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INVITATION

TO

AQUATIC SCIENTISTS

*Canada. F. R. B. Miscellaneous Special Publication No. 12*

## SUMMARY

The F.R.B.'s Biological Station at St. Andrews, N.B., invites University investigators to come to St. Andrews to conduct their own research.

The Station will provide laboratory space, holding facilities for aquatic organisms, and some boat time.

No charge is involved.

The invitation is open year-round.

Canada F.R.B. Miscellaneous Special Publication No. 12  
An Invitation

89952

to Carry on Research in the  
Aquatic Sciences

at



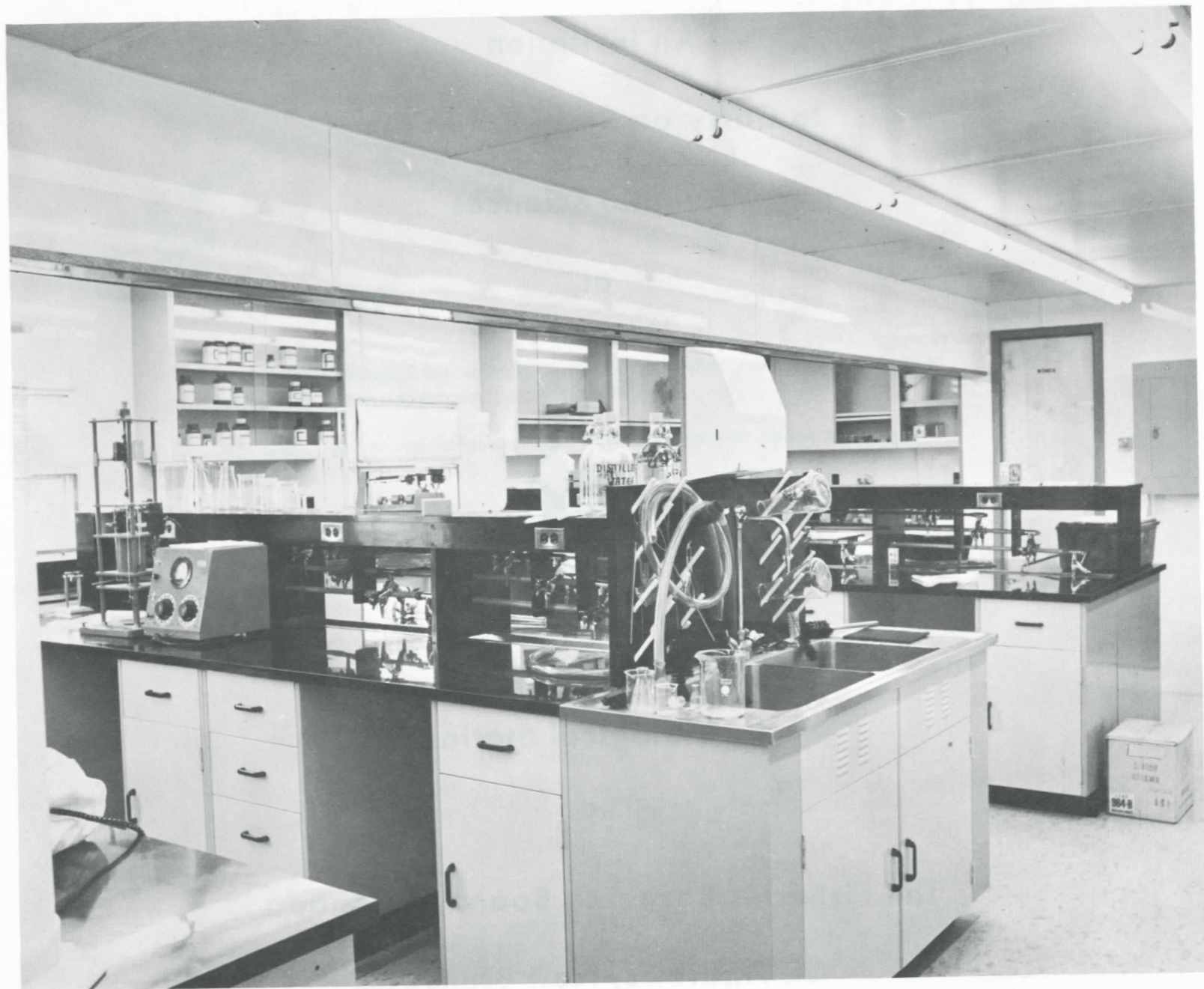
the Biological Station

of

The Fisheries Research Board of Canada

St. Andrews, New Brunswick

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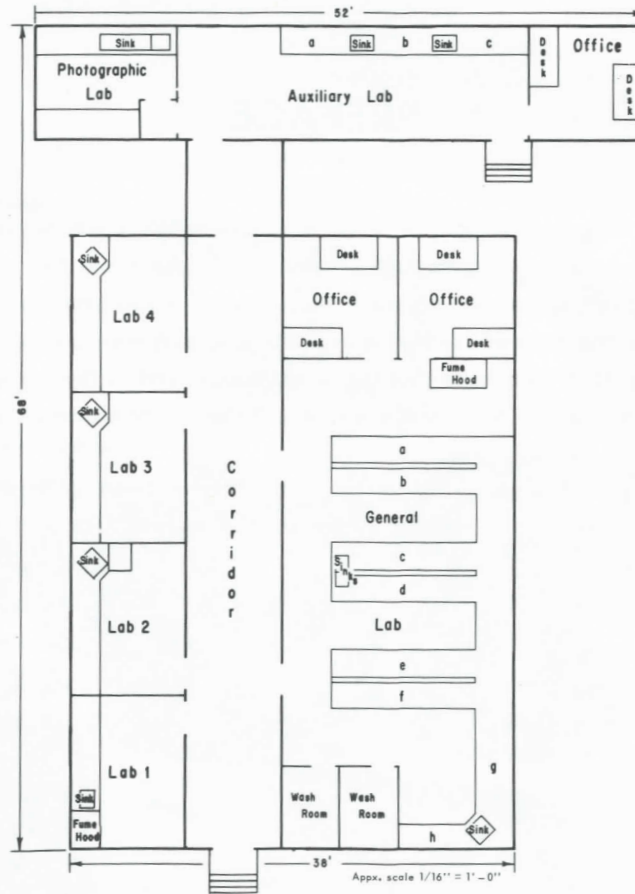
The inside of one of the laboratories reserved for visiting scientists.

## PREFACE

The St. Andrews Biological Station, built in 1908, is Canada's oldest permanent marine research laboratory. It began as a summer operation run entirely by University professors and their students. Gradually, over the years, the emphasis shifted from part-time University involvement to full-time government (Fisheries Research Board) participation. In a sense, the invitation extended in this brochure represents a full turn of the wheel. We hope, however, that it is more than that – we hope that the program described in the following pages will continue to grow and will develop into a truly unique and essential element of the marine sciences in Canada.

Canada needs a seaside laboratory where researchers from different universities can work together. The FRB's St. Andrews Biological Station, by inviting university professors and their students to share some of its facilities, hopes to make this possible.

J.M. Anderson,  
Director.



All laboratories have hot and cold fresh water, cold sea water, compressed air, gas, and 115 AC (220V) available.

## AN INVITATION

In 1968 the Fisheries Research Board of Canada issued a policy statement on relations with universities.\* In essence, FRB believes that close cooperation with universities is highly desirable and should be promoted. In this spirit, the Board's Biological Station at St. Andrews, New Brunswick, is pleased to extend an invitation to visiting investigators to use the following facilities and services:

- (a) **Laboratories:** Approximately 2100 sq. ft. of office and fully-serviced laboratory space, including air, gas, electricity (110 and 220 AC), running fresh- and salt-water, dark room, fume-hoods, etc.
- (b) **Holding facilities:** Large amount of space for holding aquatic organisms in both fresh- and salt-water; an assortment of holding tanks available (in Warehouse-Workshop-Aquatic Holding Building).
- (c) **Boats:** Small boats are available for local collection work. Although our 54-ft. *MALLOTUS* is usually fairly busy looking after day-to-day collecting requirements for the Station, we hope that she can be shared with visiting researchers. Our bigger vessels, the 130-ft. *E.E. PRINCE* and the 84-ft. *HARENGUS* are usually fully scheduled. For the most part, they will be operating upon the high seas. It is possible that a university request could be met by finding a spare bunk on a cruise, where the locale and purpose of

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\*PAST, PRESENT AND FUTURE RELATIONS BETWEEN THE FISHERIES RESEARCH BOARD OF CANADA AND THE UNIVERSITIES; copies available upon request from the Office of the Chairman, Fisheries Research Board of Canada, Ottawa 8, Ontario.

the cruise match the request. In view of the large lead-time required, it would be most appropriate to make requests for ship-time at an early time.

- (d) **Workshops:** Shareable with university visitors, the Station now has separate facilities for metal- and wood-working, and for electronics testing.
- (e) **Diving:** Planned for completion in early 1969 is a building to accommodate the Station's extensive Scuba diving program. Its facilities will be shared with visiting scientists whose research depends on a diving program. The Station cannot supply Scuba equipment, nor assume responsibilities for diving instruction or supervision. All divers must be fully qualified.
- (f) **Computing facilities:** Included in the equipment that can be shared are an IBM 1130 (16k) electronic computer, a card punch, verifier, and sorter, as well as an Olivetti 101 programmer and assorted calculating machines.
- (g) **Library:** The Station's excellent library and its services are available to our visitors. The library maintains a growing collection of both current and archival publications in all our areas of special interest. The monographs, periodicals, pamphlets, reprints, and reference tools are supplemented by an active interlibrary loan service linking us to the international chain of scientific library facilities.

The Biological Station will provide the university laboratory complex with elementary equipment and supplies (e.g., standard glassware, ordinary chemicals, balances, etc.). Refrigerators, freezers, incubators, a high-speed centrifuge,

and pH meters are available. University investigators will be expected to bring with them their own major equipment.

Arrangements for living accommodations will be the responsibility of individual investigators. However, the Biological Station maintains a list of a wide variety of available accommodations, including costs where possible; this list is available upon request.

Our invitation is extended particularly to university professors and their graduate students. Preference will be given to those graduate students who will be accompanied by their supervising professors. The invitation is open on a year-round basis. No particular limits are specified for duration of visits.

There will be no charge for using FRB's St. Andrews facilities; nor will there be any strings attached. The only limitation, apart from availability of space, will be feasibility of proposed research projects in relation to the facilities available.

Investigators wishing to work at St. Andrews should write to the Director, FRB Biological Station, St. Andrews, New Brunswick, including a brief statement of research to be undertaken, space and facilities needed, expected length of stay, and any special services required.



Dr. C.M. Lalli (right) and Miss D. Pocock, of McGill University, two of our visiting scientists during 1968, about to sail on the E.E. PRINCE in search of pteropods

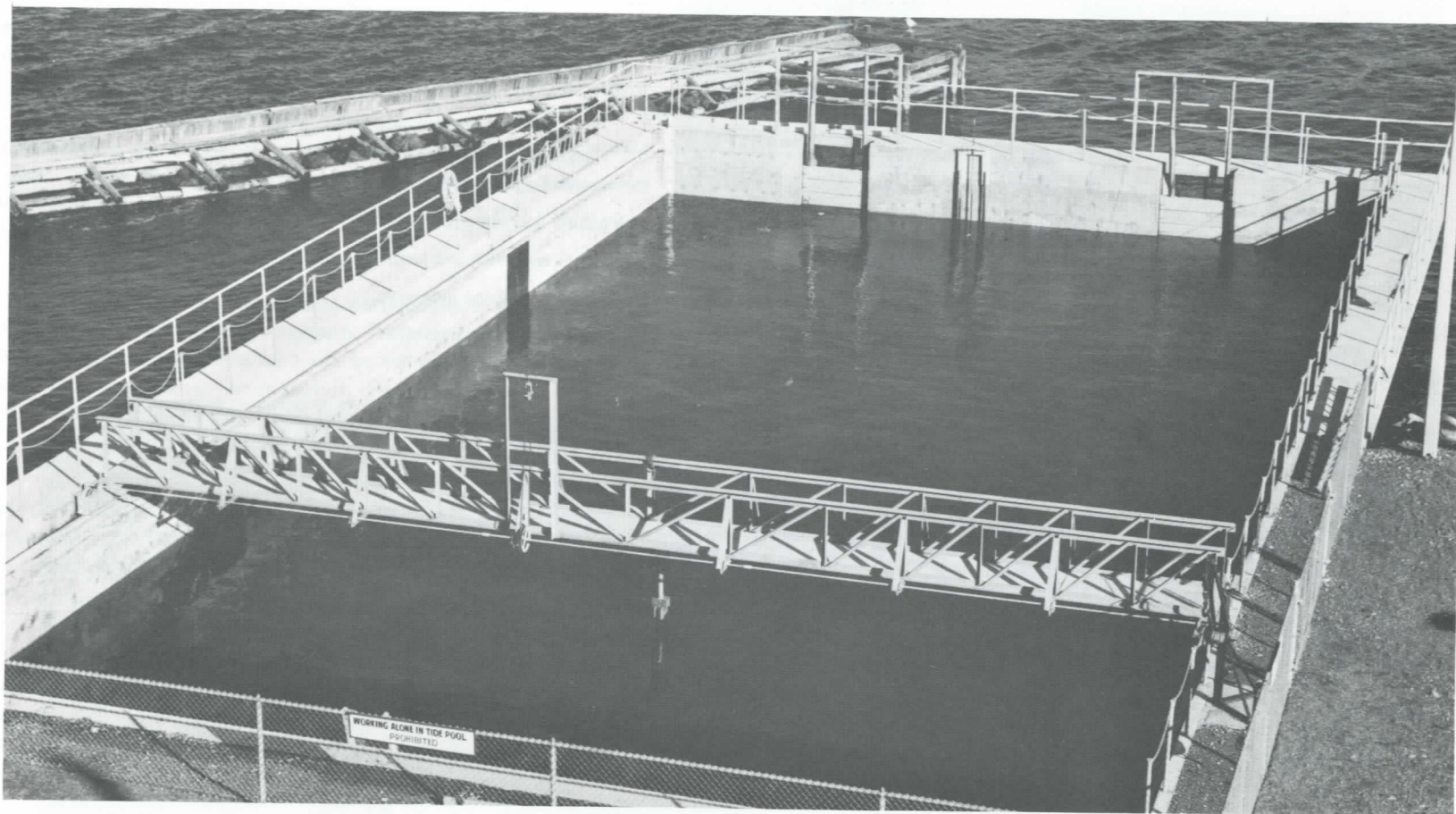


## STAFF LIST

	SCIENTIFIC FIELD	SCIENTIFIC INTEREST
D.E. Aiken, Ph.D.(Alberta)	Marine biology	Lobster growth and population studies
J.M. Anderson, Ph.D.(Toronto)	Animal physiology	Neurophysiological effects of insecticides
B.E. Barrett, Ph.D.(New Hampshire)	Fisheries biology	Life history and ecology of herring
J.S. Beckett, M.A.(Cantab.)	Marine biology	Ecology of swordfish and tuna
K.W. Besch, Dr.rer.nat.(Giessen, Germany)	Autecology, Taxonomy	Invertebrate pollution indicators
U. Buerkle, M.Sc.(McGill)	Behaviour	Hearing in fish



The E.E. PRINCE, 130 ft, launched in 1966, is the newest research vessel of the St. Andrews fleet.



The experimental tide pool, 50 x 100 x 16 ft., has viewing ports, travelling cross walk, top — and bottom — filling gates for complete water circulation control; it can be partitioned into eight separate compartments.

J.F. Caddy, Ph.D.(London)

Mollusc ecology

Life history and population dynamics of scallops and other molluscs

P.J.G. Carrothers, S.M.(M.I.T.)

Engineering and textile technology

Study of stresses in fishing gear

P.F. Elson, Ph.D.(Toronto)

Animal ecology

Population ecology of salmon

R.G. Halliday, Ph.D.(Glasgow)

Fisheries biology

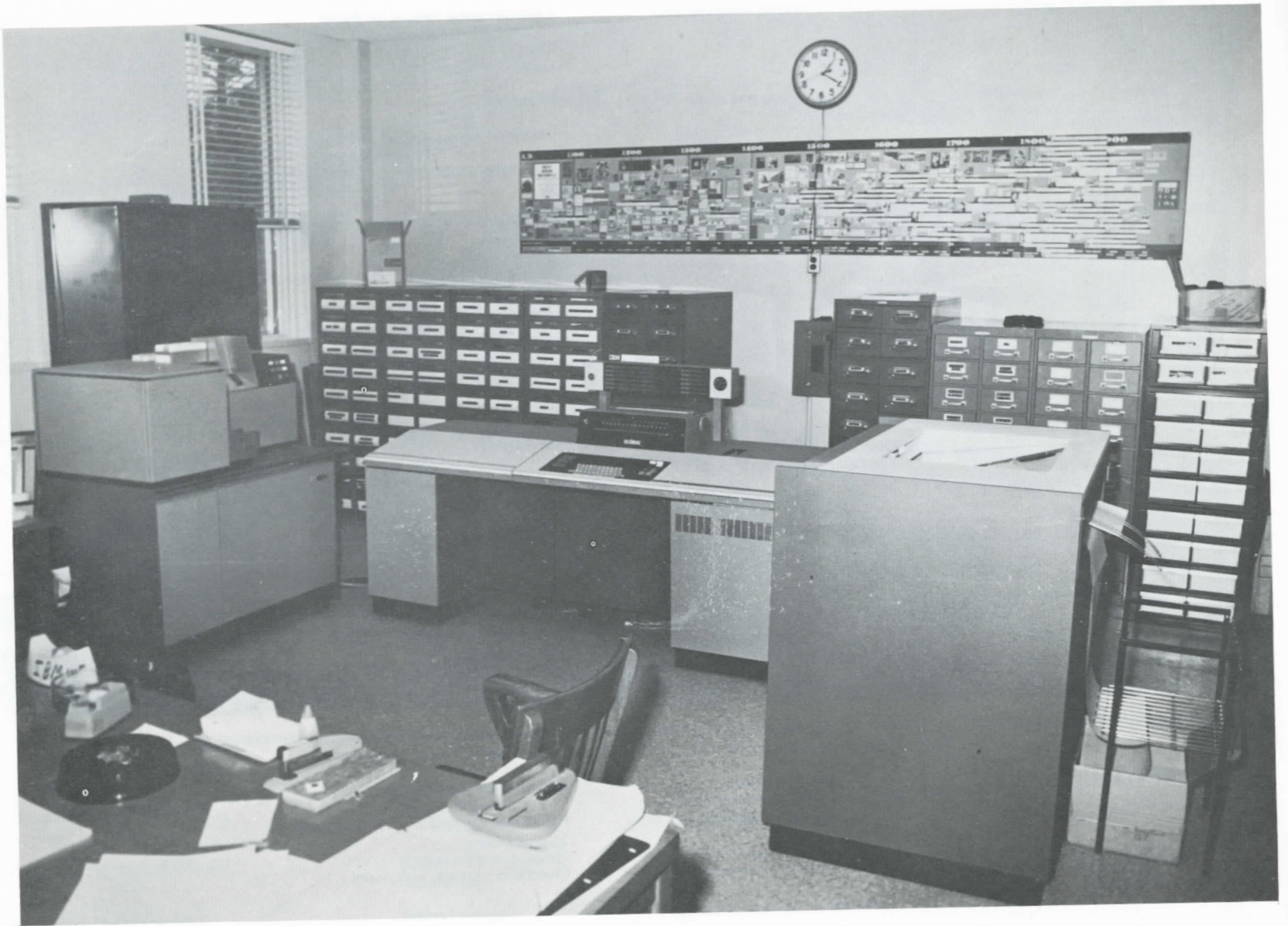
Population studies of haddock, argentinnes

A.C. Kohler, Ph.D.(McGill)

Fisheries biology

Population and growth studies of cod

L.M. Lauzier, D.Sc.(Laval)	Fisheries oceanography	Environmental factors for fishes
F.D. McCracken, Ph.D.(Toronto)	Fisheries biology	Factors controlling population size in ground-fishes
D.W. McLeese, Ph.D.(Toronto)	Animal physiology	Crustacean olfaction
J.C. Medcof, Ph.D.(Illinois)	Marine biology	Economic biology of molluscs
S.N. Messieh, Higher Dip. Ocean. (Alexandria)	Fisheries biology	Population studies and serology of herring
D. Møller, Ph.D.(Oslo)	Fish genetics	Identification of salmon stocks by biochemical methods
J.H.C. Pippy, M.Sc.(Memorial)	Parasitology	Parasites of fishes and their use as natural tags
J.W. Saunders, M.Sc.(Laval)	Fisheries biology	Ecology of brook trout and Atlantic salmon
R.L. Saunders, Ph.D.(Toronto)	Fisheries biology	Fish respiration and physiological ecology of salmon
D.J. Scarratt, Ph.D.(Wales)	Marine biology	Ecology of larval and older lobsters
J.S. Scott, Ph.D.(St. Andrews)	Fisheries and parasitology	Ecology of underutilized fish resources
M.W. Smith, Ph.D.(Toronto)	Fisheries biology	Ecology of Atlantic anadromous fishes
J.B. Sprague, Ph.D.(Toronto)	Physiological ecology	Pollution biology
A. Sreedharan, M.Sc.(U. of Mass.)	Mathematics	Statistics
A.M. Sutterlin, Ph.D. (Massachusetts)	Animal Physiology	Neurophysiological studies of optic tectum
P.E.K. Symons, Ph.D.(U. of Leiden)	Ethology	Salmon behaviour and ecology
S.N. Tibbo, M.A.(Toronto)	Marine biology	Ecology and life history of pelagic fishes
A.V. Tyler, Ph.D.(Toronto)	Animal ecology	Biotic factors in population dynamics
J. Watson, Ph.D.(Durham)	Physiological	Survival of lobsters under stress; biology of spider crab
A. Weinsieder, M.S.(Vermont)	Cell physiology	Cell division and cytology
D.G. Wilder, Ph.D.(Toronto)	Fisheries biology	Population dynamics and management of lobster stocks
V. Zitko, Ing. of Chem.(Technical University) (Czech.)	Organic chemistry	Chemistry of water pollutants



The new IBM 1130 (16k) forms the nucleus of a modern, efficient computing and statistics service.

LIST OF VISITING INVESTIGATORS AND THEIR INTERESTS AT ST. ANDREWS, SUMMER 1968

Mr. J. Baker, McGill	Apr. 23 - Sept. 1	Effects of sublethal copper on fish — E/M
Dr. J. Oughton, Guelph	May 7 - 20	Collecting marine fauna and flora
Miss Dorothy Pocock, McGill	May 10 - 21	Polychaete lipids
Miss Doreen Snow, McGill	May 10 - Sept. 29 plus occasional fall-winter visits	Population ecology of <i>Nereis</i>
Dr. Jiri Lom, Czech. Acad. Sci.	May 17 - 18	Parasites of local marine fishes
Mr. J. Patterson, McGill	June 1 to 1969	Effect of pollutants on marine enzyme systems
Mr. Paul Schluger, U. Penna.	June 5 - 29 & Aug. 15 - 27	Geology of local marine red sandstone
Dr. F.W.H. Beamish, Guelph	June 24 - July 2	Reaction of fish to towed gear
Dr. Valerie M. Pasztor, McGill	June 29 - July 27	Electrophysiological aspects of the lobster
Dr. R.A. Liversage, Toronto, and Mr. Hellenyi, assistant	July 1 - 31	Hypophysectomy of <i>Fundulus heteroclitus</i>
Dr. Carol M. Lalli, McGill, and Miss Dorothy Pocock	July 16 - 27	Pteropod collection; feeding behaviour of <i>Clione</i> ; <i>PRINCE</i> cruise
Dr. W.B. Scott, Rom	Aug. 1 - 31	Myctophid research
Dr. Susan Corey, Guelph and assistant	Aug. 1 - 23	Intertidal and sublittoral Crustacea; lobster chitin histology
Dr. H.L. Atwood, Toronto, and Mr. Chung, assistant	Aug. 2 - 31	Electrophysiology of lobster
Dr. J. Machin, Toronto	Aug. 3 - 31	Priapulids; polychaetes-water balance
Dr. W. Dall, Guelph	Aug. 13 - 20	Water balance in lobsters
Dr. Eric Denton, Plymouth, U.K.	Sept. 4 - 14	Aspects of silvering in salmonids
Mr. R. MacDougall, Memorial Univ.	Sept. 6 - 12	Cristispira of local Mollusca
Dr. J.C. Roff, Guelph	Sept. 12	Zooplankton collecting
Dr. John B. Lewis, Director, Bellairs Res. Inst. McGill, Barbados	Oct. 23 - 30	Collecting local fauna

PARTIAL LIST OF FAUNA AND FLORA TO BE FOUND IN THE VICINITY OF  
THE BIOLOGICAL STATION, ST. ANDREWS, N.B.\*

PORIFERA

*Halichondria* sp.  
*Halisarca* sp.  
*Haliclona* sp.  
*Cliona vastifica* et al.  
*Trichostemma* sp.  
*Chalina* sp.  
*Polymastia* sp.

COELENTERATA

Hydrozoa

*Obelia* sp.  
*Sertularia pumila*  
*Tubularia* sp.  
*Clava* sp.  
*Hydractinia echinata*

Scyphozoa

*Aurelia aurita*  
*Haliclystus* sp.  
*Lucernaria* sp.

Anthozoa

*Metridium* sp.

Alcyonaria

*Duva multiflora*

PLATYHELMINTHES

*Notoplana atomata*  
*Monocelis* sp.

NEMERTEA

*Cerebratulus lacteus*  
*Lineus* sp.  
*Micrura* sp.

ECTOPROCTA

*Bugula* sp.  
*Cryptosula* sp.  
*Schizoporella* sp.  
Others

ANNELIDA

Oligochaeta

*Clitellio arenaria*

Polychaeta

*Nereis virens*  
*N. pelagica*  
*Clymenella torquata*  
*Nephtys* sp.  
*Spio setosa*  
*Polydora* sp.  
*Amphitrite* sp.  
*Myxicola infundibulum*  
*Sternaspis* sp.  
*Potamilla* sp.  
*Filograna* sp.  
*Lumbrineris* (usually *L. fragilis*)  
*Aphrodite aculeata*  
*Priapulida* sp. (possibly not common)  
*Spirorbis borealis*  
*S. spirillum*  
*Phyllodoce*  
*Eteone longa*  
*Glycera dibranchiata*  
*Lepidonotus squamatus*  
*Harmothoe*  
*Pectinaria (Cistenides) gouldii*

MOLLUSCA

*Anomia* sp.  
*Crepidula fornicata*  
*Crepidula plana*  
*Lacuna vincta*  
*Lunatia heros*  
*Littorina litorea*  
*Littorina obtusata*  
*Littorina saxatilis*  
*Margarites* sp.  
*Mya truncata*  
*Hiatella arctica*  
*Buccinum undatum*  
*Neptunea decemcostata*  
*Dentalium entale*  
*Yoldia* sp.  
*Colus* sp.  
*Venericardia borealis*  
*Astarte undata*  
*Cuspidaria glacialis*  
*Cerastoderma pinnulatum*  
*L'epidopleurus cancellatus*  
*Teredo* sp.  
*Zirfaea crispata*  
*Spisula solidissima*  
*Ensis directus*  
*Pandora gouldiana*  
*Thais lapillus*\*  
*Acmea testudinalis*  
*Nudibranchs* (Dorids, Coryphellids)  
*Lepidochiton ruber*  
*Mya arenaria*  
*Mytilus edulis*  
*Modiolus modiolus*  
*Anomia simplex*

\*Many of the specimens are easily obtainable from Maritime Biological Laboratories, a supply house located nearby, at St. Stephen, N.B.

MOLLUSCA (Continued)

*Anomia aculeata*  
*Placopecten magellanicus*  
*Pitar morrhuana*  
*Velutina* sp.  
*Lunatia triseriata*  
*Cylichna alba*  
*Thyasira* sp.  
*Cyprina islandica* (*Arctica* (*Cyprina*)  
*islandica*)  
*Nuculana* sp.  
*Mercenaria mercenaria*  
*Nassarius obsoletus*  
*Macoma balthica*  
*Gemma gemma*

ARTHROPODA

*Carcinus maenas*  
*Cancer irroratus*  
*Cancer borealis*  
*Hyas araneus*  
Marine Amphipoda

Marine Isopoda  
*Homarus americanus*  
*Crangon septemspinosus*  
*Balanus balanoides*  
*Balanus hameri*  
*Balanus balanus*  
*Pagurus* sp.  
*Spirontocaris* sp.  
*Pandalus montagui*  
*Pandalus borealis*  
*Mysis stenolepis*  
*Chthamalus* sp.  
Euphausiids (*Meganyctiphanes norvegica*)  
Copepods  
*Oithona*  
*Calanus*  
Plankton assort.

ECHINODERMATA

*Asterias vulgaris*  
*Asterias forbesi*  
*Ctenodiscus crispatus*  
*Henricia sanguinolenta*

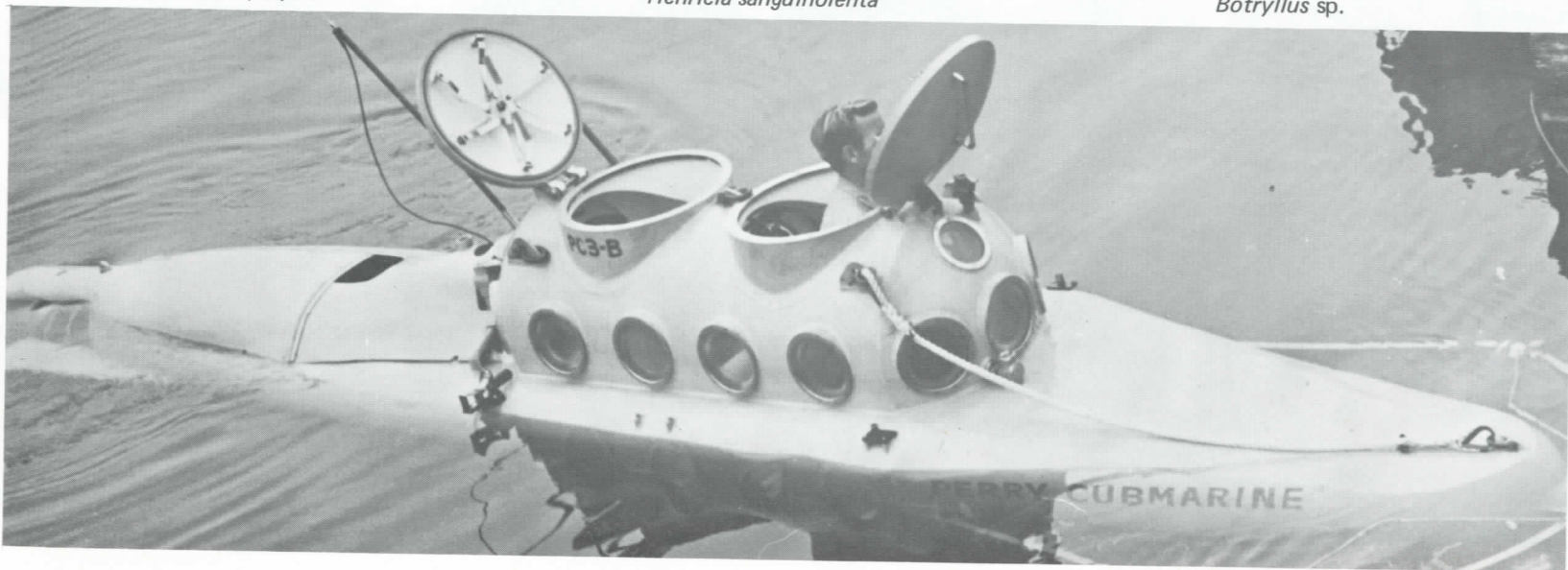
*Solaster endeca*  
*Crossaster papposus*  
*Caudina arenata*  
*Hippasterias* sp.  
*Leptasterias* sp.  
*Ophioderma* sp.  
*Gorgonocephalus arcticus*  
*Echinarachnius parma*  
*Stronglyocentrotus droehbachiensis*  
*Psolus* sp.  
*Ophiura* sp.  
*Cucumaria frondosa*

BRACHIOPODA

*Terebratulina* sp.  
*Terebratella* sp.

CHORDATA

*Saccoglossus* sp. (*Dolichoglossus*)  
*Halocynthia* sp.  
*Mogula* sp.  
*Boltenia* sp.  
*Botryllus* sp.



Chartered in the summer of 1968, the Cubmarine, which can dive to a depth of 600 ft, was used to observe performance of fishing gear as well as the behaviour of aquatic organisms in their natural habitat.

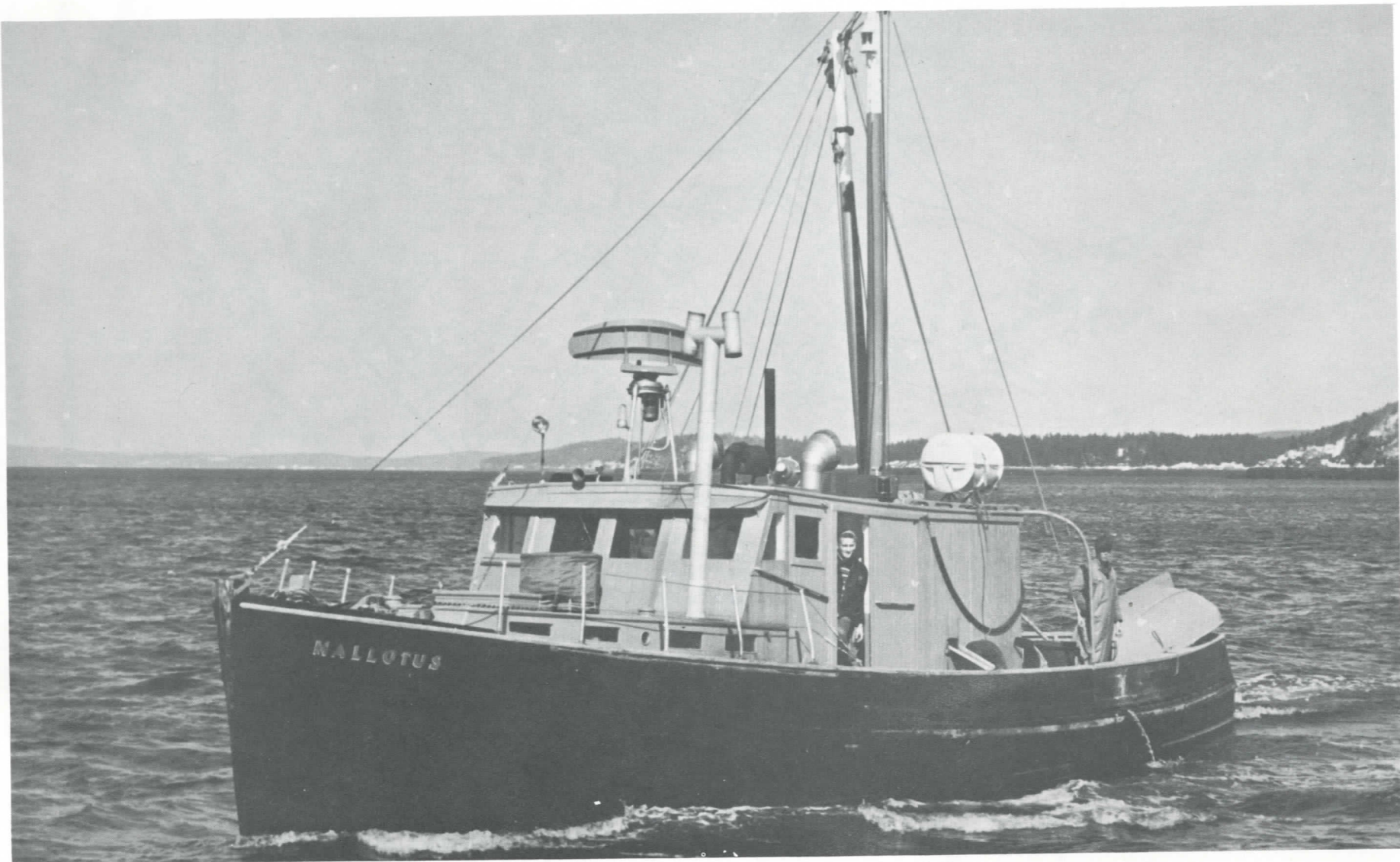


Looking toward the stacks from the library's reading room.

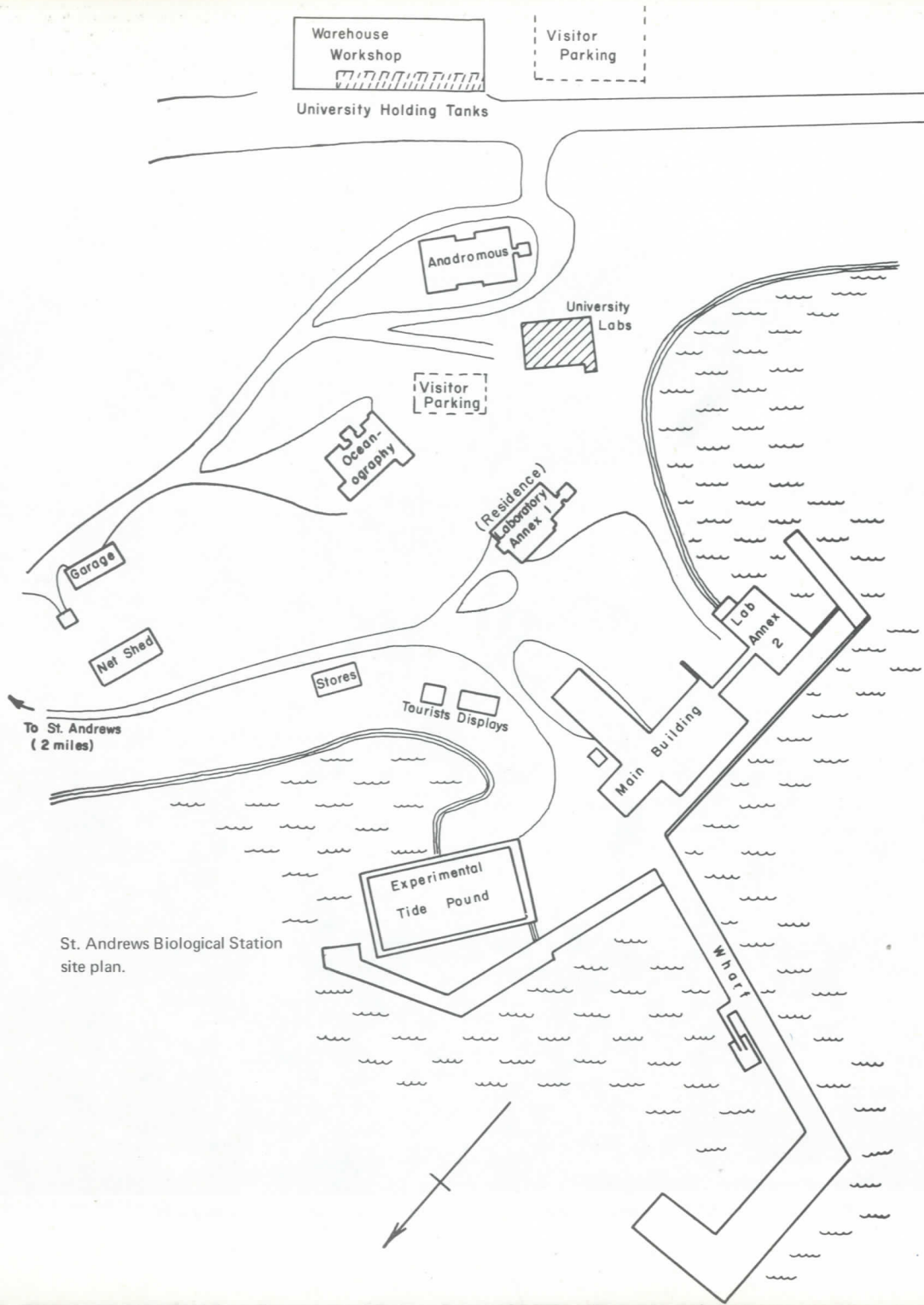


## Plant Kingdom

*Ascophylum, Chondrus, Chorda, Corallina, Enteromorpha, Fucus, Laminaria, Lithothamnion, Polysiphonia, Porphyra, Ulva, etc.*



The MALLOTUS, 54 ft, is used to make daily collections in the Passamaquoddy Bay area.



10' 5' 67° 55' 50' 45' 40' 35' 30'

# NEW BRUNSWICK (Canada)

## MAINE (United States)



Whis.  
Ra. Ref.  
Or



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