



BULLETIN No. 110

**Index and List of Titles, Publications
of the Fisheries Research Board
of Canada, 1901-1954**

Prepared by

**YVONNE BISHOP, NEAL M. CARTER,
DOROTHY GAILUS, W. E. RICKER
AND J. MURRAY SPEIRS**

**PUBLISHED BY THE FISHERIES RESEARCH
BOARD OF CANADA UNDER THE CONTROL OF
THE HONOURABLE THE MINISTER OF FISHERIES**

OTTAWA, 1957

Price 75 cents

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W. E. RICKER
N. M. CARTER
Editors

Bulletins of the Fisheries Research Board of Canada are published from time to time to present popular and scientific information concerning fishes and some other aquatic animals; their environment and the biology of their stocks; means of capture; and the handling, processing and utilizing of fish and fishery products.

In addition, the Board publishes the following:

An *Annual Report* of the work carried on under the direction of the Board.

The *Journal of the Fisheries Research Board of Canada*, containing the results of scientific investigations.

Atlantic Progress Reports, consisting of brief articles on investigations by the Atlantic stations of the Board.

Pacific Progress Reports, consisting of brief articles on investigations by the Pacific stations of the Board.

The price of this Bulletin is 75 cents (Canadian funds, postpaid). Orders should be addressed to the Queen's Printer, Ottawa, Canada. Remittance made payable to the Receiver General of Canada should accompany each order.

For a complete list of the Board's publications, write to:

*Fisheries Research Board of Canada,
Publications Office,
Ottawa, Canada.*

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FOREWORD

The subject-author index presented here has been prepared in response to requests for a guide to the published work of the Fisheries Research Board of Canada and of its predecessor, the Biological Board of Canada. Because of the rather large number of publications involved, the Board's Publications Committee considered that a really comprehensive index would be too great a task, but that an index based mainly on the *titles* of papers would have considerable value. However, during its compilation many entries covering specific information in their text and tables, but not mentioned in their titles, were included.

In addition to the names listed on the title page of this Bulletin, numerous employees of the Board have assisted with the index in one way or another. Dr. Lyle A. Swain, formerly of the Board's Technological Station in Vancouver, B.C., deserves special mention.

PUBLICATIONS INDEXED

The Index covers the following seven series of publications. A complete list of titles included in these, to the end of 1954, is given in the Appendix. Titles subsequent to 1954 in the continuing series are listed in the Annual Reports of the Board.

1. (a) CONTRIBUTIONS TO CANADIAN BIOLOGY.

Issues appeared with the following dates: 1901, 1902-05, 1906-10, 1911-14 (in two Fascicles), 1914-15, 1915-16, 1917-18, 1918-20, 1921 (in two Parts). Each issue contained several papers serially numbered.

(b) CONTRIBUTIONS TO CANADIAN BIOLOGY (NEW SERIES).

Beginning in 1922, the *Contributions* were grouped into volumes which were continuously pagged, though composed of a number of separate issues. These issues were not numbered, but each separate paper carried a number. Two volumes appeared under this title, from 1922 to 1925.

(c) CONTRIBUTIONS TO CANADIAN BIOLOGY AND FISHERIES (NEW SERIES).

In 1926 the above change of name was made, but the sequence of volumes was not altered. Volumes III-VIII appeared under the new title, during 1926-34. Beginning with Volume VI, Nos. 11-12, the articles were grouped into four Series: A. General; B. Experimental; C. Industrial; and D. Hydrographic. However, the numbers assigned under these headings are best ignored in bibliographic citation, since they are additional to the regular numbered sequence of papers in each volume.

2. (a) JOURNAL OF THE BIOLOGICAL BOARD OF CANADA.

The *Journal* replaced the *Contributions* with the completion of Volume VIII of the latter. Three volumes of the *Journal* were issued under this name, in 1934-37. Each volume consisted of five numbered issues of about 100 pages each. Numbering of individual papers was discontinued, as was the grouping into the four Series above.

(b) JOURNAL OF THE FISHERIES RESEARCH BOARD OF CANADA.

This change in the name of the *Journal* followed on the change in name of the Board by Act of Parliament, but the numbering of volumes was not interrupted. The first issue under the new name appeared in 1938, and Volumes IV-XI were published during the years 1938-54. With Volume VI, the number of issues per volume was increased to 7; it was 10 in Volume VII, 7 in Volume VIII, 9 in Volume IX, 8 in Volume X, and 6 in Volume XI.

3. (a) BULLETINS OF THE BIOLOGICAL BOARD OF CANADA.

This series was begun in 1918, and 55 issues appeared under this name, to 1937.

(b) BULLETINS OF THE FISHERIES RESEARCH BOARD OF CANADA.

Bulletins 56-101 appeared under this name, during 1939-54.

4. (a) CANADIAN ATLANTIC FAUNA.

This series was begun in 1921. Five parts, numbered 3a; 9b; 10m; 10n; and 12d,e,f have appeared at irregular intervals, though not in the order shown, to the latest one in 1948.

(b) CANADIAN PACIFIC FAUNA.

This series was begun in 1937. Six parts, numbered 1a,b,c,d; 1e; 1f,g; 9b(1); 9b(2); and 10e have appeared at irregular intervals, though not in the order shown, to 1955.

5. STUDIES FROM THE BOARD'S STATIONS (reprints). (See also under 10.)

(a) STUDIES FROM THE BIOLOGICAL STATIONS OF THE BIOLOGICAL BOARD OF CANADA.

(b) STUDIES FROM THE BIOLOGICAL STATIONS OF THE FISHERIES RESEARCH BOARD OF CANADA.

(c) STUDIES FROM THE STATIONS OF THE FISHERIES RESEARCH BOARD OF CANADA.

Separates of articles embodying work done at the Board's Stations, published in journals other than the Board's own, have been collected under the *Studies* series listed above. The series was begun in 1919, each addition being numbered consecutively throughout the changes in name of the series. The number of copies obtained was not great and no general distribution was attempted until 1952, beginning with No. 327. A complete or nearly complete set of *Studies* is available in the libraries of most of the Board's Stations, and at its Headquarters in Ottawa. Studies No. 1-395 appeared to the end of 1954 and are included in this Index. Copies of *Studies* are not available for sale.

6. RESEARCH BULLETINS OF THE NEWFOUNDLAND GOVERNMENT LABORATORY.

The 18 Bulletins of this series were published from 1932 to 1948. This series and the next were discontinued at the time Newfoundland entered Confederation in 1949. They are included in the present Index because the Fisheries Research Board of Canada can be considered the successor in interest to the fisheries research work done by the Newfoundland Government Laboratory prior to 1949.

7. SERVICE BULLETINS OF THE NEWFOUNDLAND GOVERNMENT LABORATORY.

The 15 Bulletins of this series are dated from 1935 to 1940.

REPORTS NOT INDEXED

The series of publications listed above comprise a major part of the published work of the Fisheries Research Board and its predecessor the Biological Board, but not all of it. Series *not* included in this Index are described briefly below.

8. *Annual Reports* of the Board's work, published first for the year 1925, and annually since. (Listed on page 165 of Appendix.)

9. Two series of *Progress Reports* are published approximately quarterly concerning the work done at the Board's Atlantic and Pacific Stations. These series commenced in 1931 and 1929, respectively.

(a) *Progress Reports of the Atlantic Coast Stations* (titles on pages 167-180 of Appendix)—indexes in issues No. 16, 20, 27, 33, 53 and 60.

(b) *Progress Reports of the Pacific Coast Stations* (titles on pages 181-209 of Appendix)—indexes in issues No. 60, 80 and 100.

10. The *Studies* series described under 5 was begun only in 1919. Titles of papers which appeared prior to 1919 are included in a list of publications for the years 1901-21, which appeared in Contributions to Canadian Biology for 1921, No. 12, pages 169-183. Even since 1919, some papers have been omitted from the *Studies*, either through inadvertence or because their interest was considered to be too local or too fleeting. Titles of most of these may be found in a list of publications for 1922-30, published in the Board's Bulletin No. 28, and in the lists of publications included in each year's printed Annual Report.

11. Other sources of information concerning the Board's work include the *Circulars* and *Industrial Memoranda* which have been issued by several of the Stations, and the *Manuscript Reports* which are prepared for use within the organization. Titles of these are listed each year in the Annual Report.

PLAN OF THE INDEX

The Index has been prepared mainly from the titles of the articles, with some reference to the abstracts, subheadings and conclusions. With the biological papers, the aim has been to list the main references to species and localities, and the kind of information obtained. Technological subjects are listed under the type of process concerned and the kind of product involved, as well as the fisheries source material.

Names of authors and co-authors of papers are also included in the Index.

NAMES OF FISHES, BIRDS AND MAMMALS. For papers where only a few different species are mentioned, entries have been made under each species. For the biological papers that mention many species, entries have been made under one of the general headings such as Fauna; Distribution of fish; Birds.

When a single species of fish has a large number of entries, they have been divided between the subheadings "biology" and "technology". With species having fewer entries, technological references are usually indicated by a descriptive word in brackets after the page number.

References have been listed under the common English name of the fish; where there are variants, the name selected for Pacific species has usually been that used in the Board's Bulletin No. 68, while for Atlantic or freshwater fishes we have usually used the name recommended by the latest revision of the American Fisheries Society's list of approved names. In all cases the American Fisheries Society name is cross-indexed (hyphens have been dropped from a few). Scientific names are listed, but only by a reference to the English name (except that *single* entries are repeated under the scientific name).

In some technological papers only a collective name for the fish in question is given; these entries appear after the individual species names: e.g., Skates appears at the end of the list of all the particular kinds of skates.

NAMES OF OTHER ORGANISMS. Commercial species appear under their common English name (e.g., Clams, Irish moss, etc.). Most other organisms appear under the name of the Order, Sub-order or Family in which they are classified. The groups so listed are indicated in brackets after the name of a more general term, e.g., Molluscs; Bivalves; etc.

GEOGRAPHICAL REFERENCES. Only the references to well-known geographical localities are listed, or those places where a great deal of biological investigation has been done. A note concerning the main purport of the paper is added to each geographical entry. Under the names of the Provinces reference is made only to those papers in which no particular locality is specified, or in which the locality is not sufficiently well known to warrant a separate entry.

PHYSICS AND CHEMISTRY OF NATURAL WATERS. Papers dealing with the composition or properties of sea water, the distribution of water masses, currents, tides, etc., appear under the headings Oceanography or Currents. Similar papers for inland waters appear under Limnology.

FISHERIES AND FISH POPULATION BIOLOGY. These topics are listed under one or more of the following headings: Abundance; Age composition; Catch per unit effort; Catchability; Depletion; Exploitation; Food studies; Growth rate; Management; Mortality; Statistics; Surveys; Tagging. Each entry is followed by an indication of the kinds of fish involved.

SUBDIVISION OF HEADINGS. Headings under which there are many entries have been subdivided. Examples are: Bacteria; Chemical composition; Disease; Distribution; Limnology; Oceanography; Oil; Physiology; etc.

ABBREVIATIONS

For distinguishing in the Index the various series of publications, initials are used as follows:

C: Contributions

J: Journal

B: Bulletins

AF: Canadian Atlantic Fauna

PF: Canadian Pacific Fauna

S: Studies

NR: Newfoundland Research Bulletins

NS: Newfoundland Service Bulletins

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J9: 143; J11: 501

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BARRACUDA

B68: 204

BARREL-EYE

B68: 104

BARRET, IZADORE

J8: 125

BASS, CALICO (*Pomoxis sparoides*)

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BASS, LARGEMOUTH

S144

BASS, SMALLMOUTH

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Bathylagonus nigripinnis

B68: 286

Bathylagus milleri

B68: 103

Bathylagus pacificus

B68: 102

Bathymaster signatus

B68: 156

BATTLE, HELEN IRENE

C4: 495, 501; C5: 107, 361; C7: 255

J1: 145; J2: 401; J6: 252

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C1918-20: 133

BAY OF FUNDY (*see also* Passamaquoddy Bay)

C1901: 52 (sea urchin), 59 (sardine);

C1911-14(1): 11 (diatoms), 39 (caprellid)

69 (parasitic copepods); C1914-15: 163

- (oceanography); C1915-16: 93 (phytoplankton); C1917-18: 111 (pollock), 127 (oceanography); C1921: 49 (fishes); C1: 101, 353 (water circulation); C3: 423 (haddock); C7: 73 (oceanography)
 J1: 121, 171 (oceanography), 279 (phytoplankton); J2: 41 (lobsters), 141 (oceanography); J3: 189 (zooplankton); J6: 472 (Polychaeta); J7: 490 (shellfish poisoning); J10: 1 (herring), 97 (oceanography); J11: 32, 42, 407, 428 (oceanography)
 B51: 9 (salmon)
 S1 (Isopoda); S43 (light penetration); S203 (rare fishes and salps)
- BAYLISS, L. E.
 S100
- BEALL, DESMOND
 J3: 177; J4: 478
 B35
- BEATTY, STANLEY ALBERT
 C8: 531
 J3: 77; J4: 63, 229, 412; J5: 32, 203
- BEAVER L., B.C. (*see* Okanagan lakes)
- BEDFORD, ROBERT H.
 C6: 417, 423; C7: 139, 425, 431
 B29; B49
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- BEEPLES (*see* Insects, aquatic)
- BEHAVIOUR (*see also* Reactions)
 J8: 241; J11: 69 (Pacific salmon)
- BELL, HUGH PHILIP
 C8: 63
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- BELL, JOHN MILTON
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- BELLE ISLE, STRAIT OF (*see* Strait of Belle Isle)
- BELUGA
 B59: 416, B89: 353 (oil); B94: 25; B98
- BENSLEY, BENJAMIN ARTHUR
 C1901: 59; C1911-14(2): 1
- BENSON, CLARA CYNTHIA
 C1: 401
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- Benthodesmus atlanticus*
 B68: 160
- BENTHOS (*see* Bottom fauna)
- BENZOIC ACID
 J4: 327
- Berardius bairdi*
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- BERE, RUBY
 C4: 175; C5: 423
- BERKELEY, ALFREDA ALICE (*see also* Needler, A. B.)
 C3: 317; C6: 79
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- BERKELEY, CYRIL J.
 C1: 71; C2: 503; C6: 13; C7: 309
 J6: 129; J8: 488; J10: 85; J11: 326, 454
 PF9b(1); PF9b(2)
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 S181; S199; S307; S320; S353
- BERKELEY, EDITH
 C1: 203; C2: 285; C3: 405; C4: 305;
 C6: 65; C7: 309;
 J6: 129; J8: 488; J10: 85; J11: 326, 454
 PF9b(1); PF9b(2)
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- BERMUDA
 J7: 363 (*Odontosyllis*)
- BERRILL, NORMAN JOHN
 C4: 143
 S60; S78; S95
- BEVERIDGE, JAMES MACDONALD RICHARDSON
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- BIDEFORD R., P.E.I.
 J4: 287 (oyster larvae); J5: 236 (oceanography)
- BIELY, JACOB
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- BIGELOW, HENRY B.
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- BIGELOW, N. K.
C1921: 87
- BILE
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- BIOASSAY
J11: 58 (goldfish, rats), 64 (chicks)
- BIOLUMINESCENCE
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- BIOMETRY (*see* Size)
- BIRDS (*see also* Predators)
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J2: 299, J3: 323 (kingfishers and mergansers); J4: 48 (kingfishers), 309 (mergansers); J5: 227 (effect on salmon)
B17 (waterfowl); B55 (mergansers); B58 (effect on salmon); B97 (kingfishers)
S212 (mergansers); S216 (kingfishers); S224 (ducks and coots); S301 (gulls)
- BISSET, HELEN MARY
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- BISSONNETTE, THOMAS HUME
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- BIVALVES (*see also* Clams; Mussels; Oysters)
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- BLACK, EDGAR CLARK
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- BLACK, VIRGINIA SAFFORD
J8: 164
- BLACK SMELT, BIG-SCALED (*Bathylagus milleri*)
B68: 103
- BLACK SMELT, SLENDER (*Bathylagus pacificus*)
B68: 102
- BLACKCOD (*Anoplopoma fimbria*)
J4: 327, 472 (oil); J7: 138; J8: 377
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- BLACKFISH, ALASKA
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- BLAIR, ARTHUR AVERY
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- BLENNY, BRACKETED
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B68: 187
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B68: 288

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C5: 381 (Manitoba lakes)
J6: 133 (Cowichan R., B.C.); J8 383
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BOWIE, D. J.
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Brachyistius brevipinnis
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J11: 310
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BRILL (*Eopsetta*)
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BRITISH COLUMBIA (*see also* individual local-
ities)

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crustaceans); C1914-15: 1 (halibut), 25,
169 (kelp), 133 (oceanography); C1917-18:
5 (sea lions); C1: 95 (hydroids); C2: 469
(Cirripedia), 503 (kelps), 507 (Rhizopoda
and Heliozoa), 519 (Desmidiaceae); C4: 9
(oceanography and wood-borers); C6: 79
(pandalids), 391 (trout); C7: 213 (Proto-
zoa), 221 (Cestoda), 245 (pilchard food),
319 (blennies); C8: 103 (furunculosis),
237 (Hippolytidae larvae)
J1: 469 (barnacles), 477 (Pacific herring);
J3: 108, 145 (herring); J4: 233 (pink sal-
mon), 478 (herring); J5: 474 (herring); J6:
164 (pilchard); J8: 374 (bottom fishes);
J9: 42 (currents in Loudoun channel), 141
(smooth lumpsucker), 143 (*Pallasina bar-
bata aia*), 450 (pink and chum salmon);
J10: 125 (oceanography), 320 (humpback

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- S6 (*Sagitta*); S19 (wood-borers); S28 (Protozoa); S64 (decapod Crustacea); S72 (little-neck clams); S76 (Dinoflagellata and Protozoa); S85 (trout); S88 (marine ciliates); S98 (zooplankton); S120 (pilchard); S123 (fiords); S126 (Pycnogonida); S129 (salmon); S131 (brown trout); S133 (crabs); S144 (freshwater fishes); S146, S171, S193, S221, S240, S247, S254, S260 (herring); S169 (Anomura); S176, S196, S220, S239, S246, S253, S261, (pilchards); S212 (mergansers); S227 (waterfowl); S238 (clams); S290 (fishes collected from the *Wm. J. Stewart*); S334 (recreation facilities); S348 (whales)
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C6: 365; C7: 413, 505, 521; C8: 321
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B68: 200
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B68: 338
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B55: 41; B56: 38; B72: 41; B94: 23
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C1906-10: 295
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C8: 531 (artificial horn from muscle)
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ling products)
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C1: 39, 73
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J1: 179
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J1: 1
S80
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Surveys)
- Cancer amoenus*, *C. borealis*, *C. magister* (*see*
Crab)
- CANNING
C1917-18: 181; C1918-20: 103 (sardines),
125 (dogfish); C1921: 1 (clams); C2: 1,
C5: 93 (lobsters); C6: 377 (haddock)
J2: 431, 439, 463, 473 (salmon), 457 (pil-
chard), 469 (salmon and pilchard); J3:
100 (mackerel, cod, tuna, lobster); J4: 55
(pilchard), 162 (salmon); J5: 344 (crabs,
shrimps, clams); J6: 183 (lobster), 309
(lingcod and salmon); J7: 65 (sardines,
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21 (pilchards); B47: 22 (herring); B59:
425 (changes in oil); B89: 273 (oils used);
B90: 7 (salmon); B91: 10 (crab)
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NR11: 19 (lobster)
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- CANSO, N.S.
C1902-05: 55 (Diatomaceae), 59 (flora), 71
(seaweeds), 75 (Polyzoa), 81 (fishes)
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Bank)
- CAPE BRETON, N.S.
C1918-20: 109 (list of fishes)
J2: 355 (*Argulus canadensis*)
- CAPELIN (CAPLIN), ATLANTIC
J7: 200; J11: 251
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NR2; NR17
- CAPELIN, PACIFIC
J3: 417
B64: 20; B68: 97
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- CARBOHYDRATES
J2: 477 (in oysters); J4: 412 (breakdown
during spoilage); J6: 45, 441 (glucose);
J8: 74 (Maillard reaction); J10: 521 (in
lobster shell), 583 (in crab shell)
S13 (pentose); S14 (in Polychaeta); S16
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J7: 522
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J7: 471; J8: 189
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- Careproctus gilberti*
B68: 303
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tailed)
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B68: 302
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J3: 20; J9: 417
S170; S228; S231
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B56: 33
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S273; S274
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J2: 439; J6: 63
B89
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- CASTELL, CHARLES HOWELL
J6: 491; J7: 55, 62, 70, 162, 370, 378, 421,
430, 528, 536, 561, 567; J8: 111, 195;
J9: 148, 377
B100
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J5: 43 (relation to abundance and exploita-
tion); J7: 177 (lake trout); J10: 459
(lemon sole)
B4: 10 (muttonfish); B38: 6 (pilchard);
B43: 9 (lobster); B67: 22 (herring); B82:
2 (coregonine fish)

S238 (clams); S251 (trout in Paul Lake, B.C.); S255 (butter clams); S262, S286 (B.C. clams); S285, S378 (B.C. herring); S296 (relation to abundance); S318, S321 (speckled trout, P.E.I.); S394 (black cod)
NR6: 9 (lobster)
NS15: 36 (lobster)

CATCHABILITY

J6: 291 (lobsters); J10: 474; J11: 284 (white-fish), 827 (lake trout)

CATFISH, BROAD-HEADED

S235

CATFISH, FRESHWATER (*see* Bullhead, brown)

CATOSTOMIDAE (*see* Suckers)

Catostomus catostomus (*see* Sucker, longnose)

Catostomus commersoni (*see* Sucker, white)

Catostomus macrocheilus (*see* Sucker, Columbia large-scaled)

CELLULOSE

S377

CESTODA (tapeworms; *see also* Triaenophorus)

C1911-14(2): 177; C7: 221, 377; C8: 77, 89, 99

J7: 186; J11: 267, 673, 884

B45

CETACEA (*see* Whales)

Cetorhinus maximus (*see* Shark, basking)

CHAETOPODA (*see* Annelida)

CHAGNON, E.C.

J11: 130

CHAISSON, ARTHUR FRANCIS

C5: 475; C7: 67

J1: 251

B33

Chalinura filifera

B68: 135

CHAMCOOK L., N.B.

C5: 457 (*Eupomotis gibbosus*)

S43 (light penetration); S173 (salmon)

CHAR, ARCTIC

J9: 1; J10: 326,; J11: 904

B72: 90; B79: 1

S326; S329

CHAR, DOLLY VARDEN

B32: 37; B68: 94

S144; S148; S263

CHAR, HYBRID

J11: 652, 904

CHAR, SPECKLED (*Salvelinus fontinalis*)

C2: 135; C3: 365; C5: 203

J2: 299; J3: 323; J4: 48, 302, 491; J5: 176,

258, 461, 471, 485; J6: 24, 90; J8: 383;

J9: 169; J10: 62, 187; J11: 153, 255, 904

B32: 40; B68: 95; B79

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S263; S318; S321; S341; S384; S385

NR9

NS6: 4

CHARLOTTE COUNTY LAKES, N.B.

J8: 383 (trout)

CHARNLEY, FRANK

C7: 521; C8: 507

J2: 285; J4: 162

CHASTEK PARALYSIS

J11: 529 (in fish)

B92 (in mink)

CHATHAM SOUND, B.C.

S345 (oceanography)

CHATWIN, BRUCE McLEOD

B96

Chauliodus macouni (*see* Viperfish, fanged)

Chauliodus sloanei

S226

CHEMICAL ANALYSIS

C1901: 15 (polluted water); C7: 119 (silica)

J7: 389 (chromatography of oil constituents);

J8: 309 (trimethylamine oxide); J10: 521,

583 (chitin)

S13 (pentose in marine animal tissues);

S23 (colorimetric determination of urea);

S241 (recovery of silver nitrate); S265

(reagent dispenser); S331 (partition

chromatography of aliphatic acids); S350

(isomerization)

- CHEMICAL COMPOSITION (OF FRESH FISH—*see also* Amino acids; Nutritive value; Vitamins)
 C1918-20: 125 (selachian muscle); C3: 437, 457 (fish muscle); C6: 341 (creatine in dogfish); C8: 123, 131 (non-protein nitrogen)
 J1: 179 (non-protein nitrogen); J2: 461 (lingcod), 469, 473 (mineral constituents)
 J4: 363 (histidine compound in mackerel and tuna muscle), 478 (herring); J7: 51 (sulphur in muscle proteins), 563 (of B.C. fish and constituents), 608 (acid soluble phosphorus); J8: 164 (changes in chum and coho fry), 314 (trimethylamine oxide); J10: 590 (enzymes from pyloric caeca of redfish)
 S17 (insulin); S22, S25, S82 (arginase); S38, S40, S52 (changes caused by death); S59 (dogfish blood); S63 (pH); S81 (creatine); S150, S151, S152 (fatty acids and esters); S156 (effect of cold storage); S222 (use of chemical preservatives)
- CHEMICAL COMPOSITION (OF FISH WASTES)
 C7: 169
 J3: 177
- CHEMICAL COMPOSITION (OF INVERTEBRATES)
 C1902-05: 121 (medusae); C1921: 125 (lobsters)
 J2: 477 (oysters); J6: 152 (phosphorus in lobster); J10: 521 (chitin from lobster shell), 583 (chitin from crab shell)
 B6: 4 (lobster)
 S10, S14 (annelids); S186 (glycogen in oysters)
- CHEMICAL COMPOSITION (OF PLANTS)
 C1914-15: 25, 169; C2: 503
 J10: 283
- CHEMICAL COMPOSITION (OF PROCESSED FISH, ETC.)
 C1918-20: 133 (canned grayfish)
 J2: 439 (canned sockeye and pink salmon), 457 (canned pilchard), 463 (canned coho salmon); J5: 344 (canned crabs, shrimps and clams); J6: 183 (crystals in canned lobster), 303 (dehydrated fish), 338 (smoke constituents)
 NS11: 11 (fish meal)
- CHEMICAL COMPOSITION OF WATER (*see* Limnology; Oceanography)
- CHEMISTRY, GENERAL
 B11; B37: 13; B59: 13; B89: 3
- CHEMISTRY OF OILS (*see also* Oil, chemical reactions)
 B37; B46: 7; B59: 13; B89: 18
- CHETICAMP R., N.S.
 C3: 323 (hydroids); C5: 219 (amphipods)
 S333 (salmon)
- CHIMAEROIDS
 AF12f
- CHIMAERA, SHORT-FINNED
 S226
- CHINOOK SALMON (*see* Salmon, spring)
- CHIPMAN, H. RITCHIE
 B11; B52
 S101
- Chirolophis galerita*
 B73: 10
- Chirolophis nugator*
 B68: 177
- Chirolophis polyactcephalus*
 B68: 178
- CHIRONOMIDAE (midges) (*see also* Insects, aquatic)
 J2: 209; J9: 204
- Chiroopsis decagrammus*
 B68: 231
- CHITIN, CHITOSANS
 J10: 521, 583
- Chitonotus pugelensis*
 B68: 252
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 J1: 497
- CHLORINITY, CONVERSION OF
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- CHOLINE
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- Chondrus crispus* (*see* Irish moss)
- CHORDATA
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Chrosomus erythrogaster

S144

CHUB, CREEK (*Semotilus atromaculatus*)

J11: 130

S213

CHUB, LAKE (*Cousesius plumbeus*)

S144

CHUB (*Mylocheilus caurinum*—see Peamouth)

CHUM SALMON (see Salmon, chum)

CILIATA (PROTOZOA)

PF1f

CIRCULATION (of water, see Currents; of blood, see Physiology)

CIRRIPIEDIA (see also Barnacles)

PF10e

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C1921: 73, 87; C5: 467; C6: 198, 225
C7: 325, 342; C8: 8

J5: 428; J6: 334; J8: 469; J10: 51

B72: 39, 59, 78; B82; B92: 6; B94: 10

S144

Citharichthys sordidus (see Dab, mottled sand)

Citharichthys stigmaeus (see Dab, speckled sand)

CITRIC ACID

J4: 355; J5: 122

CLADOCERA (CRUSTACEANS)

C4: 107

J5: 138; J11: 244, 596

S50; S104; S185

CLAMS, ATLANTIC (BIOLOGY)

C1901: 19; C1906-10: 29, 217; C1914-15:
73; C4: 81

J7: 219, 545

B77: 10

S7; S279

CLAMS, PACIFIC (BIOLOGY)

J4: 53; J6: 140; J8: 369

S16; S72; S73; S74; S238; S245; S255;
S262; S286

CLAMS (TECHNOLOGY)

C1921: 1 (canned); C4: 95, 227

J5: 344 (canned)

B75: 1 (toxic)

S13

CLARK, AUSTIN HOBART

C1: 21

J3: 350

CLARK, HUBERT LYMAN

C1: 25

CLASPERS (OF SKATE)

J1: 261

CLEMENS, LUCY SMITH

C1918-20: 69

S145

CLEMENS, WILBERT AMIE

C1911-14(2): 113, 131; C1918-20: 69;

C1921: 73, 87

J7: 215; J9: 141

B15; B17; B26; B27; B55; B56; B68

S77; S90; S91; S92; S107; S113; S115;

S118; S122; S134; S145; S160; S179;

S195; S197; S212; S219; S233

Clevelandia ios

B68: 169

CLIMATE (see Weather)

CLING-FISH, COMMON

B68: 334

CLING-FISH, SLENDER

B68: 335

Clinocottus acuticeps

B68: 273

Clinocottus embryum

B68: 272

Clinocottus globiceps

B68: 271

Clostridium (see Bacteria; Spoilage)

Clupea harengus (see Herring, Atlantic)

Clupea pallasii (see Herring, Pacific)

CLUPEIDAE (see also Alewife; Herring; Shad)

C1902-05: 95

- COD, ALASKA (*see* Blackcod)
- COD, ATLANTIC (BIOLOGY)
 C1906-10: 23; C1914-15: 103; C4: 287; C8: 433
 J5: 105; J10: 539; J11: 251, 894
 B18; B61
 S234; S329; S354; S379A
 NR4: 13; NR14
 NS8: 14
- COD, ATLANTIC (TECHNOLOGY)
 C3: 469; C8: 227, 275, 291
 J1: 179; J3: 2, 77, 102, 439, 473; J4: 63, 252, 355, 412; J5: 32, 197, 203, 221, 276, 287; J6: 1, 45, 53, 359, 380, 403, 441, 491; J7: 70, 128, 370, 378, 421, 430, 449, 461, 528, 536, 580, 585; J8: 111, 325; J9: 129, 148, 388; J11: 261, 355
 B7: 7; B9; B59: 395, B89: 331 (oil)
 S38; S41; S52; S101; S324; S349 (oil)
 NS1, NS3 (oil); NS4; NS9
- COD, BLACK (*see* Blackcod)
- COD, GRAY (*see* Cod, Pacific)
- COD, GREENLAND (*Gadus ogac*)
 J11: 247
 S336
- COD, LING (*see* Lingcod)
- COD, LONG-FINNED
 B68: 133
- COD, PACIFIC (BIOLOGY) (*Gadus macrocephalus*)
 J8: 377
 B68: 132
- COD, PACIFIC (TECHNOLOGY)
 J4: 367 (trimethylamine), 405 (oil); J7: 552 (peptones from flesh)
 B37: 148, B89: 335 (oil)
- COD, PILOT
 J11: 248
- COD, POLAR
 J11: 248
 B73: 2
- COD, RED (*see* Rockfishes)
- COD, ROCK (*see* Rockfishes)
- CODWORM (*Porrocaecum*)
 J10: 539; J11: 894
- COELENTERATA (HYDROIDA)
 AF3a
- COHO (*see* Salmon, coho)
- COLD STORAGE (*see also* Refrigeration)
 C7: 495
- COLLECTORS (FOR OYSTER SPAT)
 B22: 21; B34: 16; B48; B60: 20
- COLLINS, VERNON KIRKPATRICK
 J4: 412; J5: 32, 197, 203
- COLLIP, JAMES BERTRAM
 S7
- Cololabis saira*
 B68: 123
- COLORIMETRY
 C7: 119
 J2: 1; J6: 351, 414; J7: 576, 594
- COLOUR (*see* Pigment)
- COMMENSALISM
 J7: 219
- COMPETITION, IN POPULATIONS
 J10: 211
- CONNELL, ROBERT
 S61
- CONNELL, WALTER THOMAS
 C1902-05: 53
- CONNOLLY, CORNELIUS JOSEPH
 C1921: 113; C1: 335; C2: 327
 B3
 S94
- COOKE, NORMAN EDWARD
 J7: 522; J8: 117
- COOPER, ARTHUR REUBEN
 C1911-14(2): 177
- COOPER, DOUGLAS LEBARON
 J3: 1, 100; J4: 136
 S135
- COPELAND, G. G.
 C1906-10: 281

- COPEPODA, FREE-LIVING
 C1917-18: 217; C1: 303; C4: 527; C5: 83;
 C6: 483
 J1: 1; J3: 12; J5: 365; J11: 240
 B15: 7
 S3; S50; S79; S124; S312
- COPEPODA, PARASITIC
 C1906-10: 85; C1911-14(1): 69; C1917-18:
 171; C3: 235; C5: 80, 423; C6: 215
 J2: 355; J5: 172; J6: 24; J7: 505; J11: 267,
 673, 816
 S2; S94
 NR 16: 39
- COPPER SULPHATE (*see* Poisons)
- CORACIDIA (*see* Cestoda)
- COREGONIDAE (*see* Ciscoes; Lake whitefish;
Prosopium)
- Coregonus clupeaformis* (*see* Lake whitefish)
- CORNISH, GEORGE A.
 C1902-05: 75, 81; C1906-10: 79
- CORNWALL, IRA EDMOND
 C2: 469; C3: 501; C5: 213
 J1: 469; J10: 76
 PF10e
- CORROSION (PREVENTION)
 J7: 101, 116 (cans)
- COTTIDAE (*see also* Sculpins; Cabezon)
 C1906-10: 215
 B68: 242; B94: 21
 S81; S82; S148
- Cottus aleuticus*
 S144
- Cottus asper* (*see* Sculpin, prickly)
- Cottus cognatus*
 S144
- Cottus rhothea*
 S144
- Couesius plumbeus*
 S144
- COULTHARD, H.S.
 C4: 121
- COWICHAN L., B.C.
 J9: 417 (limnobiology)
- COWICHAN R., B.C.
 J5: 448 (trout); J6: 133 (bottom fauna)
 B84 (game fish)
- COX, PHILIP
 C1914-15: 73, 81, 115; C1918-20: 109;
 C1921: 151; C1: 1, 409
 J5: 1
 B2
- CRABS
 C1: 335; C2: 327; C7: 335
 J1: 191; J5: 344
 B30; B62; B91
 AF10m¹ (Atlantic)
 S5; S64; S133; S142
- CRAB, HERMIT
 S169
- CRAIGIE, EDWARD HORNE
 C1914-15: 87, 145, 151, 163; C1917-18: 127;
 C3: 489
 S42; S47; S53; S54; S66
- CRAPPIE, BLACK
 S144
- Crassostrea* (*see* *Ostrea*)
- CRAW, C. HELEN
 S51
- CREATINE
 C6: 343
- CRECY L., N.B.
 S297, S341 (fertilization); S385 (creel census)
- CREEL CENSUS
 J8: 383; J11: 5
 S385 (Crecy Lake)
- Cristivomer namaycush* (*see* Trout, lake)
- CRUISING SPEED (OF FISHES)
 J7: 169, 432; J8: 67; J11: 153
- CRUSTACEANS (*see also* Entomostraca, Malo-
 costraca)
 C1906-10: 83, 187; C1911-14(1): 39;
 C1911-14(2): 145
 J9: 164
 S64

Cryptacanthodes maculatus

S5: 4

CRYSTALS, GLASS-LIKE

J6: 183 (in canned lobster)

CTENOPHORA (COMB-JELLIES)

C6: 13

J11: 240

S110

CULTURE (OF OYSTERS AND OTHER INVERTEBRATES)

C1906-10: 217, C1915-16: 53 (oysters);

C1911-14(2): 13 (mayflies); C1914-15: 41,

C1915-16: 11, C1917-18: 53 (lobsters);

C1917-18: 75 (mussels)

B22: 17, B34: 17, B48, B60 (oysters)

S132 (oysters)

CULTURES (OF MICROORGANISMS)

C1918-20: 63 (diatoms); C8: 459 (bacteria)

J7: 162, 430 (*Pseudomonas*), 552 (bacteria);

J9: 148 (*Flavobacterium*), 157 (bacteria);

J10: 62 (bacteria)

CULTUS L., B.C.

C2: 345 (ecology of sockeye); C5: 3, 37, 55,
C8: 345 (life of sockeye)

J2: 311 (sockeye); J3: 363 (physical limnology), 450 (natural food of sockeye); J4: 19 (sampling plankton), 33 (net plankton), 151 (sockeye propagation), 184 (young sockeye mortality), 192 (kokanee and residual sockeye); J5: 293, 315 (predators of sockeye); J6: 267 (size of young sockeye relative to density); J7: 88 (sea-run and landlocked sockeye); J9: 204 (benthos); J10: 293 (coho); J11: 339 (adult sockeye survival), 988 (sockeye)

B53: 4 (salmon)

S200 (dragonflies); S208 (stoneflies); S295 (sockeye production)

CUMACEA (CRUSTACEANS)

C6: 23

CUNNER

C2: 423; C4: 431; C8: 275

J11: 254

B5: 5

S234

CURING (*see* Pickling; Salt fish; Smoking)

CURRENT, REACTIONS TO

J4: 491 (speckled trout); J7: 434 (Atlantic salmon and eels); J8: 241 (chum, pink, coho); J10: 523 (coho and chum salmon fry); J11: 69 (young Pacific salmon), 550 (cutthroat trout)

B34: 11 (oyster); B57: 56, B99 (Atlantic salmon)

S298 (Atlantic salmon)

CURRENTS, WATER (*see also* Flow; Oceanography)

C1: 101, 353 (Bay of Fundy); C2: 69 (Halifax Harbour); C3: 271 (West Vancouver I.), 282 (West Graham I., B.C.)

J1: 133 (in models), 171 (St. John estuary, N.B.); J2: 89 (sea mussel distribution), 116 (Gulf of Maine), 141 (Bay of Fundy); J3: 43 (Nootka Sound), 93 (West Vancouver I.), 203 (Fundy region); J4: 339 (Gulf Stream), 491 (Margaree Harbour, N.S.); J5: 169 (St. John estuary), 398 (Juan de Fuca Strait); J6: 460 (West Greenland); J7: 1 (Scotian Shelf), 545 (oyster trays); J9: 42 (Loudoun Channel), 213 (Grand Manan Channel), 329 (Great Lakes); J10: 97 (Fundy region), 155 (Scotian Shelf), 177 (Labrador coast); 564 (NE. Japan); J11: 14, 503, 799 (Strait of Juan de Fuca), 503 (Strait of Georgia), 23 (effect of wind), 26 (prediction); 32 (Bay of Fundy), 48 (Hecate Strait), 198 (Strait of Belle Isle), 229 (Esquiman Channel), 431 (relation to appendicularians), 853 (Seymour Narrows, B.C.)

B13: 3 (east coast ice); B18: 3 (Strait of Belle Isle); B34: 13 (B.C. oyster beds) B57: 56 (Margaree Estuary, N.S.); B83: 18 (Alberni Inlet, B.C.); B88: 46 (Arctic); B91: 3 (off Queen Charlotte I.)

S20 (tides in estuaries); S21 (tides in oceans); S56, S75 (Fraser R. mouth); S112, 376 (Strait of Georgia); S123 (B.C. fiords); S136, S139, S178, S201, S204, S210 (transgressions on Scotian Shelf); S174 (dynamic studies in Pacific); S211, S346, (Passamaquoddy Bay); S304, S361 (Arctic); S316 (Hudson Bay); S317 (Labrador Current); S345 (fresh water entering sea); S358 (Sambro lightship)

CUSHMAN, JOSEPH AUGUSTINE

C1921: 133

CUSK
C8: 531 (plastic from muscle)
NS8: 29

CUSK-POUT
B68: 197

Cyclopteroichthys ventriosus (see Lump-sucker,
smooth)

Cyclopterus lumpus (see Lumpfish)

Cyclothone microdon
B68: 105

Cymatogaster aggregatus
B68: 147

Cynoscion nobilis
B68: 145

CYPRINIDAE (see Minnows)

Cyprinus carpio (see Carp)

D

DAB, MOTTLED SAND (Pacific sand dab)
J8: 375
B68: 308

DAB, RUSTY (see Flounder, yellowtail)

DAB, SPECKLED SAND
C8: 99
B68: 309

DACE, HORNED
S213

DACE, LONGNOSE
B56: 37
S144

DACE, REDBELLY
S144

Dactylopterus volitans
S235

Damalichthys vacca
B68: 151

DAMS
J2: 95
S356

Dasyatis dipterurus
B68: 68

Dasycottus setiger
B68: 275

DAUPHINEE, JAMES ARNOLD
S23; S25

DAVIDSON, FREDERICK ALEXANDER
S257

DAVIDSON, VIOLA MAY
C2: 295; C6: 495; C8: 357
J7: 432
S32; S121

DEAS, CATHERINE PEARSON
J7: 221, 513, 552, 563

DECAPODA (see also Crabs, Lobsters, Shrimps)
AF10m (Atlantic)
NR3: 11

Decapterus macarellus
S235

Decapterus polyaspis
B68: 161

DECOLORIZATION (OIL)
C7: 413
J7: 471

DEHYDRATION (see also Drying)
C8: 475 (during refrigeration)

DE LACY, ALLAN CLARK
B66; B74

Delolepis giganteus
B68: 184

Delphinapterus leucas (see Beluga)

DE LURY, DANIEL BERTRAND
J8: 281

DENATURATION OF PROTEINS
C8: 311 (by freezing)
J5: 411 (effect of pH and NaCl); J7: 599
(by freezing); J8: 325; J9: 392 (by salting)
S324 (by freezing)

DENSITY (see Oceanography; Specific gravity)

DENSTEDT, ORVILLE FREDERICK

C6: 365; C8: 321

J1: 487; J2: 13

B37

S97

DEODORIZATION

J8: 189 (of seal oil)

DEPARTURE BAY, B.C.

C1906-10: 85 (parasitic copepods), 215 (new cottoid), 295 (geology); C1911-14(1): 51 (iodine content of flora and fauna); C1918-20: 29 (effect of weather), 35 (oceanography); C1: 81 (phytoplankton), 203 (annelids); 455 (starfish); C2: 285 (annelids); C3: 13 (isopods), 317 (ophiurans); 405 (annelids); C4: 19 (*Bankia*), 305 (annelids); C5: 213 (barnacle); C6: 65 (annelids)

J2: 335 (endoparasitic trematodes); J10: 85 (polychaete)

B17: 3 (birds and herring)

S61 (algae)

DEPLETION

C1901: 59 (herring); C2: 137 (trout); C5: 3 (sockeye)

J6: 483 (sockeye); J10: 1 (herring)

S266 (fisheries)

DEPTH DISTRIBUTION

C1917-18: 229 (marine invertebrates); C1918-20: 49 (plankton diatoms); C6

241 (haddock), 485 (copepod plankton)

J10: 498 (bottom fauna); J11: 69 (Pacific salmon); 479 (plankton)

B56: 49 (whitefish)

S6: 2 (*Sagitta*); S44: 60 (wood-borers); S48 (growth rate of algae)

NR 16: 60 (lobster larvae)

DEPTH, RIVER WATER (*see* Flow)

Derepodichthys alepidotus

B68: 197

DESMIDS (*see* Algae, freshwater)

DETWEILER, JOHN D.

C1911-14(1): 43; C1914-15: 145; C1917-18: 75

Diaphus rafinesquei

B68: 114

DIATOMS (*see also* Algae, freshwater; Plankton)

C1902-05: 55; C1906-10: 243; C1911-14(1): 11; C1915-16: 11; C1918-20: 63, 115;

C1921: 155; C1: 81, 135; C2: 31; C6: 495; C8: 357

J1: 357; J3: 12; J7: 490

S32; S56; S75; S121; S277

DICKIE, LLOYD MERLIN

J11: 660

DIGBY COUNTY, N.S.

C1901: 59 (sardines); C1914-15: 41 (lobster-hatching ponds)

J11: 660 (scallops); 963 (flounders)

S15 (mussels)

DIGESTION (*see* Physiology)

DIMETHYLAMINE

J5: 32

DIMORPHISM (SEXUAL)

J3: 417; J6: 228

Diphyllobothrium (*see* Cestoda)

DISCOLORATION (*see also* Browning)

C7: 139, 425 (halibut)

J3: 70, J5: 276, 287, 438, J6: 10, 17, J9: 157, 377 (in salt fish)

B8 (lobster); B9: 16 (dried fish); B12 (halibut)

S102 (fresh, frozen and smoked fish)

NS4 ("pink" in salt cod)

DISCHARGE RATE (*see* Flow)

DISEASE (OF FISH) (*see also* Bacteria, in diseases)

C1914-15: 81 (herring); C1917-18: 149, 169 (salmon), 172 (furunculosis); C8: 103 (furunculosis)

J5: 1 (furunculosis)

S218, S252 (furunculosis); S243 (whirling disease); S283 (P.E.I. oysters); S311 (use of poisons)

DISEASE (OF INVERTEBRATES) (*see also* Bacteria, in diseases)

C1914-15: 73 (quahaugs)

J3: 358 (lobsters)

B22: 12 (oysters)

NR16: 38 (lobsters)

DISEASE (OF MAN)

B60: 78 (from oysters); B75 (poison from shellfish)

DISINFECTANTS (*see also* Ice, germicidal; Poisons)

C7: 139 (formaldehyde)

J6: 17 (for red bacteria), 63, 84 (sodium nitrite), 257 (general); J7: 101 (general)

DISINFECTING (*see* Sterilizing; Sanitation)

DISPERSAL (*see* Migration)

DISTRIBUTION OF FISH (Arctic)

B73: 2; B94: 1

S361

DISTRIBUTION OF FISH (Atlantic)

C1901: 9, 25, 55, 59; C1902-05: 26, 81, 91; C1906-10: 54, 69, 79; C1911-14(1): 25, 69; C1918-20: 99, 109; C1921: 49; C1: 416; C2: 102, 115, 161; C3: 449, 470, 489; C5: 423; C7: 203; C8: 13, 275, 295, 433

J3: 258, 329; J4: 229, 310; J7: 95; J8: 314; J9: 83; J11: 11, 198, 894

B1: 7; B2: 9; B3: 6; B4: 4; B23: 16; B25: 6; B43: 5; B51: 2; B61; B69; B70: 6; B71: 8

S5; S40; S41; S54; S62; S111; S130; S155; S159; S184; S203; S205; S211; S226; S234; S235; S258; S281; S298; S354

NR4

NS6; NS8; NS14

DISTRIBUTION OF FISH (INTERIOR WATERS)

C1901: 9 (N.B.); C1902-05: 22 (L. Ontario), 29 (Ottawa R.); C1911-14(2): 1 (Georgian Bay); C1: 133 (Quill Lakes, Sask.), 419 (Athabaska lakes, Alta.); C2: 146 (Ontario), 412 (Cultus Lake); C3: 365 (Forbes Brook, P.E.I.), 377 (Jasper Park); C4: 197 (Jasper Park); C6: 178 (Bay of Quinte, Ont.), 455 (Hudson Bay), 473 (Churchill, Man.); C7: 325 (Man.), 378 (Hudson Bay region); C8: 1, 13 (Hudson and James Bay), 103 (B.C.)

J2: 299; J3: 328; J4: 310 (Margaree R., N.S.); J5: 294 (Cultus L., B.C.); J7: 26 (Tedford L., N.S.), 95 (N.S.), 183 (Great Bear L., N.W.T.), 248 (Beaver R., N.S.); J8: 207 (Great Slave L., N.W.T.), 347 (Ont. and Que.), 383 (Charlotte Co., N.B.); J9: 10 (Hudson Bay), 83 (Ungava Bay region), 204 (Cultus L., B.C.), 417

(Cowichan L., B.C.); J10: 196 (Okanagan region, B.C.); J11: 362 (Duffin Cr., Ont.), 624 (Port John L., B.C.), 673 (B.C.), 884 (hosts of *Trienophorus*)

B23: 29; B32: 5 (B.C.); B56: 28 (Okanagan lakes, B.C.); B72 (N.W.T.); B78 (Great Bear L., Great Slave L., N.W.T.); B79: 2 (Nelson R., Man.); B82: 2 (Great Bear L., N.W.T.)

S137, S138, S198, S213 (L. Jesse, N.S.); S144, S227 (B.C.); S163 (Jones L., B.C.); S170 (Vancouver, B.C.); S197 (Shuswap L., B.C.); S200 (Cultus L., B.C.); S205 (L. Ainslie, N.S.); S206 (N.S.); S224 (Swan L., B.C.); S229 (N.B. lakes); S242 (Potter's L., N.B.); S249, S250 (trout); S270 (Ont. salmon); S278 (P.E.I. ponds); S282 (Tathlina and Kakisa Lakes, N.W.T.) S357 (L. Winnipeg region)

NS6 (Newfoundland rivers)

DISTRIBUTION OF FISH (PACIFIC)

C1: 285; C3: 265, 489; C7: 319, 469; C8: 162

J2: 335; J3: 12; J7: 157, 238, 513, 609; J8: 374; J9: 141, 143; J10: 461, 560; J11: 335

B23: 25; B31: 3; B34: 7; B38: 11; B40: 6; B47: 31; B54: 3; B62: 3; B63: 19; B64: 4; B66: 5; B67: 19; B68

S114; S130; S143; S148; S160; S227; S258; S290; S302; S322; S334; S336

DOAN, KENNETH HENRY

B79; B98

DOE, LANCELOT ATHELSTANE EARLSTON

J9: 42

DOG

C7: 57; C8: 228

DOGFISH, ATLANTIC SPINY (BIOLOGY)

J11: 351

AF12e: 17

NR15

DOGFISH, ATLANTIC SPINY (TECHNOLOGY)

C1918-20: 125; C1: 401; C7: 477; C8: 275 S17; S18

NR15

NS5

DOGFISH, PACIFIC SPINY (BIOLOGY)

B27: 9; B68: 59

S13; S58; S59; S66; S81; S82; S119; S392

DOFGISH, PACIFIC SPINY (TECHNOLOGY)
C6: 341
J4: 174, 312, J6: 113, 326 (oil)
B37: 143, B59: 408, B89: 327 (oil)
S55, S86 (oil); S81; S82

Dolloa cyclolepis
B68: 134

DOLLY VARDEN (*see* Char, Dolly Varden)

DOLPHIN
B89: 352 (oil)

DOMINANCE (OF YEAR-CLASSES)
J3: 160 (herring); J11: 284 (whitefish)

DOUGLAS, CARMAN WESLEY
B98

DRACONTIASIS (IN FISH)
C8: 161

DRAGONFLIES (*see* Insects, aquatic)

Drosophila
J11: 595

DRUGS, EFFECT ON MARINE ANIMALS
C7: 447, 477 (digestion); C8: 145 (digestion),
207 (arteries)
J1: 239, 251 (digestion), 261 (claspers)
S8 (retinal reflexes)

DRYING (FISH)
J6: 303, 380; J7: 200
B9; B59: 425
S373; S374
NS1; NS9

DRYING (OILS) (*see also* Oil, processing)
C6: 365; C8: 321
J1: 487; J2: 13
B37: 12; B59: 320; B89: 289

DUERR, JAMES DONALD
J8: 325

DUFF, DAVID CECIL BUCHANAN
C5: 193; C8: 103
J5: 1
S218; S252

DUFF, DOROTHY
C1914-15: 95

DUFF, GEORGE LYMAN
C4: 287

DUGAL, LOUIS CHARLES
J7: 471; J8: 189

DUN (*see* moulds)

DUNBAR, MAXWELL JOHN
J6: 419, 460; J9: 65, 83; J11: 709
B73; B85; B88
S326; S329; S361; S379A

DUNLOP, HENRY ADAM
C2: 151

DUSSAULT, HENRI PAUL
J9: 157; J11: 261

DYBHAVN, JOHN
J6: 204

DYER, FRANCES ELIZABETH
J6: 403; J7: 17, 128, 449, 580; J8: 309

DYER, WILLIAM JOHN
J6: 53, 351, 359, 403, 414; J7: 449, 461,
536, 576, 580, 585; J8: 309, 314, 325
S324

DYMOND, JOHN RICHARDSON
C5: 467; C6: 391; C8: 1
B32; B72: 86
S85; S130; S144; S293

DYNAMITE (FISHING METHOD)
C1902-05: 21

E

ECHINODERMATA (*see also* Ophiura; Sea-
urchins; Starfish)
C1: 21
J3: 350; J9: 164 (vitamin B₁₂)

ECONOMICS, FISHERY
J10: 442
S306

EEL, AMERICAN
C1901: 11; C1914-15: 115
J7: 432
S17: 21 (insulin); S110; S213; S234

EEL, ROCK (*see* Gunnel)

- EEL, SNIPE
B68: 121
- EEL, SPINY
S235
- EEL, SWORD-TAIL
S226
- EEL-BLENNY
B68: 186
- EEL-GRASS
J7: 545
- EELPOUT (FRESHWATER, *see* Burbot)
- EELPOUT (MUTTONFISH—*Zoarces*)
C1918-20: 69
J4: 337; J10: 539
B4
S5: 6; S17: 19; S71
- EELPOUT, BIG-FINNED
B68: 192
- EELPOUT, BLACK-BELLIED
B68: 193
- EELPOUT, BLACK-FINNED
B68: 191
- EELPOUT, PALE
B68: 196
- EELPOUT, PEARLY
C7: 323; C8: 275
B68: 195
- EELPOUT, SHORT-FINNED
B68: 191
- EELPOUT, SOFT
B68: 194
- EELPOUT, WATTLED
B68: 190
- EFFICIENCY (FISHING GEAR)
J8: 264
- EGGS (*see* Embryology)
- EFFLUENT (*see* Pollution; Stickwater)
- EKBAUM, ELLA (*see also* Kuitunen-Ekbaum, E.)
S180; S202
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J5: 11 (herring), 71 (lobster), 111 (cod); J6: 252 (teleosts), 435 (herring); J8: 125 (salmonoids)
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- FLOUNDER, LONGFIN (*see* Sole, rex)
- FLOUNDER, LONG-JAW (*Atheresthes stomias*)
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- FLOUNDER, ROUNDNOSE (*see* Brill)
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- B57: 56 (Margaree R., N.S.); B86 (Morice-town Falls, B.C.); B99 (artificial freshets, LaHave R., N.S.)
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 456 (cunner); C3: 269 (spring salmon);
 C4: 197 (Jasper Park fishes), 421 (*Litto-
 rina*); C5: 443 (whitefish), 464 (pumpkin-
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 421 (seal); J7: 22 (killifish, white perch),
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 B25: 20 (haddock); B30: 15 (crabs);
 B42: 3 (trout); B55: 32 (mergansers);
 B54: 21 (cod); B56: 42 (whitefish); B60:
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C1914-15: 87 (hake), 95 (haddock), 103 (cod); C1915-16: 21 (spring salmon), 42 (coho salmon); C1917-18: 111 (pollock); C1918-20: 7 (Pacific salmon), 73 (muttonfish); C1921: 22 (mussels), 81 (ciscoes), 119 (anglers); C1: 12 (lumpfish); C2: 151 (sockeye), 213, 234 (shad), 451 (cunner); C3: 389 (rainbow trout), 431 (haddock); C4: 81 (*Mya*), 121 (mussel), 197

(Jasper Park fishes), 275 (haddock), 287 (cod), 413 (*Littorina*); C5: 18, 42 (sockeye), 193 (*Saprolegnia*), 459 (pumpkinseed); C6: 79 (pandalids), 199, 427 (whitefish), 293 (haddock); C8: 413 (haddock)
J1: 191 (crab); J2: 41, 353, 485 (lobster), 89 (mussels), 311 (sockeye), 359 (Kamloops trout), 379 (salmon); J3: 132, 145 (herring); J4: 202 (sockeye), 287 (oyster); J5: 8 (*Teredo*), 71 (lobster), 84 (starfish), 337 (*Prosopium*); J6: 10, 74, 233, 257, 349, 491 (bacteria), 63 (mammals), 334 (cisco and whitefish); J7: 35, 74 (rats), 178 (lake trout), 190 (pike), 221, 430, 552 (bacteria), 545 (quahags and oysters); J8: 117 (trout), 207 (Great Slave L. fishes), 347 (maskinonge), 374 (flounders, soles), 383 (brook trout), 469 (ciscoes); J9: 1 (Arctic char), 169 (brook trout); J10: 69 (bacteria), 211 (theory), 253 (phytoplankton), 326 (Arctic char), 371 (lobster), 413 (whitefish); J11: 171 (yellowtail flounder), 284 (whitefish), 362 (salmon parr), 660 (scallops), 827 (lake trout)
B1: 20 (plaice); B2: 18 (lumpfish); B3: 13 (angler); B4: 7 (muttonfish); B15: 6 (coho); B25: 16 (haddock); B27 (spring salmon); B56: 44 (whitefish); B62: 19 (Pacific crab); B82: 4 (coregonine fish)
S15 (mussel); S48 (algae); S72, S73, S94, S262 (clams); S85 (B.C. trout); S121 (phytoplankton), S142 (crab); S164 (lobster); S264 (Pacific pilchard); S270 (Ontario salmon); S341 (trout—Crecy L., N.B.); S364 (Pacific herring and halibut)
NR1: 45 (Atlantic salmon); NR6: 14 (haddock); NR9 (various trout); NR14: 76 (Atlantic cod); NR15: 13 (Atlantic spiny dogfish); NR17: 87 (Atlantic capelin); NR18: 26 (lobster)
NS2: 4, NS15: 20 (lobster)

GRUNT-FISH
B68: 280

GULF OF MAINE
J1: 279 (phytoplankton); J3: 189 (zooplankton)

GULF OF ST. LAWRENCE (*see* St. Lawrence, Gulf of)

GULF STREAM
J4: 339; J10: 155

GULLS (*see* Birds)

GUNNEL
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GURNARD, FLYING
S235

GUTTING, SPLITTING AND CLEANING FISH
B1: 11 (plaice); B3: 9 (angler); B9: 5 (fish
for drying); B19: 7 (mackerel for pickling);
B20: 10 (haddock for ice fillets); B24: 8
(mackerel for canning); B49: 5 (halibut);
B52: 2 (herring)
NS9: 9 (cod)

GUTTMANN, ABRAHAM
J9: 129

GWYN, AGNES MARGARET
J5: 11

Gymnocanthus sp.
B73: 3

Gymnocanthus tricuspis
J11: 248

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HACHEY, HARRY BENEDICT
C6: 463, C7: 91
J1: 121, 133, 171, 227; J4: 339, 378, 424;
J5: 377; J7: 1, 355; J9: 325; J10: 148;
J11: 32, 198, 395
S136; S139; S178; S182; S201; S204;
S210; S304; S306; S316; S317; S358;
S395

HADDOCK (BIOLOGY)
C1901: 61; C1914-15: 95; C1915-16: 86;
C3: 423; C4: 265; C6: 241; C8: 409
J11: 250, 535
B25; B69
S38; S41; S52; S272
NR6

HADDOCK (TECHNOLOGY)
C1917-18: 175, 179; C3: 347, 441, 457, 469;
C4: 27, 117, 227, 257, 317; C5: 431; C6:
1, 375; C7: 57; C8: 123, 131, 227, 275,
291, 302, 531
J1: 179; J3: 473; J5: 221; J6: 53; J8: 111
B7: 21; B20: 2; B25: 27; B59: 405, B89:
339 (oil)
S31; S38; S52; S101; S324; S349 (oil)

HAGFISH
B68: 49
AF12d

HAKE (*Urophycis tenuis*) (BIOLOGY)
C1914-15: 87
J11: 251
B68: 129
S35; S52; S234
NS8: 25

HAKE (TECHNOLOGY)
C8: 275
J5: 221
B7: 19; B59: 406, B89: 338 (oil)
S35; S52

HAKE, SILVER (*Merluccius bilinearis*)
NS8: 27

HAKE, SPOTTED (*Urophycis regius*)
NS8: 27

HAKE, SQUIRREL (*Urophycis chuss*)
C1914-15: 87
S54
NS8: 25

HALIBUT, ARROWTOOTHED (*see* Flounder, long-
jaw)

HALIBUT, ATLANTIC (BIOLOGY)
C1914-15: 19; C1: 409
B71
S52
NS14: 7

HALIBUT, ATLANTIC (TECHNOLOGY)
C8: 275
B7: 19
S52; S324

HALIBUT, PACIFIC (BIOLOGY)
C1914-15: 1, 19
B68: 311
S41

HALIBUT, PACIFIC (TECHNOLOGY)
C7: 141, 425; C8: 313
J4: 174, 396, (oil), 327, 367; J5: 148, 267,
411; J6: 103, 113 (oil), 119; J7: 35, 51,
74; J10: 69
B7: 7; B12; B29; B37; 149, B59: 399,
B89: 328 (oil); B49
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HALIBUT, GREENLAND (*Reinhardtius hippo-
glossoides*)
NS14: 11

- HALIFAX, N.S.
C2: 69 (polluted water); C8: 409 (young haddock)
B61 (cod)
- HALOPHILES (*see* Bacteria of salted fish; Moulds)
- HAMPTON, WILLIAM FORSEY
NS4; NS5; NS9; NS12; NS13
- HANDLING (FISH, ETC.)
B2: 26 (lumpfish); B19: 11 (pickled mackerel); B20: 24 (haddock); B33: 7, B43: 11 (lobsters); B44: 3, B60: 63 (oysters); B49: 7 (halibut); B52 (herring)
S31 (tensile strength of haddock muscle); S41, S102 (bacteria); S164 (live lobsters); S323 (refrigeration); S332 (modern methods)
NS9: 7 (salt codfish); NS15: 41 (lobsters)
- HANDSAW-FISH
B68: 119
- HARDING, KENNETH FAIRHURST
J4: 59
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- HARPER, ESTHER LOUISE
S347
- HARPER, FRANCIS
C1: 419
- HARRINGTON, ROBERT WHITING, JR.
J11: 529
- HARRISON, FRANCIS CHARLES
C1917-18: 149, 179; C1: 279
B12
S41; S89
- HART, JOHN LAWSON
C6: 165, 427, 445; C7: 245
J3: 417; J4: 478; J6: 164
B36; B38; B39; B64
S120; S128; S160; S161; S171; S176;
S183; S193; S194; S196; S220; S221;
S239; S240; S246; S247; S253; S254;
S261; S264; S302; S315; S389
- HART, JOHN SANFORD
J7: 169
- HART, JOSEPHINE FRANCES LAVINIA
C6: 23
S133; S169
- HARVEY, J. M.
C5: 83
- HASLER, ARTHUR DAVIS
J11: 107, 472
- HATCHERIES, FISH (*see also* Transplantation)
C1917-18: 105 (sockeye), 149 (Atlantic salmon); C5: 3, 40, 57 (sockeye); C6: 207 (whitefish)
J2: 311 (sockeye); J4: 141, 233 (pink salmon), 151 (sockeye); J6: 311 (Atlantic salmon), 483 (sockeye); J7: 88 (sockeye); J8: 125 (salmonoids), 383 (speckled trout); J10: 196 (speckled trout)
B50, B53 (sockeye); B84: 27 (Atlantic salmon, Kamloops trout, speckled char and lake trout)
S84, S127 (sockeye); S141 (salmonoid game fish); S259 (Atlantic salmon)
- HATCHERIES, FOR INVERTEBRATES (*see* Culture)
- HATCHET-FISH, SILVERY
B68: 106
J11: 501
- HAYES, ERNEST REGINALD
S331
- HAYES, FREDERICK RONALD
C3: 133; C4: 413
B99
S116
- HEART RATE (*see* Physiology, circulatory system)
- HEAT, LATENT AND SPECIFIC
S101 (fish muscle)
- HEIGHT, OF WATER IN RIVERS (*see* Flow)
- HELIOZOA (PROTOZOA)
PF1c
- Hemilepidotus hemilepidotus*
B68: 244
- Hemilepidotus spinosus*
B68: 243
- HEMING, L., MAN.
J11: 1 (trout-perch)
B95: 27 (pike control)
- HENDERSON, JEAN T.
C2: 307; C3: 235; C4: 397; C6: 215

- HEREDITY (ANADROMOUS AND FRESHWATER FORMS)
J4: 1; J6: 245; J7: 88; J9: 169
- HERLINVEAUX, RICHARD HENRY
J11: 14, 799
- HERMAN, F.
S395
- HERRING, ATLANTIC (BIOLOGY)
C1901: 59; C1902-05: 95; C1906-10: 23;
C1914-15: 81; C1915-16: 21
J1: 145; J2: 95, 401; J4: 349, 392; J5: 365;
J10: 1; J11: 607
S211; S234
- HERRING, ATLANTIC (TECHNOLOGY) (*see also*
Sardines)
C1: 279
J1: 179; J7: 116; J11: 255
B52
S101
- HERRING, LAKE (*see* Ciscoes)
- HERRING, PACIFIC (BIOLOGY)
C1921: 105
J1: 477; J3: 108, 145; J4: 461; J5: 11, 347,
474; J7: 403; J9: 42, 393; J11: 587
B17: 1; B47: 1; B63: 1; B65: 20 (salmon
food); B67: 1; B68: 79
S41; S146; S171; S190; S193; S221, S240,
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- HERRING, PACIFIC (TECHNOLOGY)
J4: 478; J5: 428, J6: 109 (oil), 305; J7: 35,
138, 513, 522; J10: 64
B37: 140 (oil); B47: 26; B59: 387, B89:
312 (oil)
S13; S81; S82; S325; S335; S373; S374
- HERRING, ROUND (*Etrumeus teres*)
S226
- HESS, ERNEST
C4: 27; C5: 93; C7: 147; C8: 459, 489
J1: 95, 109; J3: 358; J5: 249, 276, 287,
438; J6: 1, 10, 17
B24
- HEWSON, LEO CLARE
S319
- Hexagrammos stelleri*
B68: 233
- Hexagrammos superciliosus* (*see* Greenling,
fringed)
- Hexanchus corinus*, *H. griseus* (*see* Shark,
Pacific mud)
- HILDEBRAND, HENRY HERMAN
J9: 83
- Hippoglossoides elassodon* (*see* Sole, flat-head)
B68: 315
- Hippoglossoides platessoides* (*see* Plaice,
American)
- Hippoglossus hippoglossus* (*see* Halibut,
Atlantic)
- Hippoglossus stenolepis* (*see* Halibut, Pacific)
- HIRUDINEA (*see* Leeches)
- Histiocottus bilobus*
B68: 246
- HISTOLOGY
C1918-20: 185; C8: 207
J1: 109; J11: 63 (chum salmon testes)
S18; S24
- HISTORY
B21 (Atlantic salmon fishery); B34 (oysters
in B.C.); B36 (pilchards in B.C.); B47
(herring in B.C.); B64 (smelts of B.C.);
B90 (chum and pink salmon fishery);
B91 (crabs of Graham Is.)
S132 (oysters in B.C.); S258 (fishery research
in Canada); S292 (eastern Canadian
fisheries); S315 (fishery problems in B.C.);
S329 (Ungava Bay); S344 (Canadian Pacific
oceanography); S346 (Passamaquoddy
Bay sardine fishery); S354 (Atlantic
fisheries); S389 (B.C. trawl fishery); S392
(B.C. dogfish fishery); S393 (B.C. whaling);
S394 (blackcod fishery)
- Histrio pictus*
S203
- HOAR, WILLIAM STEWART
J4: 409, 441; J6: 90; J8: 241; J10: 523;
J11: 57, 63, 69
B90
S184: S223
- Holconotus rhodoterus*
B68: 154

- HOLLETT, ANDREW
J6: 152, 183; J7: 116
- HOLOCEPHALI (CHIMAEROIDS) (*see also* Ratfish)
AF12f
- HOMANS, ROSS EDANS SPENCER
J11: 335
S203; S272
- Homarus americanus* (*see* Lobster)
- HOMING (*see* Migration)
- HOOGLAND, PIETER LEVINUS
J11: 355
- HORMONES
C7: 1, 17, 31 (in skate)
J11: 57 (growth factor from salmon pituitary), 63 (androgens from salmon)
- HOURSTON, ALAN STEWART
J8: 347
S327; S343
- HOURSTON, WILLIAM RODERICK
B101
- HUBBS, CARL LEAVITT
C7: 319
J6: 30
- HUDSON BAY
C1921: 133 (Foraminifera), 149 (sticklebacks); C1: 21 (echinoderms), 27 (Ascidacea), 419 (fishes); C3: 1 (amphipods); C6: 455 (fisheries), 463 (survey), 475 (hydroids), 483 (copepods), 495 (diatoms); C7: 91 (oceanography), 361 (Bryozoa), 377 (Cestoda); C8: 1 (coregonine fish), 13 (other fish), 63 (marine algae)
J3: 350 (echinoderms); J5: 23 (Pteropoda); J6: 129 (Polychaeta); J9: 1 (Arctic char)
B98 (beluga)
S15 (mussels); S62 (fishes)
- HUMES, ARTHUR GROVER
J11: 816
- HUMIDITY (*see also* Drying)
J6: 10, 303; J7: 200
- HUNTER, ANDREW
S23; S25; S81; S82
- HUNTER, JOHN GERALD
S383
- HUNTING METHODS
B98: 14 (beluga)
- HUNTSMAN, ARCHIBALD GOWANLOCH
C1906-10: 103; C1911-14(1): 39; C1911-14(2): 145; C1917-18: 169; C1918-20: 85, 93; C1921: 49, 167; C1: 27, 125; C2: 69, 81, 89, 95; C3: 423; C6: 455
J2: 401; J4: 1, 96, 409; J5: 227, 485; J6: 311, 399, 476; J7: 248, 363; J10: 1; J11: 198
B1; B5; B9; B13; B20; B21; B51; B57
S5; S6; S20; S21; S32; S40; S140; S165; S168; S175; S187; S188; S192; S205; S207; S211; S225; S256; S258; S259; S266; S267; S269; S270; S275; S276; S280; S289; S291; S292; S298; S300; S303; S306; S333; S346; S354
- HUNTSMAN, MARY ELINOR
C7: 31
- L. HURON, ONT.
J9: 325 (temperature distribution)
- HUTCHINSON, ANDREW HENDERSON
J6: 206
S56; S75; S112
- HUTCHINSON, SAMUEL JEROME
S257
- HYDROGENATION (*see also* Oil, chemical reactions)
C7: 521 (pilchard oil)
B37: 31; B59: 110; B89: 247
- HYDROGEN-ION, pH (IN BACTERIAL GROWTH, etc.)
J4: 219, 355; J5: 121, 203, 265, 276, 287, 411; J6: 45, 53, 233, 403, 435; J7: 155, 561; J10: 590 (caecal enzyme)
S63; S70; S71; S78; S119
- HYDROGEN-ION, pH (IN NATURAL WATERS)
(*see* Limnology; Oceanography)
- HYDROGRAPHY (*see* Limnology; Oceanography; Physiography)
- HYDROIDS (*see also* Hydrozoa)
AF3a
- Hydrolagus colliei* (*see* Ratfish)
- HYDROLYSIS OF OIL (*see also* Oil, chemical reactions)
C7: 505

HYDROXYLAMINE (AS PRESERVATIVE)

J6: 349. J10: 69

HYDROZOA

C1917-18: 329; C1918-20: 137; C1: 95, 219, 291; C3: 323; C6: 475

J1: 503

AF3a

S79; S147

Hyperprosopon argenteum

B68: 153

Hypomesus pretiosus (see Smelt, silver)

Hypsogonus quadricornis

B68: 282

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ICE, GERMICIDAL

J4: 327; J5: 36, 244; J7: 155

S370; S375

Icelinus borealis

B68: 253

Icelinus filamentosus

B68: 255

Icelinus tenuis

B68: 254

Icelus bicornis

J11: 248

Icichthys lockingtoni

B68: 203

Icosteus aenigmaticus

B68: 332

IDYLL, CLARENCE PURVIS

J5: 448; J6: 133

IDLER, DAVID RICHARD

S371; S380

INCONNU (*Stenodus*)

B72: 59; B94: 9

INSECTS, AQUATIC (see also Chironomidae; Mayflies; Stoneflies)

C1911-14(2): 53 (dragonflies, Go Home Bay, Ont.); C4: 185 (Jasper Park), 221 (beetles, Jasper Park)

J9: 204 (Cultus L.)

S69 (Pacific marine species); S200 (dragonflies, Cultus L.)

INSULIN, FROM FISH (see also Islands of Langerhans)

C2: 115

B7: 1; B54: 24

S17; S24

INTRODUCTION (OF EXOTICS) (see Transplantation)

IODINE (see also Oil, chemical reactions)

C1911-14(1): 51, C1914-15: 25, 169 (sea-weeds); C1: 73 (sea water); C4: 115 (fish thyroid)

IODINE VALUES

S152

ION EXCHANGE

J7: 552

IRISH LORD, BROWN

B68: 243

IRISH LORD, RED

B68: 244

IRISH MOSS

S273, S274 (stabilizing power)

ISLANDS OF LANGERHANS (see also Morphology)

S18 (elasmobranch and teleostean fishes)

S24 (freshwater and marine fishes); S25,

S34 (effect of removal on blood sugar)

ISOMERIZATION

S350 (new procedure)

ISOPODA (CRUSTACEANS) (see also Gribble)

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S1; S5; S39

Isopsetta isolepis

B68: 322

Isurus nasus (see Shark, mackerel)

J

JACKSON, F. SLATER

C1: 297

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JACKSON, KENNETH JOHN

S343

JAMPOLSKY, ABIE

J11: 57

JAPAN

J10: 560 (marine fishes)

JASPER PARK, ALTA.

C3: 377 (fishes); C4: 157 (stoneflies), 175 (leeches), 185 (aquatic insects), 197 (food and growth of fishes), 221 (beetles), 343 (plankton)

JEFFERS, ANNE MEREDITH

J2: 401

JEFFERS, GEORGE WILLIAM

C7: 203

J2: 401

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JELLYFISH

C1902-05: 121

S139; S5

L. JESSE, N.S.

S137, S206, S213 (fish population); S138 (copper sulphate); S198 (survey); S229 (poison)

JEWETT, STANLEY GORDON, JR.

J11: 543

JOHANSEN, FRITS

C2: 423; C3: 1

JOHNSON, MARTIN WIGGO

J3: 189

JOHNSON, WALTER HENRY

J2: 401; J4: 349, 392; J5: 365

JOHNSTON, MARION LAWSON

J4: 363

JOHNSTON, WILLIAM WALLACE

C8: 531

J3: 473; J4: 363; J5: 217

JOHNSTONE STRAIT, B.C. (*see also* Vancouver Island)

B31, B74, B96 (tagging salmon)

JONES L., B.C.

S163 (survey)

Jordania zonope

B68: 260

JUAN DE FUCA STRAIT

J5: 398 (currents); J11: 14 (tidal effects), 503, 799 (currents)

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KAMLOOPS REGION, B.C.

B42 (productivity of lakes)

Katsuwonus pelamis

B68: 164

KEEN, DOROTHY JEAN

J10: 97

KELEHER, JAMES JOHN

J8: 469

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KELLEY, ALICE M.

J6: 435

KELP

C1914-15: 25, 169; C2: 503

KELP-FISH, SPOTTED

B68: 172

KELP-FISH, STRIPED

B68: 173

KENDALL, WILLIAM CONVERSE

C1: 419

KENNEDY, WILLIAM ALEXANDER

J7: 176, 190; J8: 264; J10: 51, 413; J11: 284, 827

B76; B81; B82

S282

KERR L., N.B.

J8: 340 (whitefish)

KERSWILL, CHARLES JAMES

J5: 23; J7: 545

S279

KETCHEN, KEITH STUART

J10: 459

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KETCHUM, BOSTWICK HAWLEY

J10: 97

KHAN, MUHAMMED MUJIBAR RAHMAN

J9: 393

KIDNEY

S310 (vitamin B₁₂); S335 (vitamin B_{12a})

KIELHORN, WILLIAM VINEYARD

J9: 223

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J7: 22

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KINDLE, EDWARD MARTIN

C1917-18: 93, 229

KING, EARL JUDSON

C7: 119

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KING, HAZEL M.

C7: 127

KINGFISH

B68: 146

KINGFISHERS (*see* Birds)

KING-OF-THE-SALMON

B68: 139

KLEEREKOPER, HERMAN

J10: 283; J11: 130

KLUGH, ALFRED BROOKER

C1906-10: 265; C1911-14(2): 219; C1915-16:
79; C1918-20: 181; C6: 41

S9; S27; S29; S37; S43; S48; S50; S79;
S103; S104; S105; S110

KNIGHT, ARCHIBALD PATTERSON

C1901: 9; C1902-05: 21, 37, 111; C1906-10:
23; C1914-15: 41; C1917-18: 53; C1918-
20: 185

J3: 184

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KOCH, LYLE WARD

C4: 77

KOKANEE (LAND-LOCKED SOCKEYE)

C1917-18: 105

J4: 192; J7: 88

B32: 42; B55: 33; B56: 29

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KOMAROV, SIMON ANDREW

C7: 11, 57, 439; C8: 123, 131

KOOTENAY, L., B.C.

J2: 359 (Kamloops trout)

KUCHEL, CLEMENS CARL

J4: 174; J5: 203

KUITUNEN-EKBAUM, ELLA (*see also* Ekbaum E.)

C8: 71, 89, 99, 161

J7: 505

KYUQUOT, B.C.

B26 (salmon tagging)

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LABRADOR

J10: 177 (oceanography)

NR12 (salmon obstructions); NR13 (Atlantic
salmon)

LABRIE, ARTHUR

J3: 439

LACHANCE, ROBERT ANDRÉ

J9: 157

LA CROIX, GEORGE WILFRID

J11: 853

LACTIC ACID

J4: 355; J5: 122

S38; S52; S207

LADYSMITH HARBOUR, B.C.

J4: 53 (littleneck clam)

Lagenorhynchus obliquidus

B89: 352 (oil)

LAKES (*see* name of lake)

LAKE WHITEFISH

C5: 441; C6: 165, 427, 445; C7: 342; C8: 3
J6: 334; J8: 207, 340; J10: 51, 413; J11: 284

B56: 39; B72: 39, 55, 76; B76: B82; B94: 12
S144; S235

NR9: 7

LAKELSE L., B.C.

J8: 82 (limnology), 103 (sockeye); J11: 479
(plankton)

LAMELLIBRANCHIATA (*see* Bivalves)

Lamna cornubica, *L. ditropis* (*see* Shark, mack-
erel)

Lampanyctus leucopsarus

B68: 115

Lampanyctus regalis

B68: 116

- LAMPREY, ARCTIC
B94: 5
- LAMPREY, PACIFIC
J8: 275
B68: 47
S36, S144
- LAMPREY, SEA
AF12d
S155; S234
- Lampris regius*
B68: 138
- LANCE (*see* Sand-launce)
- LANGFORD, RAYMOND ROBERT
J10: 238
- LANGSTROTH, GEORGE OTTY
C6: 375
S101; S109
- LANIGAN, JOHN ARTHUR
S327
- LANTERN-FISH, BIG-EYED
B68: 110
- LANTERN-FISH, BIG-FINNED
B68: 113
- LANTERN-FISH, BLUE
B68: 111
- LANTERN-FISH, SMALL-EYED
B68: 116
- LANTERN-FISH, SMALL-FINNED
B68: 115
- LANTERN-FISH, WHITE-SPOTTED
B68: 114
- LARKIN, PETER ANTHONY
B78
- LAUNCE (*see* Sand-launce)
- LAUZIER, LOUIS
J8: 332; J10: 146, 155
- LAWLER, GEORGE HERBERT
J11: 1, 884
- LEATHER MANUFACTURE (*see also* Oil, industrial uses)
J3: 473; J10: 590
- Lebius superciliosus*
B68: 234
- LEECHES
C1911-14(2): 165
C4: 175
- LEIM, ALEXANDER HENRY
C2: 161; C3: 457
B75
S4; S139
- LENGTH-WEIGHT RELATIONSHIPS
C1915-16: 44 (coho); C1918-20: 7 (Pacific salmon), 79 (muttonfish); C2: 245 (shad), 462 (cunner); C5: 73 (sockeye); C6: 427 (whitefish)
J2: 318 (sockeye), 401 (Atlantic herring); J4: 441 (Atlantic salmon), 461 (herring), 478 (B.C. herring); J7: 197 (pike); J8: 207 (Great Slave Lake fishes), 347 (muskel-lunge); J9: 1 (Arctic char), 169 (brook trout); J10: 310 (coho), 416 (whitefish); J11: 827 (lake trout)
B1: 11 (plaice); B2: 21 (lumpfish); B25: 19 (haddock); B81 (L. Manitoba fish); B82: 5 (coregonine fish); B93: 6 (seals)
S54 (squirrel hake, pollack, winter flounder, smelt); S250 (rainbow trout)
- LEOPARDFISH (*Anarhichas minor*)
S203; S226
- Lepeophtheirus* (*see* Salmon-louse)
- Lepidogobius lepidus*
B68: 169
- Lepidopssetta bilineata* (*see* Sole, rock)
- Lepomis gibbosus* (*see* Pumpkinseed)
- Leptagonus decagonus*
S203
- Leptoclinus maculatus*
J11: 248
- Leptocottus armatus* (*see* Cabezon)
- LESSER SLAVE L., ALTA.
J7: 190 (pike)
B95: 31 (*Triacnophorus*)

LETHAL LIMITS

- C1911-14(1): 73 (freezing mummichog); C2: 81 (light), 89 (larval lobster—temperature), 95 (temperature); C3: 149 (*Littorina*—temperature and salinity), 167 (*Buccinum*—dehydration and temperature); C4: 397 (lamellibranchs—temperature), 495, 501 (skate—temperature); C5: 109 (*Enchelyopus*—temperature and salinity); C8: 137 (skate tissue—temperature)
J2: 485 (larval lobster—temperature, salinity, food); J4: 409 (Atlantic salmon—salinity); J5: 84 (starfish—temperature and salinity), 485 (Atlantic salmon and brook trout—temperature); J6: 63 (mammals—sodium nitrite), 435 (herring eggs—oxygen), 476 (stream fishes—temperature); J8: 164 (Pacific salmon—salinity), 479 (flounders—tags); J9: 265 (Pacific salmon—temperature); J10: 196 (B.C. fishes—temperature)
B5: 8 (lobster—light); B33: 16 (lobster—temperature)
NR17: 127 (Atlantic capelin—temperature)

Leucichthys (see Ciscoes)

LIFE HISTORY

- C1902-05: 95 (Clupeidae); C1911-14(2): 131 (mayflies); C1914-15: 87 (hake); C1915-16: 39 (coho); C2: 161 (shad), 423 (cunner); C3: 133 (*Littorina*), 247 (Bryozoa); C4: 265 (haddock), 474 (spring salmon); C5: 3, 37, 55 (sockeye); C6: 165 (whitefish); C7: 342 (*Triaenophorus*); C8: 345 (sockeye)
J1: 1 (copepods), 159 (Atlantic salmon); J2: 41 (lobster), 209 (*Chironomus*), 311 (sockeye); J5: 176, 471 (brook trout); J6: 24 (*Lepeophtheirus*), 37 (Atlantic salmon), 245 (rainbow trout); J7: 176 (lake trout); J10: 85 (*Micronereis*), 539 (*Porrocaecum decipiens*); J11: 1 (trout-perch), 326 (Polychaeta)
B1: 13 (plaice); B2: 11 (lumpfish); B3: 9 (angler); B4: 4 (muttonfish); B17: 5, B47: 2 (herring); B21: 5 (Atlantic salmon); B22: 15, B60: 6 (oyster); B25: 13 (haddock); B30: 9, B62: 5 (crab); B32: 14 (trout); B45: 7 (fish tapeworm); B53: 3 (sockeye); B54 (lingcod); B55: 2 (merganser); B56: 29 (fishes of Okanagan L.); B64: 3 (smelts); B68 (Pacific marine fishes); B78: 17 (*Pontoporeia*), 27 (*Mysis*); B79: 3 (speckled trout); B84: 6 (spring

- salmon), 8 (coho), 14 (steelhead and rainbow trout); B85 (Pinnipedia); B93: 23 (seals); B97 (kingfisher); B98: 10 (beluga)
S45 (*Teredo navalis*); S50 (Entomostraca); S77, S90, S91, S92, S107, S113, S115, S118, S122, S134, S145, S179, S195, S219, S233, S328, S342, S362 (sockeye); S133 (B.C. crabs); S164 (lobster); S188 (Atlantic salmon); S194 (pilchard); S202 (parasites); S287 (B.C. salmon)
NR1: 33 (Atlantic salmon); NR2, NR17 (Atlantic capelin); NR7 (lobster); NR13 (Atlantic salmon); NR15 (Atlantic spiny dogfish)
NS8 (Newfoundland fishes); NS15 (lobster)

LIGHT (see Light, reactions to; Limnology; Oceanography)

LIGHT, REACTIONS TO

- C1914-15: 115 (eels); C2: 81 (marine animals); C3: 154 (*Littorina*); C5: 83 (*Calanus*)
J1: 319 (phytoplankton); J2: 485 (lobster); J4: 323 (Atlantic salmon), 349, 392 (herring); J5: 365 (copepods), 485 (Atlantic salmon); J6: 10 (bacteria), 90 (salmon and trout), 158 (coho and spring salmon), 217 (pink salmon), 425 (*Thermisto*); J7: 363 (*Odontosyllis*), 432 (salmon, eels); J8: 134 (amphipods), 241 (Pacific salmon); J10: 253 (phytoplankton), 548 (spring salmon and trout); J11: 69 (Pacific salmon), 529 (effect on athiaminosis)
B5: 8 (lobster larvae); B62: 14 (crab); B99 (Atlantic salmon)
S8 (narcotized animals); S29 (wave length—reproduction rate); S40 (marine animals); S44 (wood-borers); S50 (Entomostraca); S79, S104, S111 (marine organisms); S164 (lobster laying eggs); S215 (rainbow trout and full moon); S281 (common sucker)

Limanda aspera

B68: 323

Limanda ferruginea (see Flounder, yellowtail)

LIMNOLOGY (GENERAL)

- C2: 345 (Cultus L., B.C.); C5: 381 (Manitoba lakes)
J5: 138 (ponds at St. Andrews, N.B.); J7: 22 (Tedford L., N.S.); J8: 383 (Charlotte County lakes, N.B.)
B42:3 (Paul L., B.C.), 22 (Pinantan L., B.C.), 25 (Penask L., B.C.), 27 (Fish L.,

- B.C.), 28 (Nicola L., B.C.); B78 (Great Bear and Great Slave Lakes, N.W.T.); B82 (Great Bear L., N.W.T.); B94: (Arctic)
- S37 (productivity of lakes); S50 (entomotrachean ecology); S67 (Fraser R.); S163 (Jones L., B.C.); S170 (Lost Lagoon, Vancouver, B.C.); S195 (Shuswap L., B.C.); S198 (L. Jesse, N.S.); S200 (Cultus L., B.C.); S206 (N.S. lakes); S224 (Swan L., B.C.); S278 (ponds in P.E.I. park); S297 (Crecy L., N.B.)
- NR9: 17 (trout streams of Newfoundland)
- LIMNOLOGY (PHYSICAL AND CHEMICAL)**
- C1: 127 (Quill lakes, Sask.); C6: 185 (Bay of Quinte, Ont.)
- J1: 67 (fertilized ponds); J2: 227 (Prince Albert lakes, Sask.); J3: 363 (Cultus L., B.C.); J6: 217 (McClinton Creek, B.C.); J8: 1 (Great Slave L., N.W.T.), 82 (Lakelse L., B.C.); J9: 325, 329 (Great Lakes), 417 (Cowichan L., B.C.); J11: 624 (Port John L., B.C.)
- B42: 5 (Paul L., B.C.), 23 (Kamloops region lakes, B.C.); B56: 8 (Okanagan lakes, B.C.); B57: 42 (Margaree R., N.S.); B72: 35 (lakes of N.W.T.); B83: 59 (Alberni Inlet); B84: 5 (Cowichan R., B.C.)
- S43 (light penetration, Chamcook L., N.B.); S50 (effect of temperature, etc., on Entomotrachea); S125 (oxygen saturation); S138 (L. Jesse, N.S.); S197 (Shuswap L., B.C.); S217 (temperature of fresh waters); S237 (kokanee and sockeye salmon waters); S239 (Potter's L., N.B.); S257 (pink salmon streams, B.C.); S270 (Ont. salmon streams); S278 (ponds in P.E.I. park); S297 (Crecy L., N.B.)
- Limnoria lignorum* (see Gribble)
- LINDSAY, SHEILA TAYLOR**
- NR1
- LING** (*Lota*, see Burbot)
- LING** (*Urophycis*, see Hake)
- LING, EUROPEAN**
- J11: 11 (in Newfoundland waters)
- LINGCOD** (*Ophiodon elongatus*) (BIOLOGY)
- B54; B68: 237
- LINGCOD (TECHNOLOGY)**
- C7: 405
- J2: 461; J4: 472; J6: 305; J7: 35, 51, 74, 552; J10: 69
- B37: 148, B59: 401, B89: 336 (oil); B54: 23
- S22 (pentose); S59 (blood sugar); S68 (liver asphyxial hyperglycaemia); S81 (creatine); S82 (arginase); S375 (preservation)
- LINTON, EVERETT PERCIVAL**
- J3: 1; J6: 338, 380
- S135
- Liopsetta putnami* (see Flounder, smooth)
- LIPARID, ABYSSAL**
- B68: 302
- LIPARID, BLACK-TAILED**
- J11: 502
- B68: 304
- LIPARID, CONTINUOUS-FINNED**
- B68: 300
- LIPARID, DENNY'S**
- B68: 299
- LIPARID, GREEN'S**
- B68: 301
- LIPARID, GÜNTHER'S**
- B68: 297
- LIPARID, JUAN DE FUCA**
- B68: 298
- LIPARID, PALLAS'S**
- B68: 296
- LIPARID, PRICKLY**
- B68: 305
- LIPARID, RING-TAILED**
- B68: 295
- LIPARID, SHORE**
- B68: 297
- LIPARID, SMALL-DISKED**
- B68: 303
- LIPARID, TADPOLE**
- B68: 306

- Liparis callyodon*
B68: 296
- Liparis cyclopus*
B68: 297
- Liparis dennyi*
B68: 299
- Liparis fabricii*
B73: 7
- Liparis florum*
B68: 297
- Liparis fucensis*
B68: 298
- Liparis pulchellus*
B68: 300
- Liparis major*
J11: 249
- Liparis rutteri*
B68: 295
- LIPOXIDASE
J9: 393
- LIVER
J7: 563 (amino acids); J9: 129 (vitamin B₁₂);
J11: 355 (nutritive value and vitamin B₁₂)
S68 (lingcod); S310 (vitamin B₁₂)
- LIVER OIL
C7: 405 (lingcod); C8: 265 (salmon)
J4: 174 (halibut, dogfish), 312 (dogfish), 396
(halibut), 405 (Pacific cod), 472 (rockfish,
blackcod, lingcod); J5: 428 (Pacific
fishes); J6: 113 (halibut, dogfish), 326
(dogfish); J11: 357 (vitamin A, cod)
B37: 51 (Pacific fishes); B59: 210, B89:
180 (production)
S55, S86 (dogfish); S349 (cod, sardine, etc.)
NR15 (Atlantic spiny dogfish)
NS3 (cod)
- LOBOSA (PROTOZOA)
PF1a
- LOBSTER (BIOLOGY)
C1902-05: 28; C1906-10: 277; C1914-15:
41, 119; C1915-16: 11; C1917-18: 53;
C1918-20: 185; C2: 83, 89; C3: 310;
C8: 421
- J1: 213, 269; J2: 41, 223, 349, 485; J3:
339, 343, 358; J5: 71; J6: 152, 228, 281,
291; J8: 486; J10: 371; J11: 253
- B5; B43
S164
AF10m
NR7; NR8; NR10; NR11; NR16; NR18
NS2; NS15
- LOBSTER (TECHNOLOGY)
C1921: 125; C2: 1; C4: 227; C5: 93;
C8: 227
J1: 179; J3: 102; J6: 183; J7: 70; J10: 521
B6; B8; B10; B33
NR10; NR11
NS2
- LOCKHART, ERNEST EARLE
J10: 590
- LOGAN, JOHN FREMONT
C6: 1
- LOGIE, ROBERT REED
S283
- Lophius americanus*, *L. piscatorius* (see Anglers)
- Lophopsetta maculata* (see Flounder, sand)
S234
- LOST LAGOON, VANCOUVER, B C.
S170, S228 (brackish water)
- Lota lota*, *L. maculosa* (see Burbot)
- LOWE, CHARLES WILLIAM
C1918-20: 124
J3: 12
- LUCAS, COLIN CAMERON
S56; S83; S112
- LUCAS, VERA ZORA (see also Smith, V.Z.)
C6: 397
- Lumpenella longirostris*
B68: 188
- Lumpenus anguillaris*
B68: 186
- Lumpenus fabricii*
J11: 249
- Lumpenus lampetraeformis*
B73: 8

- LUMPFISH
C1: 1
B2
S226
- LUMPSUCKER, SMOOTH
J9: 141
- LUMPSUCKER, SPINY (ATLANTIC)
B73: 7
- LUMPSUCKER, SPINY (PACIFIC)
B68: 293
- LUSENA, CHARLES VICTOR
J10: 521
- Lycodapus fierasfer* (see Eelpout, pearly)
- Lycodapus mandibularis*
B68: 196
- Lycodes brevipes*
B68: 191
- Lycodes palearis*
B68: 190
- Lycodopsis pacificus*
B68: 193
- Lyconectes aleutensis*
B68: 184
- LYMPHOID ORGAN (see Morphology)
- Lyopsetta exilis* (see Sole, slender)
- Mac, Mc, M'**
- MACALLUM, ARCHIBALD BYRON
C1902-05: 121; C1918-20: 134
J3: 182
- MACARTHUR, M. ISOBEL
J5: 1
- MACBRIDE, E. W.
C1906-10: 217
- MACCALLUM, WALLACE ALLISON
J8: 111
- MACCLEMENT, W. T.
C1911-14(2): 210; C1915-16: 11
J4: 228
- MCCLINTON CREEK, B.C.
J3: 403, J4: 141, 233, J6: 217, J7: 224 (pink salmon)
S148 (food of predators); S257 (pink salmon)
- MC COMBIE, ALEN MILNE
J10: 253
- MC CONNELL, JOHN ANDERSON
J8: 103
- McCORMICK, N. A.
C2: 115
B7
S24; S26
- McCRIMMON, HUGH ROSS
J11: 362
- McDONALD, D. L.
C1906-10: 83
- MACFARLANE, CONSTANCE
C8: 63
- McFARLANE, SAMUEL HANFORD
J2: 335
- M'GONIGLE, ROWLAND HILLARY
C6: 315
S44; S45; S117; S159; S217; S243
- MACGREGOR, DONALD GORDON
J9: 213; J11: 32
S306
- McHUGH, JOHN LAURENCE
J5: 131, 337, 347, 474
B56; B64
S247
- MACINTOSH, FRANK CAMPBELL
J1: 497
- MACKAY, ALEXANDER HOWARD
C1901: 55; C1902-05: 55; C1918-20: 115
- MACKAY, BRUCE SINCLAIR
J11: 48
- MACKAY, DONALD COPELAND GIBSON
C7: 335
J1: 191
B362
S142

MACKAY, MARGARET E. (MACKAY-SAWYER, M. E.)
C7: 17, 439, 477
J1: 239
S70; S71

MACKENZIE, BEATTIE ALEXANDER
S386

McKENZIE, RUSSELL ALDERSON
C8: 433
J5: 105
B23; B61; B69; B70: B71
S203; S226; S235; S336

MACKENZIE R., N.W.T.
B72: 21 (survey)

MACKINNON, DIXON
J10: 523, 548; J11: 310

McLELLAN, HUGH JOHN
J7: 335; J9: 213; J10: 155; J11: 404, 419

McLEOD, DONALD CAMERON
J10: 125

MACLEOD, DONALD JOHN
C2: 1

MACLEOD, JOHN JAMES RICHARD
C3: 437, 457
S17; S26

MACLEOD, ROBERT ANGUS
S377; S379; S388

McMAHON, VERNON HERBERT
J11: 479

McMURRICH, JAMES PLAYFAIR
C1906-10: 33; C1915-16: 1
J4: 308

McMYNN, ROBERT GORDON
B91

McNAIRN, N. A.
J2: 401

M

MACPHERSON, NORMAN LETHAM
NS1; NS3

MACKEREL, ATLANTIC (BIOLOGY)
C1901: 61; C1902-05: 2; C4: 443
J11: 249
S41; S234

MACKEREL, ATLANTIC (TECHNOLOGY)
C8: 227, 291
J3: 102; J4: 363; J5: 217; J7: 62
B19; B24; B89: 345 (oil)
S101

MACKEREL, PACIFIC
B68: 163

Macropinna microstoma
B68: 104

Macrourus bairdi
S226

Macrozoarces americanus (see Eelpout)

Macrurus acrolepis
B68: 136

MADTOM, TADPOLE
J11: 529

MAGNESIUM AMMONIUM PHOSPHATE
J6: 183

MAILLARD REACTION (BROWNING)
J8: 74
S351; S360

Makaira albida
S226

Malacocottus kincaidi
B68: 276

MALACOSTRACA (CRUSTACEANS) (see also Amphipoda; Cumacea; Decapoda; Euphausiacea; Isopoda; Mysidacea)
C1911-14(2): 145 (Georgian Bay, Ont.)

Mallotus catervarius, *M. villosus* (see Capelin)

MALPEQUE BAY, P.E.I.
J2: 41 (lobsters); J5: 8 (shipworms), 84 (starfish), 236 (oceanography)
B22, B48 (oysters); B77 (bivalves)
S234 (fishes)

MAMMALS, MARINE (see also Seals, Sea lions, Whales)
J11: 267 (parasites)

MAN
J5: 211 (trimethylamine in)

MANAGEMENT OF FISHERIES — RECOMMENDATIONS AND PROCEDURES (*see also* Poisons)

C6: 208 (whitefish)

J4: 141 (pink salmon); J5: 335 (sockeye), 485 (Atlantic salmon); J6: 37 (Atlantic salmon), 250 (rainbow trout), 449 (oysters) 483 (sockeye); J8: 125 (salmonoids), 369 (butter clams), 383 (brook trout); J10: 442 (economic approach)

B5: 9, B43: 4 (lobsters); B21: 56, B57, B99 (Atlantic salmon); B22: 28, B34: 7, B60: 14 (oysters); B32: 46 (trout); B36: 23 (pilchard); B47: 34, B67: 7 (herring); B56: 51 (lakes of Kamloops region); B72: 84 (Northwest Territories); B83: 123 (problems with pulp mill); B93: 47 (hair seals)

S205 (fish culture); S230, S250 (rainbow trout, Paul L.); S231 (coho salmon hatching); S238 (clams); S245 (molluscs); S258 (history in Canada); S259 (Atlantic salmon planting); S262 (Seal I. clams); S266 (fishery depletion); S267 (Canadian fisheries); S269, S275 (Atlantic salmon); S287, S288 (Pacific salmon); S292, S293, S294, S295, S296 (general discussions); S300 (in the northeast); S315 (fishery problems in B.C.); S318 (speckled trout on P.E.I.); S327, S378 (B.C. herring); S334 (B.C. recreational facilities); S339 (pink salmon); S364 (Pacific herring and halibut); S329 (Ungava Bay); S385 (speckled trout in N.B.)

NR10, NR11: 22 (lobsters)

NS2: 15, NS15: 34 (lobsters)

MANGANESE

S10 (in tubes of Polychaeta)

MANITOBA (*see also* individual localities)

C5: 381 (biological conditions), 441 (whitefish); C7: 325 (ciscoes), 342 (*Triaenophorus*)

L. MANITOBA, MAN.

B81 (walleye, sauger, perch)

MANZER, JAMES IVAN

J8: 374, 479

MAPPLEBECK, ELEANOR GERTRUDE

J9: 148, 377

MARCH, BERYL ELIZABETH

S373

MARGAREE R., N.S.

J2: 299, J3: 323, J4: 48, 309 (birds)

B51, B57 (salmon); B58 (birds and salmon)

S205 (fish culture); S333 (salmon)

MARGOLIS, LEO

J10: 62; J11: 267, 319

S387

MARIE-VICTORIN, FRÈRE

J6: 458

MARKETING OF FISHERY PRODUCTS

C1918-20: 125 (dogfish and other selachians)

B1: 9 (American plaice); B2: 26 (lumpfish);

B4: 10 (muttonfish); B10: 14 (lobster paste);

B20: 51 (frozen haddock); B25: 24 (had-

dock); B33: 8, B43: 11 (lobster); B36: 5

(pilchards); B44, B60: 67 (oysters); B47:

18 (herring); B49: 1 (fresh halibut); B54:

23 (lingcod); B90: 7 (salmon); B98: 22

(beluga)

S299 (by-products)

NR18: 9 (lobsters)

MARKING (*see* Tagging)

MARSIPOBRANCHII (LAMPREYS, HAGFISHES)

AF12d

MARTIN, J. RUSSELL

S48

MARTIN, NIGEL VERNON

J11: 5

MARTIN, WILLIAM HOWARD

C1911-14(1): 73; C7: 295

MASKINONGE

J8: 347

MASSET INLET, B.C. (*see* McClinton Creek)

MASTIGOPHORA (PROTOZOA)

PF1c

MATHER, VERA G.

S36

MATING EXPERIMENTS

NR16: 48 (lobsters)

MATURITY

C1914-15: 87 (hake), 95 (haddock); C3: 281

(spring salmon); C7: 255 (bivalves); C8:

2 (Coregonidae)

- J1: 1 (copepods); J2: 41 (lobster); J3: 159 (herring); J4: 195 (sockeye), 233 (pink salmon); J6: 140 (*Paphia*), 281 (lobster); J7: 176 (lake trout); J8: 347 (maskinonge); J10: 314 (coho and sockeye), 326 (Arctic char), 413 (whitefish); J11 535 (haddock), 827 (lake trout)
- B1: 12 (plaice); B3: 15 (angler); B21: 7 (Atlantic salmon); B25: 12 (haddock); B54: 21 (cod); B81 (L. Manitoba fish); B82: 4 (coregonine fish)
- S72 (little-neck clam); S73 (butter clam); S223 (Atlantic salmon); S237 (kokanee and sockeye); S270 (Ont. salmon); S352 (finback whales)
- NR6: 23 (haddock); NR7: 26, NR16: 42 (lobster); NR17: 29 (Atlantic capelin)
- NS2: 3 (lobster)
- MAVOR, JAMES WATT
C1911-14(1): 25; C1914-15: 145; C1917-18: 111; C1918-20: 125; C1: 101, 353
- MAXWELL, BRIAN E.
J9: 164
- MAYFLIES
C1911-14(2): 113, 131; C7: 177
- MEAD, GILES WILLIS
J10: 560
- MEAL (*see* Fish meal)
- MEDCOF, JOHN CARL
J4: 287; J5: 253; J6: 209, 449, 498; J7: 219
B75
S277; S284; S301
- MEDUSAE (*see* Hydrozoa; Jellyfish)
- Melamphaes cavernosus*
B68: 142
- Melamphaes rugosus*
B68: 141
- MELAMPHID, CRESTED
B68: 141
- MELAMPHID, HIGH-SNOUTED
B68: 142
- Melanogrammus aeglefinus* (*see* Haddock)
- Menidia notata*
S234
- MERGANSERS (*see* Birds)
- MERISTIC CHARACTERISTICS (*see* Morphology)
- Merluccius bilinearis*
NS8: 27
- Merluccius productus* (*see* Hake)
- Mesoplodon densirostris*
S235
- METABOLISM (*see also* Physiology)
J6: 45 (bacteria)
S388 (marine bacteria)
- Microgadus proximus*
B68: 131
- Microgadus tomcod* (*see* Tomcod)
- MICROORGANISMS (*see also* Bacteria)
S370, S375 (role and control)
- Micropterus dolomieu*, *M. salmoides*
S144
- Microstomus pacificus* (*see* Sole, dover)
- MIDGES (*see* Chironomidae)
- MIDSHIPMAN
B68: 336
- MIGRATION AND MOVEMENT
C1914-15: 115 (eel); C1915-16: 43 (coho);
C1921: 106 (Pacific herring); C1: 7 (lumpfish), 455 (starfish); C3: 145 (*Littorina*), 170 (*Buccinum*), 265 (Pacific salmon); C4: 453, 471 (Pacific salmon); C5: 3, 37, 55 (sockeye); C6: 184 (whitefish fry), 241 (haddock); C8: 346 (sockeye), 433 (cod)
- J1: 159 (Atlantic salmon), 269 (lobster); J2: 311 (sockeye), 383 (pink salmon), 391 (Atlantic salmon); J3: 26, 421 (sockeye), 403 (pink salmon); J4: 1, 96, 323 (Atlantic salmon), 69 (rainbow trout), 184, 192 (sockeye), 233 (pink salmon), 349 (herring) 491 (brook trout); J5: 84 (starfish), 164 (plankton), 176, 258, 471 (brook trout), 485 (Atlantic salmon) J6: 158 (coho, spring salmon), 164 (pilchard), 217 (pink salmon), 245 (*Salmo gairdneri*), 311, 399 (Atlantic salmon), 483 (sockeye); J7: 88 (sockeye), 417 (herring), 432 (Atlantic

- salmon); J8: 103 (sockeye), 164, 241 (Pacific salmon), 374 (B.C. bottom fishes); J9: 304 (Pacific salmon), 450 (pink and chum salmon); J10: 1 (herring), 293 (coho), 326 (Arctic char), 459 (lemon sole), 548 (spring salmon and trout); J11: 107, 310 (Pacific salmon), 351 (Atlantic dogfish), 362 (salmon parr), 472 (and sense of smell, in coho), 550 (cutthroat trout)
- B14, B15, B26, B27 (Pacific salmon); B16: 3 (sockeye); B21: 6, B51 (Atlantic salmon); B25: 9 (haddock); B31 (pink and chum salmon); B40 (coho); B41 (spring salmon); B57: 12 (Margaree R. salmon); B62: 16 (Pacific crab); B66, B74 (pink salmon); B79: 6 (trout); B86 (salmon at Moricetown Falls); B98 (beluga)
- S42, S67 (sockeye); S131 (brown trout); S164 (lobster); S165, S168, S187, S192, S256, S269, S270, S275, S291, S298, S333 (Atlantic salmon); S171, S193, S221, S240, S247, S254, S260, S285, S327, S343, S363 (B.C. herring); S196, S220, S239, S246, S253, S261 (pilchard); S257, S268 (pink salmon); S293 (European fishes); S300 (Atlantic fishes); S321 (speckled trout—P.E.I.); S322 (Vancouver Island salmon); S356 (high dams and Pacific salmon)
- NR1: 66 (Atlantic salmon); NR8 (lobster); NR14: 9 (Atlantic cod); NR12 (Atlantic salmon); NR15: 55 (Atlantic spiny dogfish)
- NS15: 10 (lobster)
- MILLAR, FREDERICK GRAHAM
J9: 329
- MILLER, F. R.
C1906-10: 277
- MILLER, RICHARD BIRNIE
J6: 334; J7: 176, 190; J11: 550
B72: 31; B95
- MILLER'S THUMB (*Collus cognatus*)
S144
- MILNE, DONALD JOHNSTON
B86
- MINERAL CONSTITUENTS
C1921: 125 (lobster)
J2: 469 (salmon and pilchard), 473 (coho)
- MINK
B92 (fish as food)
- MINNOWS
B56: 38; B94: 18
S144
- MIRAMICHI R. AND BAY, N.B.
C1917-18: 149, 169 (diseased salmon);
C1918-20: 181 (new algae)
J1: 159 (Atlantic salmon)
B70 (smelt)
S336 (Greenland cod)
- MIXING AND STRATIFICATION (IN NATURAL WATERS)
J1: 133, 171, 227; J2: 141
- MODELS, HYDROGRAPHIC
B83: 76 (Alberni Harbour)
- Modiolus demissus* (see also Mussels)
B77: 25
- Mola mola* (see Sunfish, ocean)
- MOLLUSCS (see also Bivalves; Clams; Gastropoda; Mussels; Nudibranchiata; Oysters; Pteropoda)
C1911-14(1): 43; C1911-14(2): 95
J9: 164 (vitamin B₁₂)
- Molva molva*
J11: 11
- MOORE, LEONARD PATRICK
C7: 413
- MOORHOUSE, VICTOR HENRY KINGSLEY
C7: 465
- MORICETOWN FALLS, B.C.
B86 (salmon migration)
- Morone americana* (see Perch, white)
- MORPHOLOGY
C1901: 20 (*Mya*), 55 (mackerel shark);
C1906-10: 277 (lobster); C7: 477 (elasmobranch viscera); C8: 207 (*Raja*—arteries)
J1: 239 (*Raja*—nerves), 261 (*Raja*—claspers), 469 (barnacles—nerves); J2: 209 (*Chironomus*); J5: 3-17 (herring); J6: 140 (*Paphia*), 209 (oyster), 419 (*Themisto*);
J7: 505 (*Sarcotaces*); J10: 76 (barnacles—central nervous system); J11: 107 (nares)

- of fishes), 130 (ear of fishes), 171 (meristic characters of yellowtail flounder), 652 (hybrid char), 904 (chars)
- B1: 20 (plaice scales); B7: 9 (anglerfish viscera); B68: 8 (fish—general)
- S1 (Isopoda); S2 (Argulidae); S4 (shrimps); S35 (lymphoid organ, spleen, etc., of shark); S36 (velar apparatus of lamprey); S39 (*Chirodotea*); S53 (brain of ratfish); S78 (ascidians); S99 (pancreas of skate); S100 (adductor muscle of scallops); S169 (hermit crabs); S199 (anterior setae of Polychaeta); S223 (thyroid gland of Atlantic salmon); S231 (fry of coho)
- NR2: 55 (Atlantic capelin)
- MORPHOMETRY (*see* Size)
- Morrhua ductor*
J11: 248
- MORRIS, ROBERT J.
C1: 439
- MORTALITY, FISHING (*see* Abundance, Exploitation)
- MORTALITY, NATURAL OR TOTAL (*see also* Lethal limits)
C1918-20: 29 (B.C. marine organisms—severe winter); C2: 135 (trout fry), 245 (shad); C3: 367 (trout); C5: 203 (trout fry), 361 (*Enchelyopus*); C6: 180 (whitefish eggs)
J3: 26 (sockeye); J4: 184 (sockeye); J5: 43 (theory), 84 (starfish), 172 (salmon lice), 476 (stream fishes—heat); J7: 224 (pink salmon); J8: 103 (sockeye), 383 (brook trout), 479 (flounders); J9: 450 (pink and chum salmon); J10: 293 (coho), 413 (whitefish); J11: 298 (whitefish), 339 (sockeye), 362 (salmon parr), 827 (lake trout)
B1: 25 (plaice); B5: 8 (lobster); B60: 38, 74 (oysters)
S40 (marine animals); S251 (rainbow trout); S283 (P.E.I. oysters—disease); S289 (Atlantic salmon); S292 (natural vs. fishing); S293 (European work); S294 (salmon); S295 (young sockeye); S296 (survey); S340 (related to predators); S359 (effect on population); S364 (Pacific herring and halibut)
- MORTALITY IN SHIPPING LIVE ANIMALS
C1911-14(1): 73 (freezing mummichog)
B33 (lobster); B44 (oyster)
- MORTON, BETTY HELEN
J6: 326
- MOSER R., N. S.
J5: 176 (sea-running brook trout)
- MOSHER L., SASK.
B95: 33 (cisco control)
- MOSSOP, BESSIE K. E.
C1921: 15
S15
- MOTTLEY, CHARLES McCAMMON
C4: 471; C8: 253
J2: 359; J3: 169; J4: 69
S131; S141; S163; S214; S215; S230; S249; S250; S251
- MOULDS
J5: 276, 287; J6: 303; J7: 104, 128; J11: 901
- MOULT
J6: 152 (lobster)
B5: 6, B43: 11 (lobster); B30: 17 (crabs)
NR18: 12 (lobster)
NS15: 24 (lobster)
- MOUNCE, IRENE
C1: 39, 81
- MOUNSEY, YVONNE ADELAIDE
J6: 359
- MOVEMENTS (*see* Migration)
- MUD DEPOSITS (ON NETS)
C7: 295
- MUMMICHOG (*Fundulus heteroclitus*)
C1901: 12; C1911-14(1): 73; C7: 45
S57; S70; S234
- MUNRO, JAMES ALEXANDER
B17: B55
S212; S224; S227
- MURPHY, JOHN FRANCIS
NS10
- MURRAY, J. C.
C1901: 18
- MUSCLE (*see also* Flesh)
C1918-20: 185 (lobster); C3: 437, 457, 467 (fish); C4: 95 (clam), 227 (haddock, lob-

ster, clam), 501 (skate); C6: 1, 375 (haddock), 341 (dogfish); C7: 147 (haddock); C8: 123, 131 (haddock), 311 (halibut), 531 (cod, etc.)
 J4: 63 (cod), 229 (N.S. fish); J5: 32, 197, 203 (cod), 267, 411 (halibut); J6: 152 (lobster), 403 (cod); J7: 585 (cod), 594, 599, 608 (fish); J8: 325; J9: 388 (cod)
 S52 (Atlantic fishes); S63 (haddock and other trawl-caught fish); S81 (B.C. fishes); S100 (scallop)

MUSKELLUNGE
 J8: 347

MUSSELS, FRESHWATER
 C1917-18: 75

MUSSELS, MARINE
 C1921: 15; C4: 121
 J2: 89; J11: 816
 B60: 54; B75: 1; B77: 15
 S15

Mustelus canis (see Dogfish, Atlantic smooth)

MUTTONFISH (see Eelpout)

Mya arenaria (see Clams, Atlantic)

Mycophum californiense
 B68: 113

Mylocheilus caurinum (see Peamouth chub)

MYOSIN
 J7: 585, 599

Myoxocephalus (see also Sculpins)

Myoxocephalus aeneus
 S234

Myoxocephalus octodecimspinosus
 S234

Myoxocephalus polyacanthocephalus
 B68: 259

Myoxocephalus scorpius groenlandicus
 B73: 3

MYSIDACEA (CRUSTACEANS)
 C8: 181 (Pacific)
 J4: 281 (Atlantic)
 B78: 22 (*Mysis*—Great Slave L.)

Mytilus edulis (see Mussels)

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NADEAU, ARISTIDE
 J4: 355; J5: 121

NANAIMO, B.C. (see Departure Bay)

NASS R., B.C.
 C7: 295 (mud on gill nets)

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 S334 (recreational resources)

NAUBERT, JACQUES
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 B68: 266

NEAVE, FERRIS
 C4: 157, 185, 197, C7: 177
 J6: 140, 158, 245; J9: 450
 B74; B84
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 S334; S339; S382; S391

Nectolixiris pelagicus
 B68: 306

NEEDLEFISH
 S234 (Malpeque Bay)

NEEDLER, ALFRED WALKER HOLLINSHEAD
 C3: 307, 423; C4: 265; C6: 241
 J5: 8, 236, 253
 B22; B44; B48; B75
 S234; S272; S283; S296

NEEDLER, ALFREDA BERKELEY (see also Berkeley, A. A.)
 C7: 283; C8: 237
 J4: 88; J5: 8, 361, 459; J7: 490
 B25; B75
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NEILANDS, JOHN BRIAN
 J6: 368; J7: 94

NELSON R., MAN.
 B79 (trout)

NELSON, JULIUS
 C1915-16: 53

NEMATODA, PARASITIC
 C8: 71, 161, 169
 J10: 539; J11: 267, 673, 894
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- Nemichthys avocetta*
B68: 122
- Neoliparis atlanticus*
S203
- Neoscopelarchoides dentatus*
B68: 118
- NERVOUS SYSTEM (*see* Physiology)
- NETS (*see* Fishing methods)
- NEW BRUNSWICK (*see also* individual localities)
J1: 171 (tidal mixing, Reversing Falls); J9:
213 (current in Grand Manan Channel)
- NEWCOMBE, CHARLES F.
C1917-18: 5
- NEWFOUNDLAND (*see also* individual localities)
J5: 23 (Pteropoda); J11: 351 (dogfish
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- NEWTON, DOROTHY E.
C1: 377
- NEWTON, MERLIN V. B.
C7: 341
- NEY, PHYLLIS WINIFRED
J7: 563
S310
- NICHOLLS, JOHN V. V.
C7: 45, 447; C8: 137, 145, 207
- NICOLA L., B.C.
B42: 28 (productivity)
- NILE CR., B.C.
J11: 933
- L. NIPIGON, ONT.
C6: 184 (whitefish)
- NITRATE (*see also* Sodium nitrate)
J2: 1
- NITRITE (*see also* Sodium nitrite)
J8: 195
- NITROGEN
J7: 238
S116
- NOBLE, C.
C2: 115
- NOOTKA SOUND, B.C.
J3: 43 (oceanography)
- NORRIS, MARGARET ELLEN
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- Notacanthus chemnitzii*
S235
- Notacanthus phasganorus*
S226
- Notemigonus crysoleucas*
S213
- Notorynchus cepedianus* (*see* Shark, spotted
cow)
- NOVA SCOTIA (*see also* individual localities)
J2: 41 (lobsters); J3: 348 (new annelid)
J5: 105 (cod); J6: 498 (worm in oysters);
J7: 95 (thiaminase in animals), 248 (fer-
tilization of streams); J11: 171 (yellowtail
flounder), 454 (polychaetes)
- NUDIBRANCHIATA (*see also* Gastropoda)
S12, S30, S49 (Pacific)
- NUTRIENTS (IN WATER)
J1: 299; J10: 253, 283
- NUTRITIVE VALUE (*see also* Vitamins)
J2: 439 (sockeye and pink salmon), 457
(pilchard), 461 (lingcod), 463 (canned
coho), 469 (canned salmon and pilchard),
473 (coho), 477 (B.C. oysters); J5: 344
(B.C. crabs, shrimps, clams); J7: 35 (ling-
cod, halibut, lemon sole, Pacific salmon),
94 (aquatic animals), 513 (Pacific herring,
salmon, rockfish), 563 (meal, stickwater,
solubles, liver, viscera); J8: 117 (Pacific
salmon); J9: 129 (cod liver), 164 (inverte-
brates); J10: 64 (herring meal); J11: 355
(cod liver residues)
B25: 28 (haddock); B46 3 (pilchard oil);
B92 (fish for mink)
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S373, 374 (herring meal)
- NUTT, DAVID CLARK
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J4: 228 (W. T. MacClement), 308 (J. Playfair McMurrich); J5: 1 (Philip Cox); J6: 204 (John Dybhavn), 207 (Arthur Willey), 459 (Frère Marie-Victorin); J7: 213 (A.T. Cameron)

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B86 (Moricetown Falls, B.C.); B101 (Babine R., B.C.)
NR12 (Newfoundland rivers)

OCEANOGRAPHY, ARCTIC

J8: 378
B88
S304; S361

OCEANOGRAPHY, ATLANTIC

C1906-10: 281; C1914-15: 55, 145, 151, 163;
C1915-16: 72; C1917-18: 127, 295; C1: 101, 353; C4: 137, 271; C6: 255; C7: 91 (Hudson Bay), 256; C8: 398
J1: 121, 133, 227, 279; J2: 115, 141; J3: 189; J4: 339, 378, 424; J5: 236, 377; J6: 460; J7: 1, 355; J8: 332; J9: 223; J10: 97, 146, 148, 155, 177, 394; J11: 32, 42, 198, 229, 404, 419
B5: 10; B22: 7
S20; S21; S27; S43; S44; S48; S136; S139; S178; S182; S201; S203; S204; S210; S211; S226; S271; S316; S317; S346; S358
NR5: 13; NR16: 6

OCEANOGRAPHY (GENERAL)

C7: 73 (absorption of light by water)
B39: 6 (polluted waters)
S103 (measuring ultra-violet light); S105 (energy value of sunlight and moonlight); S172 (chlorinity-salinity conversion); S177 (corrections for reversing thermometers); S189 (colorimetric sea-water analyses); S191 (units for sea-water analysis); S241 (danger of silver nitrate crystals with alcohol); S293, S294 (effect of conditions on fish); S306 (meteorology, geophysics, etc.); S345 (fresh water entering the sea); S347 (oxygen determination); S355 (new water-bottle)

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C1914-15: 133; C1918-20: 35; C1: 41, 73, 81; C4: 9; C7: 295
J3: 43, 93; J5: 398; J8: 378; J9: 42; J10: 125; J11: 14, 501, 799, 853

B15: 7; B34: 12; B39: 3; B80: 17; B83: 1; B91: 3
S19; S56; S67; S75; S83; S112; S123; S174; S190; S344; S345; S376

Occa verrucosa

B68: 283

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S245 (B.C. species)

ODONATA (*see* Insects, aquatic)

ODOURS, REACTION TO

J11: 107 (fishes), 310 (coho and spring salmon), 472 (coho)

O'DONOGHUE, CHARLES HENRY

C1: 143, 441, 455; C3: 47, 247
S8; S11; S12; S30; S35; S49

O'DONOGHUE, ELSIE

C1: 143; C3: 47
S12

Odontopyxis trispinosus (*see* Sea-poacher, pigmy)

OGDEN, ERIC

S119

OIL (*see also* Bodying; Decolorization; Drying; Hydrogenation; Liver oil; Pigments; Unsaponifiables; Viscera oil; Vitamins)

OIL, ANALYTICAL VALUES

C8: 507
J2: 285; J4: 478
B89: 359
S87; S152

OIL, CHEMICAL REACTIONS

C7: 505
J2: 13
B37: 21; B59: 107, 420; B89: 107

OIL, COMPOSITION

B37: 39; B59: 31; B89: 26

OIL, DETERIORATION

B37: 25; B59: 175; B89: 168

OIL, FATTY ACIDS OF

J4: 59; J6: 109; J9: 393
B37: 16; B59: 25; B89: 18
S150; S151; S152; S331; S349; S380

- OIL, INDUSTRIAL USES
B37: 97; B59: 320; B89: 286
- OIL, METABOLISM OF FATS
B59: 97; B89: 98
- OIL, NUTRITIONAL USES
J7: 109
B37: 87; B46: 1; B59: 310; B89: 273
S299
- OIL, OTHER COMPONENTS
B59: 83; B89: 84
- OIL, PHYSICAL PROPERTIES
B37: 21; B59: 152, 420; B89: 145
S87; S150; S151
- OIL, PIGMENTS
B59: 97; B89: 78
- OIL, PROCESSING
C8: 321
J1: 487; J8: 189
B59: 280; B89: 241
S330
- OIL, PRODUCTION
B37: 51; B46: 1; B59: 210; B89: 180
NS3: 5; NS11: 7
- OIL, PROPERTIES OF INDIVIDUAL SPECIES (*see also* under each species)
B37: 125; B59: 383, 409, 412; B89: 312, 345, 347
NS3: 20; NS5: 5
- OIL, REFINING
B37: 72; B59: 256; B89: 215
S330
- OIL, SPECIFICATIONS
B89: 375
- OIL, VITAMINS
J11: 357(B)
B59: 54; B89: 46
S55 (A); S86 (D); S97 (D); S299 (general)
- OKANAGAN LAKES, B.C.
B56:8 (physical and chemical conditions), 17
(bottom fauna), 27 (fish), 39 (whitefish),
51 (fish cultural problems)
- OLIGOCHAETA (*see also* Annelida)
J9: 204
- Oligocottus maculosus*
B68: 269
- Oligocottus rimensis*
B68: 268
- Oligocottus snyderi*
B68: 270
- Oncorhynchus* (*see* Salmon, Pacific)
- Oncorhynchus gorbuscha* (*see* Salmon, pink)
- Oncorhynchus keta* (*see* Salmon, chum)
- Oncorhynchus kisutch* (*see* Salmon, coho)
- Oncorhynchus nerka* (*see* Salmon, sockeye)
- Oncorhynchus nerka kennerlyi* (*see* Kokanee)
- Oncorhynchus tshawytscha* (*see* Salmon, spring)
- Oneirodes bulbosus*
B68: 338
- ONOFREY, EVA
S379; S388
- ONTARIO (*see also* individual localities)
C1917-18: 75 (freshwater mussels); C2: 135
(trout planting in two creeks); C6: 165
(whitefish, Bay of Quinte), 445 (whitefish)
J11: 362 (salmon in Duffin Creek)
- L. ONTARIO
C1902-05: 22 (effects of dynamite), 46
(effects of sawdust); C6: 225 (ciscoes)
J9: 325 (temperature)
- ОПАВ
B68: 138
- Ophiodon elongatus* (*see* Lingcod)
- OPHIURA (BRITTLE STARS)
C3: 317
- ORGANS (*see* Kidney; Liver; Viscera, etc.)
- OSBURN, RAYMOND CARROLL
C7: 361
- OSMERIDAE (*see* Smelts)
- Osmerus mordax* (*see* Smelt, American)

OSMOPHILISM

J11: 901 ("dun" mould)

OSTRACODA (CRUSTACEANS)

C2: 295; C6: 397

J9: 16; J11: 245

S9; S50; S104

Ostrea gigas, *O. lurida* (see Oysters, Pacific)

Ostrea virginica (see Oysters, Atlantic)

OTARIIDAE (see Seals, fur)

OTOLITHS (see Age determination)

OUTRAM, DONALD NOEL

S343; S363

OXYGEN DETERMINATION (see Limnology;
Oceanography; Pollution)

OXYGEN REQUIREMENTS

J11: 933 (salmon eggs)

Oxylebius pictus

B68: 235

OYSTER FARMING (see Culture)

OYSTERS (ATLANTIC)

C1906-10: 217, 281; C1914-15: 55, 145;

C1915-16: 53; C7: 283

J4: 287; J5: 253, 361; J6: 209, 449, 498;
J7: 545

B22; B34: 29; B44; B48; B60; B77: 28
S277; S283

OYSTERS (PACIFIC)

J2: 477

B34

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PAINT FILMS (see Films)

PALATABILITY (OF FISH, ETC.—see also Quality)

C7: 57 (haddock as dog food)

J7: 449 (cod fillets)

B1: 12 (plaice); B2: 22 (lumpfish); B3: 9
(angler); B4: 10 (muttonfish); B10: 17
(lobster paste)

Pallasina barbata

J9: 143

PANCREAS

C7: 1

S17; S22; S99

PANDALIDS, *Pandalus* (see Shrimps)

PANTOPODA (ARTHROPODA)

AF10n

Paphia (see Clams, Pacific)

Paralichthys oblongus

NS14: 21

Paraliparis deani

B68: 305

PARASITES (see also Cestoda; Copepoda;
Nematoda; Protozoa; Trematoda)

C1917-18: 152, 171; C2: 459; C5: 193;
C6: 445

J7: 186; J8: 207; J11: 267 (on marine
mammals), 673 (B.C. fishes)

B4: 11; B62: 13; B78: 22; B93: 37; B98: 13
S94; S108; S111; S149; S202; S243; S311
NR9 (on trout), NR16: 39 (on lobster),
NR17: 135 (on capelin)

Parophrys vetulus (see Sole, lemon)

PASSAMAQUODDY BAY

C1901: 1 (Atlantic Biological Station), 19
(clams), 41 (flora); C1906-10: 1 (Atlantic
Biological Station), 83 (crustaceans), 243
(diatoms), 265 (flora), 281 (oysters and
oceanography); C1911-14(1): 1 (plank-
ton), 25 (Sporozoa), 43 (Mollusca), 47
(fungi); C1914-15: 151 (oceanography);
C1915-16: 1 (winter plankton); C1917-18:
175 (smoking haddock), 295 (oceanog-
raphy); C1918-20: 49 (plankton), 63
(diatoms), 99 (spoilage); C1921: 17 (mus-
sels); C2: 307 (gribble); C4: 527 (free-
living copepods); C5: 361 (*Enchelyopus*),
423 (parasitic copepods); C7: 127 (silica
in water), 277 (new polychaete); C8: 357
(diatoms)

J2: 89 (mussels), 95, 401 (herring); J5: 365
(copepods as herring food); J10: 1
(herring), 97 (oceanography); J11: 816
(parasitic copepods), 963 (flounder para-
sites)

S3 (copepods); S5 (fauna); S15 (mussels);
S32 (diatoms); S111 (protozoan fish
parasites); S159 (rare fishes); S211
(international investigations); S346 (sar-
dines)

- PASTE
B10 (lobster)
- PATHOLOGY (*see also* Diseases)
C2: 129
- PATTERSON, OLIVE GAIR
C1917-18: 175
- PAUL L., B.C.
J4: 69 (rainbow trout)
B42: 3 (productivity studies)
S214, S215, S230, S250, S251 (rainbow trout)
- PEAMOUTH CHUB (*Mylocheilus caurinum*)
B55: 34 (food); B56: 36
S144
- PEARL-EYE
B68: 118
- Pecten* (*see* Scallops)
- PENTOSE COMPOUNDS (*see* Carbohydrates)
- Peprilus simillimus* (*see* Pompano, California)
- PEPTONES
J7: 552
- Perca flavescens* (*see* Perch, yellow)
- PERCH, BLUE (*Tagniotoca lateralis*) (*see* Sea-perch, blue)
- PERCH, SILVER (*Phanerodon furcatus*) (*see* Sea-perch, white)
- PERCH, WHITE (*Morone americana*)
J7: 22
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- PERCH, YELLOW (*Perca flavescens*)
B81: 4; B94: 20
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- Percopsis omiscomaycus* (*see* Trout-perch)
- PERIODICITY (*see* Abundance)
- PERRY, H. MARGARET
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- Petromyzon marinus* (*see* Lamprey, sea)
- pH (*see* Hydrogen-ion)
- Phanerodon furcatus* (*see* Sea-perch, white)
- PHOCIDAE (*see* Seals, hair)
- Pholis gunnellus*
S234
- Pholis laetus*
B68: 180
- Pholis ornatus*
B68: 179
- PHOSPHORUS COMPOUNDS
J6: 152 (lobster); J7: 608 (skeletal muscle);
J10: 253 (phytoplankton), 283 (plankton)
- PHOTOSYNTHESIS
C6: 41 (marine algae)
- PHYSICAL CONDITIONS OF WATER (*see* Limnology; Oceanography; Physiography)
- PHYSICS, GENERAL
B11
- PHYSIOGRAPHY
C1906-10: 4 (St. Andrews, N.B.), 295 (Departure Bay, B.C.); C1915-16: 109 (St. Croix R. and Passamaquoddy Bay, N.B.)
J8: 1 (Great Slave L.)
B42: 3 (Paul L., B.C.); B56 (Okanagan L., B.C.); B57: 4 (Margaree R., N.S.); B72 (N.W.T.); B83: 5 (Alberni Inlet, B.C.); B84: 3 (Cowichan R., B.C.); B86 (Morice-town Falls, B.C.); B94: 2 (Arctic and Subarctic)
S72 (B.C. clam districts); S123 (B.C. fiords); S163 (Jones L., B.C.); S178 (Scotian shelf); S270 (Ontario salmon streams); S318 (P.E.I.)
- PHYSIOLOGY, CIRCULATORY SYSTEM (*see also* Blood)
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C8: 207
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- PHYSIOLOGY, GENERAL
B85: 19 (Pinnipedia)
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- in lingcod); S95 (Ascidacea); S169 (hermit crabs); S207 (overexertion causing death); S388 (nutrition of marine bacteria)
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- PHYSIOLOGY, INTEGUMENT AND SKELETON
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- PHYSIOLOGY, NERVES AND MUSCLES
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C6: 335; C7: 31, 447, 477; C8: 145
J1: 239, 251, 261
S8; S33; S47; S51; S53; S66; S100; S157
- PHYSIOLOGY, RESPIRATORY SYSTEM
C1901: 10; C1902-05: 24; C2: 110; C5:
193; C6: 315; C7: 71
J4: 267; J5: 485; J6: 435
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- PICKARD, GEORGE LAWSON
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- PICKLING (see also Salt fish)
C1: 279 (herring)
B19 (mackerel); B47: 21, B52 (herring)
- PIGMENT
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J3: 469; J4: 55, 209; J5: 276; J7: 184;
J9: 169; J10: 320
B59: 76; B89: 78
- PIKE, GORDON CHESLEY
J8: 275; J10: 320
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- PIKE-PERCH (see Walleye)
- PILCHARD (BIOLOGY)
C7: 245
J6: 164
B36; B38; B68: 77
S120; S128; S176; S183; S194; S196;
S220; S239; S246; S253; S261; S264
- PILCHARD (TECHNOLOGY)
C6: 355, 365 (oil); C7: 413 (oil), 521 (oil);
C8: 321 (oil)
J1: 487 (oil); J2: 13 (oil), 457, 469; J3: 177;
J4: 55, 59 (oil); J5: 428, J6: 109 (oil)
B35; B36: 19, B37: 125 (oil); B39; B46,
B59: 383, B89: 316 (oil)
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- PINHEY, KATHLEEN F.
C3: 179, 331
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- PIPE-FISH (ATLANTIC) (*Siphostoma fuscum*)
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- PIPE-FISH (PACIFIC) (*Syngnathus griseo-*
lineatus)
B68: 127
- PISCICIDES (see Poisons)
- PITUITARY GLAND
J11: 57 (of salmon)
- PIVNICK, HILLIARD
J7: 378
- PLAICE, AMERICAN (*Hippoglossoides plates-*
soides)
J10: 539 (parasite); J11: 954 (trematodes)
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NR4: 8
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- PLANKTON (ATLANTIC)
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217; C1918-20: 49, 85, 93; C3: 179,
331; C8: 357
J1: 279; J2: 95, 422; J3: 189; J5: 164;
J7: 502; J9: 223; J10: 211; J11: 239
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tistical treatment of sampling)

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 J8: 383; J9: 417; J10: 224, 238, 253, 283;
 J11: 479, 638
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C1: 81; C2: 531; C7: 249
 S80; S98; S123

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C8: 531

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J11: 22, 803 (tidal measurements)

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C4: 1 (for woodborers); C6: 423 (metals of
 water sampling bottle); C7: 67 (fresh
 water toxic to *Pseudopleuronectes*)
 J7: 490 (toxicity in shellfish); J8: 486 (metals
 toxic to lobsters); J10: 253 (phyto-
 plankton autotoxins and antibiotics)
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 S137, S213 (copper sulphate in L. Jesse,
 N.S.); S138, S206 (copper sulphate in
 various lakes); S229 (copper sulphate and
 rotenone in N.S. lakes); S242 (rotenone
 in Potter's L., N.B.); S311 (survey of use
 in Canada)

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B68: 49

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C1901: 61; C1917-18: 111; C3: 469; C8:
 531 (plastic from muscle)
 B7: 7; B59: 407 (oil), B89: 340 (oil)
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 (sawdust); C2: 69, C5: 436 (sewage)
 J5: 1, J7: 55 (sewage)
 B39 (pilchard waste); B60: 78 (oysters as
 carriers); B72: 92 (N.W.T.); B83 (pulp-
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 tylia gigantea*); C2: 285, C3: 405, C4: 305,
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 branchus allanticus*), 309 (west coast of
 Vancouver Is.)
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 (Hudson Bay), 472 (Bay of Fundy), 498
 (*Polydora*); J7: 363 (*Odontosyllis* at
 Bermuda); J8: 488 (*Trypanosyllis ingens*);
 J10: 85 (*Micronereis nanaimoensis*); J11:
 326 (*Dodecaceria fewkesi*), 454 (new
 records), 507 (eastern Arctic)

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 S5 (Atlantic Biological Station); S10 (man-
 ganese in tubes); S13 (pentose); S14
 (organic constituent of tubes); S65 (new
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 S153 (Spionidae); S181 (Syllidae); S199
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B68: 143

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- PORGY
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B68: 336
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B68: 187
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- PORPOISE
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J11: 69 (salmon behaviour), 624 (limnology)
- POTTER, GILBERT DAVID
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- POUT (*see* Bullhead; Burbot; Eelpout; etc.)
- PRAWNS (*see* Shrimps)
- PREDATORS (*see also* Birds)
C1915-16: 41 (of coho); C1917-18: 5 (sea-lions); C1921: 30 (of mussels); C1: 291 (of fish near Nanaimo); C2: 138 (of trout fry), 411 (of sockeye), 458 (of cunner); C3: 367 (of trout); C5: 80 (of sockeye), 203 (of trout)
J2: 89 (of mussels); J5: 293, 315 (of salmon); J9: 450 (of pink and chum salmon); J10: 211 (theory); J11: 362 (on salmon parr), 609 (effect on survival)
B25: 21 (of haddock); B30: 17 (of crabs); B60: 43 (of oysters); B93: 47 (seals)
S50 (of Entomostraca); S141 (pond culture); S148 (of Pacific salmon); S160 (fur seals); S205 (fish culture); S295 (of sockeye); S340 (theory); S341 (of trout); S385 (control at Crecy L., N.B.)
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- PREDICTION (*see* Abundance)
- PRÉFONTAINE, GEORGES
J6: 458
- PRESERVATIVES (FISHERY PRODUCTS)
J3: 439; J4: 327, 355; J5: 36, 121, 148, 244, 249, 265, 276; J6: 17, 63, 233, 257, 349, 441; J7: 101, 137, 155, 221, 237, 421, 461, 536; J10: 69
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- PRINCE ALBERT PARK, SASK.
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C1901: Preface, 1, 55; C1902-05: *iii*, 95, 121; C1906-10: *v*; C1911-14(1): *i*; C1911-14(2): *i*; C1915-16: *v*, 86; C1917-18: *v*; C1918-20: 5
J3: 186
- PRINCE EDWARD ISLAND (*see also* individual localities)
C1906-10: 217 (oysters and clams); C1914-15: 55; C1915-16: 53 (oysters)
S278, S279 (ponds in National Park); S283 (oyster disease); S318 (speckled trout)
- Prionace glauca* (*see* Shark, blue)
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B68: 261
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- PRITCHARD, ANDREW LYLE
C5: 467; C6: 225
J2: 383; J3: 403; J4: 141, 233; J6: 217, 392; J7: 224
B14; B31; B40; B41; B65; B66
S129; S148; S232; S236; S248; S268; S287; S288
- PROCESSING (*see also* Freezing; Pickling; Salt fish; Smoking)
B9 (dried fish); B10 (lobster paste); B19: 6 (pickled mackerel); B20 (frozen haddock); B37, B59: 256, B89: 215 (oils); B61: 63 (grading oysters); B90: 13 (salmon)
NS1: 18 (various methods for codfish)
- PRODUCTIVITY (*see also* Abundance; Limnology)
J8: 369 (clams), 383 (Charlotte Co. lakes, N.B.); J10: 224 (plankton in Western lakes); J11: 624 (Port John L., B.C.)
B42: 1 (Kamloops lakes); B56: 19 (Okanagan L.); B72: 87 (N.W.T.)
S37 (of lakes); S295 (method of computation for fishes)

Prosopium (ROUND WHITEFISHES)

C8: 6 (*quadrilaterale*)

J5: 131, 337 (*williamsoni*); J10: 51 (*cylindraceum*)

B32: 44, B55: 37, B56: 39 (*williamsoni*);

B72: 41, B82: 1, B94: 16 (*cylindraceum*)

S144 (*quadrilaterale, williamsoni*)

PROTEIN FRACTIONS

J7: 585 (extraction), 594 (colorimetric estimation), 599 (denaturation by freezing)

PROTEINS (*see also* Nutritive value)

C1921: 125 (lobster); C4: 325, C6: 1 (haddock); C8: 311 (halibut), 531 (plastic from)

J3: 177 (pilchard stickwater); J4: 412 (Atlantic cod); J7: 35 (lingcod, lemon sole, Pacific salmon, halibut); J8: 74 (Maillard reaction), 325 (Atlantic cod); J9: 129, 390 (Atlantic cod)

S299 (by-products); S324 (denaturation); S335 (separation of cobalamines); S351 (Maillard reaction)

NS11: 11 (fish meal)

PROTOZOA (*see also* Flagellata, Foraminifera)

C1911-14(1): 25; C1914-15: 83; C2: 507, 531; C7: 213

J6: 419; J7: 502; J11: 673

PF1a (Lobosa), 1b (Reticulosa), 1c (Heliozoa), 1d (Radiolaria); PF1e (Mastigophora); PF1f (Ciliata), 1g (Suctoria)

S11; S28; S76; S88; S111; S166; S243

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B68: 313

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B94: 25

Pseudomonas (*see* Bacteria)

Pseudopleuronectes americanus (*see* Flounder, winter)

Pseudopleuronectes dignabilis

NS14: 19

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S226

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B68: 278

PTEROPODA

J5: 23; J11: 244

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B68: 189

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B28; B87

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S301 (by gulls)

PUGSLEY, LEONARD IRVING

J4: 312, 396, 405, 472; J5: 344, 428

PULP-MILL POLLUTION (*see* Pollution)

PUMPKINSEED (*Lepomis gibbosus*)

C5: 457

S144

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S234

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J5: 459

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J3: 473; J6: 392

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QUAHAUGS (*see also* Clams, Atlantic)

C1914-15: 73

J7: 545

QUALITY OF FISH (*see also* Palatability; Trimethylamine)

J4: 162 (canned salmon); J5: 197 (Atlantic cod); J6: 303 (dehydrated fish)

B76 (whitefish); B100 (fresh fillets)

S309 (fresh and frozen fish); S324 (frozen and stored fish)

QUAYLE, DANIEL BRANCH
J4: 53; J6: 140; J8: 369
S238; S245

QUEBEC (*see also* individual localities)
C3: 235 (parasite of pike-perch)

QUEEN CHARLOTTE IS., B.C. (*see also* McClinton Creek)
J1: 503 (hydroids)
B40: 3 (tagging coho); B41: 4 (tagging spring salmon); B65: 4 (food of spring and coho salmon); B91: 1 (crabs on Graham Is.)
S147 (hydroids)

QUIGLEY, JOHN PAUL
S58

QUILL-FISH
B68: 189

QUILL LAKES, SASK.
C1921: 155 (diatoms); C1: 125 (fishery possibilities)

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RADCLIFFE, ROLAND WOOTTON
J8: 67

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PF1d

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B68: 333

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B68: 67

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B68: 63

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Raja erinacea (*see* Skates)

Raja kincaidi
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Raja laevis (*see* Skates)

Raja rhina
B68: 62

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S234

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B68: 64

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J7: 137, 237, 522; J9: 393

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C4: 107

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J6: 63, 109; J7: 35, 74; J11: 58

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S13; S47; S53; S58; S81; S82

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AF10m

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J2: 227; J8: 1, 207; J10: 224, 486
B42; B56; B72: 45, 69
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J10: 254 (to environmental conditions—phytoplankton)

- S42 (olfactory sense—salmon); S51 (spinal reflexes—skate); S100 (adductor mechanism of *Pecten*); S207 (of fish out of water); S215 (to full moon—rainbow trout); S275 (to environment); S289 (to environment—Atlantic salmon); S356 (attracting and guiding Pacific salmon)
- RECIPES FOR COOKING FISH
B20: 53
- RECRUITMENT (TO A FISH STOCK)
J5: 43; J11: 559
- RED DEVIL
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- REDDS
J11: 933 (salmon)
- REDFISH (*Sebastes marinus*)
J10: 590; J11: 250
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C1918-20: 125 (elasmobranchs)
B35, B36: 19 (pilchard); B39 (pollution); B47: 26 (herring)
- REED, GUILFORD BEVIL
C2: 1; C4: 227, 257; C5: 103
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C1: 279; C7: 495; C8: 475
J7: 378; J8: 111
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- REGULATION (*see* Management)
- REID, HELEN
C5: 457
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C4: 431
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NS14: 11
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B68: 329
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- REMPEL, JACOB GERHARD
J2: 209
- REPRODUCTION (*see also* Physiology, reproduction)
C1901: 27 (*Mya*); C1915-16: 74 (oyster); C1918-20: 75 (muttonfish); C1921: 107 (Pacific herring); C1: 9 (lumpfish), 292 (Pacific fish); C2: 183 (shad), 439 (cunner); C3: 270 (spring salmon); C4: 19 (*Bankia*), 413 (*Littorina*), 440 (cunner), 443 (mackerel); C5: 33, 47 (sockeye), 361 (*Enchelyopus*), 451 (whitefish), 465 (pumpkinseed); C6: 165 (whitefish), 225 (cisco); C7 255 (bivalves), 325 (ciscoes); C8: 2 (*Coregonidae*), 20 (Hudson Bay fishes), 346 (sockeye), 421 (lobster)
J1: 1 (copepods), 159 (Atlantic salmon); J2: 209 (*Chironomus*), 223 (lobster), 311 (sockeye), 383 (pink salmon); J3: 339 (lobster), 403 (pink salmon); J4: 69 (rainbow trout), 96 (Atlantic salmon), 151, 210 (sockeye), 287 (oysters), 337 (*Zoarces*); J5: 71 (lobster), 84 (starfish), 105 (cod), 145 (*Cladocera*); J6: 37, 311 (Atlantic salmon), 140 (*Paphia*), 217 (pink salmon), 419 (*Themisto*); J7: 176 (lake trout), 224 (pink salmon), 363 (*Odontosyllis*), 417 (herring); J8: 134 (amphipods), 178, 453 (sockeye); J9: 1 (Arctic char), 42 (herring), 223 (zooplankton), 450 (pink and chum salmon); J10: 85 (*Micronereis*), 293 (coho), 326 (Arctic char), 413 (whitefish); J11: 1 (trout perch), 559 (related to density of stock)
B1: 14 (plaice); B2: 11 (lumpfish); B3: 9 (angler); B4: 10 (muttonfish); B5 (lobster); B17 (herring); B18: 3, B54: 17 (cod); B21: 6 (Atlantic salmon); B22: 15, B60: 6 (oysters); B25: 12 (haddock); B30: 11 (crabs); B50, B53: 2 (salmon, artificial); B56: 48 (whitefish); B64: 8 (smelt); B79: 4 (speckled trout); B84: 30 (Pacific salmon); B98: 10 (beluga)

- S6 (*Sagitta elegans*—Bay of Fundy); S12 (nudibranchs); S72, S73 (clams); S95 (ascidians); S164 (lobsters); S194 (pilchard); S214 (trout—loss of weight); S237 (kokanee and sockeye); S272 (haddock); S282, S288 (adequate number of adult Pacific salmon); S289 (Atlantic salmon); S294 (relation to recruitment); S327, S343, S363 (B.C. herring)
- NR2: 38 (Atlantic capelin); NR7: 30 (lobster); NR9 (various trout); NR14: 87 (Atlantic cod); NR15: 13 (Atlantic spiny dogfish); NR17: 33 (Atlantic capelin)
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J10: 211 (theory), 326 (Arctic char)
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B68: 280
- Rhinichthys cataractae* (*see* Dace, longnose)
- Rhinogobiops nicholsi*
B68: 167
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C4: 95, 227
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- RICHARDS, JAMES FREDERICK
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- RICKER, WILLIAM EDWIN
J3: 363, 450; J4: 19, 33, 192; J5: 43, 293, 315; J9: 204; J10: 293; J11: 559
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B68: 335
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C1911-14(2): 95; C1914-15: 55
- ROBERTSON, JAMES GRANT
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B68: 222
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B68: 208; B89: 337 (oil)
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B68: 219; B89: 337 (oil)
- ROCKFISH, BROWN
B68: 223
- ROCKFISH, COPPER
B68: 225; B89: 337 (oil)
- ROCKFISH, GREEN-STRIPED
B68: 221
- ROCKFISH, LOBE-JAWED
B68: 217
- ROCKFISH, LONG-JAWED
B68: 215
- ROCKFISH, OLIVE-BACKED
B68: 216

ROCKFISH, ORANGE (*Sebastes pinniger*)
B59: 403 (oil); B68: 210; B89: 337 (oil)

ROCKFISH, ORANGE-SPOTTED (*Sebastes maliger*)
B68: 226; B89: 337 (oil)
S59; S81; S82

ROCKFISH, RED-STRIPED
B68: 214

ROCKFISH, SPINY-CHEEKED
B68: 230

ROCKFISH, VERMILION
B68: 212

ROCKFISH, WILSON'S
C7: 323
B68: 213

ROCKFISH, YELLOW-STRIPED
B68: 227; B89: 337

ROCKFISH, YELLOW-TAILED
B68: 207

ROCKFISHES (*Sebastes*)
C7: 323
J4: 472 (oil); J5: 148; J7: 35, 505, 513
(amino acid); J8: 76 (Maillard reaction)

ROCKLING, FOUR-BEARDED
C5: 109, 361
J11: 250
NS8: 28

ROGERS, HAROLD M.
J5: 164

RONQUIL
B68: 157

Ronquilus jordani
B68: 157

ROSE, ROBERT CHARLES
J10: 521

ROSEFISH (*see* Redfish)

ROSS, R. A.
B10

ROTENONE (*see* Poisons)

ROTIFERA
C4: 77

RUDDER-FISH, BROWN
B68: 203

ROUND WHITEFISHES (*See* *Prosopium*)

ROUNDWORMS (*see* Nematoda)

RUMINANTS
S377 (stimulants for digestion by)

RUN-OFF (*see* Flow)

RUSTING
C1: 279 (herring)

RYERSON, C. G. S.
C1911-14(2): 165

S

SABLEFISH (*see* Blackcod)

SADLER, WILFRED
C1917-18: 181, 217; C1918-20: 103
B12

Sagitta elegans
S6 (reproduction—Bay of Fundy)

SAILOR-FISH
B68: 266

SAINT (*see* St.)

SALINITY (*see* Limnology; Oceanography;
Salinity, reactions to)

SALINITY, REACTIONS TO
C3: 149 (gastropods); C4: 9 (wood-borers);
C5: 109 (*Enchelyopus*), 475 (skate blood);
C8: 403 (plankton diatoms)
J2: 485 (lobster larvae); J4: 409 (Atlantic
salmon); J5: 84 (starfish), 253 (oysters);
J6: 399 (salmon parr), 498 (mudblister
worm); J8: 164 (chum and coho fry);
J9: 169 (brook trout), 377 (red halophiles),
388 (cod muscle)
B1: 19 (plaice); B5: 3 (lobster); B22: 15,
B34: 11 (oyster); B57: 49 (salmon)
S40 (marine animals); S45 (wood-borers);
S58 (dogfish); S78 (ascidians' digestion)

Salmo clarki (*see* Trout, cut-throat)

Salmo gairdneri, *S. irideus*, *S. kamloops* (*see*
Trout, rainbow)

Salmo salar (see Salmon, Atlantic)

Salmo trutta (see Trout, brown)

SALMON, ATLANTIC (*Salmo salar*) (BIOLOGY)

C1917-18: 149, 169; C3: 305

J1: 159; J2: 299, 379, 391, 499; J3: 169, 323; J4: 1, 48, 96, 323, 409, 441; J5: 172, 227, 440, 485; J6: 24, 37, 90, 311, 399; J7: 363, 432; J11: 255, 362, 933

B21; B32: 35; B51; B57; B58; B68: 93; B84: 23; B94: 6; B99

S41; S140; S165; S168; S173; S175; S187; S188; S192; S205; S223; S225; S234; S256; S259; S269; S270; S271; S275; S276; S280; S289; S291; S298; S329; S333

NR1; NR9; NR12; NR13

NS6: 12

SALMON, ATLANTIC (TECHNOLOGY)

J1: 179

SALMON, BLUEBACK (see Salmon, coho and sockeye)

SALMON, CHINOOK (see Salmon, spring)

SALMON, CHUM (*Oncorhynchus keta*) (BIOLOGY)

C1918-20: 22; C5: 32, 46

J8: 125, 164, 241; J9: 450; J10: 300, 523; J11: 63 (androgens), 69, 933

B14: 8; B31: 10; B68: 86; B90; B94: 6; B96

S129; S202

SALMON, COHO (*Oncorhynchus kisutch*)

(BIOLOGY)

C1915-16: 39; C1918-20: 18; C3: 277; C4: 455; C5: 32, 46

J2: 463; J6: 158; J8: 67, 164, 241; J10: 293, 523; J11: 69, 310, 472, 590, 933

B14: 5; B15; B32: 42; B40; B65: 15; B68: 84; B84: 8; B94: 7

S148; S202; S231; S236; S263; S322

SALMON, DOG (see Salmon, chum)

SALMON, KING (see Salmon, spring)

SALMON, KOKANEE (see Kokanee)

SALMON, HUMPBAC (see Salmon, pink)

SALMON, LANDLOCKED (see Salmon, Atlantic)

SALMON, PACIFIC SPECIES (*Oncorhynchus*)

(BIOLOGY)

J9: 265 (temperature tolerance); J11: 126 (odour perception)

B84: 12 (Cowichan R.); B86 (Moricetown Falls); B93: 43 (eaten by seals); B101 (Babine R. slide)

S148 (eaten by marine fishes); S225 (migration); S287 (cultural problems); S288 (efficiency of natural propagation); S356 (high dams); S381 (transplantation to Atlantic); S383 (weir for); S391 (fresh-water survival)

SALMON, PACIFIC SPECIES (TECHNOLOGY)

C7: 505, C8: 265 (oil)

J2: 431 (oil), 439, 469, 473; J3: 469; J4: 162; J5: 148, 244, 428 (oil); J6: 109 (oil), 119, 305; J7: 35, 51, 74, 137, 513, 522, 552; J8: 117; J10: 69

B37: 135, B59: 390, B89: 320 (oil)

S13; S81; S82; S162; S335; S375

SALMON, PINK (*Oncorhynchus gorbuscha*)

(BIOLOGY)

C1918-20: 20; C4: 455

J2: 383; J3: 403; J4: 141, 233; J6: 217, 392; J7: 224; J8: 241; J9: 450; J10: 300; J11: 588, 933

B14: 6; B31: 3; B66; B68: 82; B74; B90; B94: 6

S129; S148; S202; S232; S248; S257; S263; S268; S339

SALMON, RED (see Salmon, sockeye)

SALMON, SILVER (see Salmon, coho)

SALMON, SOCKEYE (*Oncorhynchus nerka*)

(BIOLOGY) (see also Kokanee)

C1917-18: 32, 105; C1918-20: 12; C2: 151, 337; C3: 265; C4: 467; C5: 3, 37, 55; C8: 72, 345

J2: 311; J3: 26, 399, 421, 450, 469; J4: 151, 184, 192; J5: 136, 293, 315; J6: 267, 483; J7: 88; J8: 82, 103, 178, 453; J10: 314; J11: 69, 339, 988

B14: 3; B16; B26: 11; B27: 9; B32: 42; B50; B53; B55: 33; B56: 29; B68: 88; B94: 7

S42; S67; S77; S84; S90; S91; S92; S107; S113; S115; S118; S122; S124; S127; S129; S134; S144; S145; S179; S195; S202; S219; S233; S237; S248; S295; S328; S342; S362

- SALMON, SPRING (*Oncorhynchus tshawytscha*)
 C1915-16: 21; C1918-20: 7; C3: 265; C4:
 455, 471
 J6: 158; J10: 548; J11: 57, 310
 B14: 5; B26: 3; B32: 41; B41; B65: 6;
 B68: 85; B84: 6; B94: 7
 S129; S202; S236; S263; S322
- SALMON-LOUSE (*Lepeophtheirus*)
 C1917-18: 171
 J5: 172; J6: 24
- Salpa*, SALPS (*see* Thaliacea)
- SALT, PRODUCTION AND COMPOSITION
 NS7
- SALT FISH, PRESERVATION AND SPOILAGE
 J3: 70 (reddening), 439; J4: 136; J5: 249;
 276, 287, 438 (discoloration), 411 (de-
 naturation); J6: 1; 10, 17 (discoloration);
 J7: 70, 430; J8: 325 (denaturation); J9:
 157; 377 (discoloration), 388 (water
 transfer); J11: 261 (discoloration); 901
 (dun fungus on)
 B29; B47: 22; B59: 425 (changes in oil)
 NS4 (discoloration)
- SALT FISH, PROCESSING
 J6: 380
 B6: 3 (lobster); B9: 10 (cod); B11: 24;
 B19: 9 (mackerel)
 S31 (strength of muscle)
 NS1: 24 (Atlantic cod); NS7: 13 (types of
 salt); NS9: 7 (Atlantic cod)
- Salvelinus alpinus* (*see* Char, Arctic)
- Salvelinus fontinalis* (*see* Char, speckled)
- Salvelinus malma* (*see* Char, Dolly Varden)
- SAMBRO LIGHTSHIP
 S358
- SAMPLING BOTTLES (*see* Apparatus)
- SAMPLING
 J4: 19, J10: 238 (plankton)
 B76 (for infestation of whitefish with
Triaenophorus)
 S158 (plankton)
- SANBORN, JOSEPH RAYMOND
 S102; S114
- SAND DAB (*see* Dab, sand)
- SANDBISH
 B68: 155
- SAND-LAUNCE, ATLANTIC
 S234
 NR4: 15
- SAND-LAUNCE, PACIFIC
 B68: 159
- SANITATION, OF BOATS AND PLANTS (*see also*
 Sterilizing)
 B12: 12; B20: 11; B49: 2; B100
 NS9: 6
- SAPONIFICATION (*see also* Oil, chemical
 reactions)
 J6: 103
- Sarda sarda*
 S226
- Sardinops caerulea* (*see* Pilchard)
- SARDINES (ATLANTIC WATERS) (*see also* Her-
 ring, Atlantic)
 C1917-18: 181; C1918-20: 103
 J7: 62
 S346; S349 (oil)
- SARDINE, CALIFORNIA (*see* Pilchard)
- Sarda lineolata*
 B68: 164
- SARGASSUM FISH
 S203
- SARS, G. O.
 C1911-14(2): 221
- SASKATCHEWAN (*see also* individual localities)
 J2: 209 (*Chironomus hyperboreus*)
- SAUGER
 B81: 3
- SAUNDERS, LESLIE GALE
 C8: 243
 S69
- SAUNDERS, J. W.
 S384
- SAURY, ATLANTIC
 S234

- SAURY, PACIFIC
B68: 123
- SAWDUST (*see* Pollution)
- SAWYER, WILLIAM REGINALD
C7: 73
S105
- Saxidomus giganteus* (*see* Clams, Pacific)
- SCAD
B68: 161
- SCAD, MACKEREL
S235
- SCALES, FISH
C1914-15: 87 (hake), 95 (haddock), 103 (cod); C1915-16: 21 (spring salmon), 42 (coho); C1917-18: 109, C2: 151 (sockeye); C3: 431 (haddock); C4: 287 (cod), 471 (spring salmon); C5: 18, 75 (sockeye); C6: 282 (haddock); C8: 253 (Kamloops trout)
J4: 302 (brook trout); J5: 337 (*Prosopium*), 440 (Atlantic salmon); J6: 245 (rainbow trout); J7: 563 (amino acids in herring); J8: 245 (whitefish)
B1: 20 (plaice); B15: 8, B31: 4 (Pacific salmon); B21: 19 (Atlantic salmon); B25: 16 (haddock)
S157 (*Salmo*); S173 (Atlantic salmon); S263 (trout, etc.)
NR1: 18, NR13: 13 (Atlantic salmon); NR2: 28 (Atlantic capelin); NR6: 26 (haddock)
- SCALLOPS
J11: 660
B375
S100
- SCHIFFMAN, FRIEDEL S.
S284
- SCHOOLING, (*see also* Migration)
J8: 241; J10: 523
- SCHROEDER, W. C.
AF12d,e,f,
- SCHULTZ, LEONARD PETER
C7: 319
- Scomber scombrus* (*see* Mackerel, Atlantic)
- Scomberesox saurus*
S234
- Scorpaenichthys marmoratus*
B68: 242
- SCOTIAN SHELF
J7: 1; J10: 148, 155
- SCOTT, DAVID MAXWELL
J10: 539; J11: 171, 894
- SCOTT, FREDERICK HUGHES
C1901: 49
- SCOTT, WILLIAM BEVERLEY
J11: 884
- SCOTT, W. C. M.
C2: 129; C4: 137
- SCULPIN, ARCTIC
J11: 248
- SCULPIN, BLACK-FINNED
B68: 276
- SCULPIN, BUFFALO
B68: 258
- SCULPIN, CRESTED
B68: 246
- SCULPIN, DARTER
B68: 263
- SCULPIN, FILAMENTED
B68: 255
- SCULPIN, FLUFFY
B68: 270
- SCULPIN, GLOBE-HEADED
B68: 271
- SCULPIN, GIANT MARBLED
B68: 242
- SCULPIN, GREAT
B68: 259
- SCULPIN, LESSER FILAMENTED
B68: 254
- SCULPIN, LITTLE
S234

SCULPIN, LONG-FINNED
B68: 260

SCULPIN, LONGHORN
S234

SCULPIN, MANACLED
B68: 265

SCULPIN, MOSSY
B68: 272

SCULPIN, NORTHERN
B68: 253

SCULPIN, PADDED
B68: 249

SCULPIN, PLUMOSE
B68: 248

SCULPIN, PRICKLY (*Collus asper*)
B55: 37; B56: 38

SCULPIN, PRICKLY (*Oligocottus rimensis*)
B68: 268

SCULPIN, RIBBED
B68: 262

SCULPIN, ROSY-LIPPED
B68: 274

SCULPIN, ROUGH-BACKED
B68: 252

SCULPIN, ROUGH-SPINED
B68: 261

SCULPIN, ROUND-NOSED
B68: 250

SCULPIN, SHARP-NOSED
B68: 273

SCULPIN, SMOOTH (*see* Cabezon)

SCULPIN, SOFT
B68: 279

SCULPIN, SPINY-HEADED
B68: 275

SCULPIN, STAGHORN
J11: 248

SCULPIN, TADPOLE
B68: 278

SCULPIN, TAYLOR'S
B68: 264

SCULPIN, TIDE-POOL
B68: 269

SCULPINS (*Myoxocephalus*)
C3: 443; C8: 275,
B73: 3
S17; S33; S34; S52; S234

SCYPHOZOA (*see* Jellyfish)

Scytalina cerdale
B68: 198

SEA LICE (*see* Salmon-louse)

SEA-BASS, WHITE
B68: 145

SEA-LION, STELLER'S
C1917-18: 5
J11: 267 (parasites)
B59: 419 (oil); B85: 1; B89: 357 (oil)

SEA-URCHINS (*Echinoidea*)
C1901: 49
S116

SEAL OIL
J7: 471
B59: 418; B89: 355

SEALS, FUR
C1902-05: 30
J10: 560 (NE Japan); J11: 267 (parasites)
B85
S160

SEALS, HAIR, HARP, HOODED and RINGED
C1902-05: 30
J6: 420; J8: 189; J10: 539; J11: 246, 267
B85: 7; B93; B94: 25
S329

SEA-PERCH, BLUE
B68: 149
S81; S82

SEA-PERCH, BROWN
B68: 148

SEA-PERCH, DUSKY
B68: 151

SEA-PERCH, WALL-EYED
B68: 153

SEA-PERCH, WHITE (*Phanerodon furcatus*)
B68: 152
S81 (creatine); S82 (arginase)

SEA-POACHER, BLACK-FINNED
B68: 286

SEA-POACHER, BLACK-TIPPED
B68: 289

SEA-POACHER, DEEP-PITTED
B68: 288

SEA-POACHER, FOUR-HORNED
B68: 282

SEA-POACHER, PIGMY
J6: 30
B68: 287

SEA-POACHER, SMOOTH
B68: 292

SEA-POACHER, STURGEON-LIKE
B68: 284

SEA-POACHER, WARTY
B68: 283 *

SEA-POACHER, WINDOW-TAILED
B68: 285

SEARCHER
B68: 156

SEA-ROBIN (*Prionotus carolinus*)
S159 (Passamaquoddy Bay)

SEAWEED (*see* Algae, marine)

Sebastes marinus (*see* Redfish)

Sebastes alutus
B68: 215

Sebastes caurinus (*see* Rockfish, copper)

Sebastes dalli
B68: 223

Sebastes diploproa
B68: 217

Sebastes elongatus
B68: 221

Sebastes flavidus
B68: 207

Sebastes introniger (*see* Rockfish, black-throated)

Sebastes maliger (*see* Rockfish, orange-spotted)

Sebastes melanops (*see* Rockfish, black)

Sebastes miniatus
B68: 212

Sebastes mystinus
B68: 209

Sebastes nebulosus (*see* Rockfish, yellow-striped)

Sebastes nigrocinctus
B68: 229

Sebastes paucispinis (*see* Bocaccio)

Sebastes pinniger (*see* Rockfish, orange)

Sebastes proriger
B68: 214

Sebastes ruberrimus (*see* Snapper, red)

Sebastes rubrivinctus
J11: 335

Sebastes saxicola
B68: 216

Sebastes wilsoni (*see* Rockfish, Wilson's)

Sebastes zacentrus
B68: 222

Sebastolobus alascanus
B68: 230

SEDIMENTS
B88: 27 (Arctic)

SEDIMENTATION, OF STREAMS
J11: 362 (salmon survival)

Semotilus atromaculatus
S213

SEWAGE (*see* Pollution)

SEX RATIOS

C3: 489 (Canadian fishes); C5: 10, 39 (sockeye), 466 (sunfish); C8: 412 (haddock)
 J3: 26 (sockeye), 131 (B.C. herring), 403 (pink salmon); J4: 194 (sockeye); J7: 231 (pink salmon); J9: 6 (Arctic char); J10: 418 (whitefish); J11: 1 (trout perch), 171 (yellowtail flounder), 988 (sockeye)
 B25: 12 (haddock); B30: 10, B62: 29, B91: 20 (crabs); B64: 6 (smelt); B98: 12 (beluga)
 S237 (kokanee and sockeye); S285, S327, S343 (B.C. herring); S90, S91, S92, S107, S113, S115, S118, S122, S134, S145, S179, S195, S219, S233, S328, S342, S362 (sockeye)
 NR2: 49, NR17: 24 (Atlantic capelin); NR7: 12, NR16: 35 (lobster); NR15: 13 (Atlantic spiny dogfish)
 NS15: 25 (lobster)

SEX REVERSAL

C7: 283 (oysters)
 J5: 361 (oysters)
 S93 (*Pandalus*)

SEXUAL MATURITY (*see* Maturity)

SHAD, AMERICAN

C1902-05: 95; C2: 161
 B68: 76; B89: 346 (oil)
 S155; S226; S382

SHAND, JAMES ARTHUR

S376

SHANN, E. W.

C3: 341

SHANNY

J11: 248

SHANNY, RADIATED

S226

SHARK, BASKING

B68: 54; B89: 341 (oil)
 S226; S235

SHARK, BLUE

B68: 58; B89: 341 (oil)

SHARK, BROWN

B68: 56; B89: 341 (oil)

SHARK, HAMMERHEAD

S226

SHARK, MACKEREL

C1901: 55
 B68: 53; B89: 341 (oil)
 S159

SHARK, PACIFIC MUD

B68: 52; B89: 341 (oil)
 S13 (pentose); S35

SHARK, SLEEPER

B68: 60; B89: 341 (oil)
 S329

SHARK, SOUP-FIN

B68: 57; B89: 340 (oil)

SHARK, SPOTTED COW

B68: 51; B89: 341 (oil)

SHARK, THRESHER

B68: 55
 S226

SHARKS (*see also* Dogfish; Elasmobranchs)

SHARKSUCKER, BLUE (*Remora remora*)

S203; S226

SHELL, CRUSTACEAN

J10: 521 (lobster), 583 (crab)

SHELL, MOLLUSCAN

J6: 209 (oyster)

SHELLFISH, TOXICITY

J7: 490
 B75

SHELTER, IN STREAMS

J11: 362 (and salmon survival)

SHINER, GOLDEN

S213 (L. Jesse)

SHINER, REDSIDE (*Richardsonius balteatus*)

B55: 36 (food); B56: 35 (life)
 S144

SHINER, YELLOW (*Cymologaster aggregatus*)

B68: 147

SHIPWORMS (MOLLUSCA)

C1917-18: 93; C4: 9, 19
 J5: 8
 B60: 70; B77: 12; B80
 S19; S44; S45

- SHOCK (PHYSICAL)
J6: 252
- SHOEMAKER, CLARENCE RAYMOND
C3: 1; C5: 219
- SHRIMPS (INCLUDING PRAWNS)
C6: 79; C8: 237
J4: 88; J5: 344; J7: 363
AF10m (Atlantic)
S4; S64; S93; S387
- SHUSWAP L., B.C.
S197 (limnology)
- SHUTT, FRANK THOMAS
C1901: 15, 17
- Sicyogaster maeandricus*
B68: 334
- SIGURDSSON, G. JAKOB
J6: 45, 53
- SILICA, SILICIC ACID (*see also* Limnology;
Oceanography)
C7: 119, 127
S121 (growth of phytoplankton)
- SILVER
J7: 55
- SILVERSIDE (*Menidia notata*)
S234
- SIMPSON, WILLIAM WESLEY
C3: 437, 457
S34; S68; S119
- SINCLAIR, R. J.
C4: 227
- Siphostoma fuscum*
S234
- SIZE, OF FISH, ETC. (*see also* Growth rate;
Length-weight relationships; Weight of fish)
J1: 109 (bacillus), 213 (lobster); J2: 350
(lobster larvae), 359 (Kamloops trout),
379 (Atlantic salmon parr); J3: 108, 145
(B.C. herring), 403 (pink salmon); J5: 84
(starfish); J6: 222 (pink salmon), 228,
291 (lobster), 267 (sockeye), 281 (female
lobster), 428 (*Themisto*); J7: 186 (lake
trout); J8: 469 (ciscoes); J9: 169 (brook
trout); J10: 51 (Coregonidae), 307 (fresh-
water coho), 385 (lobster); J11: 171
yellowtail flounder), 904 (chars)
- B1: 10 (plaice); B2: 18 (lumpfish); B3: 9
(angler); B4: 7 (muttonfish); B32: 19,
21, 29 (trout); 37 (Dolly Varden); B47:
31 (herring); B54: 21 (cod); B56: 44
(whitefish); B79: 4 (speckled trout);
B82: 4 (coregonines); B90: 16 (chum and
pink salmon); B93: 6 (seals); B98: 5
(beluga)
- S35 (shark); S77 (sockeye); S85 (trout);
S116 (sea-urchin); S128, S183, S194,
S264 (pilchard); S142 (crab); S143
(*Rimicola*); S146 (herring); S161 (measur-
ing board); S248 (sockeye and pink sal-
mon); S249, S250 (rainbow trout); S262
(commercial clams); S270 (Ontario sal-
mon); S318 (speckled trout); S322
(composition of B.C. salmon); S336
(Greenland cod); S348 (beaked whales);
S352 (finback whales); S357 (L. Winnipeg
fishes); S285, S327, S343, S363 (B.C.
herring)
- NR6: 12 (haddock); NR7: 7, NR16: 18,
NR18: 14 (lobster); NR13: 15 (Atlantic
salmon); NR14: 69 (Atlantic cod), NR17:
12 (Atlantic capelin)
- NS2: 13, NS15: 25 (lobster)
- SKATE, ATLANTIC PRICKLY (*Raja scabrata*)
S234
- SKATE, BIG
B68: 63
S234
- SKATES, ATLANTIC
AF12e
- SKATE, BLACK
B68: 66
- SKATE, DEEP-SEA
B68: 67
- SKATE, LONG-NOSED
B68: 62
- SKATE, PACIFIC PRICKLY (*Raja stellulata*)
B68: 64
- SKATE, WINTER (*see* Skate, big)
- SKATES (PHYSIOLOGY AND TECHNOLOGY)
C1918-20: 125; C2: 129; C4: 117, 495,
501; C5: 475; C6: 315; C7: 1, 11, 17,
31, 439, 447, 477; C8: 139, 145, 207

- J1: 179, 239, 251, 261, 497
 B89: 343 (oil)
 S17; S18; S33; S51; S81; S82; S99;
 S101; S154
- SKEENA R., B.C.
 J8: 82 (limnology), 178 (climatology and
 sockeye), 453 (sockeye)
 B86 (salmon hazard); B93 (hair seals)
 S287 (salmon)
- SKIL-FISH, GIANT
 B68: 241
- SKIPJACK
 B68: 164
- SLASTENENKO, EFIM PETROVICH
 J11: 652
- SLEGGS, GEORGE FREDERICK
 NR2
- SMEDLEY, ENID MARY
 C8: 169
- SMELT, AMERICAN (*Osmerus mordax*)
 J10: 539 (parasite); J11: 894
 B70: 1; B94: 17
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- SMELT, LONG-FINNED (*Spirinchus dilatus*)
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- SMELT, SURF (*Hypomesus pretiosus*)
 B64: 15; B68: 98
- SMELTS (*see also* Capelin; Eulachon)
- SMITH, GEORGE FRANCIS MAURICE
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- SMITH, LOUIS FALCONER
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- SMITH, MORDEN WHITNEY
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- SOLE, BUTTER (*Isopsetta isolepis*)
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- SOLE, C-O (*Pleuronichthys coenosus*)
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- SOLE, CURL-FIN (*Pleuronichthys decurrens*)
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- SOLE, DOVER (*Microstomus pacificus*)
J8: 375
B68: 327
- SOLE, FLAT-HEAD (*Hippoglossoides elassodon*)
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NS14: 19
- SOLE, LEMON—PACIFIC (*Parophrys vetulus*)
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- SOLE, REX (*Glyptocephalus zachirus*)
J8: 375
B68: 326
- SOLE, ROCK (*Lepidopsetta bilineata*)
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- SOLE, SLENDER (*Lyopsetta exilis*)
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- TROUT, HYBRID
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- TROUT, LAKE (*Cristivomer namaycush*)
J7: 176; J8: 207; J11: 5, 904
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B72: 90; B84: 14; B94: 7
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NS6: 10
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- TROUT-PERCH (*Percopsis omiscomaycus*)
J11: 1
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- TUNAS (TECHNOLOGY)
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J11: 901

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C6: 23 (Cumacea), 65 (annelids), 397
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J7: 403 (herring); J9: 16 (Ostracoda)
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lantic capelin)

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J7: 563 (amino acids); J8: 111 (as feed stuff)
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B25: 27 (haddock); B37: 71 (B.C. fishes); B59: 222, B89: 198 (general)

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J6: 476; J7: 447; J8: 1, 178, 332
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- WHALE, FINBACK (*Balaenoptera physalus*)
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- WHITE, FRANK DAVID
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- WHITE, HARLEY CLIFFORD
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- WHITEAVES' CATALOGUE
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- WILDER, DONALD GEORGE
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- WILSON, CHARLES BRANCH
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- WINDOWPANE (*Lophopsetta aquosa*)
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APPENDIX

(Reprinted in large part from the 1953 Consolidated
Annual Catalogue of Canadian Government Publications)

LIST OF PUBLICATIONS AND TITLES 1901-1954

DEALING WITH WORK OF THE
FISHERIES RESEARCH BOARD OF CANADA
(Formerly the Biological Board of Canada)

1. CONTRIBUTIONS

(a) CONTRIBUTIONS TO CANADIAN BIOLOGY

1901. pp. 1-62, 1901. 45¢.

1. Marine biological station of Canada. Introductory notes on its foundation, aims and work. By E. E. Prince, pp. 1-8.
2. The effects of polluted waters on fish life. A preliminary report. By A. P. Knight, pp. 9-18.
3. The clam fishery of Passamaquoddy bay. By J. Stafford, pp. 19-40.
4. Report on the flora of St. Andrews, N.B. By James Fowler, pp. 41-48.
5. Food of the sea urchin (*Strongylocentrotus dröbachiensis*). By F. H. Scott, pp. 49-54.
6. The paired fins of the mackerel shark. By E. E. Prince and A. H. MacKay, pp. 55-58.
7. Report on the sardine industry in relation to the Canadian herring fisheries. By B. Arthur Bensley, pp. 59-62.

1902-05. pp. 1-128, 1907. (*Out of print.*)

1. The plankton of eastern Nova Scotia waters. An account of floating organisms upon which young food-fishes mainly subsist. By R. Ramsay Wright, pp. 1-19.
2. The effects of dynamite explosions on fish life. A preliminary report. By A. P. Knight, pp. 21-30.
3. On the fauna of the Atlantic coast of Canada. An introductory report. By J. Stafford, pp. 31-36.
4. A further report upon the effects of sawdust on fish life. By A. P. Knight, pp. 37-54.
5. The Diatomaceae of Canso harbour, Nova Scotia. A provisional list. By A. H. MacKay, pp. 55-58.
6. Report on the flora of Canso, Nova Scotia. By James Fowler, pp. 59-70.

7. The seaweeds of Canso. Being a contribution to the study of eastern Nova Scotia algae. By C. B. Robinson, pp. 71-74.
8. Report on the marine Polyzoa of Canso, N.S. By George A. Cornish, pp. 75-80.
9. Notes on the fishes of Canso. By George A. Cornish, pp. 81-90.
10. Preliminary report on the Trematodes of Canadian marine fishes. By J. Stafford, pp. 91-94.
11. The eggs and early life-history of the herring, gaspereau, shad and other clupeoids. By Edward E. Prince, pp. 95-110.
12. Sawdust and fish life. Final report. By A. P. Knight, pp. 111-120.
13. Professor Macallum on the chemistry of Medusae. A condensed résumé of results. By Edward E. Prince, pp. 121-128.

1906-10. pp. 1-305, 1912. \$2.25.

1. Report on the Atlantic Biological Station of Canada, St. Andrews, N.B., for 1908. By D. P. Penhallow, pp. 1-21.
2. Fishery bait experiments. A preliminary report upon the comparative merits of different kinds of bait used in cod fishing along Gaspé peninsula. By A. P. Knight, pp. 23-32.
3. Notes on the Actiniae occurring in the neighbourhood of the Biological Station, St. Andrews, N.B. By J. Playfair McMurrich, pp. 33-35.
4. On the fauna of the Atlantic coast of Canada. Second report. —Malpeque, 1903-1904. By J. Stafford, pp. 37-44.
5. On the fauna of the Atlantic coast of Canada. Third report —Gaspé, 1905-1906. By J. Stafford, pp. 45-68.
6. On the fauna of the Atlantic coast of Canada. Fourth report. By J. Stafford, pp. 69-78.
7. Notes on fishes of Tignish, Prince Edward Island. By George A. Cornish, pp. 79-81.
8. On a collection of Crustacea made at St. Andrews, N.B. By D. L. MacDonald, pp. 83-84.
9. Parasitic copepods from Nanaimo, British Columbia, including eight species new to science. By Charles Branch Wilson, pp. 85-101.
10. Holosomatous ascidians from the coast of western Canada. By A. G. Huntsman, pp. 103-185.
11. Preliminary list of one hundred and twenty-nine species of British Columbia Decapod Crustaceans. By George W. Taylor, pp. 187-214.
12. A new genus and species of Cottoid fish from Departure bay, Vancouver island. By Charles H. Gilbert, pp. 215-216.
13. Oyster culture and clam fishing, Prince Edward Island. By E. W. MacBride, pp. 217-220.

14. On the recognition of bivalve larvae in plankton collections. By J. Stafford, pp. 221-242.
 15. Some recent diatoms, freshwater and marine, from the vicinity of the Biological Station, St. Andrews, N.B., August 20-30, 1909. By L. W. Bailey, pp. 243-264.
 16. Notes on the flora of the St. Croix river valley and Passamaquoddy region, New Brunswick. By A. B. Klugh, pp. 265-276.
 17. Contributions to the physiology of the American lobster. The physiology of the intestine. By F. R. Miller, pp. 277-280.
 18. The temperatures and densities and allied subjects of Passamaquoddy bay and its environs. Their bearing on the oyster industry. By G. G. Copeland, pp. 281-294.
 19. The geological environment of the British Columbia Biological Station at Departure bay, Vancouver island. By E. M. Burwash, pp. 295-305.
- 1911-14. pp. 1-75, 1-222, 1915. \$2.20.
- Fasc. I.** Marine biology. pp. 1-75. 55¢.
1. The plankton in St. Andrews bay. By A. Willey, pp. 1-9.
 2. The plankton diatoms of the bay of Fundy. By L. W. Bailey, pp. 11-23.
 3. Studies on the Sporozoa of the fishes of the St. Andrews region. By J. W. Mavor, pp. 25-38.
 4. A new Caprellid from the bay of Fundy. By A. G. Huntsman, pp. 39-42.
 5. Preliminary notes on the Mollusca of St. Andrews and vicinity, New Brunswick. By John D. Detweiler, pp. 43-46.
 6. A list of fleshy fungi collected at St. Andrews, New Brunswick. By Adaline Van Horne and Mary Van Horne, pp. 47-50.
 7. The iodine content of the marine flora and fauna in the neighbourhood of Nanaimo, Vancouver island, B.C. By A. T. Cameron, pp. 51-68.
 8. On some of the parasitic copepods of the bay of Fundy fish. By V. Stock, pp. 69-71.
 9. Some experiments on the freezing and thawing of live fish. By W. H. Martin, pp. 73-75.
- Fasc. II.** Fresh water fish and lake biology. pp. 1-222. \$1.65.
1. The fishes of Georgian bay. By B. A. Bensley, pp. 1-51.
 2. Notes on the Odonata of the vicinity of Go Home bay, Georgian bay, Ontario. By E. M. Walker, pp. 53-94.
 3. The Mollusca of Georgian bay. By A. D. Robertson, pp. 95-111.
 4. Rearing experiments and ecology of Georgian bay Ephemeridae. By W. A. Clemens, pp. 113-128.

5. Life-histories of Georgian bay Ephemeridae of the genus *Heptagenia*. By W. A. Clemens, pp. 131-143.
 6. The fresh-water Malacostraca of Ontario. By A. G. Huntsman, pp. 145-163.
 7. Notes on the Hirudinea of Georgian bay. By C. G. S. Ryerson, pp. 165-175.
 8. Contributions to the life history of *Proteocephalus ambloplitis* Leidy. A parasite of the black bass. By A. R. Cooper, pp. 177-194.
 9. Bryozoa of the Georgian bay region. By H. T. White, pp. 195-199.
 10. Preliminary report on the plants of Georgian bay. A contribution to the biology of the Georgian bay waters. By W. T. MacClement, pp. 201-211.
 11. List of Georgian bay fleshy fungi and myxomycetes. By T. H. Bissonnette, pp. 213-218.
 12. Notes on the aquatic plants of Georgian bay. By A. B. Klugh, pp. 219-220.
 13. Entomostraca of Georgian bay. By G. O. Sars, pp. 221-222.
- 1914-15.** pp. 1-173, 1916. \$1.25.
1. Investigation into the Pacific halibut fisheries, British Columbia. By Arthur Willey, pp. 1-18.
 2. Notes on the egg and larval stages of the halibut. By Edward E. Prince, pp. 19-23.
 3. The commercial value of the kelp-beds of the Canadian Pacific coast.—A preliminary report and survey of the beds. By A. T. Cameron, pp. 25-39.
 4. Lobster sanctuaries and matching ponds: An investigation of the Long beach lobster pond, Digby county, Nova Scotia, in 1914. By A. P. Knight, pp. 41-54.
 5. First report on the "barren oyster bottoms" investigation, Richmond bay, P.E.I. By A. D. Robertson, pp. 55-71.
 6. A supposed disease of quahaugs from New Brunswick. By Philip Cox, pp. 73-79.
 7. Investigation of a disease of the herring (*Clupea harengus*) in the gulf of St. Lawrence, 1914. By Philip Cox, pp. 81-85.
 8. The life-history of the hake (*Urophycis chuss* Gill) as determined from its scales. By E. Horne Craigie, pp. 87-94.
 9. Investigation of the haddock fishery, with special reference to the growth and maturity of the haddock (*Melanogrammus aeglefinus*). By Dorothy Duff, pp. 95-102.
 10. Report on the life history of the cod as determined from the scales and other data. By R. P. Wodehouse, pp. 103-113.
 11. Are migrating eels deterred by a range of lights—Report on experimental tests. By Philip Cox, pp. 115-118.

12. Possible lobster planting areas on the east coast of Vancouver island, B.C. By C. McLean Fraser, pp. 119-132.
13. Variations in density and temperature in the coastal waters of British Columbia—Preliminary notes. By C. McLean Fraser and A. T. Cameron, pp. 133-143.
14. An investigation of the bays of the southern coast of New Brunswick with a view to their use for oyster culture. By J. W. Mavor, E. Horne Craigie, and J. D. Detweiler, pp. 145-149.
15. Hydrographic investigations in the St. Croix river and Passamaquoddy bay in 1914. By E. Horne Craigie, pp. 151-161.
16. A hydrographic section of the bay of Fundy in 1914. By E. Horne Craigie, pp. 163-167.
17. The water and iodine contents of some Pacific coast kelps. By A. T. Cameron, pp. 169-173.
- 1915-16** (English and French editions). pp. 1-112, 1917. 90¢.
 1. The winter plankton in the neighbourhood of St. Andrews, 1914-15. By J. Playfair McMurrich, pp. 1-9. 15¢.
 2. Diatoms and lobster rearing. By W. T. MacClement, pp. 11-20. 15¢.
 3. On the scales of the spring salmon. By C. McLean Fraser, pp. 21-38. 20¢.
 4. On the life-history of the coho. By C. McLean Fraser, pp. 39-52. 20¢.
 5. An investigation of oyster propagation in Richmond bay, P.E.I., during 1915. By Julius Nelson, pp. 53-78. 25¢.
 6. The marine Algae of the Passamaquoddy region, New Brunswick. By A. B. Klugh, pp. 79-85. 15¢.
 7. On serially striped haddock in New Brunswick. By Edward E. Prince, pp. 86-91. 15¢.
 8. Notes on the phyto-plankton of the bay of Fundy and Passamaquoddy bay. By L. W. Bailey, pp. 93-107. 20¢.
 9. The geological features of the St. Croix river and Passamaquoddy bay. By L. W. Bailey, pp. 109-112. 10¢.
- 1917-18.** pp. 1-369, 1918. \$2.60.
 1. British Columbia sea-lion investigation. Special Commission's preliminary and main reports, pp. 5-52. 30¢.
 2. Lobster investigations at Long Beach pond, N.S. By A. P. Knight, pp. 53-71. 20¢.
 3. The pearly fresh-water musels of Ontario. By John D. Detweiler, pp. 75-91. 25¢.
 4. Notes on the habits and distribution of *Teredo navalis* on the Atlantic coast of Canada. By E. M. Kindle, pp. 93-103. 15¢.

5. Rearing sockeye salmon in fresh water. By C. McLean Fraser, pp. 105-109. 10¢.
 6. On the age and growth of the pollock in the bay of Fundy. By James W. Mavor, pp. 111-125. 20¢.
 7. Further hydrographic investigations in the bay of Fundy. By E. Horne Craigie and W. H. Chase, pp. 127-148. 25¢.
 8. Examination of affected salmon, Miramichi hatchery, New Brunswick. By F. C. Harrison, pp. 149-168. 20¢.
 9. Report on affected salmon in the Miramichi river, New Brunswick. By A. G. Huntsman, pp. 169-173. 10¢.
 10. The smoking of "haddocks" for Canadian markets—an investigation conducted at the Marine Biological Station at St. Andrews, N.B. By Olive Gair Patterson, pp. 175-178. 10¢.
 11. Some observations on haddocks and "finnan haddies" relating to the bacteriology of cured fish. By F. C. Harrison, pp. 179-180. 10¢.
 12. The bacteriology of swelled canned sardines. By Wilfred Sadler, pp. 181-215. 30¢.
 13. Bacterial destruction of copepods occurring in marine plankton. By Wilfred Sadler, pp. 217-228. 15¢.
 14. Bathymetric check list of the marine invertebrates of eastern Canada with an index to Whiteaves' catalogue. By E. M. Kindle and E. J. Whittaker, pp. 229-294.
 15. Hydrography in Passamaquoddy bay and vicinity, New Brunswick. By Alexander Vachon, pp. 295-328. 35¢.
 16. Hydroids of eastern Canada. By C. McLean Fraser, pp. 329-369.
- 1918-20.** pp. 1-188, 1921. \$1.45.
1. Further studies on the growth rate in Pacific salmon. By C. McLean Fraser, pp. 7-27. 25¢.
 2. Some apparent effects of severe weather on the marine organisms in the vicinity of Departure bay, B.C. By C. McLean Fraser, pp. 29-33. 10¢.
 3. Temperature and specific gravity variations in the surface waters of Departure bay, B.C. By C. McLean Fraser, pp. 35-48. 20¢.
 4. Plankton diatoms, their distribution and bathymetric range in St. Andrews waters. By Clara W. Fritz, pp. 49-62. 20¢.
 5. Experimental cultures of diatoms occurring near St. Andrews, N.B. By Clara W. Fritz, pp. 63-68. 10¢.
 6. Contribution to the biology of the muttonfish *Zoarces anguillaris*. By Wilbert A. Clemens and Lucy Smith Clemens, pp. 69-83. 20¢.
 7. Eastern Canadian plankton.—The distribution of the Tomopteridae obtained during the Canadian Fisheries Expedition, 1914-1915. By A. G. Huntsman, pp. 85-91. 15¢.

8. Eastern Canadian plankton.—The distribution of floating tunicates (Thaliacea) obtained during the Canadian Fisheries Expedition, 1914-1915. By A. G. Huntsman, pp. 93-97. 10¢.
 9. An investigation into the rate of putrefaction in the commoner food fish caught in and around Passamaquoddy bay, N.B. By Louis Gross, pp. 99-102. 10¢.
 10. Canned sardines.—The cause of "swells" or "blown cans". By Wilfred Sadler, pp. 103-108. 10¢.
 11. List of fishes collected in 1917 off the Cape Breton coast and the Magdalen islands. By Philip Cox, pp. 109-114. 10¢.
 12. The diatoms of Canada. By L. W. Bailey and A. H. Mackay, pp. 115-124. 15¢.
 13. The utilization of dogfish and selachian fishes of eastern Canada (including Report on analyses of canned grayfish (dogfish) by Emil J. Baumann). By James W. Mavor, pp. 125-135. 15¢.
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