

## Article XIX.—BRYOZOA OF THE CROCKER LAND EXPEDITION

BY RAYMOND C. OSBURN

OHIO STATE UNIVERSITY, COLUMBUS, OHIO

The bryozoan fauna of the Greenland coastal waters is probably better known than that of any other extensive coastline except that of western Europe and the adjacent islands. For many years Greenland has been a center of attack for arctic exploration and a number of the expeditions have collected material in this group. American expeditions, for the most part, have hitherto been concerned especially with geographical exploration and have done little or nothing with the smaller marine animals. The Peary Auxillary Expedition, in 1894, secured a small collection of twenty-seven species in this group, which were identified by Hennig. The zoologists of Denmark, Norway, Sweden, England, Russia, and Germany have thus far made all the studies on Greenland Bryozoa.

The Bryozoa from collections made by various expeditions to Greenland have been dealt with in more or less detail by fourteen different authors in as many separate contributions. However, as none of these papers is generally accessible in America and, as few of them are in English (the others being in Latin, German, Swedish, and Norwegian), the writer has deemed it advisable to review the literature briefly and to append a complete list of species known from that region.

The earliest mention of Greenland Bryozoa is found in the 'Fauna Grœnlandica' (O. Fabricius, 1780). Fifteen species are mentioned, but the descriptions are so inadequate and the synonymy so doubtful that in some cases it is not possible to make out what species were meant.

In 1867, Smitt,<sup>1</sup> the Swedish naturalist, listed seventy-five species and "forms" as occurring in Greenland, though synonymy has now reduced this list to about seventy. Many of Smitt's "forms" have been raised to the rank of species.

Kirchenpauer in 1874 listed twenty-six species from eastern Greenland.

Lütken, 1875, prepared a list, without data, of sixty-four species known from Greenland, in the 'Manual and Instructions for the Arctic Expedition,' for use by the 'Valorous' expedition to Davis Strait. The difference between this list and the larger one of Smitt is probably to be accounted for by the unnecessary sinking of certain good species

---

<sup>1</sup>For title see bibliography.

in synonymy. Lütken's list was also published, without localities, in Rink's 'Danish Greenland' in the same year.

Hincks in 1877 listed, with localities, nineteen species from Davis Strait, in his paper 'On Polyzoa from Iceland and Labrador' and described two new species. Through some error these species from Davis Strait were credited to Iceland, a mistake which Hincks himself later cleared up (See 'Polyzoa of the St. Lawrence,' Ann. Mag. Nat. Hist., (6) I, p. 218, footnote 2).

Busk (1881) listed sixteen species collected by Captain Feilden of the North Polar Expedition and described two new species.

Hennig (1896) studied the material taken by the Peary Auxillary Expedition in 1894 and listed, with data, twenty-seven species from Northumberland I., Murchison Sound and Inglefield Gulf, in the northernmost part of Baffin Bay.

Vanhöffen (1897) listed ninety-eight species, twenty-eight of these from Karajakfjord, taken by the Greenland Expedition of the Berlin Gesellschaft für Erdkunde in 1892-1893.

Andersson (1902), in the report on the Swedish expedition of 1898-1899, listed twenty-four species from various localities on the eastern coast of Greenland. One new species is described.

Bidenkap (1905) gives a table showing the general geographic distribution of arctic Bryozoa, in which he records sixty-eight species as occurring in Greenland.

Norman (1906) prepared a list, without distributional data, of seventy-eight species taken in the 'Valorous' dredgings in Davis Strait, to which he added twenty-six from Lütken's list (a few of which are of doubtful validity), making, if all are to be accepted, a hundred and four species.

Kluge's paper (1907) on 'Bryozoa von West-Grönland' lists seventy-five species and varieties from the following points: Upernivik, Karnah, Foulke Fjord, Murchison Sound, Payer and Battle Harbors, Robertson, Granville, Oliks and Barden Bays, Capes York, Alexander and Chalon, Saunders and Northumberland Islands. One new species is described.

Mortensen (1911) described a new species of Endoprocta, *Loxosomella antedonis*, from northeast Greenland and subdivided the genus *Loxosoma*, erecting in addition two new genera, *Loxocalyx* and *Loxosomella*.

Finally (1916), a paper by the late Dr. G. M. R. Levinsen, published posthumously, gives a list of sixty-seven species from various localities along the coast of northeast Greenland; Stormbugt; Danmarks Havn;

Oresund; Cape Bismarek; the sound between Renskaeret and Maatten; 76° 35' N. lat., 18° 26' W. Long.; and 77° N. Lat., 18° 30' W. Long. Two new genera are erected, *Harmeria*, to include the *Lepralia scutulata* of Busk, and *Lepraliella*, to include *Lepralia hippopus* Smitt and *Cellepora contigua* Smitt. Also two new species are described. The paper is further valuable for its extended discussion of numerous species. For example, the *Lepralia spathulifera* of Smitt, which has been a sort of shuttlecock for the amusement of systematists, is definitely shown to belong to the genus *Callopora* among the *Membraniporas*.

Hitherto, one hundred and eighty species and varieties have been recorded from Greenland. In the present report six more species are added to the list and six others, which have been recorded heretofore for the eastern coast only, are new to the western coast of Greenland. This list, totaling one hundred and eighty-six species and varieties, is surprisingly large when one considers the narrowly limited conditions under which marine life exists in that region. Although Greenland extends from about latitude 60° to above latitude 83° and has several thousand miles of coast-line, the water temperature ranges closely about the zero mark (centigrade) the year round. The surface temperature in winter and summer varies not more than ten degrees off the southernmost point of Greenland, while farther north there is still less variation. At one hundred meters depth all the shorewise waters apparently have a temperature of zero or lower throughout the year.

Naturally, most of the Greenland species are typically arctic and a large number of these are circumpolar in their distribution. Some of the species, to be sure, occur also farther south on the American and European coasts, and *Crisia eburnea* and *Microporella ciliata* are cosmopolitan.

The collections made by the Crocker Land Expedition were taken at Etah, on Foulke Fjord, Lat. 78° 20' and at Umanak, Lat. 76° 30'. Peeawahto Point, the other locality mentioned in the following report, is only two miles east of Etah. These localities are well to the north on the western side of Greenland, on Smith Sound, north of Baffin Bay. The amount of material taken was certainly not extensive, but fifty-one species are represented, as many as would be expected from any similar amount from the tropics or elsewhere and all of the major groups of the marine Bryozoa are represented. The collection, unless otherwise indicated in the text, was made by Dr. M. C. Tanquary, in the year 1914. The southern and eastern coasts of Greenland are more open and more accessible and the Bryozoa are consequently much better known.

The species new to the Greenland fauna are:

*Nolella dilatata* (Hincks),  
*Electra monostachys* (Busk),  
*Callopora discreta* (Hincks),  
*Callopora spitzbergensis* (Bidenkap),  
*Cribrilina punctata* (Hassall),  
*Cheilopora prælucida* (Hincks).

#### BRYOZOA TAKEN BY THE CROCKER LAND EXPEDITION

##### ENDOPROCTA

**Loxosomella antedonis** Mortensen. This species lives attached to the free-living crinoids and was described from northeast Greenland at a latitude of 77° (See Mortensen, 1911, p. 399 *et seq.*) from specimens taken on *Hathometra proluxa*. A small broken specimen of the crinoid *Heliometa glacialis* (Leach) was included among the bryozoan material from Etah, Foulke Fjord, and on this was found a single specimen of this simple bryozoan. Other crinoids of this species were carefully examined later, but no further specimens of the *Loxosomella* were found. It is possible that it may be found wherever arctic crinoids occur, but it is so small that it is easily overlooked.

**Barentsia major** Hincks. Etah, Foulke Fjord; dredged August 7; attached to hydroid stems. The species ranges southward on the American coast to southern New England.

##### ECTOPROCTA

##### CYCLOSTOMATA

**Crisia eburnea** (Linn). Etah, Foulke Fjord; dredged August 7; a few colonies, mostly young, attached to shells, hydroid stems and *Membranipora serrulata*.

**Tubulipora flabellaris** (Fabricius). Etah, Foulke Fjord; dredged August 7. One young colony without ovicells apparently belongs here.

**Idmonea atlantica** Johnston. Etah, Foulke Fjord; dredged August 7; one portion of a colony.

**Entalophora clavata** (Busk). Etah, Foulke Fjord; dredged August 7; two small erect portions, 5 mm. in height, with partially developed ovicells. Thus far this species has been recorded for Greenland by Kluge only.

**Lichenopora crassiuscula** (Smitt). Umanak, June 9; a few colonies on algæ.

**Lichenopora hispida** (Fleming). Etah, Foulke Fjord, June 29, 1915; two colonies on a shell of *Margarites umbilicalis*.

**Lichenopora verrucaria** (Fabricius). Umanak, June 9; very abundant on algæ, hydroid stems, etc., many with completed ovicells, but no compound colonies were observed. One beautifully symmetrical colony was attached to the shell of a small living gastropod.

#### CTENOSTOMATA

**Alcyonidium mamillatum** Alder. Etah, Foulke Fjord; dredged August 7; one colony on a hydroid stem.

**Bowerbankia caudata** (Hincks). Etah, Foulke Fjord, August 7; a few small colonies attached to *Membranipora serrulata*, hydroids and algæ, and Umanak, July 13, 1914, on algæ.

**Nolella dilatata** (Hincks). Etah, Foulke Fjord; August 7; on algæ. This species has not hitherto been reported from Greenland. It is the *Cylindræcium dilatatum* of Hincks and most other writers.

#### CHEILOSTOMATA

**Gemellaria loricata** (Linn.). Umanak, July 13, and Etah, Foulke Fjord, August 7; dredged, common.

**Dendrobeania murrayana** var. **fruticosa** (Packard). Etah, Foulke Fjord; dredged August 7. Rather common and mostly attached to *Membranipora serrulata*. Colonies well developed, 30 mm. or more in height and with numerous oöcia containing eggs in various stages of development.

**Scrupocellaria scabra** var. **pænulata** Norman. Occurring with the following species, but less common. In Greenland this variety is known only from the west coast.

**Scrupocellaria ternata** (Solander). Etah, Foulke Fjord; dredged late in July to August 7.

**Scrupocellaria ternata** var. **gracilis** Smitt. Taken with the preceding, but much more common.

**Caberea ellisi** (Fleming). Umanak, July 13; dredged; a few small colonies.

**Electra monostachys** (Busk). Umanak, July 13; two small colonies on algæ. This species has not hitherto been recorded from Greenland, but is a well-known northern species and in arctic regions has been recorded by Waters from Franz Josef Land (Bry. from Franz Joseph Land, Linn. Soc. Journ. Zool., XXVIII, p. 59, 1900), and by Nordgaard from the Kara Sea (Bryozoa, Duc d'Orleans, 1912, Campagne Arctique de 1907, p. 7).

**Membranipora serrulata** (Busk). Abundant at Etah, Foulke Fjord; dredged late in July to August 7. The encrusting stage is scarcely represented, nearly all the colonies being erect, 50 mm. or more in height, dichotomously branching, flabellate and altogether having a very *Flustra*-like appearance. The branches are narrow, usually not more than 4 to 5 mm. in breadth, and occasionally are almost round. These specimens are not so heavily calcified as those which I have previously studied from farther south (Bryozoa from Labrador, etc., 1912, Proc. U. S. Nat. Mus., XLIII, p. 279), and in the form of the zoarium resemble them but slightly. Some of them are more or less flexible, especially near the tips, according to the state of calcification. The older portions of the colony seem especially suited for the attachment of other species of Bryozoa.

This species, without doubt, belongs to *Membranipora* as limited by Levinsen (1909, Morph. and Syst. Studies on the Cheil. Bry., p. 144), as there are no oecia, spines, or avicularia and there are two rosette plates in the distal and in each lateral wall. The eggs, when mature, pass to the anterior end of the zoecium, directly under the operculum, where they appear to be enclosed by an uncalcified membrane.

**Callopora arctica** (d'Orbigny). Etah, Foulke Fjord, August 7; one colony on a dead shell picked up on the beach; Umanak, July 13, 1914, two colonies on living bivalve shells brought up with the holdfasts of *Laminaria*, and Peeawahto Point, on shells of *Serripes grænlandicus*.

**Callopora craticula** (Alder). Umanak, July 9, and Etah, Foulke Fjord, August 7; dredged on *Membranipora serrulata*, *Dendrobeania* and on algæ. Also at Peeawahto Point, Sept. 7, 1914, on shells of *Serripes grænlandicus*. Small but mature colonies with oecia.

**Callopora cymbæformis** (Hincks). Abundant on hydroid stems and the erect Bryozoa, dredged at Etah, Foulke Fjord, late in July to August 7. Two colonies were also taken at Etah, June 29, 1915, one on a barnacle and the other on a shell of *Buccinum tanquaryi*. This species is almost never found except on the erect stems of other sessile organisms.

**Callopora discreta** (Hincks). Etah, Foulke Fjord; dredged August 7; one colony on a shell. This species has not previously been recorded for Greenland. Bidekap (1905, p. 12), lists it for Spitzbergen.

**Callopora nigrans** (Hincks). Etah, Foulke Fjord; dredged August 7; one colony on a dead shell.

**Callopora spathulifera** (Smitt). Etah, Foulke Fjord; dredged August 7; two colonies on a dead shell.

**Callopora spitzbergensis** (Bidenkap). Etah, Foulke Fjord; dredged August 7; two portions, one of which is entirely bilaminate, the other partially so. The species has hitherto been taken only in Spitzbergen waters, but it is highly probable that it will be found to be circumpolar in its distribution.

**Callopora unicornis** (Fleming). Etah, Foulke Fjord; dredged August 7; one small colony of only a few zoöcia, but well developed, with oöcia. Also at Peeawahto Point, Sept. 7, on a shell of *Pecten islandicus*, collected by Mr. W. Elmer Ekblaw.

**Callopora unicornis** var. **armifera** (Hincks). Etah, Foulke Fjord, June 29, 1915; on shells of *Buccinum tanquaryi* and *B. ekblawi*, collected by Messrs. M. C. Tanquary, W. Elmer Ekblaw, and E. O. Hovey.

**Cribrilina annulata** (Fabricius). Umanak, July 13; two small colonies on algæ.

**Cribrilina punctata** (Hassall). Peeawahto Point; one colony on a shell picked up on the beach.

The typical form of this species has not hitherto been listed for Greenland, though it is recorded from various localities in arctic Europe. Anderson (1902, p. 541) described the variety *watersi* from eastern Greenland, but in the one small specimen of the present collection I can detect none of the varietal differences mentioned by him.

**Hippothoa hyalina** (Linn.) Umanak, June 9; several colonies encrusting small gastropod shells taken on algæ, and July 9, many colonies on the fronds of algæ and thick incrustations on the stems. Etah, Foulke Fjord, dredged August 9, a few very small colonies on *Membranipora serrulata* and more mature ones on shells of *Buccinum belcheri* and *Margarites umbilicalis* collected by Mr. W. Elmer Ekblaw.

**Harmeria scutulata** (Busk). Etah, Foulke Fjord; dredged August 7; three colonies on algæ, none larger than the head of a pin, but all mature.

**Retepora elongata** Smitt. Etah, Foulke Fjord; dredged August 7; four small colonies among *Dendrobeania*.

**Myriozoom crustaceum** (Smitt). Etah, Foulke Fjord; dredged August 9; two very small specimens on *Membranipora serrulata*.

This species appears to have been a misfit generically and has accordingly been much shifted about by various authors. Levinsen (1909, Cheil. Bry., p. 297) erected the new genus *Myriozoella* to include it, but in 1916 (p. 469) returned to the use of the older genus *Myriozoom*. Dawson (1859, Geol. Survey of Canada for 1858, p. 256) described this

species as *Lepralia plana*, and this name has been considerably used, but the description is inadequate for determination and it would appear that Smitt's specific name should stand in spite of the apparent priority.

**Smittina minuscula** (Smitt). Etah, Foulke Fjord, Sept. 7; one small, but mature colony on a shell of *Serripes grænlandicus*. This species has been listed for Greenland by Levinsen and Kluge only, but it is probable that some of the earlier records for *S. landsborovi* refer rather to *minuscula*.

**Smittina reticulato-punctata** (Hincks). Etah, Foulke Fjord; dredged August 7; one colony on a hydroid stem.

**Smittina smitti** (Kirchenpauer). Etah, Foulke Fjord; dredged August 7; one colony on a shell.

**Smittina solida** (Stimpson). Etah, Foulke Fjord; dredged August 7; several colonies among *Dendrobeania* and *Membranipora serrulata*.

**Mucronella indivisa** (Levinsen). Etah, Foulke Fjord; dredged August 7; one colony on a worm tube.

**Mucronella ventricosa** (Hassall). Peeawahto Point, Sept. 7; on shells of *Serripes grænlandicus* and *Pecten islandicus*, collected by Mr. W. Elmer Ekblaw.

**Rhamphostomella costata** (Hincks). Etah, Foulke Fjord; dredged August 7; one small colony on a hydroid stem.

**Rhamphostomella ovata** (Smitt). Peeawahto Point, June 29, 1915; one colony on a dead shell.

**Rhamphostomella plicata** (Smitt). Etah, Foulke Fjord, August 7; on a dead shell.

**Porella concinna** (Busk). Etah, Foulke Fjord, August 7; several small colonies on shells.

**Cysticella saccata** (Busk). Etah, Foulke Fjord; dredged August 7; one small, but apparently old colony, only 7 mm. in height and without branches, but heavily calcified secondarily at the base, with oecia near the tip and beyond this about one row of young zoecia.

This genus has been recently split off from *Porella* on what appears to be a perfectly satisfactory group of characters, by Canu and Bassler (1917, Synopsis of American Early Tertiary Cheilostome Bryozoa, Bull. 96, U. S. Nat. Mus., Feb. 27, p. 53). The recent species belonging to this genus are *Porella saccata* (Busk) (= *P. elegantula* of most authors); *Porella elegantula* d'Orbigny (= *P. perpusilla* Busk), and *Porella fragilis* Levinsen (= *P. elegantula* var. *rostrata* Hincks).



**Cylindroporella tukulosa** (Norman). Umanak, July 13; one colony on the shell of a living bivalve mollusk brought up with *Laminaria* holdfasts; Peeawahto Point, Sept. 7, on a shell of *Serripes grænlandicus*, and Etah, June 29, 1915, on shells of *Buccinum ekblawi* and *B. tanquaryi*.

**Hippoporina pertusa** (Esper). Etah, Foulke Fjord; dredged August 7; one colony on shell.

**Cheilopora prælucida** (Hincks). Etah, Foulke Fjord; dredged August 7; colonies of various sizes on hydroid stems, algæ, *Dendrobeania* and *Cellepora surcularis*. In the latter case a colony nearly an inch across extended in a unilaminar expansion from branch to branch of the *Cellepora*.

**Cellepora surcularis** (Packard). Etah, Foulke Fjord; dredged August 7; two portions of colonies, the largest over an inch in height and showing the usual mode of branching.

#### LIST OF GREENLAND BRYOZOA

The following table of one hundred and eighty-six species and varieties includes all that have been recorded for Greenland. Each author who has recorded a species is indicated by a check mark and the date following the author's name refers to the paper in which the occurrence is recorded. (See bibliography.) A glance at the table will show that numerous species, such as *Idmonea atlantica*, *Lichenopora verrucaria*, etc., are so common and widely distributed that they have been listed by practically every author from Fabricius to the present. Others are less common, and a few have been noted by only one author. Some of the records by earlier writers may be questionable, as our knowledge of the species has increased so rapidly in recent years, but in most cases these have been substantiated by later records, provided the synonymy is correct. Three species mentioned by Lütken (*Flustra foliacea*, *Smitina linearis* and *S. reticulata*), and *Membranipora membranacea* recorded by Fabricius, have not been noticed by any later writer and these especially must be looked upon with suspicion.

## ENTOPROCTA

ENTOPROCTA		Osborn, <i>vide antea</i>	Levinson, 1916	Mortensen, 1911	Kluge, 1907	Norman, 1906	Bidenkap, 1905	Andersson, 1902	Vanhöffen, 1897	Hennig, 1896	Busk, 1881	Hincks, 1877	Lütken, 1875	Kirchpauer, 1874	Smitt, 1867	Fabricius, 1780
<i>Loxosomella antedonis</i> Mortensen	×	×														
“ <i>phascalosomatum</i> (Vogt)							×	×								
<i>Loxosoma</i> sp. Andersson								×								
“ sp. Lütken												×				
“ sp. Vanhöffen									×							
<i>Barentsia gracilis</i> (Sars)						×		×								
“ <i>major</i> Hincks	×						×	×								
“ <i>variarticulata</i> Andersson							×									
ECTOPROCTA																
Cyclostomata																
<i>Crisia arctica</i> Sars				×												
“ <i>cornuta</i> (Linnæus)																
“ <i>denticulata</i> (Lamarck)						×	×		×	×		×			×	
“ <i>eburnea</i> (Linnæus)		×		×				×	×				×		×	
“ <i>producta</i> Smitt					×											
<i>Tubulipora fimbria</i> Lamarck		×					×	×	×				×			×
“ <i>flabellaris</i> (Fabricius)	×				×		×	×	×				×		×	×
“ <i>liliacea</i> (Pallas)						×	×		×	×			×		×	
“ <i>ventricosa</i> Busk							×				×	×				
“ sp. Levinson			×													
<i>Idmonea atlantica</i> Johnston	×	×		×	×	×	×	×	×	×		×	×	×	×	
<i>Entalophora clavata</i> (Busk)	×			×												
“ <i>deflexa</i> Smitt								×								
<i>Hornera lichenoides</i> (Linnæus)						×	×	×	×				×	×	×	
<i>Lichenopora crassiuscula</i> (Smitt)	×	×		×	×											
“ <i>hispida</i> (Fleming)	×					×			×				×	×	×	
“ <i>regularis</i> (d'Orbigny)			×										×	×	×	
“ <i>verrucaria</i> (Fabricius)	×	×		×	×	×			×	×			×	×	×	×

	Osburn	Levinson	Kluge	Norman	Bidenkap	Andersson	Vanhöffen	Hennig	Busk	Hincks	Lütken	Kirchenpauer	Smitt	Fabricius
<i>Stomatopora fungia</i> (Couch)			X		X		X	X			X		X	
“ <i>incrassata</i> (Smitt)			X		X		X	X			X		X	
“ <i>major</i> (Johnston)				X										
“ <i>penicillata</i> (Fabricius)					X		X				X			X
<i>Diastopora diastoporoides</i> (Norman)		X	X	X	X		X	X						
“ <i>meandrina</i> Wood					X		X	X	X		X		X	
“ <i>obelis</i> (Johnston)		X		X	X		X				X	X	X	
“ “ <i>var. arctica</i> Waters			X											
“ <i>simplex</i> Smitt											X		X	
“ <i>suborbicularis</i> Hincks					X		X				X		X	
<i>Defrancia lucernaria</i> (Sars)					X		X				X		X	
<i>Reticulipora intricaria</i> (Smitt)						X								
Ctenostomata														
<i>Flustrella hispida</i> (Fabricius)					X		X				X			X
<i>Alcyonidium disciforme</i> (Smitt)						X	X							
“ <i>gelatinosum</i> (Linnæus)				X	X	X	X				X	X	X	
“ <i>hirsutum</i> (Fleming)					X	X	X				X		X	
“ <i>mamillatum</i> Alder	X	X			X	X	X					X	X	
“ “ <i>var. robustum</i> Anderson							X							
“ <i>mytili</i> Dalyell		X												
<i>Bowerbankia arctica</i> (Busk)			X				X		X					
“ <i>caudata</i> (Hincks)	X	X												
<i>Buskia nitens</i> Alder							X			X				
<i>Nolella dilatata</i> (Hincks)	X													
Cheilostomata														
Anasca														
<i>Gemellaria loricata</i> (Linnæus)	X	X		X	X		X	X			X		X	X
<i>Bugula plumosa</i> (Pallas)					X									X
<i>Dendrobania murrayana</i> (Johnston)				X	X		X		X		X		X	
“ “ <i>var. fruticosa</i> (Packard)	X	X	X	X			X	X	X	X				
“ “ <i>var. quadriden-</i> <i>tata</i> (Loven)		X	X			X								
<i>Sarsiflustra abyssicola</i> (Sars)						X								
<i>Flustra carbacea</i> Solander							X						X	
“ <i>foliacea</i> (Linnæus)											X			
“ <i>membranaceo-truncata</i> Smitt				X	X	X	X						X	
“ <i>papyracea</i> Ellis and Solander											X		X	
<i>Scrupocellaria reptans</i> (Linnæus)					X									X
“ <i>scabra</i> (Van Beneden)		X			X		X	X		X	X		X	
“ “ <i>var. elongata</i> (Smitt)				X	X							X	X	
“ “ <i>var. pænulata</i> Norman	X	X												
“ <i>ternata</i> (Solander)	X	X	X	X			X	X		X		X		



	Osburn	Levinson	Kluge	Norman	Bidenkap	Andersson	Vanhöffen	Hennig	Busk	Hincks	Lücken	Kirchenpauer	Smitt	Fabricius
<i>Relepora cellulosa</i> (Linnaeus)					x						x		x	
" <i>elongata</i> Smitt	x	x	x		x		x	x		x			x	
<i>Myriozoum coarctatum</i> (Sars)				x	x		x	x	x	x	x		x	
" <i>crustaceum</i> (Smitt)	x	x	x	x	x		x				x		x	
" <i>subgracile</i> (d'Orbigny)			x	x	x		x		x	x	x		x	x
<i>Schizoporella biaperta</i> (Michelin)			x	x	x		x						x	
" <i>cruenta</i> (Busk)				x	x		x							
" <i>elmwoodiae</i> Waters				x										
" <i>ortmanni</i> Kluge				x										
" <i>producta</i> (Packard)				x										
" <i>sinuosa</i> (Busk)		x		x	x		x					x	x	
" <i>stylifera</i> (Levinson)		x	x											
" <i>unicornis</i> (Johnston)		x			x		x							
" <i>vulgaris</i> (Moll)		x												
<i>Microporella ciliata</i> (Pallas)		x			x		x				x		x	x
" " <i>var. arctica</i> (Norman)			x	x	x									
<i>Penestrulina malusi</i> (Audouin)					x		x				x		x	
<i>Smittina auriculata</i> (Hassall)					x		x				x		x	
" <i>bella</i> (Busk)					x		x							
" <i>jeffreysi</i> (Norman)		x	x	x	x		x	x		x				
" <i>landsborovi</i> (Johnston)					x		x				x	x	x	
" <i>linearis</i> (Hassall)											x			
" <i>majuscula</i> (Smitt)			x										x	
" <i>minuscula</i> (Smitt)	x	x	x											
" <i>porifera</i> (Smitt)		x	x	x	x		x	x			x		x	
" <i>propinqua</i> (Smitt)		x	x	x	x		x			x			x	
" <i>reticulata</i> (Macgillivray)										x	x			
" <i>reticulatopunctata</i> (Hincks)	x	x	x	x	x	x				x		x		
" <i>smitti</i> (Kirchenpauer)	x	x			x		x					x	x	
" <i>solida</i> (Stimpson)	x					x	x						x	
" <i>trispinosa</i> (Johnston)											x		x	
" " <i>var. arborea</i> Levinson						x		x						
<i>Mucronella abyssicola</i> (Norman)			x		x									
" <i>immersa</i> (Fleming)			x	x	x		x					x		
" <i>indivisa</i> (Levinson)	x	x												
" <i>labiata</i> (Boeck)		x			x	x	x							
" <i>ventricosa</i> (Hassall)	x	x	x		x	x	x	x					x	
<i>Escharoides jacksoni</i> (Waters)		x			x	x	x				x		x	
<i>Rhamphostomella bilaminata</i> (Hincks)		x												
" <i>costata</i> (Hincks)	x		x	x										
" <i>ovata</i> (Smitt)	x		x	x									x	
" <i>plicata</i> (Smitt)	x	x			x		x	x		x			x	

	Osburn	Levinson	Kluge	Norman	Bidenk p	Andersson	Vanhöffen	Hennig	Busk	Hincks	Lütken	Kirchpauer	Smitt	Fabricius
<i>Rhamphostomella plicata</i> var. <i>spinigera</i> (Lorenz)		×	×											
“ <i>radiatula</i> (Hincks)		×												
“ <i>scabra</i> (Fabricius)			×	×	×	×	×	×			×	×	×	×
<i>Escharopsis rosacea</i> (Busk)				×	×	×	×	×			×	×	×	×
“ <i>sarsi</i> (Smitt)		×	×	×	×	×	×	×	×		×	×	×	×
<i>Umbonula arctica</i> (Sars)		×	×	×	×		×							
“ <i>verrucosa</i> (Esper)						×	×				×			
<i>Porella acutirostris</i> Smitt		×	×	×	×		×				×		×	
“ <i>aperta</i> (Boeck)				×										
“ <i>bicornis</i> (Busk)			×											
“ <i>compressa</i> (Sowerby)			×	×	×		×		×		×		×	
“ <i>concinna</i> (Busk)	×	×	×	×	×	×	×							
“ “ var. <i>belli</i> (Dawson)				×										
“ <i>grænlantica</i> (Norman)			×	×										
“ <i>lævis</i> (Fleming)					×		×				×		×	
“ <i>plana</i> (Hincks)		×		×										
“ <i>princeps</i> Norman		×		×	×									
“ <i>proboscidea</i> Hincks		×												
“ <i>skenei</i> (Solander)					×		×				×	×	×	
“ “ var. <i>tridens</i> (Busk)					×									
“ <i>struma</i> (Norman)				×	×									
<i>Cysticella elegantula</i> (d'Orbigny)			×	×	×		×		×					
“ <i>fragilis</i> (Levinson)		×	×											
“ <i>saccata</i> (Busk)	×	×	×	×	×		×	×	×		×			
<i>Tessaradoma gracile</i> (Sars)					×									
<i>Cylindroporella tubulosa</i> (Norman)	×	×	×	×			×							
<i>Lepraliella contigua</i> (Smitt)		×	×	×	×									
“ <i>hippopus</i> (Smitt)		×		×	×		×				×		×	
<i>Hippoporina pertusa</i> (Esper)	×		×				×	×				×		
<i>Anarthropora monodon</i> (Busk)				×							×		×	
<i>Monoporella spinulifera</i> (Hincks)			×	×	×									
<i>Cheilopora prælucida</i> (Hincks)	×													
“ <i>sincera</i> (Smitt)			×	×	×		×	×	×	×	×		×	
<i>Hemicycloporella polita</i> (Norman)			×	×										
<i>Cellepora avicularis</i> Hincks		×			×									
“ <i>nodulosa</i> Lorenz						×								
“ <i>ramulosa</i> Linnæus							×				×			
“ <i>surcularis</i> (Packard)	×	×	×	×	×		×	×	×	×	×	×	×	×
“ <i>tuberosa</i> (d'Orbigny)				×									×	
“ <i>ventricosa</i> Lorenz			×											
“ <i>whiteavesi</i> Norman							×							
<i>Celleporella lepralioides</i> (Norman)					×		×					×		

## SYNONYMY

In the following synonymy I have indicated only those names of species previously recorded for Greenland, which differ from the terminology herein used. I do not consider the synonymy as settled by any means. Changes in the arrangement of genera and even in the conception of genera and, to some extent, of larger groups as well, have recently been made at such a rate that it is difficult for even the special student of the bryozoa to keep track of them. Greater intensive study of morphological and embryological characters, and difference of opinion as to what is most fundamental, are responsible for most of these changes in classification. This is true, not only for the rarer forms, but also for some of the oldest and best known species.

The classification was at first based on the most superficial characters of the colony. This was supplanted by a similar, but much more satisfactory arrangement on the basis of the superficial characters of the individual. But more recent studies, especially those of Waters, Jullien, Levinsen, Harmer, and Canu, have shown that comparatively little reliance can be placed on external characters and that the broader features of the classification must rest on more fundamental structures. Many new genera have been proposed and old families have been broken up and rearranged or new ones established. At the same time, Levinsen chose to make use of some of the old "classical" generic names under a new interpretation, a plan which tends rather to confusion than to clarity. To my mind it would have been better to allow these genera to die a natural death and enter the limbo of zoological misconceptions than to attempt to resuscitate them. At present it seems impossible to harmonize all the changes that have been made.

In the present list I have made use of the newer generic names where I could be certain of the position of the species, but in other cases I have retained older genera, with the full realization that they will have to succumb to the progress of study. Gradually the Bryozoa will emerge from the chaotic state of classification in which they now are, just as other groups have done, but the end is not yet clearly in sight.

## CYCLOSTOMATA

*Loxosomella phascalosomatum* (Vogt).

*Loxosoma*, Andersson, 1902.

*Barentsia gracilis* (Sars).

*Pedicellina*, Vanhöffen, 1897; Bideknapp, 1905.

*Tubulipora fimbria* Lamareck.

*Tubipora serpens*, Fabricius, 1780.

*Tubulipora flabellaris* (Fabricius).

*Tubipora*, Fabricius, 1780.

*Tubulipora liliacea* (Pallas).

*Idmonea serpens*, Hennig, 1896; Vanhöffen, 1897; *I. serpens* and *T. liliacea*, Bidentkap, 1905; *I. liliacea*, Norman, 1906.

*Lichenopora hispida* (Fleming).

*Discoporella*, Smitt, 1867; Kirchenpauer, 1874; Lütken, 1875.

*Lichenopora verrucaria* (Fabricius).

*Madrepore*, Fabricius, 1780; *Discoporella*, Smitt, 1867; Kirchenpauer, 1874; Lütken, 1875; Hincks, 1877.

*Stomatopora fungia* (Couch).

*Tubulipora*, Smitt, 1867; Lütken, 1875.

*Stomatopora penicillata* (Fabricius).

*Tubipora*, Fabricius, 1780; *Tubulipora*, Lütken, 1875. This species may be synonymous with *S. fungia*, but, until this can be finally proved, they should be recorded separately.

*Diastopora diastoporoides* (Norman).

*Stomatopora*, Hennig, 1896; Vanhöffen, 1897; Norman, 1906; Kluge, 1907.

*Diastopora meandrina* Wood.

*Mesenteripora*, Smitt, 1867; Lütken, 1875; Busk, 1881.

*Diastopora obelia* (Johnston).

*D. hyalina* forma *obelina*, Smitt, 1867; *D. hyalina*, Kirchenpauer, 1874; Lütken, 1875. There is a possibility that *D. simplex* Smitt may be identical.

#### CTENOSTOMATA

*Flustrella hispida* (Fabricius).

*Flustra*, Fabricius, 1780; *Alcyonidium*, Lütken, 1875.

*Alcyonidium mamillatum* Alder.

*A. hirsutum* forma *mamillata*, Smitt, 1867; *A. hirsutum* forma *membranacea*, Kirchenpauer, 1874.

*Bowerbankia arctica* (Busk).

*Farrella*, Busk, 1881. This species may well be only a variety, or perhaps even identical with *B. imbricata* Adams, though the zoecia are larger in the far northern form.

*Nolella dilatata* (Hincks).

This species is the *Cylindracium dilatatum* of Hincks. Harmer has clearly shown (Polyzoa of the Siboga Expedition, pp. 52-53) that *Cylindracium* Hincks must give way to *Nolella* Gosse.

#### CHEILOSTOMATA

*Gemellaria loricata* (Linnæus).

*Fistularia ramosa*, Fabricius, 1780.

*Bugula plumosa* (Pallas).

*Sertularia fastigiata*, Fabricius, 1780.

*Dendrobeanta murrayana* (Johnston) and varieties *fruticosa* (Packard) and *quadridentata* (Loven). Previous to 1908, when Levinsen erected the genus *Dendrobeania* (Morph. and Syst. Studies on the Cheilostomata), all records for this species and its varieties were listed under *Bugula*.



*Sarsiflustra abyssicola* (Sars).

*Flustra*, Andersson, 1902.

*Flustra papyracea* Ellis and Solander.

*F. chartacea*, Smitt, 1867; Lütken, 1875.

*Flustra membranaceo-truncata* Smitt.

*Carbasea*, Norman, 1906.

*Scrupocellaria reptans* (Linnæus).

*Sertularia*, Fabricius, 1780.

*Scrupocellaria scabra* (Van Beneden).

*Sertularia halecina*, Fabricius, 1780; *Cellularia scabra*, Lütken, 1875. The variety *elongata* was listed by Smitt, 1867, as *Cellularia scabra forma elongata*; by Kirchenpauer 1874, as *Scrupocellaria inermis*; and by Bideknapp, 1905, as *S. scruposa*.

*Scrupocellaria ternata* (Solander).

*Cellularia ternata* and *forma gracilis* Smitt, 1867; *Cellularia*, Lütken, 1875; *Menipea* Hennig, 1896; Vanhöffen, 1897; Bideknapp, 1905; Norman, 1906; Kluge, 1907. The variety *gracilis*, as *Menipea gracilis*, Busk, 1881; Vanhöffen, 1897; Norman, 1906.

*Menipea arctica* Busk.

*Scrupocellaria*, Kluge, 1907.

*Menipea smitti* (Norman).

*M. duplex*, Vanhöffen, 1897.

*Electra pilosa* (Linnæus).

*Membranipora*, Smitt, 1867; Lütken, 1875; Vanhöffen, 1897; Bideknapp, 1905.

*Membranipora membranacea* (Linnæus).

*Flustra*, Fabricius, 1780.

*Membranipora serrulata* (Busk).

*Flustra*, Busk, 1881; Hennig, 1896; Vanhöffen, 1897; Kluge, 1907.

*Callopora*. This genus, erected by Gray and amended by Norman, contains most of the species formerly listed under *Membranipora*. It is marked by the presence of avicularia or oöcia or both. Levinsen (Morph. and Syst. Studies on the Cheilostomatous Bryozoa, p. 152) has erected a new genus *Tegella* to include *C. arctica* and *C. unicornis*, but until further work has been done on this point it may be better to include these species under *Callopora*. Additional changes in the synonymy of this genus are as follows:

*Callopora arctica* (d'Orbigny).

*Membranipora lineata* *forma sophiæ* Smitt, 1867; *M. sophiæ* Hincks, 1877; *C. sophiæ*, Norman, 1906.

*Callopora lineata* (Linnæus).

*Flustra*, Fabricius, 1780.

*Callopora minax* (Busk).

*Membranipora*, Kirchenpauer, 1874; Vanhöffen, 1897; *Rhamphotonotus*, Bideknapp, 1905.

*Callopora nigrans* (Hincks).

*Membranipora*, Kluge, 1907.

*Callopora spathulifera* (Smitt).

*Lepralia*, Smitt, 1867; Lütken, 1875; Vanhöffen, 1897; Bideknapp, 1905; Kluge, 1907. This well-known and easily determined species has been much shifted

about, though, as it happens, all Greenland records refer it to *Lepralia* prior to the work of Levensen, 1916, pp. 441-442. Levensen's study of the species appears to show conclusively that its relations are with *Callopora*.

*Callopora spinifera* (Johnston).

*Membranipora*, Vanhöffen, 1897; Bidekap, 1905.

*Callopora cymbæformis* (Hincks).

*Membranipora spinifera*, Smitt, 1867; Lütken, 1875.

*Callopora unicornis* var. *armifera* (Hincks).

*Membranipora lineata* forma *americana*, Smitt, 1867; *Callopora sophiæ*, Norman, 1906.

*Cribrilina annulata* (Fabricius).

*Cellepora*, Fabricius, 1780; *Escharipora*, Lütken, 1875.

*Cribrilina nitidopunctata* (Smitt).

*Gephyrotes*, Norman, 1906.

*Microporina articulata* (Fabricius).

*Isis hippuris*, Fabricius, 1780; *Cellaria*, Smitt, 1867; Lütken, 1875; *Cellaria borealis*, Hennig, 1896; *Cellaria*, Vanhöffen, 1897; *C. borealis*, Bidekap, 1905; *Cellularia*, Norman, 1906; *Micropora borealis*, Kluge, 1907.

*Hippothoa divaricata* Lamouroux.

*Mollia hyalina* forma *divaricata*, Smitt, 1867.

*Hippothoa hyalina* (Linnæus).

*Cellepora*, Fabricius, 1780; *Mollia*, Smitt, 1867; *Lepralia*, Kirchenpauer, 1874; *Mollia*, Lütken, 1875; *Schizoporella*, Vanhöffen, 1897; *Celleporella*, Bidekap, 1905.

*Harmeria scutulata* (Busk).

*Cribrilina*, Kluge, 1907.

*Retepora beaniana* King.

*R. cellulosa* forma *beaniana*, Smitt, 1867.

*Retepora elongata* Smitt.

*R. cellulosa* forma *notopachys* var. *elongata*, Smitt, 1867; *R. wallichiana*, Hincks, 1877; Bidekap, 1905; Levensen, 1916.

*Myriozoum coarctatum* (Sars).

*Leieschara*, Vanhöffen, 1897; Norman, 1906.

*Myriozoum crustaceum* Smitt.

*Leieschara*, Vanhöffen, 1897; *Schizoporella*, Bidekap, 1905; *Leieschara*, Norman, 1906.

*Myriozoum subgracile* (d'Orbigny).

*Millepora truncata*, Fabricius, 1780; *Leieschara*, Vanhöffen, 1897; Norman, 1906.

*Schizoporella biaperta* (Michelin).

*Escharella lineata* forma *biaperta*, Smitt, 1867.

*Schizoporella cruenta* (Norman).

*Mucronella*, Bidekap, 1905.

*Schizoporella sinuosa* (Busk).

*Escharella linearis* forma *secundaria*, Smitt, 1867; *Lepralia*, Kirchenpauer, 1874.

*Schizoporella vulgaris* (Moll.).

*Escharina*, Levensen, 1916.

*Microporella ciliata* (Pallas).

*Cellepora*, Fabricius, 1780; *Porina*, Smitt, 1867; Lütken, 1875.

*Fenestrulina malusi* (Audouin).

*Porina*, Smitt, 1867; Lütken, 1875; *Microporella*, Vanhöffen, 1897; Bidekap, 1905.

*Smittina auriculata* (Hassall).

*Escharella*, Smitt, 1867; Lütken, 1875; *Schizoporella*, Vanhöffen, 1897; *Schiz. auriculata* and *Sm. lineata*, Bidekap, 1905; Norman, 1906; *Sm. lineata*, Kluge, 1907.

*Smittina bella* (Busk).

*Smittina*, Vanhöffen, 1897; *Porella*, Bidekap, 1905; Norman, 1906; *Porella normani*, Kluge, 1907.

*Smittina jeffreysi* (Norman).

*Lepralia trispinosa* var., Hincks, 1877; *Sm. trispinosa* var. *jeffreysi* Hennig, 1896; *Sm. trispinosa*, Vanhöffen, 1897; *Smittia*, Bidekap, 1905.

*Smittina landsborovi* (Johnston).

*Lepralia*, Kirchenpauer, 1874; *Escharella*, Lütken, 1875; *Smittia landsboroughii* forma *crystallina*, Vanhöffen, 1897; *Smittia*, Bidekap, 1905. It is probable that some of these records refer to *Smittina majuscula* or *Sm. minuscula*.

*Smittina porifera* (Smitt).

*Escharella*, Smitt, 1867; Lütken, 1875; *Smittia*, Hennig, 1896; Vanhöffen, 1897; Bidekap, 1905; *Schizoporella*, Kluge, 1907.

*Smittina reticulata* (Macgillivray).

*Escharella lengentilii*, Lütken, 1875. Bidekap identifies the *Esch. legentilii* forma *prototypa* of Smitt with *Sm. reticulata*. The only Greenland record for this species is that of Lütken, which is open to some doubt, as the species of *Smittina* were none too well understood in his time.

*Smittina reticulato-punctata* (Hincks).

*Hemeschara contorta*, Kirchenpauer, 1874; *Lepralia*, Hincks, 1877; *Lepralia*, Andersson, 1902; Norman, 1906; *Schizoporella*, Kluge, 1907.

*Smittina smitti* (Kirchenpauer).

*Escharella legentilii* forma *prototypa*, Smitt, 1867; *Lepralia smitti*, Kirchenpauer, 1874; *Smittia legentilii*, Vanhöffen, 1897.

*Smittina solida* (Stimpson).

*Escharella palmata*, Smitt, 1867; Lütken, 1875; *Smittia palmata*, Vanhöffen, 1897; Andersson, 1902.

*Smittia trispinosa* (Johnston).

*Escharella jacotini*, Smitt, 1867; Lütken, 1875.

*Mucronella abyssicola* (Norman).

*Escharella laqueata*, Norman, 1906; *Escharella*, Levinsen, 1916.

*Mucronella immersa* (Fleming).

*Lepralia peachii*, Kirchenpauer, 1874; *M. peachii*, Vanhöffen, 1897; *Escharella*, Norman, 1906; *M. peachii*, Kluge, 1907.

*Mucronella indivisa* (Levinson).

*Escharella*, Levinson, 1916.

*Mucronella labiata* (Boeck).

*Phylactella*, Andersson, 1902; *Escharella*, Levinson, 1916.

*Mucronella ventricosa* (Hassall).

*Discopora coccinea* forma *ventricosa*, Smitt, 1867; *Escharella*, Levinson, 1916.

*Escharoides jacksoni* (Waters).

*Discopora appensa*, Smitt, 1867; Lütken, 1875; *M. coccinea*, Vanhöffen, 1897.

*Rhamphostomella bilaminata* (Hincks).

*Discopora*, Levinsen, 1916.

*Rhamphostomella ovata* (Smitt).

*Cellepora scabra* forma *ovata*, Smitt, 1867.

*Rhamphostomella plicata* (Smitt).

*Cellepora scabra* forma *plicata*, Smitt, 1867; *Cellepora*, Hincks, 1877; Hennig, 1896; *C. scabra* forma *plicata*, Vanhöffen, 1897; *Discopora*, Levinsen, 1916.

*Rhamphostomella radiatula* (Hincks).

*Discopora*, Levinsen, 1916.

*Rhamphostomella scabra* (Fabricius).

*Millepora reticulata*, Fabricius, 1780; *Cellepora*, Smitt, 1867; Kirchenpauer, 1874; Lütken, 1875; Hennig, 1896; Vanhöffen, 1897; *Discopora*, Levinsen, 1916.

*Escharopsis rosacea* (Sars).

*Eschara*, Smitt, 1867.

*Escharopsis sarsi* (Smitt).

*Cellepora spongites*, Fabricius, 1780; *Eschara sarsii*, Smitt, 1867; *Escharoides*, Lütken, 1875; *Eschara*, Busk, 1881; *Escharopsis lobata*, Norman, 1906; *Discopora*, Levinsen, 1916. Julien (Résultats des Campagnes Scientifiques du Prince de Monaco, XXIII, p. 88) . . . has erected a new genus, *Posterula*, for this species.

*Umbonula arctica* (Sars):

*Mucronella pavonella*, Vanhöffen, 1897; Bidekap, 1905; Norman, 1906; Kluge, 1907; *Discopora pavonella*, Levinsen, 1916. This species has commonly been known as *Mucronella pavonella* (Alder), but Nordgaard (1917, Bry. from the Arctic Regions, Tromsø Museums Aarshefter 40, No. 1, p. 79) shows that Alder's name must give way to the *arctica* of Sars. Harmer (1902, Morphology of the Cheilostomata, Q. J. M. S., XLVI, part 2, N. S., p. 296, Pl. xv, fig. 10), has shown that the species properly belongs in the genus *Umbonula*, if that genus is to be retained, on account of its close structural relationship to *U. verrucosa*.

*Porella compressa* (Sowerby).

*Eschara cervicornis*, Smitt, 1867; Kirchenpauer, 1874; Lütken, 1875; *Cellepora cervicornis*, Busk, 1881.

*Porella grænlantica* (Norman).

*P. bella* var. *grænlantica*, Norman, 1906.

*Porella skenei* (Solander).

*Discopora*, Smitt, 1867; Lütken, 1875; *Cellepora*, Kirchenpauer, 1874; *Palmicellaria*, Vanhöffen, 1897; Bidekap, 1905. The variety *tridens* (Busk), as *Palmicellaria skenei* var. *tridens*, Norman, 1906.

*Cysticella elegantula* (d'Orbigny).

*Eschara perpusilla*, Busk, 1881; *Porella perpusilla*, Vanhöffen, 1897; Bidekap, 1905; *Porella elegantula*, Norman, 1906; Kluge, 1907.

*Cysticella fragilis* (Levinson).

*Porella saccata* var. *rostrata*, Kluge, 1907; *Porella fragilis*, n. sp., Levinson, 1916.

*Cysticella saccata* (Busk).

*Eschara elegantula*, Lütken, 1875; Busk, 1881; *Porella elegantula*, Hennig, 1896; Vanhöffen, 1897; *Porella saccata*, Bidekap, 1905; Kluge, 1907.

*Cylindroporella tubulosa* (Norman).

*Porina* Vanhöffen, 1897; Kluge, 1907.

*Lepraliella contigua* (Smitt).

*Cellepora ramulosa* forma *contigua*, Smitt, 1867; *Rhamphostomella*, Norman, 1906; *Lepralia*, Kluge, 1907. Levinsen, 1916, p. 466, erects the new genus *Lepraliella* for this and the following species.

*Lepraliella hippopus* (Smitt).

*Lepralia*, Smitt, 1867; Lütken, 1875; Vanhöffen, 1897; Bidentkap, 1905; *Eschara*, Norman, 1906.

*Hippoporina pertusa* (Esper):

*Lepralia*, Kirchenpauer, 1874; Hennig, 1896; Vanhöffen, 1897; *L. nordlandica*, Kluge, 1907. The species has commonly been known as *Lepralia pertusa*.

*Monoporella spinulifera* (Hincks).

*Mucronella*, Bidenthap, 1905.

*Cheilopora sincera* (Smitt).

*Discopora*, Smitt, 1867; Lütken, 1875; *Lepralia*, Hincks, 1877; *Hemeschara*, Busk, 1881; *Lepralia*, Hennig, 1896; *Mucronella*, Vanhöffen, 1897; Bidentkap, 1905; Kluge, 1907.

*Hemicyclopora polita* (Norman).

*Lepralia emucronata*, Kluge, 1907.

*Cellepora surcularis* (Packard).

*Celleporaria incrassata*, Smitt, 1867; *Cellepora incrassata*, Kirchenpauer, 1874; *Celleporaria incrassata*, Lütken, 1875; *Cellepora incrassata*, Hincks, 1877; *C. cervicornis*, Busk, 1881; *C. incrassata*, Hennig, 1896; Vanhöffen, 1897; Bidentkap, 1905; Norman, 1906; Levinsen, 1916.

*Cellepora tuberosa* (d'Orbigny).

*C. ramulosa* forma *tuberosa*, Smitt, 1867.

## LIST OF PAPERS DEALING WITH GREENLAND BRYOZOA

- FABRICIUS, O. 1780. *Fauna grønlandica*.
- SMITT, F. A. 1867. *Bryozoa marina in regionibus arcticis et borealibus viventia recensuit*, Ofv. Kgl. Vet. Akad. Forh., No. 6.
- KIRCHENPATER. 1874. Sept. Verzeichn. der in Ost-Grönland gesammelten Hydroiden und Bryozoen. In Koldevey; Die zweite deutsche Nordpolarfahrt, Bd. II, Abth. 1, pp. 411-428.
- LÜTKEN, CHR. 1875. Manual and Instructions for the Arctic Expedition, p. 139. Also in Rink's 'Danish Greenland,' 1875, pp. 443-444.
- HINCKS, REV. THOS. 1877. On Polyzoa from Iceland and Labrador. Ann. Mag. Nat. Hist., (4) XIX, January, pp. 97-112, Pls. x-xi.
- BUSK, G. 1881. List of Polyzoa, collected by Captain Feilden in the North Polar Expedition. Journ. Linn. Soc., XV.
- HENNIG, ANDERS. 1896. Bryozoeer fran Westgrönland, samlade av dr. Ohlin under "the Peary auxiliary expedition" ar 1894. Ofv. Kgl. Vet. Akad. Forh., No. 5, pp. 351-365. Stockholm.
- VANHÖFFEN, E. 1897. Die Fauna und Flora Grönlands. In Grönlands-expedition der Gesellschaft für Erdkunde zu Berlin, 1892-1893, 2 Bd., 1 Theil, pp. 227-234. Berlin.
- ANDERSSON, K. A. 1902. Bryozoen während der schwedischen Expeditionen 1898 und 1899 unter Leitung von Prof. A. G. Nathorst und 1900 unter Leitung von conservator G. Kolthoff gesammelt. Zool. Jarhb. 15, pp. 537-557.
- BIDENKAP, OLAF. 1905. Fortegnelse over de arktiske bryozoeer. Bergens Museums Aarbog, 1905, No. 9, pp. 1-79.
- NORMAN, CANON A. M. 1906. Greenlandic Polyzoa, Ann. Mag. Nat. Hist., (7) XVII, pp. 90-93.
- KLUGE, HERMAN. 1907. Zür Kenntnis der Bryozoen von West-grönland, L'annuaire du Musée Zoologique de l'académie Impériale des Sciences de St. Pétersbourg, T. 12, pp. 546-554.
- MORTENSEN, TH. 1911. A new species of Entoprocta, *Loxosomella antedonis*, from North-east Greenland. Danmark-ekspeditionen til Grönlands Nord-østkyst 1906-1908. Bd. 5, No. 8, pp. 397-406, Pl. xxvi.
- LEVINSEN, G. M. R. 1916. Bryozoa, Danmark-ekspeditionen til Grönlands nord-østkyst 1906-1908. Bd. 3, No. 16, pp. 433-472, Pls. xix-xxiv. Kjöbenhavn.



