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Canada. Geological Survey. (1)

GEOLOGICAL SURVEY OF CANADA

ROBERT BELL, M.D., D.Sc., LL.D., F.R.S., ACTING DIRECTOR.

CATALOGUE

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OF THE

MARINE INVERTEBRATA

OF

EASTERN CANADA.

BY

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In view of the establishment of a Marine Biological Station in the Maritime Provinces within the last three years, it is thought desirable to publish a 'Catalogue of the Marine Invertebrata of Eastern Canada.' The object of this Catalogue is to give a succinct idea of the present state of our knowledge of these invertebrata, so far as the identification of species, their geographical distribution, and bathymetrical range in the northern portion of the western side of the Atlantic are concerned.

It is hoped that this publication will act as a stimulus to renewed activity in the study of marine zoology, and that it will be of use not only to zoologists, but also to students of the fossils of the post-tertiary deposits of the eastern portion of the Dominion.

ROBERT BELL.

GEOLOGICAL SURVEY OFFICE
OTTAWA, June 26, 1901.

CEREBRATULUS LURIDUS, Verrill.

Bay of Fundy; off Halifax, N.S., &c., common (Verrill).

Doubtful species.

CEREBRATULUS MEDULLATUS, Hubrecht.

H.M.S. Challenger, Station 49 (May 20, 1873), south of Halifax, Nova Scotia, in 85 fathoms, gravel and stones. "This species is probably not a *Cerebratulus*" as here defined, "but more likely belongs to *Lineus* or *Micrura*, and perhaps to some of the species described above." (Verrill.)

Family *Cephalothricidæ*.

CEPHALOTHRIX LINEARIS (Rathke).

Planaria linearis, Rathke (1799).

Cephalothrix linearis, (Ersted (1844); et auct.

"Long Island Sound to Nova Scotia, at many localities, between tides, under stones and in sand" (Verrill).

CHÆTOPODA.*

POLYCHÆTA.

Family *Serpulidæ*.

SPIRORBIS BOREALIS, Daudin (?).

Serpula spirorbis, L. (1767).

? *Spirorbis spirillum*, Gould (1841); non L.

Spirorbis borealis (Daudin ?) Verrill (1873).

The commonest species of *Spirorbis* on the shores of the Gulf of St. Lawrence, attached to algæ, stones, shells, &c. It occurs in very shallow water, and ranges, on the north American side of the Atlantic, from Newhaven, Conn., to Labrador. Sir J. W. Dawson has found it fossil, in the Pleistocene deposits at Rivière du Loup, attached to shells.

"Whether this, our most common species, be identical with the European species known by this name is still uncertain. The animals of the various species of *Spirorbis* are still very imperfectly known, and many species have been described from the tubes alone. Accurate descriptions or figures of the animals are necessary before the species can be determined satisfactorily" (Verrill).†

* With the exception of the *Serpulidæ*, all the specimens in this list that are stated to have been dredged by the writer, have been either identified or described by Professor W. C. M'Intosh, LL.D., F.R.S., &c., of the University of St. Andrews, Scotland.

† U. S. Fish Commission, Report for 1871 and 1872 (1873), page 621.

SPIRORBIS LUCIDUS (Montagu).

Serpula porrecta, O. Fabricius (non Müller).

Serpula sinistrorsa, Montagu (1808).

Serpula lucida, Montagu (1808).

Spirorbis lucidus, Fleming, et auct. (Verrill).

Grand Manan, "found chiefly on Sertulariæ and other corallines" (Stimpson); Bay of Fundy, 10 to 80 fathoms, on hydroids (Verrill); Le Have Bank, N.S., in 45 fathoms, U. S. Fish Commission, 1872, (Smith and Harger); Gulf of St. Lawrence, at Gaspé Bay and many other localities, collected by Sir J. W. Dawson, Dr. R. Bell and the writer; Henley Harbour, Strait of Belle Isle, at a depth of 4 fathoms, on algæ (Packard).

Fossil in the Pleistocene deposits at Rivière du Loup, on the inside of shells (Sir J. W. Dawson).

This species forms small, translucent, glossy, reversed spiral tubes, coiled in an elevated spire, the last whorls usually turned up, or even erect and free (Verrill).*

SPIRORFIS VITREUS (Fabricius).

Serpula vitrea, O. Fabricius (1780).

Spirorbis vitreus, Dawson (1860); et auct.

Grand Manan, on a *Pecten* in 20 fathoms (Stimpson); Gaspé (Bell), Little Métis (Sir J. W. Dawson), Strait of Belle Isle, in 40 to 50 fathoms, and along the whole coast of Labrador (Packard); Greenland (Fabricius).

As a Pleistocene fossil this species has been found at Rivière du Loup, Murray Bay, Beauport and Montreal (Sir J. W. Dawson).

"*S. vitreus* is like *S. sinistrorsus*" (now called *S. vitreus*), "a reversed species, but is thick, semi-transparent, and has the whorls closely crowded, and in adult shells turned up and somewhat narrowed and thickened at the mouth. A group of these shells looks like a number of small drops of glass that had fallen on a stone and cooled there" (Sir J. W. Dawson).†

SPIRORBIS CANCELLATUS (Fabricius).

Serpula cancellata, O. Fabricius (1780).

Spirorbis cancellata, Dawson (1860).

Abundant at depths of less than 100 fathoms at many localities in the Gulf and mouth of the River St. Lawrence, where it has been dredged by Sir J. W. Dawson, Dr. R. Bell and the writer. Strait of Belle Isle, on a stony bottom,—and common on the whole coast of Labrador (Packard); Greenland, (Fabricius).

* U. S. Fish Commission, Report for 1871 and 1872 (1873), page 622.

† Canadian Naturalist and Geologist (1860), vol. v., p. 26.

Although so common in a living state, *S. cancellatus* has not yet been found in the Pleistocene deposits of eastern Canada.

SPIRORBIS GRANULATUS (Müller).

Serpula granulata, Müller (1776); and O. Fabricius (1780).

Spirorbis granulatus, Stimpson (1853); Dawson; and Packard.

Grand Manan, "common on stones, shells and the carapaces of crabs, in 20 to 50 fathoms;" Stimpson. "Found of large size along the whole coast of Labrador," in 10 to 40 fathoms (Packard); Greenland (Fabricius).

According to Sir J. W. Dawson, *S. granulatus* resembles *S. cancellatus*, "but wants the ornament around the margin, having only two furrows and three sharp elevated ridges on the upper side." "Fabricius, who found it in Greenland, states that its animal is yellow, with a white stopper on a short stalk, and six respiratory filaments."*

SPIRORBIS CARINATUS, Montagu.

Spirorbis carinata (Montagu), Dawson (1860).

"*Spirorbis carinata* (Mont.) is a deep water species, closely allied to *S. nautiloides*, if not a variety of it. It is distinguished by a keel or ridge running along the whorls, nearer the inner than the outer edge. In some old shells a second ridge appears, and then the shell very closely resembles *S. quadrangularis* of Stimpson. Young shells, on the other hand, are not distinguishable. This species is noted by Fabricius as a Greenland shell. It abounds in the collections of Mr. Bell of the Geological Survey, and in my own from Gaspé, where it occurred in deep water, attached to dead shells and stones. It was found at Labrador by Mr. Carpenter. I also have it on a stone taken up from the Banks of Newfoundland by a fisherman's hook, and presented to me by A. Dickson, Esq." (Sir J. W. Dawson, 1860, *Canad. Nat. and Geol.*, vol. v., p. 26).

More recently, in 1893, Sir J. W. Dawson says of this species: This "is a *Spirorbis* with one carina, found also in the Gulf of St. Lawrence, and possibly the same with the *S. contortuplicata* of Fabricius from Greenland; Little Métis."

"Fossil—Rivière du Loup, on shells."†

SPIRORBIS QUADRANGULARIS, Stimpson.

1853. *Synops. Marine Invert. Grand Manan*, p. 29.

Grand Manan, taken in 10 fathoms on stones (Stimpson). Described from the shells only.

* *Canadian Naturalist and Geologist* (1860), vol. v., p. 27.

† *The Canadian Ice Age, &c.*, Montreal, 1893, p. 260.

SPIRORBIS STIMPSONI, Verrill.

1879. Proc. U. S. Nat. Mus., vol. II., p. 181.
Spirorbis nautiloides, Verrill; non Lamarck.

“Massachusetts Bay to Nova Scotia, common in 10 to 80 fathoms, on shells and stones” (Verrill). If the specimens that Dr. Stimpson identified with *S. nautiloides*, Lamarck, are *S. Stimpsoni*, then this latter species has been found in the Bay of Fundy. Sir J. W. Dawson regards *S. Stimpsoni* as synonymous with *S. glomerata*, (Müller) which latter, he says, has been found fossil in the Pleistocene deposits at Gaspé, Rivière du Loup, Little Métis and Labrador.

SPIRORBIS VALIDUS, Verrill.

1872. Trans. Conn. Acad. Arts and Sc., vol. III., p. 44.

Le Have Bank, near Cape Sable, Nova Scotia, in 45 and 60 fathoms, U. S. Fish Commission, 1872 (Smith and Harger).

VERMILIA SERRULA, Stimpson.

1853. Synops. Marine Invert. Grand Manan, p. 29.

Grand Manan, “frequent on the test of *Ascidia callosa*, and sometimes on Pectens from deep water” (Stimpson). Since dredged at many localities in the Gulf and mouth of the River St. Lawrence, at moderate depths, attached to stones, shells, &c., by Sir J. W. Dawson, Dr. R. Bell and the writer; also in the Strait of Belle Isle, at a depth of 50 fathoms, by Packard.

Fossil at Rivière du Loup, on shells, Sir J. W. Dawson; who thinks that it is “quite likely the Greenland species identified by Fabricius with *Serpula triquetra*,” L.

PROTULA MEDIA, Stimpson.

1853. Synops. Marine Invert. Grand Manan, p. 50.

Grand Manan, “on muddy and gravelly bottoms in the coralline zone, attached almost invariably to dead valves of *Pecten Magellanicus*” (Stimpson). Off Grand Manan, 30 to 50 fathoms (Verrill).

PROTULA AMERICANA, M'Intosh.

1885. H.M.S. Challenger Reports, Zoology, vol. XII., p. 512.

H.M.S. Challenger, Station 49 (May 20, 1873) south of Halifax, Nova Scotia, in 85 fathoms, gravel and stones.

Family *Sabellidæ*.

SABELLA PAVONINA, Savigny.

Grand Manan (Stimpson); Gulf of St. Lawrence, off Cap des Rosiers lighthouse, in 125 fathoms (Whiteaves); Greenland (Fabricius, under the name *Tubularia penicillus*).

SABELLA ZONALIS, Stimpson.

1853. Synops. Marine Invert. Grand Manan, p. 30.

Grand Manan, "in four fathoms among nullipores, the specimens taken having their tubes thickly coated with mud" (Stimpson).

POTAMILLA OCULIFERA (Leidy).

Sabella oculifera, Leidy (1855).

Potamilla oculifera, Verrill (1873).

"Bay of Fundy, from low-water mark to 60 fathoms" (Verrill; who says that it is "closely related to *P. rexiformis* of northern Europe, and possibly identical with it)." Le Have Bank, off Cape Sable, N.S., in 45 fathoms, U. S. Fish Commission, 1872 (Smith and Harger).

POTAMILLA NEGLECTA, Malmgren.

Le Have Bank, N.S., in 45 fathoms, very abundant; and in 60 fathoms, abundant, U. S. Fish Commission, 1872 (Smith and Harger).

POTAMILLA TORELLI, Malmgren.

H.M.S. Challenger, Station 49 (May 20, 1873) south of Halifax, Nova Scotia, in 85 fathoms, gravel and stones (M'Intosh).

CHONE INFUNDIBULIFORMIS, Kröyer.

Dredged by the writer in 1872, in the Gulf of St. Lawrence, seven miles E. by S. of Cap des Rosiers, in 110 fathoms, coarse sand and stones; between Griffins Cove and Cap des Rosiers, in 150 fathoms, mud; and about 10 miles from Cap des Rosiers, in 160 to 170 fathoms, mud and stones.

Family *Terebellidæ*.

TEREBELLIDES STRÆMII, M. Sars.

Bay of Fundy, 10 to 90 fathoms, muddy bottom (Verrill); Gulf of St. Lawrence, dredged by the writer in 1871 at various localities to the north, south and south-east of the Island of Anticosti, in from 100 to 112 fathoms.

ARTACAMA PROBOSCOIDEA, Malmgren.

Dredged by the writer in 1873, in the Gulf of St. Lawrence, a little to the north of the Baie des Chaleurs, between Cap D'Espoir and Grand Pabou, in 50 fathoms.

THELEPUS CINCINNATUS (Fabricius).

Amphitrite cincinnata, O. Fabricius (1780).

Lumara flava, Stimpson (1853); fide Verrill.

Thelepus cincinnatus, Malmgren (1867).

Grand Manan, "dredged in 35 fathoms in the Hake Bay. Tubes thin, of a light-yellowish colour, usually with pebbles attached to the outer surface" (Stimpson). Le Have Bank, Nova Scotia, in 45 to 60 fathoms; U. S. Fish Commission, 1872 (Smith and Harger). Gulf of St. Lawrence, north, south and south-east of the Island of Anticosti, in from 100 to 112 fathoms, dredged by the writer in 1871.

THELEPUS CINCINNATUS, var. CANADENSIS, M'Intosh.

H.M.S. Challenger Reports, Zoology, vol. XII., p. 469.

H.M.S. Challenger, Station 48 (May 8, 1873) near Le Have Bank, Nova Scotia, 51 fathoms, rock (M'Intosh).

TEREBELLA BRUNNEA, Stimpson.

1853. Synops. Marine Invert. Grand Manan, p. 31.

Grand Manan. "It inhabits thick-walled tubes, formed of mud and sand, which are found in great numbers on the under surfaces of large stones, near low-water mark" (Stimpson).

AMPHITRITE CIRRHATA (Müller) Packard.

"Caribou Island, Strait of Belle Isle, eight fathoms, sandy bottom. Cateau Harbour, Long Island. Common along the whole coast" of Labrador. "It constructs its tubes of fine sand" (Packard).

GRYMÆA SPIRALIS, Verrill.

1874. Amer. Journ. Sc. and Arts, Third Series, vol. VII., p. 407.

"Dredged in 1872, off Grand Manan Island, Bay of Fundy, in 60 fathoms" (Verrill).

Family *Ampharetidae*.

MELINNA CRISTATA (Sars).

Sabellides cristata, M. Sars (1856).
Melinna cristata, Malmgren (1865).

Bay of Fundy, on muddy bottoms, in 10 to 90 fathoms (Verrill).

AMPHARETE GRUBEI, Malmgren.

Henley Harbour, Strait of Belle Isle, in 4 fathoms, not uncommon (Packard).

AMPHARETE GRACILIS, Malmgren.

Bay of Fundy, 10 to 90 fathoms (Verrill).

Family *Amphictenidae*.

CISTENIDES GRANULATA (L.).

Pectinaria Greenlandica, Grube.

Common throughout the entire region, and northward, from near low-water mark to a depth of 50 fathoms, or more.

CISTENIDES HYPERBOREA, Malmgren.

Dredged by the writer, in 1873, in the Gulf of St. Lawrence, a little to the north of the Baie des Chaleurs, between Cap D'Espoir (Despair) and Grand Pabou, in 50 fathoms, also between Anticosti and the Gaspé peninsula, in from 110 to 220 fathoms.

Family *Ammocharidae*.

OWENIA (OR AMMOCHARIS) FILIFORMIS, Della Chiaje.

Dredged by the writer, in 1873, to the S.S.W. of the east point of Prince Edward Island; between Port Hood (Cape Breton) and the E. point of P.E.I.; between Cape George, N.S., and Port Hood; to the N.E., and N.E. by E., of Cape George; also between Anticosti and the Gaspé peninsula, in 110 to 220 fathoms.

Family *Maldanidæ*.

PRAXILLA MULLERI (Sars).

Clymene Mulleri, M. Sars (1856).*Praxilla Mulleri*, Malmgren (1865).

Chateau Bay, Strait of Belle Isle, 30 to 40 fathoms, in hard sand; and Cateau Harbour, Long Island, Labrador, in 15 fathoms, sand (Packard).

PRAXILLA GRACILIS, Sars.

Gulf of St. Lawrence, from various localities to the north, south and south-east of the Island of Anticosti, in from 100 to 112 fathoms, collected by the writer in 1871.

NICOMACHE LUMBRICALIS (Fabricius).

Sabella lumbricalis, O. Fabricius (1780).*Clymene lumbricalis*, Stimpson (1853).*Nicomache lumbricalis*, Malmgren (1865).

Grand Manan, "tubes adherent to stones, shells, &c., in deep water" (Stimpson). Off Caribou Island, P.Q., in 8 fathoms, sand. "This species constructs its tube of fine sand, a little more than a line in thickness and two and a half inches long" (Packard).

AXIOTHEA CATENATA, Malmgren.

Dredged by the writer, on the Bradelle Bank, in 1873.

CLYMENELLA TORQUATA (Leidy).

Clymene torquata, Leidy (1855).*Clymenella torquata*, Verrill (1873).

Bay of Fundy, low-water to 60 fathoms (Verrill).

MALDANE SARSII, Malmgren.

Gulf of St. Lawrence, dredged by the writer and determined by Professor M'Intosh.

Family *Cirratulidæ*.

CIRRATULUS CIRRHATUS (Fabricius).

Lumbricus cirratus, O. Fabricius (1780).

Terebella cirrata, Stimpson (1853).

Cirratulus cirrata, Packard (1867).

Grand Manan, "in deep water, chiefly on shelly bottoms, in 20-40 fathoms" (Stimpson). "Taken from the stomach of a codfish caught in 10 fathoms, Strait of Belle Isle, off Belles Amours" (Packard); Greenland (Fabricius).

Family *Spionidæ*.

SCOLECOLEPIS CIRRATA (Sars). Var.

Nerine cirrata, M. Sars (1856).

Scolecolepis cirrata, Malmgren (1865).

Gulf of St. Lawrence, dredged by the writer and determined by Professor M'Intosh. See H.M.S. Challenger Reports, Zoology, vol. XII, p. 380.

PRIONOSPIO STEENSTRUPI, Malmgren.

Dredged by the writer in the deep sea mud (from 110 to 220 fathoms) between Anticosti and the Gaspé peninsula, in 1872; and between the Bradelle Bank and Miscou Island, in 45 fathoms, mud and stones, in 1873.

POLYDARA CONCHARUM, Verrill.

1880. Proc. U.S. Nat. Museum, vol. II., p. 174.

"Very common all along the coast, from Cape Cod to Nova Scotia, in 10 to 100 fathoms, in tortuous, narrow galleries excavated in shells, especially of *Cyprina Islandica*; also in decayed wood dredged in 32 fathoms off Cape Cod. Collected by the writer in the Bay of Fundy in 1863, 1864, 1868, 1870, and subsequently at various localities while dredging for the U. S. Fish Commission in 1872, 1875, 1877, 1878 and 1879" (Verrill).

Family *Chætopteridæ*.

SPIOCHÆTOPTERUS TYPICUS, Sars.

Chateau Bay, Strait of Belle Isle, in 30 to 40 fathoms, hard sandy bottom. "Several fragments of tubes were also found fossil in the quaternary beds at Caribou Island" (Packard).

Family *Telethusa*.

ARENICOLA PISCATORUM, Lamarck.

Grand Manan, "common on sandy shores above low-water mark, especially where there are scattered boulders" (Stimpson). "A specimen was found in the stomach of a codfish, taken in 15 to 20 fathoms, at Belles Amours," on the northern side of the Strait of Belle Isle (Packard).

Family *Chloræmidæ*.

SIPHONOSTOMUM ASPERUM, Stimpson.

1853. Synops. Marine Invert. Grand Manan, p. 31.

Grand Manan Island, "dredged in the Hake Bay, on a shelly bottom, in 25 fathoms" (Stimpson). Salmon Bay, east of Esquimaux Bay, on the north shore of the Gulf of St. Lawrence, just inside of the Strait of Belle Isle, "at a depth of 10 fathoms, on a muddy bottom" (Packard).

TECTURELLA FLACCIDA, Stimpson.

1853. Synops. Marine Invert. Grand Manan, p. 32.

Grand Manan Island, "among nullipores and shells in 3-15 fathoms. A few specimens, which must be very closely allied to, if not identical with the *Siphonostomum vaginiferum* of Rathke, described at length by R. Leuckart, in Wiegman's Archiv. for 1849, vol. I., p. 164" (Stimpson).

BRADA GRANOSA, Stimpson.

1853. Synops. Marine Invert. Grand Manan, p. 32.

Grand Manan, "on sandy bottoms in 4-6 fathoms" (Stimpson).

BRADA SUBLEVIS, Stimpson.

1853. Op. cit., p. 32.

Grand Manan, "dredged on nullipore and muddy bottoms in the laminarian zone" (Stimpson).

TROPHONIA PLUMOSA (Müller).

Amphitrite plumosa, Müller (1776); and O. Fabricius (1780).

Trophonia plumosa, Johnston (1865).

Siphonostomum plumosum, Packard (1867).

Off Cap des Rosiers lighthouse, in 125 fathoms, dredged by the writer in 1871. "Dredged at Caribou Island, in 8 fathoms of water, on a sandy bottom," by Dr. A. S. Packard in 1860, and determined by the late Dr. Stimpson.

Family *Sphaerodoridæ*.

EPHESIA GRACILIS, Rathke.

Gulf of St. Lawrence, off Cap des Rosiers lighthouse, in 125 fathoms, dredged by the writer with the preceding species.

Another species of *Ephesia* (apparently from the writer's dredgings in the Gulf of St. Lawrence) is mentioned but not described, under the name *E. Canadensis*, by Professor M'Intosh, on page 362, of the twelfth volume of the Zoological Reports of H.M.S. Challenger.

Family *Scalibregmidæ*.

EUMENIA CRASSA, Ørsted.

Dredged by the writer, in 1872, between Anticosti and the Gaspé peninsula, in from 110 to 220 fathoms.

SCALIBREGMA INFLATUM, Rathke.

Dredged by the writer, with the preceding species, in deep water, between Anticosti and the Gaspé peninsula, in 1872; also, on the Orphan Bank, in 1873.

Family *Opheliidæ*.

AMMOTRYPANE AULOGASTER, Rathke.

Gulf of St. Lawrence, off Cap des Rosiers lighthouse, in 125 fathoms, and at several localities to the north, south and south-east of the Island of Anticosti, in from 100 to 112 fathoms; dredged by the writer in 1871.

AMMOTRYPANE FIMBRIATA, Verrill.

1873. U. S. Fish Comm. Rep. for 1871-72, p. 604.

Bay of Fundy, 10 to 90 fathoms mud (Verrill).

OPHELIA LIMACINA, Rathke.

N.N.E. of Shediac Island, N.B., in 5 fathoms, sand, dredged by the writer in 1873.

OPHELIA GLABRA, Stimpson.

1853. Synops. Marine Invert. Grand Manan, p. 33.

Grand Manan, "dredged on muddy bottoms in deep water" (Stimpson).

Family *Ariciidae*.

NAIDONEREIS QUADRICUSPIDA, Blainville (fide Verrill).

Aricia quadricuspis (?) Grube ; fide Stimpson (1853).*Naidonereis quadricuspida*, Verrill (1879).

Grand Manan, "the small specimen taken was too much injured for certainty of reference" (Stimpson).

SCOLOPLOS CANADENSIS, M'Intosh. (M. S.)

Off Port Hood, Cape Breton Island, dredged by the writer in 1873.

Family *Glyceridae*.

RHYNCHOBOLUS CAPITATUS (Ersted).

Glycera capitata, Ersted (1843) ; and Stimpson (1853).*Rhynchobolus capitatus*, Verrill (1874).

Grand Manan, "at low-water mark, under stones, on sandy shores" (Stimpson).

Family *Goniadidae*.

GONIADA MACULATA, Ersted.

Glycera viridescens, Stimpson (1853) ; fide Verrill.

Grand Manan (Stimpson) ; Bay of Fundy, 20 to 70 fathoms (Verrill) ; off Chebucto Head, Halifax Harbour, in 20 fathoms, U. S. Fish Commission, 1872 (Smith and Harger). Gulf of St. Lawrence, at several localities to the north, south and south-east of the Island of Anticosti, in from 100 to 112 fathoms, dredged by the writer in 1871.

Family *Onuphiidae*.

LEODICE VIVIDA (Stimpson).

Eunice vivida, Stimpson (1853).*Leodice vivida*, Verrill (1873).

Grand Manan (Stimpson).

NOTHRIA CONCHYLEGA (Sars).

Onuphis conchylega, Sars (1835).*Onuphis Eschrichtii*, Ersted (1843) ; Stimpson (1853) ; and Packard (1867).*Nothria conchylega*, Malmgren (1867) ; et auct.

Grand Manan, "taken on shelly bottoms in the coralline zone." "The tube is broad, flat and composed of large angular fragments of shells and chips

of slaty stones" (Stimpson). Le Have Bank, Nova Scotia, in 45 fathoms, very abundant,—and in 60 fathoms, abundant, U. S. Fish Commission, 1872, (Smith and Harger). H.M.S. Challenger, Station 49 (May 20, 1873) south of Halifax, Nova Scotia, in 85 fathoms, gravel and stones. "In the instances from Station 49, the tubes are composed of fragments of shells with a few stones, and therefore are in contrast with those from the Gulf of St. Lawrence, Canada, which (tubes) are almost wholly formed of small stones" (M'Intosh). Common at many localities in the Gulf of St. Lawrence, at moderate depths, down to 125 fathoms, dredged by the writer in 1871, 1872, and 1873. North shore of the Gulf of St. Lawrence at Salmon Bay, in 15 fathoms; and Chateau Bay, Strait of Belle Isle, in 25 to 30 fathoms; also Cateau Harbour, coast of Labrador, in 15 fathoms sand (Packard).

ONUPHIS SICULA, De Quatrefages.

Gulf of St. Lawrence, Whiteaves (M'Intosh).

Family *Eunicidæ*.

EUNICE ERSTEDII, Stimpson.

1853. Synops. Marine Invert. Grand Manan, p. 34.

Grand Manan, "dredged in 20 fathoms on a shelly bottom, off the northern point of Duck Island" (Stimpson). H.M.S. Challenger, Station 49 (May 20, 1873), south of Halifax, Nova Scotia, in 85 fathoms, gravel and stones (M'Intosh).

Family *Lumbrinereidæ*.

LUMBRICONEREIS FRAGILIS (Müller).

Lumbricus fragilis, O. F. Müller (1776).

Lumbriconeris fragilis, Ersted (1843).

Lumbrinereis fragilis, Malmgren (1867).

Bay of Fundy and Atlantic coast of Nova Scotia, from low-water mark to 430 fathoms (Verrill). Gulf of St. Lawrence, about half way between the S. W. point of the Island of Anticosti and the Gaspé peninsula, in 200 fathoms, mud, dredged by the writer in 1871.

Family *Nereidæ*.

NEREIS (LYCORIS) PELAGICA, L.

Heteronereis arctica (Ersted) Packard.

Everywhere throughout the entire region, from low-water mark to 106 fathoms, or more. Bay of Fundy (Verrill); Nova Scotia, Le Have Bank,

(Smith and Harger) ; and H.M.S. Challenger, Station 49 (M'Intosh). Occurs frequently from Anticosti, to Square Island, (Labrador) in 10 to 30 fathoms (Packard) ; Greenland (Ersted).

A fossil specimen, in a nodule from Green's Creek, near Ottawa, has been referred to this species by Sir J. W. Dawson.

NEREIS VIRENS, Sars.

Nereis grandis, Stimpson (1853); fide Verrill.

Grand Manan, "at low-water, under large stones" (Stimpson). New Haven, at low-water, northward to Labrador (Verrill).

NEREIS ABYSSICOLA, Stimpson.

1853. Synops. Marine Invert. Grand Manan, p. 33.

Grand Manan, in 40 fathoms mud, off Long Island (Stimpson).

NEREIS IRIS, Stimpson.

1853. Op. cit., p. 33.

Grand Manan, in 20 fathoms north of Duck Island. "It was found in a thin leathery tube, encased with small pebbles" (Stimpson).

NEREIS DENTICULATA, Stimpson.

1853. Op. cit., p. 33.

Grand Manan, at low-water mark (Stimpson).

Family *Syllidae*.

EUSYLLIS TUBIFEX, Gosse.

H.M.S. Challenger, dredged near Station 48 (May 8, 1873) off Le Have Bank, Nova Scotia, on a rocky bottom, in 51 fathoms (M'Intosh).

Family *Phyllodocidae*.

ETEONE CYLINDRICA, Ersted.

North shore of the Strait of Belle Isle, at Belles Amours, in 5 fathoms of water, on a muddy bottom (Packard).

PHYLLODOCE GRÆNLANDICA, Ersted.

Grand Manan, "not uncommon in 25 fathoms, shelly bottom, back of Duck Island. A large bright green species" (Stimpson). Frequent at Caribou Island, in 8 fathoms sand; at Belles Amours, in 5 fathoms, mud; and at Square Island, Labrador, in 15 to 20 fathoms, on a shelly bottom (Packard).

PHYLLODOCE CATENULA, Verrill.

1873. U. S. Fish Comm. Rep. for 1871 and 1872, p. 587.

"Very common in the Bay of Fundy, from low-water to 50 fathoms" (Verrill).

Family *Nepthydidae*.

NEPHTHYS CILIATA (Müller).

Nereis ciliata, O. F. Müller (1776).

Nephtys borealis, Ersted (1843).

Nephtys ciliata, Rathke (1843).

Grand Manan, dredged in 25 fathoms mud, near Duck Island, and in 40 fathoms mud, off Long Island. "The specimens found were mostly jet black" (Stimpson). Gulf of St. Lawrence, abundant, dredged by the writer and identified by Professor M'Intosh.

NEPHTHYS CÆCA (Fabricius).

Nereis cæca, O. Fabricius (1780).

Nephtys cæca, Ersted (1843); et auct.

Gulf of St. Lawrence, dredged by the writer and identified by Professor M'Intosh. "Abundant on the whole coast" (of the north shore of the Gulf of St. Lawrence, just inside of the Strait of Belle Isle, and of Labrador), "especially the young, which were dredged in deep, soft mud, in Salmon Bay and Belles Amours," P.Q., "in from 5 to 20 fathoms, and at Cateau Harbour," Labrador, "in 15 fathoms, sand. Chateau Bay, 30 fathoms, hard sandy bottom" (Packard).

NEPHTHYS LONGISETOSA, Ersted.

"Off Anticosti, Mr. Whiteaves" (M'Intosh); and dredged by Packard at Belles Amours, at a depth of 5 fathoms, on a muddy bottom.

NEPHTHYS INCISA, Malmgren.

Nephtys ingens, Stimpson; fide Verrill.

Grand Manan, in deep water, one specimen (Stimpson). Bay of Fundy, 10 to 60 fathoms, Verrill; who says that it is the "most common and abundant species on muddy bottoms along the whole New England coast." It occurs at all depths from 2 to 430 fathoms."

NEPHTHYS PICTA, Ehlers.

Dredged by the writer, in the Gulf of St. Lawrence, off Cap Bon Ami, six miles from shore, on a stony bottom, in 30 fathoms, in 1871; also between Cape Gaspé and Cap des Rosiers, in 75 to 80 fathoms, stones, in 1872.

NEPHTHYS CANADENSIS, M'Intosh.

1900. Ann. and Mag. Nat. Hist., Ser. vii., vol. v., p. 264.

Dredged by the writer, in the Gulf of St. Lawrence, between Cape Gaspé and Cap des Rosiers, in 75 to 80 fathoms, and eight miles S.E. of Bonaventure Island, in 56 fathoms, in 1872; also, on the Bradelle Bank, in 1873; and described from these localities by Professor M'Intosh.

NEPHTHYS LAWRENCII, M'Intosh.

1900. Op. cit., p. 265.

Described from specimens dredged by the writer in the Gulf of St. Lawrence off Cape Gaspé and Cap des Rosiers, in 1872; also on the Bradelle Bank, and off Port Hood, Cape Breton, in 1873.

Family *Sigalionidae*.

PHOLOË MINUTA (Fabricius).

Aphrodite minuta, O. Fabricius (1780).

Pholoë minuta, Ersted (1843).

Gulf of St. Lawrence, Whiteaves (M'Intosh); and north shore of the Gulf, at Belles Amours Harbour, Bradore Bay, just inside the Strait of Belle Isle, on a muddy bottom, in eight fathoms (Packard).

PHOLOË TECTA, Stimpson.

1853. Synops. Marine Invert. Grand Manan, p. 36.

Grand Manan, "dredged in 4 fathoms, on a bottom of coarse sand and nullipores" (Stimpson).

LEANIRA TETRAGONA, Ersted.

Dredged by the writer in the Gulf of St. Lawrence, off Cap des Rosiers, in 110 fathoms on coarse sand and stones in 1872 ; and between Anticosti and the Gaspé peninsula in 110 to 220 fathoms, in 1873.

LEANIRA YHLENI, ? Malmgren.

Off the S. W. Point of Anticosti, in 210 fathoms, 1873 (Whiteaves).

STHENELAIS LIMICOLA, Ehlers.

Gulf of St. Lawrence (Whiteaves) M'Intosh.

Family *Polynoidæ*.

HARMOTHOE IMBRICATA (L.)

Aphrodita imbricata, L. (1767).

Aphrodita cirrata, Muller (1776) ; and O. Fabricius (1780).

Lepidonote cirrata, Ersted (1843) ; and Stimpson (1853).

Harmothoe imbricata, Malmgren (1865).

Grand Manan, taken about low-water mark ; of a bright pink or violet colour (Stimpson) ; "in the Bay of Fundy it is common from above low-water mark to 60 fathoms" (Verrill). Nova Scotia, on the Le Have Bank, in 45 and 60 fathoms ; and off Chebucto Head, Halifax Harbour, in 20 fathoms, U. S. Fish Commission, 1872 (Smith and Harger). North shore of the Gulf of St. Lawrence, at Caribou Island, in 8 fathoms, sand ; Atlantic coast of Labrador, at Sloop Harbour, twenty-five miles south of Cape Harrison, in 6 to 8 fathoms, sand, common ; at Cateau Harbour, in 15 fathoms sand ; and at Sandwich Bay, Dumplin Harbour, in 4 fathoms (Packard). Probably common throughout the whole region.

"This species is very variable in the colour of its scales (elytra), which in some individuals are uniformly pale, in others partially red, while others have a central spot, and a broad dark, curved band" (Packard).

POLYNOE GASPÉENSIS, M'Intosh.

1874. Ann. and Mag. Nat. Hist., Ser. iv., vol. XIII., p. 267.

This species was described from specimens dredged by the writer in 100 to 212 fathoms off the Island of Anticosti, and in various parts of the Gulf of St. Lawrence, in 1872.

NEMIDIA (?) LAWRENCII, M'Intosh.

1874. Op. cit., p. 266.

Gulf of St. Lawrence, Whiteaves, (M'Intosh).

NEMIDIA (?) CANADENSIS, M'Intosh.

1874. Op. cit., p. 265.

Gulf of St. Lawrence, Whiteaves (M'Intosh.)

EUPOLYNOE ANTICOSTIENSIS, M'Intosh.

1874. Op. cit., p. 265.

"Dredged rather abundantly" by the writer "in various parts of the Gulf of St. Lawrence, in 1873."

EUPOLYNOE OCCIDENTALIS, M'Intosh.

1874. Op. cit., p. 264.

? *Eucranta villosa* (Malmgren) Verrill.

Gulf of St. Lawrence, dredged by the writer in 1872, off Cape Gaspé and Cap des Rosiers, in 110 fathoms, stones and coarse sand, but only one imperfect specimen was obtained. Professor Verrill thinks that *E. occidentalis* is identical with *Eucranta villosa*, Malmgren.

ANTINOE SARSII, Kinberg.

Gulf of St. Lawrence, not uncommon, Whiteaves (M'Intosh).

MALMGRENIA WHITEAVESII, M'Intosh.

1874. Op. cit., p. 263.

A single small specimen, about a quarter of an inch long, dredged between Anticosti and the Gaspé peninsula, in 110 to 220 fathoms, was detected in one of the collections forwarded to Professor M'Intosh by the writer.

LAGISCA RARISPINA (Sars).

Le Have Bank, Nova Scotia, U. S. Fish Commission, 1872, Smith and Harger (Verrill).

LAGISCA RARISPINA, var. OCCIDENTALIS, M'Intosh.

1874. Op. cit., p. 262.

Gulf of St. Lawrence, collected by the writer and described by Professor M'Intosh.

EUNOA NODOSA, (Sars).

Le Have Bank, Nova Scotia, in 45 and 60 fathoms, U. S. Fish Commission, 1872, Smith and Harger (Verrill); Gulf of St. Lawrence, Whiteaves (M'Intosh).

EUNOA ERSTEDI, Malmgren.

Dredged by the writer on the Orphan Bank, opposite the mouth of the Baie des Chaleurs, in 1872.

EUNOA SPINULOSA, Verrill.

1880. Proc. U.S. Nat. Museum, vol. II., p. 169.

"Sable Island Bank, off Nova Scotia, Captain McPhee, schooner Carl Schurz, November, 1878 (U. S. Fish Commission)," Verrill.

NYCHIA CIRRHOSA (Pallas).

Le Have Bank, Nova Scotia, in 45 fathoms, U. S. Fish Commission, 1872, Smith and Harger (Verrill). Gulf of St. Lawrence, abundant in the writer's dredgings (M'Intosh).

NYCHIA AMONDSENI, Malmgren.

Gulf of St. Lawrence, rather plentiful in the writer's collections. "A specimen of *Selenium polynoes*, Kröyer, was attached to the ventral aspect of a foot of one" (M'Intosh).

LEPIDONOTUS SQUAMATUS (L.).

Aphrodita squamata, L. (1767).*Aphrodite punctata*, Müller (1776).*Polynoe squamata*, Gould (1841).*Lepidonote punctata*, (Ersted (1843).*Lepidonotus squamatus*, Malmgren (1865).

Throughout the entire region, abundant, from above low-water mark to a depth of 80 fathoms.

Family *Aphroditidæ*.

LÆTMONICE FILICORNIS, Kinberg.

One or two examples of this species were recognized by Professor M'Intosh in the writer's Gulf of St. Lawrence dredgings in 1871-73.

LÆTMONICE ARMATA, Verrill.

1879. Proc. U. S. Nat. Museum, vol. II., p. 169.

"Common on muddy bottoms in the Bay of Fundy and Gulf of Maine, in 50 to 150 fathoms. Collected first in 1864, 1865 and 1868," by Professor Verrill and S. I. Smith, "and subsequently by the U. S. Fish Commission, in many localities."

"It differs from *L. filicornis*, with which it was formerly identified by me, not only in having a much smaller median antenna, but also in the character of the setæ, especially those of the ventral fascicule. Whether the Gulf of St. Lawrence specimens, recorded by M'Intosh as *L. filicornis*, belong to this species, is uncertain" (Verrill).

LÆTMONICE PRODUCTA, Grube, var. ASSIMILIS, M'Intosh.

1885. H.M.S. Challenger Reports, Zoology, vol. XII., p. 4.

H.M.S. Challenger, dredged at Station 49 (May 20, 1873) south of Halifax, Nova Scotia, in 85 fathoms, gravel and stones.

APHRODITA ACULEATA, L.

Grand Manan, "a fine large species, often four inches in length, which is taken occasionally in deep water" (Stimpson); Bay of Fundy, 10 to 106 fathoms, mud (Verrill). Gulf of St. Lawrence, several young examples, in the writer's 1871-73 collections (M'Intosh).

Family *Euphrosynidæ*.

SPINTHER CITRINUS (Stimpson).

Cryptonota citrina, Stimpson (1853).

Spinther citrinus, M'Intosh (1874).

Grand Manan, "dredged on a gravelly and somewhat muddy bottom, in 35 fathoms in the Hake Bay" (Stimpson).

EUPHROSYNE BOREALIS, Ørsted.

Grand Manan, "it frequents muddy bottoms" (Stimpson). H.M.S. Challenger, Station 49 (May 20, 1873) south of Halifax, Nova Scotia, in 85 fathoms, gravel and stones. Not in Mr. Whiteaves' dredgings" (M'Intosh).

(*Incertæ sedis*).

ENONELLA BICARINATA, Stimpson.

1853. Synops. Marine Invert. Grand Manan, p. 34.

Grand Manan, "found in fine sand at low-water mark, at High Duck Island" (Stimpson).

GEPHYREA.

CHÆTIFERA.

STERNASPIS FOSSOR, Stimpson.

1853. Synops. Marine Invert. Gr. Manan, p. 29.

Grand Manan, on muddy bottoms in the coralline zone (Stimpson). Common in the Bay of Fundy in 10 to 90 fathoms, mud (Verrill, 1873).

ACHÆTA.

PHASCOLOSOMA CEMENTARIUM (De Quatrefages).

Phascolosoma Bernhardus, Pourtales (1852).

Sipunculus Bernhardus, Stimpson (1853); non Forbes.

Sipunculus cementarius, De Quatrefages (1866).

Phascolosoma cementarium, Verrill (1873).

Grand Manan, "common in the coralline zone, in shells of *Dentalium* especially" (Stimpson). Bay of Fundy, 2 to 90 fathoms, abundant (Verrill). Le Have Bank, N.S., in 45 fathoms (Smith and Harger). Common in the shells of small gasteropoda, such as *Lunatia*, *Bela*, and especially *Nassa trivittata*, everywhere between Prince Edward and Cape Breton islands and throughout Northumberland Strait. Dredged by the writer in 1873, and determined by Professor Verrill.

PHASCOLOSOMA HAMULATUM, Packard.

1867. Mem. Boston Soc. Nat. Hist., vol. 1., p. 290.

"But one specimen was taken in eight fathoms, Caribou Island, Strait of Belle Isle, inhabiting a dead shell of *Aporrhais occidentalis*" (Packard). "Perhaps the same as *P. cementarium*" (Verrill).