *In* *Marine aquiculture. Selected papers from the Conference on Marine Aquiculture, Oregon State University Press, Corvallis, Oreg.* (1)
1416. TOMLINSON, N., S. E. GEIGER, AND S. W. ROACH. 1969. Quality of sea frozen fish from the north-eastern Pacific Ocean, p. 68-75. *In* R. Kreuzer [ed.] *Freezing and irradiation of fish*. Fishing News (Books) Ltd., London. (2)
1417. ROACH, S. W., AND N. TOMLINSON. 1969. Partial freezing of Pacific salmon intended for canning, p. 114-118. *In* R. Kreuzer [ed.] *Freezing and irradiation of fish*. Fishing News (Books) Ltd., London. (2)
1418. TARR, H. L. A., AND L. GARDNER. 1970. Ribonucleic acid synthesis by salmon liver nuclei. *Int. J. Biochem.* 1: 235-240. (2)
1419. TARR, H. L. A., L. J. GARDNER, AND P. INGRAM. 1969. Pacific cod muscle 5'-nucleotidase. *J. Food Sci.* 34: 637-640. (2)
1420. ETCHEGARY, A. A., J. S. CREWE, AND W. A. MACCALLUM. 1969. Canadian experience in handling fish aboard chill-freezer trawlers. *Bull. Inst. Int. Froid Suppl. VIII, Annexe* 1969-5; 111-117. (9), (8)
1421. MACCALLUM, W. A., AND J. H. MERRITT. 1969. The handling of sea-frozen whole fish and its effect on bacterial spoilage and on sanitary quality. *Bull. Inst. Int. Froid Suppl. VIII, Annexe* 1969-5: 119-123. (8), (9)
1422. MORRISON, C. M., M. L. CAMERON, AND P. H. ODENSE. 1970. Periodicities in the thick filaments of the opaque and translucent parts of the adductor of the oyster, *Crassostrea virginica*. *Can. J. Zool.* 48: 608-609. (8)
1423. ACKMAN, R. G., AND S. N. HOOPER. 1970. Analyses of fatty acids from Newfoundland copepods and sea water with remarks on the occurrence of arachidic acid. *Lipids* 5: 417-421. (8)
1424. ADDISON, R. F., AND R. G. ACKMAN. 1970. Direct determination of elemental phosphorus by gas-liquid chromatography. *J. Chromatogr.* 47: 421-426. (8)
1425. HOOPER, S. N., AND R. G. ACKMAN. 1970. *trans*-6-Hexadecenoic acid in the Atlantic leatherback *Dermochelys coriacea* L. and other marine turtles. *Lipids* 5: 288-292. (8)
1426. LORING, D. H., D. J. G. NOTA, W. D. CHESTERMAN, AND H. K. WONG. 1970. Sedimentary environments on the Magdalen Shelf, southern Gulf of St. Lawrence. *Mar. Geol.* 8: 337-354. (7)
1427. ANTIA, N. J., E. BILINSKI, AND Y. C. LAU. 1970. Identification and characterization of phospholipase D in a unicellular red alga (*Porphyridium cruentum*). *Can. J. Biochem.* 48: 643-648. (2)
1428. SEKI, H., AND M. HARDON. 1970. Microbiological studies relevant to a lobster introduction into Fatty Basin, British Columbia. *J. Oceanogr. Soc. Jap.* 26: 38-51. (1), (3)
1429. KABATA, Z. 1970. Three copepods (Crustacea) parasitic on fishes of the genus *Lepidion* Swainson, 1838 (Pisces: Telostei). *J. Parasitol.* 56: 175-184. (1)
1430. BRETT, J. R. 1969. Temperature and fish. *Chesapeake Sci.* 10: 275-276.
1431. WHYTE, J. N. C., AND B. A. SOUTHCOTT. 1970. An extraction procedure for plants: extracts from the red alga *Rhodomela larix*. *Phytochemistry* 9: 1159-1161. (2)
1432. IDLER, D. R. 1969. Steroidogenesis in fish, p. 121-133. *In* *Fish in research*. Academic Press, Inc., New York and London. (8)
1433. LANTZ, A. W., AND D. G. IREDALE. 1969. Techniques in smoking goldeye (*Hiodon alosoides*). *Can. Inst. Food Technol. J.* 2: 157-159. (4)
1434. VALLENTYNE, J. R. 1969. Sedimentary organic matter and paleolimnology. *Mitt. Int. Ver. Limnol.* 17: 104-110. (4)
1435. HAMILTON, A. L. 1969. On estimating annual production. *Limnol. Oceanogr.* 14: 771-782. (4)
1436. BRUNSKILL, G. J., S. D. LUDLAM, AND W. H. DEMENT. 1969. A comparative study of meromixis. *Verh. Int. Ver. Limnol.* 17: 137-139. (4)
1437. BRUNSKILL, G. J., AND S. D. LUDLAM. 1969. Fayetteville Green Lake, New York. I. Physical and

- chemical limnology. *Limnol. Oceanogr.* 14: 817-829. (4)
1438. BRUNSKILL, G. J. 1969. Fayetteville Green Lake, New York. II. Precipitation and sedimentation of calcite in a meromictic lake with laminated sediments. *Limnol. Oceanogr.* 14: 830-847. (4)
1439. BRUNSKILL, G. J., AND R. C. HARRISS. 1969. Fayetteville Green Lake, New York. IV. Interstitial water chemistry of the sediments. *Limnol. Oceanogr.* 14: 858-861. (4)
1440. VALLENTYNE, J. R. 1969. Pyrolysis of amino acids in Pleistocene *Mercenaria* shells. *Geochim. Cosmochim. Acta* 33: 1453-1457. (4)
1441. TONER, E. D., AND G. H. LAWLER. 1969. Synopsis of biological data on the pike. *FAO Fish. Synopsis* 30: 39 p. (4)
1442. LAWLER, G. H. 1969. Occurrence of *Triaenophorus* spp. in Lake Malaren fishes. *Rep. Inst. Freshwater Res. Drottningholm* 49: 120-128. (4)
1443. LI, M. F., AND G. S. TRAXLER. 1970. Observations on rainbow trout ovary cells infected with amphibian virus (LT-1). *Can. J. Microbiol.* 16: 642-645. (8)
1444. HAMILTON, R. D., AND J. E. PRESLAN. 1969. Cultural characteristics of a pelagic marine hymenostome ciliate, *Uronema* sp. *J. Exp. Mar. Biol. Ecol.* 4: 90-99. (4)
1445. PALOHEIMO, J. E., AND L. M. DICKIE. 1970. Production and food supply, p. 499-527. *In* J. H. Steele [ed.] *Marine food chains*. Oliver & Boyd, Edinburgh. (7)
1446. VOLLENWEIDER, R. A. 1969. Möglichkeiten und Grenzen elementarer Modelle der Stoffbilanz von Seen. (Possibilities and limits of elementary models concerning the budget of substances in lakes.) *Arch. Hydrobiol.* 66: 1-36. (In German, English abstract) (4)
1447. INGRAM, P. 1970. Uridine diphosphate glucose-glycogen glycosyl transferase from trout liver. *Int. J. Biochem.* 1: 263-273. (2)
1448. ANTIA, N. J., AND J. Y. CHENG. 1970. The survival of axenic cultures of marine planktonic algae from prolonged exposure to darkness at 20 C. *Phycologia* 9: 179-183. (2)
1449. ACKMAN, R. G. 1970. Effect of terminal "groups" on gas-liquid chromatographic retention times of long-chain compounds: a case of tail *versus* dog. *J. Chromatogr.* 47: 534-536. (8)
1450. LAWLER, G. H. 1970. Parasites of coregonid fishes, p. 279-309. *In* C. C. Lindsey and C. S. Woods [ed.] *Biology of coregonid fishes*. Univ. of Manitoba Press, Winnipeg, Man. (4)
1451. LINDSEY, C. C., J. W. CLAYTON, AND W. G. FRANZIN. 1970. Zoogeographic problems and protein variation in the *Coregonus clupeaformis* whitefish species complex, p. 127-146. *In* C. C. Lindsey and C. S. Woods [ed.] *Biology of coregonid fishes*. Univ. of Manitoba Press, Winnipeg, Man. (4)
1452. ZITKO, V. 1970. Polychlorinated biphenyls (PCB) solubilized in water by nonionic surfactants for studies of toxicity to aquatic animals. *Bull. Environ. Contam. Toxicol.* 5: 279-285. (6)
1453. WOJCIWICZ, M. B., AND P. ODENSE. 1970. The effect of urea upon the activity measurement of cod muscle cathepsin with hemoglobin substrate. *Can. J. Biochem.* 48: 1050-1053. (8)
1454. MITCHELL, E. 1970. Pigmentation pattern evolution in delphinid cetaceans: an essay in adaptive coloration. *Can. J. Zool.* 48: 717-740. (5)
1455. YURKOWSKI, M., AND B. L. WALKER. 1970. Lipids of the intestinal mucosa of normal and essential fatty acid deficient rats. *Can. J. Physiol. Pharmacol.* 48: 631-639. (4)
1456. IDLER, D. R., L. M. SAFE, AND S. H. SAFE. 1970. Mass spectrometric studies of methyl ether derivatives of sterols. *Steroids* 16: 251-262. (8)
1457. IDLER, D. R., AND P. WISEMAN. 1970. Sterols in red algae (Rhodophyceae): variation in the desmosterol content of dulce (*Rhodymenia palmata*). *Comp. Biochem. Physiol.* 35: 679-687. (8)
1458. INGRAM, P. 1970. α -1, 4-Glucan: α -1, 4-glucan 6-glycosyl transferase from trout liver. *Int. J. Biochem.* 1: 451-456 (8)
1459. IDLER, D. R., P. M. WISEMAN, AND L. M. SAFE. 1970. A new marine sterol, 22-*trans*-24-norcholesta-5, 22-dien-3 β -ol. *Steroids* 16: 451-461. (8)
1460. LAYCOCK, R. A., AND L. W. REGIER. 1970. Pseudomonads and achromobacters in the spoilage of irradiated haddock of different preirradiation quality. *Appl. Microbiol.* 20: 333-341. (8)
1461. SCOTT, K. R. 1970. Thermistor readout monitors cold storage. *Can. Contr. Instrum.* 9: 36-38. (4)
1462. BROCKERHOFF, H. 1970. Substrate specificity of pancreatic lipase. Influence of the structure of fatty acids on the reactivity of esters. *Biochim. Biophys. Acta* 212: 92-101. (8)
1463. HUTZINGER, O., W. D. JAMIESON, AND V. ZITKO. 1970. Identification of polychlorinated biphenyls and DDT in mixtures by mass spectrometry. *Nature* 226: 664. (6)
1464. MESSIEH, S. N., AND S. N. TIBBO. 1970. A critique on the use of otoliths for ageing Gulf of St. Lawrence herring (*Clupea harengus* L.). *J. Cons. Cons. Perma. Int. Explor. Mer* 33: 181-191. (6)
1465. MASON, J. C. 1970. Copulatory behavior of the crayfish, *Pacifastacus trowbridgii* (Stimpson). *Can. J. Zool.* 48: 969-976. (1)
1466. PARSONS, T. R., AND G. C. ANDERSON. 1970. Large scale studies of primary production in the North Pacific Ocean. *Deep-Sea Res.* 17: 765-776. (1), (3)
1467. STEPHENS, K. 1970. Automated measurement of dissolved nutrients. *Deep-Sea Res.* 17: 393-396. (1)
1468. MASON, J. C. 1970. Egg-laying in the western North American crayfish, *Pacifastacus trowbridgii* (Stimpson) (Decapoda, Astacidae). *Crustaceana* 19(44): 37-42. (1)
1469. BERNARD, F. R. 1970. Occurrence of the spirochaete genus *Cristispira* in western Canadian marine bivalves. *Veliger* 13: 33-36. (1)

1470. BERNARD, F. R. 1970. A distributional checklist of the marine molluscs of British Columbia: based on faunistic surveys since 1950. *Syesis* 3: 75-94. (1)
1471. BROCKERHOFF, H., R. J. HOYLE, AND P. C. HWANG. 1970. An assay of lipase based on the liberation of acetaldehyde from vinyl oleate. *Anal. Biochem.* 37: 26-31. (8)
1472. CUNNINGHAM, C. C., AND I. W. DUEDALL. 1970. Phenosafranin indicator for chlorinity titrations. *J. Cons. Cons. Perma. Int. Explor. Mer* 33: 292-293. (7)
1473. SCOTT, K. R. 1970. Portable refrigerated fish holding unit for remote freshwater fisheries. *Can. Inst. Food Technol. J.* 3: 139-142. (4)
1474. ADDISON, R. F., AND R. G. ACKMAN. 1970. Exceptional occurrence of odd-chain fatty acids in smelt (*Osmerus mordax*) from Jeddore Harbour, Nova Scotia. *Lipids* 5: 554-557. (8)
1475. ACKMAN, R. G. 1970. Confusion between C and C fatty acids in a gas chromatographic analysis of seed lipids of water plants. *Lipids* 5: 950-951. (8)
1476. DICKIE, L. M. 1970. Marine science and technology. *Chem. Can.* 22(Nov.): 25-27. (7)
1477. O'HALLORAN, M. J., AND D. R. IDLER. 1970. Identification and distribution of the Leydig cell homolog in the testis of sexually mature Atlantic salmon (*Salmo salar*). *Gen. Comp. Endocrinol.* 15: 361-364. (8)
1478. IDLER, D. R., AND M. J. O'HALLORAN. 1970. Steroids of a chondrosteian: identification of interrenal tissue in the American Atlantic sturgeon, *Acipenser oxyrhynchus* Mitchell, by histological and histochemical methods. *J. Endocrinol.* 48: 621-626. (8)
1479. IDLER, D. R., AND G. B. SANGALANG. 1970. Steroids of a chondrosteian: in-vitro steroidogenesis in yellow bodies isolated from kidneys and along the posterior cardinal veins of the American Atlantic sturgeon, *Acipenser oxyrhynchus* Mitchell. *J. Endocrinol.* 48: 627-637. (8)
1480. ANTIA, N. J., I. D. DESAI, AND M. J. ROMILLY. 1970. The tocopherol, vitamin K, and related isoprenoid quinone composition of a unicellular red alga (*Porphyridium cruentum*). *J. Phycol.* 6: 305-312. (1)
1481. ACKMAN, R. G., AND S. N. HOOPER. 1970. Hydrogenolysis products of the minor fatty acids from *Euphoria longana* seed oil. *J. Amer. Oil Chem. Soc.* 47: 525-529. (8)
1482. PLATT, T., R. J. CONOVER, R. LOUCKS, K. H. MANN, D. L. PEER, A. PRAKASH, AND D. D. SAMBOTO. 1970. Study of a eutrophicated marine basin. FAO technical conference on marine pollution and its effects on living resources and fishing, December 9-18, 1970, Rome, Italy. (7)
1483. SCOTT, J. S. 1969. Morphology and morphometric variation in *Lecithophyllum botryophorum* (Trematoda: Hemiuroidae) in *Argentina silus*. *Can. J. Zool.* 47: 213-216. (6)
1484. APPLGATE, V. C., B. G. H. JOHNSON, AND M. A. SMITH. 1966. The relation between molecular structure and biological activity among mononitrophenols containing halogens. *Great Lakes Fish. Comm. Tech. Rep.* 11: 1-19. (4)
1485. PARSONS, T. R., AND H. SEKI. 1970. Importance and general implications of organic matter in aquatic environments. In D. W. Hood [ed.] Symposium on organic matter in natural waters. *Inst. Mar. Sci. Occas. Publ.* 1(June): 1-27. (1)
1486. MASON, J. C. 1970. Maternal-offspring behavior of the crayfish, *Pacifastacus trowbridgi* (Stimpson). *Amer. Midland Natur.* 84: 463-473. (1)
1487. MARGOLIS, L. 1970. Nematode diseases of marine fishes, p. 190-209. In S. F. Snieszko ed. A symposium on diseases of fishes and shellfishes. *Amer. Fish. Soc. Spec. Publ.* 5. (1)
1488. BURSA, A. S. 1969. *Actiniscus canadensis* n.sp., *A. pentasterias* Ehrenberg v. *arcticus* n.var., *Pseudoactiniscus apentasterias* n.gen., n.sp., marine relicts in Canadian Arctic lakes. *J. Protozool.* 16: 411-418. (5)
1489. FREEMAN, H. C., AND D. R. IDLER. 1971. Binding affinities of blood proteins for sex hormones and corticosteroids in fish. *Steroids* 17: 233-250. (8)
1490. LAWRIE, A. H. 1970. The sea lamprey in the Great Lakes. *Trans. Amer. Fish. Soc.* 99: 766-775. (4)
1491. VOSE, J. R., J. Y. CHENG, N. J. ANTIA, AND G. H. N. TOWERS. 1971. The catabolic fission of the aromatic ring of phenylalanine by marine planktonic algae. *Can. J. Bot.* 49: 259-261. (2)
1492. HALLIDAY, R. G., AND F. D. MCCrackEN. 1970. Movements of haddock tagged off Digby, Nova Scotia. *ICNAF Res. Bull.* 7: 8-14. (7)
1493. PINHORN, A. T. 1970. Assessments of the effects of increases in the mesh sizes of trawls on the cod fisheries in the southern Grand Bank area (ICNAF Divisions 3N and 3O). *ICNAF Res. Bull.* 7: 32-45. (9)
1494. KNIGHT, W. 1970. Some remarks on the behaviour of growth and mortality estimates based on age-length keys. *ICNAF Res. Bull.* 7: 52-55. (6)
1495. MESSIEH, S. N. 1970. Immature herring populations in the Bay of Fundy. *ICNAF Res. Bull.* 7: 59-66. (6)
1496. KABATA, Z. 1967. *Proclavellodes pillaii* gen. et sp.n. (Copepoda: Lernaepodidae) from South India. *J. Parasitol.* 53: 1298-1301. (1)
1497. EVELYN, T. P. T. 1967. The metabolism of putrescine (1,4-diaminobutane) by mycobacteria isolated from fish. I. Preliminary studies with intact cells. *Can. J. Microbiol.* 13: 511-519. (1)
1498. EVELYN, T. P. T. 1967. The metabolism of putrescine (1,4-diaminobutane) by mycobacteria isolated from fish. II. Studies with arsenite-inhibited cells and cell-free extracts. *Can. J. Microbiol.* 13: 521-531. (1)
1499. PARKER, R. R., AND L. MARGOLIS. 1967. A redescription of the syntypes of *Caligus rapax* H. Milne Edwards, 1840 (Copepoda, Caligidae) and the misuse of this name since 1850. *Crustaceana* 12: 87-101. (1)

1500. WERNER, A. E. 1968. Gases from sediments in polluted coastal waters. Pulp Pap. Mag. Can. 69: 127-136. (1)
1501. KABATA, Z. 1967. The genus *Haemobaphes* (Copepoda: Lernaeoceridae) in the waters of British Columbia. Can. J. Zool. 45: 853-875. (1)
1502. POZAR, D. F. 1968. An automatic wet-food dispenser. Progr. Fish-Cult. 30: 113-115. (1)
1503. SHELDON, R. W., T. P. T. EVELYN, AND T. R. PARSONS. 1967. On the occurrence and formation of small particles in seawater. Limnol. Oceanogr. 12: 367-375. (1)
1504. STEPHENS, K. 1967. Continuous measurement of turbidity. Deep-Sea Res. 14: 465-467. (1)
1505. KE, P. J., AND L. W. REGIER. 1971. Direct potentiometric determination of fluoride in water after 8-hydroxyquinoline extraction. Anal. Chim. Acta 53: 23-29. (8)
1506. IDLER, D. R., AND P. WISEMAN. 1971. Identification of 22-*cis*-cholesta-5,22-dien-3 β -ol and other scallop sterols by gas-liquid chromatography and mass spectrometry. Comp. Biochem. Physiol. 38A: 581-590. (8)
1507. WELLS, R. 1968. Haddock length conversion factors for St. Pierre Bank. ICNAF Res. Bull. 5: 137-140. (9)
1508. YAMAMOTO, M. 1971. Purification and some properties of an acid deoxyribonuclease from testes of chinook salmon *Oncorhynchus tshawytscha*. Biochim. Biophys. Acta 228: 95-104. (2)
1509. BUTTKUS, H. 1970. Accelerated denaturation of myosin in frozen solution. J. Food Sci. 35: 558-562. (2)
1510. SPRAGUE, J. B. 1970. Measurement of pollutant toxicity to fish. II. Utilizing and applying bioassay results. Water Res. 4: 3-32. (6)
1511. EMERY, K. O., C. A. KAYE, D. H. LORING, AND D. J. G. NOTA. 1968. European cretaceous flints on the coast of North America. Science 160: 1225-1228. (7)
1512. PLATFORD, R. F. 1968. Isopiestic measurements on the system water-sodium chloride-magnesium chloride at 25°. J. Phys. Chem. 72: 4053-4057. (7)
1513. MCALLISTER, C. D. 1970. Zooplankton rations, phytoplankton mortality, and the estimation of marine production, p. 419-457. In J. H. Steele ed. Marine food chains. Oliver & Boyd, Edinburgh. (1), (3)
1514. ACKMAN, R. G., C. A. EATON, AND C. LITCHFIELD. 1971. Composition of wax esters, triglycerides, and diacyl glyceryl ethers in the jaw and blubber fats of the Amazon River dolphin (*Inia geoffrensis*). Lipids 6: 69-77. (8)
1515. PLATFORD, R. F. 1968. Isopiestic measurements on the system HO-NaCl-NaSO at 25°C. J. Chem. Eng. Data 13: 46-48. (7)
1516. BUDLONG, J. P. 1968. Bridge and amplifier monitor d-c level. Electronics Sept. 2: 71-72. (7)
1517. BUDLONG, J. P. 1968. UJT gives frequency divider an immunity to input jitter. Electronics July 7: 105. (7)
1518. BUTLER, T. H. 1970. Synopsis of biological data on the prawn *Pandalus platyceros* Brandt, 1851. FAO Fish. Rep. 4: 1288-1315. (1)
1519. GREENFIELD, L. J., R. D. HAMILTON, AND C. WEINER. 1970. Nondestructive determination of protein, total amino acids, and ammonia in marine sediments. Bull. Mar. Sci. 20: 289-304. (4)
1520. PIPPY, J. H. C., AND F. A. ALDRICH. 1969. *Hepatoxylon trichiuri* (Holden 1802) (Cestoda-Trypanorhyncha) from the giant squid *Architeuthis dux* Steenstrup 1857 in Newfoundland. Can. J. Zool. 47: 263-264. (9)
1521. MARKERT, J. R., AND W. E. VANSTONE. 1968. Egg proteins of Pacific salmon, genus *Oncorhynchus*: proteins in the soluble fraction. Can. J. Biochem. 46: 1334-1337. (2)
1522. GOLDSACK, D. E., R. E. HURST, AND J. LOVE. 1969. A pressure jump apparatus with optical detection. Anal. Biochem. 28: 273-281. (2)
1523. TARR, H. L. A., AND J. E. ROY. 1967. Fish-muscle purine and pyrimidine nucleoside phosphorylases. Can. J. Biochem. 45: 409-419. (2)
1524. ROY, J. E., AND K. L. ROY. 1967. The mechanism and specificity of guanine deaminase. Can. J. Biochem. 45: 1263-1269. (2)
1525. TARR, H. L. A., J. E. ROY, AND M. YAMAMOTO. 1968. Fish liver pyrimidine deoxynucleoside phosphorylase and deoxyribosyltransferase. Can. J. Biochem. 46: 407-415. (2)
1526. BUTLER, D. G., E. M. DONALDSON, AND W. C. CLARKE. 1969. Physiological evidence for a pituitary-adrenocortical feedback mechanism in the eel (*Anguilla rostrata*). Gen. Comp. Endocrinol. 12: 173-176. (2)
1527. IDLER, D. R., AND P. WISEMAN. 1971. Sterols of Crustacea. Int. J. Biochem. 2: 91-98. (8)
1528. COX, R. E., J. R. MAXWELL, G. EGLINTON, C. T. PILLENGER, R. G. ACKMAN, AND S. N. HOOPER. 1970. The geological fate of chlorophyll: the absolute stereochemistries of a series of acyclic isoprenoid acids in a 50 million year old lacustrine sediment. Chem. Commun. 1970: 1639-1641. (8)
1529. CHAU, Y. K., V. K. CHAWLA, H. F. NICHOLSON, AND R. A. VOLLENWEIDER. 1970. Distribution of trace elements and chlorophyll *a* in Lake Ontario. Proc. Conf. Great Lakes Res. 13: 659-672. (4)
1530. WHYTE, J. N. C., AND J. R. ENGLAR. 1971. Polysaccharides of the red alga *Rhodymenia pertusa* Part II. Cell-wall glucan; proton magnetic resonance studies on permethylated polysaccharides. Can. J. Chem. 49: 1302-1305. (2)
1531. KASON, W. R., S. NAKAI, AND R. J. BOSE. 1971. Interaction of α_{S1} -casein with polyethylenimine. J. Dairy Sci. 54: 461-466. (2)
1532. ELGMORK, K., AND O. A. SÆTHER. 1970. Distribution of invertebrates in a high mountain brook in the Colorado Rocky Mountains. Univ. Colo. Stud. Ser. Biol. 3: 1-55. (4)

1533. SÆTHER, O. A. 1970. Chironomids and other invertebrates from North Boulder Creek, Colorado. Univ. Colo. Stud. Ser. Biol. 31: 56-114. (4)
1534. STANTON, M. P. 1971. Syringe procedure for transfer of nanogram quantities of mercury vapor for flameless atomic absorption spectrophotometry. Anal. Chem. 43: 625-627. (4)
1535. LILEY, N. R., AND E. M. DONALDSON. 1969. The effects of salmon pituitary gonadotropin on the ovary and the sexual behavior of the female guppy, *Poecilia reticulata*. Can. J. Zool. 47: 569-573. (2)
1536. HAMILTON, A. L., AND O. A. SÆTHER. 1971. The occurrence of characteristic deformities in the chironomid larvae of several Canadian lakes. Can. Entomol. 103: 363-368. (4)
1537. SHELDON, R. W. 1969. A universal grade scale for particulate materials. Proc. Geol. Soc. London 1659: 293-295. (7)
1538. PLATT, T., AND D. V. SUBBA RAO. 1970. Energy flow and species diversity in a marine phytoplankton bloom. Nature 227: 1059-1060. (7)
1539. TRITES, R. W. 1969. Capacity of an estuary to accept pollutants, p. 148-160. In Proceedings of the conference on pollution, St. Mary's University, Halifax, N.S., Aug. 24-26, 1969. Chemical Institute of Canada, Ottawa, Ont. (7)
1540. PINHORN, A. T., AND R. WELLS. 1970. Catch/effort assessments for the major cod stocks in ICNAF Subareas 2 and 3. ICNAF Redb. 1970, Part III, p. 65-74. (9)
1541. PITT, T. K. 1970. Trends in the American plaice fishery in ICNAF Subarea 3. ICNAF Redb. 1970, Part III, p. 103-110. (9)
1542. TEMPLEMAN, W. 1970. Temperatures and salinities in the eastern Newfoundland area in 1969. ICNAF Redb. 1970, Part III, p. 11-21. (9)
1543. BRINKHURST, R. O., A. L. HAMILTON, AND H. B. HERRINGTON. 1968. Components of the bottom fauna of the St. Lawrence, Great Lakes. Great Lakes Inst. Univ. Toronto PR 33: 50 p. (4)
1544. MERCER, M. C. 1970. Sur la limite septentrionale du calmar. Natur. Can. 97: 823-824. (9)
1545. NYMAN, O. L. 1970. Electrophoretic analysis of hybrids between salmon (*Salmo salar* L.) and trout (*Salmo trutta* L.) Trans. Amer. Fish. Soc. 99: 229-236. (9)
1546. MERCER, M. C. 1970. Cephalopod resources and fisheries in the Northwest Atlantic. Amer. Malacol. Union Annu. Rep. Bull. 1970: 30-33. (9)
1547. NYMAN, O. L. 1970. Ecological interaction of brown trout, *Salmo trutta* L., and brook trout, *Salvelinus fontinalis* (Mitchill), in a stream. Can. Field-Natur. 84: 343-350. (9)
1548. WHYTE, J. N. C. 1971. Polysaccharides of the red seaweed *Rhodymenia pertusa* Part I. Water-soluble glucan. Carbohydrate Res. 16: 220-224. (2)
1549. BOSE, R. J., AND M. D. PETERS. 1971. Occurrence and origin of the tropylium ion in the mass spectra of arylboronic acid esters. Can. J. Chem. 49: 1766-1770. (2)
1550. SUTTERLIN, A. M., AND R. L. SAUNDERS. 1969. Proprioceptors in the gills of teleosts. Can. J. Zool. 47: 1209-1212. (6)
1551. CADDY, J. F. 1969. Development of mantle organs, feeding, and locomotion in postlarval *Macoma balthica* (L.) (Lamellibranchiata). Can. J. Zool. 47: 609-617. (6)
1552. SPRAGUE, J. B., P. F. ELSON, AND J. R. DUFFY. 1971. Decrease in DDT residues in young salmon after forest spraying in New Brunswick. Environ. Pollut. 1: 191-203. (6)
1553. BESCH, K. W., AND P. ROBERTS-PICHETTE. 1970. Effects of mining pollution on vascular plants in the Northwest Miramichi River system. Can. J. Bot. 48: 1647-1656. (6)
1554. HUGHES, G. M., AND R. L. SAUNDERS. 1970. Responses of the respiratory pumps to hypoxia in the rainbow trout (*Salmo gairdneri*). J. Exp. Biol. 53: 529-545. (6)
1555. SYMONS, P. E. K. 1970. Claw-shuddering behavior of the shore crab *Hemigrapsus oregonensis*. Can. Field-Natur. 84: 2 p. (6)
1556. PETERSON, R. H., AND J. M. ANDERSON. 1969. Effects of temperature on brain tissue oxygen consumption in salmonid fishes. Can. J. Zool. 47: 1345-1353. (6)
1557. AIKEN, D. E. 1969. Ovarian maturation and egg laying in the crayfish *Orconectes virilis*: influence of temperature and photoperiod. Can. J. Zool. 47: 931-935. (6)
1558. WILDISH, D. J. 1970. The toxicity of polychlorinated biphenyls (PCB) in sea water to *Gammarus oceanicus*. Bull. Environ. Contam. Toxicol. 5: 202-204. (6)
1559. HAMILTON, R. D., AND J. E. PRESLAN. 1969. Cultural characteristics of a pelagic marine hymenostome ciliate, *Uronema* sp. J. Exp. Mar. Biol. Ecol. 4: 90-99. (4)
1560. TARR, H. L. A., AND L. GARDNER. 1971. Deoxyribonucleic acid polymerase from immature testes of salmon. Can. J. Biochem. 49: 19-27. (2)
1561. BUTTKUS, H. 1971. The sulfhydryl content of rabbit and trout myosins in relation to protein stability. Can. J. Biochem. 49: 97-107. (2)
1562. IDLER, D. R., D. A. HORNE, AND G. B. SANGALANG. 1971. Identification and quantification of the major androgens in testicular and peripheral plasma of Atlantic salmon (*Salmo salar*) during sexual maturation. Gen. Comp. Endocrinol. 16: 257-267. (8)
1563. RONALD, A. P., AND H. TSUYUKI. 1971. The subunit structures and the molecular basis of the multiple hemoglobins of two species of trout, *Salmo gairdneri* and *S. clarki clarki*. Comp. Biochem. Physiol. 39B: 195-202. (2)
1564. HOOPER, S. N., AND R. B. ACKMAN. 1971. Trans-6-hexadecenoic acid and the corresponding alcohol in lipids of the sea anemone *Metridium dianthus*. Lipids 6: 341-346. (8)
1565. BOYCE, N. P. J. 1971. An instrument for removing cephalic sections of nematodes. Trans. Amer. Microsc. Soc. 90: 89-92. (1)

1566. KABATA, Z. 1971. *Lernanthropus togatus* sp. n. (Copepoda: Dichelethiidae), a parasite of *Gasterin* sp. (Pisces: Teleostei) in the Indian Ocean. *J. Parasitol.* 57: 157-160. (1)
1567. KABATA, Z. 1970. Crustacea as enemies of fishes. In S. F. Snieszko and H. R. Axelrod [ed.] *Diseases of fishes*. Book 1. T. F. H. Publications, Inc., Jersey City, N.J. 197 p. + 105 fig. (1)
1568. KABATA, Z. 1970. Copepoda parasitic on Australian fishes. X. Families Eudactylinidae and Pseudocycnidae. *J. Natur. Hist.* 4: 159-173. (1)
1569. ZITKO, V. 1971. Determination of residual fuel oil contamination of aquatic animals. *Bull. Environ. Contam. Toxicol.* 5: 559-564. (6)
1570. WILDISH, D. J., AND V. ZITKO. 1971. Uptake of polychlorinated biphenyls from sea water by *Gammarus oceanicus*. *Mar. Biol. (Berlin)* 9: 213-218. (6)
1571. TSUYUKI, H., AND A. P. RONALD. 1971. Molecular basis for multiplicity of Pacific salmon hemoglobins: evidence for *in vivo* existence of molecular species with up to four different polypeptides. *Comp. Biochem. Physiol.* 39B: 503-522. (2)
1572. ACKMAN, R. G., S. N. HOOPER, AND P. J. KE. 1971. The distribution of saturated and isoprenoid fatty acids of the lipids of three species of molluscs, *Littorina littorea*, *Crassostrea virginica* and *Venus mercenaria*. *Comp. Biochem. Physiol.* 39B: 579-587. (8)
1573. BECK, B., T. G. SMITH, AND A. W. MANSFIELD. 1970. Occurrence of the harbour seal, *Phoca vitulina* Linnaeus, in the Thlewiaza River, N.W.T. *Can. Field-Natur.* 84: 297-300. (5)
1574. QUAY, W. B., AND E. D. MITCHELL. 1971. Structure and sensory apparatus of oral remnants of the nasopalatine canals in the fin whale (*Balaenoptera physalus* L.). *J. Morphol.* 134: 271-279. (5)
1575. SERGEANT, D. E. 1969. Feeding rates of Cetacea. *Fiskeridir. Skr. Ser. Havunders.* 15: 246-258. (5)
1576. SANGALANG, G. B., M. WEISBART, AND D. R. IDLER. 1971. Steroids of a chondrosteian: corticosteroids and testosterone in the plasma of the American Atlantic sturgeon, *Acipenser oxyrinchus* Mitchill. *J. Endocrinol.* 50: 413-421. (8)
1577. BURSA, A. S. 1970. *Dinamoebidium coloradense* spec. nov. and *Katodinium auratum* spec. nov. in Como Creek, Boulder County, Colorado. *Arctic Alpine Res.* 2: 145-151. (5)
1578. BURSA, A. S. 1970. *Dinamoebidium hyperboreum* spec. nov. in coastal plankton of Ellesmere Island, N.W.T., Canada. *Arctic Alpine Res.* 2: 152-154. (5)
1579. PLATT, T. 1971. The annual production by phytoplankton in St. Margaret's Bay, Nova Scotia. *J. Cons. Cons. Perma. Int. Explor. Mer* 33: 324-334. (7)
1580. HUGHES, R. N., AND M. L. H. THOMAS. 1971. The classification and ordination of shallow-water benthic samples from Prince Edward Island, Canada. *J. Exp. Mar. Biol. Ecol.* 7: 1-39. (7)
1581. SERGEANT, D. E. 1970. Migration and orientation in harp seals. *Proc. Annu. Conf. Biol. Sonar Diving Mammals* 7: 123-131. (7)
1582. RICKER, W. E. 1970. A. N. Dzerzhavin's biostatistical method. *Ryb. Khoz.* 46(10): 6-9, 46(11): 5-7. (1)
1583. RICKER, W. E. 1971. Comparison of two reproduction curves. *Ryb. Khoz.* 47(3): 16-21; 47(4): 10-13. (In Russian) (1)
1584. ZITKO, V., AND S. N. TIBBO. 1971. Fish kill caused by an intermediate oil from coke ovens. *Bull. Environ. Contam. Toxicol.* 6: 24-25. (6)
1585. STRASDINE, G. A. 1968. Amylopectin accumulation in *Clostridium botulinum* type E. *Can. J. Microbiol.* 14: 1059-1062. (2)
1586. PLATT, T., AND R. J. CONOVER. 1971. Variability and its effect on the 24th chlorophyll budget of a small marine basin. *Mar. Biol.* 10: 52-65. (7)
1587. LIPPS, J. H., J. W. VALENTINE, AND E. MITCHELL. 1968. Pleistocene paleoecology and biostratigraphy of Santa Barbara Island, California. *J. Paleontol.* 42: 291-307. (5)
1588. SÆTHER, O. A. 1971. Nomenclature and phylogeny of the genus *Harnischia* (Diptera: Chironomidae). *Can. Entomol.* 103: 347-362. (4)
1589. BURSA, A. S. 1971. Morphogenesis and taxonomy of fossil and contemporary Dinophyta secreting discoasters. *Proc. Planktonic Conf. Roma 1970*, 11: 129-143. (5)
1590. BRETT, J. R. 1970. 3. Temperature. 3.3. Animals. 3.32. Fishes, p. 513-560. In O. Kinne [ed.] *Marine ecology*. Vol. 1. Environmental factors, Part. 1. Wiley-Interscience, London, New York, Sydney, and Toronto. (1)
1591. ACKMAN, R. G. 1971. Pristane and other hydrocarbons in some freshwater and marine fish oils. *Lipids* 6: 520-522. (8)
1592. SUTCLIFFE, W. H., JR., R. W. SHELDON, A. PRAKASH, AND D. C. GORDON, JR. 1971. Relations between wind speed, Langmuir circulation, and particle concentration in the ocean. *Deep-Sea Res. Oceanogr. Abstr.* 18: 639-643. (7)
1593. SUNDARARAJ, B. I., T. C. ANAND, AND E. M. DONALDSON. 1971. Effects of salmon pituitary gonadotropin, ovine luteinizing hormone, and testosterone on the testes and seminal vesicles of hypophysectomized catfish, *Heteropneustes fossilis* (Bloch). *Gen. Comp. Endocrinol.* 17: 73-82. (2)
1594. BEAMISH, P. 1971. Quantitative measurements of acoustic scattering from zooplanktonic organisms. *Deep-Sea Res. Oceanogr. Abstr.* 18: 811-822. (7)
1595. ZITKO, V. 1971. Effects of pesticide-grade hexanes on the silicic acid chromatography of polychlorinated biphenyls and organochlorine pesticides. *J. Chromatogr.* 59: 444-445. (6)
1596. ACKMAN, R. G., C. A. EATON, AND E. D. MITCHELL. 1971. The bottle-nosed dolphin *Tursiops truncatus*: fatty acid composition of milk triglycerides. *Can. J. Biochem.* 49: 1172-1174. (8)
1597. VALLENTYNE, J. R. 1971. A description of Hutchinson Lake, Ontario. *Limnol. Oceanogr.* 16: 473-475. (4)

1598. WHYTE, J. N. C. 1971. PMR spectrometric determination of the degree of polymerization and anomeric configuration in oligosaccharides. *Anal Biochem.* 42: 476-480. (2)
1599. BEAMISH, P., AND E. MITCHELL. 1971. Ultrasonic sounds recorded in the presence of a blue whale *Balaenoptera musculus*. *Deep-Sea Res. Oceanogr. Abstr.* 18: 803-809. (7)
1600. ZITKO, V., O. HUTZINGER, AND S. SAFE. 1971. Retention times and electron-capture detector responses of some individual chlorobiphenyls. *Bull. Environ. Contam. Toxicol.* 6: 160-163. (6)
1601. BROCKERHOFF, H. 1971. On the function of bile salts and proteins as cofactors of lipase. *J. Biol. Chem.* 246: 5828-5831. (8)
1602. SHIEH, H. S. 1971. The incorporation of radioactive compounds into glycerides of the American lobster, *Homarus americanus*. *Int. J. Biochem.* 2: 423-426. (8)
1603. HUTZINGER, O., S. SAFE, AND V. ZITKO. 1971. Polychlorinated biphenyls: synthesis of some individual chlorobiphenyls. *Bull. Environ. Contam. Toxicol.* 6: 209-219. (6)
1604. ZITKO, V. 1971. Polychlorinated biphenyls and organochlorine pesticides in some freshwater and marine fishes. *Bull. Environ. Contam. Toxicol.* 6: 464-470. (6)
1605. MUNDIE, J. H. 1971. The diel drift of chironomidae in an artificial stream and its relation to the diet of coho salmon fry, *Oncorhynchus kisutch* (Walbaum). *Can. Entomol.* 103: 289-297. (1)
1606. TAYLOR, F. H. C. 1971. Variation in hatching Pacific herring (*Clupea pallasii*) eggs with water depth, temperature, salinity, and egg mass thickness. *Rapp. Proces-Verbaux Reunions Cons. Perma. Int. Explor. Mer* 160: 34-41. (1)
1607. RICKER, W. E. 1969. Food from the sea, p. 87-108. *In Resources and man, a study and recommendations.* Report of the Committee on Resources and man, U.S. National Academy of Sciences, Preston Cloud, Chairman. W. H. Freeman and Co., San Francisco, Calif. (1)
1608. LITCHFIELD, C., R. G. ACKMAN, J. C. SIPOS, AND C. A. EATON. 1971. Isovaleroyl triglycerides from the blubber and melon oils of the beluga whale (*Delphinapterus leucas*). *Lipids* 6: 674-681. (8)
1609. COOTE, A. R., I. W. DUEDALL, AND R. S. HILTZ. 1971. Automatic analysis at sea, p. 347-351. *In Advances in automated analysis.* Technicon International Congress. Volume II, Industrial Analysis, Thurman Associates. (7)
1610. KABATA, Z., A. RAIBAUT, AND O. K. BEN HASSINE. 1971. *Eubrachiella mugilis* n. sp., un copepode parasite de muges de Tunisie. *Bull. Inst. Nat. Sci. Tech. Oceanogr. Peche* 2: 87-93. (1)
1611. IDLER, D. R., L. M. SAFE, AND E. F. MACDONALD. 1971. A new C-30 sterol (Z)-24-propyldenecholest-5-en-3 β -ol (29-methylisofucosterol). *Steroids* 18: 545-553. (8)
1612. NYMAN, O. L., AND D. H. SHAW. 1971. Molecular weight heterogeneity of serum esterases in four species of salmonid fish. *Comp. Biochem. Physiol.* 40B: 563-566. (9)
1613. SHAW, D. H. 1971. Neutral carbohydrates in the milk of the bottlenose dolphin (*Tursiops truncatus*). *Carbohydr. Res.* 19: 419-422. (9)
1614. ARMSTRONG, F. A. J., AND J. F. UTHE. 1971. Semi-automated determination of mercury in animal tissue. *At. Absorpt. Newsl.* 10: 101-103. (4)
1615. SÆTHER, O. L. 1971. Notes on general morphology and terminology of the Chironomidae (Diptera). *Can. Entomol.* 103: 1237-1260. (4)
1616. ODENSE, P. H., T. C. LEUNG, AND Y. M. MACDOUGALL. 1971. Polymorphism of lactate dehydrogenase (LDH) in some gadoid species. *Rapp. Proces-Verbaux Reunions Cons. Perma. Int. Explor. Mer* 161: 76-79. (8)
1617. SÆTHER, O. A. 1971. Four new and unusual Chironomidae (Diptera). *Can. Entomol.* 103: 1799-1827. (4)
1618. BERNARD, F. R. 1972. Occurrence and function of lip hypertrophy in the Anisomyaria (Mollusca, Bivalvia). *Can. J. Zool.* 50: 53-57. (1)
1619. MANN, K. H. 1972. Ecological energetics of the seaweed zone in a marine bay on the Atlantic coast of Canada. I. Zonation and biomass of seaweeds. *Mar. Biol.* 12: 1-10. (7)
1620. HUGHES, R. N., AND M. L. H. THOMAS. 1971. Classification and ordination of benthic samples from Bedeque Bay, an estuary in Prince Edward Island, Canada. *Mar. Biol.* 10: 277-235. (7)
1621. BUTTKUS, H., AND R. J. BOSE. 1971. Contribution to the cyclization of hydrazones of α,β -unsaturated carbonyl compounds. The biscarbamyl- and bis-thiocarbamylhydrazones of malondialdehyde. *J. Organ. Chem.* 36: 3895-3898. (2)
1622. ACKMAN, R. G., AND C. A. EATON. 1971. Mackerel lipids and fatty acids. *Can. Inst. Food Technol. J.* 4: 169-174. (8)
1623. HEALEY, M. C. 1971. Gonad development and fecundity of the sand goby, *Gobius minutus* Pallas. *Trans. Amer. Fish. Soc.* 100: 520-526. (4)
1624. INGRAM, P., D. A. APPELGARTH, S. STURROCK, AND J. N. C. WHYTE. 1971. Sorbitol and mannitol in human urine. *Clin. Chim. Acta* 35: 523-224. (2)
1625. ACKMAN, R. G., S. N. HOOPER, AND W. FRAIR. 1971. Comparison of the fatty acid compositions of depot fats from fresh-water and marine turtles. *Comp. Biochem. Physiol.* 40B: 931-944. (8)
1626. DESAI, I. D., AND D. LAUB. 1972. Comparative characterization of L-threonine dehydratase in seven species of unicellular marine algae. *Phytochemistry* 11: 277-287. (2)
1627. DUEDALL, I. W., AND D. E. BUCKLEY. 1971. Calcium carbonate monohydrate in seawater. *Nature Phys. Sci.* 234(45): 39-40. (7)
1628. WEISBART, M., AND D. R. IDLER. 1971. Identification and quantification of corticosteroids in the Atlantic halibut, *Hippoglossus hippoglossus* L. *Gen. Comp. Endocrinol.* 17: 416-423. (8)
1629. DUEDALL, I. W., AND A. R. COOTE. 1972. Oxygen distribution in the South Atlantic. *J. Geophys. Res.* 77: 496-498. (7)

1630. SUNDARARAJ, B. I., S. K. NAVYAR, T. C. ANAND, AND E. M. DONALDSON. 1971. Effects of partially purified salmon pituitary gonadotrophin on reinitiation of spermatogenesis in the long-term hypophysectomized catfish, *Heteropneustes fossilis*. J. Reprod. Fert. 27: 292-293. (2)
1631. FLANNAGAN, J. F., AND G. H. LAWLER. 1972. Emergence of caddisflies (Trichoptera) and mayflies (Ephemeroptera) from Heming Lake, Manitoba. Can. Ent. 104: 173-183. (4)
1632. VAISEY, M., AND K. SHAYKEWICH. 1971. Training for measuring the taste of food. Can. Diet. Assoc. p. 1-8. (4)
1633. ZITKO, V., AND P. M. K. CHOI. 1972. PCB and *p,p'*-DDE in eggs of cormorants, gulls, and ducks from the Bay of Fundy, Canada. Bull. Environ. Contam. Toxicol. 7: 63-64. (6)
1634. WILDISH, D. J. 1971. Adaptive significance of a biased sex ratio in *Orchestia*. Nature 233: 54-55. (6)
1635. EVELYN, T. P. T. 1971. The agglutinin response in sockeye salmon vaccinated intraperitoneally with a heat-killed preparation of the bacterium responsible for salmonid kidney disease. J. Wildl. Dis. 7: 328-335. (1)
1636. BRETT, J. R. 1971. Energetic responses of salmon to temperature. A study of some thermal relations in the physiology and freshwater ecology of sockeye salmon (*Oncorhynchus nerka*). Amer. Zool. 11: 99-113. (1)
1637. BROCKERHOFF, H. 1971. Stereospecific analysis of triglycerides. Lipids 6: 942-956. (8)
1638. ACKMAN, R. G., S. N. HOOPER, AND J. HINGLEY. 1971. Monoethylenic fatty acids of a partially hydrogenated herring oil. J. Amer. Oil Chem. Soc. 48: 804-806. (8)
1639. CASTELL, C. H. 1971. Metal-catalyzed lipid oxidation and changes of proteins in fish. J. Amer. Oil Chem. Soc. 48: 645-649. (8)
1640. HODDER, V. M., AND L. S. PARSONS. 1971. Some biological features of southwest Newfoundland and northern Scotian Shelf herring stocks, ICNAF Res. Bull. 8: 67-73. (9)
1641. HODDER, V. M., AND L. S. PARSONS. 1971. Comparison of certain biological characteristics of herring from Magdalen Islands and southwestern Newfoundland. ICNAF Res. Bull. 8: 59-65. (9)
1642. HALLIDAY, R. G. 1971. Recent events in the haddock fishery of the eastern Scotian Shelf. ICNAF Res. Bull. 8: 49-58. (6)
1643. KOHLER, A. C. 1971. Tagging of white hake, *Urophycis tenuis* Mitchell, in the southern Gulf of St. Lawrence. ICNAF Res. Bull. 8: 21-25. (6)
1644. PARSONS, L. S., AND V. M. HODDER. 1971. Variations in the incidence of larval nematodes in herring from Canadian Atlantic waters. ICNAF Res. Bull. 8: 5-14. (9)
1645. ILES, T. D. 1971. The retention inside the Bay of Fundy of herring larvae spawned off the southwest coast of Nova Scotia. ICNAF Redb. 1971, Part III, p. 93-103. (6)
1646. SCHINDLER, D. W. 1971. Carbon, nitrogen, and phosphorus and the eutrophication of freshwater lakes. J. Phycol. 7: 321-329. (4)
1647. ROSS, H. H., AND W. E. RICKER. 1971. The classification, evolution, and dispersal of the winter stonefly genus *Allocapnia*. Ill. Biol. Monogr. 45: 166 p. (1)
1648. HILTZ, D. F., W. J. DYER, S. NOWLAN, AND J. R. DINGLE. 1972. Variation of biochemical quality indices by biological and technological factors, p. 191-195. In R. Kreuzer [ed.] Fish inspection and quality control. Fishing News (Books) Limited, London. (8)
1649. DYER, W. J. 1972. Speed of freezing and quality of frozen fish, p. 75-81. In R. Kreuzer [ed.] Fish inspection and quality control. Fishing News (Books) Limited, London. (8)
1650. MOUNIB, M. S., AND J. S. EISAN. 1972. Fixation of carbon dioxide by the testes of rabbit and fish. Comp. Biochem. Physiol. 43B: 393-401. (8)
1651. PARSONS, T. R., K. STEPHENS, AND M. TAKAHASHA. 1972. The fertilization of Great Central Lake I. Effect of primary production. Fish. Bull., U.S. Dep. Comm. 70(1): 13-23. (1)
1652. LEBRASSEUR, R. J., AND O. D. KENNEDY. 1972. The fertilization of Great Central Lake II. Zooplankton standing stock. Fish. Bull. 70(1): 25-36. (1)
1653. BARRACLOUGH, W. E., AND D. ROBINSON. 1972. The fertilization of Great Central Lake III. Effect on juvenile sockeye salmon. Fish. Bull. 70(1): 37-48. (1)
1654. LI, M. F., AND G. S. TRAXLER. 1972. Antiviral activity of aqueous clam (*Mya arenaria*) extract on amphibian virus (LT-1). Can. J. Microbiol. 18: 397-402. (8)
1655. BARICA, J., AND F. A. J. ARMSTRONG. 1971. Contribution by snow to the nutrient budget of some small northwest Ontario lakes. Limnol. Oceanogr. 16: 891-899. (4)
1656. ZITKO, V. 1972. Absence of chlorinated dibenzodioxins and dibenzofurans from aquatic animals. Bull. Environ. Contam. Toxicol. 7: 105-110. (6)
1657. STRASDINE, G. A. 1972. The role of intracellular glucan in endogenous fermentation and spore maturation in *Clostridium botulinum* type E. Can. J. Microbiol. 18: 211-217. (2)
1658. BOYCE, N. P. 1971. *Ezonema bicornis* gen. et sp. n. (nematoda: scuratiidae) from freshwater fishes of Hokkaido, Japan. J. Parasitol. 57: 1175-1179. (1)
1659. ZITKO, V., O. HUTZINGER, W. D. JAMIESON, AND P. M. K. CHOI. 1972. Polychlorinated terphenyls in the environment. Bull. Environ. Contam. Toxicol. 7: 200-201. (6)
1660. CAREY, F. G., J. M. TEAL, J. W. KANWISHER, AND K. D. LAWSON. 1971. Warm-bodied fish. Amer. Zool. 11: 135-143. (6)
1661. ZITKO, V. 1972. Problems in the determination of polychlorinated biphenyls. Int. J. Environ. Anal. Chem. 1: 221-231. (6)
1662. WILDISH, D. J. 1972. Polychlorinated biphenyls

- (PCB) in sea water and their effect on reproduction of *Gammarus oceanus*. Bull. Environ. Contam. Toxicol. 7: 182-187. (6)
1663. IDLER, D. R., AND L. M. SAFE. 1972. Separation of steryl acetates by silver ion chromatography. Steroids 19: 315-324. (8)
1664. ACKMAN, R. G. 1972. The analysis of fatty acids and related materials by gas-liquid chromatography, p. 165-269. In R. T. Holman [ed.] Progress in the chemistry of fats and other lipids. Vol. 12. Pergamon Press, New York, N.Y. (8)
1665. IDLER, D. R. 1972. Some comparative aspects of corticosteroid metabolism. Excerpta Med. Int. Congr. Ser. 219: 14-28. (8)
1666. IDLER, D. R., G. B. SANGALANG, AND M. WEISBART. 1972. Are corticosteroids present in the blood of all fish? Excerpta Med. Int. Congr. Ser. 219: 983-989. (8)
1667. MACKAY, K. T. 1972. Further records of the stromateoid fish *Centrolophus niger* from the northwestern Atlantic, with comments on body proportions and behaviour. Copeia 1972: 185-187. (7)
1668. BLYGH, E. G. 1972. Mercury in Canadian fish. Can. Inst. Food Sci. Technol. J. 5: A6-A14. (8)
1669. PLATT, T. 1972. Local phytoplankton abundance and turbulence. Deep-Sea Res. 19: 183-187. (7)
1670. SUNDARARAJ, B. I., T. C. ANAND, AND E. M. DONALDSON. 1972. Effects of partially purified salmon pituitary gonadotropin on ovarian maintenance, ovulation, and vitellogenesis in the hypophysectomized catfish, *Heteropneustes fossilis* (Bloch). Gen. Comp. Endocrinol. 18: 102-114. (2)
1671. PATALAS, K. 1972. Primary and secondary production in a lake heated by thermal power plant. Proc. 16th Annu. Tech. Meet. Inst. Environ. Sci., Boston, p. 267-271. (4)
1672. PATALAS, K. 1971. The crustacean plankton communities of lakes. Trans. Amer. Microsc. Soc. 90: 117-118. (4)
1673. ACKMAN, R. G. 1972. Influence of methyl substituent position on retention times in the GLC of higher monomethylbranched fatty acid esters and hydrocarbons. J. Chromatogr. Sci. 10: 243-246. (8)
1674. ADDISON, R. F., AND R. G. ACKMAN. 1971. Erythrocyte lipids of Atlantic cod, *Gadus morhua*. Can. J. Biochem. 49: 873-876. (8)
1675. STASKO, A. B. 1971. Review of field studies on fish orientation. Ann. N.Y. Acad. Sci. 188: 12-19. (6)
1676. WATSON, J. 1972. Ecdysis of the snow crab, *Chionoecetes opilio*. Can. J. Zool. 49: 1025-1027. (6)
1677. BERKELEY, C. 1972. Further records of Polychaeta new to British Columbia with comments on some others. Can. J. Zool. 50: 451-456. (1)
1678. FLETCHER, G. L., AND R. F. ADDISON. 1972. Some aspects of the chemistry and acute toxicity of the iron ore flotation agent dimethyl ammonium alkyl hydroxamate and some related compounds to brook trout. Bull. Environ. Contam. Toxicol. 7: 147-159.
1679. IDLER, D. R., AND P. WISEMAN. 1971. Sterols of molluscs. Int. J. Biochem. 2: 516-528. (8)
1680. BRETT, J. R. 1972. The metabolic demand for oxygen in fish, particularly salmonids, and a comparison with other vertebrates. Resp. Physiol. 14: 151-170. (1)
1681. MARGOLIS, L., AND M. D. DAILEY. 1972. Revised annotated list of parasites from sea mammals caught off the west coast of North America. Nat. Oceanic Atmos. Admin. Tech. Rep. SSRF-647: 23 p. (1)
1682. HIROSE, K., AND E. M. DONALDSON. 1972. Biological study on ovulation *in vitro* of fish - III. The induction of *in vitro* ovulation of *Oryzias latipes* oocytes using salmon pituitary gonadotropin. Bull. Jap. Soc. Sci. Fish. 38: 97-100. (2)
1683. ARMSTRONG, F. A. J. 1972. Phosphorus compounds in natural waters. Int. Symp. Identification Meas. Environ. Pollut., Ottawa, Ont. June, 1971: 370-374. (4)
1684. UTHE, J. F., J. REINKE, AND H. GESSER. 1972. Extraction of organochlorine pesticides from water by porous polyurethane coated with selective absorbent. Environ. Lett. 3: 117-135. (4)
1685. UTHE, J. F. 1972. Determination of total and organic mercury levels in fish tissue. Int. Symp. Identification Meas. Environ. Pollut., Ottawa, Ont. June, 1971: 207-212. (4)
1686. MACCALLUM, W. A. 1971. Quality aspects of industrial water thawing and fillet processing, p. 225-233. In R. Kreuzer [ed.] Fish inspection and quality control. Fishing News (Books) Limited, London. (9)
1687. WILDISH, D. J. 1972. Post embryonic growth and age in some littoral *Orchestia* (Amphipoda, Talitridae). Crustaceana 3: 267-274. (6)
1688. SWIFT, D. J. P., J. R. SCHUBEL, AND R. E. SHELDON. 1972. Size analysis of fine-grained suspended sediments: a review. J. Sediment. Petrology 42: 122-134. (7)
1689. GLOOSCHENKO, W. A. 1971. The effect of DDT and dieldrin upon C uptake by *in situ* phytoplankton in lakes Erie and Ontario. Proc. 14th Conf. Great Lakes Res. p. 219-223. (4)
1690. MUNAWAR, M., AND A. NAUWERCK. 1971. The composition and horizontal distribution of phytoplankton in Lake Ontario during the year 1970. Proc. 14th Conf. Great Lakes Res., p. 69-78. (4)
1691. BERNARD, F. R. 1972. The genus *Thytsira* in western Canada (Bivalvia: Lucinacea). Malacologia 11: 365-389. (1)
1692. DUEDALL, I. W., AND A. R. COOTE. 1972. Oxygen distribution in the Pacific Ocean. J. Geophys. Res. 77: 2201-2203. (7)
1693. LAYCOCK, R. A., AND D. H. LORING. 1972. Distribution of *Clostridium botulinum* type E in the Gulf of St. Lawrence in relation to the physical environment. Can. J. Microbiol. 18: 763-773. (8)
1694. ACKMAN, R. G., S. EPSTEIN, AND C. A. EATON. 1971. Differences in the fatty acid compositions

- of blubber fats from northwestern Atlantic fin-whales (*Balaenoptera physalus*) and harp seals (*Pagophilus groenlandica*). *Comp. Biochem. Physiol.* 40B: 683-697. (8)
1695. DONALDSON, E. M., AND Z. H. SHEHADEH. 1972. Effect of salmon gonadotropin on ovarian and testicular development in immature grey mullet *Mugil cephalus*, p. 71-85. *In* Z. H. Shehadeh (principal investigator) and K. S. Norris (coinvestigator) *The grey mullet (Mugil cephalus L.): induced breeding and larval rearing research 1970-1972*. Publ. Oceanic Inst. Waimanalo Hawaii Rep. No. 01-72-76-1. (2)
1696. ZITKO, V., O. HUTZINGER, AND P. M. K. CHOI. 1972. Contamination of the Bay of Fundy-Gulf of Maine area with polychlorinated biphenyls, polychlorinated terphenyls, chlorinated dibenzodioxins, and dibenzofurans. *Environ. Health Perspect.* 4: 47-50. (6)
1697. LANTZ, A. W., AND D. G. IREDALE. 1972. Canadian Northwest Territories fish and mammal processing plant. *Can. Inst. Food Sci. Technol. J.* 5(1): A15-A18. (4)
1698. VAISEY, M., M. SLUSAR, D. BABIENKO, AND A. W. LANTZ. 1971. Appraising smoked whitefish with sensory panels, p. 175-180. *In* R. Kreuzer [ed.] *Fish inspection and quality control*. Fishing News (Books) Limited, London. (4)
1699. DICKIE, L. M. 1972. Food chains and fish production. *ICNAF Spec. Publ.* 8: 201-221. (7)
1700. ACKMAN, R. G., S. N. HOOPER, S. EPSTEIN, AND M. KELLEHER. 1972. Wax esters of barracudina lipid: a potential replacement for sperm whale oil. *J. Amer. Oil Chem. Soc.* 49: 378-382. (8)
1701. GILGAN, M. W., AND M. E. ZINCK. 1972. Estimation of ecdysterone from sulfuric acid induced fluorescence. *Steroids* 20: 95-104. (8)
1702. VOLLENWEIDER, R. A. 1969. Möglichkeiten und Grenzen Elementarer Modelle der Stoffbilanz von Seen. (Possibilities and limits of elementary models concerning the budget of substances in lakes.) *Arch. Hydrobiol.* 66: 1-36. (In German) (4)
1703. VOLLENWEIDER, R. A. ed. 1969. *A manual on methods for measuring primary production in aquatic environments including a chapter on bacteria*. Blackwell Scientific Publications, Oxford and Edinburgh. 213 p. (4)
1704. MACFARLANE, R. B., W. A. GLOOSCHENKO, AND R. C. HARRISS. 1972. The interaction of light intensity and DDT concentration upon the marine diatom, *Nitzschia delicatissima* Cleve. *Hydrobiologia* 39: 373-382. (4)
1705. UTHE, J. F., F. A. J. ARMSTRONG, AND K. C. TAM. 1971. Determination of trace amounts of mercury in fish tissues: results of a North American check-sample study. *J. Ass. Offic. Anal. Chem.* 54: 866-869. (4)
1706. AIKEN, D. E., AND E. H. BYARD. 1972. Histological changes in lobsters (*Homarus americanus*) exposed to yellow phosphorus. *Science* 176: 1434-1435. (6)
1707. DUEBALL, I. W. 1972. The partial molal volume of calcium carbonate in sea water. *Geochim. Cosmochim. Acta* 36: 729-734. (7)
1708. MANN, K. H. 1972. Ecological energetics of the seaweed zone in a marine bay on the Atlantic coast of Canada. II. Productivity of the seaweeds. *Mar. Biol.* 14: 199-209. (7)
1709. MANN, K. H. 1972. Case history: the River Thames, p. 215-232. *In* *River ecology and man*. Academic Press, Inc., New York, N.Y. (7)
1710. WILDISH, D. J. 1972. Acute toxicity of polyoxyethylene esters and polyoxyethylene ethers to *S. salar* and *G. oceanicus*. *Water Res.* 6: 759-762. (6)
1711. SYMONS, P. E. K. 1971. Behavioural adjustment of population density to available food by juvenile atlantic salmon. *J. Anim. Ecol.* 40: 569-587. (6)
1712. KATES, M., A. J. HANCOCK, R. G. ACKMAN, AND S. N. HOOPER. 1972. Preparation and characterization of the DDD(RRR)-stereoisomer of 4,8-, 12-, 16-tetramethylheptadecanoic acid and 5,9-, 13-, 17-tetramethyloctadecanoic acid. *Chem. Phys. Lipids* 8: 32-41. (8)
1713. GORDON, L. I., P. K. PARK, S. W. HAGER, AND T. R. PARSONS. 1971. Carbon dioxide partial pressures in North Pacific surface waters - time variations. *J. Oceanogr. Soc. Jap.* 27: 81-90. (1)
1714. ACKMAN, R. G., S. N. HOOPER, AND J. HINGLEY. 1972. Isomer subfractionation effects in the study of longer chain monoethylene fatty acids in hydrogenated oils. *J. Chromatogr. Sci.* 10: 430-436. (8)
1715. ACKMAN, R. G. 1972. Anomalous peak broadening behavior of methyl-branched ketones and fatty acids in GLC on porous polymer bead columns. *J. Chromatogr. Sci.* 10: 506-508. (8)
1716. ADDISON, R. F., G. L. FLETCHER, S. RAY, AND J. DOANE. 1972. Analysis of a chlorinated terphenyl (Aroclor 5460) and its deposition in tissues of cod (*Gadus morhua*). *Bull. Environ. Contam. Toxicol.* 8: 52-60. (7)
1717. ACKMAN, R. G., S. N. HOOPER, AND J. HINGLEY. 1972. The harbour seal *Phoca vitulina concolor* De Kay: comparative details of fatty acids in lung and heart phospholipids and triglycerides. *Can. J. Biochem.* 50: 833-838. (8)
1718. REINKE, J., J. F. UTHE, AND D. JAMIESON. 1972. Organochlorine pesticide residues in commercially caught fish in Canada - 1970. *Pestic. Monit. J.* 6: 43-49. (4)
1719. VALLENTYNE, J. R. 1972. Freshwater supplies and pollution: effects of the demographic explosion on water and man, p. 181-211. *In* N. Polunin [ed.] *The environmental future*. The MacMillan Press Ltd., London. (4)
1720. SHIEH, H. S., AND B. H. REDDY. 1972. Incorporation of C amino-acids by a fish pathogen, *Aeromonas salmonicida*. *Int. J. Biochem.* 3: 167-170. (8)
1721. ACKMAN, R. G., S. N. HOOPER, AND J. C. SIPOS. 1972. Distribution of *trans*-6-hexadecenoic and other fatty acids in tissues and organs of the

- Atlantic leatherback turtle *Dermochelys coriacea coriacea* L. *Int. J. Biochem.* 3: 171-179. (8)
1722. MAXWELL, J. R., R. E. COX, R. G. ACKMAN, AND S. N. HOOPER. 1971. The diagenesis and maturation of phytol. The stereochemistry of 2,6,10,14-tetramethylpentadecane from an ancient sediment. *Advan. Org. Geochem.* p. 277-291. (8)
1723. COX, R. E., J. R. MAXWELL, R. G. ACKMAN, AND S. N. HOOPER. 1971. The isolation of a series of acyclic isoprenoid alcohols from an ancient sediment: approaches to a study of the diagenesis and maturation of phytol. *Advan. Org. Geochem.* p. 263-276. (8)
1724. MUNDIE, J. H. 1971. Insect emergence traps, p. 80-93. *In* W. T. Edmondson [ed.] *A manual on methods for the assessment of secondary productivity in fresh waters.* Blackwell Scientific Publications, Oxford and Edinburgh. (1)
1725. ALDERDICE, D. F. 1971. Responses of marine poikilotherms to environmental factors acting in concert, p. 1659-1722. *In* O. Kinne [ed.] *Marine ecology.* Vol. 1. (1)
1726. STEWART, J. E., AND B. M. ZWICKER. 1972. Natural and induced bactericidal activities in the hemolymph of the lobster, *Homarus americanus*: products of hemocyte-plasma interaction. *Can. J. Microbiol.* 18: 1499-1509. (8)
1727. STEWART, J. E., AND J. W. CORNICK. 1972. Effects of *Gaffkya homari* on glucose, total carbohydrates, and lactic acid of the hemolymph of the lobster (*Homarus americanus*). *Can. J. Microbiol.* 18: 1511-1513. (8)
1728. UTHE, J. F., J. SOLOMON, AND B. GRIFT. 1972. Rapid semimicro method for the determination of methyl mercury in fish tissue. *J. Ass. Offic. Anal. Chem.* 55: 583-589. (4)
1729. BARICA, J. 1972. Salinization of groundwater in arid zones. *Water Res.* 6: 925-933. (4)

(A continuing series)

INTERPRETIVE ARTICLES OF THE FISHERIES RESEARCH BOARD OF CANADA

Abbreviation: A

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1. SQUIRES, H. J. 1966. Research in Newfoundland on marine invertebrates. *Nfld. J. Commer.* 33(8): 29-31. (9)
2. KETCHEN, K. S. 1967. The trawl fishery for Pacific cod. *West. Fish.* 73(6): 36-40, 42, 44-45, 56-62. (1)
3. WOODLAND, G. B. 1967. The Fisheries Research Board of Canada. *Annu. Rev., 1967, Fish Counc. Can.*, p. 53-55. (10)
4. WILDER, D. G. 1966. Ramenez-les... Vivants! *Pêche Can.*, July-Aug., p. 2-5. (6)
5. WILDER, D. G. 1966. Le homard d'Amérique. *Pêche Can.*, Sept., p. 9-14. [In English, see *Trade News* 18(4): 6-11 (1965).] (6)
6. LANTZ, A. W., AND D. G. IREDALE. 1966. Tranches de poissons légèrement marinées. *Pêche Can.*, Sept., p. 15-16. [In English, see *Trade News* 18(10-11): 8-9.] (4)
7. FISHERIES RESEARCH BOARD OF CANADA. 1966. Les saumons du Pacifique. *Pêche Can.*, Oct., p. 5-7. (1)
8. TIBBO, S. N., AND R. D. HUMPHREYS. 1966. Le hareng de l'Atlantique. *Pêche Can.*, Nov., p. 4-7. (6)
9. HUMPHREYS, R. D., AND S. N. TIBBO. 1966. Le maquereau de l'Atlantique. *Pêche Can.*, Nov., p. 11-13. (6)
10. FISHERIES RESEARCH BOARD OF CANADA. 1967. Le grand pétoncle. *Pêche Can.*, May, p. 1-4, 23. (6)
11. GILLESPIE, G. J. 1967. Les scientifiques des pêcheries isolent une hormone du type cortisone de la raie. *Pêche Can.*, Apr., p. 24-25.
12. CASTELL, C. H. 1957. Gains et pertes de poids des filets pendant le traitement et la conservation en entrepôt. *Pêche Can.*, May, p. 5-8. [In English, see *FRB Circ. No. 27, Halifax, N.S.*] (8)
13. FISHERIES RESEARCH BOARD OF CANADA. 1967. L'éperlan. *Pêche Can.*, May, p. 25. (6)
14. JOHNSON, L. 1966. Great Bear Lake. *Can. Geogr. J.*, Aug., p. 58-67. (4)
15. TARR, H. L. A. 1966. Flavor of fresh foods. *Advan. Chem. Ser.* 56: 190-202. (2)
16. LARKIN, P. A. 1965. Summarization of summary of symposium. *Can. Fish. Rep.* 4: 137-142. (1)
17. LARKIN, P. A. 1966. North American fishery potential. The fisheries of North America. The first North American Fisheries Conference, Canada - United States - Mexico. Washington, D.C., April 30-May 5. (1)
18. LARKIN, P. A. 1965. The challenges facing fisheries science. *Trade News* 18(6): 13-14. (1)
19. SHEPARD, M. P. 1965. Scientists attempt prediction of salmon runs by high seas tagging. *West. Fish.* 69(6): 24, 26, 28. (1)
20. FISHERIES RESEARCH BOARD OF CANADA. 1966. Clams of British Columbia. *Trade News* 18(12): 15-16. (1)
21. FISHERIES RESEARCH BOARD OF CANADA. 1966. The Pacific blackcod. *Fish. Can.* 19(4): 20. (1)
22. FISHERIES RESEARCH BOARD OF CANADA. 1966. The Pacific herring. *Fish. Can.* 19(1): 19-20. (1)
23. FISHERIES RESEARCH BOARD OF CANADA. 1966. The Pacific gray cod. *Fish. Can.* 19(6): 11. (1)
24. SMITH, M. W. 1965. Atlantic salmon. *Trade News* 18(6): 15-17. (6)
25. SAUNDERS, R. L., C. J. KERSWILL, AND P. F. ELSON. 1965. Atlantic salmon recaptured near Greenland. *Atl. Salmon J.*, Fall, p. 24-26. [Reprinted from *J. Fish. Res. Board Can.* 22: 625-629.] (6)
26. TARR, H. L. A. 1965. Preservation of fish by antibiotics. *Proc. Indo-Pac. Fish. Counc.* 11: 265-273. (2)
27. IDLER, D. R., W. A. MACCALLUM, D. CHALKER, AND J. T. LAUDER. 1965. Effect of environmental and/or physiological factors on quality. Part I. Newfoundland trap cod, p. 98-101. In Rudolf Kreuzer [ed.] *The technology of fish utilization. Contributions from research.* Fishing News (Books) Ltd., London. (8)
28. CASTELL, C. H. 1965. Effect of environmental and/or physiological factors on quality. Part II. Metal-catalyzed rancidity in groundfish, p. 101. In Rudolf Kreuzer [ed.] *The technology of fish utilization. Contributions from research.* Fishing News (Books) Ltd., London. (8)
29. TOMLINSON, N., AND S. E. GEIGER. 1965. Changes occurring in fish passing through rigor mortis while stored in refrigerated sea water, p. 21-25. In Rudolf Kreuzer [ed.] *The technology of fish utilization. Contributions from research.* Fishing News (Books) Ltd., London. (2)
30. TARR, H. L. A. 1965. Enzymatic degradation of glycogen and adenosine 5-triphosphate in fish muscle, p. 26-31. In Rudolf Kreuzer [ed.] *The technology of fish utilization. Contributions from research.* Fishing News (Books) Ltd., London. (2)
31. CASTELL, C. H. 1965. Preliminary studies of quality assessment with the Intelctron Fish Tester V, p. 158-161. In Rudolf Kreuzer [ed.] *The technology of fish utilization. Contributions from research.* Fishing News (Books) Ltd., London. *Also in:*

- Working papers. FAO symposium on the significance of fundamental research in the utilization of fish. Husum, Federal Republic of Germany, May 26-30, 1964. (8)
32. TIGERSTROM, R. VON, AND H. L. A. TARR. 1965. Enzymatic removal of carbohydrates from fish muscle, p. 256-258. In Rudolf Kreuzer [ed.] The technology of fish utilization. Contributions from research. Fishing News (Books) Ltd., London. Also in: Working papers. FAO symposium on the significance of fundamental research in the utilization of fish. Husum, Federal Republic of Germany, May 26-30, 1964. (2)
 33. WILDER, D. G. 1965. Lobster outlook bright. *Atl. Advocate* 56(2): 40-44. (6)
 34. ROACH, S. W. 1965. New methods for unloading fish. *Trade News* 18(6): 4-7. (2)
 35. DRINNAN, R. E., AND L. A. ENGLAND. 1965. Further progress in rehabilitating oyster stocks. *Trade News* 18(6): 10-12. (6)
 36. OUTRAM, D. N. 1965. Canada's Pacific herring. *Dep. Fish. Can., Ottawa, Ont.* 23 p. (1)
 37. KETCHEN, K. S. 1965. Groundfish: will we realize the potential? *West. Fish.* 68(6): 16-18, 20, 64-68. (1)
 38. TARR, H. L. A. 1966. Phosphorus compounds in fish. *Bull. Jap. Soc. Sci. Fish.* 32: 213-223. (2)
 39. HART, J. L., AND R. G. FERGUSON. 1966. The American smelt. *Trade News* 18(9): 22-23. (6)
 40. ACKMAN, R. G., C. S. TOCHER, AND J. MCLACHLAN. 1966. Dimethyl- β -propiothetin: determination by reactor gas-liquid chromatography, occurrence in algae, and implications in fisheries, p. 235-242. In E. G. Young and J. L. McLachlan [ed.] Fifth Int. Symp., Halifax, Canada. Pergamon Press, Oxford. (8)
 41. TARR, H. L. A. 1966. A review of technological developments in Canada's Pacific coast fisheries. *Fish. Can.* 19(6): 6-10. (2)
 42. LANTZ, A. W. 1966. A freezer for Eskimo fishermen. *Fish. Can.* 19(6): 14-15. (4)
 43. TEMPLEMAN, W., AND J. L. HART. 1966. Canadian research report, 1965. A. Subareas 1, 2, 3, 4, 5. ICNAF Redb. 1966, Part II, p. 3-24. (6), (9)
 44. FISHERIES RESEARCH BOARD OF CANADA. 1967. The albacore. *Fish. Can.* 19(10): 8. (1)
 45. FISHERIES RESEARCH BOARD OF CANADA. 1967. Sockeye salmon. *Fish. Can.* 19(10): 12. (1)
 46. FISHERIES RESEARCH BOARD OF CANADA. 1967. Soles and flounders of the Pacific. *Fish. Can.* 19(9): 10-11. (1)
 47. FISHERIES RESEARCH BOARD OF CANADA. 1967. The lingcod. *Fish. Can.* 19(9): 15-16. (1)
 48. FISHERIES RESEARCH BOARD OF CANADA. 1967. Coho salmon. *Fish. Can.* 19(8): 16. (1)
 49. FISHERIES RESEARCH BOARD OF CANADA. 1967. The Pacific blackcod. *Fish. Can.* 19(8): 19. (1)
 50. FISHERIES RESEARCH BOARD OF CANADA. 1967. Shrimp fishing in British Columbia. *Fish. Can.* 19(7): 13-15. (1)
 51. FISHERIES RESEARCH BOARD OF CANADA. 1967. Soles et poissons plats du Pacifique. *Pêche Can.*, June, p. 15-17. (1)
 52. TULLY, J. P. 1967. Weather of the sea. *West. Fish.*, May, p. 62-66, 75, 89, 99, 109; June, p. 36, 38-43. (1), (3)
 53. LARKIN, P. A. 1965. North American fishery potential. *Can. Fish. Rep.* 5: 4-8. Also: *West. Fish.* 70(2): 66-67, 82, 84, 86-87. (1)
 54. FISHERIES RESEARCH BOARD OF CANADA. 1967. Le germon Atlantique. *Pêche Can.*, July, p. 19. (1)
 55. JANGAARD, P. M. 1967. Frozen storage of whole lobsters. *Fish. Can.* 20(2): 16. (8)
 56. WOODLAND, B. 1967. High seas tagging to probe movement of Atlantic salmon. *Fish. Can.* 20(3): 12-13. (10)
 57. SMITH, M. W. 1967. Etablissement et gestion d'étrangements artificiels de truiticulture dans les provinces maritimes. *Pêche Can.*, Aug., p. 20-27. (6)
 58. FARLEY, J., AND J. H. C. PIPPY. 1967. Swimmers' itch. *Dep. Fish. Can., Fish. Fact Sheet*, July. (6)
 - 58f. FARLEY J., AND J. H. C. PIPPY. 1969. La démançaison des nageurs. *Pêche Can.*, May, p. 3-7. (6)
 59. OUTRAM, D. N. 1967. Herring spawn abundance lowest record in 1966. *West. Fish.*, April, p. 39-41. (1)
 60. KETCHEN, K. S. 1967. Recent developments in fisheries for groundfish in NE Pacific. *Fish. Can.* 19(11): 5-11. (1)
 61. BEAMISH, F. W. H. 1967. La caméra sous-marine donne des indices du comportement du poisson devant le chalut. *Pêche Can.*, June, p. 7-9. (7)
 62. OUTRAM, D. N. 1967. Herring spawning in B.C. in 1966 reported the lowest on record. *Fish. Can.* 19(12): 15-18. (1)
 63. FISHERIES RESEARCH BOARD OF CANADA. 1967. Chum salmon. *Fish. Can.* 19(12): 19. (1)
 64. FISHERIES RESEARCH BOARD OF CANADA. 1967. The sea scallop. *Fish. Can.* 19(7): 17-20. (6)
 65. CASTELL, C. H. 1967. Gain and loss in the weight of fillets during processing and storage. *Fish. Can.* 19(7): 7-10. [Also: FRB Circ. No. 27, Halifax, N.S.] (8)
 66. GILLESPIE, G. J. 1967. Scientists study lobster diet. *Fish. Can.* 20(2): 19-20.
 67. TIBBO, S. N. 1967. Bluefin tuna. *Fish. Can.* 19(8): 10-12. (6)
 68. WOODLAND, B. 1967. Tenacity is rewarded for fisheries scientist. *Fish. Can.* 19(10): 10-11. (10)
 69. DYER, W. J. 1967. Frozen fish muscle — chemical changes and organoleptic quality. *Cryobiology*, Jan.-Feb., p. 297-305. (8)
 70. FISHERIES RESEARCH BOARD OF CANADA. 1967. Eulachon, anchovy, and pilchard. *Fish. Can.* 19(10): 14-15. [In French, see *Pêche Can.*, July, p. 20-21 (1967).] (1)
 71. FISHERIES RESEARCH BOARD OF CANADA. 1967. Anchois. Anchois du nord (*Engraulis mordax*). *Pêche Can.*, July, p. 21. [In English, see *Fish. Can.* 19(10): 14 (1967).] (1)
 72. FISHERIES RESEARCH BOARD OF CANADA. 1967. Pilchard. Sardine du Pacifique (*Sardinops sagax*).

- Pêche Can., July, p. 20. [In English, *see* Fish. Can. 19(10): 14-15 (1967).](1)
73. CASTELL, C. H. 1967. Some current Canadian technological research in the Atlantic area. Act. Rep. 19(1): 27-32. [Presented at the symposium "Food from the sea", Oct. 18-19, 1966.](8)
 74. THOMSON, J. A. 1967. Good groundfish area found in Dixon Entrance. West. Fish. 74(5): 12-14, 47, 48. (1)
 75. HUNTER, J. G. 1967. Field activities of the Fisheries Research Board of Canada in the Arctic in 1965. Arctic Circ. 17(1): 14-16. (5)
 76. WILDER, D. G. 1968. A researcher reports on Canada's lobster fishery. Can. Sci., Sept., p. 26-27. (6)
 77. HAYES, F. R. 1966. Science in the service of an industry. The work of the Fisheries Research Board of Canada. Fish. Council. Can. Annu. Rev., p. 19-23. (10)
 78. TARR, H. L. A. 1967. Current problems in fish research. 1. Bacterial spoilage and its control. Fish. News Int. 6(8): 52, 55. (2)
 79. TARR, H. L. A. 1967. Current problems in fish research. 2. Freezing. Fish. News Int. 6(9): 32, 24, 36. (2)
 80. TARR, H. L. A. 1967. Current problems in fish research. 3. Nutritive value of fish. Fish. News Int. 6(10): 44-45. (2)
 81. WALDICHUK, M. 1967. The detection and measurement of water pollution - chemical analysis. Can. Fish. Rep. 9: 23-32. (3)
 82. LAUZIER, L. M., AND A. MARCOTTE. 1967. Climat marin dans les secteurs cotiers du sud-ouest du golfe Saint-Laurent. Actual. Mar. 11(1): 15-19. (6)
 83. ELSON, P. F., AND C. J. KERSWILL. 1967. Developing criteria for pesticide residues important to fisheries. Can. Fish. Rep. 9: 41-45. (5), (6)
 84. SPRAGUE, J. B., AND C. P. RUGGLES. 1967. Impact of water pollution on fisheries in the Atlantic Provinces. Can. Fish. Rep. 9: 11-15 (6)
 85. MARCH, B. E., J. BIELY, E. G. BLIGH, AND A. W. LANTZ. 1967. Nutrient composition of freshwater fish meals. Feedstuffs 39(46): 50. (4)
 86. FISHERIES RESEARCH BOARD OF CANADA. 1967. Progress in 1966 in Canadian research on problems raised by the Protocol. Int. N. Pac. Fish. Comm. Annu. Rep. 1966, p. 27-50. (1)
 87. ALDERDICE, D. F. 1967. The detection and measurement of water pollution - biological assays. Can. Fish. Rep. 9: 33-39. (1)
 88. THOMAS, M. L. H. 1968. Anti-fouling coatings for boats. Fish. Can. 20(11): 18-20. [Also: FRB Circ. No. 52, St. Andrews, N.B.](6)
 89. JANGAARD, P. M. 1968. Suggestions for handling Atlantic coast shrimp. Fish. Can. 20(11): 21-22. (8)
 90. KETCHEN, K. S. 1968. Trends in marine fisheries along the Pacific coast. Fish. Can. 20(11): 10-16. [Also Trans. Amer. Fish. Soc. 97: 82-88.](1)
 91. FORRESTER, C. R. 1968. Utilization of fish for animal food in B.C. Fish. Can. 20(10): 17-21. (1)
 92. TIBBO, S. N., AND L. M. LAUZIER. 1968. Abnormal water temperatures affect herring fisheries. Fish. Can. 20(7): 7-9. (6)
 93. GHELARDI, R. J., AND C. T. SHOOP. 1968. Will Atlantic lobsters breed in B.C. waters? Fish. Can. 20(9): 7-12. (1)
 94. TIBBO, S. N. 1966. The Canadian Atlantic herring fishery. Can. Fish. Rep. 8: 7-16. (6)
 - 94A. HUMPHREYS, R. D. 1966. Canadian research on the biology of the Bay of Fundy-Gulf of Maine herring populations. Can. Fish. Rep. 8: 21-37. (6)
 95. HODDER, V. M. 1966. Recent herring investigations in Newfoundland waters. Can. Fish. Rep. 8: 39-54. (9)
 96. MARTIN, W. R. 1966. Herring resource research needs. Can. Fish. Rep. 8: 63-65. (10)
 97. TARR, H. L. A. 1966. The nutritive value of herring meal. Can. Fish. Rep. 8: 161-164. (2)
 98. IDLER, D. R. 1966. Use of herring for fish protein concentrate and low fat meal. Can. Fish. Rep. 8: 177-191. (2)
 99. HART, J. L. 1967. Fisheries production from the northwest Atlantic. Proc. 7th Int. Congr. Nutr., Hamburg, 1966. Vol 4: Problems of world nutrition, Symp. XV: Food from the sea, p. 1007-1014. (6)
 100. KELEHER, J. J. 1968. The keystone freshwater fishes. Zoolog 9(1): 6-8. (4)
 101. ACKMAN, R. G. 1968. Letter to the editor. J. Gas Chromatogr. 6: 23A. (8)
 102. OUTRAM, D. N. 1967. 1967 herring spawning less than half average. West. Fish., Nov., p. 64-66. (1)
 103. KETCHEN, K. S. 1968. Trends in marine fisheries along the Pacific coast of North America. Trans. Amer. Fish. Soc. 97: 82-88. [Also: Fish. Can. 20(11): 10-16.](1)
 104. SMITH, M. S., AND T. H. BUTLER. 1968. Good shrimping areas discovered. West. Fish., Mar., p. 22, 24, 34, 35. (1)
 105. TAYLOR, F. H. C. 1968. What happened to the herring? West. Fish., Feb., p. 24, 26, 28, 30-32. (1)
 106. RICKER, W. E., AND K. H. LOFTUS. 1968. Pacific salmon move east. Fish. Council. Can. Annu. Rev., p. 37-39, 43. (1)
 107. MITCHELL, E. D. 1968. North Atlantic whale research. Fish. Council. Can. Annu. Rev., p. 45, 47. (5)
 108. TEMPLEMAN, W. 1967. Canadian research report, 1966. Subareas 1, 2, and 3. ICNAF Redb. 1967, Part II, p. 3-25. (9)
 109. THOMAS, M. L. H. 1968. Control of eelgrass using 2,4-D in oyster-growing areas. Fish. Can. 21(3): 13-16. [Also FRB Circ. No. 1, Dartmouth, N.S.]
 - 109f. THOMAS, M. L. H. 1969. L'herbicide 2,4-D. La zostère et sa répression. Pêche Can., Feb., p. 3-7. (7)
 110. MEDCOF, J. C., AND E. I. LORD. 1968. Strange catch - a walrus tusk. Fish. Can. 21(3): 19-20. (6)
 111. FISHERIES RESEARCH BOARD OF CANADA. 1968. Anti-pollution and Atlantic salmon. Fish. Can. 21(1): 12-13. (6)
 112. CLAGGETT, F. G. 1968. Fish meal pilot plant for research. Fish. Can. 21(1): 14-16. [Also: FRB Circ. No. 39, Vancouver, B.C.](2)

113. BLAIR, A. A. 1968. Pink salmon find new home in Newfoundland. *Fish. Can.* 21(4): 9-12. (9)
114. THOMAS, M. L. H. 1968. Test new treatment to protect wood from marine borers. *Fish. Can.* 21(4): 17-21. [Also: FRB Circ. No. 53, St. Andrews, N.B.] (6)
115. BLAXLAND, M. 1968. Marine ecology laboratory studying sea's food chain. *Fish. Can.* 21(4): 22-24. (7)
116. BRETT, J. R. 1968. The design of a new fish respirometer. *Biological Problems in Water Pollution, Third Seminar, Aug. 13-17, 1962*, p. 312-314. (1)
117. QUAYLE, D. B. 1966. Marine borers in B.C. coastal waters. *Wooden Marine Piling Symp. 11, Univ. of British Columbia, May 30, 1966. Forest Products Lab., Vancouver, B.C., Inf. Rep. VP-X-9*, p. 1-29. (1)
118. BRETT, J. R. 1967. Salmon, p. 348-349. *In McGraw-Hill Yearbook of Science and Technology. McGraw-Hill Book Company, New York, N.Y.* (1)
119. TEMPLEMAN, W. 1968. Canadian research report, 1967. Subareas 1, 2, and 3. *ICNAF Redb. 1968, Part II*, p. 3-23. (9)
120. BECKETT, J. S. 1968. Longline lures for swordfish. *Fish. Can.* 21: 26-27. (6)
121. WILDER, D. G., AND U. J. WALSH. 1968. TBTO — a safe, effective treatment for lobster traps. *Fish. Can.* 21: 14. (6)
122. PIKE, G. C. 1968. Whaling in the North Pacific — the end of an era. *Can. Geogr. J.* 76: 128-137. (1)
123. MURRAY, A. R. 1967. The Atlantic salmon of Newfoundland, p. 348-363. *In Joseph R. Smallwood [ed.] The Book of Newfoundland. Newfoundland Book Publishers, St. John's, Nfld.* (9)
124. IDLER, D. R. 1968. The development and scope of the Halifax process. *Can. Fish. Rep.* 10: 45-56. (8)
125. POWER, H. E. 1968. Nutritional characteristics and projections on production costs of products prepared by the Halifax process. *Can. Fish. Rep.* 10: 57-64. (8)
126. MARTIN, W. R. 1968. Fish resources and their potential utilization for fish protein concentrate. *Can. Fish. Rep.* 10: 29-31. (10)
127. JANGAARD, P. M. 1969. FPC development studies given high priority. *Fish. Can.* 21: 12-14. (8)
128. YATES, A. N. 1969. Experimental prawn trap fishing in B.C. *Fish. Can.* 21: 15-19. [Also: FRB Circ. 87, Nanaimo, B.C.] (1)
- 128f. YATES, A. N. 1969. Les casiers à crevettes: objet d'expériences menées en C.-B. *Pêche Can.*, Oct., p. 3-8. (1)
129. CARROTHERS, P. J. G. 1969. Outline general characteristics of synthetic fibres used in fishing. *Fish. Can.* 21: 23-24. (6)
130. TARR, H. L. A. 1969. Nutritional value of fish muscle and problems associated with its preservation. *Can. Inst. Food Technol. J.* 2: 42-45. (2)
131. TIBBO, S. N. 1969. L'espadon. *Pêche Can.*, Feb., p. 8-11. [Also: Trade News 18: 16-18.] (6)
132. WEINSIEDER, A. 1969. What is the Fisheries Research Board doing to help me become a more productive fisherman? *Atl. Fisherman Shipp. Rev.*, Apr., p. 10. (6)
133. BRAUN, V. M. 1969. What's on the codfish's menu today? *New Sci.*, March 6, p. 509-511. (7)
134. BLAXLAND, M. 1969. Marine Ecology Laboratory the newest. *Atl. Fisherman Shipp. Rev.*, May, p. 5-6. (7)
135. AIKEN, D. E. 1969. Photoperiod, endocrinology, and the crustacean molt cycle. *Science* 164: 149-155. (6)
136. CADDY, J. F., AND J. WATSON. 1969. Submersibles for fisheries research. *Hydrospace, Mar.*, p. 1-5. (6)
137. TEMPLEMAN, W. 1969. Biological research, fishermen, industry, and government. *Groundfish are most important. Atl. Fisherman Shipp. Rev.*, July-Aug., p. 14-16. (9)
138. WATSON, J., AND S. L. SIMPSON. 1969. The queen crab industry in the Atlantic Provinces. *Industrial Development Branch, Fisheries Service, Dep. Fish. For. Proj. Rep.* 28: 52 p. + 29 fig. (6)
139. WALDICHUK, M. 1969. Effects of pollutants on marine organisms; improving methodology of evaluation — a review of the literature. *J. Water Pollut. Contr. Fed.* 41: 1586-1601. (3)
140. HODDER, V. M. 1969. Herring landings and distribution of catches in Newfoundland, 1967-68. *Fish. Can.* 22(4): 3-6. (9)
141. BLIGH, E. G. 1969. Consumption of fish and fish products. *Fish. Can.* 22(6): 9-12. (4)
- 141f. BLIGH, E. G. 1970. La consommation du poisson et des produits de la mer. *Pêche Can.*, Apr./May, p. 18-21. (4)
142. ELSON, P. F. 1969. Threat of industrialization to Canada's Atlantic salmon. *Fish. Can.* 22(5): 3-9. (6)
143. SCOTT, J. S. 1969. Sous-exploitation du poisson de fond des baies de la Nouvelle-Écosse. *Pêche Can.*, Nov./Dec., p. 18-20. (6)
144. CHANDLER, R. A. 1970. Ancient shark teeth. *Fish. Can.* 22(7): 17-18. (6)
145. SPRAGUE, J. B. 1969. Measurement of pollutant toxicity to fish: I. Bioassay methods for acute toxicity. *Water Res.* 3: 793-821. (6)
146. BILINSKI, E. 1969. Lipid catabolism in fish muscle, p. 135-152. *In Fish in research. Academic Press, Inc., New York, N.Y.* (2)
147. TARR, H. L. A. 1969. Contrasts between fish and warm blooded vertebrates in enzyme systems of intermediary metabolism, p. 155-174. *In Fish in research. Academic Press, Inc., New York, N.Y.* (2)
148. IDLER, D. R. 1969. Coexistence of a fishery and a major industry in Placentia Bay. *Chem. Can.* 21(11): 16-21. (8)
149. WILDER, D. G. 1969. Trends in Canada's lobster fishery. *Fish. Can.* 22(1): 7-10. (6)
150. DICKIE, L. M. 1970. The strategy of fishing — an exercise in cooperative research. *Sea Harvest Ocean Sci.*, Feb./Mar., p. 32-36. (7)
151. NISHIKAWA, M., R. M. R. BRANION, K. E. PINDER, AND G. A. STRASDINE. 1970. Fermentation of

- spent sulphite liquor to produce acetic acid, propionic acid, and vitamin B. *Can. Pulp Pap. Ass.* 71: T59-T64. (2)
152. TEMPLEMAN, W. 1969. Reports on researches in the ICNAF area in 1968. Canadian research report, 1968. Subareas 1, 2, and 3. ICNAF Redb. 1969, Part II, p. 3-12. (9)
153. MCCracken, F. D. 1969. Reports on researches in the ICNAF area in 1968. Canadian research report, 1968. Subareas 4 and 5. ICNAF Redb. 1969, Part II, p. 12-22. (6)
154. TEMPLEMAN, W. 1969. Temperatures and salinities at Station 27 and in the St. John's-Flemish Cap section in 1968. ICNAF Redb. 1969, Part III, p. 39-44. (9)
155. ELSON, P. F. 1969. Utilization of three stocks of Atlantic salmon tagged and liberated as smolts in the Northwest Miramichi River from 1964 to 1967. ICNAF Redb. 1969, Part III, p. 71-77. (6)
156. HALLIDAY, R. G., AND B. ROSCOE. 1969. The effects of icing and freezing on the length and weight of groundfish species. ICNAF Redb. 1969, Part III, p. 79-89. (6)
157. PINHORN, A. T. 1969. Cod length conversion factors for Flemish Cap (ICNAF Division 3M). ICNAF Redb. 1969, Part III, p. 90-93. (9)
158. WELLS, R. 1969. Fork length - head girth relationships for Grand Bank and St. Pierre Bank haddock. ICNAF Redb. 1969, Part III, p. 94-95. (9)
159. SREEDHARAN, A. 1969. Age-length key studies. ICNAF Redb. 1969, Part III, p. 96-108. (6)
160. TARR, H. L. A. 1969. Antibiotic preservation of fish at sea, p. 27-30. *In* F. E. Firth [ed.] *Encyclopedia of marine resources*. Reinhold Publ. Corp., New York, N.Y. (2)
161. WEIR, J. R. 1970. Highlights of 1969 activities of Fisheries Research Board. *Fish. Can.* 22(8): 16-18. (10)
162. CASTELL, C. H. 1970. Current status of the TMA test as a measure of spoilage in fish. *Fish. Can.* 22(9): 16-20. [*Also*: FRB Circ. 38, Halifax, N.S.](8)
163. TIBBO, S. N. 1970. Herring - the 'Golden Goose' of the sea. *Fish. Can.* 22(9): 9-13. [*Also*: FRB Circ. 55, St. Andrews, N.B.](6)
- 163f. TIBBO, S. N. 1970. Le hareng - "la poule aux oeufs d'or." *Pêche Can.*, July, p. 7-12. (6)
164. PARSONS, T. R., AND H. SEKI. 1969. A short review of some automated techniques for the detection and characterization of particles in sea water. *Bull. Jap. Soc. Fish. Oceanogr.*, Spec. No. (Prof. Uda's Commem. Pap.): 173-177. (1), (3)
165. PARSONS, T. R. 1970. Plankton, pollution, and fish in the Strait of Georgia. *West. Fish.* 80(1): 18, 20, 43. (1)
166. WALDICHUK, M. 1970. Oceanography in Canada. *Sea Harvest Ocean Sci.*, June/July, p. 35-38. (3)
167. SEKI, H. 1970. Microbial biomass in the euphotic zone of the North Pacific subarctic water. *Pac. Sci.* 24: 269-274. (1)
168. PARSONS, T. R. 1970. Book review of "A manual on methods for measuring primary production in aquatic environments". R. A. Vollenweider [ed.]. *Limnol. Oceanogr.* 15: 168-169. (1)
169. BLIGH, E. G. 1970. Mercury in freshwater fish. *Fish. Can.* 22(10): 7-8. (4)
170. SIPOS, J. C., R. G. ACKMAN, AND R. F. ADDISON. 1970. Recognition of Bunker oils by thin-layer chromatography. *Fish. Can.* 23(1): 13-15. [*Also*: FRB Circ. 37, Halifax, N.S.](8)
171. JANGAARD, P. M. 1970. Herring research has high priority. *Halifax Mail-Star*, Sept. 12. (8)
172. MACCALLUM, W. A., AND D. R. IDLER. 1970. A technical-economic assessment of vertically-integrated fishing and filleting operations dependent on supplies of frozen and iced fish or on iced fish only. *Can. Fish. Rep.* 15: 593-606. (8), (9)
173. MACCALLUM, W. A., AND D. R. IDLER. 1970. A technical-economic assessment of electronically-powered and water immersion thawers used for processing fish blocks landed by Newfoundland trawlers. *Can. Fish. Rep.* 15: 385-394.
174. MITCHELL, E. 1970. Request for information on tagged whales in the North Atlantic. *J. Mammal.* 51: 378-381. (5)
175. SCOTT, J. S. 1969. Under-exploited groundfish on the Nova Scotia banks. *Fish. Can.* 22(2): 13-15. [*Also*: FRB Circ. 54, St. Andrews, N.B.](6)
176. WATSON, J. 1970. L'étiquetage révèle une exploitation intensive du crabe des neiges. *Pêche Can.*, Sept., p. 3-7. (6)
177. JANGAARD, P. M. 1969. Marine oils production increases. *Halifax Mail-Star*, Feb. 17, p. 24. (8)
178. UTHE, J. F., F. A. J. ARMSTRONG, AND M. P. STAINTON. 1970. Rapid determination of residual levels of mercury in fish tissue and results of a check sample program. *Rep. Fifth Pestic. Residue Anal. Semin. West Can.*, Vancouver, B.C., May 14-15, 1970, p. 156-164. (4)
179. SANDEMAN, E. J. 1970. Comme un poisson dans l'eau...le sébaste. *Pêche Can.*, Oct., p. 9-11. (9)
180. STEWART, J. E., AND H. RABIN. 1970. Gaffkemia, a bacterial disease of lobsters (genus *Homarus*), p. 431-439. *In* S. F. Snieszko [ed.] *A symposium on diseases of fishes and shellfishes*. Amer. Fish. Soc., Washington, D.C., Spec. Publ. 5: 431-439. (8)
181. TEMPLEMAN, W. 1970. Reports on researches in the ICNAF area in 1969. Canadian research report, 1969. Subareas 1, 2, and 3. ICNAF Redb. 1970, Part II, p. 3-17. (9)
182. SCOTT, J. S. 1970. Reports on researches in the ICNAF area in 1969. Canadian research report, 1969. Subareas 4 and 5. ICNAF Redb. 1970, Part II, p. 17-29. (6)
183. PARSONS, T. R. 1970. Bases of resource management: oceanography, p. 1-8. *In* *Environmental management, a British Columbia priority. Primary Industries Programs, Center for Continuing Education, Univ. of British Columbia, Vancouver, B.C.*, Oct. 26-27, 1970. (1), (3)
184. MANSFIELD, A. W. 1970. Population dynamics and exploitation of some arctic seals, p. 429-446. *In* M. W. Holdgate [ed.] *Antarctic ecology*. Vol. 1. Academic Press Inc., London and New York. (5)

185. WINTERS, G. H. 1967. The capelin, Newfoundland's latent resource. *Nfld. J. Commer.* 34(8): 46-47. (9)
186. KABATA, Z. 1971. Book review of: O. N. Bauer [ed.] 1969. Infectious diseases of fishes and their control. *J. Fish. Biol.* 3: 367-368. (1)
187. WALDICHUK, M. 1968. Sewage pollution in confined coastal waters. *Pac. Search* 68(16): 2 p. (1)
188. LEBRASSEUR, R. J. 1968. Marine biology in Saanich Inlet. *Pac. Search* 68(21): 2 p. (1)
189. RICKER, W. E. [ed.] 1968. Methods for assessment of fish production in fresh waters, p. 1-6, 255-269. IBP Handb. 3. Blackwell Scientific Publications, Oxford and Edinburgh. (1)
190. LEAR, W. H. Greenland halibut. *Nfld. J. Commer.* 35(8): 21, 22, 38 (9)
191. WELLS, R. 1969. Report on American plaice eggs and larvae. ICNAF Spec. Publ. 7 (Pt. I): 181-182; (Pt. II): 266-278. (9)
192. MAY, A. W. 1969. Marine fisheries for Atlantic salmon. *Arctic Circ.* 19: 31-38. (9)
193. WINTERS, G. H. 1969. Capelin (*Mallotus villosus*) Canadian fisheries, p. 94-101. In F. E. Firth [ed.] Encyclopedia of marine resources. Reinhold Publ. Corp., New York, N.Y. (9)
194. FLEMING, A. M. 1969. Navigation. Newfoundland fisheries, p. 434-440. In F. E. Firth [ed.] Encyclopedia of marine resources. Reinhold Publ. Corp., New York, N.Y. (9)
195. MAY, A. W. 1969. Labrador fisheries, p. 342-346. In F. E. Firth [ed.] Encyclopedia of marine resources. Reinhold Publ. Corp., New York, N.Y. (9)
196. DICKIE, L. M. 1968. Book review of: D. H. Cushing, 1968. Fisheries biology: a study in population dynamics. University of Wisconsin Press, Madison, Wis. 200 p. *Limnol. Oceanogr.* 13: 729-730. (7)
197. BEAMISH, F. W. H., AND L. M. DICKIE. 1967. Metabolism and biological production in fish, p. 215-242. In S. D. Gerridge [ed.] The Biological basis of freshwater fish production. Blackwell Scientific Publications, Oxford and Edinburgh. (7)
198. IDLER, D. R. 1970-71. Stable protein from the sea. *Sci. Aff.* 4: 85-87 (8)
199. LORING, D. H. 1967. Résumé of marine geological investigations carried out by the Atlantic Oceanographic Group in the Gulf of St. Lawrence, 1964-1966. *Mar. Sediments* 3: 24-26. (7)
200. BLIGH, E. G. 1970. Mercury contamination in fish. 20th Annu. Inst. Public Health Insp., Winnipeg, Man. Oct. 19-23, 1970, p. 10-19. (4)
201. BLIGH, E. G. 1971. Environmental factors affecting the utilization of Great Lakes fish as human food. *Limnos* 4: 13-19. (4)
202. MAY, A. W. 1971. Salmon exploited at sea. Halifax Mail-Star, Fish. Suppl., Feb. 19, p. 12-13. (9)
203. TARR, H. L. A. 1970. Seafood - progress in sanitation and quality. Econ. Lab. Inc. Fifth Annu. Tech. Symp. Sept. 16-17, 1970. 13 p. (2)
204. FISHERIES RESEARCH BOARD OF CANADA. 1967. III. The research program. A. Progress in 1965 in Canadian research on problems raised by the protocol. *Int. N. Pac. Fish. Comm. Annu. Rep.* 1965, p. 27-41. (1)
205. MAY, A. W. 1971. Scientific problems relative to the West Greenland salmon fishery. *Atl. Salmon J.* 1: 11-13. (9)
206. HALLIDAY, R. G. 1970. 4T-V-W haddock: recruitment and stock abundance in 1970-72. ICNAF Redb. 1970, Part III, p. 84-95. (6)
207. ILES, T. D., AND S. N. TIBBO. 1970. Recent events in Canadian Atlantic herring fisheries. ICNAF Redb. 1970, Part III, p. 134-147. (6)
208. ILES, T. D. 1970. Vertebral numbers of the Bay of Fundy herring and the origin of New Brunswick sardines. ICNAF Redb. 1970, Part III, p. 148-151. (6)
209. MACASKIE, I. B. 1971. A sea otter transplant to British Columbia. *Fish. Can.* 23(4): 3-9. (5)
210. PARSONS, T. R. 1968. Book review of: D. F. Martin, 1968. Marine chemistry. Vol. 1: Analytical methods. Marcel Dekker, Inc., New York, N.Y. 280 p. *Limnol. Oceanogr.* 13: 726.
211. PARSONS, T. R., AND R. J. LEBRASSEUR. 1968. The availability of food to different trophic levels in the marine food chain, p. 325-343. In J. H. Steele [ed.] Marine food chains. Oliver and Boyd, Edinburgh. (1)
212. BRETT, J. R. 1970. Fish - the energy cost of living, p. 37-52. In W. J. McNeil [ed.] Marine aquiculture. Selected papers from the conference on marine aquiculture. Oregon State University Press, Corvallis, Oreg. (1)
213. WILDER, D. G. 1971. Artificial rearing of lobsters. *Fish. Can.* 23(3): 14-15. (6)
- 213f. WILDER, D. G. 1970-71. L'élevage du homard. *Pêche Can.*, Dec-Jan., p. 20, 21. (6)
214. JANGAARD, P. M. 1969. Sex hormone research linked to development of fish farming. *Fish. Can.* 21(10): 9-11. (8)
215. JANGAARD, P. M. 1967. Book review of: J. Brody, 1965. Fishery by-products technology. AVI Publishing Co., Westport, Conn. 240 p. *Trans. Amer. Fish. Soc.* 98: 232-233. (8)
216. VALLENTYNE, J. R. 1970. Phosphorus and the control of eutrophication. *Can. Res. Develop.* 3(3): 36-43, 49. (4)
217. WATSON, I. 1969. Etude biologique du crabe des neiges *Chionoecetes opilio*. *Pêche Can.*, Aug., p. 13. (6)
218. TARR, H. L. A. 1969. Fisheries research. *Oceanol. Int. Yearb.*, p. 33-34. (2)
219. HODDER, V. M. 1970. Recent events in the Canadian Atlantic herring fisheries (résumé). *Proc. Can. Soc. Wildl. Fish. Biol. Atl. Chap. Annu. Meet.* Nov. 4-6, 1970, p. 135-137. (9)
220. JANGAARD, P. M. 1970. FRB scientists play important role in year-long research cruise. *Fish. Can.* 22(10): 16-18. (8)
221. CHANDLER, R. A., AND J. C. MEDCOF. 1969. A 'catch' 20 million years old. *Fish. Can.* 21(8): 15-16. (6)
222. ANDERSON, J. M. 1971. Sublethal effects and

- changes in ecosystems. Assessment of the effects of pollutants on physiology and behaviour. Proc. Roy. Soc. London B Biol. Sci. 177: 307-320. (6)
223. MANN, K. H., AND J. B. SPRAGUE. 1970. Combating pollution on the east coast of Canada. Mar. Pollut. Bull., p. 75-77. (6), (7)
224. LAWLER, G. H. 1970. Parasites of coregonid fishes, p. 279-309. In C. C. Lindsey and C. S. Woods [ed.] Biology of coregonid fishes. University of Manitoba Press, Winnipeg, Man. (4)
225. FISHERIES RESEARCH BOARD OF CANADA (FRESHWATER INSTITUTE, WINNIPEG). 1971. FRB engineer invents portable fish plant for flying to remote locations. Can. Fisherman Ocean Sci. 57(1): 33. (4)
226. DRUMMOND, G. I., AND M. YAMAMOTO. 1971. Nucleoside cyclic phosphate diesterases, p. 355-370. In P. D. Boyer, H. Lardy, and K. Myrback [ed.] The enzymes. Vol. IV. 3rd ed. Academic Press, Inc., New York, N.Y. (2)
227. DRUMMOND, G. I., AND M. YAMAMOTO. 1971. Nucleotide phosphomonoesterases, p. 337-354. In P. D. Boyer, H. Lardy, and K. Myrback [ed.] The enzymes. Vol. IV. 3rd ed. Academic Press, Inc., New York, N.Y. (2)
228. MANSFIELD, A. W. 1969. Book review of: Ph. Rosen-dahl, 1967. Jakob Danielsen -- a Greenlandic painter. Rhodos, Copenhagen. 355 p. North, Mar.-Apr., p. 43. (5)
229. SERGEANT, D. E. 1969. Book review of: G. A. Klevezal' and S. E. Kleinenberg, 1967. Opredele-nic vozrasta mlekokopitayushchikh po sloistym strukturam zubov i kosti. (Age determination of mammals by layered structure in teeth and bones.) 144 p. Acad. Nauk USSR, Moscow. J. Mammal. 50: 163-164. (5)
230. WEIR, J. R. 1971. Food from a northern environ-ment. Can. Inst. Food Technol. J. 4(2): A24-A28. (10)
231. HUNTER, J. G. 1971. Fisheries Research Board studies in Canada's Arctic. Can. Geogr. J. 82: 100-107. (5)
232. WALDICHUK, M. 1971. Radioactivity in the marine environment, summary report. Nat. Acad. Sci. Nat. Res. Council, Washington, D.C. 28 p. (3)
233. JOHNSON, W. E., AND J. R. VALLENTYNE. 1970. Ecology and our pollution problems. Habitat 13(5-6): 4-9. (4)
234. HAMILTON, R. D. 1972. The environmental acceptability of NTA: current research and areas of concern. Amer. Soc. Limnol. Oceanogr. (Limnol.) Symp. 109-111. (Also in: Nutrients and Eutrophication, Special Symposia 1: 217-221.) (4)
235. PARSONS, T. R. 1971. Productivity of Strait of Georgia. Fish. Can. 23(5): 16-17. (1)
236. CADDY, J. F., AND E. I. LORD. 1971. High price of scallop landings conceals decline in offshore stocks. Fish. Can. 23(5): 3-7. (6)
237. MAY, A. W. 1971. Overfishing the sea. Fish. Can. 23(5): 18-19. (9)
238. BRETT, J. R. 1970. Environmental manipulation to enhance growth rate of sockeye salmon. FAO Fish. Cult. Bull. 2(4): 4. (1)
239. STASKO, A. B. 1971. People and projects in under-water telemetry. Underwater Telem. Newsl. 1(2): 5-14. (6)
240. HALLIDAY, R. G., A. C. KOHLER, AND M. D. GROSSLEIN. 1971. Comparisons of abundance indices from research vessel surveys and commercial statistics for cod and haddock in ICNAF Subarea 4. ICNAF Redb. 1971, Part III, p. 229-238. (6)
241. MCCracken, F. D. 1971. Reports on researches in the ICNAF area in 1970. Canadian research report, 1970. Subareas 4 and 5, ICNAF Redb. 1971, Part II, p. 17-26. (6)
242. WALDICHUK, M. 1972. Application of oceanographic information to the design of sewer and industrial waste outfalls. Int. Council. Explor. Sea Symp. on "The physical processes responsible for the dispersal of pollutants in the sea with special reference to the nearshore zone", Proc. No. 44: 62 p. (3)
243. FREESE, M. 1971. Ultrasonic inspection of parasitized whole fish, p. 256-262. In R. Kreuzer [ed.] Fish inspection and quality control. Fishing News (Books) Ltd., London. (4)
244. PRAKASH, A. 1970. Terrigenous organic matter and coastal phytoplankton fertility. Int. Symp. "Fertility of the Sea", Sao Paulo, Brazil, Dec. 1-6, 1969, p. 351-368. (7)
245. TEMPLEMAN, W. 1971. Temperatures and salinities in the eastern Newfoundland area in 1970. ICNAF Redb. 1971, Part III, p. 5-16. (9)
246. HODDER, V. M. 1971. Status of the southwest Newfoundland herring stocks, 1965-70. ICNAF Redb. 1971, Part III, p. 105-114. (9)
247. SERGEANT, D. E. 1971. Calculation of production of harp seals in the western North Atlantic. ICNAF Redb. 1971, Part III, p. 157-184. (5)
248. PINHORN, A. T. 1971. Accuracy of abundance indices for cod from St. Pierre Bank (ICNAF Division 3Ps) based on Canada (Newfoundland) research vessel surveys in terms of comparisons with commercial abundance indices. ICNAF Redb. 1971, Part III, p. 239-248. (9)
249. PINHORN, A. T. 1971. Virtual population assessment of ICNAF Division 2J cod. ICNAF Res. Bull. 8: 75-85. (9)
250. PINHORN, A. T., AND R. WELLS. 1971. Assessments of the effects of increases in the mesh sizes of trawls on the cod fisheries in subareas 2 and 3. ICNAF Res. Bull. 8: 37-43. (9)
251. CADDY, J. F. 1971. Recent scallop recruitment and apparent reduction in cull size by the Canadian fleet on Georges Bank. ICNAF Redb. 1971, Part III, p. 147-155. (6)
252. KETCHEN, K. F. 1971. Book review of: N. G. Benson [ed.] 1970. A century of fisheries in North America. Amer. Fish. Soc., Washington, D.C., Spec. Publ. 7: 330 p. J. Wildlife Manage. 35: 583-584. (1)
253. SANDEMAN, E. J. 1971. Programmes Canadiens de

- recherche (sur les ressources en crevettes de la côte atlantique). *Actual. Mar.* 14(3): 20-21. (6)
254. STEVENSON, J. C. 1971. Communication between scientists through primary journals. *Trans. Amer. Fish. Soc.* 100: 398-399. (10)
255. WATSON, J. 1969. Fisheries for the genus *Chionoecetes* in other countries with a note on the occurrence in Labrador. *Can. Fish. Rep.* 13: 19-23. (6)
256. WATSON, J. 1969. Biological investigations on the spider crab *Chionoecetes opilio*. *Can. Fish. Rep.* 13: 24-47. (6)
257. JOHNSON, L. 1967. Book review of: T. Hatherton [ed.] 1965. *Antarctica. A New Zealand Antarctic Society survey*. Frederick A. Praeger, New York and Washington. xiv + 511 p. *Trans. Amer. Fish. Soc.* 96: 80. (9)
258. WALDICHUK, M. 1970. Conserving the ocean as a source of natural resources. Proc. "Pollution, Tomorrow - and You" Conf. Pollut., University of British Columbia, Vancouver, B.C. Oct. 24, 1970, p. 7-38. (3)
259. RICKER, W. E. 1972. Hereditary and environmental factors affecting certain salmonid populations, p. 19-160. *In* R. C. Simon and P. A. Larkin [ed.] *The stock concept in Pacific salmon*. H. R. MacMillan lectures in fisheries. Mitchell Press Ltd., Vancouver, B.C. (1)
260. WALDICHUK, M. 1971. Book review of: C. G. Wilber, 1969. *The biological aspects of water pollution*. Charles Thomas Publisher, Springfield, Ill. 269 p. *Can. Field Natur.* 85: 267-268. (3)
261. WALDICHUK, M. 1971. Book review of: J. K. McNulty, 1970. *Effects of abatement of domestic sewage pollution on the benthos, volumes of zooplankton, and the fouling organisms of Biscayne Bay, Florida*. University of Miami Press, Coral Gables, Fla. 107 p. *Trans. Amer. Fish. Soc.* 100: 597-598. (3)
262. MANOHAR, S. V. 1971. Characteristics of white muscle fluorescence in pre-rigor fish, p. 211-215. *In* R. Kreuzer [ed.] *Fish inspection and quality control*. Fishing News (Books) Ltd., London. (4)
263. WATSON, J. 1971. The Atlantic snow (queen) crab. Fisheries fact sheet. Dep. Environ., Ottawa, Ont. 4 p. (6)
264. [NOT YET ISSUED]
265. MANSFIELD, A. W. 1967. Aivit! *Animals* 10: 24-27. (5)
266. HEALEY, F. P. 1971. *Bibliography on physiology and biochemistry*. University of Nebraska Press, Lincoln, Nebr. 6 p. (4)
267. BIGG, M. 1972. Killer whale study. *Vancouver Public Aquarium Newsl.* 16: 3 p. (1)
268. SPRAGUE, J. B. 1971. Measurement of pollutant toxicity to fish - III. Sublethal effects and "safe" concentrations. *Water Res.* 5: 245-266. (6)
269. KERR, S. R. 1971. Book review of: E. C. Piclou, 1969. *An introduction to mathematical ecology*. John Wiley and Sons, New York, N.Y. viii + 283 p. *Can. Field Natur.* 85: 345-346. (7)
270. ALLEN, K. R. 1971. Book review of: T. T. Macan, 1970. *Biological studies of the English lakes*. Longman Group Ltd., London. xvi + 260 p. *J. Fish Biol.* 3: 359 (1)
271. MUNDIE, J. H. 1971. Book review of: T. T. Macan, 1970. *Biological studies of the English lakes*. American Elsevier Publishing Co., Inc., New York, N.Y. xvi + 260 p. *Trans. Amer. Fish. Soc.* 100: 371. (1)
272. MUNDIE, J. H. 1970. Book review of: O. A. Sæther, 1967. *Some nearctic podonominae, diamesinae, and orthocladiinae (Diptera: Chironomidae)*. *Fish. Res. Board Can. Bull.* 170. ix + 154 p. *J. Fish Biol.* 2: 289-290. (1)

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- J** – Journal of the Fisheries Research Board of Canada
- B** – Bulletins of the Fisheries Research Board of Canada
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