

THE OTTAWA NATURALIST.

VOL. XIV.

OTTAWA, DECEMBER, 1900.

No. 9.

CATALOGUE OF THE RECENT MARINE SPONGES OF CANADA AND ALASKA.

By LAWRENCE M. LAMBE, F.G.S.

For convenience of reference, the names of the species of recent marine sponges referred to or described in a number of papers by the writer, published in the Transactions of the Royal Society of Canada, at various dates since 1892, are here brought together in the form of a catalogue. Although the species enumerated are for the most part to be found in Canadian waters, a number are mentioned that occur outside of this limit. In the west, localities are given as far south as California, and some of the more northern forms are recorded from the Alaskan Arctic, with frequent reference to Behring Sea and North Pacific species. In the east, species from off the western coast of Greenland are considered to be from Canadian waters. The Canadian and foreign distribution of each species is given, although in the latter case a complete statement of the geographical range outside of Canada is not always attempted. It is thought desirable to state where the type, or specimens used in the description, of species that have been described as new, were collected and where they are now to be found.

A bibliographical index is appended as well as the names of a number of species, recorded by different authors as occurring off the coast of Greenland and in Behring Sea and Strait.

An asterisk placed before the name of a species denotes that that species is not represented in the collection of the Geological Survey.

The numbers in heavy type refer to the Bibliographical Index.

I. MONAXONIDA.

1. HALICHONDRIA PANICEA, Johnston. 1842. (14)

Distribution—River and Gulf of St. Lawrence (37); coast of New England (33); Vancouver Island; Queen Charlotte Islands and Behring Sea. (15, 16, 17, 18)

Foreign distribution—Coasts of Great Britain (Johnston, Bowerbank); Basse Rocks, off southeast coast of Ceylon (Carter); Kerguelen Island (Carter, Challenger); Torres Strait (Ridley "Alert"); Japan (Challenger); coasts of Norway, Sweden, Novaya Zemlya and western Greenland (Fristedt).

2. HALICHONDRIA DISPARILIS, Lambe. 1893.

Described in Transactions, Royal Society of Canada, vol. XI, p. 25, pl. ii, figs. 1, 1a; type in the museum of the Geological Survey of Canada.

Type locality—Gulf of Georgia, near Comox, Vancouver Island, B.C.

3. EUMASTIA SITIENS, O. Schmidt. 1870. (26)

Distribution—River and Gulf of St. Lawrence and coast of Nova Scotia; Greenland; North Pacific Ocean and Behring Sea. (17, 18)

Foreign distribution—Pitlekai, eastern Siberia (Fristedt).

Schmidt's specimens are from Greenland.

4. PETROSIA HISPIDA, Ridley and Dendy. 1886. (23)

Locality—Middleton Island, Gulf of Alaska (17).

Foreign locality—Royal Sound, Kerguelen Island (Challenger).

5. RENIERA CINEREA, Grant. 1827.

Locality—Blunden Harbour, B.C. (16).

Foreign distribution—Coasts of Great Britain (Grant, Bowerbank); Philippine Islands (Challenger); Spitzbergen (Fristedt).

6. RENIERA RUFESCENS, Lambe. 1892.

Described in Transactions, Royal Society of Canada, vol. X, p. 75, pl. iv, fig. 6, and pl. v, figs. 12, 12a; type in the museum of the Geological Survey of Canada.

Type locality—Petropaulowski, Kamtschatka.

Distribution—Arctic Ocean (Kotzebue Sound), Behring Sea and North Pacific Ocean; Gaspé coast and Orphan Bank, off the entrance to the Baie des Chaleurs, Gulf of St. Lawrence. (15, 17, 18)

7. RENIERA MOLLIS, Lambe. 1893,

Described in Transactions, Royal Society of Canada, vol. XI, p. 26, pl. ii, figs. 3, 3a; type specimen in the museum of the Geological Survey of Canada.

Type locality—Elk Bay, Discovery Passage, Vancouver Island, B.C.

Distribution—Vancouver Island; coast of Labrador, Orphan Bank, off the entrance to the Baie des Chaleurs, and Hudson Bay. (16, 18, 20, 21).

8. CHALINA OCULATA, Pallas. 1766.

Distribution—River and Gulf of St. Lawrence (37), coast of Nova Scotia (18); New England coast (Verrill, 33).

Foreign distribution—Between England and Belgium (Pallas); Northumberland coast and Firth of Forth (Johnston); coast of England (Bowerbank).

9. GELLIUS ARCOFERUS, Vosmaer. 1885. (35)

Distribution—Gulf of St. Lawrence (18); Greenland (Fristedt, 12).

Foreign distribution—Barents Sea (Vosmaer); Siberian Arctic Ocean (Fristedt).

10. GELLIUS FLAGELLIFER, Ridley and Dendy. 1886. (23)

Distribution—Gulf of St. Lawrence (18).

Foreign locality—Off Marion Island (Challenger).

11. GELLIUS LAURENTINUS, Lambe. 1900.

Described in Transactions, Royal Society of Canada, second series, vol. VI, p. 20, pl. i, figs. 1, 1a; type material in the museums of University College, Dundee, Scotland, and of the Geological Survey of Canada.

Distribution—Gulf of St. Lawrence; Davis Strait.

12. TOXOCHALINA BOREALIS, Lambe, 1894.

Described in Transactions, Royal Society of Canada, vol. XII, p. 115, pl. ii, figs. 2, 2a—e; type material in U. S. National Museum at Washington, D.C., and in the museum of the Geological Survey of Canada.

Type locality—Kyska Harbour, Kyska Island, Aleutian Islands.

13. TEDANIA FRAGILIS, Lambe. 1894.

Described in Transactions, Royal Society of Canada, vol. XII, p. 116, pl. ii, figs. 3, 3a—c; type specimen in U. S. National Museum at Washington, D.C., and authentically named examples in the museum of the Geological Survey of Canada.

Distribution—Amaknak Island (type locality), Aleutian Islands ; Sooke, Vancouver Island, B.C.

14. *DESMACELLA PEACHII*, var. *GRONLANDICA*, Fristedt, 1887. (12)
Locality—Between Anticosti and the Gaspé Peninsula, Gulf of St. Lawrence (18).
Foreign locality—East coast of Greenland (Fristedt).
15. *DESMACELLA PENNATA*, Lambe. 1894.
 Described in Transactions, Royal Society of Canada, vol. XII, p. 129, pl. iv, figs. 6, 6a—d ; type specimen in the museum of the Geological Survey of Canada.
Type locality—Sooke, Vancouver Island, B.C.
16. *ESPERELLA LINGUA*, Bowerbank. (Sp.) 1866. (1)
Distribution—Gulf of St. Lawrence (18) ; northeast coast of the United States (Verrill, 33) ; Greenland (Fristedt) ; Adak Island, Aleutian Islands (17).
Foreign distribution—Western Islands, Outer Skerries and Unst, Scotland (Bowerbank) ; off northern coast of Norway (Vosmaer).
17. *ESPERELLA SERRATOHAMATA*, Carter. (Sp.) 1880.
Locality—Sooke, Vancouver Island, B.C. (17).
Foreign locality—Gulf of Manaar, India, (Carter, 7) and (?) Korea Strait (*Esperella macrosigma*, Lindgren, 39).
18. *ESPERELLA HELIOS*, Fristedt. (Sp.) 1887.
Distribution—Alaskan Arctic Ocean ; Behring Strait and Behring Sea.
Type locality—Pitlekai (Fristedt).
19. *ESPERELLA HISPIDA*, Lambe. 1893.
 Described in Transactions, Royal Society of Canada, vol. XI, p. 27, pl. ii, figs. 4, 4a—c ; type specimen in the museum of the Geological Survey of Canada.
Type locality—Near Suquash, off Pulteney Point, Queen Charlotte Sound, Vancouver Island, B.C.
20. *ESPERELLA ADHÆRENS*, Lambe. 1893.
 Described in Transactions, Royal Society of Canada, vol. XI, p. 27, pl. ii, figs. 5, 5a—d ; type in the museum of the Geological Survey of Canada.
Type locality—Elk Bay, Discovery Passage, Vancouver Island, B.C.
Distribution—Vancouver Island, North Pacific Ocean and Behring Sea (16, 17).

21. *ESPERELLA OCCIDENTALIS*, Lambe. 1893.

Described in Transactions, Royal Society of Canada, vol. XI, p. 28, pl. ii, figs. 6, 6a--e; type in museum of the Geological Survey of Canada.
Type locality—Gulf of Georgia, near Comox, Vancouver Island, B.C.

22. *ESPERELLA MODESTA*, Lambe. 1894.

Described in Transactions, Royal Society of Canada, vol. XII, p. 118, pl. iii, figs. 1, 1a--d; type material in the U. S. National Museum at Washington, D.C., and in the museum of the Geological Survey of Canada.

Localities from which material was first examined—Chika Island, Akutan Pass; Simeonof Island, Shumagin Islands.

Distribution—Behring Sea and North Pacific Ocean; Gaspé coast, Gulf of St. Lawrence (18).

23. *ESPERELLA FRISTEDTII*, Lambe, 1900.

Described in Transactions, Royal Society of Canada, second series, vol. VI, p. 21, pl. i, figs. 2, 2a--h; specimens in the U. S. National Museum at Washington, D.C., and in the museum of the Geological Survey of Canada.

Distribution—Davis Strait.

Foreign locality—West from Taimur Peninsula (Fristedt); the specimen from this locality was referred to Carter's species *Esperia cupressiformis* (12, p. 457).

24. *ESPERELLA MINUTA*, Lambe. 1900.

Described in Transactions, Royal Society of Canada, second series, vol. VI, p. 23, pl. i, figs. 3, 3a--c; type in the U. S. National Museum at Washington, D.C.

Type locality—Davis Strait, off Cape Wild.

25. *ESPERIOPSIS RIGIDA*, Lambe. 1892.

Described in Transactions, Royal Society of Canada, vol. X, p. 68, pl. iii, fig. 4, and pl. v, figs. 3, 3a--g; type in museum of the Geological Survey of Canada.

Type locality—Entrance to Malaspina Inlet, B.C.

26. *ESPERIOPSIS VANCOUVERENSIS*, Lambe. 1892.

Described in Transactions, Royal Society of Canada, vol. X, p. 68, pl. iii, fig. 5, and pl. v, figs. 4, 4a--d; type specimen in museum of the Geological Survey of Canada.

Type locality—West coast of Vancouver Island, B.C., north of Quatsino Sound.

27. *ESPERIOPSIS QUATSINOENSIS*, Lambe. 1892.

Described in Transactions, Royal Society of Canada, vol. X, p. 69, pl. iii, figs. 8, 9, and pl. v, figs. 8, 8a, 8b, 8c; types in museum of the Geological Survey of Canada.

Type localities—West coast of Vancouver Island, B.C., north of Quatsino Sound, and near Lasqueti Island, Strait of Georgia.

Distribution—Behring Sea and North Pacific Ocean as far south as the State of Washington.

28. *ESPERIOPSIS LAXA*, Lambe. 1892.

Described in Transactions, Royal Society of Canada, vol. X, p. 70, pl. iii, fig. 10, and pl. v, figs. 13, 13a, 13b, 13c; type in museum of the Geological Survey of Canada.

Type locality—Oyster Bay, Vancouver Island, B.C.

29. *CLADORHIZA ABYSSICOLA*, M. Sars. 1872.

Distribution—Between Anticosti and the Gaspé Peninsula, Gulf of St. Lawrence (Whiteaves, 37); coast of New England (Verrill, 33); Baffin Bay (Fristedt, 12).

Foreign distribution—Coast of Norway (Sars, 25); between the north coast of Scotland and the Faroe Islands (Carter).

30. *CLADORHIZA GRANDIS*, Verrill. 1879. (? syn. *C. NOBILIS*, Fristedt. 1887.)

Distribution—Off the coast of Nova Scotia (Verrill, 32); eastern coast of Greenland (Fristedt).

31. *CLADORHIZA NORDENSKIOLDII*, Fristedt. 1887.

Locality—Between Anticosti and the Gaspé Peninsula, Gulf of St. Lawrence (18).

Fristedt's type specimen is from the east coast of Greenland.

32. *CHONDROCLADIA ALASKENSIS*, Lambe. 1894.

Described in Transactions, Royal Society of Canada, vol. XII, p. 119, pl. ii, figs. 7, 7a-e; type material in the U. S. National Museum at Washington, D.C., and in the museum of the Geological Survey of Canada.

Distribution—Behring Sea and North Pacific Ocean.

33. *CHONDROCLADIA PULCHRA*, Lambe. 1894.

Described in Transactions, Royal Society of Canada, vol. XII, p. 119, pl. ii, figs. 8, 8a-d; type material in the U. S. National Museum at Washington, D.C., and in the museum of the Geological Survey of Canada.

Distribution—Aleutian Islands.

34. DESMACIDON (HOMŒODICTYA) PALMATA, Johnston. 1842.

Distribution—Nova Scotia and northeast coast of the United States (18, 33).

Foreign distribution—Coasts of England and Scotland (Johnston and Bowerbank).

35. IOPHON CHELIFER, Ridley and Dendy. 1886.

Distribution—Vancouver Island, B.C., (16); Gulf of St. Lawrence (18); Davis Strait (21).

Foreign distribution—Off the Cape of Good Hope, off Prince Edward Island (lat. 46° 41' S., long. 38° 10' E.) and off Crozet Island (Challenger).

36. *IOTROCHOTA MAGNA, Lambe. 1894.

Described in Transactions, Royal Society of Canada, vol. XII, p. 120, pl. iii, figs. 2, 2a—d; type in the U. S. National Museum at Washington, D.C.

Localities from which material was examined—Kyska Island and Nagai Island, North Pacific Ocean.

37. MYXILLA INCRUSTANS, Johnston. 1842.

Distribution—Gaspé coast, Gulf of St. Lawrence (18).

Foreign distribution—Coast of Great Britain (Johnston, Bowerbank).

38. MYXILLA BARENTSI, Vosmaer. 1885.

Distribution—Alaskan Arctic Ocean, Behring Sea, and North Pacific Ocean as far south as Vancouver Island (17).

Foreign distribution—Arctic Sea (Vosmaer, 35).

39. MYXILLA LACUNOSA, Lambe. 1892.

Described in Transactions, Royal Society of Canada, vol. X, p. 70, pl. iii, fig. 3, and pl. v, figs. 5, 5a—g; type specimen in the museum of the Geological Survey of Canada.

Type locality—West coast of Vancouver Island, B.C., north of Quatsino Sound.

40. MYXILLA ROSACEA, Lieberkühn, var. 1892.

Described in Transactions, Royal Society of Canada, vol. X, p. 71, pl. iii, fig. 6, and pl. v, figs. 6, 6a, 6b—f; specimen in the museum of the Geological Survey of Canada.

Locality—Oyster Bay, Vancouver Island, B.C.

41. MYXILLA PARASITICA, Lambe. 1893.
Described in Transactions, Royal Society of Canada, vol. XI, p. 31, pl. ii, figs. 8, 8a—f; specimens in the museum of the Geological Survey of Canada.
Distribution—Vancouver Island, B.C.
42. MYXILLA BEHRINGENSIS, Lambe. 1894.
Described in Transactions, Royal Society of Canada, vol. XII, p. 121, pl. iii, figs. 3, 3a—f, type material in the U. S. National Museum at Washington, D.C., and in the museum of the Geological Survey of Canada.
Distribution—Behring Sea and North Pacific Ocean.
43. MYXILLA AMAKNAKENSIS, Lambe, 1894.
Described in Transactions, Royal Society of Canada, vol. XII, p. 122, pl. ii, figs. 10, 10a—e; type material in the U. S. National Museum at Washington, D.C., and in the museum of the Geological Survey of Canada.
Distribution—Behring Sea and North Pacific Ocean as far south as Vancouver Island, B.C.
44. MYXILLA FIRMA, Lambe. 1894.
Described in Transactions, Royal Society of Canada, vol. XII, p. 122, pl. iii, figs. 4, 4a—f; type material in the U. S. National Museum at Washington, D.C., and in the museum of the Geological Survey of Canada.
Distribution—Kyska Island (North Pacific Ocean) and Vancouver Island, B.C.
45. CLATHRIA LOVENI, Fristedt. 1887.
Localities—Chika Island, Akutan Pass; Unalaska Island (17).
Type locality—Cape Yakan (Fristedt).
46. CLATHRIA LÆVIGATA, Lambe. 1893.
Described in Transactions, Royal Society of Canada, vol. XI, p. 31, pl. ii, figs. 9, 9a—f; type specimen in the museum of the Geological Survey of Canada.
Type locality—Near Comox, Vancouver Island, B.C.
47. CLATHRIA DELICATA, Lambe. 1896.
Described in Transactions, Royal Society of Canada, second series, vol. II, p. 192, pl. ii, figs. 2, 2a—h; type specimen in the museum of the Geological Survey of Canada.

Distribution—Coast of Nova Scotia.

There are two specimens from Portland, Maine, in the Peter Redpath Museum, McGill University, Montreal.

48. *PLOCAMIA MANAARENSIS, Carter. 1880.

One specimen, from coast of California, in the U. S. National Museum at Washington, D.C (17).

Carter's type is from the Gulf of Manaar (7).

49. PHAKELLIA VENTILABRUM, Johnston. 1842.

Distribution—River and Gulf of St. Lawrence (37), Hudson Bay (20), Davis Strait and the northeast coast of the United States (33); North Pacific Ocean, Behring Sea and the Alaskan Arctic Ocean.

Foreign distribution—British Seas (Bowerbank, Johnston, &c.); Ireland, (Johnston); Shetlands (Bowerbank); between Scotland and Faroe Islands (Carter); southwest coast of Norway (Schmidt); Arctic Ocean, off Norway (Vosmaer); Baltic Sea (Fristedt); Florida, Gulf of Mexico, and Barbadoes (Schmidt); off Brazil and northeast coast of Falkland Islands (Challenger).

50. *PHAKELLIA DALLI, Lambe. 1894.

Described in Transactions, Royal Society of Canada, vol. XII, p. 125, pl. iii, figs. 5, 5a—d; type specimen in the U.S. National Museum at Washington, D.C.

Type locality—Chika Island, Alaska.

51. AXINELLA RUGOSA, Bowerbank. (Sp.) 1866.

Distribution.—Chika Island and Unalaska Island, Alaska (17); Greenland (Fristedt 12).

Foreign distribution.—Orkney and Shetland Islands (Bowerbank).

52. SUBERITES SUBEREA, Johnston, 1842.

Distribution—Vancouver Island, North Pacific Ocean, and Behring Sea (17); New England coast (Verrill, 33).

Foreign distribution—Coasts of British Isles (Bowerbank).

53. SUBERITES FICUS, Johnston. 1842.

Locality—Sable Island, off the coast of Nova Scotia (specimens in the Peter Redpath Museum, McGill University, Montreal, 18).

Foreign distribution—Coasts of Great Britain (Johnston and Bowerbank).

54. SUBERITES HISPIDUS, Bowerbank. 1864.

Described in Canadian Naturalist, second series, vol. I, p. 304; type

specimen in the Peter Redpath Museum, McGill University, Montreal; one specimen in the museum of the Geological Survey of Canada.

Localities—Portland, Maine (type locality), and off the coast of Anticosti, Gulf of St. Lawrence (18); New England coast (Verrill, 33).

55. SUBERITES MONTALBIDUS, Carter. 1880. (8)

Localities—Unalaska Island, Alaska, 17 (one specimen in the U. S. National Museum at Washington, D.C.) and Richmond Gulf, Hudson Bay, 20 (one specimen in the museum of the Geological Survey of Canada).

Distribution—Behring Sea and Strait, Beaufort Sea, the Siberian Arctic Ocean, the Kara Sea, the European Arctic Ocean, Barents Sea (type specimen from near the southwest end of Novaya Zemlya) and the west and east coasts of Greenland.

56. *SUBERITES MONTINIGER, Carter. 1880, (8)

Locality—Granite Cove, Port Althorp, Cross Sound, Alaska (one specimen in the U. S. National Museum at Washington, D.C.).

Type locality—Barents Sea from the southwest end of Novaya Zemlya, in lat. $71^{\circ} 6' N.$, long. $50^{\circ} E.$

57. SUBERITES SIMPLEX, Lambe. 1893.

Described in Transactions, Royal Society of Canada, vol. XI, p. 32, pl. iv, figs. 4, 4a; type specimen in the museum of the Geological Survey of Canada.

Type locality—Gulf of Georgia, near Comox, Vancouver Island, B.C.

58. SUBERITES PACIFICA, Lambe. 1893.

Described in Transactions, Royal Society of Canada, vol. XI, p. 32, pl. ii, figs. 10, 10a—d; type specimen in the museum of the Geological Survey of Canada.

Type locality—Gulf of Georgia, near Comox, Vancouver Island, B.C.

59. SUBERITES CONCINNUS, Lambe. 1894.

Described in Transactions, Royal Society of Canada, vol. XII, p. 128, pl. ii, figs. 12, 12a; type material in the U. S. National Museum at Washington, D.C., and in the museum of the Geological Survey of Canada.

Distribution—North Pacific Ocean, Behring Sea and Alaskan Arctic Ocean.

60. POLYMASTIA MAMMILLARIS, Johnston. (Sp.) 1842.

Distribution—Gulf of St. Lawrence (37, 18) and off the coast of Nova Scotia (24); northeast coast of United States.

This species has a wide geographical range. According to Topsent (38, p. 135) it is found, outside of Canadian waters, in the Arctic Ocean (Kara Sea, White Sea, Spitzbergen, Greenland, &c.); in the North Atlantic (coasts of Norway, Belgium, British Isles, France, Spain); in the Mediterranean (coast of France, Naples, Adriatic); Pacific Ocean (Amboina Island, Japan).

61. *POLYMASTIA ROBUSTA*, Bowerbank. 1860.

Distribution—Gulf of St. Lawrence (18); off the coast of Nova Scotia (24); northeast coast of United States (Verrill, 33).

Foreign distribution—British Isles (Bowerbank, Norman, Hanitsch); North Sea, Shetland Islands (Norman); entrance to the Baltic (Levinsen); French coast of the English Channel and of the Atlantic (Topsent).

62. *POLYMASTIA LAGANOIDES*, Lambe. 1894.

Described in Transactions, Royal Society of Canada, vol. XI, p. 129, pl. iv, figs. 5, 5a—c; type in the U. S. National Museum at Washington, D.C.; part of the type specimen in the museum of the Geological Survey of Canada.

Type locality—Behring Island, Behring Sea.

63. *TRICHOSTEMMA HEMISPHERICUM*, M. Sars. 1872.

Distribution—Gulf of St. Lawrence (Whiteaves, 37) 18; northeast coast of the United States (Verrill, 33).

Foreign distribution—Lofoten, Norway (Sars); Arctic Ocean, off the coast of Norway (Vosmaer).

64. *TENTORIUM SEMISUBERITES*, Schmidt. (Sp.) 1870. (26)

Distribution—Gulf of St. Lawrence (Whiteaves, 37); off Nova Scotia (Challenger); Baffin Bay, Omenak Bay, west and east coast of Greenland (Fristedt); Davis Strait and East Greenland (Lambe, 21); Greenland (Schmidt); northeast coast of United States (Verrill, 33).

Foreign distribution—Off the Shetland Islands (Wyville Thompson); Arctic Ocean off the coast of Norway (Vosmaer); Inaccessible Island, South Atlantic Ocean (Challenger).

65. *STYLOCORDYLA BOREALIS*, Lovén. (Sp.) 1868. (22)

Distribution—Gulf of St. Lawrence (Whiteaves, 37); south of Halifax, Nova Scotia (Challenger); northeast coast of the United States (Verrill, 33).

Foreign distribution—North Sea and coast of Finmark (Lovén); off the coast of Finmark (Vosmaer); Lofoten, Norway (Sars); between the north of Scotland and the Faroe Islands (Wyville Thompson, Carter);

off Bahia, Brazil, and between Marion and Crozet islands, South Indian Ocean (Challenger).

66. *CLIONA CELATA*, Grant. 1826.

Locality—North shore of Prince Edward Island, Gulf of St. Lawrence (18); New England coast (Verrill, 33).

Foreign distribution—Coasts of Great Britain (Bowerbank); Norway, Denmark, Belgium, France; Mediterranean—France, Naples, Adriatic (Topsent); Florida; South of Australia (Carter, Dendy); New Guinea (Ridley and Dendy).

II. TETRACTINELLIDA.

67. *CRANIELLA CRANIUM*, Müller. (Sp.) 1798.

Distribution—Richmond Gulf, Hudson Bay (20); Greenland (Fristedt).

Foreign distribution—The Island of Arran, Galway, Ireland (Bowerbank); The Minch, Scotland (Norman); between the Faroe Isles and the North of Scotland (Carter); Shetland Islands (Bowerbank); Kors Fjord, Norway (Norman, Sollas); lat. $61^{\circ} 0' N.$, long. $4^{\circ} 49' E.$ and lat. $72^{\circ} 53' N.$, long. $21^{\circ} 51' E.$ (Hansen); near last mentioned locality (Vosmaer).

68. *CRANIELLA VILLOSA*, Lambe. 1893.

Described in Transactions, Royal Society of Canada, vol. XI, p. 34, pl. iii, figs. 1, 1a—f; type specimen in the museum of the Geological Survey of Canada.

Type locality—Houston Stewart Channel, Queen Charlotte Islands, B.C.

69. *CRANIELLA SPINOSA*, Lambe. 1893.

Described in Transactions, Royal Society of Canada, vol. XI, p. 35, pl. iv, figs. 1, 1a—j; type specimen in the museum of the Geological Survey of Canada.

Localities from which material was examined—Elk Bay, Discovery Passage and Gulf of Georgia, near Comox, Vancouver Island, B.C.

70. *THENEA MURICATA*, Bowerbank. (Sp.) 1858.

Distribution—Gulf of St. Lawrence (Whiteaves, 37); northeast coast of the United States (Verrill, 33); Baffin Bay, Davis Strait and east coast of Greenland (Fristedt); east coast of Greenland (Lambe, 21).

This species is known to range through the Arctic and North Atlantic oceans, from about lat. 42° to $75^{\circ} N.$, and from long. $60^{\circ} W.$ to $32^{\circ} E.$

71. *CYDONIUM MULLERI*, Fleming. 1828.

Distribution—Vancouver Island and Queen Charlotte Islands,

Type locality—Island of Fulah and Unst (Shetland Islands).

According to Vosmaer (35, p. 6) the geographical distribution of this species is "Atlantic (Shetland, Iceland, Florida) and Arctic Oceans."

III. HEXACTINELLIDA.

72. RHABDOCALYPTUS DAWSONI, Lambe. (Sp.) 1892.

Described in Transactions, Royal Society of Canada, vol. X, p. 73, pl. iv, fig. 2, and pl. vi, figs. 2, 2', 2a, 2a', 2b, 2b', 2c, 2d-i, 2k; type in the museum of the Geological Survey of Canada.

Localities—Off mouth of Qualicum River (type specimen) and Strait of Georgia near Comox. Vancouver Island, B.C.

This species referred to 13, p. 54.

73. APHROCALLISTES WHITEAVESIANUS, Lambe. 1892.

Described in Transactions, Royal Society of Canada, vol. X, p. 74, pl. iii, fig. 2, and pl. vi, figs. 3, 3a--n, 3p; type specimen in the museum of the Geological Survey of Canada.

Type locality—Strait of Georgia near Comox, Vancouver Island, B.C.

74. STAUROCALYPTUS DOWLINGII, Lambe. (Sp.) 1893.

Described in Transactions, Royal Society of Canada, vol. xi, p. 37, pl. iii, figs. 2, 2a--h; type in the museum of the Geological Survey of Canada.

Type locality—Strait of Georgia, near Comox, Vancouver Island.

Foreign locality—Sagami Sea, Japan (Ijima, 13).

IV. CALCAREA.

75. LEUCOSOLENIA CANELLATA, Verrill. 1874 (13).

Distribution—Gulf of St. Lawrence (Whiteaves); Strait of Belle Isle (Lambe); northeast coast of the United States (Verrill, 33); Davis Strait (Lambe).

76. SYCON COMPACTUM, Lambe. 1893.

Described in Transactions, Royal Society of Canada, vol. XI, p. 38, pl. iv, figs. 3, 3a--f; type in the museum of the Geological Survey of Canada.

Type locality—Elk Bay, Discovery Passage, Vancouver Island, B.C.

77. SYCON PROTECTUM, Lambe. 1896.

Described in Transactions, Royal Society of Canada, second series, vol. II, p. 204, pl. iii, figs. 6, 6a--g; type in the museum of the Geological Survey of Canada.

Distribution—Off Bonaventure Island, Baie des Chaleurs (type locality); Strait of Belle Isle, and Upernavik, Baffin Bay (Lambe); near Nanaimo, Vancouver Island (Lambe).

78. SYCON ASPERUM, Lambe. 1896.

Described in Transactions, Royal Society of Canada, second series, vol. II, p. 205, pl. ii, figs. 8, 8a—c; type in the museum of the Geological Survey of Canada.

Type locality—Off Bonaventure Island, Baie des Chaleurs, Gulf of St. Lawrence.

79. SYCON MUNDULUM, Lambe. 1900.

Described in Transactions, Royal Society of Canada, second series, vol. VI, p. 28, pl. iii, figs. 7, 7a—e; of two specimens, one (the type) is in the museum of University College, Dundee, Scotland, the other in the museum of the Geological Survey of Canada.

Distribution—Exeter Harbour (type locality) and off Cape Raper. Davis Strait.

80. *SYCON EGLINTONENSIS, Lambe. 1900.

Described in Transactions, Royal Society of Canada, second series, vol. VI, p. 29, pl. ii, figs. 6, 6a—e; type in the museum of University College, Dundee, Scotland.

Type locality—Eglinton Harbour, Davis Strait.

81. GRANTIA COMOXENSIS, Lambe. 1893.

Described in Transactions, Royal Society of Canada, vol. XI, p. 39, pl. iii, figs. 3, 3a—c; type in museum of the Geological Survey of Canada.

Type locality—Strait of Georgia, near Comox, Vancouver Island, B.C.

82. GRANTIA CANADENSIS, Lambe. 1896.

Described in Transactions, Royal Society of Canada, second series, vol. II, p. 206, pl. iii, figs. 7, 7a—c; two specimens, one (the type) in the museum of the Geological Survey of Canada, a third in the Peter Redpath Museum, McGill University, Montreal.

Distribution—Between Pictou Island and Cape Bear (type locality); off Bonaventure Island; Little Metis. Gulf of St. Lawrence.

83. GRANTIA MONSTRUOSA, Breitfuss. 1898.

Described in Memoires de l'Académie des Sciences de St. Pétersbourg, eighth series, vol. VI, No. 2, p. 24, pl. ii, fig. 16, and pl. iii, fig. 19; type specimen from the North Polar Sea off the coast of Russia.

Specimens in the U. S. National Museum at Washington, D.C., and one in the museum of the Geological Survey of Canada, from Copper Island, Commander Islands, Behring Sea.

84. *GRANTIA PHILLIPSII, Lambe. 1900.

Described in Transactions, Royal Society of Canada, second series, vol. VI, p. 30, pl. iv, figs. 9, 9a--i; type in museum of University College, Dundee, Scotland.

Type locality—Cape Aston, Davis Strait.

85. *GRANTIA INVENUSTA, Lambe. 1900.

Described in Transactions, Royal Society of Canada, second series, vol. VI, p. 32, pl. vi, figs. 14, 14a--f; type in the museum of University College, Dundee, Scotland.

Type locality—Off Cape Raper, Davis Strait.

86. LEUCONIA PYRIFORMIS, Lambe. 1893.

Described in Transactions, Royal Society of Canada, vol. XI, p. 40, pl. iii, figs. 4, 4a--d; type in the museum of the Geological Survey of Canada.

Type locality—Strait of Georgia, near Comox, Vancouver Island, B.C.

87. LEUCANDRA VALIDA, Lambe. 1900.

Described in Transactions, Royal Society of Canada, second series, vol. VI, p. 32, pl. iv, figs. 10, 10a--e, and pl. v, figs. 11, 11a--e; of two specimens, one (the type) in the museum of University College, Dundee, Scotland, the other in the museum of the Geological Survey of Canada.

Type locality—Exeter Harbour, Davis Strait.

88. LEUCANDRA CUMBERLANDENSIS, Lambe. 1900.

Described in Transactions, Royal Society of Canada, second series, vol. VI, p. 34, pl. v, figs. 12, 12a--j; type specimen in the museum of University College, Dundee, Scotland, one specimen (co-type) in the museum of the Geological Survey of Canada.

Localities—Cumberland Sound, Kingawa Fjord; off Cape Raper, Davis Strait.

89. LEUCANDRA TAYLORI, Lambe. 1900.

Described in Transactions, Ottawa Naturalist, vol. XIII., p. 261, pl. vi, figs. a--i; type in the collection of the Rev. George W. Taylor, Nanaimo, B.C.; one specimen (co-type) in the museum of the Geological Survey of Canada.

Type locality—Boat Harbour, near Nanaimo, Vancouver Island, B.C.

90. HETEROPIA RODGERI, Lambe, 1900.

Described in Transactions, Royal Society of Canada, second series, vol. VI, p. 35, pl. vi, figs. 13, 13a-g; type specimen in the museum of University College, Dundee, Scotland, one specimen (co-type) in the museum of the Geological Survey of Canada.

Type locality—Off Norman's Light, Strait of Belle Isle, Gulf of St. Lawrence.

91. AMPHORISCUS THOMPSONI, Lambe, 1900.

Described in Transactions, Royal Society of Canada, second series, vol. VI, p. 36, pl. iii, figs. 8, 8a-j; type specimen in the museum of University College, Dundee, Scotland, co-type in the museum of the Geological Survey of Canada.

Type locality—Off Norman's Light, Strait of Belle Isle, Gulf of St. Lawrence.

BIBLIOGRAPHICAL INDEX.

1. BOWERBANK, J. S. List of sponges in McAndrew's "List of British Marine Invertebrate Fauna." Report of British Association for 1860, p. 217. 1861.
2. ——— Description of two American Sponges. Canadian Naturalist, second series, vol. I, p. 304. 1864.
3. ——— A monograph of the British Spongiadæ, vol. I—IV, Ray Society, London, 1864, 1866, 1874, 1882.
4. BREITFUSS, L. L. Kalkschwammfauna des Weissen Meers und der Eis-meerküsten des Europäischen Russlands. Mémoires de l'Académie Impériale des Sciences de St. Pétersbourg, serie VIII, vol. VI. 1898.
5. CARTER, H. J. Descriptions and Figures of Deep-sea Sponges and their Spicules from the Atlantic Ocean, dredged up on board H.M.S. "Porcupine," chiefly in 1869; with Figures and Descriptions of some remarkable Spicules from the Agulhas Shoal and Colon, Panama. Annals and Magazine of Natural History, fourth series, vol. XIV, pp. 207—221, 245—257. 1874.
6. ——— Descriptions and Figures of Deep-sea Sponges and their Spicules from the Atlantic Ocean, dredged up on board H.M.S. "Porcupine," chiefly in 1869. Annals and Magazine of Natural History, fourth series, vol. XVIII, pp. 226—240, 307—324, 388—410, 458—479. 1876.
7. ——— Report on specimens dredged up from the Gulf of Manaar and presented to the Liverpool Free Museum by Capt. W. H. Cawne Warren. Annals and Magazine of Natural History, fifth series, vol. V, pp. 437—457, and vol. VI, pp. 36—61, 129—156. 1880.

8. ——— Descriptions of two new sponges in "The Zoology of Barents Sea," by W. S. M. D'Urban. *Annals and Magazine of Natural History*, fifth series, vol. VI., p. 253. 1880.
9. ——— Supplementary Report on Specimens dredged up from the Gulf of Manaar, together with others from the sea in the vicinity of the Basse Rocks and from Bass's Straits respectively, presented to the Liverpool Free Museum by Capt. W. H. Cawne Warren. *Annals and Magazine of Natural History*, fifth series, vol. VII, pp. 361—385. 1881.
10. ——— Some sponges from the West Indies and Acapulco in the Liverpool Free Museum described, with general and classificatory Remarks. *Annals and Magazine of Natural History*, fifth series, vol. IX, pp. 266—301, 346—368. 1882.
11. ——— New Sponges, Observations on old ones, and a proposed New Group. *Annals and Magazine of Natural History*, fifth series, vol. X, pp. 106—125. 1882.
12. FRISTEDT, K. Sponges from the Atlantic and Arctic oceans, and the Behring Sea (translation). *Vega—expeditionens vetenskapliga arbeten*, bd. iv. 1887.
13. IJIMA, I. The genera and species of Rossellidæ. *Annotationens Zoologicae Japonenses*, vol. II, pars. ii. 1898.
14. JOHNSTON, G. A history of British Sponges and Lithophytes. 1842.
15. LAMBE, L. M. Sponges from the Pacific coast of Canada and Behring Sea. *Transactions, Royal Society of Canada*, vol. X. 1892.
16. ——— Sponges from the Pacific coast of Canada. *Transactions, Royal Society of Canada*, vol. XI. 1893.
17. ——— Sponges from the Western coast of North America. *Transactions, Royal Society of Canada*, vol. XII. 1894.
18. ——— Sponges from the Atlantic coast of Canada. *Transactions, Royal Society of Canada*, second series, vol. II. 1896.
19. ——— Description of a new species of Calcareous Sponge from Vancouver Island, B.C. *Ottawa Naturalist*, vol. XIII, p. 261. 1900.
20. ——— Notes on Hudson Bay sponges. *Ottawa Naturalist*, vol. XIII, p. 277. 1900.
21. ——— Sponges from the coasts of Northeastern Canada and Greenland. *Transactions, Royal Society of Canada*, second series, vol. VI. 1900.
22. LOVÉN, S. Öfversigt af K. Vetenskaps Akademiens Förhandlingar, Stockholm, 1868, and translated, *Annals and Magazine of Natural History*, fourth series, vol. II. 1868.

23. RIDLEY, S. O. and DENDY, A. Preliminary Report on the Monaxonida collected by H.M.S. "Challenger." *Annals and Magazine of Natural History*, fifth series, vol. XVII, pp. 325--351, 470 493. 1886.
24. ——— Report on the Monaxonida collected by H. M. S. "Challenger" during the years 1873 to 1876: *The Voyage of H.M.S. "Challenger," Zoology*, vol. XX. 1887.
25. SARS, M. On some remarkable forms of animal life from the great deeps off the Norwegian coast (G. O. Sars). 1872.
26. SCHMIDT, O. *Grundzüge einer Spongien—Fauna des Atlantischen Gebietes*. 1870.
27. SOLLAS, W. J. The Sponge-fauna of Norway; a Report on the Rev. A. M. Norman's Collection of Sponges from the Norwegian Coast. *Annals and Magazine of Natural History*, fifth series, vol. V, pp. 130—144, 241—259, 396—409, 1880, and vol. IX, pp. 141—165, 426—453. 1882.
28. ——— Report on the Tetractinellidæ collected by H.M.S. "Challenger" during the years 1873-76: *The Voyage of H.M.S. "Challenger," Zoology*, vol. XXV. 1888.
29. THOMPSON, W. *The depths of the Sea*. 1873.
30. VERRILL, A. E. *Brief Contributions to Zoology*, from the Museum of Yale College. Results of recent Dredging Expedition on the coast of New England. *American Journal of Science and Arts*, third series, vol. VI, pp. 435—441, 1873, and vol. VII, pp. 38—46, 131—138, 405—414, 498-505, 1874.
31. ——— *Explorations of Casco Bay*. *Proceedings of the American Association for the advancement of science*. 1874.
32. ——— Notice of recent additions to the marine invertebrata of the northeastern coast of America, with descriptions of new genera and species, and critical remarks on others. *Proceedings of the United States National Museum*, vol. II, p. 165. 1879.
33. ——— Preliminary check-list of the Marine Invertebrata of the Atlantic Coast, from Cape Cod to the Gulf of St. Lawrence. (Prepared for the U.S. Commission of Fish and Fisheries). 1879.
34. VOSMAER, G. C. J. Report on the sponges dredged up in the Arctic Sea by the "Willem Barents" in the years 1878 and 1879. *Nederland Arch. für Zool.*, suppl., bd. I. 1882.
35. ——— The Sponges of the "Willem Barents" expedition, 1880 and 1881. *Bijdragen tot de Dierkunde Natura Artis Magistra*, XII, Amsterdam. 1885.

36. ——— Porifera. Bronn's Klassen und Ordnungen des Thierreichs, bd. II. 1887.
37. WHITEAVES, J. F. Report on deep-sea dredging operations in the Gulf of St. Lawrence, in Report of Department of Marine and Fisheries for 1873, Ottawa, 1874, and American Journal of Science and Arts, third series, vol. VII, p. 210. 1874.
38. TOPSENT, E. Étude monographique des Spongiaires de France. III. Monaxonida (Hadromerina). Arch. de Zool. exp. et gén, 3e série, t. VIII. 1900.
39. LINDGREN, N. G. Beitrag zur Kenntniss der Spongienfauna des Malayischen Archipels und der chinesischen Meere. Zoologischen Jahrbüchern, elfter band. 1898.

The following species according to L. L. Breitfuss (in "Kalkschwamm fauna des Weissens Meeres, &c.") occur in the waters of East Greenland :—

- Leucosolenia coriacea*, Montagu.
 „ *lamarcki*, Hæckel.
Ascandra corallorrhiza, Hæckel.
 „ *fabricii*, O. Schmidt.
 „ *mirabilis*, Fristedt.
 „ *reticulum*, Hæckel.
Sycon ciliatum, Aut. (Hæckel).
 „ *raphanus*, O. Schmidt.
Grantia arctica, Hæckel.
 „ *utriculus*, O. Schmidt.
 „ *compressa*, Aut. (Hæckel).
 „ *clavigera*, O. Schmidt.
Amphoriscus glacialis, Hæckel.
Leuconia ananas, Montagu.
 „ *stiligera*, O. Schmidt.
 „ *egedi*, O. Schmidt.

In his "Catalog der Calcaree, der Zoologischen Sammlung des Koniglichen Museums für Naturkunde zu Berlin," the same author cites the occurrence of the following species from Greenland :—

- Leucosolenia lamarcki*, (Hæckel). East Greenland.
Ascandra fabricii, (O. Schmidt). West Greenland.
 „ *reticulum*, (O. Schmidt). „ „
Sycon karajakense, Breitfuss. „ „
Grantia arctica, (Hæckel). „ „
 „ *pennigera*, (Hæckel) Breitfuss. Greenland.
 „ *utriculus*, (O. Schmidt). West Greenland.

- Amphoriscus glacialis*, (Hæckel). East Greenland.
Leuconia ananas, (Montagu). West Greenland.
 „ *egedi*, (O. Schmidt). Greenland.

Fristedt in "Sponges from the Atlantic and Arctic Oceans and the Behring Sea," mentions the following sponges from the "Sea west from Greenland"—

- Hyalonema foliata*, Fristedt.
Amorphina panicea, Pallas (O.S.).
Isodictya Dicksonii, Fristedt.
Suberites montalbidus, Carter.
Thecophora semisuberites, O. Schmidt.
Tethya muricata, Bowerbank.
 „ *cranium*, Lamarck.
Desmacella porosa, Fristedt.
Cornulum ascidioides, Fristedt.
 „ *textile*, Carter.
 „ *enteromorphoides*, Fristedt.
Experia lingua, Bowerbank (O.S.).
Cladorhiza abyssicola, Sars.
Clathria corallorhizoides, Fristedt.
Axinella vermiculata, Bow. (Fristedt) var. *erecta*, Carter.

And a number as below from Behring Strait and Sea :—

- Halisarca Dujardinii*, Johnston.
Amorphina renieroides, Fristedt.
 „ *fibrosa*, Fristedt.
Suberites montalbidus, Carter.
Hastatus Robertsoni, Bow. (Fristedt).
Myxilla septentrionalis, Fristedt.
Esperia lingua, Bow. (O.S.) var. *arctica*, Fristedt.

Also the following from Beaufort's Sea :—

- Ascandra complicata*, Montagu (Hæckel).
Leucandra cylindrica, Fristedt.
Cribrochalina variabilis, Vosmaer.
Amorphina grisea, Fristedt.
Eumastia sitiens, O. Schmidt.
Suberites montalbidus, Carter.
Tethya Sibirica, Fristedt.
Esperia helios, Fristedt.