

## VI.

### ON THE FAUNA OF THE ATLANTIC COAST OF CANADA.

#### FOURTH REPORT.

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The second report of the Canadian Marine Biological Station (that for Canso, 1901-1902) gave a list of *Porifera*, *Cœlenterata* (with the exception of the *Hydroids*), and *Echinodermata*, of St. Andrews, N.B., and Canso, N.S. The present report is a continuation and embraces lists of the *Hydroids*, *Polyzoa*, *Brachiopoda*, and *Mollusca* from all five localities occupied by the station up to the present time, viz.: St. Andrews, N.B.; Canso, N.S.; Malpeque, P.E.I.; Gaspé, P.Q.; and Seven Islands, P.Q.

Such lists of themselves are more or less unreadable or uninteresting, and besides give but little indication of the labour of collecting and identifying the species. Much could be said about the size, shape, colour, organs, activities, variations, reproduction, habitat, distribution, or other attributes of each. But with every change of locality of the station new forms and new features have arisen, so that the subject has been continually growing and contributing a clearer perspective of its contents as well as indicating the direction of future work. In the meantime these lists will preserve, in briefest form, much information that, through accident to specimens or notes, might otherwise be lost. Since leaving Canso it has seemed advisable to give special accounts of the faunas of the localities visited and to continue the more comparative work on phyla in a separate series.

Irrespective of the Hudson Bay regions, we may consider the study of our Atlantic fauna to have originated at three different centres.

(1) New England zoological pioneers crept up along the shores of the great Gulf of Maine to Grand Manan and reached out along the Atlantic coast of Nova Scotia for 'curios' brought back by the hazardous expeditions of Gloucester fishing fleets to Lahave, Sable Island, Banquereau, and the Grand Banks. Foremost of these were Stimpson and Verrill, whose works were afterwards supplemented by those of Nova Scotian and New Brunswick naturalists such as Willis and Ganong.

(2) Naturalists from our great inland institutions wandered down the River St. Lawrence and spread over a considerable area of the gulf with Gaspé as the centre. Of these Dawson, familiarized in his youth with the rocks, weeds, and animals of the seashore at Pictou in the Acadian gulf, besides contributing most valuable papers of his own, inspired students of McGill University and the Montreal Natural History Society, his influence spreading through Bell, Whiteaves, Lambe and others to various parts of the Dominion.

(3) We are again indebted to the United States naturalists Packard, Verrill, Stearns, &c., who may be regarded as having made the bleak coast of southern Labrador their centre.

These praiseworthy endeavours to gain a knowledge of the northern fauna of the New World by more or less hasty glimpses at points widely separated and by men often of different special training, with perhaps different objects in view, and to some extent following different authorities, may have given rise to incongruities that are not so likely to occur in a more systematic examination of the regions

included by one and the same zoologist fortified with a practical knowledge of every phase of the subject.

Hitherto *Protozoa*, except the *Foraminifera* and then only from the standpoint of geology, have not at all been studied.

Collections of *Porifera* still await examination, and we lack information on the natural conditions and appearances of the living animals.

There is much to learn about our *Cœlenterates* especially the *Hydroids* and *Medusæ*.

Some *Echinoderms* are of doubtful identity or specific value.

The *Vermes*, excepting *Annelids*, have not been studied and especially that great army of parasitic worms including some *Turbellaria* and *Nemertea*, all *Trematoda*, *Cestoda*, *Nematoda*, *Acanthocephala* and *Hirudinea*.

Nearly all the known *Molluscoida* have been determined as is the case in several other phyla, by foreign specialists, and we have merely the name but no types to refer to.

*Arthropods* have been often ignored, the numerous parasitic *Cirripedia*, *Copepoda*, and *Isopoda* almost entirely.

Shells of *Mollusca* have been most frequently studied, but with regard to many of these there are doubts whether northern and southern species under different names are not identical or whether there are not included in the same species two or more different forms. Young stages are sometimes very difficult to distinguish. The more defenceless *Nudibranchs* require to be studied on the spot, for it is impossible to identify bleached and shrunken alcoholic specimens, while descriptions of the latter are useless.

Our *Tunicata* have never been studied by Canadian zoologists, and the knowledge we have of them is from foreign specialists upon preserved material.

Of marine *Vertebrates* we may be said to know only the commoner from actual observation by trained men, while a great deal that passes for knowledge depends upon more or less untrustworthy statements of fishermen or mariners not accustomed to the accurate and comparative methods of science.

Several small groups as the *Orthonectidæ*, *Gephyrea*, *Rotifera*, *Acarina*, &c., have been neglected.

The foregoing references are to the purely morphological aspect of our science, which is surely the basis of training of our judgments on the one hand and of our means of expression on the other. But when we pass to the many other branches of study of our animals we are entering fields scarcely known to exist except by the few specialists whose researches have directed them towards particular trains of observation and thought. To mention physiology and embryology is but to suggest two other forms of study of an individual whose morphology is subject to continual change, due in the one case to the requirements of vital processes and reactions and in the other to its origin from a parent and subsequent development. While embryology (*ontogeny*) considers individuals as respects their immediate origin and relationships in lineal series, phylogeny comprehends the ultimate origins and relationships of these series. I need not begin to mention the many secondary subdivisions of these primary aspects, carrying similar considerations down from the individual to its cells, the units of structure and of function. But there is another train of relationships beginning with the physiology of the cell, extending through that of the individual, and culminating in ecology or the study of individuals, races, phyla, with respect to their different relations and reactions to one another and to the other objects around them *i.e.* to their entire environment.

The sea was the original home of all animals and is still the habitation of the masses and of the most generalized (primitive) representatives of the great phyla, of which the *Echinodermata* and *Tunicata* are entirely marine, the *Porifera*, *Cœlenterata*,

and *Molluscoida* are almost entirely marine, while vast numbers of *Protozoa*, *Vermes*, *Arthropoda*, *Mollusca*, and *Vertebrata* are still confined to the salt water.

There appears to be an Arctic or circum-polar fauna which extends southward to varying distances into the Atlantic and Pacific oceans, permitting certain species to be obtained indifferently off the Alaskan, Labrador or Scandinavian coasts.

A Syrtensian or Intermediate fauna has been claimed to inhabit the seas of Labrador and Newfoundland and to be represented in the deepest and coolest parts of the Bay of Fundy.

An Acadian or Nova Scotian fauna occupies the southern portion of the Gulf of St. Lawrence and extends from Newfoundland to Cape Cod, where it passes into the Virginian fauna.

These assemblages of animals overlap one another, sometimes to the extent that certain Arctic forms may intermingle even with Virginian species, and Pleistocene fossils indicate that many species now confined to the colder parts of the gulf had formerly a much broader distribution.

Some marine animals inhabit the littoral zone (between high and low tide marks), some the laminarian zone (down to 15 fathoms), many the coralline zone (to 50 fathoms); abyssal forms exist in greater depths, pelagic species on the surface of the sea. There are those that for their whole adult life are fixed to one spot, those that though free to move live a quiescent life, hiding in cracks of rock or burrowing in mud, those that pursue an active rapacious life, migrating through long distances. They are all subject to accident from physical forces or from enemies, and have developed wonderful powers of repair and reproduction, as well as of protection, defence, elusion, &c.

Turning from what may be regarded as the more theoretical to the more practical side of zoology, we would have to consider those animals that supply food, clothing, ornaments, dyes, bait, fertilizers, &c. Several of the great phyla (*Cœlenterata*, *Echinodermata*, *Polyzoa*, *Tunicata*) are of little or no direct commercial value, but they affect in one way or another those that are—serving them as food, competing with them for a living, or (*Protozoa*, *Vermes*, *Arthropoda*) attacking them as parasites, sometimes occasioning fatal diseases.

The *Mollusca*, the *Arthropoda*, and the *Vertebrata* are of greatest economic importance. The first group supplies oysters, clams, scallops, quahogs, mussels, razor-fish, periwinkles, whelks, squid, useful as food for man or bait for fish; some of the bivalves yield pearls and some of the gastropods, dyes. The second furnishes lobsters, crabs, shrimps, prawns, &c. The third and by far the most valuable group is the *Vertebrata*, from which we obtain our various food-fishes, whale-oil, sealskins, &c. Salt water food-fishes such as the salmon, trout, cod, haddock, pollack, herring, smelt, shad, mackerel, striped-bass, halibut, &c., besides their flesh, yield many other products and even their waste parts are now converted into a fertilizer. We have many other species of fish that we have not yet learned or been driven to make use of, except occasionally for bait, and for which there is no demand, partly, doubtless, because of our unlimited supply of the most estimable and most reputable kinds.

It is not easy to comprehend the full significance of these fisheries—extending far beyond the marketable value of their products. Besides the thousands of fishermen and their families directly engaged, there are shipbuilders and manufacturers of gear and tackle, the great fishing firms who buy, dry, cure and pack the fish, and all those employed in transportation, retailing, &c.

This brief outline should suffice to show the importance of keeping a record of the species that occur while we are engaged in investigations and experiments having a more direct bearing upon economic fishery problems. Lists of animals constitute an inventory of the stock at hand, and every additional fact has its part in establishing or dissolving theories of wide and momentous significance.

## COELENTERATA.

*Hyroida.*

The only species of the larger Cœlenterates to be added to the St. Andrews-Canso list are:—

*Halyclystus auricula*, Clark, Malpeque.

*Lucernaria quadricornis*, Müller, Seven Islands.

Of the 69 hydroids in the following list 30 are new for the eastern coast of Canada. Of the latter, 15 have been reported from the eastern coast of the United States; 9 occur off the coasts of Alaska, Greenland, Iceland, Scandinavia or Russia; the other six are thought to be new species.

This list is more complete for Gaspé and Seven Islands than for the first three localities of the station. At St. Andrew's the sudden presentation of an extensive fauna rendered it impossible to at once do justice to every group.

At Canso the hydroids were turned over to Mr. Fraser, from the University of Toronto, who was working on them there, my own specimens being what I have found attached to shells, ascidians or other objects in my collection. At Malpeque, the territory accessible was not rich in hydroids. There are five or six specimens in the Redpath museum collected by Dawson at Gaspé, about two dozen small bottles full collected by Deeks, formerly lecturer in zoology at McGill University, also from Gaspé, and about 10 small bottles collected by Deeks in the Strait of Belle Isle. All of these are unlabelled, but, as far as they go, agree with my own collections, except that there is a *Sertularella geniculata*, Hincks, from the Strait of Belle Isle.

Six species are inserted without specific names and may be new. The introduction of new names without appropriate descriptions and drawings is not to be recommended, but there are already in the literature a number of such with descriptions so meagre as to be equally well applied to several species. Where this is true for our own territory, I hope to be able to dredge on the grounds concerned in order to judge more accurately regarding the forms in question. The greatest lack in descriptions of hydroids is measurements. It is but little satisfaction to the systematist to learn that a given species is larger or smaller than a certain other species from which it is to be distinguished when no measurements are to hand for either. Much information must be gathered before any satisfactory discussion of our hydroids can be attempted.

The *Gonothyræa* inserted occurs between the clustered stems of *Tumularia*. Its *hydrotheca* has about 24 long, narrow, rigid, sharp teeth, separated by broad, rounded spaces below, and continuing as thickened lines down the *hydrotheca*.

Four *Thuiariae*, of which the first two resemble *T. argentea* and *T. tenera*, the third being most like *T. similis*, but with alternate branches growing out of the apices of *hydrothecæ*, and the fourth has the proximal parts of the branches weak with narrow, distant *hydrothecæ*, but the distal parts thick with broad, crowded *hydrothecæ*. The *Abietinaria* most resembles *A. gigantea*, Clark.

*Clava leptostyla*, Agassiz—St. Andrews, Canso, Seven Islands.

*Cordylophora lacurtris*, Allman—St. Andrews, Gaspé, Seven Islands.

*Dicoryne mirabilis*, L. Agassiz—Seven Islands.

*Dicoryne flexuosa*, G. O. Sars—St. Andrews.

*Bougainvillia Carolinensis*, McCr.—St. Andrews, Seven Islands.

*Eudendrium ramosum*, L.—St. Andrews, Gaspé, Seven Islands.

*Eudendrium dispar*, Ag.—St. Andrew's, Seven Islands.

*Eudendrium capillare*, Alder—St. Andrew's.

*Eudendrium tenue*, Agassiz—St. Andrew's.

*Tubularia indivisa*, L.—St. Andrew's.

*Thamnocnida larnyx*, L.—St. Andrew's, Malpeque, Gaspé.

- Hydractinia echinata*, Johnston—St. Andrew's, Malpeque, Gaspé, Seven Islands.  
*Monocaulus glacialis*, M. Sars—St. Andrew's.  
*Monobrachium parasitum*, Mereschowsky—Gaspé.  
*Campanularia volubilis*, Pallas—St. Andrew's, Gaspé, Seven Islands.  
*Campanularia flexuosa*, Hincks—St. Andrew's, Canso, Gaspé, Seven Islands.  
*Campanularia verticillata*, L.—St. Andrew's, Gaspé, Seven Islands.  
*Campanularia neglecta*, Alder—St. Andrew's, Seven Islands.  
*Campanularia caliculata*, Hincks—Seven Islands.  
*Campanularia speciosa*, Clark—Gaspé, Seven Islands.  
*Campanularia integra*, Macgillivray—Seven Islands.  
*Obelia flabellata*, Hincks—St. Andrew's, Seven Islands.  
*Obelia longissima*, Pallas—St. Andrew's, Seven Islands.  
*Obelia dichotoma*, L.—St. Andrew's, Gaspé, Seven Islands.  
*Obelia geniculata*, L.—St. Andrew's, Canso, Gaspé, Seven Islands.  
*Gonophyræa lovéni*, Allman—St. Andrew's, Canso, Gaspé, Seven Islands.  
*Gonophyræa* Sp.—Malpeque.  
*Clytia Johnstoni*, Alder—St. Andrew's.  
*Clytia noliformis*, McCr.—Canso, Gaspé, Seven Islands.  
*Calycella syringa*, L.—St. Andrew's, Malpeque, Gaspé, Seven Islands.  
*Calycella quadridentata*, Hincks—Gaspé.  
*Cuspidella costata*, Hincks—Gaspé.  
*Opercularella lacerta*, Hincks—St. Andrew's.  
*Lafoea fruticosa*, Sars—Seven Islands.  
*Lafoea gracillima*, Alder—Gaspé, Seven Islands.  
*Lafoea robusta*, Verril. With *Coppinia arcta* (*Coppinia mirabilis*)—St. Andrew's Gaspé, Seven Islands.  
*Halecium halecium*, L.—St. Andrew's.  
*Halecium muricatum*, Ellis & Solander—St. Andrew's, Canso, Gaspé.  
*Halecium beani*, Johnston—St. Andrew's, Seven Islands.  
*Halecium gracile*, Verrill—St. Andrew's, Seven Islands.  
*Halecium tenellum*, Hincks—St. Andrew's, Gaspé, Seven Islands.  
*Halecium articulatum*, Clark—St. Andrew's.  
*Hebella calcarata*—*Lafoea calc.*, A. Ag.—Canso.  
*Sertularia pumila*, L.—St. Andrew's, Canso, Seven Islands.  
*Sertularella polyzonias*, L.—St. Andrew's, Gaspé, Seven Islands.  
*Sertularella tricuspudata*, Alder—St. Andrew's, Gaspé, Seven Islands.  
*Sertularella rugosa*, L.—Seven Islands.  
*Thuiaria thuja*, L.—Seven Islands.  
*Thuiaria Fabricii*, Levinsen—Gaspé, Seven Islands.  
*Thuiaria cupressina*, L.—St. Andrew's.  
*Thuiaria argentea*, Ellis & Solander—St. Andrew's, Gaspé.  
*Thuiaria* Sp.—Gaspé.  
*Thuiaria latiuscula*, Stimpson—Gaspé, Seven Islands.  
*Thuiaria robusta*, Clark—Gaspé, Seven Islands.  
*Thuiaria immersa*, Nutting—Seven Islands.  
*Thuiaria tenera*, Sars—Gaspé, Seven Islands.  
*Thuiaria* Sp.—Gaspé, Seven Islands.  
*Thuiaria semilis*, Clark—Gaspé.  
*Thuiaria* Sp.—Gaspé.  
*Thuiaria* Sp.—Gaspé.  
*Abietinaria abietina*, L.—St. Andrew's, Canso, Gaspé, Seven Islands.  
*Abietinaria* Sp.—Seven Islands.  
*Diphasia fallax*, Johnston—St. Andrew's.

- Diphasia rosacea*, L.—St. Andrew's.  
*Hydrallmania falcata*, L.—St. Andrew's, Gaspé, Seven Islands.  
*Selaginopsis mirabilis*, Norman—Gaspé, Seven Islands.  
*Grammaria abietina*, M. Sars—(= *Salacia abietina*)—Gaspé, Seven Islands.  
*Antennularia antennina*, L.—St. Andrew's.  
*Schizotricha gracillina*, Sars—Grand Manan.

## MOLLUSCOIDA.

### I. *Polyzoa* (*Bryozoa*).

Canso specimens were turned over to Mr. Cornish, of the University of Toronto, who contributed an article on them to the Canso report—28 species, of which 3 are new to our territory. At Malpeque *Polyzoa* are not numerous, but at Gaspé and Seven Islands there are good collecting grounds. Of the 70 species given here, 15 are new to the Atlantic coast of Canada. There are in the Redpath museum 14 or 15 species from this region labelled by Dawson.

- Ætea anguinea*, L.—St. Andrew's.  
*Gemellaria loricata*, L.—St. Andrew's, Gaspé, Seven Islands.  
*Gemellaria loricata*, var. *Americana*, Lam.—Gaspé.  
*Cellularia Peachii*, Busk.—St. Andrew's, Seven Islands.  
*Menipea ternata*, Ellis and Solander—St. Andrew's, Malpeque, Gaspé, Seven Islands.  
*Scrupocellaria scabra*, van Beneden—Malpeque, Gaspé, Seven Islands.  
*Caberea Ellisii*, Fleming—St. Andrew's, Malpeque, Seven Islands.  
*Bugula Murrayana*, Johnson—St. Andrew's, Malpeque, Gaspé, Seven Islands.  
*Bugula plumosa*, Pallas—St. Andrew's, Malpeque.  
*Bugula gracilis*, Busk.—St. Andrew's.  
*Flustra digitata*, Packard—St. Andrew's, Gaspé.  
*Electra catenularia*, Jameson—St. Andrew's, Gaspé, Seven Islands.  
*Membranipora lineata*, L.—Gaspé, Seven Islands.  
*Membranipora craticula*, Alder—Seven Islands.  
*Membranipora unicornis*, Fleming—St. Andrew's, Seven Islands.  
*Membranipora monostachys*, Busk.—Seven Islands.  
*Membranipora spinifera*, Johnston—Seven Islands.  
*Membranipora flustroides*, Hincks—Seven Islands.  
*Membranipora Lacroixii*, Audouin—Gaspé, Seven Islands.  
*Membranipora solidula*, Alder, and Hincks—St. Andrew's.  
*Cribilina punctata*, Hassall—Seven Islands.  
*Cribilina annulata*, Fabricius—St. Andrew's, Seven Islands.  
*Membraniporella crassicauda*, Hincks—Gaspé.  
*Porina tubulosa*, Norman—Seven Islands.  
*Myriozoum subgracile*, D'Orbigny—St. Andrew's, Gaspé, Seven Islands.  
*Schizoporella sinuosa*, Busk.—Seven Islands.  
*Schizoporella hyalina*, L.—St. Andrew's, Seven Islands.  
*Schizoporella cincta*, Hincks—Seven Islands.  
*Hippothoa divaricata*, Lamouroux—Seven Islands.  
*Hippothoa expansa*, Dawson—Seven Islands.  
*Lepralia Pallasiana*, Moll.—St. Andrew's.  
*Lepralia hippopus*, Smith—Seven Islands.  
*Umbonula verrucosa*, Esper.—Seven Islands.  
*Escharoides Sarsii*, Smith—St. Andrew's, Canso, Gaspé, Seven Islands.  
*Porella concinna*, Busk.—Gaspé, Seven Islands.

- Porella minuta*, Norman—Seven Islands.  
*Porella acutirostris*, Smith—Seven Islands.  
*Porella proboscidea*, Hincks?—Seven Islands.  
*Porella skenei*, Ellis and Solander?—St. Andrew's, Canso, Gaspé.  
*Porella elegantula*, D'Orbigny—Gaspé.  
*Porella surcularis*, Packard—Gaspé, Seven Islands.  
*Smittia landsborovii*, Johnston—Gaspé, Seven Islands.  
*Smittia arctica*, Norman—Gaspé, Seven Islands.  
*Smittia producta*, Packard—St. Andrew's, Seven Islands.  
*Mucronella Peachii*, Johnston—St. Andrew's, Gaspé.  
*Mucronella ventricosa*, Hassall—Seven Islands.  
*Mucronella pavonella*, Alder—Seven Islands.  
*Rhamphostomella costata*, Lorenz.—St. Andrew's, Seven Islands.  
*Cellepora pumicosa*, L.—Canso, Gaspé.  
*Crisia eburnea*, L.—Gaspé.  
*Crisia denticulata*, Lamarck—St. Andrew's, Gaspé, Seven Islands.  
*Stomatopora penicillata*, Fabr.—Gaspé.  
*Stomatopora diastoporoides*, Norman—St. Andrew's.  
*Tubulipora flabellaris*, Fabr.—Seven Islands.  
*Tubulipora fimbria*, Lamarck—St. Andrew's, Gaspé, Seven Islands.  
*Tubulipora expansa*, Packard—Seven Islands.  
*Idmonea Atlantica*, Johnston—St. Andrew's, Gaspé, Seven Islands.  
*Entalophora clavata*, Busk.—Gaspé.  
*Lichenopora hispida*, Fleming—St. Andrew's, Seven Islands.  
*Lichenopora verrucaria*, Fabr.—Seven Islands.  
*Flustrella hispida*, Fabr.—St. Andrew's, Canso, Seven Islands.  
*Alcyonidium gelatinosum*, L.—Canso, Gaspé.  
*Alcyonidium parasiticum*, Flem.—Gaspé.  
*Alcyonidium hirsutum*, Flem.—Malpeque.  
*Alcyonidium polyoun*, Has.—St. Andrew's.  
*Pedicellina gracilis*, Sars.—St. Andrew's, Seven Islands.  
*Pedicellina cornua*, Pallas—St. Andrew's.  
*Bowerbankia gracilis*, Leidy?—Gaspé, Seven Islands.  
*Triticella flava*, Dal.—St. Andrew's.  
*Triticella pedicellata*, Ald.—St. Andrew's.

## II. Brachiopoda.

- Terebratulina septentrionalis*, Couthony—St. Andrew's, Canso.  
*Hemithyris psittacea*, Gmelin—Gaspé, Seven Islands.

## MOLLUSCA.

That the Mollusca have been more completely exploited faunistically than other groups may be judged from the fact that of 135 species in the following list only seven are reported new to our region, and each of these occurred at one place only. *Kellia planulata* was found at Malpeque sticking to oyster shells. *Doridella obscura* was obtained but once by dragging a plankton net through weeds by Ram Island, Malpeque. Four Nudibranchs are perhaps local in distribution—*Placobranchus catulus* and *Elysia chlorotica* at Malpeque, *Eolis pellucida* at Canso, *Doris bifida* not at any of the five localities of the station, but at New Harbour in Mahone Bay, Nova Scotia. *Loligo Pealii* occurs in early summer at St. Andrews.

A more critical examination may separate other species in such genera as *Buccinum*, *Bela*, *Margarita*, *Macoma*, *Crenella*, *Astarte*. It is sometimes difficult to

decide if a given shell is adult or the young of a larger species (*Bela*, *Tritonofusus*, *Apporrhais*, &c.). The young of *Serripes*, *Thracia conradi*, *Limatula*, may appear somewhat different from the adults. *Mya truncata*, *Thracia*, *Limatula*, are seldom found alive. *Mytilus*, *Mya*, *Saxicava*, *Acmea*, *Lunatia*, *Littorina*, *Apporrhais*, are found throughout the whole region. *Acmea* and *Littorina* are large at the south, diminutive towards the north; *Mesodesma* the reverse. *Cyprina* and *Neptunea decemcostata* are examples occurring only to the south; *Kennerlia* and *Neptunea despecta* only north. *Ostrea*, *Venus*, *Clidiophora*, *Tottenia*, *Crepidula* and *Eolis papillosa* are local in occurrence, the first five closely associated.

- Anomia aculeata*, Müller—St. Andrews, Malpeque, Gaspé, Seven Islands.  
*Anomia simplex*, Orbigny—St. Andrews, Canso, Malpeque, Gaspé.  
*Ostrea Virginica*, Gmelin—Malpeque.  
*Pecten Islandicus*, Müller—St. Andrews, Canso, Gaspé, Seven Islands.  
*Pecten Magellanicus*, Gmelin—St. Andrews, Canso, Malpeque, Gaspé.  
*Limatula subauriculata*, Montagu—Cape Gaspé.  
*Mytilus, edulis*, L.—St. Andrews, Canso, Malpeque, Gaspé, Seven Islands.  
*Modiola modiolus*, L.—St. Andrews, Canso, Malpeque, Gaspé, Seven Islands.  
*Modiola demissa*, Dillwyn—St. Andrews, Malpeque.  
*Modiolaria, discors*, L.—St. Andrews, Canso, Gaspé, Seven Islands.  
*Modiolaria nigra*, Gray—St. Andrews, Canso, Gaspé, Seven Islands.  
*Crenella faba*, Müller—Gaspé, Seven Islands.  
*Crenella pectinula*, Gould—Cape Gaspé, Seven Islands.  
*Crenella glandula*, Totten—St. Andrews, Seven Islands.  
*Crenella decussata*, Montagu—Gaspé.  
*Nucula tenuis*, Montagu—Seven Islands.  
*Leda minuta*, Müller—Canso, Gaspé, Seven Islands.  
*Leda pernula*, Müller—St. Andrews, Canso, Gaspé.  
*Leda tenuisulcata*, Couthouy—St. Andrews, Gaspé.  
*Yoldia limatula*, Say—St. Andrews, Malpeque, Gaspé, Seven Islands.  
*Yoldia sapotilla*, Gould—St. Andrews, Canso.  
*Megayoldia thraciaciformis*, Storer—St. Margaret's Bay, N.S.  
*Cardium ciliatum*, Fabr.—St. Andrews, Canso, Gaspé, Seven Islands.  
*Cardium pinnulatum*, Conrad—St. Andrews, Canso, Malpeque, Gaspé.  
*Serripes Græulandicus*, Gmelin—Canso, Gaspé, Seven Islands.  
*Cyprina Islandica*, L.—St. Andrew's.  
*Astarte lactea*, Brod. & Sow.—Gaspé, Seven Islands.  
*Astarte compressa*, L.—St. Andrew's, Canso, Gaspé, Seven Islands.  
*Astarte undata*, Gould—St. Andrews, Canso, Gaspé, Seven Islands.  
*Astarte castanea*, Say—St. Andrew's  
*Astarte Banksii*, Leach—Canso, Gaspé, Seven Islands.  
*Venericardia borealis*, Conrad—St. Andrews, Gaspé, Seven Islands.  
*Venus mercenaria*, L.—Malpeque.  
*Tottenia gemma*, Totten—Malpeque.  
*Cytherea convexa*, Say—St. Andrews, Malpeque.  
*Liocyma fluctuosa*, Gould—Canso, Gaspé.  
*Petricola pholadiformis*, Lam—Malpeque.  
*Cryptodon Gouldii Phillippi*—Gaspé.  
*Kellia planulata*, Stim.—Malpeque.  
*Spisula solidissima*, Dillwyn—Malpeque.  
*Spisula polynyma*, Stimson—Gaspé, Seven Islands.  
*Mesodesma deauratum*, Turton—St. Andrews, Gaspé, Seven Islands.  
*Cumingia tellinoides*, Conrad—Malpeque.  
*Tellina tenera*, Say—Malpeque, Gaspé.

- Macoma balthica*, L.—St. Andrews, Malpeque, Gaspé, Seven Islands.  
*Macoma calcarea*, Gmelin—Gaspé, Seven Islands.  
*Ensis directus*, Conrad—St. Andrews, Canso, Malpeque, Gaspé, Seven Islands.  
*Siliqua costata*, Say—Gaspé, Seven Islands.  
*Chidiophora Gouldiana*, Dall—St. Andrews, Malpeque.  
*Kennerlia glacialis*, Leach—Mal Bay (Gaspé), Seven Islands.  
*Lyonsia arenosa*, Müller—Mal Bay (Gaspé).  
*Periploma fragilis*, Totten—Gaspé.  
*Thracia Conradi*, Couthouy—St. Andrews, Gaspé.  
*Thracia myopsis*, Müller—Gaspé.  
*Mya arenaria*, L.—St. Andrews, Canso, Malpeque, Gaspé, Seven Islands.  
*Mya truncata*, L.—St. Andrews, Gaspé, Seven Islands.  
*Saxicava rugosa*, L.—St. Andrews, Canso, Malpeque, Gaspé, Seven Islands.  
*Cyrtodaria siliqua*, Daudin—Canso, Gaspé, Seven Islands.  
*Panopæa Norvegica*, Spengler—Gaspé, Seven Islands.  
*Zirfaea crispata*, L.—Malpeque.  
*Xylophaga dorsalis*, Turton—Gaspé.  
*Teredo navalis*, L.—Canso, Malpeque.  
*Dentalium entalis*, L.—St. Andrews.  
*Tonicella marmorea*, Fabr.—St. Andrews, Malpeque, Gaspé, Seven Islands.  
*Trachydermon albus*, L.—St. Andrews, Canso, Gaspé, Seven Islands.  
*Amicula vestita*, Brod and Sow.—Gaspé.  
*Lepeta cæca*, O. F. Müller—St. Andrews, Gaspé, Seven Islands.  
*Acmæa testudinialis*, Müller—St. Andrews, Canso, Malpeque, Gaspé, Seven Islands.  
*Acmæa alveus*—Malpeque, Seven Islands.  
*Acmæa rubella*, Fabricius—Seven Islands.  
*Puncturella noachina*, L.—St. Andrews, Gaspé, Seven Islands.  
*Margarita olivacea*, Brown—Malpeque.  
*Margarita undulata*, Sowerby—St. Andrews, Malpeque, Gaspé, Seven Islands.  
*Margarita cinerea*, Conthouy—St. Andrews, Canso, Malpeque, Gaspé, Seven Islands.  
*Odostomia trifida*, Totten—Malpeque.  
*Odostomia seminuda*, Adams—Malpeque.  
*Menestho albula*, Fabr.—Canso.  
*Scalaria grænlandica*, Perry—St. Andrews.  
*Lunatia heros*, Say—St. Andrews, Canso, Malpeque, Gaspé, Seven Islands.  
*Lunatia grænlandica*, Müller—St. Andrews.  
*Natica clausa*, Brod. and Sow.—St. Andrews, Gaspé, Seven Islands.  
*Velutina lævingata*, Pennant—St. Andrews, Canso, Gaspé, Seven Islands.  
*Velutina undata*, Brown—St. Andrews, Gaspé.  
*Marsenina glabra*, Couthouy—Seven Islands.  
*Crepidula fornicata*, L.—St. Andrews, Canso, Malpeque.  
*Crepidula plana*, Say.—Malpeque.  
*Crucibulum striatum*, Say.—St. Andrews, Canso.  
*Litorina rudis*, Maton.—St. Andrews, Canso, Malpeque, Seven Islands.  
*Litorina palliata*, Say—St. Andrews, Canso, Malpeque.  
*Litorina litorea*, L.—St. Andrews, Canso, Malpeque, Gaspé, Seven Islands.  
*Lacuna vincla*, Montagu.—St. Andrews, Malpeque, Gaspé, Seven Islands.  
*Turritella erosa*, Couthouy—St. Andrews, Canso, Malpeque, Gaspé, Seven Islands.  
*Turritella reticulata*, Mighels and Adams—Malpeque, Gaspé, Seven Islands.  
*Turritella costulata*, Müller—St. Andrews.  
*Trichotropis borealis*, Brod. and Sow.—St. Andrews, Canso, Gaspé, Seven Islands.  
*Bittium nigrum*, Totten—Malpeque.  
*Cerithrithiopsis costulata*, Müller—St. Andrews.

- Aporrhais occidentalis*, Beck—St. Andrews, Canso, Malpeque, Gaspé, Seven Islands.
- Trophon clathratus*, L.—Gaspé, Seven Islands.
- Trophon clathratus* var *Gunneri*—St. Andrews, Canso, Seven Islands.
- Purpura lapillus*, L.—St. Andrews, Percé, Seven Islands.
- Astryris lunata*, Say—St. Andrews, Malpeque.
- Nassa trivittata*, Say—St. Andrews, Canso, Gaspé.
- Buccinum undatum*, L.—St. Andrews, Canso, Gaspé.
- Buccinum Tottenii*, Stimpson—St. Andrews.
- Neptunea despecta*, var *tornata*, Gould—Malpeque, Gaspé, Seven Islands.
- Neptunea decemcostata*, Say—St. Andrews, Canso.
- Sipho stimpsoni*, Mörch—St. Andrews, Canso.
- Sipho pygmaeus*, Gould—St. Andrews, Canso, Gaspé.
- Tritonofusus Kroyeri*, Müller—Seven Islands.
- Admete Couthouyi*, Jay—Gaspé, Mal Bay, Seven Islands.
- Bela cancellata*, Mighels—Seven Islands.
- Bela decussata*, Couthouy—St. Andrews, Canso, Malpeque, Gaspé, Seven Islands.
- Bela pleurotomaria*, Couthouy—St. Andrews, Canso, Gaspé, Seven Islands.
- Philine lima*, Brown—St. Andrews, Canso.
- Philine quadrata*, Searles Wood—Gaspé.
- Cylichra alba*, Brown—St. Andrews, Canso.
- Retusa pertenuis*, Mighels—Gaspé.
- Retsua Gouldii*, Couthouy—Gaspé.
- Torratina canaliculata*, Say—Malpeque.
- Doridella obscura*, Verrill—Malpeque.
- Doto coronata* (Gmelin)—St. Andrews.
- Placobranchus catulus*, Ag.—Malpeque.
- Elysia chlorotica*, Ag.—Malpeque.
- Æolis papillosa*, L.—St. Andrews, Canso.
- Æolis pellucida*, Alder and Han.—Canso.
- Æolis purpurea*, Stimpson—St. Andrews, Gaspé.
- Coryphella Mananensis*, Stimpson—Malpeque, Gaspé, Seven Islands.
- Dendronotus arborescens*, Müller—St. Andrews, Canso, Gaspé, Seven Islands.
- Polycera Lessonii*, Orbigny—St. Andrews, Malpeque.
- Doris planulata*, Stimpson—St. Andrews, Canso, Gaspé.
- Doris bifida*, Verrill—Chester, N.S.
- Loligo Pealii*, Lesueur—St. Andrews.
- Illex illecebrosus*, Lesueur—St. Andrews, Canso, Malpeque, Gaspé, Seven Islands.

MONTREAL, May 15, 1908.