

MEDDELELSER OM GRØNLAND

UDGIVNE AF

KOMMISSIONEN FOR VIDENSKABELIGE UNDERSØGELSER I GRØNLAND

Bd. 134 · Nr. 6

SYLLIDAE (POLYCHAETA) FROM
GREENLAND WATERS

BY

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WITH 15 FIGURES IN THE TEXT

KØBENHAVN

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INTRODUCTION

During the study of arctic Polychaetes collected by the "Ingolf", the "Michael Sars" and other arctic expeditions together with numerous collections made by private collectors I happened to come over a fairly rich material of Syllids from Greenland waters, from the open seas around this giant island as well as from the coastal waters and inside the fjord areas. Several of the species in question were represented by both sexual and asexual phases. After the identification of them I got the idea to publish this little paper alone dealing with an interesting and difficult family instead of splitting up the report in different papers as planned for the great material of northern polychaetes of the Zoological Museum of the University of Copenhagen. I thought that it should be of some value to publish descriptions and drawings of the specimens under consideration in one paper so that a comparison would be easy to make.

It soon proved expedient to include in the investigation—besides the undetermined material of our collections—the old material of Greenland Syllidae too, collected e. g. by the "Denmark" Expedition 1906—08, the East-Greenland Expedition (Ryder 1892) etc. and the material delivered by the numerous private collectors during the last 50—60 years, e. g. OLRİK, HOLM, NORDMANN, STEPHENSEN, POUL M. HANSEN a. o., and submit them to a thorough revision. It proved necessary too to study critically also the rather comprehensive literature on the subject; hence the fairly long lists of synonyms and literature on many of the species.

The material comprises 12 species distributed on the four sub-families within the family Syllidae, viz. the following species:

1. *Syllis armillaris* (O. FR. MÜLLER).
2. *S. cornuta* RATHKE.
3. *S. fasciata* MLMGR.
4. *Eusyllis blomstrandii* MLMGR.
5. *Sphærosyllis latipalpis* LEVINSEN.
6. *Exogone verugera* (CLAP.).

7. *E. hebes* (WEBSTER et BENEDICT).
8. *E. sp.*
9. *Autolytus prolifer* (O. FR. MÜLLER).
10. *A. prismaticus* O. FABR.
11. *A. groenlandicus* n. sp.
12. *A. verilli* MARENZELLER.

The species printed in spaced types is new to science. Furthermore the material contains an indeterminable species of *Exogone*.

Of the enumerated species the following are new to the Greenland fauna:

1. *Syllis armillaris* (O. FR. MÜLLER).
2. *Eusyllis blomstrandii* MLMGR.
3. *Sphærosyllis latipalpis* LEVINSEN.
4. *Exogone verugera* (CLAP.).
5. *E. hebes* (WEBSTER et BENEDICT).

Furthermore the material comprises all the species hitherto known from Greenland with the exception of *Ancistrosyllis groenlandica* Mc'INTOSH 1877 taken in Baffin Bay by the "Valorous" Expedition and not refound since its establishment. The species *Syllis incisa* O. FABR. which is only known from Greenland I consider most likely identic with MALMGREN's *Syllis fasciata*.

All the accompanying figures have been made by the scientific artist POUL H. WINTHER by means of a grant from the Carlsberg Fond, which I beg to accept my most respectful thanks.

Subfamily Syllinae.

Genus *Syllis*.

Syllis (Typosyllis) armillaris (O. FR. MÜLLER) 1776.

Syn.:

1776. *Nereis armillaris* O. FR. MÜLL., p. 217.
1867. *Syllis borealis* MALMGREN, p. 160, pl. VII, fig. 42.
1867. *Syllis armillaris* MLMGR., p. 160, pl. VIII, fig. 46.
1867. *Syllis tigrina* MLMGR., p. 161.
1883. *Syllis armillaris* LEVINSEN, p. 88.
1914. *Syllis (Typosyllis) armillaris* FAUVEL, p. 100.
1928. *Syllis (Typosyllis) armillaris* AUGENER, p. 717.
1929. *Syllis armillaris* DITL., p. 16.

Occurrence:

West Greenland: 64°15' N. 14°22' W. 15. 5. 1896; "Ingolf" St. 51; 128 m; 1 spec. — 63°43' N. 14°34' W.; 16. 5. 1895; "Ingolf" St. 6; 170 m; 1 spec. — 63°59' N. 53°03' W.; Riis-Carstensen; 28. 7. 1926; 119 m; 3 spec. — Off Sukkertoppens Havn; 14. 5. 1909; "Tjalfe" St. 358; 2 spec. — Bredefjord; 3. 9. 1912; "Rink" St. 152; 80—120 m; 1 spec.

East Greenland: Ellaø, Solitærbugten; several localities in different depths; 10, 11, 15, 19, 40 m; Three-Year Expedition to N.-E. Greenland 1931—34; 11.—13. 9. 1931. — 5 miles S. of Bontekoøen; 21. 8. 1932; 245 m; tough clay. — The outlet of Hurry Inlet; 1. 7. 1932; 140 m; clay. — The bay opposite to Rode Ø; 22. 8. 1932; 39 m; sand, stone. — Near the Bjerneøer; 26. 7. 1932; 306 m; all the last finds made by the Three-Year Expedition to N.-E. Greenland 1931—34.

This species does not seem to penetrate into Baffin Bay; it is furthermore restricted to coastal waters, even inside the fjords, or at any rate it is found in fairly shallow waters. Finds from the deep sea in Greenland waters are unknown. In East Greenland it is found in several places in the Scoresby Sund area. The two "Ingolf" finds are from the North Atlantic. The present material furthermore contains several finds from Iceland waters at very low depths ($2\frac{1}{2}$ —15 m).

The species is distinguished by the short, spindle-shaped dorsal cirri with only a few (8—11, rarely more) segments. Among the present

specimens no epitokous individuals were available. In his material from Spitsbergen AUGENER also did not find any epitokous specimens, and as it seems to be a fact, that this species is not so pronouncedly arctic it may be presumed that it only propagates atokous in the arctic area; furthermore it rarely enters the deep sea.

Distribution: East Greenland, the Behring Sea, Spitsbergen, Iceland, the Faroes, West coast of Norway and Sweden; Denmark; British Islands, France, Madeira; the Mediterranean.

Syllis cornuta RATHKE 1843.

Syn.:

1843. *Syllis cornuta* RATHKE, p. 164, pl. VII, fig. 12.
 1867. *Syllis cornuta* MALMGREN, p. 161, pl. VIII, fig. 45.
 1867. *Chaetosyllis oerstedii* MLMGR., p. 162, pl. IX, fig. 51.
 1867? *Syllis fabricii* MLMGR., p. 162.
 1883? *Syllis fabricii* LEVINSEN, p. 89.
 1909. *Syllis fabricii* DITL., p. 14.
 1911. *Syllis fabricii* DITL., p. 422.
 1911. *Syllis oerstedii* FAUVEL, p. 11.
 1914. *Syllis Oerstedii* DITL., p. 700.
 1914. *Syllis fabricii* DITL., p. 699.
 1914. *Syllis cornuta* FAUVEL, p. 101.
 1928. *Syllis (Typosyllis) cornuta* AUGENER, p. 718.

Occurrence:

West-Greenland: The following finds near Fyllas Banke, all made by the "Ingolf", St. 27; 64°55' N. 55°10' W.; 1. 7. 1895; 740 m; 4 spec. — St. 28; 65°14' N. 55°47' W.; 1. 7. 1895; 791 m; 4 spec. — St. 29; 65°34' N. 54°13' W.; 5. 7. 1895; 128 m; about 10 spec. — St. 31; 66°35' N. 55°54' W.; 11. 7. 1895; 166 m; 1 spec. — St. 32; 66°35' N. 56°38' W.; 11. 7. 1895; 599 m; ∞ spec. — St. 35; 65°16' N. 55°05' W.; 18. 7. 1895; 682 m; about 20 spec. — 64°01' N. 52°40' W.; 28. 7. 1926; 83 m; Riis Carstensen; 1 spec. — 66°49' N. 56°28' W.; 1889; about 450 m; Wandel; 1 spec. — 68°28' N. 54°47' W.; 18. 8. 1908; about 200 m; "Tjalfe" St. 119; 1 spec. — Upernivik Harbour; 19. 7. 1886; about 10 m; Holm; 1 spec. — 12 miles off the outlet of the Strømfjord; St. 2; 23. 6. 1911; 375—380 m; Nordmann; about 10 spec. — Kvanefjord; St. 2; 21. 6. 1912; 17—18 m; 1 spec. — Bredefjord; St. 36, 55, 156; 12. 8.—15. 9. 1912; 29—330 m; 2, 2, 1 spec.

East Greenland: Stormbugt; "Danmark" Exp., St. 91 A; 12.6. 1908; 2—12 m; 1 spec. — The Sound between Cape Bismarck and "Maatten"; "Danmark" Exp. St. 94; 19. 7. 1908; about 25 m. — Stormbugt; Sverdrup Exp.; 8. 7. 1901; 2 spec. — "Stationen"; Ryder; 1 spec. — St. 67; 29. 10. 1892; Ryder. — "Heklas" Harbour; Ryder; 9. 8. 1891. — SE. of Sabine Ø.; Søren Jensen; 10. 7. 1900; about 200 m.

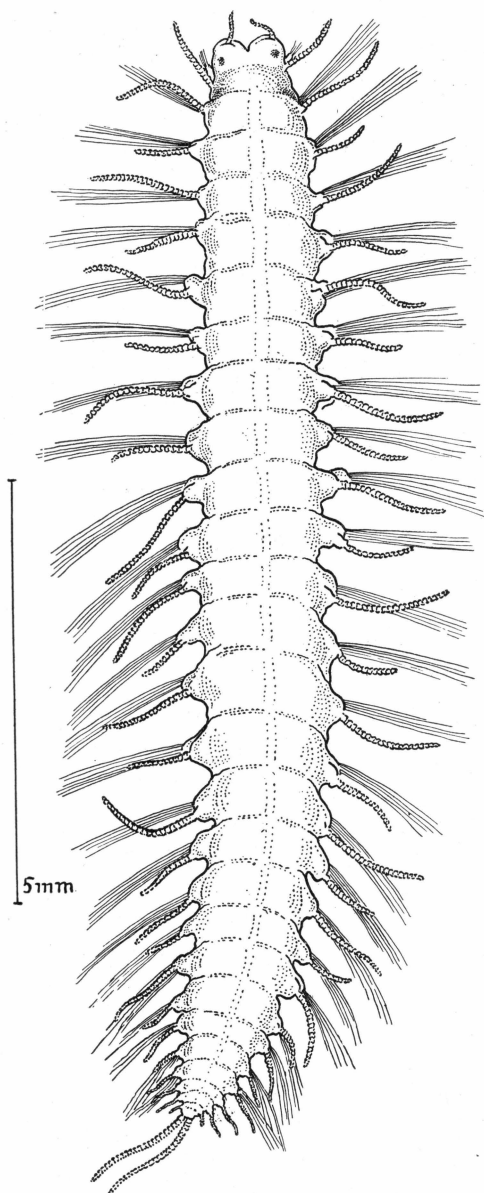


Fig. 1. *Syllis cornuta* (RATHKE) epitokous specimen.

— Moskusoksefjord; Off. Mt. Anker; 3. 8. 1932; 95 m. — Antarctic Sund; 6. 8. 1932; 543 m. — Inner part of Franz Joseph Fjord; 7. 8. 1932; 630 m. — Danmarks Ø; 24. 8. 1932; 10—11 m. — Between C. Stevenson and C. Leslie; 24. 8. 1932; 106 m. — Solitærbugt, Ellø; 10.—14. 9. 1931; 5, 6, 9, 11, 12, 15, 16, 24, 31 m; 1 spec. at each station. — Ymerø, E. of Zoolog Dalen; St. 70; 55 m, 180 m; 8. 8. 1932;

1 spec. at each station. — Eskimonæs, SE. of Knolden; St. 6; 14—40 m; 18. 8. 1932. — Nordbugten at Nordvestfjorden; 24. 7. 1933; 59, 111, 153, 163 m; 1 spec. at each locality. — W. coast of Jameson Land, off Bjørnøer; 26. 7. 1933; 68 m. All the last localities: the Three-Year Exped. to NE. Greenland 1931—34. — Angmagsalik; 14. 7. 1922; Hedegaard. — C. Tordenskjold; 1. 7. 1935; 11 m; rocks. — Kekertak-suak; 13. 7. 1935; 60 m; sand; 2 spec. — Lindenowfjord; 17.—28. 7. 1935; St. 11⁵, 20⁴, 20¹⁰; 100—15 m, 20—30 m; 3 spec.; The three last finds: Bertelsen — Knudshoved, Karlshavn; 6. 8. 1937; 8—10 m; Løppenthin. — Norwegian Sea; 65°00' N. 11°16' W.; 20. 5. 1896; "Ingolf" St. 59; 584 m; 1 spec. — 70°50' N. 8°29' W.; 23. 7. 1896; St. 115; 162 m; 3 spec. — Jan Mayen; 28. 6. 1900; Søren Jensen; about 100 m; 2 spec. — 66°54' N. 15°35' W.; "Beskytteren"; about 100 m; 2 spec.

This species is the most common Syllid in Greenland waters; it occurs both in the open sea, as well as in the littoral zone, and it even penetrates far into the fjords; in West Greenland e. g. in Bredefjord, and in East Greenland it has been dredged far inside the great fjord-areas Scoresbysund and Franz Joseph Fjord. — On a whole it is not a true abyssal form; in the present material the depths of the dredgings range between 5 m (Ellaø) and 791 m (the Davis Strait).

It should just be noticed, that in the collections there are no specimens at all from Iceland waters.

The material contains both atokous as well as epitokous, pelagic specimens.

AUGENER refers with some doubt, indicated by a mark of interrogation, MALMGREN's *S. fabricii* to this species, and I am inclined to agree with his supposition, for on examining the specimens from the "Denmark" Expedition determined by DITLEVSEN (1911, p. 422) as *S. fabricii* I was able to state, that they were identic with *S. cornuta*. DITLEVSEN's specimens are therefore here enumerated in the list of synonyms of this species.

The species may easily be separated from the two other species of *Syllis* in this area by the number of segments in the dorsal cirri (viz. 22—30) and by the long, pointed ventral cirrus which especially in the central part of the body is rather long and pointed, even longer than the parapodium. The greater part of the present specimens are atokous, but a number of epitokous pelagic individuals are present too. One of these pelagic specimens measures about 14 mm with 27 chætigers of which 23 are furnished with long swimming bristles; only the first and the three last chætigers have unmodified bristles, the long bristles are as long as the body is broad. The prostomium has two small eyes and two short, segmented antennæ. The dorsal cirri are of different

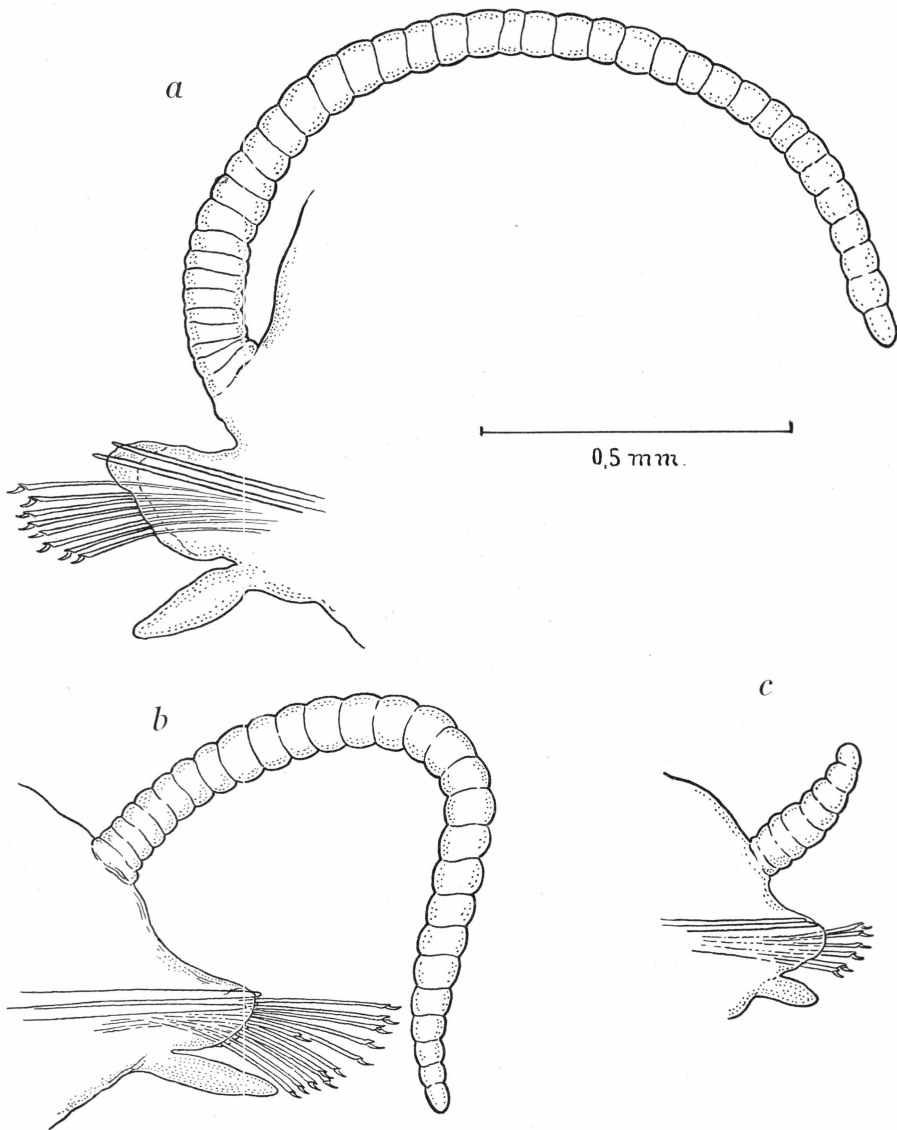


Fig. 2. a. *Syllis fasciata* MLMGR.; b. *S. cornuta* RTKE.; c. *S. armillaris* (MÜLL.).

length and almost always a long and a short cirrus are arranged in regular courses. The body ends in two long, segmented anal cirri.

Distribution: The species is widely distributed in the arctic and boreal waters, in littoral and abyssal regions; it is seldom found outside the 1000 m line. Greenland, the Kara Sea, Spitsbergen; the cold area in the Norwegian Sea, Jan Mayen, East and NE. of Iceland; southwards to the Lusitanian area: the Channel, and the Mediterranean.

Syllis fasciata MLMGR. 1867.

Syn.:

1867. *Syllis fasciata* MLMGR., p. 161, pl. VIII, fig. 47.
 1883. *Syllis fasciata* LEVINSEN, p. 89.
 1909. *Syllis fasciata* DITLEVSEN, p. 14.
 1911. *Syllis incisa* DITLEVSEN, p. 422.
 1911. *Syllis fasciata* FAUVEL, p. 12.
 1914. *Syllis fasciata* FAUVEL, p. 101.
 1914. *Syllis fasciata* DITLEVSEN, p. 699.
 1928. *Syllis (Typosyllis) fasciata* AUGENER, p. 719.
 1934. *Syllis (Typosyllis) fasciata* E. WESENBERG-LUND, p. 20.
 1937. *Syllis fasciata* DITLEVSEN, p. 23.

Occurrence:

West Greenland, deep sea: 74°07' N. 62°51' W.; 275 m; 30. 7. 1928; "Godthaab" 1928; St. 73; 2 spec. — 66°51' N. 57°40' W.; 680 m; 3. 7. 1928; Godthaab 1928; St. 39; 3 spec. — 65°16' N. 55°05' W.; 582 m; 18. 7. 1895; "Ingolf"; St. 35; 1 spec. — Littoral waters: Godhavn; Orlík; 3 spec. — 17 miles from the Mouth of Nordre Strømfjord; 325—330 m; 25. 6. 1911; V. Nordmann; 2 spec. — Nordre Strømfjord; St. 9 B; 44—64 m; V. Nordmann; 2 spec. — Bredefjord; 9—41 m; Laminaria-bottom; 23. 7. 1912; "Rink"; St. 66; 2 spec. — Prøven. — Godthaab.—

[The two last specimens, were determined by DITLEVSEN as *S. incisa*, (see below).]

East Greenland, littoral waters: Jan Mayen; about 20 m; 26. 6. 1900; Søren Jensen; 2 spec. — Danmark's Harbour; about 10 m; soft bottom; Delesseria; 8. 8. 1907. "Denmark" Expedition. — Between the Mouth of Hurry Inlet and the South-coast of Scoresby Sund; 245 m; 28. 6. 1932; Three-Years East Greenland Expedition. — Kangerdlugsuaq; several localities; Degerbøl; St. 8; 10 m; St. 21; 40—50 m; gravel; 1 and 3 spec; and 7th Thule Expedition; 18.—29. 8. 1933; 7—100 m. — Tasiusarsak; 100 m; 7th Thule Expedition; 20. 7. 1933. — Tasiusak; about 25 m; 17. 5. 1899; East Greenland Expedition; and 9. 8. 1933; 100 m; 7th Thule Expedition. — Sermilik settlement Ikatek; 125 m; 27. 7. 1933; 7th Thule Expedition.

Only atokous specimens were present. The species is distinguished by the long, dorsal cirri, the segments of which may number about 40. The length of the cirri may vary rather considerably in the same specimen. Characteristic is also a strong acicular seta in the hindmost feet. I was not able to find them in all the individuals; they may evidently often be broken.

On examining the specimens of *S. incisa* from the Denmark Expedition (DITLEVSEN 1911, p. 422) I was able to state, that they were identic with *S. fasciata*, and for that reason DITLEVSEN's specimens are enume-

rated here in the list of synonyms of this species. Yet it is still an open question whether *S. incisa* is an independent species; according to the literature the only difference between the two closely related species seems to be the viviparity of *S. incisa*.

Distribution: The species is by far more pronouncedly arctic than the two other Syllids mentioned here; it is found considerably further northwards in West Greenland waters; it is circumpolar and does not seem to penetrate further south in the North Atlantic than off the Faroes. — Greenland; Novaya Zemlya; the Kara Sea; Spitsbergen; the Bering Sea; Iceland; the Faroes; Eastern North America.

Subfamily Eusyllinae.

Genus Eusyllis.

Eusyllis blomstrandii MLMGR. 1867.

Syn.:

1867. *Eusyllis blomstrandii* MALMGREN, p. 159.
 1867. *Eusyllis monilicornis* MALMGREN, p. 160.
 1883. *Eusyllis blomstrandii* LEVINSEN, p. 88.
 1883. *Eusyllis monilicornis* LEVINSEN, p. 88.
 1909. *Syllis monilicornis* DITLEVSEN, p. 14.
 1911. *Eusyllis blomstrandii* FAUVEL, p. 12.
 1914. *Eusyllis blomstrandii* FAUVEL, p. 103.
 1914. *Syllis monilicornis* DITLEVSEN, p. 700.
 1928. *Eusyllis blomstrandii* AUGENER, p. 721.
 1929. *Eusyllis blomstrandii* DITLEVSEN, p. 16.

Occurrence:

West Greenland: 66°21' N. 56°50' W.; 680 m; 800 m. w.; 18. 5. 1909; "Tjalfe" St. 363; 1 spec. — 65°17' N. 54°17' W.; 104 m; 18. 7. 1895; "Ingolf" St. 34; 1 spec. — Godhavn; 1 spec. — 17 miles from the Mouth of Nordre Strømfjord; 14—38 m; 25. 6. 1911; W. Nordmann; 1 spec. — In the North Atlantic boreo-arctic region: Færøbanken; about 120 m; 13. 8. 1902; "Michael Sars"; Ad. S. Jensen; 3 spec. — 61°09' N. 7°54' W.; 360 m; 15. 8. 1902; "Michael Sars"; Ad. S. Jensen; 4 spec. —

None of the localities mentioned here have previously been published, and the species was not hitherto known from Greenland waters. It is found in the open sea west of Greenland ("Ingolf" and "Tjalfe") as well as in littoral waters and the fjords.

The species is distinguished by the not genuine segmentation of the antennæ and cirri. The specimens were atokous except that from Godhavn.

The prostomium has a slight incurvation in its posterior border, thus being slightly cordiform; otherwise short and broad; four eyespots; the anterior pair at the same level as the origin of the paired antenna, and considerably larger than the posterior pair which is close behind the anterior. The unpaired antenna is longer than the lateral

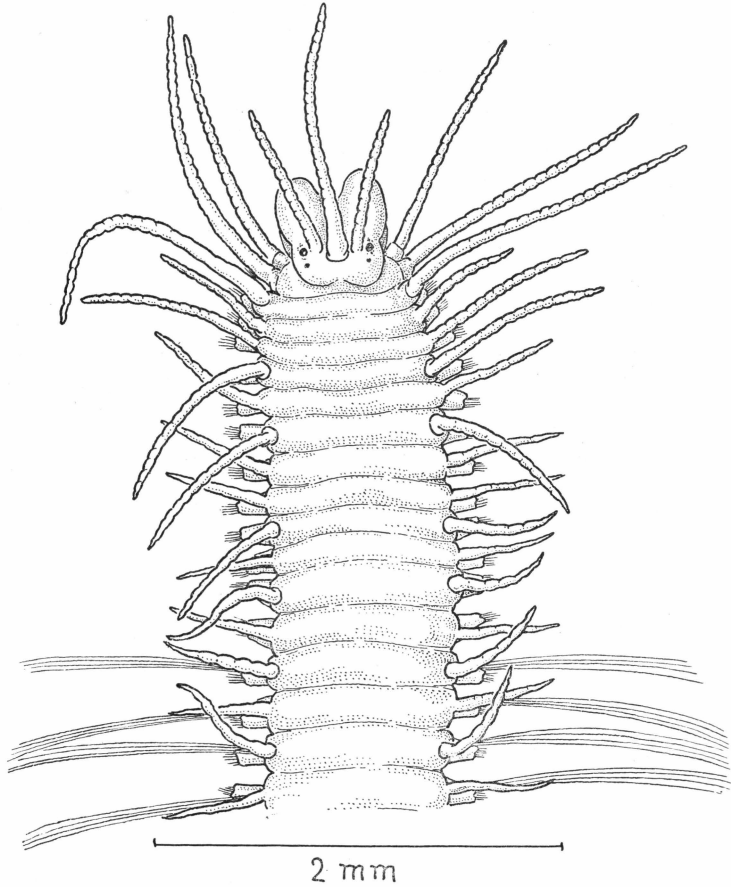


Fig. 3. *Eusyllis blomstrandii* MLMGR. epitokous specimen; Godhavn.

ones and is inserted slightly behind them. The palpi are broad, flat, rounded in front and coalesced at their bases. One pair of long tentacular cirri of equal length; the first dorsal cirrus is like the tentacular cirri in shape and size but perhaps more distinctly annulate than these and the following dorsal cirri, the length of which varies in the first segments as follows; in the first chætiger very long, even slightly longer than the dorsal tentacular cirrus; 2nd chætiger short, only one third of the former; 3rd and 4th chætiger of equal length and half as long as the first cirrus; 5th chætiger as the cirrus of the 2nd chætiger; 6th

cirrus as the third and fourth, and all the rest short and like those of the second chætiger. The ventral cirri shorter than the feet and flat and broad.

The end piece of the compound bristles very short and bidentate. The specimen from Godhavn was epitokous with swimming bristles from the 13th chætiger about twice the breadth of the body.

Distribution: Mostly arctic and boreal. (Not known from East-Greenland) Spitsbergen, the Kara Sea, North America, Iceland, the Faroes, but reported from the Channel and the Mediterranean too.

Subfamily Exogoninæ.

Genus *Sphærosyllis*.

Sphærosyllis latipalpis LEVINSEN 1883.

Syn.:

1883. *Sphærosyllis latipalpis* LEVINSEN, p. 87.

1883. *Sphærosyllis hystrix* (TAUBER non CLAPARÈDE) fide LEVINSEN, p. 87.

1928. *Sphærosyllis latipalpis* AUGENER, p. 722.

Occurrence:

63°56' N. 52°41' W.; the surface; 8. 6. 1925; "Dana" St. 2314; 1 spec.

Only an anterior fragment is present; length about 2.5 mm. The prostomium not distinctly set off from the buccal segment; two broad coalesced palpi; three very small, hardly visible antennæ; no eyes; the pharynx with a large tooth. The body with small glands and incrustated with sand grains. The dorsal cirri are small, globular, ending in a small digitiform process, which is most easily seen in the first 7 segments which are unmodified and only carry about 6 compound setæ with similar end-pieces of a rather considerable length. The specimen is an epitokous female with long swimming bristles from the eighth chætiger; two rows of big eggs on each side fastened to the ventral base of the feet.

Distribution: The species was not hitherto reported from Greenland waters. AUGENER reports it from Spitsbergen. TAUBER's specimen, erroneously determined as *Sphærosyllis hystrix* Clap. dates from Danish waters. — The two wide-spread localities in the Arctic make it presumeable that the species in fact is more distributed in arctic waters than previously known; according to its minute size it may, however, easily be overlooked in the collections.

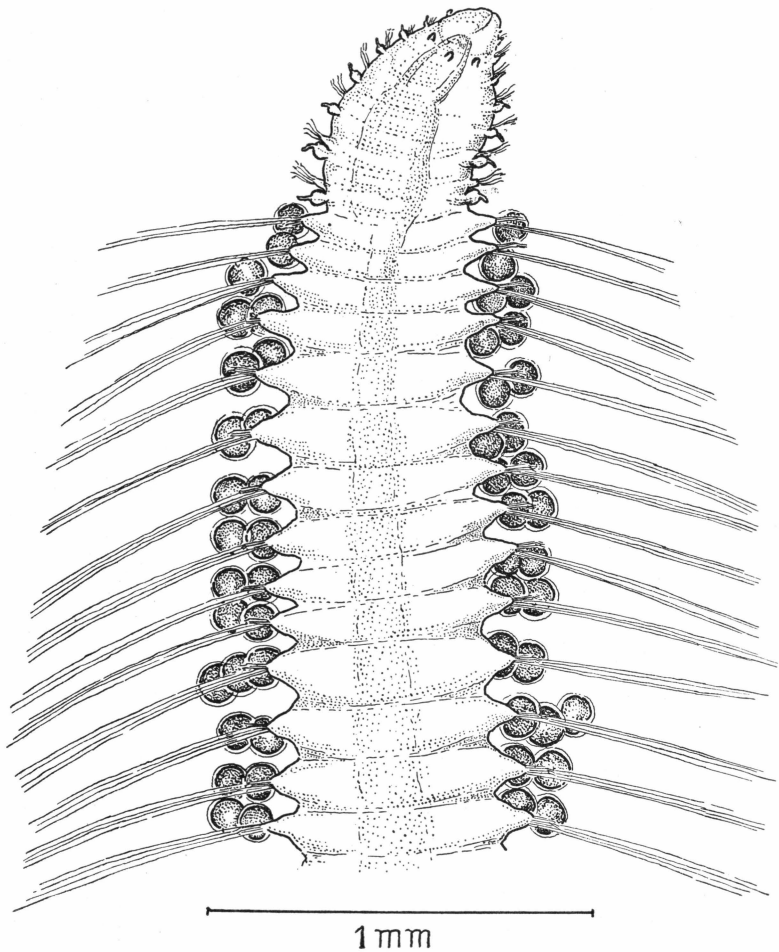


Fig. 4. *Sphaerosyllis latipalpis* LEV. epitokous female; "Dana" St. 2314.

Genus *Exogone*.

Exogone verugera (CLAPERÈDE) 1868.

Syn.:

1868. *Paedophylax veruger* CLAP., p. 213.
 1920. *Exogene veruger* ELIASON, p. 10.
 1923. *Exogene verugera* FAUVEL, p. 307.
 1929. *Exogene verugera* DITLEVSEN, p. 15.

Occurrence:

- 64°45' N. 52°52' W.; the surface; 19. 6. 1925; "Dana" St. 2334;
 1 spec. — 63°56' N. 52°41' W.; the surface; 8. 6. 1925; "Dana" St. 2314;
 4 spec. — Both finding-places in the Davis Strait.

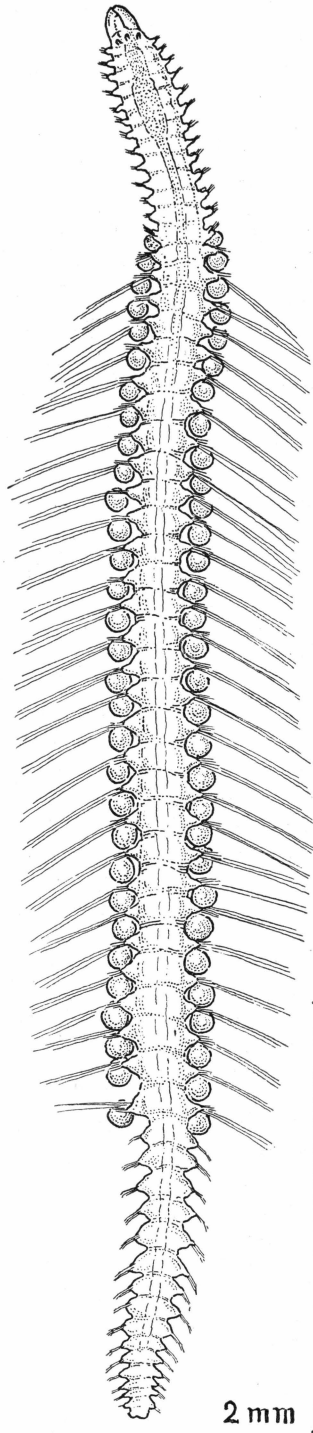


Fig. 5. *Exogone verugera* (CLAP.) epitokous female; "Dana" St. 2314.

Five specimens in all are present; one of them is a mature female with eggs in one row on each side of the body, fastened on the ventral side or rather on the posterior rim of the parapodia. The prostomium is much shorter than broad with three small club-shaped tentacles of equal length. Eyes were not visible. The palpi are rather long, dorsally completely fused but with a distinct separating furrow on the ventral side. Very small tentacular cirri. Both dorsal and ventral cirri highly reduced, especially the latter. The first 12 chætigers unmodified with compound setæ; from the 13th to the 43rd chætiger long swimming bristles; eggs fastened to all the modified segments. The body which seems to be complete ends with a region of 15 unmodified chætigers. The pygidium is rounded with a slight incurvation. No anal cirri. — The compound setæ have broad, carved ends of the shaft and two sorts of end-pieces, either long and falcate or short, triangular and serrated at one side.

Distribution: Boreal and Atlantic (the Faroes, Danish waters (the Sound); Atlantic coast of North-America). Hitherto not known from Greenland waters.

Exogone hebes (WEBSTER & BENEDICT) 1884.

Syn.:

1884. *Paedophylax hebes* WEBSTER & BENEDICT, p. 716.

1914. *Exogone hebes* SOUTHERN, p. 17.

1923. *Exogone hebes* FAUVEL, p. 308.

Occurrence:

65°27' N. 53°48' W.; 6. 6. 1890; Lundbeck; 1 spec. — (The Davis Strait).

To this species I refer a small complete specimen about 5 mm long, a mature epitokous male. It consists of 39 segments. The prostomium is separated from the buccal segment only by an indistinct furrow. It carries three tentacles inserted at the same level close to each other, the middle one is much longer than the others, even longer than the prostomium itself, the lateral ones being reduced to small, inconspicuous tubercles. Laterally to them two pairs of obliquely set eye-spots. The palpi are dorsally perfectly fused, ventrally they are separated by a slight longitudinal furrow, by far not so distinct as in the preceding specimen. The withdrawn proboscis reaches to the 6th segment and is provided with a conical tooth. It was impossible to count the number of papillæ, which according to the literature amounts to 10; the proventriculus is long, provided with about 20 annular rows of glands. The following part of the intestine forms a loop at the boundary of the 9th and 10th chætiger. The first segment, which is achætous

has two minute tentacular cirri. The feet are conical with a rounded papilla near their tip. The dorsal and ventral cirri are shorter than the parapodium, oblong or club-shaped, very small in the first 10 chætigers, later on short, digitiform. In each foot there are 4—6 compound

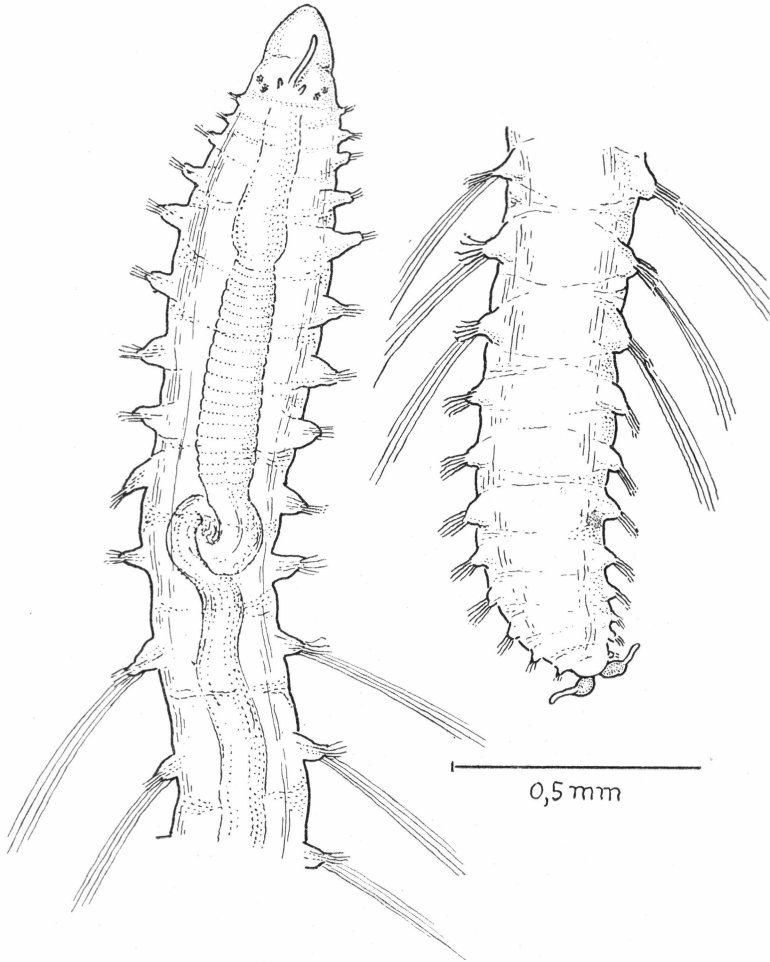


Fig. 6. *Exogone hebes* (WEBST. & BENED.) epitokous specimen; the Davis Strait.

setæ with short falcate terminal pieces and a single strong spine, bidentate at the tip; both types exactly corresponding to the figures of SOUTHERN. The third type of setæ, which this author mentions, and which ends in a smooth tip like a button, I could not find. The first 10 chætigers are unmodified, then follows a region—from the 11th to the 31st chætiger—with long swimming bristles; in this region, beginning at the 12th chætiger, a peculiar little pouch-formed organ is seen

in front of each parapodium; it is doubly striated and seems to contain a number of rods lying in two rows partly crossing each other. It bears some resemblance to the rod-pouches described by CLAPARÈDE from *Sphærosyllis* and *Sphærodorum*. After this region of modified segments

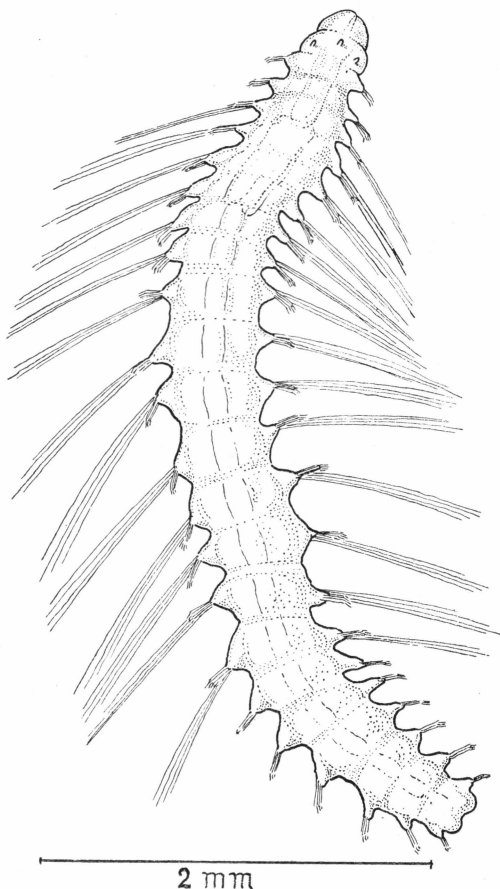


Fig. 7. *Exogone* sp. epitokous specimen; "Dana" St. 2314.

a region of 8 segments without swimming bristles follows. — The pygidium ends in two anal cirri terminating in a digitiform appendage.

Distribution: Irish waters; the Channel; East coast of North America (Maine, Massachusetts).

The species has not previously been recorded from arctic waters.

Occurrence: *Exogone* sp.

63°56' N. 52°41' W.; the surface; 8.6.1925; "Dana" St. 2314; 1 spec.

I should regard an imperfect specimen from Davis Strait as an indeterminable *Exogone*. It resembles *E. verruger* CLAP. but it differs

from it in the following three features: 1° the palpi are much shorter and broader, but even as completely fused; 2° the swimming bristles begin at the 3rd chætiger and cease at the 16th, thus the epitokous part of the body is much shorter although it begins much farther forwards than in the preceding species; 3° the bristles are different. There are 4 sorts besides the swimming bristles viz.: 1° a strong, pointed aciculum; 2° a single, slightly curved, blunt, uncompound bristle; 3° 3—4 compound setæ with short heterogomph unidentate, terminal piece and 4° a compound heterogomph bristle with a long falcigerous end piece. The tip of the shaft of these compound bristles is broad and concavely curved.

The specimen is, as mentioned, incomplete, the posterior part missing.

Subfamily Autolytinae.

Genus *Autolytus*.

Autolytus prolifer (O. F. MÜLLER) 1788

Syn.:

1788. *Nereis prolifera* O. F. MÜLLER, p. 15, pl. LII, fig. 5—7.
 1855. *Sacconereis helgolandica* MAX MÜLLER, p. 18.
 1862. *Polybostrichus Mülleri* KEFERSTEIN, p. 113.
 1867. *Autolytus prolifer* MALMGREN, p. 153.
 1867. *Autolytus fallax* MALMGREN, p. 154.
 1883. *Autolytus prolifer* LEVINSSEN, p. 89.
 1911. *Autolytus prolifer* FAUVEL, p. 12.
 1914. *Autolytus prolifer* DITLEVSEN, p. 700.
 1928. *Autolytus prolifer* AUGENER, p. 724.
 1929. *Autolytus fallax* DITLEVSEN, p. 17.

Occurrence:

West Greenland: 76°40' N. 76°20' W.; Baffin Bay, off Jones Sd.; 16. 8. 1928; "Godthaab" 1928; St. 114; 85 m; 1 spec. — 67°40' N. 55°00' W.; Davis Strait; 26. 6. 1925; "Dana"; St. 2356; 100 m. w.; 1 spec. — 66°55,5' N. 53°40' W.; Davis Strait; 25. 6. 1925; "Dana"; St. 2355; 50 m. w.; 1 spec. — 65°34' N. 54°31' W.; off Sukkertoppen; 5. 7. 1895; "Ingolf"; St. 29; 128 m. w.; 10 spec. — 65°17' N. 54°17' W.; 18. 7. 1895; "Ingolf"; St. 34; 104 m; 1 spec. — Godhavn; Olrik; 1 spec. — Egedesminde; Levinsen; 1 spec. — Holstensborg; "Tjalfe"; St. 88; 29. 6. 1908; 8 spec. — The Pecten-bank in the harbour of Holstensborg; Traustedt; 19. 5. 1892; 4 spec. — Close to Holstensborg; Poul M. Hansen; 6. 5. 1936; 100 m. w.; 3 spec. (♀♀ with eggs). — 64°45' N. 52°52' W.; Lille Hellefiskebanke; "Dana"; St. 2334; 19. 6. 1925; 100 m. w.; 1 spec. — Off Napassok; Poul M. Hansen; 14. 6. 1937; 1 spec.

East Greenland: 3 miles NE. of Cape Bismarck Peninsula; "Danmark" Exp.; 20. 7. 1908; 3 spec.

The specimens from the following localities were found on *Lafoëina*-colonies: All the specimens from Holstensborg and environment, except those collected by Poul M. Hansen; those from Godthaab; "Ingolf" St. 29 and St. 34 and the three specimens from East Greenland.

Autolytus prolifer seems to be fairly common in West Greenland often close to the coast and in littoral waters. The free-swimming stages have been taken in the upper layers of the sea, with about 50—100 m of wire out.

The atokous specimens have a broad, anteriorly rounded head with short coalesced palps bent down to the ventral surface of the head. The two pairs of eyes close to each other, the anterior with the greater distance between them; all with small lenses. The three antennæ are almost of the same length, in some specimens the central one is a little longer than the lateral ones. One pair of tentacular cirri on each side, the dorsal one much longer than the ventral. The dorsal cirri of the two first chætigers, especially the first, considerably longer than the following which are all of about equal length and rather short. The cirrus of the first chætiger reaches backwards to about the 14th segment, that of the second segment is only twice as long as the rest. All these appendages are indistinctly annulated. The pygidium has two long claviform cirri. The feet are rounded with about 8 compound bristles with very small, nearly rudimentary terminal pieces, strongly bidentate, the second tooth bigger than the apical; the shafts are abruptly dilated at the tip which is finely serrated. Posteriorly, in the fan formed by the compound bristles, there is a single uncompound bristle ending in a pointed, curved tip with fine spikes at the base.

The female stage, *Sacconereis helgolandica* MAX MÜLL. has a short, broad head with a remarkably straight frontal border, two pairs of eyes, the dorsal one being the more conspicuous, the ventral just visible on the sides of the head from the dorsal surface; three antennæ of which the unpaired one is a little longer than the lateral ones. Then follows a segment with two rather short tentacular cirri, end after this the unmodified region of the body consisting of three segments with a short, dorsal cirrus and compound bristles only; after this the modified region with very long swimming bristles, consisting of about 35 segments, in the figured specimen 36, and at last the body terminates in a part consisting of about 10 segments without swimming bristles and a little pygidium with two very small anal cirri. The feet are divided into a superior and an inferior part. The dorsal cirrus is smooth and of moderate length. The inferior part of the foot has a tuft of about 12 compound bristles spread fan-like and with an uncompound, slightly bent bristle

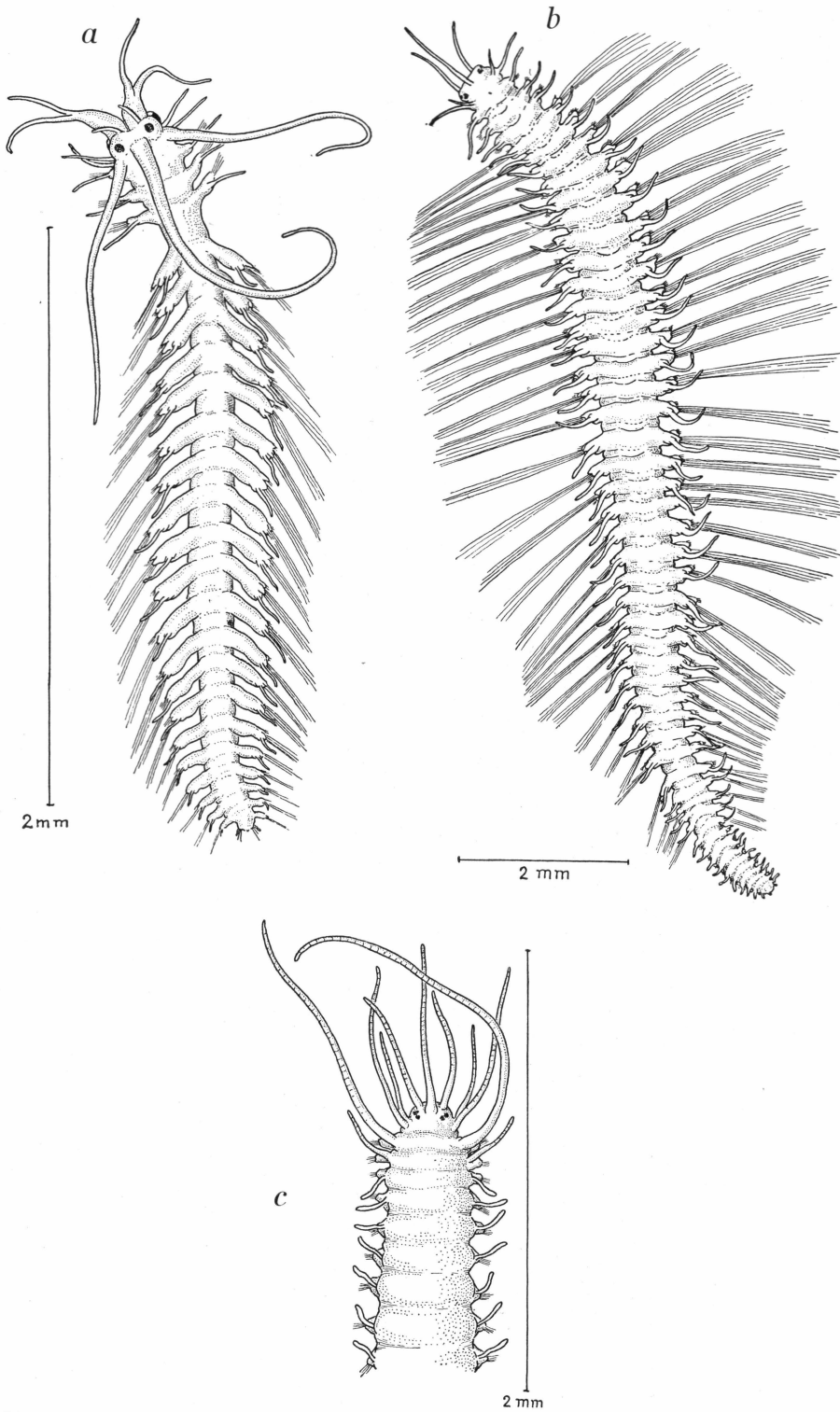


Fig. 8. *Autolytus prolifer* (MÜLL.). a. male; the Sound, S. of Ven; b. female; "Dana" St. 2356; c. atokous specimen; Egedesminde.

posteriorly. The compound bristles are similar to those described from the atokous stage. Just in front of, or above this tuft the immensely long swimming-bristles project. I find them equally broad in all their length, only at the tip tapering gradually into the long flagelliform, elegantly curved tip. I cannot at all agree with Mc'INTOSH, who describes these bristles as flattened and increasing "in diameter towards the broad terminal part which then diminishes a little ending in a curved tip". — Only one of the females had ova, and they were not included in the usual egg-sac, which seemed to have burst perhaps due to the pressure of the cover slip. They were few and found among the base of the swimming bristles, three on each side of the posterior part of the modified region of the body.

The male stage, *Polybostrichus* MÜLLERI KEF., has a comparatively small head with two big eyes turned dorsally and two on the ventral side looking laterally and downwards; three antennæ, of which the lateral ones are inserted in front of the dorsal eyes and are subulate and rather long, in any rate considerably longer than in the following two species of *Autolytus*; the unpaired antenna is inserted between the dorsal eyes and is enormously long, reaching backwards to about the 6th modified segment; furthermore the head carries the bifid palpi, so characteristic of the *Polybostrichus*; they are subular, with thick fleshy bases; the bifurcation takes place halfway and the two branches are almost similar in length. From the achætous segment following immediately after the cephalic lobe arises one pair of tentacular cirri, the dorsal one very elongated, nearly as long as the median antenna, whereas the ventral one is much shorter. This ventral cirrus of the first segment in *Polybostrichus* is the only ventral cirrus which is found in the sub-family *Autolytinae*. In front of this ventral cirrus, on the ventral side of the head, but as far as I can see, post-cephalic, still another appendage projects, in shape and length exactly similar to the ventral cirrus of the first achætous segment. Then follows a region consisting of three segments of the ordinary type with only short compound bristles and after this the region with long swimming bristles, consisting of about 20 segments. The arctic material did not contain well preserved specimens of males; the figure is made from an individuum from the Sound, dredged south of Ven 2. 12. 1941. The sharp distinction between the unmodified and the modified regions, which the figure shows, and which comes into existence through the different directions of the pedal lobes of the two regions is, most likely not characteristic, but merely due to the preparation; in other specimens examined it was not present. However, the feet, in the two regions are of different shapes; in the modified segments they are longer, deeply cut, with distinct cirratophores. The figured specimen is only about 2.5 mm long and quite young; in older

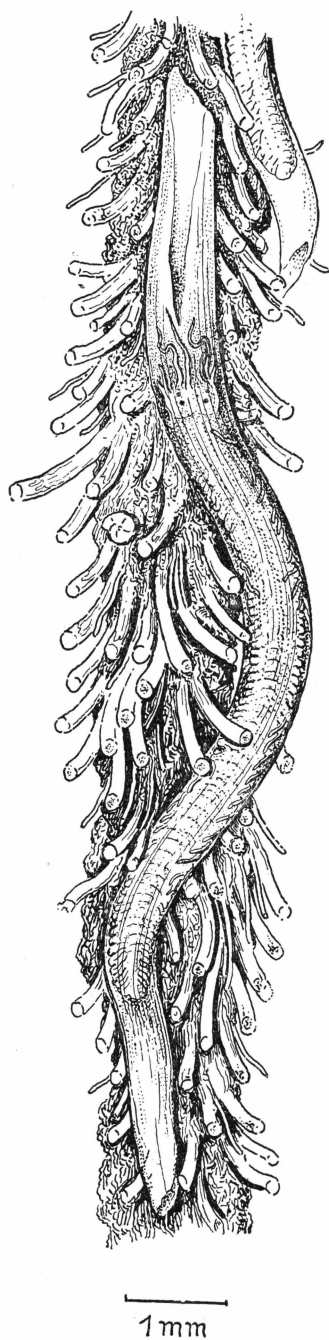


Fig. 9. *Autolytus prolifer* (MÜLL.) atokous; on *Lafoëina maxima* LEV. Holstensborg; "Tjalfe" St. 88.

specimens the region with the swimming-bristles may be considerably longer. The long bristles continue, however, to the very tip of the body; I therefore consider the present specimen complete. What is said above of the bristles of the female stage holds good of the bristles of the male stage too.

I find it of interest to point out, that in all the sexually ripe animals of both sexes there were constantly three chætigers in the first region of the body, just as is the case with the specimen of AUGENER from Spitsbergen (loc. cit.), and I fully agree with him that Mc'INTOSH, who in his Monograph on British Annelids (1908, p. 220) mentions, that he has had specimens with 3, 11 and 14 segments in the anterior region of the body, in reality has had several species of *Autolytus* before him, which he has not kept apart.

Among the material of arctic Polychaeta handed over to me there were several colonies of the Hydroid *Lafoeina maxima* LEVINSSEN. On them were found about 25 delicate, but strong, translucent tubes, all inhabited by *Autolytus prolifer* in the atokous stage. The tubes were never twisted round the colonies but lay slightly undulating along one side of it. The anterior end of it was constantly slit open as thown on the figure. It is well known, that the species is commonly found in tubes among stones, shells and other débris in low water between the tide-marks, often entangled between roots of algæ, see-weed and the like.

Distribution: Spitsbergen, the Kara Sea, Scandinavia, the Lusitanian area; Mediterranean. — The species was formerly known from Greenland. LEVINSSEN mentions it, though without further specification of locality.

Syn.: *Autolytus prismaticus* (O. FABRICIUS) 1780.

1780. *Nereis prismatica* O. FABRICIUS, p. 302.
 1780. *Nereis bifrons* O. FABRICIUS, p. 303.
 1843. *Polybostrichus longisetosus* ØRSTED, p. 185.
 1867. *Autolytus longisetosus* MALMGREN, p. 154.
 1867. *Autolytus incertus* MALMGREN, p. 155.
 1883. *Autolytus longisetosus* LEVINSSEN, p. 89.
 1902. *Autolytus longisetosus* MOORE, p. 274.
 1911. *Autolytus longisetosus* FAUVEL, p. 13.
 1914. *Autolytus longisetosus* DITLEVSEN, p. 701.
 1916. *Autolytus prismaticus* FAUVEL, p. 7.
 1920. *Autolytus prismaticus* CHAMBERLIN, p. 12 B.
 1928. *Autolytus prismaticus* AUGENER, p. 725.
 1937. *Autolytus prismaticus* DITLEVSEN, p. 22.

Occurrence:

West Greenland: 81°44' N, Cape Chalon; about 18 m; mud (Moore).
 — 72°33.5' N. 57°36' W.; "Godthaab" 1928; St. 61; 21. 7. 1928; 190 m;

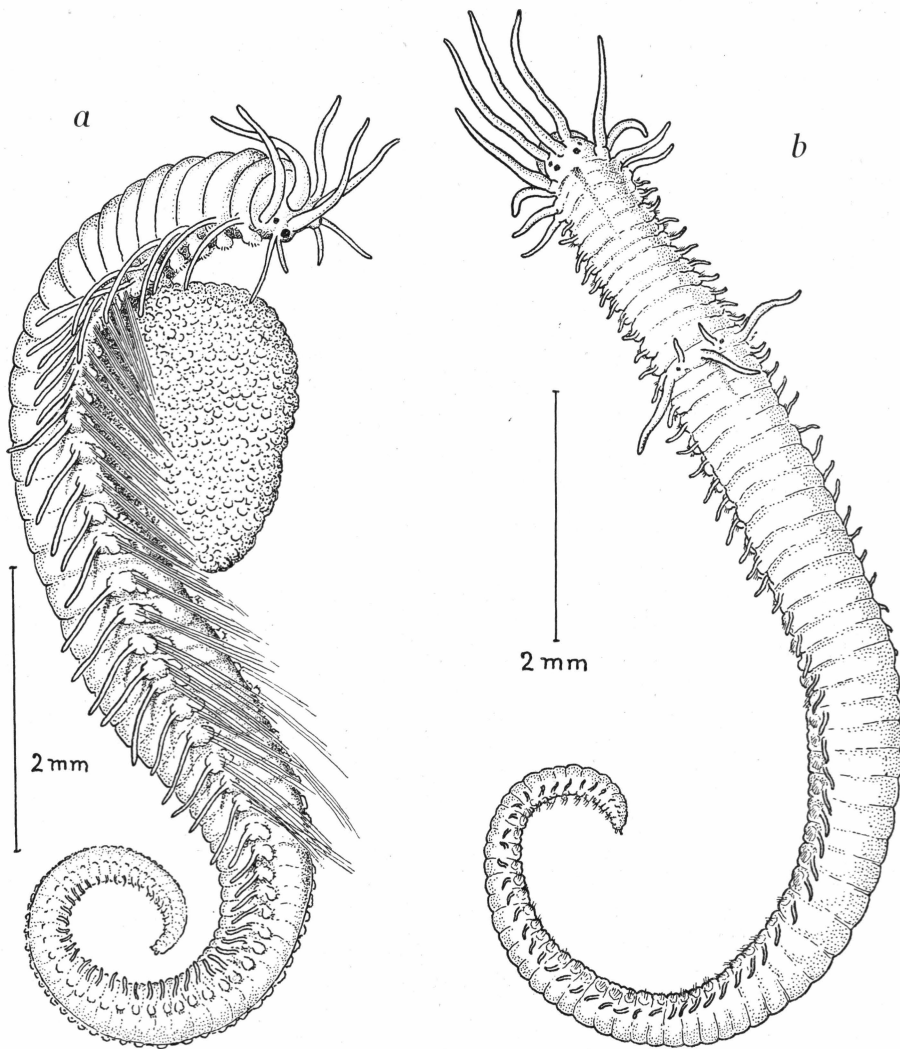


Fig. 10. *Autolytus prismaticus* (O. FABR.). a. female; b. atokous specimen.

1 spec. — $69^{\circ}44'$ N. $51^{\circ}22'$ W.; "Godthaab" 1928; St. 154; 7. 9. 1928; 480 m; 1 spec. — Godhavn; Olrik; about 35 spec. — $67^{\circ}10'$ N. $55^{\circ}00'$ W.; "Dana" St. 2356; 25. 6. 1925; 100 m. W.; 1 spec. — Egedesminde; Levinsen; 1877; 2 spec. — $66^{\circ}55.5'$ N. $53^{\circ}40'$ W.; Holstensborg harbour; "Dana"; St. 2335; 25. 6. 1925; 50 m. W.; 1 spec. — Several localities at Holstensborg; "Dana" 1925 and Poul M. Hansen; 6. 5. 1936; about 100 m. W. — Kangiakfjord; Poul M. Hansen; 9. 5. 1936; 75 m. W.; 8 spec. — Kapsigdlit; Poul M. Hansen; 25. 5. 1936; about 100 m. W. — At the Storø, about $62^{\circ}07'$ N.; Poul M. Hansen; 20. 7. 1934; 1 spec. — Atangmik; Poul M. Hansen; 27. 6. 1934; 1 spec. — Ikertokfjord; Poul

M. Hansen; 5. 6. 1934; 1 spec. — Close to Julianehaab; Poul M. Hansen; 27. 7. 1934; 1 spec. — Off Isortakfjord; Poul M. Hansen; 12. 6. 1935; 1 spec. — At Atangmik; Poul M. Hansen; 12. 6. 1935; 1 spec. — Off Kerrortussak; Poul M. Hansen; 27. 5. 1937; 100 m. W.; 3 spec. — Northern Isortak; Poul M. Hansen; 18. 5. 1939; 4 spec. — Store Hellefiskebanke; Holm; 1886; 2 spec. — $64^{\circ}45' N. 52^{\circ}52' W.$; "Dana"; St. 2334; 19. 6. 1925; 100 m. w.; 1 spec. — East of Hellefiskebanke, off Ikertok; $60^{\circ}45' N. 53^{\circ}45' W.$; "Dana"; St. 2350; 23. 6. 1925; 50 m. W.; 2 spec. — Just outside the harbour of Sukkertoppen; "Tjalfe"; St. 358; 14. 5. 1908; about 10 spec. — The harbour of Sukkertoppen; Holm; 5. 7. 1884; 1 spec. — $64^{\circ}34' N. 59^{\circ}09' W.$; Lundbeck; 8. 6. 1890; 1 spec. — The harbour of Godthaab; Holm; 27. 6. 1884; 1 spec. — Godthaabsfjord; "Tjalfe"; St. 43 B.; 10. 6. 1908; 70 m. W.; 1 spec. — Fyllas Banke; $63^{\circ}56' N. 52^{\circ}41' W.$; "Dana"; St. 2314; 8. 6. 1925; 100 m. W.; 2 spec. — Ikerasik at Agto; Poul M. Hansen; 27. 5. 1938; 1 spec. — Amerdlokfjord; Poul M. Hansen; 20. 5. 1939; 100 m. w.; 1 spec. — Off Fiskenæsfjord; Poul M. Hansen; 1 spec. — Kvanefjord; "Rink"; St. 28; K. Stephensen; 5. 7. 1912; 400 m. W.; 1 spec.

East Greenland: Storøen; Three-Year Expedition to NE. Greenland 1931—34; 20. 5. 1933; 1 spec. — Angmasaliksford; Bertelsen; 11. 6. 1935; 3 spec.

Iceland: Skutilsfjord; Lundbeck; 25. 5. 1892; 1 spec.

The species seems to be widely spread and fairly common along the west coast of Greenland, mostly in coastal waters. It is worth mentioning that all three phases penetrate into the fjords and the harbours; yet the greater part of the sexually ripe stages are dredged at the surface of the open sea with 50—480 m of wire out; the greater part with 75—100 m. W. out.

The collections contain all three stages of this species.

The atokous form may be distinguished from *A. prolifer* by the length of the appendages of the cephalic lobe and the first segments. The shape of the head, the position of the eyes and the length of the antennæ are almost similar, but the tentacular cirri, both the ventral and the dorsal are considerably shorter and stouter than in *A. prolifer*; furthermore the dorsal one has a distinct cirratophore which seems to lack in the congener. However, the best separating character is the length of the cirri of the two first chætigers. Here as in all species of *Autolytus* only the dorsal cirrus is present. They are both much shorter in *A. prismaticus* than in *A. prolifer*, still shorter than the ventral tentacular cirrus, or just of the same length, and the cirrus of the second chætiger is only slightly shorter than that of the first chætiger. In *A. prolifer* the first cirrus was much longer than the second about 6 times the length of the latter. The dorsal cirri of the following

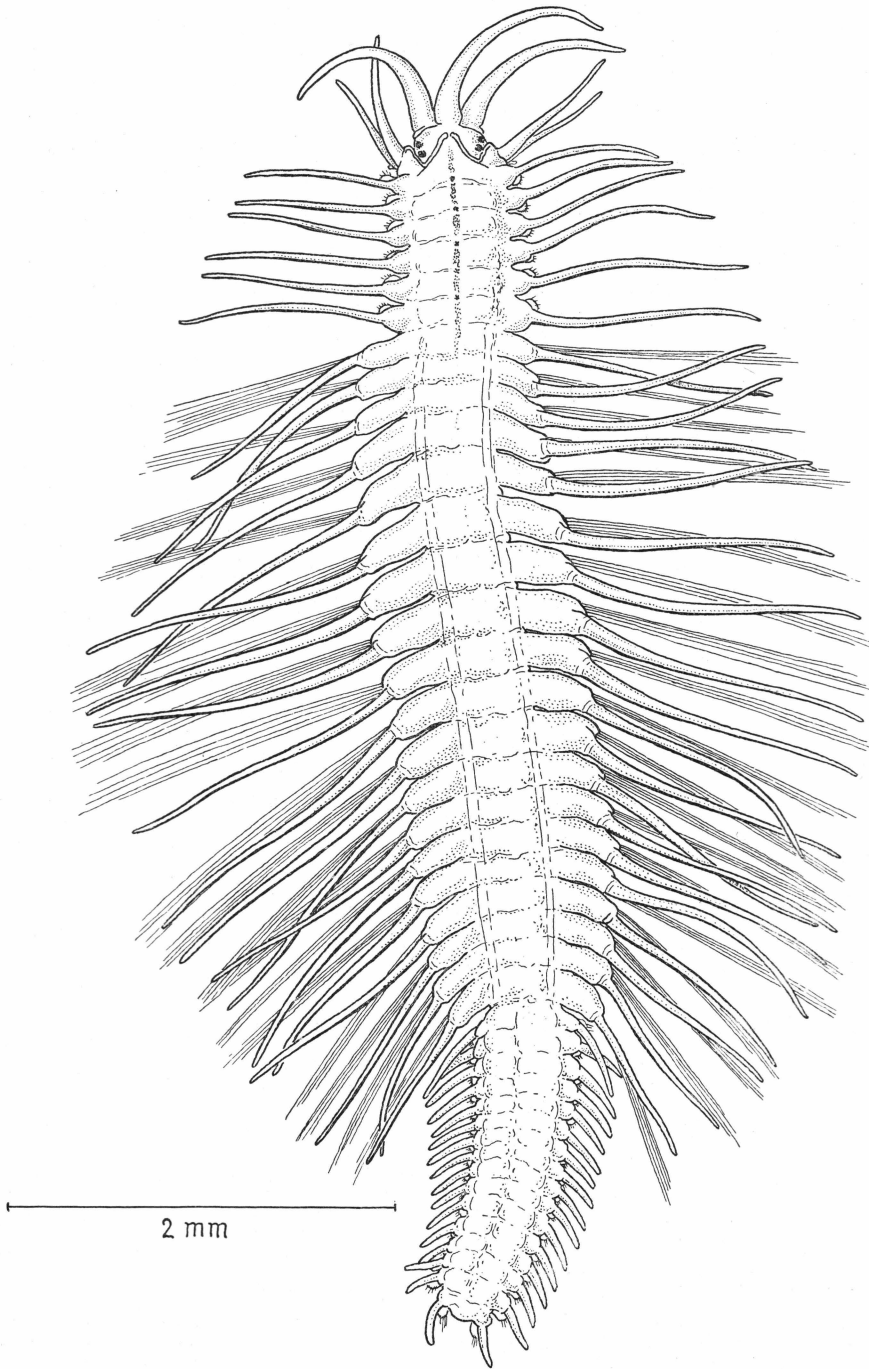


Fig. 11. *Autolytus prismaticus* (O. F. M.) ♀.

segments are also shorter than in *A. prolifer*, and the pedal lobes less projecting.

In one specimen the stock has formed a bud on the 14th chætiger. No constriction in front of this was to be seen, and no trace of any other head behind. The head distinctly showed 2 pairs of eyes, a median antenna much longer than the two lateral ones and one, the dorsal most, tentacular cirrus on each side. AUGENER (1928, p. 724) has observed the forming of a bud in a specimen of *A. prolifer* from Spitsbergen, and he mentions, that it takes place in the 14th chætiger, just as MALMGREN (1867, p. 186, pl. VI, fig. 41) mentions it and showed it in his figure of the species *A. fallax* MLMGR. which is synonymous with *A. prolifer*. Evidently this feature is common to the two closely related species.

The sexually ripe stages in this species are characterized by 6 segments in the anterior, unmodified part of the body and a number of unmodified segments posterior to the region with the swimming bristles forming a tail-like appendage.

Saconereis. The prostomium is broad and short with 4 eyes on the dorsal side close to each other and close to the margins of the head; all 4 are provided with a lense. Three long, stout, fleshy tentacles, nearly of equal size; the buccal segment has, as far as I can see, three pairs of tentacular cirri; one pair is quite thin and rather short; in the figure of the specimen without eggs it is seen lying on the dorsal side behind the eyes, in the specimen with eggs it is seen beneath the eyes. The two other tentacular cirri are much like all the rest of the dorsal cirri in shape and size. The 6 first chætigers carry a very long subulate dorsal cirrus and a tuft of compound bristles. Then follows the modified central part of the body consisting of a varying number of segments (18—25) carrying long swimming-bristles and a dorsal cirrus still longer than in the anterior part. Among the bases of the feet a delicate web may be seen, the brooding pouch, in which the eggs are carried. The last section of the body consists of a highly varying number of segments (15 to about 50) without swimming-bristles and with much shorter dorsal cirri. The body ends in a pygidium with two oblong appendages. — One specimen has a mass of egg on the ventral side; it is curved in a characteristic manner, just like a little Hippocampus; in quite another way than in *A. prolifer* ♀. The eggmass is single and enclosed in a very delicate, yet remarkably tough and durable coating. When the female has no ripe eggs, either when they are shed or not yet developed it never has this characteristic curved appearance, but is quite extended, as seen in fig. 11.

Polybostrichus. The male is of a curious aspect on account of the long appendages, often thrown into graceful curls and twisted round each other or themselves. The palpi are bifid, but bifurcation only takes place in the middle of them; the two branches are almost equally long

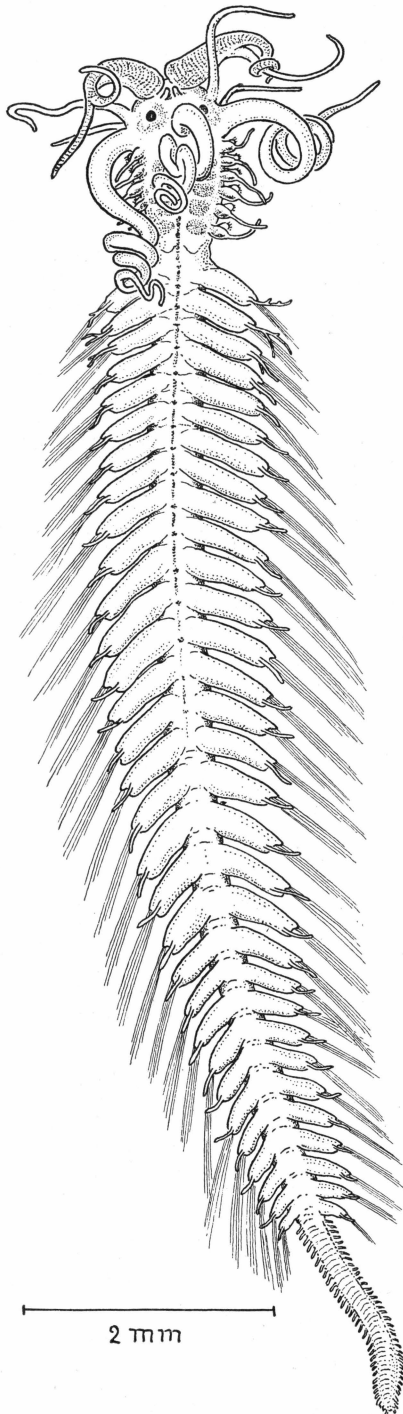


Fig. 12. *Autolytus prismaticus* (O. FABR.) ♂.

and thick. Four large eyes, one pair on the dorsal side the other ventrally situated; all four with large, brown lenses. The median antenna long and stout reaching to about the 3rd of the modified chætigers; in front of the dorsal eyes two very small lateral antennæ rising close to each other. One pair of tentacular cirri, rather long and slender. Then follow two cirri on each side which I interpret as a dorsal and ventral cirrus of the first achætous segment. The dorsal cirrus is very long and stout, longer still than the unpaired antenna, often curled and twisted to a high degree; the ventral cirrus is much shorter and slenderer and never coiled. If we compare this with the figures of MALMGREN pl. VII, figs. 38 and 38 A we find that he also has seen three appendages, corresponding in shape and placing fairly well with those figured here. The small appendage which I regard as the ventral cirrus of the first segment is both in his dorsal and lateral views the slender cirrus behind and beneath the eyes respectively. Then follows the part with unmodified segments viz. 6, all with small feet carrying long and slender dorsal cirri and compound bristles; the last 5 of them contain testes and glandular pads on the ventral surface of the pedal lobes.

The following part of the body is provided with swimming-bristles of a considerable length; it consists of about 30—35 segments. The dorsal cirri of these segments are slender, digitiform and the first three of them highly remarkable because they show a distinct ramification, the first four has two side branches, the two last only one very small branch. The last part of the body is a tail-like appendage only with compound bristles and very small dorsal cirri; the body ends with two minute styliform appendages.

The compound bristles are similar in all segments and in both sexes arranged in an oblique fan, which comes into existence by the different length of the setæ; the anterior ones are the shorter and they increase gradually in length posteriorly. They are of the usual type with a very short terminal piece, broad at the base and abruptly curved and tapering and rather coarsely bidentate. The shaft of these bristles is broad and club-shaped in the distal part, corresponding in shape to the basal part of the terminal piece, opposite to this base the shaft ends in a very long spine-like process.

The present specimens are undoubtedly *A. prismaticus*, although in one point they do not fully agree with the usual type of this species, viz. in the ramificated dorsal cirri of the first segments of the modified part of the body; this seems to be a hitherto unknown feature in the *Polybostrichus* forms.

Distribution: The species is mainly arctic. It is formerly known from the area here under consideration and furthermore from Spitsbergen, North America, Alaska.

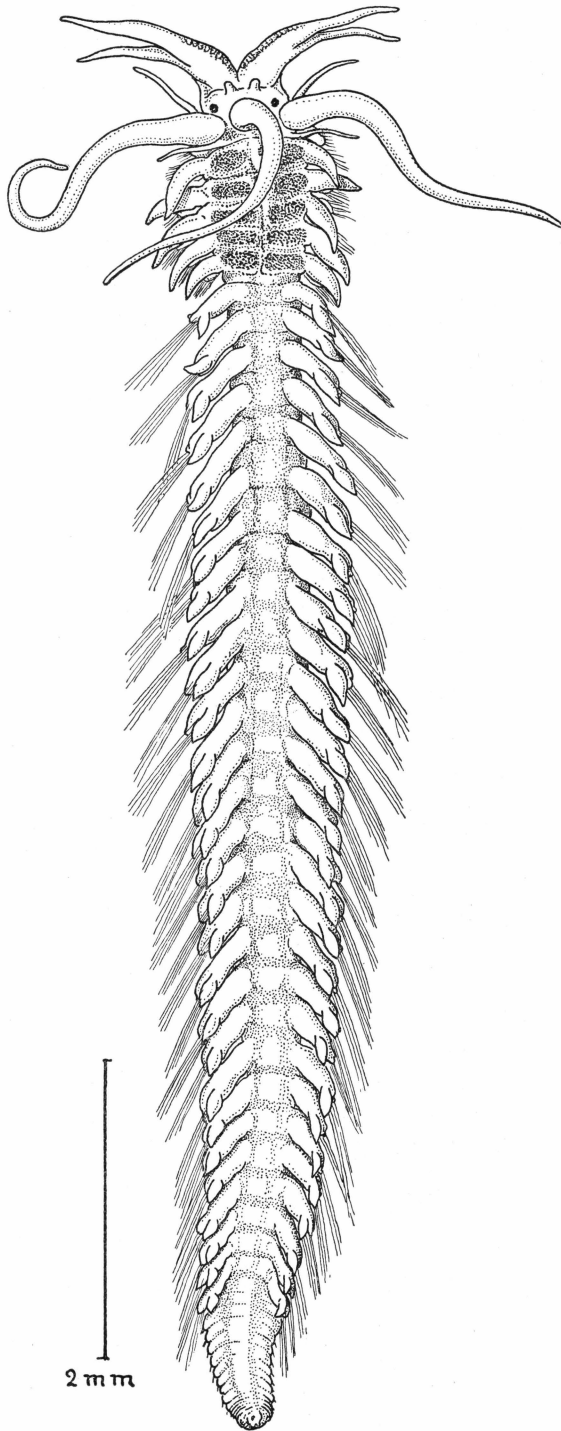


Fig. 13. *Autolytus groenlandicus* n. sp. ♂, off Kangek.

Autolytus groenlandicus n. sp.

Occurrence:

SW. Greenland: Godthaab Skibshavn; "Ingolf"; St. vac.; 28. 6. 1895. — Kangek; 2. 7. 1938; 100 m. w.; Poul M. Hansen.

I describe as a new species two specimens from West Greenland, which I can not refer to any other hitherto known species. The specimen from Kangek which is figured, is well preserved and perfect and is regarded as the type specimen. That from the "Ingolf" Expedition is in a very poor state of preservation and highly injured too. Both are kept as microscopical preparations. The type specimen has been stained in Alun-Karmin.

Both specimens are ripe males.

The cephalic lobe is short and broad with a straight frontal border. It carries two pairs of eyes all with brown, globular lenses; they lie laterally, one on the dorsal and one on the ventral side of the head; at a certain focus of the microscope they are seen simultaneously. The dorsal pair lies outermost and behind the ventral pair. At the same level as the ventral pair of eyes two small claviform antennæ. The unpaired antenna is long and stout, reaching backwards to about the 3rd modified segment. The palpi are very stout and thick at their bases, rather short—much shorter than in the other species of *Autolytus* here mentioned—tapering gradually towards the blunt tip. Where the side branch arises, the main stem becomes abruptly narrower; the two branches are nearly evenly long. Especially the main branch is distinctly transversally or rather annularly wrinkled and both the frontal and posterior border are closely set with a row of glandular bodies. The buccal segment carries one pair of tentacular cirri on each side, the dorsal one much stouter and longer than the ventral one, which is slender and styliform and only one fifth the length of the dorsal one. The anterior part of the body consists of 6 unmodified segments, and this part is a little broader than the following part. They all carry club-shaped, uncompound bristles. The first chætiger has a long, slender, cylindrical dorsal cirrus much unlike the cirri of the following 5 chætigers. This segment is much narrower than the rest and has no testes. The foot is consequently also smaller as just the number of bristles is. The 5 other segments are similarly shaped all with the testes seen as dark spots filling nearly the whole segment. The feet are rather small, blunt, slightly projecting and nearly hidden by the big, flat, dorsal cirri pointing backwards and shaped like oar-blades. Then follow 28 segments with long swimming bristles. The feet are here long and cylindrical, truncate, the anterior corner with a little globular knob; a foliaceous and fleshy dorsal cirrus, especially large in the middle part of this region, arises

on the distal border of the foot. In the first segments these cirri are narrower and more digitiform. Besides the swimming bristles there are on these feet a few aciculi, which do not project from the skin; they are separated into two bundles, most frequently so, that two of them enter the above mentioned pedal knob on the anterior corner, the others—usually three, the posterior corner of the foot. They are bent in large curves and end bluntly. Furthermore there is in each foot a tuft of 6—8 bristles, which project below the swimming bristles. In spite of a most careful examination it was not possible in either of the two specimens to find compound bristles. All these last mentioned bristles, as well as those from the anterior 6 segments as from the 13 last segments were uncompound bristles, ending in a semiglobular dilation with a small central process, just similar to the aciculi found in many other Syllids, e. g. *Sphærosyllis* (compare FAUVEL 1923, p. 303, fig. 116 n, q). The last part of the body consists of 13 unmodified segments with diminishing feet and dorsal cirri. This part does not form a tail-like appendage as in *A. prismaticus*; it ends bluntly in a rounded pygidium without anal cirri.

As to the relationship of this supposed new species it is most reasonable to regard it as allied to *Autolytus prismaticus* on account of the same number of unmodified segments in the anterior part; it differs from it in the number of appendages of the buccal and the first achætous segments, the shape of the dorsal cirri and the absence of compound setæ.

The two specimens have been taken at adjacent localities but at an interval of about 40 years.

Autolytus verrillii MARENZELLER 1892.

Syn.:

- 1867. *Autolytus alexandri* MALMGREN, p. 156.
- 1867. *Autolytus newtoni* MALMGREN, p. 156.
- 1883. *Autolytus alexandri* ♂ ♀ LEVINSEN, p. 90.
- 1883. *Autolytus newtoni* LEVINSEN, p. 90.
- 1914. *Autolytus alexandri* DITLEVSEN, p. 701.
- 1914. *Autolytus newtoni* DITLEVSEN, p. 701.
- 1914. *Autolytus verrillii* FAUVEL, p. 107.
- 1920. *Autolytus alexandri* CHAMBERLIN, p. 12 B.
- 1928. *Autolytus verrilli* AUGENER, p. 726.

Occurrence:

West Greenland: Davis Strait; Møller; 8 spec. — Godhavn; Orlik; 15 spec. — 64°45' N. 52°52' W.; Lille Hellefiskebanke; 19. 6. 1925; 100 m. w.; "Dana"; St. 2334; 4 spec. — 63°56' N. 52°41' W.; Fyllas Banke; 8. 6. 1925; 100 m. w.; Riis-Carstensen; 2 spec. — 60°45' N.

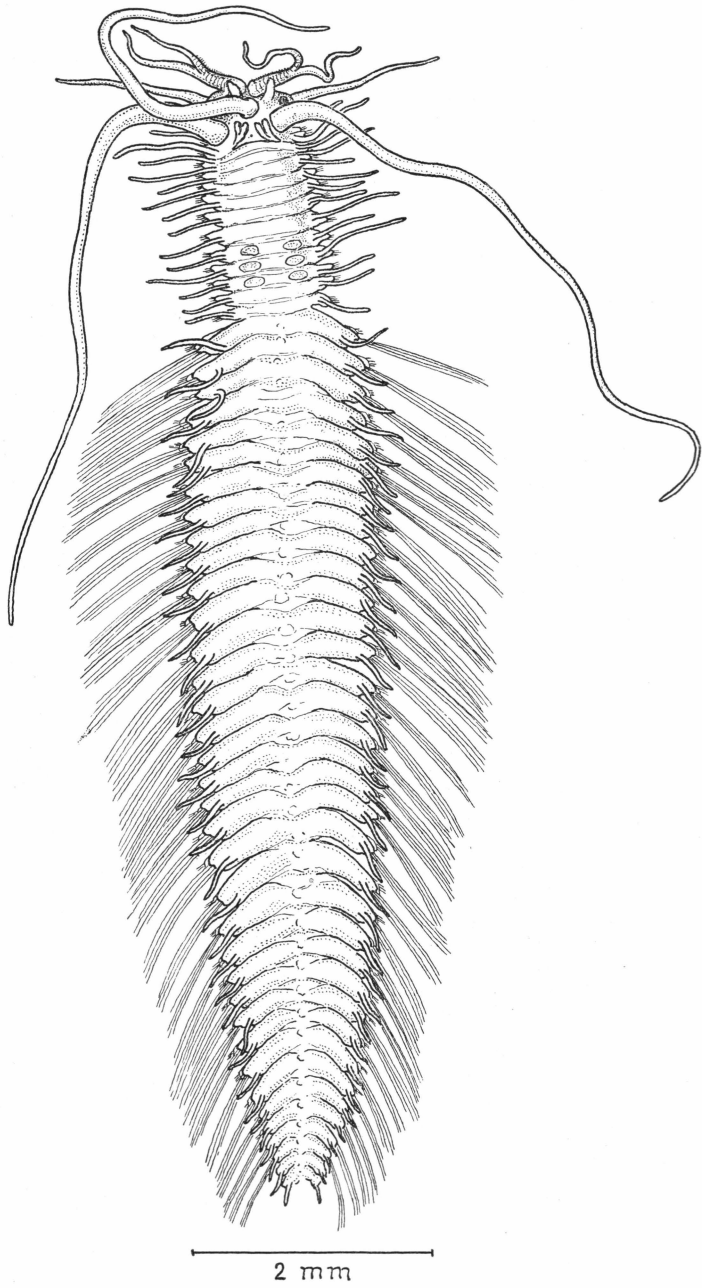


Fig. 14. *Autolytus verrilli* MARENZ. ♂.

52°45' W.; East of Store Hellefiskebanke; 23. 6. 1925; 100 m. W.; "Dana"; St. 2350; 1 spec. — Karkut, Godthaabsfjord; 15. 6. 1939; Poul Hansen; 1 spec. — W. of Iceland: 65°29' N. 24°36' W.; 22. 4. 1904; 40 m. W.; "Thor"; St. 263; 1 spec.

The present material consists only of ripe females and males; the atokous phase is not present. The colour is yellow or whitish; the indi-

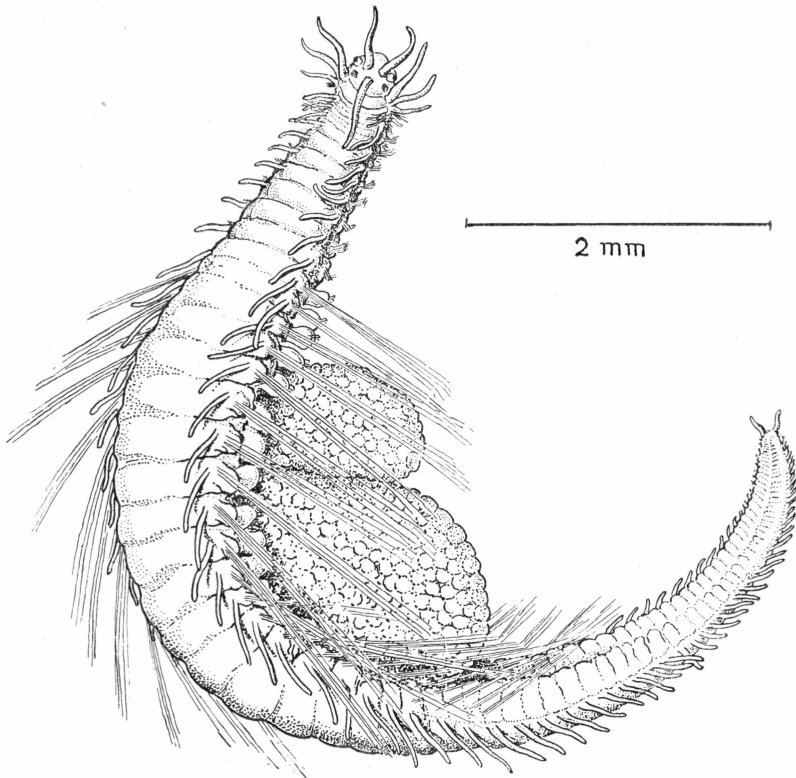


Fig. 15. *Autolytus verrilli* MARENZ. ♀.

cation of a brown longitudinal pigmental band along the dorsal side and one or two transversal bands in each segment are seen.

The *Sacconereis*: The head has four eyes, all visible from the dorsal side although the two foremost are extended down the sides of the head, so they look downward. The three antennæ are of equal length and rather short. Two pairs of tentacular cirri nearly of the same length as the antennæ. The first dorsal cirrus longer than the following and similar to the other appendages of the head and the buccal segment. There are 14 chætigers without swimming bristles, carrying compound bristles and long, slender dorsal cirri of unequal length. The following part of the body has about 20—25 segments all

provided with long swimming bristles and dorsal cirri considerably longer than in the anterior part. In the specimen here figured there were 22 segments in this part. The posterior region tapers gradually towards the end which carries two long anal appendages; it consists of about 40—50 segments. The females which were carrying eggmasses were all curved towards the ventral side, in a different way than in *A. prismaticus*; all of them carried two eggmasses, lying in the curvature in the middle of the body and kept together by a very fine and delicate membrane and partly protected by the long swimming bristles.

The *Polybostrichus*: The head has a dorsal and a ventral pair of eyes. The bifid palpi are rather short and slender, the two branches of equal size; they are annulated and at their anterior rim set with tufts of cilia and a long row of embedded glands. Between the dorsal eyes the unpaired antenna is inserted, and in front of this two small conical lateral antennæ. The dorsal cirrus of the first achætous segment is enormous reaching far backwards about to the 10th segment of the modified region. The ventral cirrus of the same segment is much thinner and shorter, hardly as long as the cirri of the chætiger in the unmodified region. All these appendages are not coiled as they often are in the other species. Between the bases of the long dorsal cirri two large divergent nuchal epaulettes reaching back to the third chætiger. The first 14 chætigers are unmodified, their dorsal cirri are long but of unequal size, on an average a long and a short cirrus in regular courses. There are only 3—5 pairs of testes lying in the posterior half of the unmodified region, never in the last or the two last segments. In the modified region we find 35 segments with swimming bristles. The pedal lobe ends in a small, globular knob. The dorsal cirri are short, only $\frac{1}{3}$ of the length of the lobe, subulate. They are all equal in shape, gradually diminishing backwards. This part of the body is broader and more flattened than the anterior part, mostly due to the long, well-developed pedal lobes. As to the last part of the body it is not possible to state anything with certainty, as it is missing or incomplete in all the present specimens, but it is certain that a last region with unmodified segments exists.

The compound bristles in this species are bidentate; a clearly well developed second tooth, which is even as large as the apical one, is always present. The terminal piece is a little longer and more slender than in the three other species of *Autolytus* described here, and the shaft is not so broadly dilated; distally it is strongly denticulated.

Distribution: The species is pronouncedly arctic. AUGENER remarks, that it belongs to the *Polychaetes* which penetrate farthest northwards. Greenland, Spitsbergen, New England, Alaska.

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