THE DANISH
INGOLF-EXPEDITION.

VOL. IV, PART 4.

CONTENTS:

HJALMAR DITLEVSEN: ANNELIDS. I.

PUBLISHED AT THE COST OF THE GOVERNMENT

BY

THE DIRECTION OF THE ZOOLOGICAL MUSEUM OF THE UNIVERSITY.

COPENHAGEN.

H. HAGERUP.

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1917.

THE DANISH INGOLF-EXPEDITION.

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ANNELIDS. I.

BY

HJALMAR DITLEVSEN.

WITH 6 PLATES AND 24 FIGURES IN THE TEXT.

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Introduction.

The present paper is the first part of the report on the Annelids brought home by the Ingolf expedition. Together with these, however, some other material of Annelids from Northern seas has been included. In this respect I shall name the rather considerable material brought home by several Danish naturalists on different expeditions to Greenland, Iceland and the Faroe Islands.

From East-Greenland originate the collections made by the Amdrup-Expedition, mainly due to the late zoologist, Mag. scient. Soren Jensen; also the then captain in the navy, Ryder and Cand. magist. Kruuse have brought home material from the East-coasts of Greenland.

Of special interest is the material from Davis Strait brought home by Ad. Jensen, now inspector at the zoological museum, on his cruises with the fishery investigation-ship "Tjalfe" 1908—1909; these collections as well as the material brought home by Dr. Nordmann and Cand. magist. Stephensen from their investigations in Greenland fjords have, together with the investigations of the Ingolf-Expedition, brought to light a fauna rather different from the usual Greenland litoral fauna with its well-known aretic forms — a fauna containing several boreal and more southern species not hitherto known from Greenland waters. The named investigations have shown that concerning the Annelids we have just the same facts in the distribution as have been established for other groups of animals, viz. Mollusca, Crustacea and Echinoderms: In Greenland waters we have to deal with so to say two different faunas of different origin, namely an exclusively aretic fauna mainly restricted to those tracts which have a negative bottom-temperature, and another mixed with species originating from southern regions and confined to those parts of Greenland seas and fjords with a positive bottom-temperature.

From Iceland waters collections have been made by Dr. A. C. Johansen, Mag. scient. Otterstrom, Mag. scient. A. Ditlevsen and Mag. scient. R. Horring. From the named seas are also present Annelids collected by Ad. Jensen during a cruise with the Norwegian research-steamer Michael Sars in 1902.

A rather considerable material of Annelids was brought home from the Faroe Islands by Dr. Th. Mortensen in the year 1899. Also Mag. scient. R. Horring, Mag. scient. A. Ditlevsen, Cand. magist. Gemzoe and Mag. scient. Otterstrom have made collections at the coasts of the Faroe Islands.

In this connection I will add that the Danish investigation steamer "Thor" has brought home a considerable material from the Faroes as well as from Iceland; also this material has been dealt with in this paper.

The present, first part of the report deals with the following families: *Aphroditidæ*, *Polynoïdæ*, *Sigalionidæ*, *Acoëtidæ*, *Phyllodocidæ* and a new family which it has proved necessary to establish, the *Otopsidæ*. These families are represented by 67 species in all.

Aphroditidæ.

Aphrodite aculeata (L.).

1900. *Aphrodite aculeata*, Mc. Intosh: A Monogr. Brit. Ann. p. 247.

In Mc. Intosh's paper the complete synonymy from the year 1554 is found.

Locality:

The Ingolf-Expedition has taken this species in the following localities:

St.	28.	65°14′	N. L.	55°42′	W. L.	420	fms.	Davis Strait.
-	9.	64°18′	—	27°00′	—	295	—	Danmark Strait.
-	24.	63°06′	—	56°00′	—	1199	—	Davis Strait.
-	36.	61°50′	—	56°21′	—	1435	—	— —
-	65.	61°33′	—	19°00′	—	1089	—	Danmark Strait.

Further it has been taken:

West-Greenland:

64°51′ N. L. 55°14′ W. L. 426 fms. Davis Strait, off Godthaab.

Iceland:

Loonsvik, 40 fms.

Medelland bay, South-Iceland 90—70 fms.

63°15′ N. L. 22°23′ W. L. 326—216 m. South-Iceland.

The Faroe Islands:

Vestmanhavn, $3^1/_2$—5 fms. Fine black sand.

— , 5—6 fms.

Kongshavn, 12—16 fms. Stones, sand and clay.

Fundingsfjord, 12—20 fms.

North of the Faroe Islands, 8—10 miles.

The fish-bank, off Fugleo, 150 fms.

The most interesting among the above named captures are those from Davis Strait. *Aphrodite aculeata* was hitherto not known from Greenland; it is a more southern species. It is worth taking notice of the fact that all the captures in Davis Strait have been made in deep water

where the temperature at the bottom is relatively high. I shall here give the temperatures concerning the respective Ingolf-stations.

St.	28.	Bottom temp.	3°5.
-	9.	— —	5°8.
-	24.	— —	2°4.
-	36.	— —	1°5.
-	65.	— —	3°0.

Not a single capture originates from shallow water at the coasts of Greenland; this fact explains how the species in question was not known from Greenland earlier, when dredging had been undertaken only in shallow water where the bottom-temp. is negative.

Why this species is not to be found in the southern Fjords with Atlantic water and with the bottom-temperature positive, viz. Bredefjord where Stephensen did not find it, I am not able to explain at present, but it is a fact worth taking notice of.

Lætmonice filicornis Kinb.

1855. *Lætmonice filicornis*, Kinberg: Öfvers. Kgl. Vet. Akad. p. 382.
1865. — — , Malmgren: Nord. Hafs. Ann. p. 53.
1879. — — , Tauber: Ann. Dan. p. 79.
1900. — — , Mc. Intosh: A monogr. Brit. Ann. p. 258.

Localities:

The Ingolf-Expedition has taken this species at the following stations:

St.	32.	66°35′	N. L.	56°38′	W. L.	318	fms.	Davis Strait.
-	97.	65°28′	—	27°39′	—	450	—	Danmark Strait.
-	28.	65°14′	—	55°42′	—	420	—	Davis Strait.
-	27.	64°54′	—	55°10′	—	393	—	— —
-	89.	64°45′	—	27°20′	—	310	—	Danmark Strait.
-	90.	64°45′	—	29°06′	—	568	—	— —
-	9.	64°18′	—	27°00′	—	295	—	— —
-	53.	63°15′	—	15°07′	—	795	—	South of Iceland.
-	54.	63°08′	—	15°40′	—	691	—	— - —
-	63.	62°40′	—	19°05′	—	800	—	— - —
-	83.	62°25′	—	28°30′	—	912	—	Danmark Strait.
-	74.	62°17′	—	24°36′	—	695	—	South of Iceland.
-	64.	62°06′	—	19°00′	—	1041	—	— - —
-	81.	61°44′	—	27°00′	—	785	—	South west of Iceland.
-	65.	61°33′	—	19°00′	—	1089	—	South of Iceland.
-	46.	61°32′	—	11°36′	—	720	—	West of the Faroe Islands.
-	76.	60°50′	—	26°50′	—	806	—	South of Iceland.
-	78.	60°37′	—	27°52′	—	799	—	— - —

Further, the species has been taken:

West-Greenland:

66°27′ N. L.	57°16′ W. L.		686 m.	Davis Strait.	
66°21′ —	56°54′ —	605—	700 -	—	—
63°54′ —	53°15′ —	988—		—	—
63°54′ —	53°15′ —	988—	1400 -	—	—
65°30′ —	55°26′ —	298 fms.		—	—
65°36′ —	56°24′ —	349 —		—	—
66°49′ —	56°28′ —	235 —		—	—

From Dannark Strait one capture is present, namely:

64°42′ N. L. 27°43′ W. L.

Further, one capture from the tract south west of the Faroe Islands, namely:

61°08′ N. L. 9°28′ W. L. 820 m.

We here have a case like that of *Aphrodite aculeata*; neither *Lætmoniæ filicornis* has hitherto been known from Greenland waters, and now it suddenly comes to light from a lot of different localities in Davis Strait. All these localities are situated on rather deep water and all of them have the bottom-temperature positive.

Lætmonice appears to be much more abundant in these localities than Aphrodite, a far greater number of the former has been taken. I shall only say that from the above St. 32 of the Ingolf-Expedition more than a hundred specimens are present.

Polynoïdæ.

As to the arrangement and classification of the Polynoïdæ in the present paper I should wish to remark the following.

Concerning the limitation of the genus *Harmothoe* I am following Levinsen in comprising under this genus all the species provided with the typical, well-known, sword-shaped notopodial setæ. At present there are no essential difficulties in this arrangement — at any rate when it is a question of northern forms exclusively — and as long as thorough researches, based upon anatomical investigations concerning the whole group of Polynoïds are lacking, there is no possibility for a systematic arrangement based on the principles of natural relationship. Nor do but two authors appear to be able to agree as to this question at present.

Since the completion of my manuscript a new paper by Erik Bergström 1916 dealing with the Polynoïds from the Swedish antarctic expedition has been published. In several respects the sound points of view of this author have my whole sympathy, even when I am not able to agree in details with all that he proposes in the mentioned paper. When he says: (l. c. p. 270) „So ist es z. B. nicht richtig, wie es Malmgren (1865. S. 56, Schema) tut, eine specielle Gattung *Evarne* neben *Harmothoe* aufzustellen, nur weil einige der Ventralborsten bei der Typusart der ersten Gattung einspitzig sind",

then I agree perfectly with him, but when he adds a little later: „Dagegen ist es ohne Zweifel richtig, eine Gattung wie *Antinoë*, mit der Art *Antinoë Sarsi* Kinberg 1862 als Typus aufzustellen weil hier ein ganz neuer Typus von Neuropodialborsten hinzukommt", I do not know whether he is right or not. I am most inclined to urge that the author in these words is laying too much stress on the shape of the neuropodial setæ which, in the whole, vary very much within the group under consideration.

On the following pages twentynine species of the genus *Harmothoe* are dealt with.

As to the genus *Lepidonotus* I shall first point out the peculiar shape of the cephalic lobe, the two frontal prominences of which are continued in the paired tentacles, a type of head which this genus has in common with some other genera, viz. the genus *Aleutia*, the genus *Driesschia* and the new genus *Bathynoë*, established in this paper. Whether all the forms with the cephalic lobe of the Lepidonote type will prove to form a natural group or not I have no decided opinion at present.

A junction of *Lepidonotus* and *Gattyana* in one genus, such as Levinsen was inclined to make, I find entirely unjustified; on the other hand I find it unnecessary to discuss this view, as I believe it has scarcely any other follower among specialists. According to my opinion the genus *Gattyana* is much closer related to the genus *Harmothoe* than to *Lepidonotus*. We have thus the species *Harmothoe villosa* which evidently represents a transitional form between these two genera. But this question is discussed later on under the species under consideration.

The new genus *Bathynoë* is closely allied to the genus *Lepidonotus*, but must be maintained as a special genus. It is a deep-sea form of great interest.

Harmothoe nodosa (Sars).

Pl. II, fig. 1; Pl. III, fig. 10.

1843. *Lepidonote scabra*, Orsted: Gronl. Ann. Dorsibr. p. 164.
1860. *Polynoe scabra*, Sars: Om de ved Norges Kyster forek. Arter af Slægten Polynoe, p. 58.
1865. *Eunoe Ørstedi*, Malmgren: Nord. Hafs.-Ann. p. 61.
1879. *Polynoe scabra*, Théel: Ann. polych. des Mers de la Nouv. Zemble p. 7.
1882. — *islandica*, *Polynoe arctica*, *Polynoe spinulosa*, *Pylynoe foraminifera*, G. Arm. Hansen: Norske Nordhavs Exped. pp. 24, 27, 28, 20.
1883. — *scabra*, Wiren: Vega-Exped. p. 387.
?1900. *Ennoë Tritoni*, Mc. Intosh: A monogr. Brit. Ann. p. 296.
1902. *Gattyana scuta*, Moore: Polyn. Greenl. waters p. 259.

Locality:

The Ingolf-Expedition has taken this species in the following localities:

St. 31.	66°35′	N. L.	55°34′	W. L.	88 fms.	Davis	Strait.	
- 32.	66°35′	—	56°38′	—	318 —	—	—	
- 29.	65°34′	—	54°31′	—	68 —	—	—	

St. 15. 66°18′ N. L. 25°59′ W. L. 330 fms. Danmark Strait.
- 98. 65°38′ — 26°27′ — 138 — — —
- 46. 61°32′ — 11°36′ — 720 — West of the Faroe Islands.

Further, it has been taken: West-Greenland; Northern Strom-fjord. 48—46 m. and 375—380 m., stony ground. 70°42′ N. L. 54°28′ W. L. 480 m., 68°20′ N. L. 54°03′ W. L. 418—532 m., 62°58′ N. L. 50°52′ W. L. 47 m. Davis Strait by the investigation vessel "Tjalfe". In East-Greenland it has been taken in: 72°27′ N. L. 19°56′ W. L. 190 m. Off Henry land, 38 m. stony bottom. Tasiusak, 36 m. 72°25′ N. L. 19°33′ W. L. 266 m. Further at Jan Mayen, 105 m. and at Iceland in Seydis-fjord, Skulavig 12 m., Bakkefjord, 60 m.

We here have one of the most varying species within the group of the Polynoids. *H. nodosa* is not only a form with a large geographical range with distinct local varieties, but it is, within a rather limited area, able to vary considerably. It belongs to those forms which easily make systematical confusion, and the different investigators have difficulty in agreeing about what is to be considered a variety and what must be maintained as a distinct species. And for the individual investigator it is difficult to form a decided opinion on the value of the special forms established by other authors.

A rather rich material of this species is present, large as well as small individuals.

Generally the specimens have a rather characteristic aspect: The scales are beset with greater and smaller bodies, which often grew rugged, or branched, outgrowths. Very often forms like those figured Pl. III fig. 10 are seen. Scales as well as cirri show a rich supply with papillæ. This feature especially shows characteristic as to the palps on which the papillæ are arranged in 6 longitudinal rows, stretching from the base of the palp to its tip. The setæ are of a rather constant shape, the dorsal bristles being of the well-known swordlike shape characteristic in the genus Harmothoe sensu Levinsen, the ventral bristles having a rather large end-blade provided with rather strong spines; no accessory tooth under the apex, and about the distal half of the end-blade quite smooth.

Eunoe tritoni Mc. Intosh, the palps of which are provided with the above named six longitudinal rows of papillæ, and is, therefore, possibly to be referred to the species in mention, differs from the typical feature in respect to the dorsal setæ; the transverse rows of spines reache in *E. tritoni* to the tip of the bristle which is not the case in *H. nodosa*. For the rest I do not know Mc. Intosh's species from autopsy.

Among my material was found a specimen which is to be referred to Moore's *Gattyana senta*, agreeing well with the description and figures of this author. In Pl. II fig. 1 I have figured a scale not much different from Moore's fig. 2 Pl. XIII. — It was soon quite clear to me, that Moore's species could not belong to the genus *Gattyana*, and that it must be referred to the group *Harmothoe nodosa* was evident from the papillæ being arranged in six longitudinal rows. For the rest, the same opinion is already expressed by Augener in Zool. Anzeiger 1910: „Bemerkungen über einige Polychæten von Roscoff & c.", p. 244. He writes: „Eine nahestehende Art ist die gleichfalls alaskische "*Gattyana senta* I. P. Moore, die nach der Form ihrer Dorsalborsten eher in die Gattung *Eunoë* zu passen scheint". It is seen from my observations above that the resemblance reaches further than to the dorsal setæ. In reality the only difference between Moore's species and the typical *H. nodosa*, if it is possible to speak about such, is that in the former the spines of the scales have become uncommonly long

and proportionally much ramified. I think it would not be difficult in a large material of Moore's *G. senta* to find forms approaching *H. nodosa* and vice versa. I also think that I have found such an intermediate form, the specimen taken by "Tjalfe" in 62°58′ N. L. 50°52′ W. L. in Davis Strait. Whether that specimen should be called *H. senta* or *H. nodosa* is after all rather immaterial.

As it interested me in this connection to learn the real facts as to the relating forms from the „Norske Nordhavs Expedition" described by G. Armauer Hansen, I adressed myself to Professor Brinkmann, Director of the Zool. Museum in Bergen, who kindly lent me the types for examination. The species which in this connection interested me particularly were the following: *Polynoe assimilis*, *P. foraminifera*, *P. arctica*, *P. spinulosa*, *P. islandica*. The examination gave the result that *P. assimilis* was identic with *Nychia globifera*, Sars; the other four species were rather common variants of *H. nodosa*.

Finally I shall only remark that it is possible that the species here characterized must later be divided into more or less species or sub-species viz. varieties, but I think it will be necessary to examine a rather great material to settle the question whether we have here to do with only one highly varying species or with more distinct species.

Harmothoe floccosa Mc. Intosh.

Pl. III, fig. 14.

1900. *Lagisca floccosa*, Mc. Intosh: A monogr. Brit. Ann. p. 298.

1912. — , Small: Report on the Annel. polych. coll. & c. p. 171.

Locality:

57°24′ N. L. 7°75′ E. L. 108 m. Skagerrak.

Some fragments from the named locality seem to agree with the species described by Mc. Intosh under the name of L. floccosa.

According to my opinion, Malmgren's *Lagisca propinqua* cannot be referred to this species as Mc. Intosh suggests. A comparison of my figs. Pl. II, fig. 14 and Pl. III, fig. 3, plainly shows the difference between the scales of the two species. It is here seen that, while all the great bodies in the scale of *H. propinqua* are almost globular, they differ in form in the same scale of *H. floccosa*; one of them is almost globular, another is bluntly conical, a third is acutely conical. The microscopical bodies in the scales also differ in the two forms. In *H. propinqua* they show a tendency to divide, which is not the case in *H. floccosa*, in which they are conical and acute, the largest among them are slightly curved, resembling small spines. (See further under *Harmothoe propinqua* p. 00).

Harmothoe capitulifera Ditl.

1911. *Harmothoe capitulifera*, Hj. Ditlevsen: Annelids from the Danmark Expedition. Særtryk af Medd. om Gronland XLV, p. 416.

Locality:

The Ingolf-Expedition St. 32. 66°35′ N. L. 56°38′ W. L. 318 fms.

— — - 35. 65°16′ — 55°05′ — 362 —

Both of these stations are situated in Davis Strait.

A single specimen has been taken on each of the above named localities, and the capture is of some interest, as the specimen brought home by the Danmark-Expedition originated from the East coast of Greenland.

The species seems to prefer rather deep water, perhaps the reason why so few specimens of this apparently rather uncommon species have come to light.

Harmothoe globifera (Sars).

1872. *Nychia globifera*, Sars: Bidrag til Kundsk. om Dyrelivet paa vore Havbanker. Forh. Vid. Selsk. Chria. p. 95.

1883. *Polynoe globifera*, G. A. Hansen: Norsk Nordhavsexped. p. 4.

1883. — *assimilis*, G. A. Hansen: Norsk Nordhavsexped. p. 27.

1894. *Lepidonotus globifera*, Bidenkap: Norges Ann. polych. p. 61.

Locality:

The Ingolf-Exped. has taken this species in the following localities:

St. 35.	65°16′	N. L.	55°05′	W. L.	362	fms.	Davis Strait.
- 25.	63°30′	—	54°25′	—	582	—	—	—
- 38.	59°12′	—	51°05′	—	1870	—	S. W. of Greenland.
- 59.	65°00′	—	11°16′	—	310	—	East of Iceland.
- 116.	70°05′	—	8°26′	—	371	—	South of Jan Mayen.

Further it has been taken in Davis Strait by the investigation-vessel "Tjalfe" in 66°22′ N. L. 57°16′ W. L., 686 m. and in 64°14′ N. L. 55°55′ W. L., 839 m.

From Danmark Strait some specimens are present, taken in 65°39′ N. L. 28°25′ W. L. 553 fms., and finally from the area at Jan Mayen a little farther north than the Ingolf station 116, namely from 70°32′ N. L. 8°10′ W. L., 470 fms.

That the species described by G. Arm. Hansen under the name of *Polynoë assimilis* must be referred to the species here concerned, I have convinced myself of by examining the original specimens of the named author, kindly lent me by Professor Brinkmann in Bergen.

Harmothoe Jeffreysii Mc. Intosh.

1900. *Lagisca Jeffreysii*, Mc. Intosh: A monograph Brit. Ann. II, p. 305.

Locality:

The Faroe Islands; Vestman-sound c. 70 fms.

Dr. Mortensen took three specimens in the named locality in 1899. The largest measures 26 mm. in length and it has a breadth of 7 mm., bristles included. The two others are considerably smaller. The specimens seem to be typical and well agreeing with Mc. Intosh's description of this characteristic species.

About the geographical distribution of this species only little is to be said; the specimens of Mc. Intosh originate from the island of Balta.

Harmothoe asperrima (Sars).

1860. *Polynoe asperrima*, Sars: Vid. Selsk. Forh. Chria.
1867. *Dasylepis asperrima*, Malmgren: Ann. polych. p. 7.
1873. — — , Sars: Bidrag Christianiafj. Fauna p. 2.
1894. *Harmothoe* — , Bidenkap: Norges Ann. polych. p. 57.
1900. *Acanticolepis* — , Mc. Intosh: Monogr. Brit. Ann. p. 311.

Locality:

The Ingolf-Exped. St. 54. 63°08′ N. L. 15°40′ W. L. 691 fms. South of Iceland.
— — - 103. 66°23′ — 8°52′ — 579 — East of Iceland.

Seven specimens in all are present from the two above named stations. In all essentials they agree with the description of Sars. The most characteristic feature in this species is the scales, as the peculiar supply of spines makes it impossible to confound it with any other. Among other peculiarities can be pointed out the long, almost straight, dorsal setæ, which are present in a great number; their form is very characteristic and perceivable; nevertheless their form is typical Harmothoidal, so that the species cannot be separated from the genus *Harmothoe* sensu Levinsen.

It seems to be common nowhere, most frequently it has been taken at the coasts of Norway. Bidenkap states its northernmost locality at Bodö, consequently somewhat more northerly than the two Ingolf-stations. In Norway it is known, vide Bidenkap from Dröbak, Manger and Østeråt, as well as near the mouth of the Hardanger-fjord and in Drontheim's-fjord.

At the British coast it is known according to Mc. Intosh only from the firth of Clyde. It belongs evidently to those species, which descend to rather great depths.

Harmothoe imbricata (L.).

1865. *Harmothoe imbricata*, Malmgren: Nord. Hafs.-Ann. p. 66.
1897. — — , Michaelsen: Polychætenfauna Deutsch Meres p. 11.
1898. — — , Michaelsen: Grönländ. Annel. p. 121.
1900. — — , Mc. Intosh: Monogr. Brit. Ann. p. 315.
1912. — — , Izuka: Err. Polych. Japan, p. 43.

Locality:

West-Greenland:

The Ing.-Exped. St. 38. 59°12′ N. L. 51°05′ W. L. 1870 fms. South of Davis Strait.
Upernivik ..... 30—40 —
Jacobshavn .....
Egedesminde ..... 50—70 m.
Ameralikfjord .....
Northern Stromfjord ..... 21—40 -
Nogarsungsnak ..... 70—80 fms.
St. Hellefiskebanke ..... 40 —

Holstensborg	5—10 fms.	
Umanak		
Julianehaab		
62°58′ N. L. 50°52′ W. L.	50 —	Davis Strait.
Ulkebugten		
Sigssarisok-fjord, Nanortalik		
Igalikofjord, Julianehaab District		
Tunugdliarfik	14—18 m.	
Proven	5—10 fms.	
Ivigtut		
Brede-fjord	5—500 m.	
Narssuk harbour	6 -	
Kvane-fjord	54 -	
East-Greenland:		
Sabine-island	3—5 fms.	
Smalsund	4—5 —	
Hekla's harbour	3—5 —	
Turnar sound	c. 3 —	
Henry-island	20 —	
Tasiusak	30—15 —	
Angmagsalik	10 —	
Solo-fjord	10—15 —	
Tiningnekelok		
Iceland:		
The Ing.-Exped. St. 127. 66°33′ N. L. 20°05′ W. L.	44 fms.	
— - 54. 63°08′ N. L. 15°40′ W. L.	691 —	
Olafs-fjord	6 —	
Aksar-fjord	22 —	
Thistil-fjord	10 —	Sand. Coral.
Seydis-fjord, Skulavig	6 —	
Beru-fjord. Djupningen		
Bern-fjord	6—20 —	
63°8′ N. L. 18°49′ W. L.	72 —	Mud.
Havnefjord		
Vido, near Reykjavik. Tidepools		
Off Reykjavik	8 —	
Off Eyafjällsjökul S. W.	15—18 —	Black Sand.
Breidavig	14 —	Sand.
Mouth of Dyre-fjord	c. 30 —	Sand.
Bakke-fjord	20—28 —	

Faroe Islands:

Off Kolsø, N. & W. 6 miles	60 fms.
Klaksvig	10—15 —
Bordovig	7—15 —
Midvåg	7—11 —
Vestmanhavn	10—30 —
Off Nolso Blinkfyr, 9 miles	c. 30 —
Sandvåg	2—5 —
Thorshavn	12—16 —
Trangisvåg; mouth of the fjord	

Further it has been taken:

70°32′ N. L. 1°10′ W. L. East of Jan Mayen.
70°21′ — 8°25′ — 160 fms. East of Jan Mayen.

Harmothoe imbricata is circumpolarly spread over the northern hemisphere. Southwards it reaches, at the coasts of Europe, France and Spain. According to *Izuka* it is common along the whole coast of Japan, both on the east and on the west side, from Sakhalin to Kyushiu. It seems able to bear rather fresh water; in the Baltic it is said, vide Michaelsen, to reach Kolkovik in the interior of the Gulf of Finland.

As to its bathymetrical distribution it also shows a most uncommon ability in accomodation. While it seems to be a common coast-form everywhere inside its range, and even at a few places reaches so far that it can be taken in tide-pools, it is found, though seldom, at very great depths; thus the Ingolf-Expedition has taken a specimen S. W. of Greenland at a depth of 1870 fms. Most frequently it is found between one and a hundred fms.

Harmothoe impar (Johnston) Malmgren.

Pl. II, fig. 16. Pl. III, fig. 11.

1865. *Evarne impar*, Malmgren: Nord. Hafs.-Ann. p. 71.
1912. *Harmothoe impar*, Augener: Polych. Franz-Josephs Land I. p. 207.

Locality:

57°24′ N. L. 7°25′ E. L. 108 m. Skager Rack.

I think Augener is right in specifically separating this form from *H. imbricata*. In my material only one specimen is present, but in all essentials I find it agreeing with the remarks of the named author. As to the scales, the words of Augener seem to agree well with my figure (Pl. II. fig. 16): „Die grossen Randpapillen sind bei *H. imbricata* mehr oder weniger deutlich keulenförmig, bei H. impar sind sie im allgemeinen tropfenförmig und wenig abgesetzt gegen die Elytronfläche".

Also what Augener writes about the position of the eyes agrees with my figure (Pl. III. fig. 11): „Bezonders zu beachten als Differenz aber ist die Stellung der vorderen Augen am Kopfe. Bei *H. imbricata* stehen diese Augen unmittelbar an und unter den frontalen Spitzen des Kopfes und sind so von oben mehr oder weniger verdeckt, bei *H. impar* stehen die vorderen Augen ungefähr in der Mitte des seitlichen Kopfrandes, ähnlich wie bei *L. propinqua*, *rarispina* u. s. w. The bristles appear to me to argree well with those of H. imbricata. I have here figured the tip of a ventral and dorsal bristle, highly magnified (Zeiss Apochr. 2 mm).

The species mentioned under this name by Claparède (Anatom. u. Entwicklungsgesch. wirbelloser Thire) from St. Vaast la Hougue appears to me to concern quite another species than that here dealt with.

fig. 1.

Harmothoe rarispina (Sars).

1860. *Polynoë rarispina*, Sars: Christ. Vid. Selsk. Forh. p. 60.

1865. *Lagisca rarispina*, Malmgren: Nord. Hafs.-Ann. p. 65.

Locality:

The Ingolf-Exped. has taken this species south of Iceland and in Davis Strait:

Ing.-Exped. St.	67.	61°30′	N. L.	22°30′	W. L.	975	fms.	South of Iceland.		
— -	55.	63°33′	—	15°02′	—	316	—	—	-	—
— -	72.	63°12′	—	23°04′	—	197	—	—	-	—
— -	35.	65°16′	—	55°05′	—	362	—	Davis Strait.		
— -	33.	67°57′	—	55°30′	—	35	—	—	—	

Further this species has been taken:

West-Greenland:

69°46′ N. L. 51°22′ W. L. c. 250 fms. Davis Strait.

Off Disco; outside Fortunabay. 109—90 fms.

Northern Stromfjord; 17 miles from the mouth, 200—240 m. mud. and 18 miles from the mouth, 41—21 m. Sand and clay. The bay at Stivdliarsok 33—50 m. Stones.

Off Godhavn, 25 fms.

Godhavn, in tidepools.

Egedesminde.

Brede-fjord, at different places varying from 29—100 m.

Skov-fjord — — — — 10—140 -

Kvane-fjord — — — — 22—205 -

East-Greenland:

70°21′ N. L. 8°25′ W. L. 160 fms.

Sabine island 5—3 fms.

Tiningnekelok.

Iceland:

Reykjavik; on Laminaria.

The species is known from Spitzbergen, Novaya-Semlya and the Kara Sea. At the coasts of Europe it goes along the Norwegian coast southwards to the North Sea. It can be met with in tide-pools and it has been taken in depths towards 1000 fms.

Harmothoe propinqua (Malmgren).

Pl. III, fig. 1, 3.

1867. *Lagisca propinqua*, Malmgren: Ann. polych. p. 9.

1873. — — , Sars: Christianiafj. Fauna p. 3.

1894. *Harmothoe propinqua*, Bidenkap: Norges Annul. polych. p. 49.

Locality:

Iceland, Seydisfjord, 80 m. mud.

Iceland, Seydisfjord; between the bridge and the northern side of the bottom of the fjord. Laminaries.

Iceland, Whale-fjord. 46 m.

The specimens present agree well in most respects with the description of Malmgren. Bidenkap (l. c. p. 49) emphasizes "the large, globe-shaped chitinous bodies on the scales", and he writes that these proved "quite typical in all the specimens examined by me, not forming any transitional form towards the extraordinarily lengthened and fusiform chitinous bodies, characteristic of *H. rarispina*." Sars considers *H. propinqua* to be only a more southerly variety of H. rarispina, corresponding to this about as the more southern form of *H. imbricata* with the more smooth scales corresponds to the more northern form of this species with bodies along the edge of the scales.

Mc. Intosh refers it to Savigny's species *Lagisca floccosa*, described in 1820. I do not think he is right in this; one of the most characteristic features in Malmgren's species is the great, almost globular bodies along the edge of the scales, but nobody is able to say how Savigny's species would stand in this respect, as it lacks all the scales. Savigny writes: "Je ne puis décrire les élytres qui etoient tombees et que je n'ai pas vues." Nor do I think that Mc. Intosh is right in identifying his *Lagisca floccosa* with Malmgren's *L. propinqua*. Malmgren's figure (l. c. T. I. fig. 3 *c*) of an elytron with the large bodies reaching over the edge of the scale does not at all resemble the figure given by Mc. Intosh (l. c. Pl. XXXII. fig. 5), where the scale is provided with a greater number of smaller bodies which do not reach the edge of the scale. If one compares my figure (Pl. III, fig. 3) with Malmgren's it is, according to my opinion, striking that my specimens from Seydisfjord really are identic with Malmgren's *L. propinqua*. To settle the question I addressed Professor Théel at the "riksmuseum" in Stockholm and asked him to lend me the original specimen of Malmgren's species for examination, but Théel informed me that the latter did not exist in the collections, wherefor I was reduced to my scientific tact.

The question whether Sars is right in considering Malmgren's species as a mere variety of *L. rarispina* and not as a distinct species is not easy to decide for the moment. I shall only point

out that the bodies on the more caudal situated scales are more lengthened in shape than those on the scales situated more cephalic. The scale figured Pl. III, fig. 3 originates from about the middle of the body. — I shall point out only one more feature which I have not seen mentioned in the litterature, namely that the microscopical bodies in the scales show tendency to divide in the apex (Pl. III, fig. 1) a condition also seen in *H. rarispina*.

The parapodium and the setæ give no information inasmuch as these organs are scarcely to be distinguished in the two forms.

Harmothoe zetlandica Mc. Intosh.

Pl. III, fig. 7.

1876. *Harmothoe zetlandica*, Mc. Intosh: Trans. Zool. Vol. IX. p. 379.

1900. — — , Mc. Intosh: A monograph Brit. Ann. p. 330.

Locality:

The Faroes; 8 miles E. S. E. off the "Bisp" c. 70 fms.

Two specimens have been taken at the above named locality of a form which, without hesitation, I am able to refer to Mc. Intosh's *Harmothoe zetlandica*. Some differences between the description of Mc. Intosh and the specimens under examination are to be pointed out, though they are not very conspicuous.

On the head (Pl. III, fig. 7) the frontal prominences seem to be more reduced than is the case in the figure of Mc. Intosh (l. c. Pl. XXVIII, fig. 1) and the papillæ on the tentacles and the tentacular cirri are not visible as in the same figure of Mc. Intosh. At the low power under which my figure has been drawn they are not seen. The most characteristical feature in the head is, without doubt, the shape of the paired tentacles; they are very short and have a distinct basal joint; they are rather thick at the base and taper quickly to the terminal point. The unpaired tentacle is nearly as long as the rather long and stout palps.

fig. 2.

The foot (fig. 2) is relatively high and short. The dorsal cirrus is short with a distinct terminal filament, and is beset with sparcely spread, short clavate papillæ. The notopodial branch it not very prominent, and relatively few dorsal setæ are present.

As to the geographical range of this species only little is known; the specimens of Mc. Intosh originate from the Shetlands at a depth of c. 5 fms. My specimens have been taken at the Faroes in c. 70 fms.

Harmothoe antilopis Mc. Intosh.

1876. *Harmothoe antilopis*, Mc. Intosh: Trans. zool. soc. IX, p. 383. Pl. LXIX, figs. 4—6.
1879. — *antilopes*, Marion: Ann. des sc. nat. p. 13. Pl. XV, fig. 1.
1885. *Polynoë* — , Carus: Prodomus Faunæ mediterraneæ, Vol. I, p. 200.
1900. *Harmothoe antilopis*, Mc. Intosh: A monograph of the British Annelids p. 334.

Locality:
The Ingolf-Exped. St. 6. 63°43′ N. L. 14°34′ W. L. 90 fms. South Iceland.
63°15′ N. L. 22°23′ W. L. 326—216 m. South Iceland.

Two specimens are present, one of which is broken in two. They appear, in nothing essential, to differ from Mc. Intosh's description.

It is a species with a wide geographical distribution, but nowhere does it seem to be common. It is known from Gibraltar and from the Mediterranean, the Channel, off the Hebrides and other localities near the British Isles; the present author has taken it in Kattegat, North-East of Frederikshavn, in a depth of 36 m.

Harmothoe Fraser-Thomsoni Mc. Intosh.

Pl. III, fig. 4, 5, 9.

1900. *Harmothoe Fraser-Thomsoni*, Mc. Intosh: A monograph Brit. Ann. p. 337.
1914. — — , Fauvel: Annélides polychètes non pélag. p. 56.

Locality:
Faroe Islands; N. t. E. off Kolso. 60 fms.
— — ; E. t. S. off the south point of Nolso, 16 miles. c. 80 fms.
— — ; Mouth of Bovovig. 20—30 fms.
Iceland; Vestmanoer. 49 fms. mud.

Only fragments and one entire specimen are present; the condition is rather good, and as they agree tolerably with the description of Mc. Intosh of the above named species, I venture to refer them to it.

The frontal papillæ of the cephalic lobe are rather prominent and only a little diverging; the hindmost eyes are situated rather wide from each other, and are somewhat smaller than the two foremost, the position of which is latteral. (Pl. III, fig. 5). The palps are thick, middle-long with a short distinct terminal filament. The tentacles and tentacular cirri are relatively short with middle-long terminal filament, before which is a dilatation, a condition also concerning the dorsal cirri. All the named appendages are almost smooth; only a few papillæ are seen very sparcely spread. The mentioned papillæ in the palps, Mc. Intosh l. c. p. 338, are densely situated and exceedingly minute; they cannot be seen in my figure, Pl. III, fig. 5, which has been drawn at low power.

The scales are very characteristic. At the first glance they remind one of the scales of *Harmothoe imbricata*; each scale has on its surface, about at the middle of the uncovered part, a rather distinct, brown, strongly pigmented spot, which gives it a close ressemblance to a certain colour-variety of the

named species. The greater part of the surface of the scale is covered with a lot of small prominences which are bluntly conical. Seen from above they have the appearance of small bud-like bodies, hollow in the tip or simply ring-shaped forms, quite the same circumstance which I have stated in *H. aculinarum* and which has evidently mislead Storm; this is not astonishing especially in a form like the latter, where the prominences are only few and small; in order to learn the real state of the case it is necessary to have one of the small bodies lying in profile under the microscope. — Besides the microscopical bodies are found, spread over the scale, some larger ones of a rather characteristic form. Their number and their arrangement on the surface of the scale vary a good deal in the different elytra. As a rule a row is found close inside the hind margin of the scale, as can be seen on Pl. III, fig. 9. These larger bodies — Mc. Intosh calls them "blunt spines or tubercles" — have about the same form as the half of a hen's egg divided transversely, a little aslope and placed with the surface of the cut on the scale. As they vary somewhat in form — some among them being more blunt and others more acute — we are able to state both halves of the hen's egg represented among them. At their base they are surrounded by a tight-closing low ring-shaped wall (Pl. III, fig. 4). The scale is rather thin and translucent and its margin smooth.

fig. 3. Tip of ventral bristle.

In one respect my figure (Pl. III, fig. 9) does not seem to agree with the description and figure of Mc. Intosh, namely regarding the distribution of the microscopical bodies and the greater prominences over the surface of the scale. Mc. Intosh writes: "The anterior and inner half is densely covered with small horny papillæ or tubercles, while the outer area and that behind the scar for the pedicle have large tubercles sparcely distributed. The small tubercles are grouped with a few larger spines along the outer edge while the posterior border is marked by about eight large blunt spines or tubercles." In my specimens the distribution of the great bodies varies not inconsiderably in the different elytra, but it is the uncovered part of the scale where the microscopical spines are most numerous viz. the lateral and caudal half of the scale.

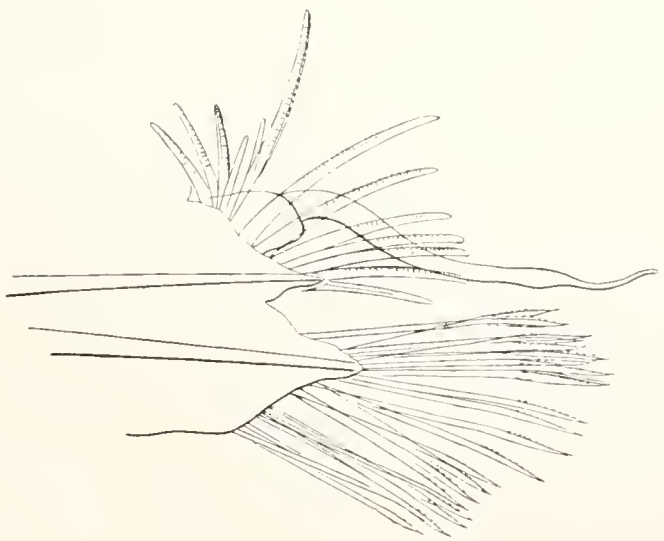


fig. 4.

The parapodia are rather short and high. The neuropodial branch is the strongest (fig. 4). The segmental papillæ are smooth but distinct.

As to the distribution of this species Mc. Intosh indicates that it has been taken by the "Knight Errant" in the Atlantic in a depth of 53 fms., but he does not give further indication of that locality; at the south-west coast of Ireland in a depth of 93 fms. together with Malmgrenia castanea. After this it is quite natural to find it at the Faroe Islands.

Harmothoe glabra (Malmgren).

1865. *Lænilla glabra*, Malmgren: Nord. Hafs.-Annal. p. 73.
1897. *Harmothoe glabra*, Michaelsen: Polychætenfauna der Deutschen Meere, p. 90.
1900. ? — *setosissima* (Savigny), Mc. Intosh: A monograph Brit. Annel. II, p. 345.
1902. — *glabra*, Moore: Proc. Acad. sc. Philad. 1902.

Locality:
The Faeroes (no indication of depth) Vestmanhavn.
57°24′ N. L. 7°25′ E. L. 108 m. Skager Rak.
50°14′ N. L. 4°24′ W. L. 60 m. Western part of the Channel.

A single specimen is present from the Faroe Islands. It has a length of 46 mm.; and its greatest breadth is 16 mm. In the western part of the Channel have been taken five or, to put it more exactly, fragments of five, all smaller; the same is the case with a single specimen taken in the Skager Rak by the investigation-steamer "Thor."

It is difficult to say anything definite about the distribution of this species. In our museum we have no specimens from the Arctic. Malmgren mentions it as "rasissime" at Båhuslän. First near the coasts of England it becomes more frequent, according to Mc. Intosh. Southward it reaches so far as to the Mediterranean.

Moore names some captures from North-Greenland, namely Northumberland Island and Bardenbay, both from shallow water, 10—40 fms. I consider these findings very improbable.

Mc. Intosh thinks he is able to maintain that Malmgren's species is identic with that of Savigny, in the year 1820 described *Polynoë setosissima*, a supposition which in my opinion is not well founded: For one thing Savigny gives no locality; he writes: "la patrie ne m'est pas connue." Individu communiqué par M. Cuvier." Secondly Savigny has nothing to say about the scales "qui étoient tombées et que je n'ai point vues." Thirdly he gives no figures of the setæ, and from his description of the same nothing can be concluded. Only an examination of Savigny's original specimen could settle the question, and it does not appear that Mc. Intosh has done this.

Harmothoe sp.

Pl. II, fig. 9. Pl. IV, fig. 3.

Locality:
N. W. t. N. off. Hojen, 44 miles, 660 m. Skager Rak.

Fragments of three specimens are present, taken by the investigation-steamer "Thor." The largest of these fragments, representing about the foremost half of the animal, perhaps a little more, has a length of 9 mm.

The animal has its greatest breadth somewhat before the middle of the body, where it measures about 7 mm including the setæ; without setæ $4^1/_2$ mm. Besides the named fragments was found one scale lying in the glass; I suppose — but I cannot say it with absolute certainty — that this scale belongs to one of the fragments in mention. No other elytron is present; all are lacking.

The cephalic lobe has a very deep incision (Pl. II, fig. 9); the latter reaches so far that it almost divides the head in two halves. The frontal prominences are distinct and diverge somewhat. No eyes are seen from above, but the usual two pairs are both present; they are very feeble in colour; the hindmost pair is situated so caudally that it is hidden under the nuchal fold, and the two foremost eyes are so ventrally situated that they cannot be seen unless the animal is turned round. None of the eyes is seen in the figure.

fig. 5.

The unpaired tentacle is lacking but its basal joint, being very strong, shows that the former probably has been of considerable length. The two paired tentacles are relatively short and slender, in length about one third of the length of the palps. These latter are rather thick but their distal third is represented by a long and thin terminal filament. The palps are quite smooth while the tentacles are densely beset with long filiform papillæ, the apex of which is somewhat extended. The tentacular cirri are provided with a rather long basal joint and are considerably longer than the palps; they are, like the tentacles, beset with papillæ.

fig. 6.

The largest of the fragments consists — the head and buccal segment not counted — of 14 segments. The position of the elytrophores shows that the arrangement of the scales is that usual in the Polynoids. The colour is dark violet. The pigmentation does not extend to the cephalic lobe and its appendages.

The parapodia are rather prominent; the neuropodial branch projects more than the notopodial, and the former is provided with a flab. The setæ are long, especially the neuropodial setæ, and they are present in considerable numbers (fig. 5).

The dorsal cirri are entirely lacking, thus their length cannot be stated; I suppose them to be rather long and beset with papillæ, as far as it is allowed one to judge from the tentacular cirri. The ventral cirrus is medium length it is devoid of papillæ. The segmental papillæ are distinct but only a little prominent.

The dorsal setæ, which are of the usual sword-shaped type, are rather strong, the most ventrally situated are the longest and tolerably straight; those nearest the dorsum are curved and relatively short. The transverse rows of spines stretches towards the tip of the bristle and leave only the apex free (fig. 6 *d*).

The ventral setæ are present in two rather different forms, partly smooth, (fig. 6 *b*) partly spiny (fig. 6 *c*). In this respect it calls to mind the *H. borealis*, Théel, to which it perhaps will prove to be closely related. At any rate the ventral setæ of the species from Skager Rack are provided with a distinct tooth under the tip, and therefore must be regarded as specifically different from the species of Théel (fig. 6 *c*).

The above named elytron is rather thin, translucent and membranous; it is moreover so soft and delicate that it takes creases just like moist silk-paper. Its surface is densely beset with microscopical, conical bodies which resemble small spines but, they do not terminate with an acute tip; most of them have the apex obliquely cut off or rounded. Along the caudal edge of the scale are situated long, thread-shaped papillæ.

As remarked above, it is necessary to mention this scale under correction. It was as said — lying loose in the glass and the only one which was present.

Harmothoe Hubrechti Mc. Intosh.

Pl. II, figs. 2, 3, 6.

1900. *Evarne Hubrechti*, Mc. Intosh: A monograph of the British Annelids II, p. 360.

1914. *Lagisca* — , Fauvel: Annelides polychètes non pélagiques provenant des campagne de l'Hirondelle et de la princesse Alice, p. 67.

Localities:

65°00′ N. L.	28°10′ W. L.	800 m.	Wire.	Young	fish	trawl.	West of Iceland.
61°34′ —	19°05′ —	1800 -	—	—	—	—	South of Iceland.
60°00′ —	10°35′ —	1050 -	—	—	—	—	South West of the Faroes.
57°52′ —	9°53′ —	1550 -	—	—	—	—	South of the Faroes.
57°46′ —	9°55′ —	1260 -	—	—	—	—	South of the Faroes.
49°27′ —	13°33′ —	2800 -	—	—	—	—	South West of Ireland.
51°00′ —	11°43′ —	1350—840 -	—	—	—	—	South West of Ireland.

On most of the above-named localities a number of specimens has been taken — on a single station more than twenty of a form which, on the whole, agrees with Mac. Intosh's *Evarne Hubrechti*. According to Mc. Intosh this interesting form has been taken several times, earliest by the "Triton," in 1882 in a depth of 600 fms. Further depths of 500 and 300 fm. are named, and finally the species is said to have been taken at the surface. Fauvel names localities from Newfoundland and the Açores with depths between 1241 and 1294 fm.

Mc. Intosh as well as Fauvel mentions single individuals with somewhat aberrant shape of bristles and greater eyes, and in consequence of these facts Fauvel suggests that such individuals represent the epistocous developed form of the species. This is possible; at any rate all the specimens at my disposal belong to the pelagic and swimming form, and have been taken intermediate, and are captured with the young-fish trawl. The animal is evidently a clever swimmer; several traits in its frame argue this plainly. Among the material in question are found larger as well as smaller specimens. While the largest individual has a length of 16 mm. the smallest mesures only 4 mm.

In the small specimens the setæ are comparatively somewhat longer than in the large, and the form of the animal on the whole short and broad, the result will be that the small specimens, setæ included, are about equal in lenght and width. The largest specimen, the length of which is 16 mm., has a width of 6 mm. When the setæ are included, it measures 11 mm., consequently considerably more than half the length of the animal.

The colour varies as regards my material according to the size of the animal. While the colour of the largest must be described as very dark-violet, almost black-violet, and very iridescent, the young specimens are all slightly pigmented and of the well known milk-white colour, which is always assumed by transparent, pelagic animals when they are thrown down into spirit. Only the pharynx is with the young specimens of a dark colour, while the living animal is likely to have been almost colourless and transparent. This case grew extremely interesting in that another pelagic Polynoid, a *Drieschia* was found in my material among the species here dealt with, also a small, transparent form, but the proboscis of which was strongly pigmented with the same dark-violet colour which was found in the same organ of *H. Hubrechti*. In this connection it must be allowed to call to mind the black and very dark coloured deep-sea fishes which are specially dealt with in Murray and Hjort's work "the Depths of the ocean" and which the authors indicate as living in similar depths as the animal under consideration.

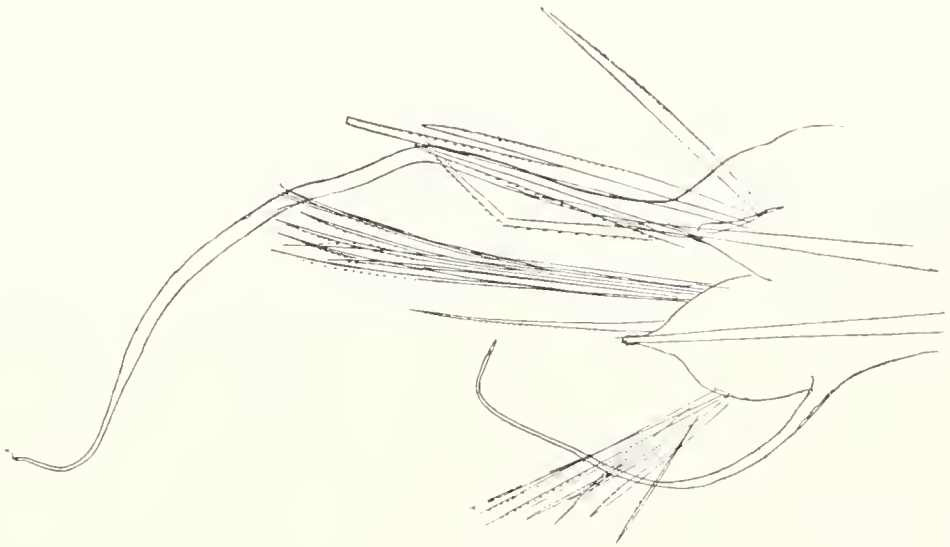


fig. 7.

The cephalic lobe is relatively small, somewhat broader than long; the lateral margins are convex, the incision in the middle is broadest in front and tapers gradually towards the base. The frontal prominences are inconspicuous and more dorsally situated than usual in Polynoids. The eyes are large and strongly pigmented; the two eyes on the same side are situated close together. The palps are rather thick and clumsy and provided with a short terminal filament. The unpaired antenna is long with a conspicuous basal joint. The paired antennæ are short, about one third of the length of the unpaired. The tentacular cirri are long and slender. All these appendages are smooth and devoid of papillæ. (Pl. II, fig. 2).

The scales (Pl. II, fig. 3), which are circular or ovoid, have their entire surface beset with small conical spiny prominences, the dimension of which increases from the inner to the outer edge of the scales. No papillæ are found along the edge.

The foot is well developed in length as well as in height. The length of the dorsal cirrus is conspicuous fig. 7. The dorsal setæ, which are arranged in rosette-like groups and pointing towards all

sides, are straight and pointed. The ventral setæ, which are arranged flabellately and are most delicate in shape, almost capillary, form together an excellent swimming organ. Mc. Intosh compares the aspect of a dorsal bristle with the stem of an Equisetum, considering the collars composed of the spines of the former as resembling the connate leaves of the named plant. The likeness is really rather striking. Another circumstance, not mentioned by Mc. Intosh, is that the bristles are hollow, a fact which likely is related to the pelagic behaviour of the animal; they are exceedingly fragile and in preparations of parapods I have often seen the broken bristles filled with air.

One of the most peculiar features in the animal is the organ indicated by Mc. Intosh as the "caudal rudder[1]." It forms a backwards directed rod, on the ventral side of which is situated a longitudinal membrane; along the dorsal side of the rod is found a lower membrane which, however, is exceedingly delicate and transparent, so that it is difficult to perceive.

Harmothoe badia Théel.

1878. *Polynoe badia*, Théel: Kgl. Sv. Vet. Akad. Handl. Vol. XVI, p. 18.
1883. — , Wirén: Vega Exped. II, p. 390.
1886. *Harmothoe badia*, Levinsen: Kara-Havets Ledorme p. 3.
1909. — , Hj. Ditlevsen: Annal. polych. p. 5.

Locality:

The Ingolf-Exped.	St. 38.	59°12′	N. L.	51°05′	W. L.	1870	fms.	Southern part of the Davis Strait.
—	- 104.	66°23′	—	7°25′	—	957	—	East of Iceland.
—	- 105.	65°34′	—	7°31′	—	762	—	— - —
—	- 110.	66°44′	—	11°33′	—	781	—	— - —
—	- 111.	67°14′	—	8°48′	—	860	—	North East of Iceland.
—	- 116.	70°05′	—	8°26′	—	371	—	South of Jan Mayen.
—	- 117.	69°13′	—	8°23′	—	1003	—	— - —
—	- 118.	68°27′	—	8°20′	—	1060	—	— - —
—	- 119.	67°53′	—	10°19′	—	1010	—	North East of Iceland.
—	- 120.	67°29′	—	11°32′	—	885	—	— — - —
—	- 140.	63°29′	—	6°57′	—	780	—	North of the Faroe Islands.

[1] Since the completion of my manuscript a new paper has been published by P. Fauvel (Annélides polychètes pelagiques provenant des campagnes des yachts Hirondelle et Princesse-Alice (1885—1910), Monaco 1916). In this treatise the author discusses the named organ and the morphology of the same. He describes thoroughly its anatomical structure and communicates as far as possible its physiology, but as to its origin and morphological value his investigations give no positive result; all that he says in this respect is negative.

According to my opinion the organ under consideration is formed by the latest, strongly transformed parapodium on the left side. I must confess that for the present I am not able to prove this, but a preparation of mine gave me the idea (Pl II, fig. 6), which after a re-examination, I, find very likely. One of the most caudal situated parapodia on the same side proves namely a resembling transformation, only in a much lesser degree; on the ventral side of its stem is seen a membrane running longitudinally from the base of the foot towards the tip; it is not difficult to imagine this transformation increasing to such a degree that the result must be the "caudal rudder." In the interest of the truth I must confess, that I have not been able to state the feature here described as constant. The fig. 6, Pl. II has been painted after a small specimen, the hindpart of which has been cut off, then cleared in Glycerine and afterwards kept on a slide in Gelatine Glycerine.

Further, this species has been taken in West-Greenland; Northern Stromfjord, 53 miles from the mouth, 380 m. and in Kvanefjord, 200—240 m.

In East-Greenland it has been taken in Turner Sound 6—0 m., Turner Sound 228 m., Forsblad Fjord and in Ryder Sound 6—0 m.

Besides these findings the investigation steamer "Thor" has taken the species North of Hirtshals, 570 m. and North of Haustholm, 526 m.

The species under consideration proves to have a rather wide geographical range in the Norwegian sea, specially North East and East of Iceland, where it has been taken at a great number of the stations of the Ingolf-Expedition. It proves that the species goes rather far southwards, as it has been taken by the Ingolf-Expedition St. 140. A single finding is present from the western part of the Atlantic from the area South West of Greenland, the Ingolf-Exped. St. 38. The captures by the "Thor" prove that the species reaches as far as Skager Rak. — It is principally a deep-sea form, but while it can be found in shallow water in the Aretic, it is only found in great depths in the boreal area.

Harmothoe Sarsii (Kinb.).

1865. *Antinoë Sarsii*, Malmgren: Nord. Hafs.-Ann. p. 75.
1879. *Polynoë Sarsi*, Théel: Les annél. polych. p. 16.
1883. — , Wirén: Vega-Exped. p. 390.
1897. *Harmothoe Sarsi*, Michaelsen: Polychaetenfauna p. 88.
1900. *Antinoë Sarsi*, Mc. Intosh: Monograph. p. 365.
1911. *Harmothoe Sarsi*, Ditlevsen: Ann. from the Danmark exp. p. 425.

Locality:

West-Greenland:

Northern Strom-fjord; 44 miles from the mouth of the fjord in a little bay. 58 m.

60°07′ N. L. 48°26′ W. L. Captured with young-fish trawl 600 m. W. by the investigation vessel "Tjalfe."

East-Greenland:

Forsblad's Fjord 90—40 fms.

Turner Sound c. 3 fms.

Cap Dalton 9—11 fms.

Further, it has been taken off Jan Mayen, 55 fms.

Almost all the captures are single-captures. Only from the Jan Mayen locality is a rather great number present, namely ten specimens, all relatively large. Some few among them measure c. 37 mm., and, by their breadth, some fragments indicate still larger dimensions. The specimen from Turner Sound is the only one which approaches in size the Jan Mayen specimens.

It appears very striking that a single capture south-west of Greenland is intermediate. I have thoroughly examined the specimen in question, partly in view of the exactness of the diagnosis, partly in order to be able to state facts which could suggest epitokism. However there are no peculiarities

to be found, either in this respect or to justify the establishment of any variety, to say nothing of *nova* species. In all essentials it agrees with the typical *H. Sarsi*, and only a few small differences can be stated.

The specimen, intermediately captured, is 20 mm. in length and 7 mm. in breadth, bristles included. The colour is rather peculiar; every Elytron, which is moreover weekly pigmented, has about in the middle a sharply restricted, in form irregular, black spot.

Each of the elytrophores has on its cephalic side a pigmented spot, and in those parapodia which carry a dorsal cirrus is found, medial to this latter, a prominence pigmented all over the surface, save a distinct line abreast of the animal.

While the shape of the setæ in the whole is typical, some small differences are found. In the Jan Mayen specimens the distal part of the capillary setæ is beset with fine hairs arranged in two rows, a feature which gives them a feather-like aspect; these hairs seem to be lacking in the intermediate captured specimen. The broader ventral setæ in the specimens from Jan Mayen are beset with rather delicate, hairy spines, which successively grow smaller towards the tip. The corresponding setæ in the pelagic captured specimens have fewer and larger spines that are lacking in the distal part of the bristle, which is here quite smooth.

Not considering the above mentioned pigmentation in spots, there is scarcely anything to indicate epitokism. The parapodium and the setæ do not in the least justify the supposition of a greater ability in swimming by the intermediate captured specimen than by the rest.

As I thought that it could be of some interest to see how the Baltic form of this species behaved, I examined more thoroughly a specimen taken west of Rönne (at Bornholm) in a depth of 46 m. The specimen in question is considerably smaller than the Arctic specimens in general; the length is 15 mm., the breadth c. 6 mm. The pigmentation on the scales is more uniform, darkest along the caudal edge. The pigmentation of the body corresponds tolerably to what has been described above, there is a plain pigmentation on the front side of the elytrophores and of the prominence over the dorsal cirrus. Besides this is seen a pigmented transverse line over the dorsum of the body between each of two segments, while the segments themselves show a more diffuse pigmentation, separated from the intersegmental line by an unpigmented part. The bristles agree more with the bristles of the pelagic taken specimen than with the features described in the Jan Mayen specimens.

H. Sarsi is evidently a pronounced Arctic form, which, however, does not appear to be particularly common anywhere. In the Baltic, where it is perhaps most frequently found and where it can be taken as far east as at the Ålands-Islands, it must be considered as a relict, as is already expressed by Malmgren. It does not seem to be fond of great depths, thus it is not found on a single Ingolf-station, and the greatest depth in which it has been taken by the East-Greenland expeditions is 90 fms. However, I must state in this connection that Mc. Intosh mentions a specimen which is said to have been taken in a depth of 1215 fms. by the Porcupine-expedition.

Harmothoe mollis Sars.

1873. *Lœnilla? mollis*, Sars: Bidrag til Christianiafjordens Fauna III, p. 7. Pl. XIV.
1879. — — , Tauber: Annulata Danica p. 81.
1894. *Harmothoe mollis*, Bidenkap: Norges Annulata polychæta, p. 48.
1909. *Antinoë mollis*, Mc. Intosh: A monograph p. 369.

Locality:
44 miles N. W. t. N. off Hojen. 660 m.

A single rather large fragment is present from the named locality, representing the foremost fourteen setæ-carrying segments. It is a quite typical specimen in all respects; the cephalic lobe, the proboscis protruded, and the setæ agree well with the description and figures of Sars. Only the longitudinal fold on the dorsal side of the palps is not prominent.

This species is essentially known from the coast of Norway, but seems to be scarce everywhere. It has been taken at Dröbak in 40—50 fm. by M. Sars, at Lofoten in 150—200 fm. by G. O. Sars and in the Trondhjemsfjord, 120 fm. by Storm. According to Mc. Intosh it has been taken near Donegal and at different places off the Irish coast. The Porcupine-Exped. has taken it in 370—420 fms. According to Verril it has also been found at the coast of America. Tauber indicates that two specimens have been taken by Collin in Oresund at Hellebæk; it is impossible now to elucidate the real facts of this case; at any rate the two specimens in mention are not present in the museum in Copenhagen.

Harmothoe bathydomus n. sp.

Pl. I, figs. 1—5, 7. Pl. II, figs. 10, 11.

?1885. *Harmothoe opalina*, Mc. Intosh: Report on the sc. results of the voyage of H. M. S. Challenger, Zool. Vol. XII, p. 71.

Locality:
Ingolf-Exped. St. 37. 60°17′ N. L. 54°05′ W. L. 1715 fm. W. of South-Greenland.

The material available consists only of a fragment representing the foremost 28 segments of the body save the cephalic lobe and the buccal segment. It measures in length 31 mm.; the width comes to 15 mm.; without setæ only 10 mm.

The cephalic lobe (Pl. I, fig. 7) is somewhat longer than broad, the anterior incision is rather broad and reaches nearly to the middle of the head; the two lateral halves of the latter end on each side in a short, conical, papilliform prominence; these two prominences are not quite parallel but diverge a little. There are no eyes. The palps are long, rather thick and quite smooth; they are thickest at their base and taper gradually towards the apex; they are devoid of terminal filament. The unpaired antenna measures about $^4/_5$ of the length of the palps; it is, like the paired antennæ and the tentacular cirri, beset with a few small clavate papillæ.

Only a few scales are present; they are soft and gelatinous, thin and feebly translucent of a whitish hue; their shape is broadly reniform with the elytrophore situated near hilus. Along the

convex edge of the scale (Pl. I, fig. 4) are seen under a lens several rounded, not very prominent, papilliform bodies, a part of which is also spread over the surface of the lateral half of the scale within the edge.

Examined under the microscope each of these bodies proves to be provided with a single little thread-shaped papilla (Pl. I, fig. 1), a fact which calls to mind Harmothoe mollis, described from the Christianiafjord by Sars. However, the respective shape of the named bodies in the two species is rather different; in H. mollis the bodies in mention are rather lengthened, almost cylindrical or conical with rounded apex; in the species from the Ingolf-Expedition they are short, thick, almost dome-shaped or mammiform; some of them are constricted at the base, rendering the shape more ovoid; but each of them carries on the apex the above named filiform papilla, in aspect quite like those which Sars describes and figures in his H. mollis. In other respects there is hardly any resemblance between the two species.

The proboscis not being protruded I cannot say anything about this organ.

fig. 8.

The foot (fig. 8) is nearly as high as long; its two branches taper to a rather pointed apex; each of them is provided with a strong aciele. The dorsal cirrus — lacking in the parapodium figured — is rather long and tapers in a short filament. Near the base of the dorsal cirrus, and median to this, is situated a warty prominence resembling the elytrophore in those segments where the scales have dropped off, but it is not quite as prominent and a little more pointed in shape. There are no corresponding prominences of that sort in the scale-carrying segments. Some few papillæ of the usual clavate form are seen on the dorsal as well as on the ventral cirrus. The segmental papillæ are only very little prominent.

The setæ of the notopodial branch (Pl. II, figs. 10—11) are relatively slender; they are feebly curved but, for the rest, of the sword-shape usual in the genus of Harmothoe. The dentition along the edge is weak, and in most of these setæ is seen towards the apex a dilatation not very prominent. (Pl. II, fig. 10).

The neuropodial setæ (Pl. I, figs. 2, 3, 5) are very characteristic; the shaft is rather long and thick, the endblade broad and relatively more sharply limited against the shaft than usual; the former tapers gradually towards the apex, which is long and strongly curved and with a single tip. The dentition of the endblade is conspicuous on the concave edge, where a row of rather strong spines is seen. In some of these bristles small acute spines are scattered over a part of the endblade (Pl. I, fig. 5).

At the first examination of this form I judged it to be the species from the Challenger-Expedition, described by Mc. Intosh under the name of *H. opalina*, which has been captured near Juan Fernandez and Valparaiso; it seems to me beyond doubt that the two forms are closely related, especially the form and aspect of the setæ seem to agree completely. As the author, however, does not at all mention papillated bodies on the scales which I have described above, and as I do not

think that so strange and characteristic a fact could be overlooked, I have come to the conclusion that the two forms must be specifically different.

Harmothoe castanea (Mc. Intosh).

1876. *Malmgrenia castanea*, Mc. Intosh: Trans. Zool. soc. IX.
1900. — — , Mc. Intosh: A monogr. Brit. Ann. p. 379.

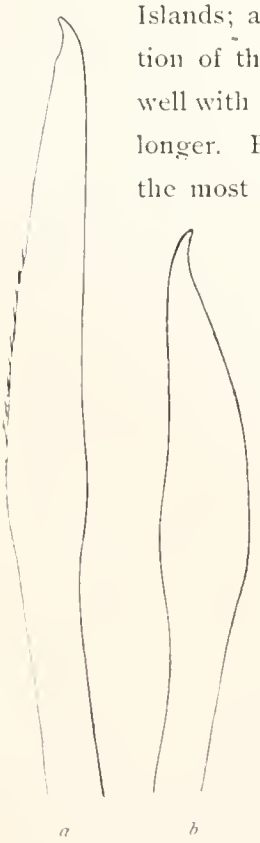
Locality:

The Ingolf-Exped. St. 86. 65°03′ N. L. 23°47′ W. L. 76 fms., Bredefjord, Iceland.

Off the Bisp, E. S. E. Faroe Islands, c. 70 fms.

fig. 9.

In Bredefjord, Iceland the Ingolf-Expedition has taken a single very small specimen which must certainly be referred to this species. From the Faroe Islands are present nine specimens, rather typical and agreeing well with Mc. Intosh's description. They have been taken on Spatangus purpureus, a fact which only further confirms the correctness of the determination. However, some inconspicuous differences are present between the description of the named author, and the specimens from the Faroe Islands; as the specimens from different localities are stated to vary in regard to the construction of the setæ, I shall here point out the result of my examination. The parapodia agree well with the description of Mc. Intosh (fig. 9). Only the ventral bristles seem to be relatively longer. Further the development of the transverse spiny rows seems to be more feeble, and the most ventral of the named bristles are quite smooth, as seen in my figures (figs. 10 *a*, *b*).



a *b*

fig. 10.

The geographical range of this species is now stated to stretch between Iceland and Valencia, and must be supposed to coincide in the named region with that of *Spatangus purpureus*.

Harmothoe acanellæ (Verrill.).

Pl. I, figs. 6, 8, 9, 13. Pl. II, fig. 4.

1883. *Polynoë acanellæ*, Verrill: Results of the explorations made by the steamer Albatross off the Northern coast of the U. S. in 1883, p. 525.
1885. — — , Verrill: Notice of recent addit. to the marine Invertebrata of the North eastern coast of America. Proc. U. S. Nat. M. t. VIII, p. 424.

Localities:

Ingolf-Exped. St. 46. 61°32′ N. L. 11°36′ W. L. 720 fms. South of Iceland.
— - 10. 64°24′ — 28°50′ - 788 — Danmark Strait.
— - 39. 62°00′ — 22°38′ — 865 — South of Iceland.

Ingolf-Exped. St.	40.	62°00′	N. L.	21°36′	W. L.	845 fms.	South of Iceland.			
—	- 67.	61°30′	—	22°30′	—	975 —	—	-	—	
—	- 69.	62°40′	—	22°17′	—	589 —	—	-	—	
—	- 68.	62°06′	—	22°30′	—	843 —	—	-	—	
—	- 25.	63°30′	—	54°25′	—	582 —	Davis Strait.			

Further it has been taken at 66°49′ N. L. 56°28′ W. L. 235 fms., Davis Strait; and at 61°08 N. L. 9°56′ W. L. 900 m. S. W. of the Faroe Islands. Finally at 63°05′ N. L. 20°07′ W. L. 557 m., south of Iceland.

Of the above named stations, all those from the Ingolf-Expedition with the exception of two belong to a restricted area south of Iceland, and the last named locality belongs to the same area, not far from the Ingolf-Expedition's St. 69. The station S. W. of the Faroe Islands lies somewhat more easterly. Two localities belong to Davis Strait. The depths lie between 900 and 2000 m.; only one specimen originates from more shallow water, namely 557 m.

The species lives associated with corals on which it lives. Verrill has described it from *Isidella arbuscula* (*Acanella Normanni*). Almost the entire material at my disposal originates from the same species. Only two captures, viz. from the Ingolf Stations 46 and 10, have been taken on *Anthomastus grandiflorus*.

On the *Isidella arbuscula* the worm is found sitting on the branches of the coral and making use of the long and flexible hindpart of its body, which it evidently employs just as an arboreal mammal does its prehensile tail; it is always the ventral side of the abdomen which turns towards the branch of the coral to which the animal is attached. From the attitudes occupied by the different specimens when attached to the branches of the coral and preserved together with these, it is to be supposed that the worm is able to move about on the coral. I find it probable that it is also able to swim, and this supposition is founded on the shape of the feet. For one thing the dorsal cirri are very long, secondly the dorsal setæ are few, translucent and provided with only few rows of spines, the ventral setæ have a relatively broad endblade. The long dorsal cirri as well as the shape of the dorsal setæ call to mind the corresponding organs of the pelagic living *Harmothoe Hubrechti*, Mc. Intosh. But while the latter is a veritable Plankton-organism —, at any rate periodically — I imagine the *H. acanellæ* only swimming from one coral-bush to another, where it then takes hold of a branch with its abdomen, f. i. as a *Hippocampus* with his tail takes hold of a plant.

The shape of the animal is very characteristic, the hindmost part of the body being more slender as well as thinner than the rest. At a first glance I suggested the abdomen of the specimen under examination regenerated; but when I perceived that all the specimens present had the same peculiar aspect, and that the hindmost part of the body was devoid of scales, while each segment was provided with a pair of very long dorsal cirri, I became concious that the case was normal.

The closer examination gave the following:

The greatest specimens reach a length of c. 40 mm., a few somewhat more. In one individual, the length of which was accurately 40 mm., the greatest width was c. 9 mm.; without setæ only 6 mm. The shape of the animal is consequently rather slender in the whole.

Scales are present on the following segments: 2, 4, 5, 7, 9, 11 .... 21, 23, 26, 29, 32. The matter stands thus, that the first segments behave as generally in the Polynoids, from the segment 23, we

have the same case as we know in Admetella, namely that two segments are passed over. The last elytron in H. acanellæ is found on segment 32, whereafter each of the following rings carry on each side a long thread-shaped dorsal cirrus. This part of the animal consists of 17 segments. The anal ring bears two exceedingly long anal cirri.

In all there are 15 pairs of scales. They do not seem to cover the dorsum thoroughly, but leave a narrow streak uncovered in the middle.

The head (Pl. I, fig. 13) is somewhat broader than long. The median incision is rather narrow, but can be followed almost to the base of the cephalic lobe. The two frontal prominences are distinct, directed forwards and not diverging conspicuously. The eyes are relatively large; the foremost pair somewhat prominent, lens carrying. The hindmost two are situated at a rather long distance from each other near the base of the cephalic lobe. The unpaired antenna is considerably long, somewhat longer than the palps. The paired antennæ are about one third of the length of the unpaired antenna. The palps are thick, taper gradually towards the very short terminal filament. The tentacular cirri are somewhat longer than the unpaired antenna. None of these appendages are provided with papillæ.

The foremost scales are almost circular, the others more ovoid in shape, the hindmost broadly reniform. They are densely beset with minute conical bodies arranged in more or less regular rows over the surface of the scale; along the outer edge are found some spiny prominences not very conspicuous and a few thread-shaped papillæ.

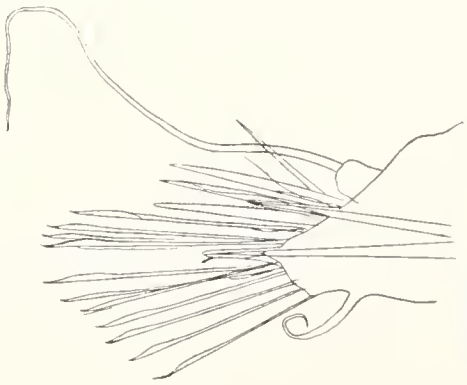


fig. 11.

The notopodial branch of the foot is but feebly developed and only few dorsal setæ are present. The neuropodial branch bears a bundle of flabellately arranged setæ. The dorsal cirrus is very long and slender and tapers gradually towards the tip. The ventral cirrus is relatively conspicuous in length but rather slender. The segmental papillæ are distinct and rather prominent.

The dorsal setæ, of which seldom more than 6 to 8 are present, sometimes only 4 to 5, are of the usual sword-shape with transverse rows of small spines; they are rather straight and relatively strong. The distal part of the bristle is entirely devoid of spines. (Pl. I, fig. 9).

The ventral setæ are provided with a rather long shaft, the endblade is relatively short and broad. They ressemble the ventral bristles of Harmothoe bathydomus, but the tip is only inconspicuously curved. (Pl. I, fig. 8).

The ventral setæ of the first parapodium differ considerably from those in the other feet. They are all much more slender, the endblade relatively much longer; besides, the latter is strongly bent, so that it forms an angle with the proximal part of the bristle. (Pl. II, fig. 4). In this parapodium the ventral cirrus is very long.

Harmothoe nivea (M. Sars).

1863. *Polynoë nivea*, M. Sars: Geologiske og zoologiske Iagttagelser, anstillede paa en Rejse &c. Nyt Mag. f. Naturv. XII. Christiania, p. 291.

1867. *Leucia nivea*, Malmgren: Ann. polych. p. 13.

1878—80. *Leucia nivea*, Storm: Bidrag til Trondhjemsfjordens Fauna. Kgl. Norske Vid. Selsk. Skr. Trondhjem p. 33.

1880. *Polynoë zonata*, Langerhans: Die Wurmfauna von Madeira II. Z. w. Z. Br. XXXIII, p. 275.

1894. *Leucia nivea*, Bidenkap: Norges Ann. polych. p. 63.

1914. *Harmothoe echinopustulata*, Fauvel: Annél. polych. non pelagiques p. 58.

Locality:

Trondhjemsfjord; off Rodberg 300—150 m.

This species has had a rather strange destiny, as it has been described three times as sp. nov., first by Sars in 1866; secondly by Langerhans, who got it from Madeira and has overlooked it in the paper of Sars. For the third time in 1914 by Fauvel, who describes it in his grand paper dealing with the Annelids brought home by the expeditions started by the Prince of Monaco. The last named expeditions have found this species at the Açores.

In the material examined by me, only a fragment is present, a little more than a centimeter in length. It consists of the hindmost part of the animal, and some scales still remain. Thus I have not been able to study the head and the foremost part of the body. However, there is no doubt about the identity of the species; the characteristic bodies on the scales, which have caused Fauvel to give the animal the most significant name of "*echinopustulata*," will not admit of any mistake. Also the setæ are characteristic. Besides Dr. Wollebæk, Christiania Museum has been kind enough to lend me a *Leucia nivea* which quite agrees with the specimen from Trondhjemsfjord at my disposal.

The species, which seems to have a rather restricted distribution, is known from Norway, vide Bidenkap, from Bergensfjord, Trondhjemsfjord and Bakkefjord.

The depths vary from c. 30 to 200 fm.

Harmothoe oculinarum Storm.

Pl. II, fig. 5, 13. Pl. III, fig. 6, 8.

1878. *Læuilla oculinarum*, Storm: Bidrag til Trondhjemsfjordens Fauna. Kgl. N. Vid. Selsk. Skr. i Trondhjem p. 32.

1894. *Harmothoe oculinarum*, Bidenkap: Norges Ann. polych. p. 47.

Locality:

Trondhjemsfjord; Skarnsund. 200—150 m.

63°21′ N. L. 16°27′ W. L. 500—560 m. South of Iceland.

According to Bidenkap the species is hitherto known only from Norway, where it seems to be rather common between Hardanger and Bodo. It is said to live on Oculina.

As the description of the animal given by Storm is very compendious, and as no illustrations accompany the description, I adressed Dr. Nordgaard in Drontheim, who was kind enough to send me some specimens for examination.

Of the material at my disposal two specimens originate from Trondhjems-Fjord, while one has been taken in the Atlantic, south of Iceland, at the above named locality. At the examination there

proved to be some differences between the specimens from the Trondhjems-Fjord on one side and the Atlantic specimen on the other. The two from the Trondhjems-Fjord agree best with the specimens sent by Dr. Nordgaard. At any rate the deviations are not so great that they will admit of the establishment of a new species for the Atlantic specimen.

In the two specimens from Drontheim the cephalic lobe shows a peculiar feature, namely that the two frontal prominences are pointing towards each other. It is a case that I do not remember to have seen in any other Polynoid (Pl. III, fig. 8). As known, the frontal prominences usually diverge in the Polynoids; I also have seem them almost parallel e. g. in H. ingolfiana (Pl. II, fig. 15), but I do not remember any Polynoid where they are distinctly converging, as in the species in question. It concerns the two specimens from the Trondhjems-Fjord but not the Atlantic specimen; in this the frontal prominences are diverging as usual in the Polynoids. (Pl. III, fig. 6).

In the two specimens from Drontheim the paired tentacles are of the well known cylindrical shape, with an extension at the base of the terminal filament (Pl. III, fig. 8); in the Atlantic specimen the same organs are of the same thickness all over, and have no extension under the terminal filament, and this latter is conspicuously longer than in the Drontheim-individuals. The unpaired tentacle is lacking in all the 3 individuals at my disposal. The palps are rather thick at their base in all the specimens, but the terminal filament is decidedly longer in the Atlantic specimen. Of resemblances regarding the cephalic lobe the median incision, which only reaches to the middle of the head, and the position of the eyes can be pointed out.

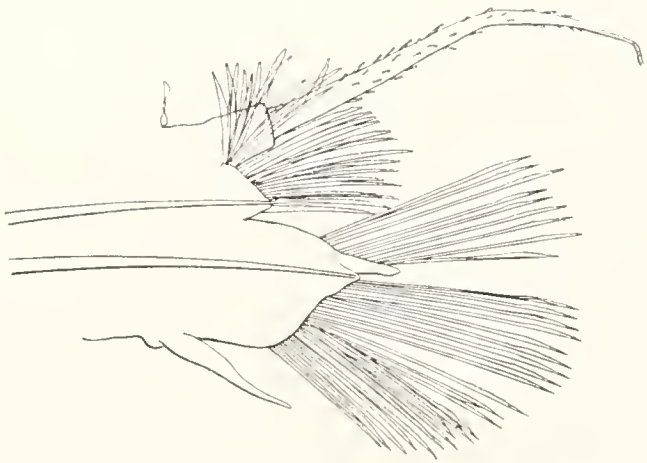


fig. 12.

As to the scales I find them agreeing well with the description of Storm: "oculo nudo glaberrima ciliis sat crassis sale microscopio modo conspicuis in superficie postica instructa, granulis nonnellis minimis anuliformibus intermixtis, dorsum ut in precedente tegentia." I shall only remark that the microscopical bodies which Storm characterizes as annuliform appear to me to be small conical prominences, the interior cavity of which causes the bodies to appear to be excavated in the tip.

What here is said about the scales only concerns the Drontheim-specimens. I have figured a scale from the individual from the Atlantic Pl. II, fig. 5. First papillæ are wanting almost entirely in this scale; secondly the small conical bodies are more numerous, and spread densely over the whole surface of the scale; I must add that their number varies not inconsiderably in the different scales. What, meanwhile, is found in the scale of the Atlantic specimen and is not present in the specimens from Drontheim, nor in the specimens lent me by Dr. Nordgaard, is a row of rather large bodies along the convex edge of the scale (Pl. II, fig. 5). These bodies are at any rate distinctly ring-shaped; they are seen at high magnifying power in Pl. II, fig. 13, where a part of the mentioned edge of the elytron is figured. It is also seen that the edge is somewhat thickened, as can be seen in all specimens examined by me. Some of the microscopical bodies are also seen in the same figure.

The scales cover the dorsum in its whole breadth; the milky colour of the former is very characteristic, and is present in all the specimens. This is also remarked by Storm: "Color totius corporis et elytrorum lacteus".

The shape of the foot is the same in all the specimens (fig. 12). Also the shape of the bristles is identical.

Peculiar to the foot is, that the notopodial branch is somewhat reduced, and that the neuropodial branch is provided with a little flab or tentacle-like prominence which projects somewhat over the acicle. The dorsal cirrus is rather short and beset with short clavate papillæ.

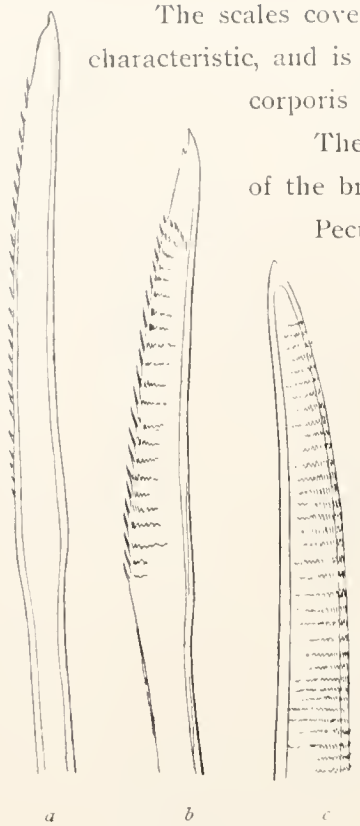


fig. 13.

The neuropodial setæ are long-shafted, with a short or middle-long endblade, the spines of which are only a little prominent. Under the tip, which is strongly bent, is found a little acute tooth. As a rule this tooth is worn off, (fig. 13 *a*), but in the new setæ it is easily seen, (fig. 13 *b*).

The reasons which for the present have made me keep together specifically the specimens from the Trondhjems-Fjord and from the Atlantic are the following:

It is known that the species of Storm lives on Oculina; the Atlantic specimen which has been taken south of Iceland in a depth of c. 500 fms. originates just from the Oculina-area.

The parapodia and the setæ can not be distinguished in the two forms. Last not least, only one specimen is present from the Atlantic; I therefore consider it best to wait for further captures from this locality before forming an opinion concerning the question.

Harmothoe ingolfiana n. sp.

Pl. I, fig. 12, 14. Pl. II, fig. 15.

Locality:

The Ingolf-Exped. St. 67. 61°30′ N. L. 22°30′ W. L. 975 fms. South of Iceland.

A number of specimens, c. 10 in all, are present from the above named locality. Only half of these are, however, tolerably entire. The rest are represented by larger or smaller fragments. They belong to a form which I have not been able to refer to any known species. It is a typical Harmothoe of rather small size. Almost all the specimens present are alike in this respect. They measure c. 14 mm. in length. The corresponding breadth is, with setæ, 6 mm., without setæ c. 5 mm. One of the specimens, of which only the foremost half (c. 15 segments) is present, is, however, considerably larger; it measures in length 10 mm. and has a breadth of 9 mm. with setæ and c. 7 mm. without setæ.

The cephalic lobe is of the usual Harmothoid type, but it is rather clumsy in shape; the median incision is unusually short and reaches not more than one third of the length of the head; the frontal prominences are small and rounded. No eyes are seen. The median unpaired tentacle has a relatively stout basal joint; the tentacle itself is rather short, the terminal filament long, about the half of the length of the tentacle. The paired tentacles are extraordinarily short; they do not reach the length

of the basal joint of the unpaired tentacle; their terminal filament is inconspicuous. The palps are of usual length and shape, with a relatively short terminal filament. The tentacular cirri are rather short. While the palps are smooth, the tentacles and tentacular cirri are beset with sparcely spread clavate papillæ of the usual form.

fig. 14.

The foot (fig. 14) is about as high as long; the notopodial branch somewhat smaller than the neuropodial. The acicles are strong; the dorsal cirrus is medium length and slender, beset with sparcely spread papillæ like the tentacles and the tentacular cirri. The ventral cirrus is rather short and of the usual shape. Segmental papillæ are distinct; in the hindmost half of the body they are longer than in the front part.

The dorsal bristles (fig. 15 *a*) are of the usual sword-shape in this genus. The transverse rows of spines are rather prominent, the spines themselves are rather stout but acute. The distal part of the bristle is devoid of spines of a length about corresponding with the case i H. imbricata.

The ventral setæ are rather different according to their position; the most ventral of them has a rather short end-leaf, the spines of which are very delicate, almost hairlike; the most distal of these spines differ from the others, being a stout and clumsy thorn diverging more from the longitudinal axis of the bristle than the others (fig. 15 *b*, *c*). The tip of the bristle calls to mind that in Harmothoe imbricata; the tooth under the apex is however relatively weaker. The most dorsally situated of the neuropodial setæ have a considerable long endblade provided with a strong and abundant supply of spines; the tip of these bristles is straighter than that of the other ventral setæ, the secondary tooth is stronger (fig. 15 *d*).

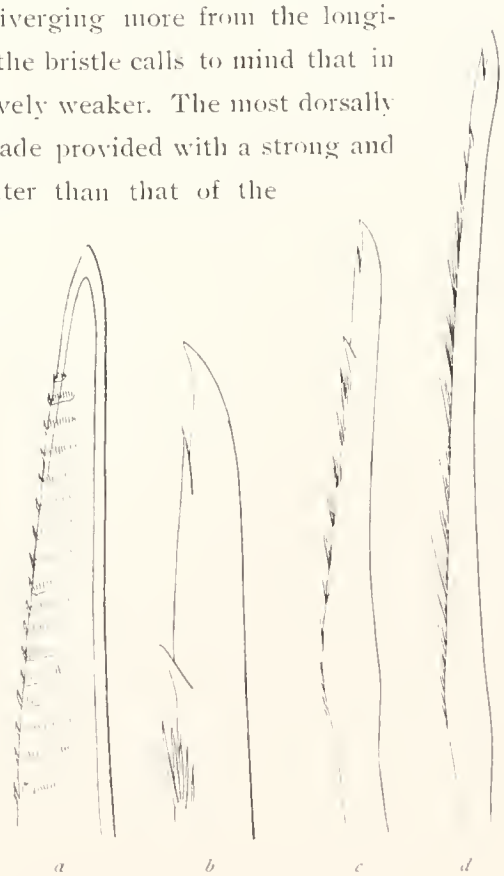


fig. 15.

The elytra which are relatively large, and seem to cover the dorsum in its whole breadth, are present to the number of 15. They are of the usual form, the foremost more or less circular; more caudally they grow successively more oblong to renal-shaped (Pl. I, fig. 14). The surface of the elytron is densely beset with small chitinous prominences, smallest at the cephalic end of the scale and growing larger along the latero-caudal edge. The smallest of these prominences have the well-known conical shape; the larger tend to divide in the tip and show forms with 2—3 and 4 branches. They call to mind in this stage the bodies we know in Gattyana cirrosa. The bodies in the species in mention, however, are dividing further, and form along the edge of the elytron the peculiar shapes which I have figured Pl. I, fig. 12 — resembling old stubs of trees. Along the edge are found, besides these bodies, long thread-shaped papillæ sparcely spread. (Pl. I, fig. 12).

As all the specimens present originate from the same locality nothing can be said about the geographical range of this species. That it is a pronounced deep-sea form, is beyond doubt.

Harmothoe violacea Storm.

1879. *Lænilla violacea*, Storm: Kgl. N. Vid. Selsk. Skr. p. 32.
1880. — — , Storm: Kgl. N. Vid. Selsk. Skr. p. 124.
?1894. *Harmothoe glabra*, Bidenkap: Arch. f. Mathem. og Naturv. p. 5.
1894. *violacea*, Bidenkap: Norges Ann. polych. p. 47.

Locality:
Off Rodberg; Trondhjems-fjord. 300—350 m.
62°57′ N. L. 19°58′ W. L. 957 m.

Some fragments are present, unfortunately in a rather bad condition, so that it is with some hesitation that I venture to refer them to Storm's species. No scales are present, but the bristles resemble very much those of a specimen of H. violacea which Storm has presented to our museum.

In his paper on the Annulata polychæta of Norway, Bidenkap mentions this species as identic with Malmgren's *Lænilla glabra* and he refers to his paper: "Undersogelser over Annulata polychæta" in Archiv for Mathematik og Naturvidenskab 1894, where he deals with a single specimen taken at Brönnmelhuk in 60—80 fms. by the author himself. He remarks that this specimen agrees in all respects with the description of Malmgren of *L. glabra*, except the position of the eyes, and he adds, that the small chitinous bodies on the scales, the structure of the bristles, the relative length of the appendages of the cephalic lobe & c. are entirely typical. I shall hereto only remark that if the specimen here mentioned by Bidenkap is identic with Malmgren's *L. glabra*, it cannot be referred to Storm's *H. violacea*. By the kindnes of Professor Théel I have borrowed from the "Riksmuseum" in Stockholm Malmgren's specimen of *H. glabra*, and the first glance proved the two forms to be different to such a degree that no confounding is possible. Without any discussion of the problem Bidenkap here unites two well defined species, and only succeeds in increasing the previously great confusion in the systematizing of this group.

Harmothoe vesiculosa n. sp.

Pl. I, fig. 10, 11.

Locality:
49°25′ N. L. 12°20′ W. L. 1180 m. South west of Ireland.

The species has been taken by the investigation-steamer "Thor"; a great number of fragments are present, all in a rather bad condition. All appendages are lacking, even the parapodia are in several segments torn off or partly torn off. As far as it is possible to judge — not a single entire specimen is found and all the fragments represent front parts — the size of the animal has been about one and a half centimeter. The breadth, with setæ, makes about 7 mm. A few fragments, however, are somewhat smaller. A single fragment representing about the foremost half of a specimen is found in a somewhat better state of preservation than the rest. A deep brown-violet colour remains on the dorsum, and even a few scales were found *in situ*. The following description refers mainly to this specimen.

The cephalic lobe is of the ordinary polynoid shape (Pl. I, fig. 10). The sagittal incision reaches about to the middle. The frontal prominences are rather conspicuous and terminate in an acute tip.

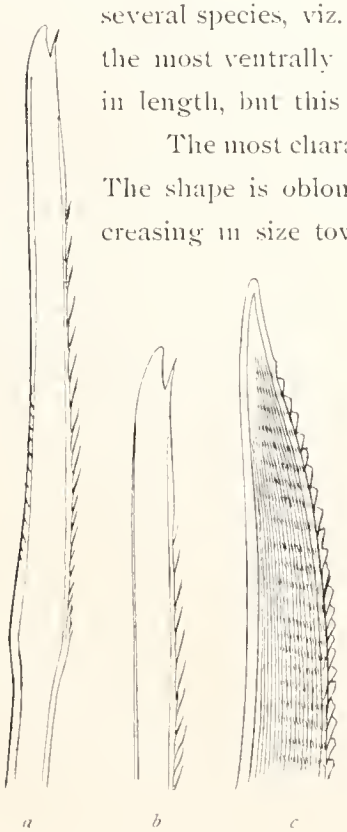
The eyes are relatively large, the foremost pair is situated laterally and is scarcely seen when the animal is regarded from above. The hindmost pair is situated near the base of the head. Of the cephalic appendages only the two paired tentacles are present; they are short, fusiform and smooth, devoid of papillæ.

The parapodium (fig. 16) is somewhat longer than high; the neuropodial branch stronger and more prominent than the notopodial part. The bristles are numerous. About the dorsal cirri nothing can be said; they are all lacking. The ventral cirri are short, devoid of papillæ and taper gradually towards the tip. Segmental papillæ are distinct.

fig. 16.

The dorsal setæ, in length about one third of the ventral, are of the usual sword-shape and beset with numerous transverse rows of spines, reaching nearly to the tip of the bristle (fig. 17 *c*). The ventral setæ are only a little characteristic; they remind one in some degree of the same bristles in H. imbricata, but the end-blade is somewhat longer and more slender; the tip is bifid, the terminal hook is small and the secondary process is somewhat weaker and slightly bent outwards, a case found in several species, viz. H. multisetosa Moore. All the ventral setæ are extraordinarily uniform; from the most ventrally situated to those situated most dorsally the end-blade increases successively in length, but this is also the single difference (fig. 17 *a*, *b*).

The most characteristic point with this species, and quite peculiar, is the elytron (Pl. I, fig. 11). The shape is oblong to renal-shaped; the surface is beset with small conical prominences increasing in size towards the outer edge of the scale. Along the former is found a number of densely-arranged translucent vesicles, about twenty, of which those in the middle are the largest and taper gradually in size to both sides. Along the hind-edge is found a sparce supply of short papillæ.



a *b* *c*

fig. 17.

Harmothoe aspera (A. Hansen).

Pl. II, fig. 7.

1878. *Polynoë aspera*, A. Hansen: Nyt Mag. f. Naturv. Bd. 24, p. 1.
1879. — , Théel: Annél. polych. des mers de la Now. Zembla p. 10.
1882. — , A. Hansen: Norsk. Nordhavs Exped. p. 5.
1889. *Harmothoe aspera*, Trantsch: Beitr. zur Kentn. d. Polyn. Spitzbergen p. 71.
1911. — *multisetosa*, Ditlevsen: Ann. Danm. Exp. p. 412.
1912. — *aspera*, Augener: Polych. v. Frantz Josephs-Land I. p. 207.

Locality:

The Ingolf-Exped. St. 32. 66°35′ N. L. 56°38′ W. L. 318. Davis Strait.

Only one specimen is present. It agrees well with the form mentioned in my paper from the Danmark-Expedition under the name of *H. multisetosa*, Moore. Some of the scales are more lengthened and narrower in shape, as shown in my figure Pl. II, fig. 7.

As Augener in his paper dealing with the Polychæta from Frantz Joseph's Land expresses the supposition that the species in mention should be identic with the form described by Arm. Hansen in 1878 under the name of *Harmothoe aspera*, I addressed myself to Professor Brinkmann in Bergen, who kindly lent me the original specimen of A. Hansen for examination. According to this it is beyond doubt that Augener is right. I shall only add, that Augener is guilty of a mistake, when he writes about the species in mention that it "von Ditlevsen unter dem Namen Lagisca multisetosa aus Nordgrönland u. s. w."; I have mentioned the species as Harmothoe multisetosa, not as Lagisca. That it must be a mistake, I conclude from the fact that the name is right in the synonymi-list of Augener in front of his paper dealing with the species concerned.

As to the identity of Moores *Lagisca multisetosa* which, according to Augener, later has proved to originate from Alaska, not from Greenland, my point of view is the same as that of Augener; it may be possible that the two forms are identic. The question cannot be settled without further investigations.

Harmothoe villosa (Mgrn.).

1865. *Eucranta villosa*, Malmgren: Nord. Hafs-Ann. p. 80.
1883. *Harmothoe villosa*, Levinsen: Nord. Ann. p. 193.
1894. — — , Bidenkap: Norges Ann. polych. p. 52.
1911. — — , Ditlevsen: Annel. from the Danm. Exped. p. 416.
1912. *Eucranta* — , Small: Rep. on the Ann. polych. coll. in the North Sea and adj. parts by the Scotch Fishery Board Vessel, Goldseeker, Part I, p. 181. Pl. VI, figs. 3—5.

Localities:

The Ingolf-Expedition has taken this species at two stations, namely: St. 25. 63°30′ N. L. 54°25′ W. L., 582 fm. and St. 32. 66°35′ N. L. 56°38′ W. L., 318 fm., both localities in Davis Strait.

Further it has been taken in 63°05′ N. L. 20°7′ W. L. 1106 m., in the Atlantic, S. W. of Iceland.

From West Greenland 6 specimens are present taken on 6 different places in "Bredefjord"; the depths, in which it is captured here vary from 310 to 700 m.

From East Greenland one specimen is present, taken S. E. of Sabine Island in 110 fm.

In the above named paper of Small, the literature as to this species is mentioned, and a thorough description is given of a fragment with 16 segments, taken by the Scotch investigation ship "Goldseeker." In one respect my observations on this species differ decidedly from those of Small. He writes about his specimen: "The eyes are large." In all the specimens at my disposal the eyes are absolutely small; in that respect my specimens agree completely with Malmgrens figure (Taf. X, fig. 9 *a*) in which the eyes are remarkably small for a Polynoid. But it is possible that the species in question varies in this respect; it seems evident to me that the species discussed by Small must really be H. villosa, his figures of the bristles plainly show that, and his description also agrees with my observations in other respects. As to the dorsal setæ, Small points out that these "especially the superior are more curved than Malmgren's figure indicates." I can only say that I suppose Malmgren's figure to be correct in that respect as far as regards one of the lower dorsal setæ.

Several among these are not more curved than Malmgren's figure indicates. Of course it is awkward to choose one of the few rather straight dorsal setæ when the greater part are far more curved. Small himself draws one of the more curved dorsal setæ, and his figure, especially concerning the small spines on the bristles, is more correct than those of Malmgren; in so far Small's figures eke out that of Malmgren, but, according to my opinion it had been more opportune if Small had given one figure more, namely of one of the most curved dorsal bristles which are so strongly curved that the two halves of the bristle, which are bent towards each other, form a right angle. Dorsal setæ of such a shape, so strongly curved are found in only very few species. They are found in the genus Gattyana, specially in G. cirrosa. As also the shape of the ventral setæ of H. villosa call to mind those of the genus Gattyana, it can scarcely be surprising that I looked very thoroughly for threadshaped dorsal bristles in H. villosa; if such had been present I would without hesitation have proposed to refer H. villosa to the genus Gattyana; now it may admit of doubt if it is to be done or not. That the species in mention is closely related to the genus Gattyana is, according to my opinion, beyond doubt; of traits of character approximate to Gattyana I shall name: the mentioned, strongly bent dorsal setæ; the shape of the ventral setæ, especially the shape of the endblade; further the dense supply of papillæ on the scales, partly on the cirri too, specially the proximal half of the dorsal cirri is densely beset with papillæ. Finally, last not least, the small bodies on the scales show tendency to ramification of the apex, a case which is well known in the genus Gattyana. I can add that the segmental papillæ are rather prominent, about of the same length as the ventral cirri. All in all I find it a matter of taste whether it is to be referred to the genus Harmothoe or Gattyana; it represents a real transitional form between the two genera in mention; perhaps it really is closer related to *Gattyana* than to *Harmothoe*.

As regards the geographical distribution it is possible to state that *H. villosa* is widely spread over the Norwegian sea and that it enters the Atlantic. In Greenland it is found on the east as well as on the west coast. It seems to be common in the deeper regions of the Greenland fjords.

Admetella longepedata Mc. Int.

1885. *Polynoë* (*Admetella*) *longepedata*, Mc. Intosh: Challenger report, Vol. XII, p. 124. Pl. XII, A. fig. 17. XIV, fig. 5. XX, fig. 6.

1906. *Admetella longepedata*, Augener: Westindische Polychæten. Bull. Mus. Comp. Zool. Vol. XLIII, p. 123.

1912. — — , Ehlers: Valdivia Exped. Bd. 16, p. 40. Taf. II, figs. 10, 11. Taf. III, figs. 1, 5.

Locality:

Ingolf-Exped. St. 18. 61°44′ N. L. 30°29′ W. L. 1135 fm.

The present species has first been captured by the Challenger, East of Prince Edward's island, S. W. of Africa in a depth of 1375 fm. Further, Augener gives an account of a specimen from the West Indies from a depth of 291 fm., and finally the species has been taken by the Valdivia Expedition at the coast of Somali in 1242 fms. When we hereto add the locality from the Ingolf-Expedition from the northern part of the Atlantic we can scarcely doubt that we here have a deep-sea form with a very large geographical range.

The specimen taken by the Ingolf-Expedition is in tolerably good condition. It has a length of c. 5 ctm.; the greatest width, mesured from the apex of one parapodium to that of another is 18 mm. The width of the body, save the parapods, gives only 5 mm.

As in all hitherto taken specimens all the scales are lost. It is possible that the hindmost part of the animal has regenerated; the segments are here very small, and the limits between them are effaced; therefore it is difficult to state the number of segments for the entire animal tolerably exactly; surely it must be between 50 and 60.

The arrangement of the scales in the specimen from the Ingolf-Expedition is just as indicated by Augener, consequently 2, 4, 5, 7 &c. until the segment 23, hereafter two are passed over so that we get 23, 26, 29 &c. a fact which also agrees with the indication of Ehlers for the specimen taken by the Valdivia-Expedition.

On the cephalic lobe both of the paired antennæ are present, the unpaired is lacking; one of the leaf-shaped appendices at the base of the former is present; it is much like that figured by Ehlers (Valdivia-Exped. T. II, fig. 11), is perhaps a little more lengthened. The edge is on both sides somewhat involute, as if it could have enclosed the corresponding unpaired antenna. That this appendix should be, as suggested by Augener, a relaxed flap of the skin nothing seems to argue; nor does it seem reasonable to make it homologous with the "Frontalhöcker" usually found in the cephalic lobe of the Polynoids as indicated by Ehlers; it is the sort of theory that can neither be proved nor disproved until material better fitted for examination is present.

The palps are big, and taper gradually towards the apex, and the longitudinal elevated list on their dorsal side, indicated on the figure by Ehlers of the specimen from the Valdivia-Expedition, seems to be more prominent in the individual taken by the Ingolf, where it can be followed from the basis of the palp towards the apex. Such an elevated list or fold on the dorsal side is, for the rest, not uncommon among the polynoids; we know it from *Harmothoe mollis*, *H. floccosa*, *H. setosissima* and others. The wall situated between the palps is also present in the specimen from the Ingolf-Expedition, but is, however, not so prominent as described and figured by Ehlers, probably on account of the fact that the proboscis in the Ingolf-specimen is almost completely retracted.

Behind the cephalic lobe a low projection is seen, lowest in the middle, while the side-parts are more prominent; this formation I suppose to be a nuchal flab, homologous with the well known flab in *Alentia gelatinosa*. Augener writes l. c. p. 124: "Eine entfernte Ähnlickkeit der *Admetella* mit *Alentia gelatinosa* spricht sich in der Gestaltung der an den Kopflappen autossenden Rückenpartie aus, welche ungefähr ein Aussehen hat, wie es Alentia zeigen würde, wenn man sich deren blattförmigen Nuchallappen entfernt denkt." I can agree with Augener in his opinion about the "entfernte Ähnlichkeit" between *Admetella* and *Alentia*, but I do not understand his meaning about the nuchal flab: He writes about the "blattförmigen Nuchallappen" in *Alentia*, but *Alentia* has only one flab, and A. has not seen the nuchal projection in *Admetella*, which in my opinion is the only base for a comparison between the two forms in this respect. Ehlers also mentions this nuchal projection; he writes: "Auf der Rückenfläche ist, dem Anscheine nach, ein breiter Nackenhöcker vorhanden."

The feet agree well with the figures of Ehlers. The "oft blasenartig durchscheidende Firste" on the dorsal side of the foot, as Ehlers mentions, is very prominent, and, I can add, just as prominent

in the not elytron-carrying feet as in the elytron-carrying. Dorsal as well as ventral setæ are present, but they are all in rather bad condition, so that it is very difficult to state how their apices are shaped; there are a lot of those with bifid tip, which are figured by Mc. Intosh, but I am inclined to consider them as originated by fracture and not as intact setæ. I have found a few of those figured by Ehlers l. c. T. II, figs. 3, 4 and 5.

Enipo Torelli (Malmgren).

1865. *Nemidia Torelli*, Malmgren: Nord. Hafs-Ann. p. 84.
1883. *Enipo Torelli*, Levinsen: Nord. Ann. p. 39.

Locality:
Brede-fjord, West-Greenland, 10—15 m. gravel and clay.
— — , 310—320 - clay with stoms.

I follow Levinsen in uniting in one genus the two rather isolated forms *Enipo Kinbergi* and *Nemidia Torelli*, Malmgren. While *Enipo Kinbergi* seems to be a boreal form, not scarce in Danish Seas, *Enipo Torelli* is a pronounced arctic species. The two specimens from Brede-fjord in the southern part of West-Greenland, which I have had under examination are both typical and agree well with the description of Malmgren.

Macellicephala violacea (Lev.).

1887. *Oligolepis violacea*, Levinsen: Kara-Havets Ledorme, p. 4.
1907. *Macellicephala violacea*, Wirén: Zool. Studier tillägnade Prof. Tullberg p. 287.

Locality:
The Ingolf-Exped. has taken the species on two localities:
St. 103. 66°23′ N. L. 8°52′ W. L. 579 fms. N. O. of Iceland.
- 116. 70°05′ — 8°26′ - 371 - S. of Jan Mayen.

Further is present one specimen from the neighbourhood of Ingolf's Station 116, namely: 70°32′ N. L. 8°10′ W. L. 470 fms. and two from S. W. of the Faroe Islands: 61°07′ N. L. 9°30′ W. L. 835 m. and 61°8′ N. L. 9°28′ W. L. 820 m.

The specimens from the two last-mentioned stations are remarkably smaller than those from the other localities, and it is possible that the specimens in question belong to another species. Already several species of this interesting genus have been described, latest by Fauvel in his valuable paper on the collections of the prince of Monaco, 1914. What, however, renders difficult, not to say impossible, a closer examination is the state of preservation of the specimens, especially the fact that they have lost all their bristles, a case which, according to Wirén, is not uncommon in M. violacea. Consequently, for the moment, I refer all the specimens present to this species.

Scalisetosus assimilis Mc. Int.

1900. *Scalisetosus assimilis*, Mc. Intosh: Monogr. Brit. Ann. p. 377.

Locality:

E. t. S. of the south-point of Nolso, 16 miles. c. 80 fms. The Faroe Islands.

Some few fragments are present from the above named locality. As known, the species lives on Echinoderms. Mc. Intosh mentions it as "commensalistic on Echinus esculentus."

No information is given of the present specimens as to whether they have been taken on Echinoderms or not; possibly they can also be found as free-living.

The species seems to have a rather wide distribution; it is known from the coasts of England and Spain — now also from the Faroe Islands.

Acholoë astericola (delle Chiaje).

1900. *Acholoë astericola*, Mc. Intosh: A monograph p. 397.

Locality: Off Plymouth.

Some individuals are present, all taken on *Astropecten irregularis*. According to Mc. Intosh the species can be found on different species of Asterids. Claparède mentions it from *Astropecten aurantiacus* where it is to be found together with *Stephania flexuosa*.

Gattyana cirrosa (Pall.).

1865. *Nychia cirrosa*, Malmgren: Nord. Hafs-Ann. p. 58.

Locality:

The Ingolf-Expedition has taken the species on the following localities:

St. 28.	65°14′ N. L.		55°42′ W. L.		420 fms.	Davis Strait.
- 34.	65°17′	—	58° 7′	—	55 —	— —
- 94.	64°56′	—	36°19′	—	204 —	Off Angmagsalik.
- 2.	63°04′	—	9°22′	—	262 —	North West of the Faroe Islands.

Holsteinsborg-harbour 30 fms.

Seydis-fjord, Iceland 70—50 fms.

Dyre-fjord, Iceland.

Further it has been taken:

West-Greenland:

Upernivik-harbour.

Jacobshavn.

Egedesminde.

Northern-Stromfjord.

44 miles from the mouth 58 m. land.

15½ miles from the mouth, near Ekalarssuit 12—29 m. Sandy clay with Laminaria.
14½ miles from the mouth, 51—54 m., sandy clay.
17 miles from the mouth, 200—240 m. mud?
Bay at Stivdliarssuk 33—50. Stones.
18 miles from the mouth, in a little tributary fjord, 21—41 m. Clay and sand.
12 miles from the mouth 375—380 m., clay with stones and rocks.
Bay on the north-side of Spintorssuak, 8—21 m. Sandy clay with Laminaria and other algæ.
5 miles off Sarfarssuak W. S. W., 35—20 m.
The innermost part of Ugssuit; 16 m. Sandy clay with stones.
53 miles from the mouth 67—56 m. gravel with small stones.
Holstensborg.
Brede-fjord; at different places, 5—220 m.
Kvane-fjord; the mouth 34 m. Algæ with hydroids.

East-Greenland:
Sabine-Island 3—15 fms.
Cap Dalton 11—19 fms.
Hurry Inlet 7—0 fms.
Off Henry Land 20 fms.
Angmagssalik, sublitorally.

Iceland:
Seydis-fjord 3—4 fms.
Bakke-fjord 25—32 fms; sand and clay.
Bern-fjord 6 fms. mud.
Axar-fjord 22 fms.

This, geographically, widely spread form seems to prefer shallow water near the coast. According to Mc. Intosh it can be found in greater depths, as far as c. 600 fms. In the fjords of Greenland it appears to be extraordinarily common; it is here found together with the closely related species, *Harmothoe* (*Gattyana*) *villosa*.

Gattyana Amondseni (Malmgren).

1867. *Nychia Amondseni*, Malmgren: Annul. polych. p. 5.

Locality:
Off the Westman-Islands, 49 fms. Clay and mud.

Only one specimen is present from the above named locality. The species seems to be common nowhere.

Lepidonotus squamatus (L.).

1865. *Lepidonotus squamatus*, Malmgren: Nord. Hafs-Ann. p. 56.

Locality:

The Ingolf-Expedition has got the species from North Iceland. Grjotnæs 12—15 fms., and from Dyre-fjord.

Further it is present from:

Iceland:

Off Husavik, the true East, 4 miles 80 m. North Iceland.
Reykjavik, 8 fms.
Reykjavik, tidepools.
Hval-fjord, 46 m.

The Faroe Islands:

N. t. W. of Kolso, 6 miles, c. 60 fms.
Vestmanhavn 50 fms.
Off Nolso c. 100 fms.
Off Nolso Blinkfyr c. 30 fms.
Fundings-fjord c. 30 fms.
Off Myggenæs N. t. O. 7 miles 5—7 fms
At the mouth of Bovovig 20—30 fms.
Thorshavn 12—16 fms.
Kongshavn.
Trangisvåg 10—30 fms.

Norway:

Trondhjems-fjord, off Ladenæs c. 100 m.

I shall only add that it is a mistake that this species should occur in Greenland. The communication originates without doubt from T. Rupert Jones: Manual of the Nat. Hist., Geol. and Physics of Greenland, in which book Lütken includes it without reservation in the Greenland fauna.

Bathynoë nodulosus n. g. n. sp.

Pl. II, fig. 8. Pl. III, fig. 12. Pl. IV, fig. 2, 5.

Locality:

The Ingolf-Expedition St. 65. 61°33′ N. L. 19°00′ W. L. 1089 fms. Atlantic Ocean; south of Iceland.

One specimen is present, which has unfortunately lost most of its elytra and cirri.

The shape of the animal is rather lengthened; when the animal is stretched out the length will nearly reach two Ctm. It is impossible to give the measure exactly, as the animal, on account of the preservation, does not allow of being stretched out, the hindpart of the body being bent towards the ventral side. The greatest breadth, c. 5 mm. from the front end, is 6 mm. This breadth is kept

by the body about 5 mm.; then the body tapers gradually towards the tip of the hindpart. The first parapodium is elytron-carrying and, as far as it was possible to state, the arrangement of the elytra is the usual.

The cephalic lobe (Pl. IV, figs. 2, 5), the shape of which is broad with embossing sides, is of the Lepidonote type; frontal prominences are lacking and the side-halves of the head are continued directly in the paired tentacles. Eyes are lacking. All appendages are exceedingly short and, relatively to their length, rather thick. The unpaired tentacle reaches c. 1 mm. in length, the paired tentacles are inconspicuously shorter. The tentacles taper towards the apex and are provided with a short terminal filament. The palps are quite peculiar; they are represented by a whartshaped prominence on each side, in length about the half of that of the tentacles; their tip is bluntly rounded and there is no trace of terminal filament. All in all they are quite different from what we are accustomed to see in the Polynoids

fig. 18.

Unfortunately the pharynx is not protruded to such a degree that it is possible to state the presence of jaws, and as only one specimen is at my disposal I have considered it not to be convenient to undertake any dissection.

In the middle-line of the dorsum is found a row of warty prominences, one on each segment, and at the base of each foot is found a similar prominence on the dorsal side, so that the dorsum shows three longitudinal rows of warty prominences. (Pl. IV, fig. 2).

The parapodium is conspicuously reduced, mainly the dorsal branch, which carries no setæ; only a relatively weak acicle is found in its interior (fig. 18). The ventral setæ are short and clumsy, with a short broad end-blade terminating in a strong curved tip and entirely devoid of spines and hairs. Besides the acicle only three or four such bristles are found in the neural part of the parapodium (fig. 19).

fig. 19.

The dorsal cirri are short and clavate (Pl. 2, fig. 8); originating on the dorsal side of the parapodium they are bent in a right angle down towards the former. Ventral cirri are lacking on all feet except the foremost — also a peculiar feature.

The scales are almost circular or quadrangular, with strongly rounded angles. The first is mainly the case with the smaller scales found in the hindmost part of the body. It must also be pointed out, as a strange feature not common in Polynoids, that the scales grow successively smaller towards the hindpart of the animal. Along the edge of the scales and spread over their surface are found peculiar short digitate prominences different in number, corresponding to the size of the scale; in one of the largest, figured Pl. III, fig. 12, are found twelve such prominences along the edge of the elytron and five on its surface. In the smaller scales from the hindpart of the body are found no prominences along the edge and only two or three on the surface.

Dorsal cirri and elytra are densely beset with short and clumsy papillæ, giving the organs concerned a velvety aspect.

Drieschia melanostoma n. sp.

Pl. III, fig. 2.

Locality:

51°00′ N. L. 11°43′ W. L. 1350—840 m. W. Young-fish trawl. South West of Ireland.

Among a lot of specimens of *Harmothoe Hubrechti* Mc. Intosh, the author found four animals of an aspect differing somewhat from the rest. They were more slender in shape, they were composed of fewer segments, and the parapods were lower and somewhat longer. In one respect they agreed well with the others, namely in the colour; they were milky white, just the colour assumed by transparent, pelagic animals when preserved in spirit; the proboscis was deeply dark-violet as with all the worms in the same glass. Only one specimen had the pharynx protruded, but on account of its dark colour it was plainly seen through the skin. A closer examination showed that the four specimens in mention not only belonged to another species but also were generically different from *H. Hubrechti*. With some hesitation I refer them to the genus *Drieschia*, established by Michaelsen on a pelagic Polynoid, taken near Ceylon. They seem to me to be closer related with a form described by Moore from Woods Hole, to which he has given the name of *Drieschia pellucida*, but at any rate they are specifically different also from this species.

Michaelsen characterizes his genus Drieschia in the following manner: "Körper kurz, aus dem Kopflappen und 28 Segmenten zusammengesetzt; Kopflappen und Anhänge desselben wie bei der Gattung *Lepidonotus*; 13 Elytrenpaare an den Segmenten 2, 4, 5, 7 .... 21, 23 u. 26; Ruder einästig, mit einer Acicula und zweierlei Borsten; die Borsten der ersten Form sehr dünn, lang-haarförmig; die Borsten der zweiten Form dicker, und unterhalb des äusseren, spitzen Endes erweitert und ornamentiert."

Already the species described by Moore necessitates alterations in the quoted diagnosis, in as much as the number of segments in this species is only 25. The form at my disposal demands a further extension of the frame. In the first place the number of segments is 30, consequently greater than in both of the formerly described species. In the second place is found in the parapod a notopodial acicle, though the notopodial branch is for the rest rudimental and devoid of setæ.

The generic diagnosis will then be as follows:

The body short, consisting of a small number of segments viz. c. 25—30. Cephalic lobe and its appendages as in *Lepidonotus*. Scales on the following segments: 2, 4, 5, 7 ... 21 ... 23 and 26. In the foot the notopodial branch is suppressed or rudimental. Two sorts of bristles in the neuropodial branch, partly very thin or capillary, partly thicker with more or less broad end-blade. Sometimes are found a few which are in shape transitional between the two sorts.

The last remark dealing with the bristles is added because a sharply pronounced difference between the thinner and thicker setæ is found in neither of the two Atlantic species, such as is the case in the species described by Michaelsen; specially the thin, capillary ones are not nearly so thin as the corresponding ones in the form from Ceylon; in this they are not only capillary in shape but they seem to be flexible as the most delicate hair. This is not the case in the Atlantic forms, specially not in the species examined by me. And in the Atlantic forms the bristles in question are thicker in their proxi-

mal part, a fact which gives them a certain rigidity, in the Indian form they are capillary from the very beginning.

I suggest that the form described by v. Marenzeller under the name of *Nectochæta Grimaldi* must belong to the genus *Drieschia*.

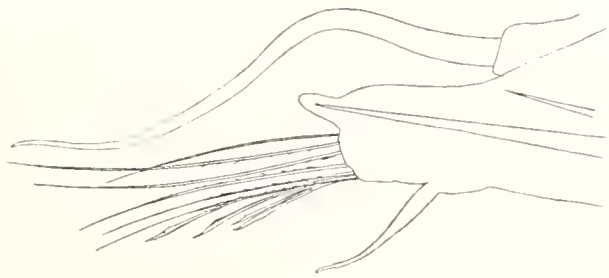


fig. 20.

Like the form described by Moore the species in mention has a slender shape and the segments are relatively longer than is usually the case in the *Polynoids*. The largest individual measures 12 mm. in length, and the body has a width of c. 2 mm., parapods not included. Parapods and bristles included the width makes more than 5 mm. The body consists of 30 segments, save the cephalic lobe and the anal segment. In the middle of the body the length of the segments is about one millimeter, but the subdivision of these which is described and figured by Moore in relation to the form from Woods Hole is not seen in any of the individuals at my disposal.

The cephalic lobe (Pl. III, fig. 2) behaves as in the genus of Lepidonotus; the length and breath is about the same; at the base it is somewhat constricted. The eyes are of medium size, not very prominent. The unpaired antenna is long, rather thick at the base, and tapers gradually towards the tip. The paired antennæ are but half the length of the former and somewhat more slender. The palps are thick and rather long, of usual form; near the apex they taper quickly, and end with a short terminal filament. The tentacular cirri are long, nearly of the same length as the unpaired antenna.

The parapod (fig. 20) is long and rather low; and the notopodial branch is rudimental; the latter is provided with an acicle, but this is feeble and much more slender than the corresponding one in the neuropodial branch, and quite short. Some peculiar bodies are found imbedded in the cutis of the distal half of the foot; they are rounded, but not very regular of shape, some of them are oval or ovoid, some reniform and somewhat varying in size. They prove to be chromophil in a high degree when stained with Safranine; while the remaining tissue of the parapod assumes the well known wine-red colour the bodies in mention show strongly yellow-red. Probably it is a question of a sort of sense-organs attendant on the pelagic behaviour of the animal.

About the scales nothing can be said; they are all lost. The dorsal cirri are long, rather thick, and taper gradually towards the tip; the longest among them measures c. 4 mm.

a *b*

fig. 21.

The setæ are present essentially in two different forms, one relatively short and thick and the other thin and capillary. They are arranged flabellately in the foot, and the short and thick are most ventrally situated. These, relatively strong, are provided with a short end-blade (fig. 21 *a*). This end-blade is broadest at the base and tapers gradually towards the

apex which is bent, and under which is situated a strong spine. Along the edge of the end-blade are found a few acute, obliquely placed spines, the largest of which is situated most proximally. The shaft is noticeable on account of its strange thickness in proportion to the end-blade.

The much longer and slender, capillary setæ vary somewhat in shape and aspect in proportion to their position; those which are situated most ventrally somewhat approach in shape the thick ones above described; their end-blade is distinct, even if it has grown long and narrow, and the tooth under the apex is plainly pronounced; the edge is beset with rather strong spines (fig. *b*). The more dorsally situated are markedly capillary; the end-blade is indistinct, the spines are few and feeble, and there is no trace of a tooth under the tip.

Alentia gelatinosa (Sars).

1835. *Polynoë gelatinosa*, M. Sars: Beskr. og Iagtt. p. 63.
1858. *Halosydna gelatinosa*, Kinberg: Freg. Eugenias Resa p. 19.
1860. *Polynoë* — , Sars: Chr. Vid. Selsk. Forh. p. 58.
1865. *Alentia* — , Malmgren: Nord. Hafs-Ann. p. 81.
1867. — — , Malmgren: Ann. polych. p. 14.
1886. — — , Langerhans: Zeitsch. W. Z. Bd. 40, p. 251.
1894. — — , Bidenkap: Norges Ann. polych. p. 62.
1900. *Halosydna* — , Mc. Intosh: Monogr. Brit. Ann. p. 384.

Locality:
The Faroe Islands; Anda-fjord, 16—32 fms.
— — ; North of Nolso c. 100 fms.
— — ; "Stokken" in d. e. 50 fms.

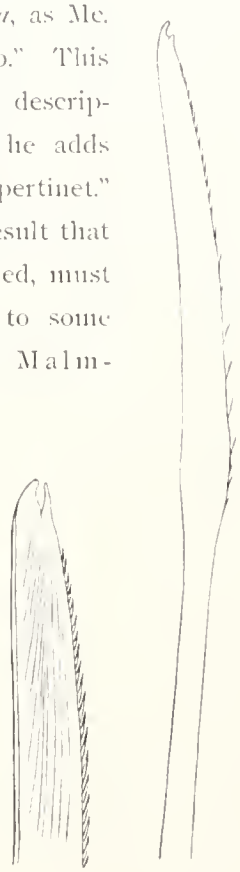
Only three specimens are present, all from the Faroe Islands a locality where, according to the literature, this species could be expected to be found. It can be found, according to Mc. Intosh, everywhere round the British coast; further it is known from Båhuslän in Sweden, from several Norwegian fjords, and reaches so far southwards as Madeira, from where Langerhans communicates about it. In spite of its rather great distribution it seems nowhere to be really common, if anywhere at the British coast.

As to the bathymetric distribution, I shall only remark that Mc. Intosh states that it can be found in tide-pools, and that Ehlers notes it from a depth of 1336 fms.

The species was originally described (1835) by M. Sars under the name of *Polynoe gelatinosa*, later, Kinberg in his report on the Annelids of the frigate Eugenia, referred it to his genus *Halosydna*. In 1865 Malmgren describes the animal and forms a new genus for the species, maintaining that in many and essential respects it differs from the forms, essentially from the southern hemisphere, with which Kinberg had made it generically identic. Of late, Mc. Intosh in his great Monograph incorporates it under Kinberg's genus-name of *Holosydna*, and at the same time he gives a new diagnosis of the genus. Mc. Intosh prompts this by remarking, that "Kinberg in his description of

the genus gives little to discriminate it from Lepidonotus except the numerous elytra and the elongated body." The diagnosis of the genus which Mc. Intosh gives is, however, such that no other of Kinberg's species of the genus *Halosydna* can remain in it, only the species *gelatinosa*, as Mc. Intosh includes in his diagnosis the character "nuchal collar with a prominent flab." This flab is only found in *gelatinosa*, in none of the other species. However Kinberg's description shows clearly that he has not formed the genus *Halosydna* on this species; he adds after the diagnosis: "Huc *Polynoe gelatinosa* Sars, species scandinavia, infra descripta, pertinet." The maintenance of Mc. Intosh's frame for the genus *Halosydna* will have the result that Kinberg's other seven species, for which the genus *Halosydna* has been established, must give up their place for the extraneous species *gelatinosa* and must be referred to some other genus. According to my opinion it will be much more rational to maintain Malmgren's genus-name *Alentia*.

As to the specimens from the Faroe Islands, these agree well with the descriptions and the figures hitherto published. Only concerning the ventral bristles shall I take any reservation: Langerhan's figures 6 *e*, *f*, *g*, do not agree well with the experiences I have made in the specimens from the Faroes; I have therefore figured two ventral bristles, as I find them the most typical (fig. 22 *a*, *b*).



b *a*

fig. 22.

Sigalionidæ.

Leanira tetragona (Orsted).

1845. *Sigalion tetragonum*, Orsted: Nat. Tidsskr. 2. R. 1. p. 204.
1865. *Leanira tetragona*, Malmgren: Nord. Hafs-Ann. p. 88.
1883. — — , Levinsen: Nord. Ann. p. 42.
1893. — — , Bidenkap: Norges Ann. p. 65.

Locality:

64°05′ N. L. 55°20′ W. L. 1100 m. Southern part of Davis Strait.
Drontheims-fjord, off Tantra.
S. E. ½ E. off Oxo 295 m. Norway.
63°05′ N. L. 22°23′ W. L. 326—216 m. Atlantic.
62°57′ N. L. 19°58′ W. L. 957 m. Atlantic.
58°32′ N. L. 4°18′ E. L. 280 m. North Sea.
57°48′ N. L. 7°41′ E. L. 440—460 m. Skager Rak.
57°32′ N. L. 7°14′ E. L. 254 m. Skager Rak.
58°04′ N. L. 9°49′ E. L. 250 m. Skager Rak.
N. of Haustholm, 53 miles, 526 m. Skager Rak.
N. N. W. ½ W. of Haustholm 313 m. Skager Rak.
N. N. W. of Hirtshals, 44 miles, 660—420 m. Skager Rak.
N. ½ W. of the light-ship of Skagen 140 m.
N. W. t. N. of Hojen (Skagen) 19 miles, 525 m.

The species is pronouncedly boreal and it seems only exceptionally to descend to great depths.

When Levinsen, on the authority of Mc. Intosh, includes it in the Fauna of Greenland, he is mistaken. On the other hand it must now, when captured in the southern part of Davis Strait by Ad. Jensen, be reckoned to the Fauna of Greenland, yet to the warm area of this fauna.

Leanira hystricis Ehlers.

1874. *Leanira hystricis*, Ehlers: Beitr. z. Verticalverbr. d. Borstenwürmer im Meere p. 35.
1900. — — , Mc. Intosh: Monogr. Brit. Ann. Vol. I, p. 434.
1914. — — , Fauvel: Annél. polych. non pélag. p. 84.

Locality:
62°57′ N. L. 19°58′ W. L. 957 m. Atlantic. South of Iceland.
49°23′ N. L. 12°13′ W. L. 1298 m. Atlantic. S. W. of England.

From the northernmost locality two specimens are present, one from the southernmost; all of them are incomplete. They agree well with Ehler's description, and must, without doubt, be referred to the species in mention. The locality also agrees well with earlier captures. The species is a pronounced deep-sea Annelide. In his last great paper (1914), Fauvel is able to add a capture from the Açores, taken in 1385 m.

Sigalion Buskii Mc. Intosh.

1877. *Sigalion Buskii*, Mc. Intosh: Trans. z. soc. Vol. IX, p. 391.
1900. — — , Mc. Intosh: Monogr. Brit. Ann. p. 431.

Locality:
61°08′ N. L. 9°28′ W. L. South West of the Faroe Islands.
51°34′ N. L. 11°50′ W. L. 960 m. South West of Ireland.

One specimen is present from each of the above named localities. As they both seem to agree well with Mc. Intosh's description, I have no hesitation in referring them to this species.

As known, it ranges from the Shetland Islands to the sea south-west of Ireland; bathymetrically between depths from 90 to 960 m.

Sthenelais Jeffreysii Mc. Intosh.

1877. *Sthenelais Jeffreysii*, Mc. Intosh: Trans. z. soc. IX, p. 406.
1900. — — , Mc. Intosh: Monogr. Brit. Ann. p. 421.

Locality:
The Ing.-Exped. St. 25. 63°30′ N. L. 54°25′ W. L. 582 fms. Davis Strait.

Further, it has been taken south of Iceland, 63°05′ N. L. 20°9′ W. L. 557 m., two specimens, and finally one specimen, have been taken in Drontheims-fjord, off Tantra, 200 m.

The capture in the southern part of Davis Strait is the most interesting: it shows that we have now two species of *Sigalionidæ* belonging to the Fauna of Greenland; *Leanira tetragona* has been taken in a locality not far from the above named Ingolf-locality.

Mc. Intosh mentions a species from Norway, taken by Canon Norman and supposed to be closely related to *S. Jeffreysii* although specifically different. I remark this, as one of the here named specimens originates from Drontheims-fjord; after a closer examination however it appears evident to me that this is also a typical *S. Jeffreysii* and not the species mentioned by Mc. Intosh.

Pholoë minuta (Fabr.).

1865. *Pholoë minuta*, Malmgren: Nord. Hafs-Ann. p. 89.
1893. — — , Bidenkap: Norges Ann. polych. p. 66.
1900. — — , Mc. Intosh: Monograph Brit. Ann. p. 437.

Locality:

The Ingolf-Expedition has taken the species East of Jan Mayen, 70°50′ N. L. 8°29′ W. L. 86 fms.

Further it has been taken:

West-Greenland:

Egedesminde.

Julianehaab.

Northern-Stromfjord; c. 18 miles from the mouth, 41—21 m., Clay sand.

Northern-Stromfjord; c. 15½ miles from the mouth, 12—29 m. Sandy mud with numerous laminariæ.

Ulkebugten, 5 fms. mud.

Bredefjord, 10—15 m. mud with gravel and dead algæ.

Saarfjord; Narssak harbour, 6 m. black stinking mud.

East-Greenland:

Tiningnekelak, 65°64′ N. L. 37°40′ W. L. 1 fm.

Angmagsalik.

Iceland:

Dyrefjord.

Faroe Islands:

Vestmanhavn, 3½—5 fms.

Fundingfjord, 12—20 fms.

Pholoë minuta is surely a coast-form. Besides, its geographical range is not easy to make out in some details. A fact which in a great measure causes this is the smallness of the animal; thus it is strange that Bidenkap only is able to state two localities for Norway, namely: Brettenæs in Bergensfjord and Drobak in Christiania-fjord. Mc. Intosh indicates it as common everywhere at British coasts from Shetland to the Channel Islands. In Greenland it is surely common at most places

on the western as well as on the eastern coast. Further it is known from the east coast of N. America. It is known as far north as Smith's sound. Besides Iceland and the Faroe Islands it is known from Spitzbergen, Novava-Zemlya and Kara Sea.

In Danish fairways the species is not uncommon, where it is known from Limfjorden, Hirtsholmene, Samso, Oresund, and it can be found, vide Michaelsen, in the western part of the Baltic, where it can be met with in Kieler-Bay and Travemünde-Bay. Southwards it is known from the North-western coast of France and, according to Fauvel (1914), at "Cape de bonne espérance and Pacifique."

It must be regarded as a coast-form with an uncommon wide range.

Sthenelais filamentosus n. sp.

Pl. IV, fig. 6. Pl. V, fig. 9.

Locality:

Medalland Bay. South Iceland, 90—70 fms.

Fragments of five specimens are present. It is impossible to indicate correctly the length of this species; at any rate it does not appear to be very great. The largest fragment, which likely makes a little more or a little less than the foremost half of the animal, measures 25 mm. in length; the greatest breadth, only a little behind the cephalic lobe, is 4 mm.

Habitually this species calls to mind *Sthenelais boa*, but the dorsum is not entirely covered by the scales; a narrow longitudinal streak in the middle of the back is visible almost throughout the whole length of the animal. The colour of the elytra has a brownish design similar to that common in the above named species.

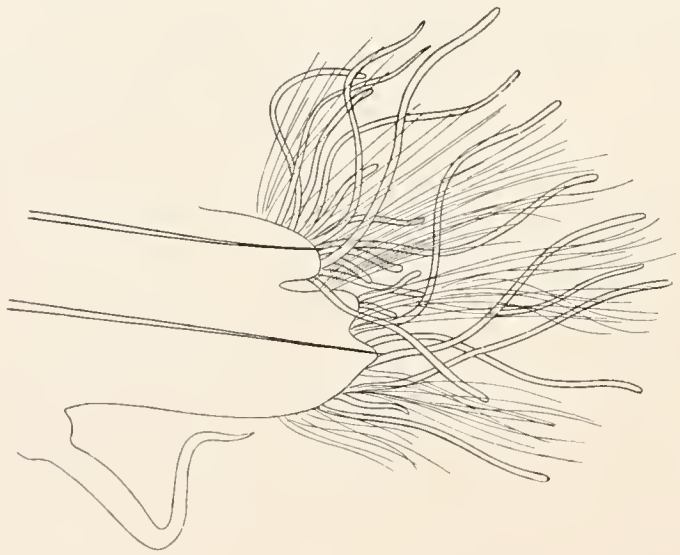


fig. 22.

The cephalic lobe (Pl. IV, fig. 6) is rather large, somewhat broader than long; its two side-halves project rather conspicuously, but they are partly coalesced with the first parapodium on each side. In the front the former is strongly constricted towards the base of the unpaired tentacle. As usual, two ciliated flabs are found; in the species under consideration they are rather prominent, somewhat longer than the basal joint of the tentacle. Of the four eyes only one pair is to be seen from above; these two eyes are situated a little behind the constriction of the cephalic lobe, opposite to the two ciliated flabs, at some distance from each other. The other pair is situated just in the named constriction, and so ventrally that it is only visible from the ventral side. Generally the eyes are rather strongly pigmented; in some individuals they are extraordinarily pale. The unpaired tentacle is of medium length and rather slender. The palps are long, slender and taper gradually towards the tip; their surface is, as usual in these forms, perfectly smooth. The two at the base of the palps situated spoonshaped bodies are in this species relatively large; they are oval, their distal half is bent

inwards, towards the middle, their lateral contour is convex, while the medial is somewhat concave, rendering the bodies almost renal shaped, with the hilus turned towards each other; the edge is smooth, devoid of incisions.

The first parapodium, which, as said, is partly coalesced with the cephalic lobe is provided with two tentacular cirri. The largest of the latter, presumably homologous with the paired tentacle in the Polynoids, is about equal in length to the unpaired tentacle; the other is only half that length and conspicuously more slender. First parapodium bears on each side a bundle of long hairy setæ, which are turned forwards and converging.

The second parapodium is, like the first, turned forwards; it is longer than the first and projects somewhat before this. Its shape is rather high and somewhat compressed; its two branches are partly coalesced; only their distal parts are free and distinct. The parapodium is provided with a lot of long thread-shaped papillæ, which mainly are situated on the dorsal side of the parapodium (fig. 22). The ventral cirrus, which in this genus is usually of a considerable length, is here about twice the length of the same organ in the other parapodia.

The third parapodium is also turned forwards; but not to such a degree as the second, in shape it is transitional between the second and the rest; its distal half is beset with thread-shaped papillæ, but the latter do not reach the length of those in the second parapodium, nor are they so numerous.

The other parapodia are relatively not so high as the foremost described above; their two branches are not coalesced to such a degree as described, and are more separated from one another; the supply with papillæ is much reduced, the latter being not so long and only few. In a parapodium from about the middle of the animal I count in the notopodial branch 3, in the neuropodial 2. The two on the neuropodial branch have been transformed into broad oval flabs. The ventral cirrus is on its dorsal surface irregularly denticulated.

fig. 23.

The aciculæ are strong.

The dorsal setæ are very long, exceedingly delicate and finely serrated.

The ventral setæ are, as usual in these species, of different shape; most dorsally is situated a little bundle of a few uncompound bristles; the latter consist of a straight stem which is rather thick in the proximal half but then tapers quickly to the tip, which is exceedingly delicate. In its distal half

the stem is beset with small bunches of fine, hairy spines; these bunches alternate along the two sides of the stem when seen in optical section, and are situated obliquely to the stem (fig. 23 *a*).

The most dorsal of the compound bristles have a straight, in the distal end somewhat enlarged shaft. The endblade is relatively long and provided with 8 to 14 joints or constrictions; it tapers gradually and terminates with a single, fine tip (fig. 23 *c*).

Ventrally to these are situated setæ of which the shaft is rather strong and bent, and provided with a relatively short and broad end-blade; the tip of the latter is curved, and supplied with a secondary process converging with the former; thus the bristle ends with a formation not unlike the beak of a raptorial bird, the tip of the bristle forming the upper part of the bill, the accessory spine forming the under part of the same (fig. 23 *b*). The more ventrally the here described setæ are situated, the longer and slender is the endblade, it is provided with joints too (fig. 23 *c*). The tip of the bristle retains its characteristic shape, but the bristle, on the whole, grows more slender, the shaft is strongly bent and the number of constrictions can be 8—10.

fig. 25.

fig. 24.

The elytra are of a most characteristic shape. The foremost among them are tolerably circular; the other more oblong, egg or renal-shaped. The lateral side of the elytron has a thin portion along the edge of which are situated some peculiar bodies, two or three lobated as shown in the figures. The surface of the scale is smooth, only a few diminutive papillæ are found near the edge.

I suppose that the form here dealt with is related to *Sthenelais limicola*, Ehlers, but so many differences are found that I, at any rate provisionally, propose to separate it specifically from this form.

Acoëtidæ.

Panthalis Oerstedii Kinb.

1865. *Panthalis Oerstedii*, Malmgren: Nord. Hafs-Ann. p. 85
1893. — — , Bidenkap: Norges Ann. polych. p. 67.
1900. — — , Mc. Intosh: Monograph. p. 400.
1914. — — , Fauvel: Comp. scientif. p. 78.

Locality:
63°05′ N. L. 20°7′ W. L. 557 m. South of Iceland.

Only a single fragment, consisting of the cephalic lobe and the 22 foremost segments, is present. It is in all respects typical.

Bidenkap indicates that at the coast of Norway this species reaches to the Drontheim-fjord northwards. The present capture originates from about the same latitude; for the rest the distribution

of the species seems to be more southerly. It is not uncommon at the British coasts and from Skager Rack it enters Kattegat. In the Mediterranean it reaches to the eastern part of this (Marenzeller), and recently Fauvel communicates that it has been captured as far southwards as the islands of Cabo Verde, where it was found near Maïo in a depth of 628 m. Thus this species has a relatively wide geographical range.

Phyllodocidæ.

Notophyllum foliosum (Sars).

1835. *Phyllodoce foliosa*, Sars: Beskr. og lagtt. p. 69.
1865. *Notophyllum* — , Malmgren: Nord. Hafs. Ann. p. 93.
1883. — — , Levinsen: Nord. Ann. p. 204.
1883. *Trachelophyllum Luetkeni*, Levinsen: ibid. p. 204.
1908. *Notophyllum foliosum*, Mc. Intosh: Monogr. p. 47.
1914. — — , Fauvel: Ann. polych. p. 115.

Locality:

49°25′ N. L. 12°20′ W. L. 1270—1180 m. Atlantic Ocean W. of Ireland. Bergen, Northern Bratholm c. 40 fms. Drontheim-fjord, Skarnsund 200—150 m.

Only one specimen is present from each of the above named localities. The species has a rather wide geographical range; it reaches from the Drontheim-fjord to the Mediterranean, which it enters. It also belongs to the Phyllodocidæ which descend to great depths; thus Fauvel states it from a depth of 1685 m. near the Azores.

Eulalia sanguinea (Ørsted).

1843. *Eulalia sanguinea*, Orsted: Ann. Dan. p. 28.
1865. *Eumida* — , Malmgren: Nord. Hafs-Ann. p. 97.
1908. — — , Mc. Intosh: Monogr. Brit. Ann. p. 66.
1914. — — , Southern: Clare Island Survey p. 47.
1914. — — , Fauvel: Ann. polych. p. 114.

Locality:

The Faroe Islands; off Nolso 9 miles, c. 30 fms.
The Faroe Islands; Vestmanhavn.
The Faroe Islands; N. t. O. of point of Myggenæs, 5—7 fms.
63°30′ N. L. 20°14′ W. L. 80 m. South of Iceland.
Vestmano, 40 fms. West Iceland.

The species is cosmopolitic. It is known from arctic tracts, from the coasts of Europe; it enters the Mediterranean and the Black Sea; and its occurs in the Gulf of Persia, at Japan and New Zealand.

Eulalia viridis (Müller).

1865. *Eulalia viridis*, Malmgren: Nord. Hafs-Ann. p. 98.
1908. — — , Mc. Intosh: Monogr. Brit. Ann. p. 55.

Locality:

The Ingolf-Expedition has taken the species in Iceland, in Dyrefjord.

Further specimens are present from Seydisfjord and Bernfjord (Skulavig), Iceland; from the Faroe Islands, N. t. E. of Myggenæs Point, 5—7 fms. and the outer road of Thorshavn. Finally a specimen from Drontheims-fjord, Skarnsound, 200—150 m.

The species in question is a form principally preferring shallow water; it is known from Greenland, the Bering Sea, Madeira, the Canaries and South Africa.

?Eulalia tripunctata Mc. Intosh.

Pl. V, fig. 10.

1874. *Eulalia tripunctata*, Mc. Intosh: Ann. nat. hist. Skr. 4. Vol. 14, p. 197.
1908. — — , Mc. Intosh: Monograph Brit. Ann. p. 63.
1914. — — , Southern: Clare Island Survey. Part 47, p. 65.

Locality:

The Ingolf-Expedition has taken one specimen at each of the following localities:

St. 35. 65°16′ N. L. 55°05′ W. L. 362 fms. Davis Strait.
- 25. 63°30′ — 54°25′ — 582 — —
- 65. 61°33′ — 19°00′ — 1089 — South of Iceland.

It is not without hesitation that I refer this species taken by the Ingolf to Mc. Intosh's *Eulalia tripunctata*. The latter is hitherto known exclusively from the coasts of France and England, and the Ingolf-specimens would seem to belong to an arctic or at any rate a subarctic species. Nevertheless the specimens in question seem to agree well with the description of Mc. Intosh.

The shape of the animal is exceedingly lengthened; the largest specimen has a length of 83 mm. and a greatest width of $1^1/_2$ mm. The "three rows of black spots on the dorsum" are not very prominent; presumably they have disappeared in the spirit; a few of them however are yet rather distinct, especially on each side within the parapodia; the median row appears to have entirely disappeared.

Eulalia tjalfiensis n. sp.

Pl. IV, figs. 1, 13, 17.

Locality:

62°58′ N. L. 50°62′ W. L. c. 25 fms. Davis Strait.
Berufjord c. 20 fms. Iceland.

This species belongs to those forms of Phyllodocidæ which, spread among the common setæ, possess long uncompounded hairy bristles, and it is thus apparently fitted for swimming. Without doubt it is a question of a form of epitokism. Besides these long bristles, no other transformation seems to take

place in this species, neither in the shape of the parapodia nor with regard to the eyes, as is well known in many other Polychaets. The appearance of the long and exceedingly delicate hairy bristles seems to be the only alteration which takes place.

Only one specimen is present from each of the above named localities; the specimen from Iceland is stated to have been secured with the dredger, and thus there is predominant probability that this specimen originates from the bottom. The specimen from Davis Strait has been dredged by the trawl, and of course there is a chance that it has been captured swimming; there is nothing to show that the form lives intermediate with its long setæ, but it is a matter of course that there is a great probability for such a supposition.

In the description I shall deal with the largest of the two specimens taken by Ad. Jensen in Davis Strait during his investigation voyage to Greenland with the motor-vessle "Tjalfe."

The specimen under consideration is a mature female with eggs, as seen in fig. 17. The shape of the animal is exceedingly lengthened; it measures c. 90 mm. with a breadth of only 2 mm. The colour in spirit is uniform ochreous-brown. The specimen from Iceland is noticeably lighter and more yellowish; possibly this specimen is a male; at any rate no eggs are to be seen in it; perhaps it is only a question of an immature specimen, the sexual development of which has not yet finished; it is somewhat smaller than the specimen secured in Davis Strait, further the number of hairy bristles in the parapodium is less considerable. That the two specimens should be specifically different is not probable, as the likeness is considerable and the various characteristics too peculiar.

The cephalic lobe (Pl. IV, fig. 1) is rather big, almost heart-shaped; the side-edges are convex and the frontpart somewhat prominent. The four tentacles are of medium length, fusiform, and somewhat flattened. The unpaired tentacle is relatively large and, as usual, situated in the hindpart of the cephalic lobe. Two eyes are present, rather strongly pigmented; their position is in the hindpart of the cephalic lobe; a straight line from the foremost border of one eye to the same part of the other will touch the base of the unpaired tentacle.

Just behind the cephalic lobe is seen a rather prominent sausage-shaped prominence; it does not represent the first segment, but is situated between this and the cephalic lobe. Of the two dorsal tentacular cirri on each side pertaining respectively to the second and third segment, the foremost is the longer; both are provided with a basal joint; the shape of the former is fusiform with a somewhat lengthened tip. The ventral tentacular cirri are considerably shorter than the dorsal, about two thirds of the length of the latter, but they are of the same shape and have a distinct basal joint (fig. 1).

The parapodia are not very prominent. The dorsal lamella is nearly egg-shaped, somewhat wry, the ventral edge being more convex than the dorsal; the latter is nearly straight or even provided with an insignificant concavity in the middle. The peculiar connective tissue of the lamella forms a characteristic feather-shaped figure. The ventral lamella reaching nearly to the tip of the parapodium has a shape like that of the dorsal lamella, but is relatively more acute.

The compound setæ has a rather strong, inconspicuously curved shaft with a short clumsy dilatation in the tip beset with three or four short blunt spines. The endblade is relatively short, it tapers quickly and the distal third is quite thin and delicate; one edge is finely denticulated.

Eulalia minuta n. sp.

Pl. IV, f. 10, 12, 14.

Locality:

The Ingolf-Expedition St. 29. 65°34′ N. L. 54°31′ W. L. Davis Strait.

Five entire specimens and some fragments have been captured at the above named locality. It is a very small species; the largest specimen examined had a length of 5 mm. and a breadth of 1 mm. The body consists of a relatively small number of segments varying according to the dimensions of the different specimens, 24—30 in the present individuals.

The cephalic lobe is nearly semi-globular in shape, dorso-ventrally somewhat flattened. The tentacles are long and slender, the unpaired somewhat longer than the four paired and a little more slender than the latter. Eyes are present and situated near the base of the cephalic lobe (fig. 14, Pl. IV). The tentacular cirri are fusiform or lancet-shaped, while the tentacles are nearly filamentous in shape. At their base they are strongly constricted and they are provided with a distinct basal joint. Towards the distal half they taper quickly and form a thin terminal filament. The dorsal tentacular cirri are somewhat longer than the ventral. Among the dorsal cirri the hindmost on each side is the longest; among the ventral cirri the foremost is the longest.

The dorsal lamellæ are almost as broad as long; the shape of the latter is almost cordate or ovo-cordate; the connective tissue forms a meshwork showing a dendritic ramified figure. The ventral lamella is conspicuously narrower than the dorsal and overhangs the parapodium with its distal half (fig. 10, Pl. IV).

The parapodium itself is only a little prominent.

The setæ present in a number of c. 12 in each parapodium are rather strong yet relatively more slender than in the preceeding species. The dilatation in the tip of the shaft is only a little prominent; it forms a step on the one side of the bristle and terminates in an outgrowth on the other side; this outgrowth is finely denticulated.

The endblade of the bristle is short; it tapers quickly from its proximal end, and the denticulation along the edges is exceedingly delicate and difficult to see even under high magnifying power.

Phyllodoce groenlandica Ørsted.

1843. *Phyllodoce groenlandica*, Orsted: Gronlands Annulata dorsibranchiata, p. 42.
1867. — — , Malmgren: Annulata polychæta, p, 21.
1900. — — , Mc. Intosh: A monograph Brit. Ann. II, p. 86.
1914. *Anaitides* — , Bergstrom: Phyllodociden, p. 141.

Locality:

The Ingolf-Expedition has taken this species in the following localities:

St. 32. 66°35′ N. L. 56°38′ W. L. 318 fms. Davis Strait, off Holstensborg.
- 34. 65°17′ — 54°17′ — 55 — — — , off Sukkertoppen.
- 27. 64°54′ — 55°10′ — 393 — — — —
- 105. 65°34′ — 7°31′ — 762 — East of Iceland.

Further it is found in material from:

West Greenland:

Kutalisat, Disco.
Bay of Disco.
Godhavn.
Holstensborg.
Egedesminde.
Jacobshavn.
Kronprinsens Eiland.
Jacobshavn.
St. Hellefiskebanke, 29 miles W. S. W. off Rifkol, 21 fms. Sand and stones.
St. Hellefiskebanke, 40 fms.
Godthaab, shallow water.
Northern Stromfjord, 12 miles from the mouth 375—380 m., clay with stones or rocks.
— — , 17 miles from the mouth 325—330 m., clay.
— — , 35 miles from the mouth 535 m., clay.
— — , 53 miles from the mouth 380 m., grey clay.
— — , Ugssuit Bredning, 175 m., grey clay.
Bredefjord.

East Greenland:

Cape Dan, Angmagsalik.
Hekla's harbour.
Turner sound, 300 fms.

Iceland:

Bakkefjord, 12—15 fms. Black sand.
Reykjavik, 8 fms. in sponges.
Berufjord, 5 fms. Sand and clay.
Lónsvik, 40 fms. clay and mud.
63°15′ N. L. 9°35° W. L. 270 fms. East of Iceland.

Faroe Islands:

Kongshavn.
Klaksvig, 10—15 fms.

It is beyond doubt that *Phyllodoce groenlandica* Orsted ought to be maintained as a distinct species. In spite of the difficulties in separating the different species of the genus in question from each other, and especially the difficulties in strictly limiting each species, I am, with the large material at my disposal, convinced that the large arctic form which is especially common along the coasts of Greenland ought to bear the name in question, and ought to be specifically maintained. As to the large specimens, the difficulty in fixing this species is not especially great; it is only when we

have to deal with small specimens that the difficulties commence; these are well known to every zoologist who has had to deal with a considerable material of the genus in question. Even Orsted himself writes in his Annulatorum Danicorum conspectus p. 31. "Difficillimum sæpe est characteres specificos firmos inter species hujus genesis statuere" and Levinsen completely gave up as to the northern forms, and united them all in one species, Ph. maculata L.

As to the differences between *Phyllodoce groenlandica* Orsted and *Ph. maculata* L. I shall first emphasize that, while *Ph. maculata* is a small or at any rate rather small species which only reaches a length of a few centimetres, the *Phyllodoce groenlandica* is a large species, probably the largest northern species, reaching a length of nearly half a meter. Orsted indicates in his description a maximum measure of 10 to 11 Danish inches. The largest specimen at my disposal measures 450 mm. in length, and several others reach a length of 400 mm. The colour of these animals is commonly greyish brown, so that the body itself is almost grey with a bluish hue, while the elytra are slightly chocolate-brown or earth-brown. In single specimens the body itself is dark brown, and the colour of the scales paler. In others the body is bluish, and in such specimens I have seen the dorsal leaves very dark, almost black.

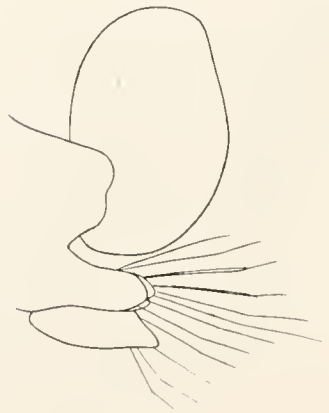


fig. 24.

In the species under consideration the cephalic lobe is relatively smaller than in *Phyllodoce maculata;* it is somewhat broader in shape and the nuchal flabs more prominent; the dorsal cirri in *Phyllodoce groenlandica* are almost rectangular in shape, with the angles rounded, in *Ph. maculata* they are broadly ovoid terminating in a blunt tip. The ventral cirri in *Ph. groenlandica* end in a tip, in *Ph. maculata* the same are ovoid and do not terminate in a tip. In giving prominence to these differences I shall note that the cirri here mentioned originate (fig. 24) from about the middle of the body. The differences pointed out do not hold good when f. i. cirri are taken near the head in one specimen and near the tail in another; in a single specimen the cirri vary considerably according to their place in the body.

The bristles are much alike in the two species; rather constant appears to me the difference consisting in the fact that the end-blade is relatively longer, terminating in a longer hairy tip, in *Phyllodoce groenlandica* than in *Ph. maculata* Unfortunately it appears impossible to employ the supply of papillæ in the pharynx to distinguish the two specimens under consideration. The proximal half of the protruded pharynx is in both forms beset with papillæ, arranged in six regular longitudinal rows on each side. The form of the papillæ is rather uniform in both species, namely ovoid and somewhat flattened.

Finally I shall remark that, while the colour in *Phyllodoce groenlandica* is rather uniform, the *Ph. maculata* is strongly spotted, a fact which caused O. F. Müller to give it the name of maculata.

As a rule, it can be said that it is not difficult to separate the two species from each other, especially when it is a question of full grown individuals. Meanwhile specimens can be met with differing from the usual aspect, and among the material I have had under examination some which I must deal with more in detail.

Two specimens are present originating from "Store Hellefiskebanke" in West Greenland, off the

frontier between the districts of Egedesminde and Holstensborg. At the first glance they appear to differ rather considerably from the typical forms of *Phyllodoce groenlandica*; the colour is ochreous, almost lemon-coloured with darker spots; the two specimens are almost equal in size, the largest measures 265 mm. in length and, even if their colour calls to mind the *Ph. maculata*, their dimensions prevent their being referred to this species. A closer examination gives the following: The shape of the cephalic lobe is equal to what is typical in *Ph. groenlandica*, the rudiments of the nuchal flabs distinct, the nuchal papilla is protruded and rather prominent. The parapodium is the typical one in *Ph. groenlandica*, the dorsal cirrus being rectangular with rounded angles, the ventral cirrus ending in a short tip. The setæ are provided with a long end-blade.

The pharynx appears to differ somewhat from what is typical in *Ph. groenlandica*. Only the papillæ-carrying part of the former is protruded; this part is relatively long, the rows of papillæ are not so regularly arranged as usual, and each row contains 14—16 papillæ, while a number of 12 appears to be the rule even if this number at times is surpassed. Not considering the colour, the pharynx is thus the only differing point, and as the anomalism of the papillæ has scarcely any importance and the peculiar shape of the protruded part of the pharynx easily can be explained as a result of a spasmodic contraction of the muscles it appears to me that no hold is present to justify the establishment of a nova species.

The geographical range of *Ph. groenlandica* is considerable. From the coast of Greenland it reaches eastwards to Iceland, Spitzberg, Nova-Zembla and the Kara sea and Siberia. It is known from the Bering Strait and is thus circumpolar. Izuka indicates it to be taken in Surugabay in Japan in a depth of 63—75 fms. The description by this author, especially that of the pharynx and his figure of the parapodium, make me doubt that it is the species in consideration with which he deals. Southwards, where this species is more scarce, it is said to reach the coasts of England and Scandinavia. According to Michaelsen it enters the Baltic.

Bathymetrically it is also very extensive. It is to be found in shallow water and reaches to a depth of towards 800 fms.

Phyllodoce maculata (O. F. Müller).

1771. *Die gefleckte Nereide*, O. F. Müller: Von Würmern des süssen und salzigen Wassers p. 156.
1865. *Phyllodoce maculata*, Malmgren: Nord. Hafs-Ann. p. 94.
1910. — — , Mc. Intosh: A monograph p. 89.

Locality:

The Ingolf-Expedition has taken this species at two localities, namely in Isafjord and in Seydisfjord "among Algæ."

Further it has been taken:

West Greenland:

Sakrak, Waigat.

Tunugdliarfik, 14—18 fms.

Iceland:

Westman Islands, 49 fms. Clay and mud.

Siglufjord, 15 fms.

Nordfjord at Skagestrandsbugt, 5—6 fms.

Faroe Islands:

Vestmanhavn.

This species is evidently a more southerly form than Ph. groenlandica; it is not common in Greenland. At Iceland and the Faroe Islands it seems to be the predominating species of this genus. It is found at the coasts of England, Heligoland, it enters the Danish seas and is said to reach to the Bay of Kiel. It prefers shallow water.

Phyllodoce Paretti Blainville.

Pl. II, fig. 12. Pl. IV, fig. 7. Pl. V, fig. 3.

? 1868. *Phyllodoce Pancerina*, Claparède: Annél. Naples. Suppl. p. 456.

1910. — *Paretti*, Mc. Intosh: Monogr. p. 82.

Locality:

Fundingsfjord, 12—20 fms., Østero. The Faroe Islands.

From the named locality is present a single specimen of a Phyllodoce, which can not be referred to either of the two species dealt with above. Unfortunately the animal is in a very bad condition. After a closer examination different facts are found which could argue that the species in question is *Phyllodoce Paretti*, de Blainville. Before I deal with these facts I shall remark that I am not convinced that the species of Blainville is identic with Claparède's species *Ph. Pancerina* as suggests Mc. Intosh. Strangely, Claparède does not mention the peculiarity of the dorsal cirri, a fact which, according to Mc. Intosh, is said to be most characteristic of the species under consideration.

In the specimen from the Faroe Islands the cephalic lobe is almost square in shape and very little; it is provided with two large eyes, strongly pigmented, a fact emphasized by Claparède and Mc. Intosh as well. Claparède writes: "La frappante petitesse du lobe céphalique est aussi caractéristique de cette espèce."

The four tentacles are relatively strong and fusiform.

The tentacular cirri, which are long as well as thick, have partly fallen off; the two hindmost dorsal cirri, which are present, are of a rather peculiar shape being somewhat flattened, a fact not agreeing with the other tentacular cirri yet present (Pl. II, fig. 12). Claparède says about the organs in question in his species: "La Ph. pancerina est aussi remarquable pour la longueur de ces organes, dont le plus court est quatre fois, et le plus long au moins cinq fois aussi long que les antennes. Ces cirres tentaculaires sont en même temps remarquables par leur épaisseur."

As to the dorsal cirri (lamellæ) the specimen from the Faroe Islands shows evidently the peculiar fact mentioned by Mc. Intosh regarding Blainville's species but not named by Claparède regarding Ph. Pancerina in spite of its being very characteristic. Mc. Intosh writes, l. c. p. 84:

"The lamellæ (dorsal cirri) are of a rich deep green or blackish-green with a border of yellow or greenish yellow, and they have a tendency to be curled and twisted, especially in specimens in confinement, a feature greatly increasing the complexity of the dorsum." Unfortunately I can say nothing about the colour in the specimen from the Faroe Islands after its preservation for many years in alcohol; the present colour is quite uniform dark brownish with a reddish hue; but the large, dorsal lamellæ are highly "curled and twisted" as is plainly shown in my figure of the parapodium (Pl. V, fig. 3).

I have figured a bristle (Pl. IV, fig. 7). The fig. 1 *c* of Claparède appears rather a failure, though it shows the same swelling of the distal part of the shaft as seen in my figure, and what the same author gives in the text can be referred to several species of Phyllodoce.

Hitherto the species under consideration is known from the Mediterranean and from the coasts of England and France. Likely the locality in the Faroe Islands will prove to be the northernmost.

Anaïtis Wahlbergi Mgrn.

1865. *Anaïtis Wahlbergi*, Malmgren: Nord. Hafs-Ann. p. 94.
1867. — *kosteriensis*[1], Malmgren: Ann. polych. p. 20.
1894. — *Wahlbergi*, Bidenkap: Norges Ann. p. 70.
1909. — — , Ditlevsen: 2den Fram-Exped. p. .
1910. — *kosteriensis*[1], Mc. Intosh: A monograph p. 72.

Locality:

Off Jan Mayen. 55 fms.

55°41′ N. L. 14°09′ W. L. 63 m. West coast of Iceland.

Bakkefjord, 28 fms. Iceland.

One specimen is present from each of the above named localities.

The species has a rather wide geographical range, but it does not appear to be common anywhere. It is known from Iceland, Spitsbergen, Novaya Zemlya, the Kara sea, the sea north of America, Norway, the North Sea and the Cattegat.

Anaïtis sp.

Pl. IV, figs. 4, 9, 16. Pl. V, fig. 4.

Locality:

The Ingolf-Expedition St. 25. 63°30′ N. L. 54°25′ W. L. 582 fms. The southern part of Davis Strait.

Only one specimen has been taken; it is in a rather bad condition.

The length is 20 mm.; the greatest breadth, setæ counted, is 2 mm.

Habitually the animal calls to mind *Anaïtis Wahlbergi*; the body is somewhat flattened and the dorsal lamellæ are densely pressed to the dorsum, leaving the midmost part of the latter uncovered.

[1] In his paper "Zur Systematic der Polychætenfamilie der Phyllodocidna" Erik Bergstrøm maintains that Anaïtis kosteriensis is a well-marked species.

The cephalic lobe is somewhat longer than broad (Pl. IV, fig. 16), nearly rhombic in shape with rounded corners. The four tentacles are rather strong. Eyes are entirely lacking.

The first segment is — as usual in the genus Anaïtis — large and prominent, but it does not seem to be fused with the second, as is the case in Anaïtis Wahlbergi and A. kosteriensis. As the material, however, does not allow us to decide this question with absolute certainty, I do not find it reasonable to establish a new species on this single badly preserved specimen. Thus it is possible that the fig. 16, Pl. IV is not correct in this respect. The tentacular cirri are rather long and thick, the hindmost the longest.

The parapodium is of the well-known phyllodocoid shape and terminates in a double flab. The former is somewhat overlapped by the dorsal lamella which, in the foremost part of the animal, is rather circular; more caudally they grow more ovoid or broadly renal-shaped. The ventral lamella is rather oblong, almost rectangular with rounded corners.

The setæ are of a very characteristic shape; they are much like the setæ in the species described by Percy Moore under the name of *Anaïtis polynoïdes*, from the coast of California. The shaft (Pl. IV, fig. 4, 9) has terminally a rather considerable dilatation, from where project a few small acute prominences, and a single large spine projecting on one side of the endblade. A similar spine is not uncommon within the family of the Phyllodocidæ; rather frequently it is found in the genus *Eteone*, viz. *Eteone pusilla* Orsted and *Eteone flava* Malmgren; in Anaïtis it is also found, but not so prominent in any of the known species of this genus. In the species in question it is larger even than in the named species of Eteone. It is straight, conical and tapers gradually towards the tip.

Mystides occidentalis n. sp.

Pl. IV, figs. 8, 11, 15.

Locality:

The Ingolf-Expedition St. 32. 66°35′ N. L. 56°38′ W. L. 318 fms. Davis Strait.

Only one specimen has been taken. The animal is in a bad condition, and the hindpart of the body is lacking; the part present of the latter has a length of 36 mm. and a breadth of c. $1^1/_2$ mm., parapodia counted. The colour is light ochreous brown.

The shape of the cephalic lobe is trapezoid (fig. 11) the four tentacles of medium length. Eyes are not seen. The tentacular cirri are rather short, fusiform and all of them of about the same length.

The parapodium (fig. 15) is low, of medium length and, as usual, provided with a bilobated membraneous flab. The shape of the dorsal lamella is rather lengthened, ovoid; the ventral lamella has a shape like the dorsal but it is relatively shorter and broader; it is only a little prominent and does not reach the tip of the parapodium.

The setæ are rather strong; the shaft of each bristle has in its tip the usual extension, being club or head-shaped and provided with small acute spines, of which the midmost is the largest; on each side of the latter they gradually taper in length; the smallest of these spines are hardly visible even under high magnifying power (Zeiss, Apochr. 2 mm.). The endblade of each of the setæ is long, broad at the base but quickly tapering in breadth, it terminates in an exceedingly delicate tip. The concave edge of the endblade is as usual in these forms finely denticulated (fig. 8).

Eteone longa (Fabricius).

Pl. V, fig. 13.

1799. *Nereis longa*, Fabricius: Betragtninger over Nereidesl. Naturhistorieselskabets Skrifter, 5. Bind, 1. Hefte, p. 171.
1843. *Eteone longa*, Orsted: Gronlands Ann. dorsibr. p. 33.
1867. — , Malmgren: Ann. polych. p. 27.
1883. — , Levinsen: Nord. Ann. p. 51.

Locality:

West Greenland:

69°17′ N. L. 52°50′ W. L. 225 fms. Dark greyish clay. Disco Bay.
Umanak.
Ritenbenk.
Jacobshavn.
"Kronprinsens Eiland."
Holstensborg.
Ulkebugten. Near Holstensborg.
Godthaab Skibshavn, 15 Fv.
Julianehaab, harbour 8—10 m. Among Green-Algæ.
Bredefjord, 5—37 m.

East Greenland:

Turner Sound, 3 fms.

Iceland:

Djupivogr; on Algæ.
Faxafjord; opposite Kollafjord 10 fms.
Seydisfjord; Skulafjord 6 fms. Black sand.

Many specimens are present from the above named localities. Though no original specimens of Fabricius exist in our museum there can be no doubt as to which species Fabricius has given the name of "the long Nereid"; nor has Orsted felt any doubt about the identity of the species; he remarks, l. c. p. 34, that "a great number of specimens had been sent down from the different places between Annanak and Frederikshaab." The species in question is, indeed, by far the most common species of Eteone in Greenland, at any rate on the west coast; further it is a pronounced littoral species, which enters entirely shallow water and easily can be taken at eb-tide, and the behaviour of which is open to observation. Thus Fabricius gives an account of the comportment of it in the water. Malmgren indicates that it is "haud infrequens" in a depth from 3 to 20 fms. The captures by "Tjalfe" prove that the species also enters deeper water until c. 200 fms.

Further it appears to me that *Eteone longa* is a particularly Arctic form; it is not known from the coasts of the British Islands nor from the Atlantic coasts of France. Nor is it named in the list of Norwegian polychæta in Bidenkap's Norges Annulata polychæta. Michaelsen states it from Danish

waters ("Aarhus Bugt" and "Sejero Bugt") on the authority of Levinsen; consequently I have re-examined the specimens in question, but they are not typical; the cause of his wrong determination is perhaps a confusion of the two species Eteone longa and E. arctica.

Augener writes in his paper: "Polychæten von Franz-Josephs Land I," Zool. Anz. XLI, p. 216 "In Gronland mag *Et. arctica* durch die sehr nahestehende *Et. longa* vertreten werden, falls beide Arten überhaupt vershieden sind, da Ditlevsen z. B. (Annelids from the Danmark Exped. 1911, p. 418) nicht Et. longa, aber Et. arctica aus Grönland anführt." I must confess that I am not able to understand perfectly the meaning of this remark. As to the two species *Eteone longa* and *Eteone arctica* my opinion is that they are closely related, perhaps only varieties of the same species, an apprehension probably also concurred in by Augener. I have separated them specifically on account of several structural differences between them, a fact also stated by Mc. Intosh, who writes that E. arctica "differs from E. longa in the shape of the dorsal cirrus and other points." Like Mc. Intosh I have also found difference in the shape of the dorsal lamellæ in the two species in question; in *E. longa* they are small, narrow and papilliform, in *E. arctica* they are broader, flattened and almost ovoid. The figures of Malmgren l. c. Taf. II, fig. 12 *c* and 12 *c'* give this plainly. As to the besetting of papillæ on the proboscis I have not been able to state any essential diversity in the two species. *E. arctica* often protrudes the proboscis entirely under the preservation, *E. longa* does not protrude the proboscis at all or, in some cases, protrudes it halfway. In fig. 13, Pl. V, I have figured the cephalic end of a well preserved specimen of E. longa from Bredefjord in South Greenland. The proboscis of this specimen is only protruded half-way, and it is impossible without section to state the number of terminal papillæ, just as it is impossible to state the exact shape of the proboscis. Only one thing is plain, the surface is smooth and the papillæ spread over the dorsal surface of the proboscis of *Eteone arctica*, figured by Malmgren, are entirely lacking.

The result of my examination of the material present of the two species, *E. longa* and *E. arctica* is the following: The two species are closely related; the only invariable difference stated is the shape of the dorsal lamellæ; probably there are some difference, in the besetting with papillæ of the proboscis; they appear to be entirely lacking on the dorsal surface of the proboscis of E. longa. Further the geografical range of the two forms is different, the *E. longa* being exclusively Arctic, while the *E. arctica*, also found in the Arctic, goes further southwards, viz. to British and Danish coasts.

Eteone depressa Mgrn.

Pl. V, figs. 1, 5, 6, 7, 8.

1865. *Eteone depressa*, Malmgren: Nord. Hafs-Ann. p. 103.

1913. — — *partim*, Augener: Polych. Franz-Josephs Land, p. 215.

Locality:

The Ingolf-Expedition has taken this species on St. 138, 63°26′ N. L. 7°56′ W. L., 471 fms. North of the Faroe Islands.

Further it has been captured:

Iceland, Bakkefjord, 12—15 fms. Black sand.

— , Lónsvig, c. 40 fms. Clay and mud.

Only a few specimens have been secured. Considering it suitable to separate the two species *Eteone depressa* and *Eteone flava* specifically until closer examinations on a more extensive material exist, I have here only endeavoured to state the differences between the two named species.

Eteone depressa is in shape more flattened than *Et. flava* and the cephalic lobe of the former has a somewhat different shape; that part of the cephalic lobe which bears the tentacles is separated from the hinder part by a furrow (Pl. V, fig. 8), which does not seem to be found in *Eteone flava*. The parapodium projects beyond the dorsal and ventral lamella. Further, the bristles are of different shape in the two forms: In *E. depressa* the shaft of the bristle is provided with a single rather strong spine in the tip; in *Et. flava* I find two such spines almost equal in length. I do not agree with Augener in his remark that "bei *Et. flava* die mittleren Dorsalcirren etwas gestreckter und zugespitzter erscheinen als bei *Et. depressa*." Comp. my figg. 1 and 15, Pl. V.

Eteone flava (Fabricius).

Pl. V, figs. 2, 15, 16.

1799. *Nereis flava*, Fabricius: Betragtninger over Nereidesl. Naturhistorieselsk. Skrifter. 5. Bd, 1. H., p. 168.
1843. *Eteone* — , Orsted: Gronl. Ann. dorsibr. p. 34.
1865. — — , Malmgren: Nord. Hafs-Ann. p. 102.

Locality:
West Greenland:
Northern Stromfjord; Saerutbugten 20—40 m. Greyish mud with stones.
— — ; 12 miles from the mouth, 375—380 m. Clay with stones and rocks.

East Greenland:
Turner Sound, 3 fms.

Iceland:
Bakkefjord, 12—15 fms. sand and clay.
Dyrefjord.

Faroe Islands:
Trangisvåg. Among laminariae.

In *Eteone flava* the lamellæ are more prominent than in the foregoing species; the dorsal as well as the ventral lamella overlap the parapodium considerably (Pl. V, fig. 15). The shape of the lamellæ is somewhat different from that of *Et. depressa*; the dorsal lamellæ are almost circular; the ventral lamella is oblong and more lengthened than in *E. depressa*. As noticed under the preceeding species also the setæ differ in the two forms. Possibly *Et. flava* is a more Arctic species than *Et. depressa*. According to Levinsen they are both to be found in our seas and Southern states *Et. flava* as well as *Et. depressa* from England.

Eteone spetzbergensis Mgrn.

Pl. V., figs. 12, 14, 18.

1865. *Eteone spetzbergensis*, Malmgren: Nord. H. Ann. p. 102.
1908. — — , Mc. Intosh: A monogr. II. p. 104.
1913. — — , Augener: Polych. v. Franz-Jos. Land p. 218.

Locality:
The Ingolf Expedition has taken this species in:
Seydisfjord, 20—50 fms. Iceland.
Further, it has been taken by Dr. A. C. Johansen in Seydisfjord, 40 fms. Clay.
Bakkefjord, Iceland 12—15 fms.

A single specimen is present from each of the above named localities. They agree well with the description of Malmgren, tolerably with his figures; it is without hesitation that I refer them to Malmgren's species. As the name indicates, Malmgren's specimens originate from Spitzbergen. Augener states that it is found in Franz-Josephs land and adverts to its not being found in Greenland.

Eteone striata Levinsen.

Pl. V., fig. 11, 17 and 19.

1883. *Eteone striata*, Levinsen: Nord. Ann. p. 55.

Locality:
The Ingolf Expedition has taken the species in Seydisfjord, Iceland 20—50 fms.
Further, it has been taken:

Iceland.
Bakkefjord, 20—28 fms.: sand mixed with clay.
Lodmundarfjord; clay.

How far this species is identic with *E. picta* Quatrefage or *E. fucata* Savigny I do not venture to decide. That it is not identic with Ehler's *Eteone picta* from Nova Zembla is a matter of course, as Augener names this species as a synonym for *Et. spetzbergensis*, from which it is decidedly different.

Levinsen has described his species from Danish specimens, and the specimens present in my material from Iceland agree well with his description. I shall add the following:

Especially characteristic of the species are the dorsal tentacular cirri which are three times the length of the corresponding ventral cirri, and further the colour, well characterized in the name of the animal, three longitudinal striæ — Levinsen indicates them as "violaceo-fuscis" — running along the entire dorsal side of the animal.

The setæ (Pl. V, fig. 17) call to mind those in *Eteone flava*, a species to which it does not seem however to be nearly related.

Otopsidæ, nov. fam.

For the following form, taken by the Ingolf Expedition south of Iceland in a depth of 843 fms., it has proved necessary to establish a new family. For the moment it will be of no use to discuss the relationship of this form to the known groups of Polycheats. I shall only remark that the parapodium calls to mind that of the Phyllodocidæ with the restriction that compound setæ are entirely lacking. The cephalic lobe does not show relation to any known form.

It is an untoward situation to be obliged to establish a new genus on a single specimen; almost impossible is it when it is necessary to draw up the lines for a new family.

According to my opinion the *characteristica* of the new family will be the following:

Forms of medium size with the body of nereidiform or eunicifórm aspect, consisting of a considerable number of segments. Body somewhat flattened; the dorsal side only a little convex, the ventral side provided with a well marked, rather deep depression extending along the mid-ventral line through about the whole length of the animal. The cephalic lobe is well developed, its longitudinal axis forming about a right angle with the longitudinal axis of the body. Two tentacles (short and thick) are present; in the median line of the cephalic lobe is situated a rather small, unpaired tentacle (possibly a nuchal organ?). Pharynx longitudinally folded; chitinous jaws and paragnaths wanting. The parapodium is well developed, long, muscular and highly movable. Acicles present in two bundles, a ventral, consisting of 3, and a dorsal, consisting of 2 acicles. Dorsal and ventral cirrus developed, lamelliform. Bristles uncompound, hairy, exceedingly delicate.

Otopsis longipes n. g. n. sp.

Pl. VI., figs. 1—12.

Locality:

The Ingolf Expedition, St. 68, 62°06′ N. L., 22°30′ W. L. 843 fms. South-west of Iceland.

Two fragments are present, evidently belonging to the same specimen. One of these fragments constitutes the foremost part of the animal including the head; the hindpart of the animal is lost. The two fragments together measure 110 mm; the cephalic fragment (Pl. VI., fig. 6), measures alone 43 mm. The breadth of the animal, almost the same through the whole length of the present fragments and only tapering a little in the front end, is c. 7 mm.

The shape of the animal being eunicifórm or nereidiform and the hindmost segments present being of almost the same breadth as the rest, it is quite impossible to judge of the real length of the animal. It is possible that more than half of the body-length has been lost. The single segments are short and broad, and the body has got a peculiar and characteristic aspect in that the parapodia are not limited against the dorsum by a furrow as usually is the case with errantiate Polychaetes viz. Nereids, Eunicids, Hesionids, Glycerids; the case is more like that in Polynoids and Phyllodocids in which families the furrow is covered respectively by the elytra and the dorsal lamellæ; but even in these two families the parapodia are more sharply limited against the dorsum than in the species under consideration. The case presents itself plainly in the fig. 6, Pl. VI.

On the ventral side the parapodia are limited against the body by a very deep and sharply pointed furrow. This furrow is present throughout the whole length of the animal, and only in the foremost part of the body, near the head, does it grow more indistinct and successively more flattened. The ventral side of the animal is highly convex; but in the middle of this ventral convexity a broad and deep longitudinal furrow is present, so that the ventral side presents two parallel-running longitudinal walls separated from each other by the named longitudinal furrow. Towards the front end of the animal this furrow also becomes more shallow and tapers successively in the foremost segments; yet a limited ventral part can be seen even here (Pl. VI. fig. 1). On the dorsal side of each segment a pair of indistinct pores is to be seen; they form two longitudinal rows of pores stretching along the dorsal side of the animal. In the front part of the animal the named pores are invisible; it is undecided whether they are really wanting here or whether they can not be seen on account of the fact that the skin here is more strongly folded and wrinkled than in the other parts of the body.

On the dorsal side the skin is finely wrinkled; the furrows and the wrinkles are running in the longitudinal axis of the animal; as already remarked, this system of furrows and wrinkles becomes more distinct in the front end of the animal. In the parapodia these furrows are highly distinct (Pl. VI. figs. 9 and 5).

On the ventral side a system of longitudinal and across-running wrinkles is distinct on the two ventral longitudinal walls (Pl. VI. fig. 11). In the ventral furrow the skin is only furrowed transversally.

The cephalic lobe is rather large, of equal length and breadth, c. 2 mm; its longitudinal axis is situated about right-angled to the axis of the body. The ventral part of the cephalic lobe constitutes a broad, thick, wrinkled, convex shape which bounds the mouth dorsally and overhangs the latter. (Pl. VI., figs. 1, 4, 8.) The named wrinkles, running longitudinally and restricted to this part of the lobe, are of different distinctness; the median furrow is larger and deeper than the others and divides the lobe in two lateral halves. (Pl. VI. figs. 1 and 4). Near the base of the cephalic lobe are situated two tentacles, on the dorsal side short, broad and somewhat flattened, almost conical in shape and somewhat restricted at their base. Between these two tentacles is seen, in the dorsal midline of the cephalic lobe, a similar but conspicuously smaller tentacle-like prominence. Whether this organ is a true tentacle or not is undecided; it is possible that it is a nuchal organ like those found in Phylladocids. I am most inclined to interpret it as a tentacle on account of its shape, which is more like the two paired tentacles than the usual globular shape of the mentioned nuchal organs. No eyes are to be seen.

Only a very little part of the pharynx is protruded. On fig. 1 Pl. VI. it is seen strongly folded in a rather regular manner, the folds running like radii towards the opening of the mouth. No jaws or paragnaths are present: the opened pharynx only shows longitudinal folds.

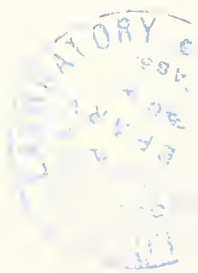
On the buccal segment two cirritentaculares are seen on each side; they are of about the same shape as the tentacles and of about the same size. The following segment has no parapodium, only a cirrus (dorsal cirrus?) is present. Hereafter each segment is provided with a well developed parapodium. Those nearest the front end are smaller, but they increase rapidly backwards.

The parapodium seems to me to ressemble in structure that of the Phyllodocidæ. If we could imagine the base of the Phyllodoce-parapodium lengthened to such a degree that the bristle-carrying part and the lamellæ were placed on the tip of a long shaft, we should have the case present in

Otopsis. In length this parapodium also calls to mind that of Admetella longepedata. Peculiar is the behaviour of the acicles: These are present in two bundles, a ventral and a dorsal; the ventral bundle consists of three, the dorsal of two acicles (Pl. VI., figs. 9 and 10). The ventral of these bundles can be traced to the apex of the parapodium itself, the dorsal is tapering in the base of the dorsal lamella and represents the rudiment of a dorsal parapodial branch. Another peculiarity concerning the acicles is their thinness and flexibility. (Pl. VI., figs. 9, 7.)

The parapodium itself constitutes a little bilobate flob, highly overhung by the two, respectively dorsally and ventrally situated, lamelliform organs, in my opinion really corresponding to the dorsal and ventral lamella in the parapodium of the Phyllodocids.

Compound bristles are entirely lacking. All the setæ present are exceedingly fine, hairy and pulled out into a delicate long apex. (Pl. VI., fig. 12.)



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Corrigenda.

p. 3.	line	15:	for	"Medelland"	read "Medalland".
p. 11.		12:	-	"Narssuk"	"Narssak".
—	—	16:	-	"Smalsund"	"Smallesund".
		18:	-	"Turnar"	"Turner".
	—	23:	-	"Tiningnekelok"	"Tiningnekelak"
		32:	-	"Bern-fjord"	"Beru-fjord".
p. 13.		25:	-	"Fortunabay"	"Fortunebay".
		37:	-	"Tiningnekelok"	"Tiningnekelak".
p. 16.		19:	-	"Bovovig"	"Bordøvig".
p. 40.		31:	-	"Northern Stromfjord. 44 miles from the mouth 58 m. land"	read "Northern Stromfjord; 44 miles from the mouth, 58 m. sand".
p. 41.		25:	-	"Bern-fjord"	read "Beru-fjord".
p. 42.		18:	-	"Bovovig"	"Bordovig".
p. 46.		19:	-	"Anda-fjord"	"Ande-fjord".
p. 68		34:	-	"cirritentaculares"	read "cirri tentaculares".

Plate I.

Plate I.

Fig. 1. *Harmothoe bathydomus*, n. sp. Bodies from the scales.
— 2. *Harmothoe bathydomus*, n. sp. tip of a ventral bristle.
— 3. *Harmothoe bathydomus*, n. sp. Tip of a ventral bristle, strongly curved.
— 4. *Harmothoe bathydomus*, n. sp. Elytron.
— 5. *Harmothoe bathydomus*, n. sp. Ventral bristle.
— 6. *Harmothoe acanellæ*, Verrill. Elytron.
— 7. *Harmothoe bathydomus*, n. sp. Cephalic lobe.
— 8. *Harmothoe acanellæ*. Verrill. Ventral bristle.
— 9. *Harmothoe acanellæ*, Verrill. Dorsal bristle.
— 10. *Harmothoe vesiculosa*, n. sp. Cephalic lobe.
— 11. *Harmothoe vesiculosa*, n. sp. Elyton.
— 12. *Harmothoe ingolfiana*, n. sp. Bodies from the scales.
— 13. *Harmothoe acanellæ*, Verrill. Cephalic lobe.
— 14. *Harmothoe ingolfiana*, n. sp. Elytron.

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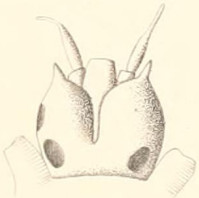

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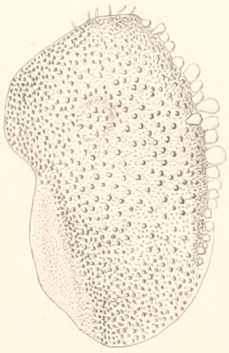

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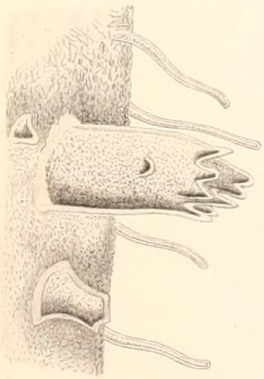

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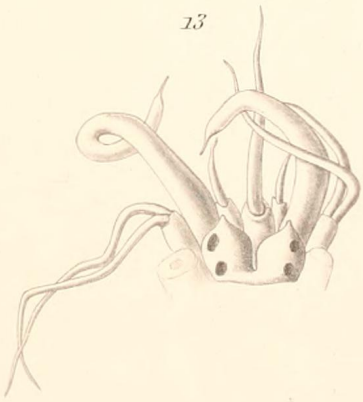

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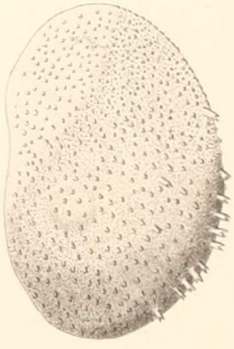


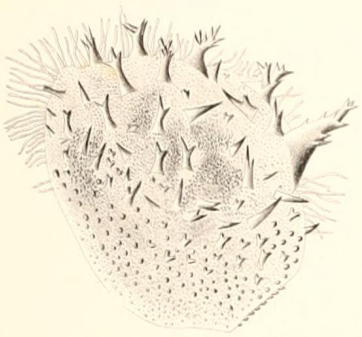
Autor del.

T.N. Möller sc.

Plate II.

Plate II.

Fig. 1. *Harmothoe senta*, Moore. Elytron.
— 2. *Harmothoe Hubrechti*, Mc. Intosh. Cephalic lobe.
— 3. *Harmothoe Hubrechti*, Mc. Intosh. Elytron.
— 4. *Harmothoe acanellæ*, Verrill. Bristle from the first parapodium.
— 5. *Harmothoe oculinarum*, Storm. Elytron.
— 6. *Harmothoe Hubrechti*, Mc. Intosh. "Rudder."
— 7. *Harmothoe aspera*, Hansen. Elytron.
— 8. *Bathynoë nodulorus*, n. g. n. sp. Dorsal cirrus.
— 9. *Harmothoe* sp. Cephalic lobe.
— 10. *Haarmothoe bathydomus*, n. sp. Tip of a dorsal bristle.
— 11. *Harmothoe bathydomus*, n. sp. Dorsal bristle.
— 12. *Phyllodoce paretti*, Blainv. Foremost part of the animal.
— 13. *Harmothoe oculinarum*, Storm. Bodies from the scale.
— 14. *Harmothoe floccosa*, var Porcupine, Mc. Intosh. Elytron.
— 15. *Harmothoe ingolfiana*, n. sp. Cephalic lobe.
— 16. *Harmothoe impar*, Malmgren. Elytron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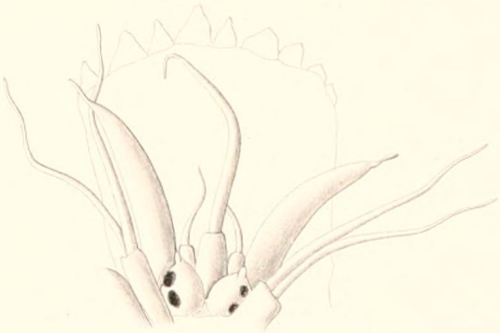
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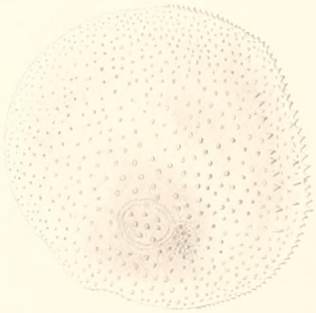
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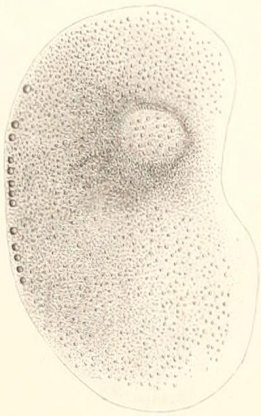
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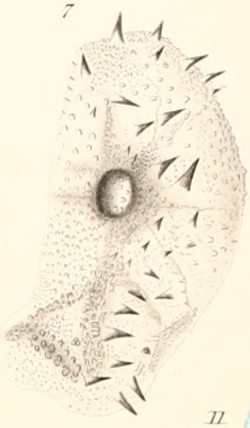
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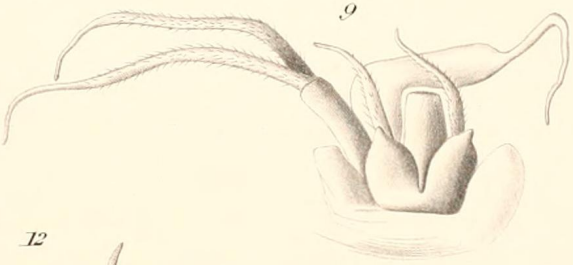
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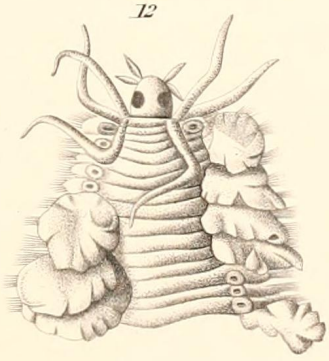
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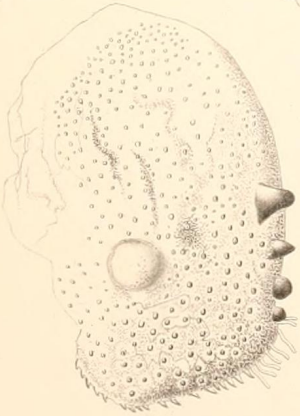
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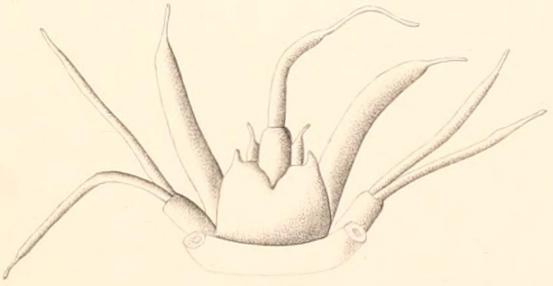
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Plate III.

Plate III.

Fig. 1. *Harmothoe propinqua*, Malmgren. Bodies from the scale.
— 2. *Drieschia melanostoma*, n. sp. Cephalic lobe.
— 3. *Harmothoe propinqua*, Malmgren. Elytron.
— 4. *Harmothoe Fraser Thomsoni*, Mc. Intosh. Bodies from the scales.
— 5. *Harmothoe Fraser Thomsoni*, Mc. Intosh. Cephalic lobe.
— 6. *Harmothoe oculinarum*, Storm. Cephalic lobe.
— 7. *Harmothoe zetlandica*, Mc. Intosh. Cephalic lobe.
— 8. *Harmothoe oculinarum*, Storm. Cephalic lobe.
— 9. *Harmothoe Fraser Thomsoni*, Mc. Intosh. Elytron.
— 10. *Harmothoe nodosa*, Orsted. Elytron.
— 11. *Harmothoe impar*, Malmgren. Cephalic lobe.
— 12. *Bathynoë nodulosus*, n. g. n. sp. Elytron.

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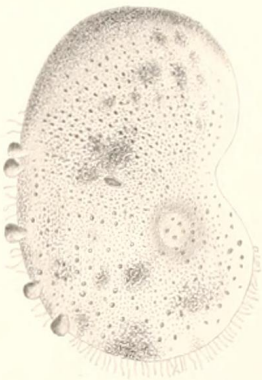

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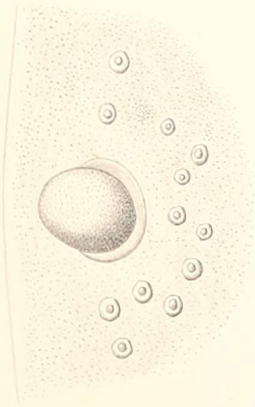

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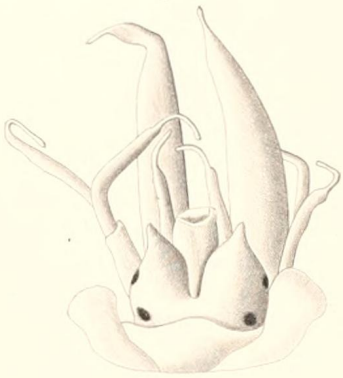

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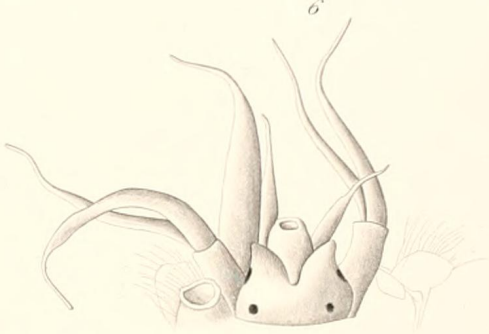

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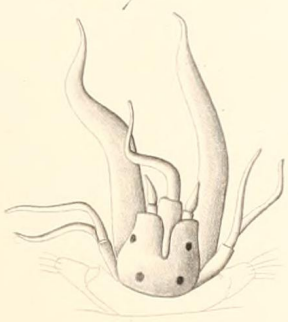

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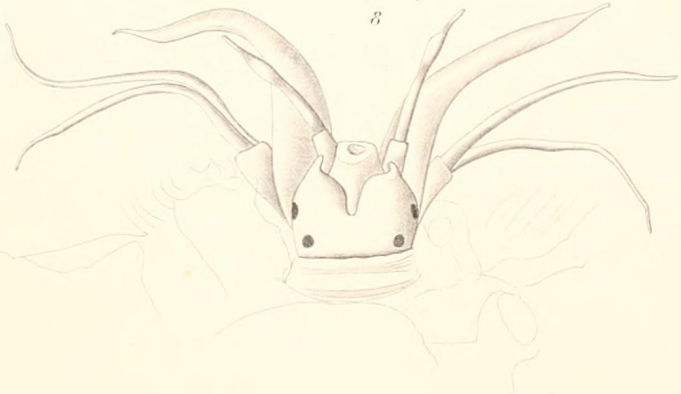

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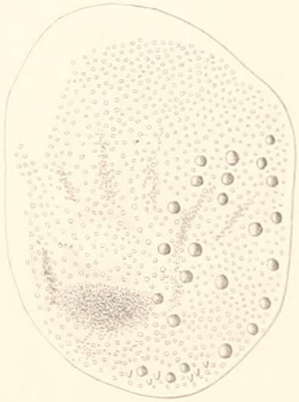

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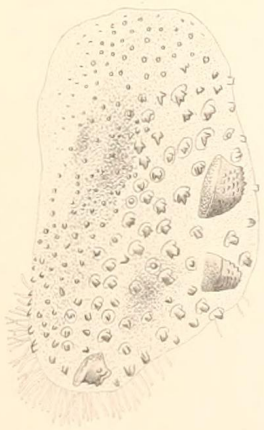

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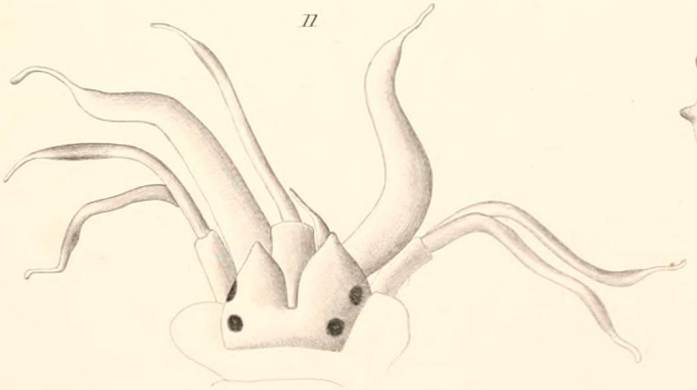

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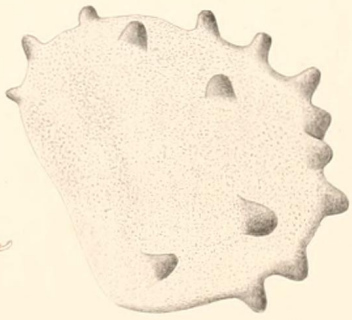
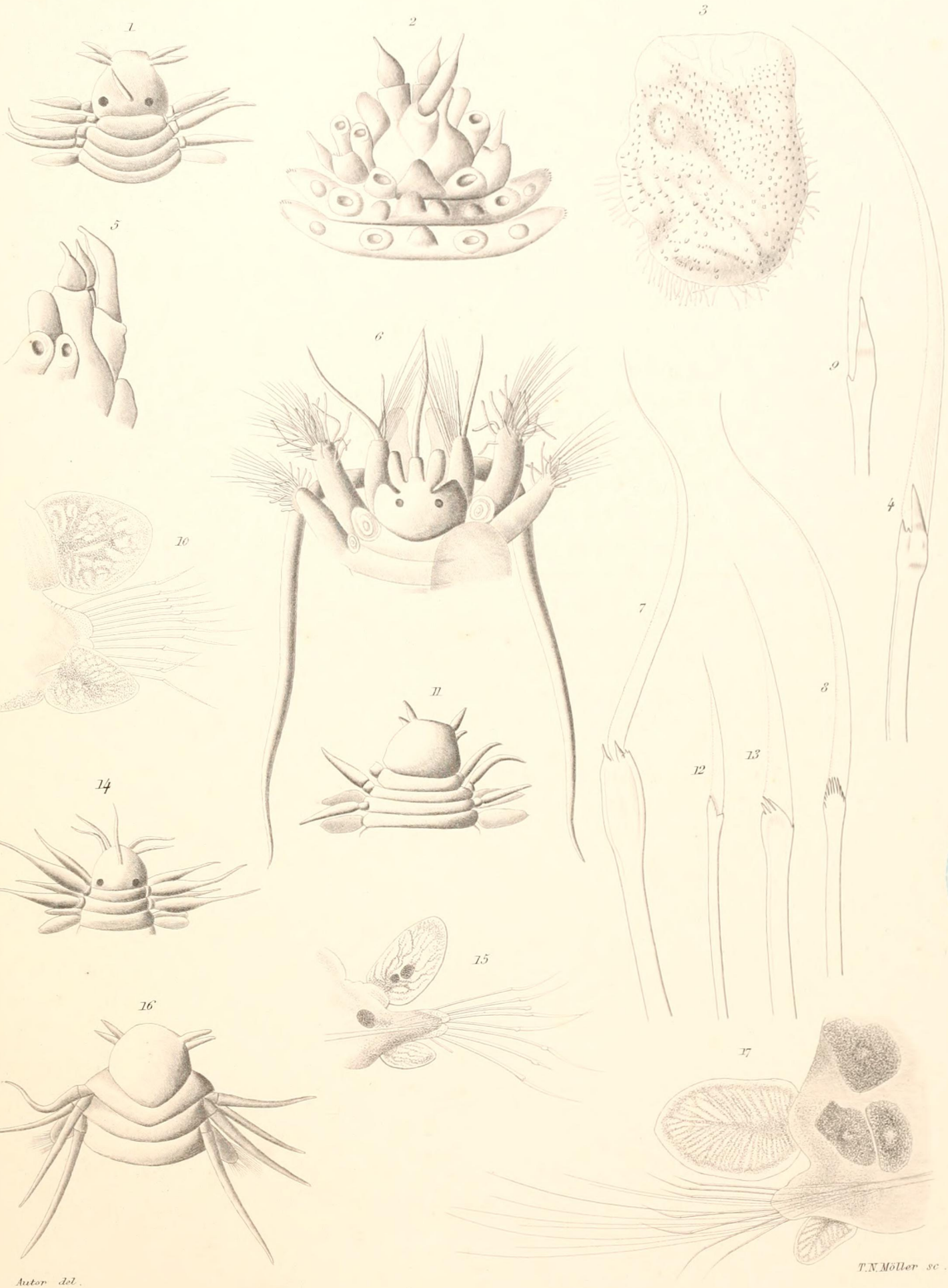


Plate IV.

Plate IV.

Fig. 1. *Eulalia tjàlfiensis*, n. sp. Cephalic lobe.
— 2. *Bathynoë nodulosus*, n. g. n. sp. Cephalic lobe.
— 3. *Harmothoe* sp. Elytron.
— 4. *Anaïtis* sp. Bristle.
— 5. *Bathynoë nodulosus*, n g. n. sp. Cephalic lobe. From the side.
— 6. *Sthenelaïs filamentosus*, n. sp. Cephalic lobe.
— 7. *Phyllodoce paretti*, Blainv. Bristle.
— 8. *Mystides occidentalis*, n. sp. Bristle.
— 9. *Anaïtis* sp. Bristle.
— 10. *Eulalia minuta*, n. sp. Parapodium.
— 11. *Mystides occidentalis*, n. sp. Cephalic lobe.
— 12. *Eulalia minuta*, n. sp. Bristle.
— 13. *Eulalia tjàlfiensis*, n. sp. Bristle.
— 14. *Eulalia minuta*, n. sp. Cephalic lobe.
— 15. *Mystides occidentalis*, n. sp. Parapodium.
— 16. *Anaïtis* sp. Cephalic lobe.
— 17. *Eulalia tjàlfiensis*, n. sp. Parapodium.



Autor del.

T.N.Möller sc.

Plate V.

Plate V.

Fig. 1. *Eteone depressa*, Malmgren. Parapodium.
— 2. *Eteone flava*, Fabricius. Cephalic lobe.
— 3. *Phyllodoce Paretti*, Blainv. Parapodium.
— 4. *Anaïtis* sp. Parapodium.
— 5. *Eteone depressa*, Malmgren. Cephalic lobe. From the side.
— 6. *Eteone depressa*, Malmgren. Bristle.
— 7. *Eteone depressa*, Malmgren. Bristle.
— 8. *Eteone depressa*, Malmgren. Cephalic lobe.
— 9. *Sthenelaïs filamentosus*. Parapodium.
— 10. *Eulalia tripunctata*. Mc. Intosh. Parapodium.
— 11. *Eteone striata*, Levinsen. Cephalic lobe.
— 12. *Eteone spetzbergensis*, Malmgren. Cephalic lobe.
— 13. *Eteone longa* (Fabricius). Cephalic lobe.
— 14. *Eteone spetzbergensis*, Malmgren. Parapodium.
— 15. *Eteone flava*, Fabricius. Parapodium.
— 16. *Eteone flava*, Fabricius. Bristle.
— 17. *Eteone striata*, Levinsen. Bristle.
— 18. *Eteone spetzbergensis*, Malmgren. Bristle.
— 19. *Eteone striata*, Levinsen. Parapodium.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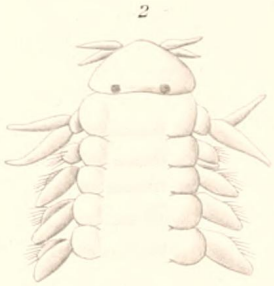
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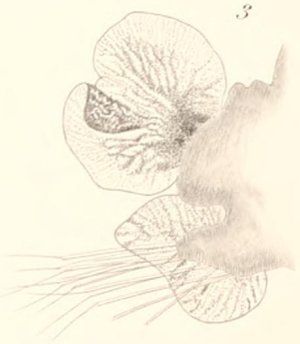
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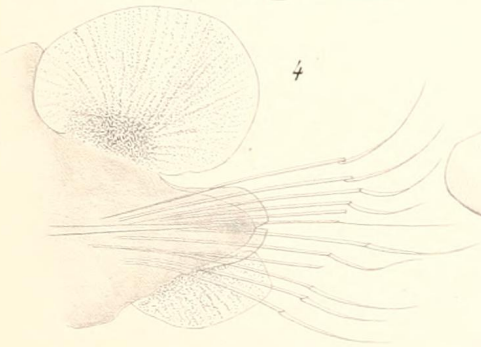
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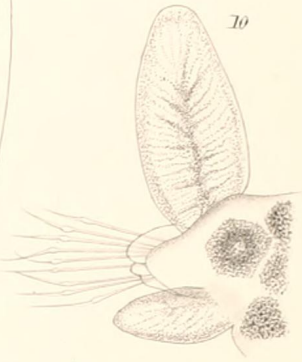
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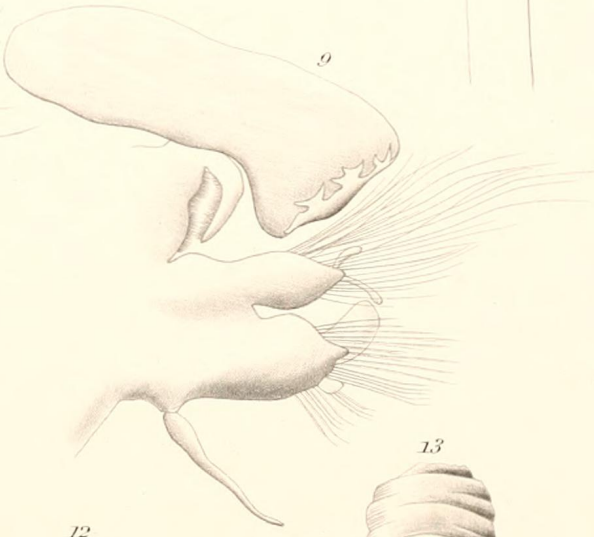
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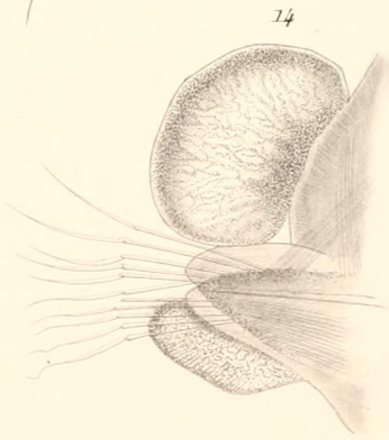
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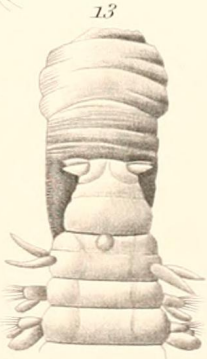
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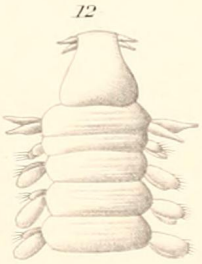
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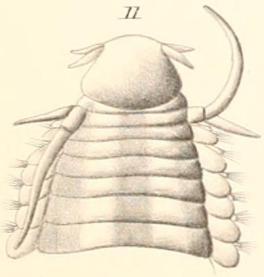
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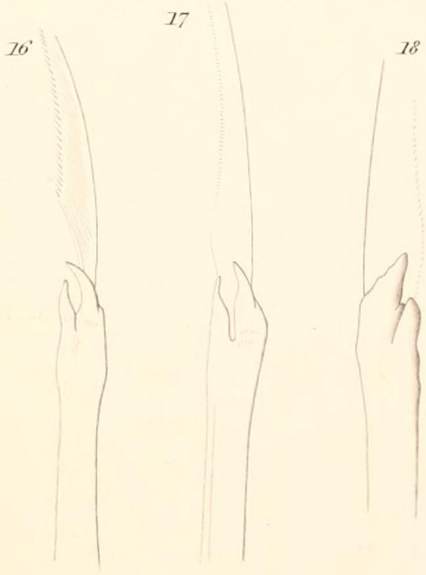
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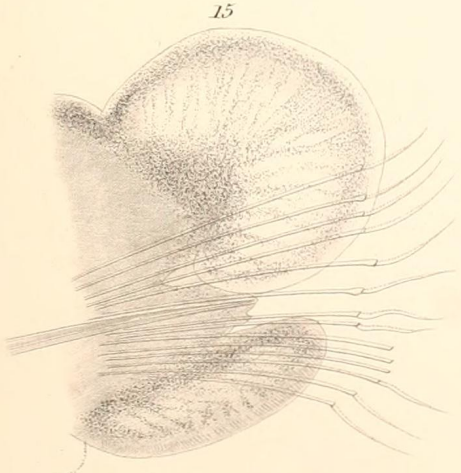
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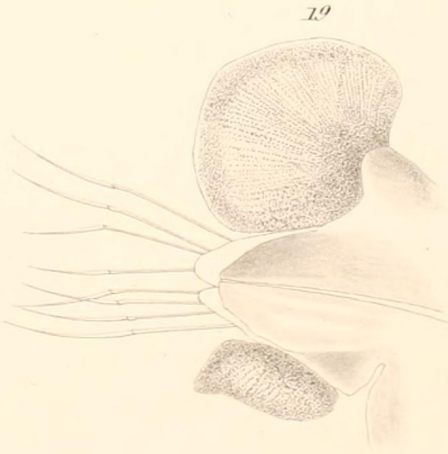
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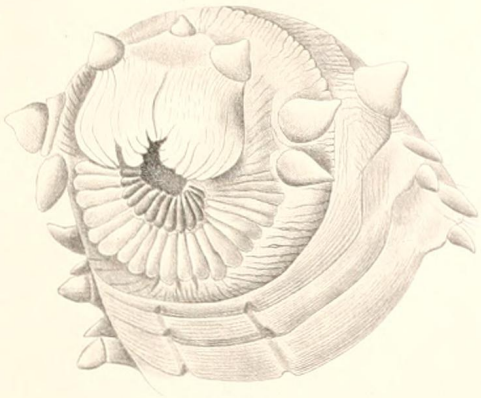
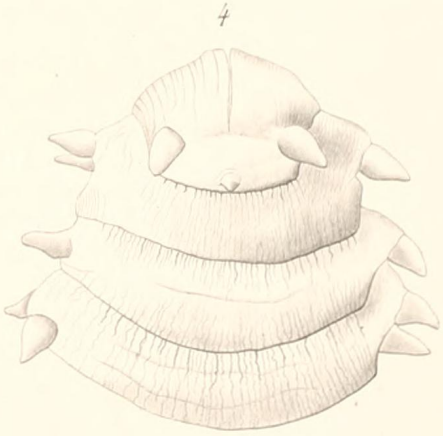
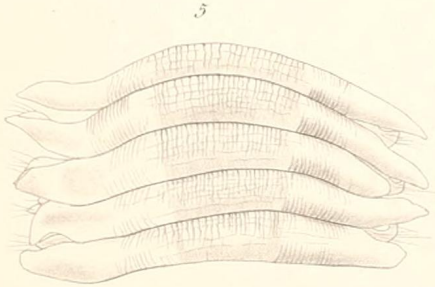
Plate VI.

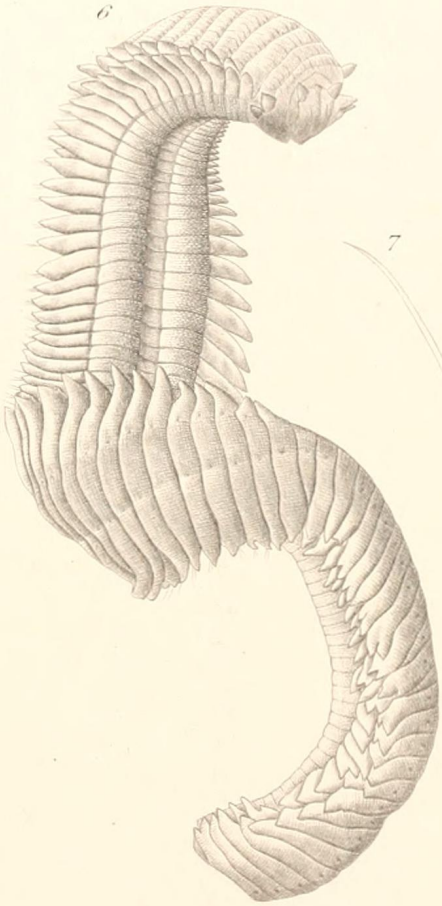
Plate VI.

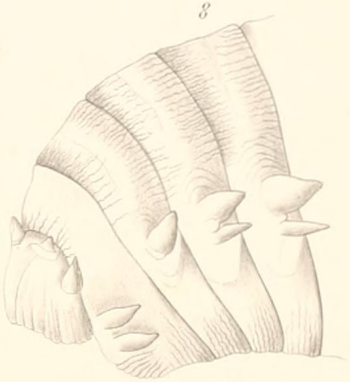
Fig. 1. *Otopsis longipes*, n. g. n. sp. Cephalic lobe and foremost segments; from before.
— 2. *Otopsis longipes*, n. g. n. sp. Acicle from the ventral branch of the Parapodium.
— 3. *Otopsis longipes*, n. g. n. sp. Acicle from the dorsal branch of the Parapodium.
— 4. *Otopsis longipes*, n. g. n. sp. Cephalic lobe; from above.
— 5. *Otopsis longipes*, n. g. n. sp. Segments from the midmost part of the animal; dorsal aspect.
— 6. *Otopsis longipes*, n. g. n. sp. The anterior Fragment of the animal; habitus. From a photograph, taken by docent R. H. Stamm.
— 7. *Otopsis longipes*, n. g. n. sp. Acicle from the dorsal branch of the parapodium.
— 8. *Otopsis longipes*, n. g. n. sp. Cephalic lobe and the foremost segments; from the left side.
— 9. *Otopsis longipes*, n. g. n. sp. Parapodium.
— 10. *Otopsis longipes*, n. g. n. sp. The distal part of a parapodium.
— 11. *Otopsis longipes*, n. g. n. sp. Segments from the midmost part of the animal. Ventral aspect.
— 12. *Otopsis longipes*, n. g. n. sp. Two bristles.

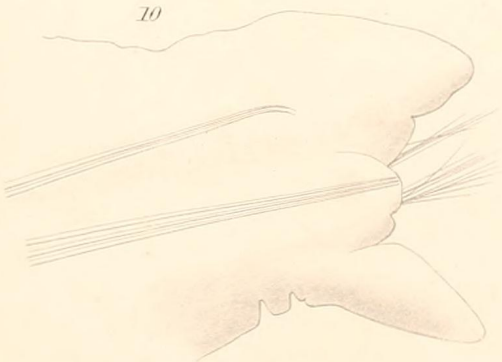


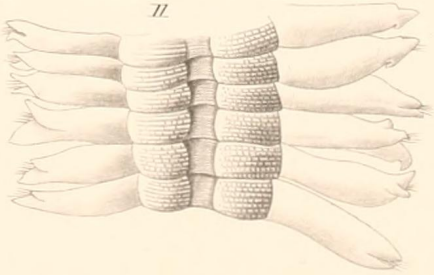












THE INGOLF-EXPEDITION

1895 1896.

THE LOCALITIES, DEPTHS, AND BOTTOMTEMPERATURES OF THE STATIONS

Station Nr.	Lat. N.	Long. W.	Depth in Danish fathoms	Bottom-temp.	Station Nr.	Lat. N.	Long. W.	Depth in Danish fathoms	Bottom-temp.	Station Nr.	Lat. N.	Long. W.	Depth in Danish fathoms	Bottom-temp.
1	62° 30′	8° 21′	132	7°2	24	63° 06′	56° 00′	1199	2°4	45	61° 32	9° 43′	643	4°17
2	63° 04′	9° 22′	262	5°3	25	63° 30′	54° 25′	582	3°3	46	61° 32′	11° 36′	720	2°40
3	63° 35′	10° 24′	272	0°5		63° 51′	53° 03′	136		47	61° 32′	13° 40′	950	3°23
4	64° 07′	11° 12′	237	2°5	26	63° 57′	52° 41′	34	0°6	48	61° 32′	15° 11′	1150	3°17
5	64° 40′	12° 09′	155			64° 37′	54° 24′	109		49	62° 07′	15° 07′	1120	2°91
6	63° 43′	14° 34′	90	7°0	27	64° 54′	55° 10′	393	3°8	50	62° 43′	15° 07′	1020	3°13
7	63° 13′	15° 41′	600	4°5	28	65° 14′	55° 42′	420	3°5	51	64° 15′	14° 22′	68	7°32
8	63° 56′	24° 40′	136	6°0	29	65° 34′	54° 31′	68	0°2	52	63° 57′	13° 32′	420	7°87
9	64° 18′	27° 00′	295	5°8	30	66° 50′	54° 28′	22	1°05	53	63° 15′	15° 07′	795	3°08
10	64° 24′	28° 50′	788	3°5	31	66° 35′	55° 54′	88	1°6	54	63° 08′	15° 40′	691	3°9
11	64° 34′	31° 12′	1300	1°6	32	66° 35′	56° 38′	318	3°9	55	63° 33′	15° 02′	316	5°9
12	64° 38′	32° 37′	1040	0°3	33	67° 57′	55° 30′	35	0°8	56	64° 00′	15° 09′	68	7°57
13	64° 47′	34° 33′	622	3°0	34	65° 17′	54° 17′	55		57	63° 37′	13° 02′	350	3°4
14	64° 45′	35° 05′	176	4°4	35	65° 16′	55° 05′	362	3°6	58	64° 25′	12° 09′	211	0°8
15	66° 18′	25° 59′	330	−0°75	36	61° 50′	56° 21′	1435	1°5	59	65° 00′	11° 16′	310	−0°1
16	65° 43′	26° 58′	250	6°1	37	60° 17′	54° 05′	1715	1°4	60	65° 09′	12° 27′	124	0°9
17	62° 49′	26° 55′	745	3°4	38	59° 12′	51° 05′	1870	1°3	61	65° 03′	13° 06′	55	0°4
18	61° 44′	30° 29′	1135	3°0	39	62° 00′	22° 38′	865	2°9	62	63° 18′	19° 12′	72	7°92
19	60° 29′	34° 14′	1566	2°4	40	62° 00′	21° 36′	845	3°3	63	62° 40′	19° 05′	800	4°0
20	58° 20′	40° 48′	1695	1°5	41	61° 39′	17° 10	1245	2°0	64	62° 06′	19° 00′	1041	3°1
21	58° 01′	44° 45′	1330	2°4	42	61° 41′	10° 17′	625	0°4	65	61° 33′	19° 00′	1089	3°0
22	58° 10′	48° 25′	1845	1°4	43	61° 42′	10° 11′	645	0°05	66	61° 33′	20° 43′	1128	3°3
23	60° 43′	56° 00′	Only the Plankton Net used		44	61° 42′	9° 36′	545	4°8	67	61° 30′	22° 30′	975	3°0

Station Nr.	Lat. N.	Long. W.	Depth in Danish fathoms	Bottom-temp.	Station Nr.	Lat. N.	Long. W.	Depth in Danish fathoms	Bottom-temp.	Station Nr.	Lat. N.	Long. W.	Depth in Danish fathoms	Bottom-temp.
68	62° 06′	22° 30′	843	3°4	92	64° 44′	32° 52′	976	1°4	118	68° 27′	8° 20′	1060	—1°0
69	62° 40′	22° 17′	589	3°9	93	64° 24′	35° 14′	767	1°46	119	67° 53′	10° 19′	1010	—1°0
70	63° 09′	22° 05′	134	7°0	94	64° 56′	36° 19′	204	4°1	120	67° 29′	11° 32′	885	—1°0
71	63° 46′	22° 03′	46			65° 31′	30° 45′	213		121	66° 59′	13° 11′	529	—0°7
72	63° 12′	23° 04′	197	6°7	95	65° 14′	30° 39′	752	2°1	122	66° 42′	14° 44′	115	1°8
73	62° 58′	23° 28′	486	5°5	96	65° 24′	29° 00′	735	1°2	123	66° 52′	15° 40′	145	2°0
74	62° 17′	24° 36′	695	4°2	97	65° 28′	27° 39′	450	5°5	124	67° 40′	15° 40′	495	—0°6
	61° 57′	25° 35′	761		98	65° 38′	26° 27′	138	5°9	125	68° 08′	16° 02′	729	—0°8
	61° 28′	25° 06′	829		99	66° 13′	25° 53′	187	6°1	126	67° 19′	15° 52′	293	—0°5
75	61° 28′	26° 25′	780	4°3	100	66° 23′	14° 02′	59	0°4	127	66° 33′	20° 05′	44	5°6
76	60° 50′	26° 50′	806	4°1	101	66° 23′	12° 05′	537	—0°7	128	66° 50′	20° 02′	194	0°6
77	60° 10′	26° 59′	951	3°6	102	66° 23′	10° 26′	750	0°9	129	66° 35′	23° 47′	117	6°5
78	60° 37′	27° 52′	799	4°5	103	66° 23′	8° 52′	579	0°6	130	63° 00′	20° 40′	338	6°55
79	60° 52′	28° 58′	653	4°4	104	66° 23′	7° 25′	957	—1°1	131	63° 00′	19° 09′	698	4°7
80	61° 02′	29° 32′	935	4°0	105	65° 34′	7° 31′	762	—0°8	132	63° 00′	17° 04′	747	4°6
81	61° 44′	27° 00′	485	6°1	106	65° 34′	8° 54′	447	—0°6	133	63° 14′	11° 24′	230	2°2
82	61° 55′	27° 28′	824	4°1		65° 29′	8° 40′	466		134	62° 34′	10° 26′	299	4°1
83	62° 25′	28° 30′	912	3°5	107	65° 33′	10° 28′	492	0°3	135	62° 48′	9° 48′	270	0°4
	62° 36′	26° 01′	472		108	65° 30′	12° 00′	97	1°1	136	63° 01′	9° 11′	256	4°8
	62° 36′	25° 30′	401		109	65° 29′	13° 25′	38	1°5	137	63° 14′	8° 31′	297	0°6
84	62° 58′	25° 24′	633	4°8	110	66° 44′	11° 33′	781	—0°8	138	63° 26′	7° 56′	471	0°6
85	63° 21′	25° 21′	170		111	67° 14′	8° 48′	860	—0°9	139	63° 36′	7° 30′	702	—0°6
86	65° 03′6	23° 47′6	76		112	67° 57′	6° 44′	1267	—1°1	140	63° 29′	6° 57′	780	—0°9
87	65° 02′3	23° 56′2	110		113	69° 31′	7° 06′	1309	—1°0	141	63° 22′	6° 58′	679	—0°6
88	64° 58′	24° 25′	76	6°9	114	70° 36′	7° 29′	773	—1°0	142	63° 07′	7° 05′	587	—0°6
89	64° 45′	27° 20′	310	8°4	115	70° 50′	8° 29′	86	0°1	143	62° 58′	7° 09′	388	—0°4
90	64° 45′	29° 06′	568	4°4	116	70° 05′	8° 26′	371	—0°4	144	62° 49′	7° 12′	276	1°6
91	64° 44′	31° 00′	1236	3°1	117	69° 13′	8° 23′	1003	—1°0					

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