

Ohlin 1901a T1725

*Arctic Crustacea collected during the Swedish Arctic Exped.
1878, 1899 and 1900 under the direction...*

H. NOUYEL

BIHANG

TILL

KONGL. SVENSKA VETENSKAPS-AKADEMIENS

HANDLINGAR.

TJUGUSJUNDE BANDET.

BIBLIOTHEQUE
du
MUSEUM

STOCKHOLM 1901-1902. P. A. NORSTEDT & SÖNER.

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which it has been taken is 250 metres in stat. 21, 1900. But these figures give, of course only, an approximate value, and it is only by means of shutting nets that we might expect to get certain information as to its bathymetrical range.

One specimen was infested by the parasitic cirriped, *Salpa hamondora* G. O. SARS.

Colour bright red.

Length of largest spec. 69 mm.

Schizopoda.

Fam. Euphausliidæ.

Nyctiphanes G. O. SARS 1883.

This genus was instituted by SARS, in his Preliminary Notices on the Schizopoda of H. M. S. Challenger Expedition, to receive the Northern *Thysanopoda Couchii* BELL and *Thysanopoda norvegica* M. SARS and a new nearly related form, viz. *Nyctiphanes australis* from Bass' Strait. It is mainly characterized by a membranous reflexed leaflet on the basal joint of the antennula, and by the rudimentary and dissimilar state of the two hindmost pairs of legs.

25. *Nyctiphanes norvegica* (M. SARS).

1857. *Thysanopoda norvegica* M. SARS, Om 3 nye norske Krebsdyr, I. c. p. 169.
1864. M. SARS, Udførlig Beskrivelse etc., I. c. p. 2.
1864. nana M. SARS, Tillæg til etc., I. c. p. 84.
1878. *Norvegica* SMITH, Stalk-eyed Crust. Atl. Coast North America etc., I. c. p. 89.
1885. *Nyctiphanes* G. O. SARS, Norweg. North Atl. Exp. II, p. 12.

1886. *Nyctiphanes Norvegica* KOELBEL, Crust., Pycnog. und Arachn. von Jan Mayen etc., l. c. p. 48, taf. III, fig. 7—10.
1892. *norvegica* NORMAN, Families Lophogastridae and Euphausiidae etc., l. c. p. 459.
1892. STERBING, Hist. Crustacea, l. c. p. 263.

Localities:

in 1898:

- stat. 41. lat. 75° 58' N., long. 13° 18' E., 56 miles S.W. of South Cape, Spitzbergen, depth 350 m., bottom temp. + 2.73° C., grayish clay, 1/IX, one spec.

in 1899:

- stat. 3. lat. 63° 36' N., long. 0° 26' E., depth 1900 m., 2/VI., many spec.

in 1900:

- stat. 21. East Greenland, off Kaiser Franz Joseph Fjord between Bontekoe Island and Mackenzie Bay, depth 250 m., mud, 8/VIII, one spec.
" 29. lat. 73° 43' N., long. 14° 49' W., between Greenland and Jan Mayen, depth 2000 m., clay, 27/VIII, many spec.
" II. lat. 73° 30' N., long. 2° W., depth 1500--0 m., vertical net, 12/VII, one spec.

Distribution: This beautiful species seems to be widely distributed both in the North Atlantic Ocean and in the adjacent parts of the Arctic. It has been obtained during the Porcupine Expedition off the coast of Portugal. NORMAN mentions it from the Bay of Biscay and from the British Isles, and SARS from the whole of the Norwegian coast, where it occurs, in some localities, at the surface, in such vast swarms that the sea gets thereby a peculiar brownish tint. SARRH states the same fact on the east coast of New England and Nova Scotia, where it goes as far south as Massachusetts Bay. BUCHHOLZ and HANSEN enumerate it from the sea E. of Greenland, KOELBEL from Jan Mayen, and GOËB from Bohuslän and lat. 75° N., long. 12° E. It also occurs in Færøe Channel (MURRAY *vide* NORMAN) and off the Naze (METZGER). SARS reports it from the North Polar Basin, where it was taken during the famous Fram Expedition.

écrire dans la partie quadrillée ci-dessus.

Strangely enough, it was not obtained either on the Challenger Expedition or on the German Plankton Expedition.

G. O. SARS says¹: «May be the British form, *Thysanopoda Couchii*, observed by BELL, is identical with the present species.» NORMAN has, however, clearly proved that *Nyctiphanes Couchii* is a very distinct species, nearly related to *Nyctiphanes australis* G. O. SARS from Bass' Strait, Australia.
Length 37 mm.

Rhoda SIM 1872.

(= *Boreophausia* G. O. SARS 1883).

STEBBING is the first who, in his *History of Crustacea*, pointed out that two Northern Euphausiids, viz. the well-known *Thysanopoda inermis* KRÖYER and a closely-allied form *Thysanopoda Raschii* M. SARS, ought strictly to be referred to the genus *Rhoda*, established in 1872 by G. SIM in his paper on «Stalk-eyed Crustacea N. E. Coast of Scotland» published in the *Scottish Naturalist*. The genus was created to receive a species, viz. *Rhoda Jardineana*, which NORMAN identifies with *Thysanopoda Raschii*. SARS, in his «Preliminary Notices on the Schizopoda of H. M. S. «Challenger» Expedition», established for KRÖYER's *Thysanopoda inermis* a new genus, viz. *Boreophausia*, but without giving any generic diagnosis. Two years afterwards he added² to this genus *Thysanopoda neglecta* KRÖYER and *Thysanopoda Raschii* M. SARS and, with some hesitation, *Thysanopoda longicaudata* KRÖYER. Of these species, *Thysanopoda Raschii* is the only one that ought properly to be referred to *Boreophausia*, the other two belonging, according to HANSEN and NORMAN, to the genus *Thysanoessa*, established by BRANT in 1851. Since *Rhoda Jardineana* has proved to be identical with *Boreophausia Raschii*, SARS' genus must yield priority to the much older name *Rhoda*. The genus thus includes *Rhoda inermis* (KRÖYER) and *Rhoda Raschii* (M. SARS).

¹ l. c. p. 12.

² Norweg. North Atlant. Exp. II, p. 13. Rep. Challenger Exp., p. 64.

26. *Rhoda inermis* (KRÖYER).

1846. *Thysanopoda inermis* KRÖYER, Voy. in Scand. etc., p. 7, fig. 2 a—t.
 1859. KRÖYER, Monograph, Fremstilling of *Sergestes*, l. c. p. 294, tab. V, fig. 24.
 1879. SMITH, Stalk-eyed Crust. Atl. Coast North America, l. c. p. 91.
 1882. *Euphausia* G. O. SARS, Overs. Norges Crust. etc., l. c. p. 51, tab. I, fig. 15.
 1886. KOEHLER, Crust., Pycnog. und Arachn. von Jan Mayen etc., l. c., p. 47.
 1887. *Boreophausia* HANSEN, Ofv. vestl. Grönlands Fauna etc., l. c. p. 53.
 1887. HANSEN, Hjemphua-Togtets zool. bot. Udbytte etc., l. c. p. 253, tab. XXIII, fig. 3.
 1892. NORMAN, Families Lophogastridae and Euphausiidae etc., l. c. p. 461.
 1893. [*Boreophausia*] *Rhoda inermis* STEBBING, Hist. Crustacea, l. c. p. 263.
 1900. *Rhoda inermis* STEBBING, Arctic Crustacea, l. c. p. 11.

Localities:

in 1899:

- stat. 3. lat. 63° 36' N., long. 0° 26' E., depth 1900 m., 2/VI, four spec. (together with *Nyctiphanes norvegica*).
 26. lat. 72° 26' N., long. 21° 46' W., depth 160—0 m., vertical net, 24/VII, three spec.
 27. lat. 71° 35' N., long. 21° 10' W., depth 200—0 m., vertical net, 27/VII, three spec.
 43. lat. 73° 32' N., long. 24° 34' W., Kaiser Franz Joseph Fiord, Cape Weber, depth 100—110 m., mud with gravels and stones, 28/VIII, one spec.

in 1900:

- West Spitzbergen, entrance of King's Bay, depth 300—0 m., trawl, 2/VII, many spec.
 stat. 16. lat. 72° 25' N., long. 17° 56' W., E. of Greenland, depth 300 m., stones and sand, 30/VII, one spec.
 21. East Greenland, off Kaiser Franz Joseph Fiord, between Bontekoe Island and Mackenzie Bay, depth 250 m., mud, 8/VIII, several spec.
 29. lat. 72° 42' N., long. 14° 49' W., between Greenland and Jan Mayen, clay, depth 2000 m., 27/VIII, three spec.

Rhoda incrimis has more or less the same distribution as the preceding species, which it rivals also in number of specimens. It is restricted to the boreal parts of the North Atlantic and its continuation northwards. It occurs off the British Isles, West- and North-Norway, Kara Sea, Spitzbergen, Jan Mayen, East- and West-Greenland, and the coast of New England as far south as Vineyard Sound and Massachusetts Bay.

It does not attain such a size as *Nyctiphanes norvegica*. My largest specimen measured 29 mm.

Thysanoëssa BRANDT 1851.

This genus was established by BRANDT in MIDDENDORFF'S Sibirische Reise with the following diagnosis. Pedum maxillarium par externum reliquis pedibus longius. It included *Thysanopoda (Thysanoëssa) longipes* BRANDT which has proved to be identical with *Thysanopoda neglecta* KRÖYER. Another species figured but not described by KRÖYER, in Voyage en Scandinavie etc., is also referred to this genus, viz., *Thysanopoda longicaudata*. In 1882 SARS described two more species from the coasts of Norway, viz. *Thysanoëssa borealis* and *Thysanoëssa tenera*, but HANSEN, who has examined KRÖYER'S type-specimens, preserved in the Museum of Copenhagen, comes to the conclusion that *Thysanoëssa borealis* must be identified with *Thysanopoda neglecta*, and *Thysanoëssa tenera* with *Thysanopoda longicaudata*. In the Challenger reports, SARS has added two new species to the genus, viz. the cosmopolitan *Thysanoëssa gregaria* and *Thysanoëssa macrura* from the Arctic and South Atlantic Oceans. The genus which is closely allied to *Nematocelis* G. O. SARS and *Stylochiron* G. O. SARS is, in its present restriction, distinguishable, according to SARS, by the following characteristics: first pair of legs greatly produced and rather strong, the two last joints armed with spiniform bristles on both margins.

During the Swedish Arctic Expeditions of the last three summers only the following species was obtained, viz.

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27. *Thysanoëssa longicaudata* (KRÖYER).

1846. *Thysanopoda longicaudata* KRÖYER, Voy. en Scand. etc., l. c. p. 7, fig. 1 a—f.
 1882. *Thysanoëssa tenera* G. O. SARS, Ofv. Norges Crust. etc., l. c. p. 53, tab. I, fig. 19—20.
 1887. " *longicaudata* HANSEN, Ofv. vestl. Grönl. Fauna etc., l. c. p. 54.
 1892. " NORMAN, Lophogastridæ and Euphausiidæ etc., l. c. p. 463.
 1893. " STEBBING, Hist. Crustacea etc., l. c. p. 265.
 1893. " ORTMANN, Decapoden und Schizopoden d. Plankton-Exp., l. c. p. 14.
 1900. " SARS, Norweg. North Polar Exp. 1893—1896. Crustacea, p. 14.

Locality:

in 1900:

- II. lat. 73° 30' N., long. 2° W., depth 1500—0 m., vertical net, 13 VII, one spec.

This species has been obtained off the Western and Northern coasts of Norway, off Scotland, in the Færøe Channel, off Greenland (Valorous' Exp. *vide* NORMAN), in the North Polar Basin, in the sea between Norway and Jan Mayen, and at several stations of the German Plankton Expedition situated resp. in the areas of the Gulf Stream, the Irminger Sea, the West Greenland Current, and the Labrador Current. KRÖYER's type specimens are from lat. 61° N., long. 13° W., and from lat. 60° N., long. 11° W. The main distribution of this species seems, therefore, to be, the Arctic parts of the North Atlantic.

Length: 15.5 mm.

Fam. Mysidæ.

Boreomysis G. O. SARS 1869.

This genus was instituted in 1869 by G. O. SARS in his Undersøgelser over Christianiafjordens Dybvandsfauna, to receive *Mysis arctica* KRÖYER, which, at that time, was only

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(Borte från hithöret.)

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known from a single specimen from Greenland. Later on, in his classical *Monographi over de ved Norges Kyster forekommende Mysider*, III, 1879, the same author gave a full diagnosis of the genus. He considers the structure of the marsupium in the female as its most distinctive feature, this being here composed of seven pairs of lamella, whilst, in all other Mysideans, it is formed by three pairs at the utmost.

Petalophthalmus WILLEMOES-SCHM is the only one that shares that characteristic with *Boreomysis*. Besides that, the structure of the leopods in the male being all natatory, with very elongate branches, and the rudimentary auditory apparatus make the genus very distinct. In the same genus he included two other species also occurring in the deepest parts 100-400 fathoms of the Norwegian Fiords, viz., *Boreomysis tridens* G. O. SARS, and *Boreomysis megalops* G. O. SARS. On the Norwegian North Atlantic Expedition were obtained the two species to be mentioned below; and, in his report on the Challenger Schizopoda, Sars added two more species to the genus, viz. *Boreomysis obtusata* and *Boreomysis microps* from the North Pacific and North Atlantic resp., both from considerable depths. Thus the genus comprises at present, seven species, all of which are probably bathypelagic forms.

28. *Boreomysis nobilis* G. O. SARS.

Fig. 3.

1879. *Boreomysis nobilis* G. O. SARS, *Crust. et Pycnogon. nova etc.*,
l. c. p. 426.
1885. G. O. SARS, *Norweg. North Atl. Exp. I.*
p. 54, pl. 5, fig. 22-28.
1887. HANSEN, *Ofn. vestl. Grönlands Fauna etc.*,
l. c. p. 214.

Localities:

in 1900:

- stat. 21. East Greenland, off Kaiser Franz Joseph Fiord between Bontekoe Island and Mackenzie Bay, depth 250 m., mud, 8/VIII, several spec.
- 25. East Greenland, entrance of Kaiser Franz Joseph Fiord, depth 200-300 m., mud, 14 VIII, three spec.

The species was described after a single specimen (a male) obtained during the Norwegian North Atlantic Expedition in lat. 79° 59' N., long. 5° 40' E. from a depth of 839 metres. Two other localities are recorded by HANSEN for this species, viz. lat. 69° 15' N., long. 52° 55' W., and lat. 75° 26' N., long. 67° 27' W., both, thus, situated, in the northern part of Baffin Bay. The depths were 265 and 260 fathoms resp. I have not been able to find any other records of its occurrence. It may, therefore, be regarded as an inhabitant of the deep-sea of the Atlantic part of the Arctic Ocean.

The oral parts do not deviate from the structure, which is to be found in the type species, viz. *Boreomysis arctica* (KRÖYER) as described and figured by SARS in his Carcinologiske Bidrag. The molar part of the mandible, the maxillae and the maxillipeds closely agree with the corresponding parts in the said species, but deviate more from those in the following species. The last joint of the palp of the mandible slightly deviates as may be seen by comparing SARS' and my own figures of it. As SARS' specimen of *Boreomysis nobilis* had the uropoda somewhat mutilated, I give herewith a figure of them.

Length of largest male 45 mm.
female 49 mm.

29. *Boreomysis scyphops* G. O. SARS.

Petalophthalmus incermis WILLEMÖES-SUHM MS.

1879. *Boreomysis scyphops* G. O. SARS, Crust. et Pycnogon. nova etc., l. c. p. 429.
1884. G. O. SARS, Prelimin. Not. Schizop. Chall. Exp., l. c. p. 34.
1885. G. O. SARS, Norweg. North Atl. Exp. I., p. 56, pl. 6.
1885. G. O. SARS, Schizopoda, Chall. Rep., l. c. p. 178, pl. XXXII, fig. 10-20.

Localities:

in 1898:

- stat. 26. lat. 78° 19' N., long. 8° 41' E., Swedish Depth, depth 2700 m., bottom temp. -1.4° C., Biloculina clay, 25 VII, six spec. (more or less mutilated).
27. lat. 77° 52' N., long. 3° 5' W., 40 miles S.W. of the Swedish Depth, depth 2750 m., bottom temp. -1.1° C., Biloculina clay, 29 VII, two spec.

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in 1900:

stat. 29. lat. 72° 42' N., long. 14° 49' W., between Greenland and Jan Mayen, depth 2000 m., clay with foraminifers, 27/VIII, many spec.

This easily-recognizable form was, for the first time, recorded by the late WILLEMOES-SUMM who referred it to *Petalophthalmus* on account of the resemblance, in respect to the rudimentary eyes, between this species and *Petalophthalmus armiger* — also obtained at a very considerable depth during the Challenger Expedition and described by the same distinguished zoologist. On the Norwegian North Atlantic Expedition the same species was also trawled, described, and figured by SANS, who, after the working-up of the material of Challenger Schizopoda, was not able to find any differences between the Arctic and Antarctic specimens. He also proved that the species must be referred to *Borcomysis*, and, in his Challenger Report, he explains the reasons why he thinks it inadvisable to adopt WILLEMOES-SUMM's specific name, although it can justly claim priority.

Besides its very striking peculiarities in structure, this species is also of the utmost interest with regard to its geographical distribution. Up to now it has been obtained at three stations on the Challenger Expedition between lat. 46° 16' S. and lat. 53° 55' S. on the one side, and between long. 48° 27' E. and long. 123° 4' E. on the other, the depths varying from 1600 to 1950 fathoms. During the Norwegian North Atlantic Expedition it was obtained at lat. 71° 59' N., long. 11° 40' E. from a depth of 1110 fathoms. These are, as yet, the only localities recorded for this species, besides those enumerated by me from the last Swedish expeditions. But it has hitherto been obtained in no other place in the intermediate tropical seas. Thus, it seems to be a bipolar form, to which animals two other *Schizopoda* may also belong, viz. the Arctic *Lophogaster typicus* M. SANS, obtained by the Challenger at two stations south of the Cape of Good Hope and *Amblyops Crozetii* WILLEMOES-SUMM represented in the Challenger collection by a single specimen from Crozet Island, and now rediscovered in the Arctic Ocean by the Swedish Expedition of 1900 (*vide infra*). The explanation of such strange occurrences belongs, without doubt, to the most

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draient aussi à n'importe quelle espèce et que le genre mé

interesting problems yet to be solved by zoogeographers, but, I think, we shall have to wait a long time, before this intricate question can be satisfactorily settled.

SARS' descriptions of the species are so exhaustive that I have nothing to add to them. Specimens preserved in a mixture of formal and alcohol still exhibit the bright red colour of the body. The eyescales, the carapace, the antennæ and the legs are whitish.

Length of greatest specimen (a female) 62 mm.

or from the tip of the antennal scale to that of the uropod 78 mm.

The largest specimen which SARS measured in this way was 85 mm. long. It was obtained in the Southern Ocean.

Amblyops G. O. SARS 1872.

Amblyopsis G. O. SARS, 1869 (preoccupied).

This genus was first brought to the notice of the scientific world in 1869 by G. O. SARS, in his «Undersøgelser over Christianiafjordens Dybvandsfauna», to receive a Mysidean closely allied to *Pseudomma*, and first mentioned in 1868 by the great Norwegian carcinologist's illustrious father in his «Fortsatte Bemærkninger over det dyriske Livs Utbredning i Havets Dybder»¹ under the name of *Pseudomma abbreviatum* G. O. SARS. In Heft 2 of his «Carcinologiske Bidrag til Norges Fauna» G. O. SARS has more fully described and figured this species, which was obtained by him in depths ranging from 100 up to 300 fathoms at several places on the coast of Norway. e. g. off Lofoten, in the Hardanger- and Christiania-Fiords. The same author afterwards added to this genus, in his report on the Challenger Schizopoda, another form from the Southern Ocean off Crozet Islands, of which species, however, only a single specimen — an adult male — was obtained. To my great surprise, I rediscovered five specimens, viz. four males and one female, of this species from a station of the Swedish Arctic Expedition, 1900, together with a number of the bathypelagic *Borcomysis scyphops*. I am unable to

¹ Forh. Vid. Selsk. Christiania, Aar 1868, p. 262.

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detect any differences whatever between the Southern and Northern form, so that I must consider them as being absolutely identical. In a short notice on A new bipolar Schizopod published in the Ann. Mag. Nat. Hist. for this year (Ser. 7, Vol. VII, p. 371), I have pointed out the great geographical interest which is connected with this find. As I have also one female at my disposal, I am here able to complete SARS' description.

I refer to this genus another very characteristic form brought home by the same expedition, although it deviates from it in some points.

30. *Amblyops Crozetii* WILLEMOES-SCHM. MS.

1881. *Amblyops crozetii* WILLEMOES-SCHM. M. S.
G. O. SARS, Prelim. Not. Schizopoda Challenger Exp. I. c. p. 36.
1885. G. O. SARS, Schizopoda, Chall. Rep., I. c. p. 186, pl. XXXIII, figs. 11-16.

Locality:

in 1900:

stat. 29. lat. 72° 42' N., long. 14° 49' W., between Greenland and Jan Mayen, depth 2000 m., clay with foraminifers, 27 VIII, five spec. (4 ♂, 1 ♀).

In general appearance and in nearly all details my specimens perfectly agree with the description and figures given by SARS in the Challenger Report. I am only able to find very slight differences in a few respects. Thus, the insinuation of the end of the telson is, in the Northern specimens, a little more pronounced, and the antero-lateral corners of the eye-cores more rounded.

In the structure of the oral parts this species closely resembles *Amblyops abbreviata*. There are, however, a few differences of minor importance: the third joint of the palp of the mandible is relatively longer than in last species; also the last joint of the second pair of maxillae is, along its exterior margin, provided with 12 ciliated bristles instead of six, as SARS mentions for *A. abbreviata*. The basal joint of the first pair of maxillipeds has at its extremity a similar prominence

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nature de ces substances qui s'amassent dans l'ectoderme;
donc déterminer leur fonction. Le fait que ces éléments

as in this species. Last joint (with the claw) of the second pair of maxillipeds is of more than half the length of the preceding joint. In *A. abbreviata* it is much shorter. Pereiopods and pleopods of the usual structure.

As mentioned above, a single specimen of *Amblyops Crozetii* was taken in the Southern Ocean off Crozet Islands in lat. 46° 16' S., long. 48° 27' E. at a depth of 1600 fathoms. The find of it in the Arctic Ocean was, therefore, very surprising and seems, in my opinion, to corroborate the view of CHEN that a communication of animals still exists in the deeper or abyssal strata of the oceans between the Arctic and Antarctic seas. However, further researches in the far Southern Ocean afford the only means of fully settling the interesting problem of bipolarity.

Length of male: 26 mm., of female 25 mm.

31. *Amblyops Sarsii* n. sp.

Fig. 4.

Carapace submembranaceous, covering whole pereion except the hindmost segment. Sixth segment of pleon as long as the three preceding ones. The anterior, or cephalic, part of the carapace is marked off by a distinct sulcus and arched above. The frontal margin ends in an angle, which, seen *en profile*, seems to form a short, somewhat upturned rostrum. The antero-lateral corners evenly rounded.

The eye-scales, or ocular plates, as compared with those in the other species of the genus, rather small, not contiguous, with a free space between them. They are of an almost quadrate form, with a sharp line running along the lateral side. The upper side with a short styliform process visible from above and from the medial side. The anterior-inferior margin is rounded off.

The peduncular joints of the antennula very large, short and thick, especially the last one, which is as long as the two proximal ones, but broader. An oblique, broad band of dark-brown pigment-spots is on the upper side of the third joint, which gives it a somewhat strange appearance. As the distal part was broken off, it was impossible to make out the exact form of the antennal scale. The non-setous part of

the exterior margin reaches in all cases to the root of the flagellum. The three distal peduncular joints rather large, nearly quadrate, of about the same size.

Second joint of the flagellum of the mandible relatively broader than in *Amblyops abbreviata* and third joint longer, in fact nearly as long as preceding joint.

Maxillula and *maxilla* as in type species. *Maxilliped* relatively shorter and broader, its third joint more broad than long, fourth a little longer than fifth, which is nearly as broad as long.

First pair of legs (gnathopod or second pair of maxilliped) much longer than maxilliped (in *Amblyops abbreviata* scarcely longer) and of a very slender form.

Second pair of legs with *unguis* slender, and nearly as long as preceding articulation.

Three pairs of incubatory lamellae, the first of which, as usual, much the smallest.

Telson half as long as sixth joint of pleon, of an oblong lanceolate form, nearly as in the type-species, the distal half of the lateral margins fringed with short setae. Apex narrowly rounded.

The inner plates of the *uropoda*, twice as long as telson, of the usual lanceolate form, auditory apparatus well developed, although small. The relative length of the inner and outer plates could not be ascertained, as the distal part of the exterior one was broken off.

Length: 17 mm.

Locality:

in 1900:

Spitzbergen, Ice Fiord, Coal Bay, depth 50 m., stones and dead shells. 16/VI—20/VI. one spec., female.

***Pseudomma* G. O. Sars 1869.**

In his paper on «Nye Dybvandscrustaceer fra Lofoten», G. O. Sars introduced in the science a new genus of *Schizopoda* closely allied to *Amblyops*, but differing from that genus in having coalesced eye-plates and more slender pereopods without any unguiform terminal joint. The species

60, 100, 100

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mentioned below was described as the type of the genus. Another species, *Pseudomma affine*, was also for the first time recorded in the same memoir. In 1879, SMITH farther enlarged the genus with *Pseudomma truncatum* from the Gulf of St. Lawrence, and, in his Challenger Report, SARS described two new species, viz. *Pseudomma Sarsii* WILLEMORS-SUHM M.S. and *Pseudomma australe*; the former was dredged off Kerguelen Islands and at a station as far south as lat. 65° 12' S. and the latter in Bass Strait.¹ To these I am here going to add a new form collected in the course of the Swedish Arctic Expedition 1900. The genus will, therefore, comprise five northern and two southern species.

Although the genus, without doubt, must be regarded as of abyssal origin, it is worth while remarking that *Pseudomma australe* was obtained at a depth of 33 fathoms and *Pseudomma truncatum* once at a depth of 45 fathoms.

32. *Pseudomma roseum* G. O. SARS.

- 1870. *Pseudomma roseum* G. O. SARS, Nye Dybvandserustaceer fra Lofoten, l. c. p. 154.
- 1870. G. O. SARS, Carcinol. Bidrag til Norges Fauna etc., l. l. c. p. 54, tab. IV.
- 1879. SMITH, Stalk-eyed Crust. Atl. Coast North America, l. c. p. 98.

Localities:

in 1900:

- stat. 18. lat. 74° 30' N., long. 18° 40' W., East Greenland, S.E. of Walrus Island, depth 80—100 m., mud and stones, 4/VIII, two spec. (♀).
- 21. East Greenland, off Kaiser Franz Joseph Fiord and Mackenzie Bay, depth 250 m., mud, 8/VIII, twelve spec. (4♂, 8♀).
- 27. East Greenland, Kaiser Franz Joseph Fiord, Muskox-Fiord, depth 220 m., clay, 21/VIII, three spec. (♀).

This pretty Mysidean was first discovered by SARS off Lofoten Islands, where, in some places, it was rather abundant. It was afterwards obtained in the Hardanger Fiord, and by the Norwegian North Atlantic Expedition, at one

¹ In the »Fauna und Flora Grönlands», l. c. p. 200. VANKORFFEN shortly described another species, viz. *Pseudomma parvum*, but without giving any details or figures at all.

d'écailles grasses ni de cholestérine figurés. On trouve seulement des diffuses dans la région du corps mitochondrial des cellulaires: il est facile de les reconnaître.

station off the West coast of Norway, and at another S.W. of Jan Mayen. METZGER mentions it from Skagerack SW. of Lindesnäs, and SMITH from Gulf of Maine and Gulf of St. Lawrence. It was also obtained at Matotschkin Schar (STRUBERG). It must, therefore, be regarded as belonging to the cold area of the North Atlantic.

It ranges vertically from 60—70 fathoms (Matotschkin Schar) up to 400—500 fathoms (Hardanger Fiord).

Length of largest male 24 mm.

female 28 mm.

33. *Pseudomma Théeli* n. sp.

Fig. 5.

Eye-scales quite coalesced, non-serrated, without any trace of a median fissure, seen from above representing an equilateral triangle, the lateral sides of which are somewhat sinuated. Antennal scale relatively much longer than in the other species, five times as long as they are broad, its outer margin terminating, as usual, in a strong spine, which, however, is situated, contrary to what is the case in the other known species, at the apex of the scale. In this respect it comes nearest to *Pseudomma Sarsii* WILLEMÖES-SUHM, and is farthest remote from *Pseudomma australe*, in which this spine is situated very near the base of the scale. *Pseudomma Théeli* and *Pseudomma australe* thus represent the extreme poles in regard to the relative length of the outer margin as compared with the inner setous one, the other species being intermediate links in the series.

Telson is also of a very different appearance than in the allied species. It is very long and narrow, with the lateral sides a little sinuated. It is five times as long as it is broad (at the apex). This is subtruncated, armed with 10 strong spines, the median ones being as long as the apex is broad. Only three or four very small lateral spines are on each side above the apical ones. I was not able to detect any trace of the median pair of slender plumose setae which occurs in the other species.

In the general appearance *Pseudomma Théeli* resembles the type species, viz. *Pseudomma roscum*. In the structure

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tites vacuolaires, en revanche, les cellules épidermiques rées de paillettes. Ces dernières contiennent à être colorées.

of the oral parts there are some deviations to be found in the form of the two distal joints of the palp of the mandible, the third one being triangular, with the apex very broad. The maxillipeds and the first pair of pereopods, the gnathopods, are also relatively much shorter and thicker than in *Pseudomma roseum*, as may be seen by comparing my figures with those given by Sars in his *Carcinologiske Bidrag*, I. tab. IV, fig. 11, 12.

Locality:

in 1900:

stat. 27. East Greenland, Franz Joseph Fiord, entrance of Musk-ox Fiord depth 220 m., mud, 21 VIII, two spec. (females, the one very mutilated, without pleon and the half of the pereion).

Length 20 mm.

Erythropus G. O. Sars 1869.

Nematopus G. O. Sars (preoccupied).

In the year 1863, G. O. Sars, in his *Beretning om en i Sommeren 1862 foretagen zoologisk Reise i Christianias og Trondhjems Stifter*, has described two new Mysideans for which he created a new genus, *Nematopus*. Next year he added two other species, and also referred to it *Mysis erythroptalma* described by Goës nearly at the same time. Then, in his most important paper, especially with regard to *Schizopoda*, viz. *Undersøgelser over Christianiafjordens Dybvandsfauna*, he enlarges the genus with a new species, but, at the same time, changed the generic name into *Erythropus*, the old name being preoccupied. For one, of the former species he also instituted a new genus, viz. *Parerythropus* to indicate the close relationship with the typical genus. In his *Monographi over de ved Norges Kyster forekommande Mysider*, the genus was thus made to include the following species: *Erythropus Goësi* (= *Mysis erythroptalma* Goës), *Erythropus serrata*, *Erythropus microptalma* (= *Nematopus microps*), *Erythropus pygmaea* (= *Nematopus elegans*), *Erythropus abyssorum*. Another species was described in his report on the crustaceans of the Norwegian North Atlantic Expedition, viz. *Ery-*

cellule axiale et dans une cellule-germe. (Dietrich-Parat-V)

throps glacialis. It is worth remarking that no representative of this genus was obtained either on the Challenger Expedition or on the German Plankton Expedition. These species, all of which, when living, are very easily recognizable by their bright red eye-pigment soluble in spirit, have hitherto only been recorded from the North Atlantic and Arctic Oceans; *Erythroptus pygmaea* also occurs in the Mediterranean at Messina and Naples (G. O. SARS), and, as Sars has pointed out, they are certainly of an Arctic origin only occurring along the Norwegian coast in the innermost and deepest basins of the fiords, as also many other animals of undoubtedly Arctic origin.

31. *Erythroptus Gøssii* (G. O. Sars).

- 1864. *Mysis erythroptus* G. O. Sars, *Crust. decapoda marina Suecica* etc., l. c. p. 174.
- 1868. *Nematopus Gøssii* G. O. Sars, *Beretn. om en i Sommeren 1865 foretagen zool. Reise* etc., l. c. p. 96.
- 1870. *Erythroptus* > G. O. Sars, *Carcinol. Bidrag til Norges Fauna* etc., l. c. p. 24, tab. I.
- 1892. > > NORMAN, *British Mysida* etc., l. c. p. 160.

Locality:

in 1898:

stat. 21. lat. 78° 27' N., long. 15° 20' E., Ice Fiord, North Fiord, depth 175 m., soft brownish clay. 19/VII, one spec.

This species, the type of the genus, was found by Lovén off Finmarken, by Lilljeborg at Christiansund, and by the Swedish Expedition, in 1861, in Wide Bay, North Spitzbergen. Later on, it was rediscovered by Sars at several places off the Norwegian coast from Hammerfest to Christiania Fiord. It also occurs off Scotland, in the Firth of Forth (Scott). Smith mentions it from Massachusetts Bay, and Stuxberg and Jarzynsky from the White Sea, Murman Coast, Matotschkin Schar, and Kara Sea. Vanhöffen enumerates it in his list of crustaceans obtained in Karajok Fiord, West Greenland. Along the Norwegian coast it occurs in depths ranging from 30 up to 100 or 125 fathoms, and seems to live exclusively on muddy bottom.

Méditerranée. Donc, en plus de l'Hétérocycémide *Conocycema*
van Ben., on peut trouver trois espèces de Dicyémides dans
commun; ce sont:

BILHAG TILL K. SV. VET.-AKAD. HANDL. BAND 27. AFD. IV. N:o 8. 81

Farther north it dwells in shallower depths. In Murman Sea it was once dredged at a depth of only 10 fathoms.
Length of my spec. (a male) 15 mm.

35. *Erythrops abyssorum* G. O. SARS.

1869. *Erythrops abyssorum* G. O. SARS, Undersøg. over Christiania fiordens Dylwandsfauna, l. c. p. 326.
1870. G. O. SARS, Carcinol. Bidrag til Norges Fauna etc., l. c. p. 36, tab. V, fig. 1—12.

Localities:

in 1899:

stat. 25. lat. 72° 28' N., long. 21° 48' W., depth 180 m., muddy bottom, some stones, 24 VII, one spec.

in 1900:

stat. 16. lat. 72° 25' N., long. 17° 56' W., E. of Greenland, depth 300 m., stones and sand, 30 VII, four spec.

This species, which is closely allied to *Erythrops serrata* G. O. SARS, was first discovered by the great Norwegian carcinologist in great abundance in an isolated deep basin off the exterior part of the Christiania Fiord where it occurred on muddy bottom, in depths ranging from 150 to 230 fathoms. There it was living together with *Munropsis typica*, *Eurycope cornuta*, and other Arctic crustaceans. Afterwards it was observed off Lofoten Islands, and, on the Norwegian North Atlantic Expedition, in the Porsanger Fiord, and also off Jan Mayen. It was, moreover, obtained during the Dijnphna Expedition at four stations in the Kara Sea. It was also obtained by VANBÖFFEN in Karajok Fiord, West Greenland. Its occurrence off East Greenland, together with the finds of it mentioned above, thus attest its Arctic origin. In the Arctic Ocean it seems to live in shallower water, e. g., in the Kara Sea, it was taken at a depth of 51 fathoms.

As SARS has shown, this species is subject to some variations in the size of the eyes and the length of the pereopods. The deeper the water in which it lives, the smaller become the eyes; and, on muddy bottom, the legs are

Dans les belones de la manche, on ne rencontre qu'une
de Dicyémides vrais: elle a été rangée par Whitman dans le
Dicyema, sous le nom de Dicyema truncatum.

Dans la Méditerranée, la même espèce se trouve dans les

always longer than in specimens living on more firm and compact bottom. This interesting fact, viz., the modifying influence of the bottom on the length of the pereopods, the same author also states with regard to the other species of the genus. *Erythrops pygmaea*, which dwells very often on sandy bottom, has also relatively the shortest legs, whilst *Erythrops serrata* and *Erythrops microphthalmus*, living always on muddy bottom, are provided with the longest ones. Now, Sars points out this interesting fact to be observed even in the same species.

Of my specimens, three were males and two females.

Length of larval male 18 mm.

female 15.5 mm.

36. *Erythrops glacialis* G. O. Sars.

1877. *Erythrops glacialis* G. O. Sars, Prodr. descript. Crust. etc.,
l. c. p. 242.

1885. " " G. O. Sars, Norw. North. Atl. Exp. I,
p. 45, pl. 5, fig. 1—4.

Locality:

in 1900:

stat. 21. East Greenland, off Kaiser Franz Joseph Fiord, between
Bontekoe Island and Mackenzie Bay, depth 250 m., mud,
8/VIII, one spec.

This species was obtained in two specimens during the Norwegian North Atlantic Expedition in the open sea off the coast of Norway at two stations. Both belong to the cold area, and the depths were 498 and 350 fathoms resp. As it has now been found also off East Greenland, Sars is, no doubt, right in suggesting that it may unquestionably be regarded as a true Arctic form.

My specimen was a male with well developed pleopods of the typical biramous appearance. In no detail, did it deviate from the description and figures which Sars has given of it in the work cited above.

Length: 17 mm.

Parerythropus G. O. SARS. 1869.

Among the species belonging to *Nematopus* (*Erythropus*), G. O. Sars described, in 1864, one species which deviated so much in some points of its structure, that the author, even at that time, only with great hesitation included it in the genus. Having afterwards discovered some other species all agreeing with each other, but deviating from *Nematopus abesus*, he established then in 1869, in his *Undersøgelser over Christianiafjordens Dybvandsfauna*, a new genus, viz. *Parerythropus*, for this species. Two other species, viz. *Parerythropus abyssicola* from the deep basins of the Sogne Fiord, and *Parerythropus spectabilis* from two stations of the Norwegian North Atlantic Expedition, were then, in 1877, shortly described by the same author. To the same genus is now generally referred another species described, from the coasts of New England in 1879, by SMITH as *Meterythropus robusta*.

As the preceding genus, this includes also deep sea forms of an undoubtedly Arctic origin. Up to now the genus has not been met with in other seas except in the cold area of the North Atlantic and in the Arctic Ocean.

37. **Parerythropus robusta** (SMITH).

1879. *Meterythropus robusta* SMITH, *Stalk-eyed Crust. Atl. Coast North America*, l. c. p. 93, pl. XII, fig. 1, 2.

1879. *Parerythropus* G. O. SARS, *Carcinol. Bidrag til Norges Fauna etc.*, l. c. III, p. 98, tab. XXXIX.

Locality:

in 1900:

stat. 19. lat. 74° 35' N., long. 18° 15' W., East Greenland, S.E. of Pendulum Island, depth 150 m., mud and stones, 5 VIII, seven spec. (4 ♂, 3 ♀).

This species was first observed in Massachusetts Bay and in the Gulf of St. Lawrence by the late distinguished carcinologist Prof. SMITH, who proposed a new genus for it, mainly on account of the different structure of the first pair of pleopods in the male, the endopodite being here rudimen-

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— 1908

Historique

liquide viscoleux.

Quelques détails cytologiques se trouvent encore dans de Keppen, mais il n'est pas exagéré de les qualifier de

fibres musculaires granuleuses sphériques.

tary, soft, and membranaceous. Meanwhile, it was found by SARS at Bodø and in the Varanger Fiord, and, on the Norwegian North Atlantic Expedition, in the Porsanger Fiord, and off South Cape, Spitzbergen. SARS does not regard the deviating form of the endopodite of the first pair of male pleopods as of generic value; but, as the species in all other points closely agrees with the other known species of *Parerythroptera*, he includes it in this genus.

It also occurs in the Kara Sea (Dijmphna Expedition) and off East Greenland (Swed. Arct. Exp. 1900). It must, therefore, be considered as decidedly Arctic, but as to how far SARS is right in supposing it also to be circumpolar is a detail which must be left to future researches to prove.

It ranges bathymetrically from 33 up to 150 fathoms. It lives mainly on muddy bottom, sometimes mixed with sand.

Length of largest male. 23 mm.
female. 21 "

One of the females in my collection had in the marsupium six eggs of rather large size. The cleavage was finished, but the formation of the embryo had not yet begun.

In the other two females the marsupium contained about twenty young ones, most of which were of a length of 4 mm.

38. *Parerythroptera spectabilis* G. O. SARS.

1877. *Parerythroptera spectabilis* G. O. SARS, Prodr. descript. Crust. etc., l. c. p. 243.
1885. G. O. SARS, Norweg. North Atl. Exp. I, p. 47, pl. 5, fig. 5-12.

Localities:

in 1899:

stat. 18. lat. 74° 52' N., long. 17° 16' W., depth 350 m., muddy clay, sand and pebbles, 4 VII, one spec. (♂).

in 1900:

stat. 21. East Greenland between Dontekoe Island and Mackenzie Bay. depth 250 m., mud, 8 VIII, several spec. (15♂, 12♀).

This species, which is distinguishable by its considerable size, the its eyes, and the armature of the apex of telson.

suivra chronologiquement le cycle en partant des cellules
 se développent dans la cellule axiale du nématogène prima-
 cette espèce comme pour les suivantes, il ne sera pas due

was obtained during the Norwegian North Atlantic Expedition at two stations far distant from each other, but both belonging to the cold area, the one being situated off Storggen NW. off Cape Stadt and the other SW. of Jan Mayen. It also occurs off West Greenland, Karajok Fiord (VAN-HÖFFEN).

Its vertical range is from 250 up to 763 metres, and it is undoubtedly of Arctic origin.

Length of largest male 23 mm.
 female 20

Mysideis G. O. SARS 1869.

In his *Undersøgelser over Christianiafjordens Dybvandsfauna*, Sars established this genus to receive a Mysidean obtained by him at great depths in the Christiania Fiord, and first named *Mysis insignis* by the same author in *Beretning om en i Sommeren 1863 foretagen zoologisk Reise i Christiania Stift*. The genus comes nearest to *Mysidopsis*, although deviating from that genus in the structure of mandibles and of the second pair of maxillæ. Sars added, then, to the genus in 1879, in the third part of his *Carcinologiske Bidrag til Norges Fauna*, another form already described in 1863 by Goës as *Mysis grandis* and occurring rarely off the coasts of Finnmarken and Spitzbergen.¹ No other species have as yet been described.

39. **Mysideis grandis** (Goës).

- | | | |
|-------|----------------------|---|
| 1864. | <i>Mysis grandis</i> | Goës, <i>Crust. decap. podophth. mar. Suecia etc.</i> ,
l. c. p. 176. |
| 1879. | <i>Mysideis</i> | G. O. Sars, <i>Carcinol. Bidrag til Norges Fauna</i>
etc., III, p. 106, tab. XLI—XLII. |
| 1892. | <i>Stilomysis</i> | Norman, <i>British Myside etc.</i> , l. c. p. 148. |
| 1900. | | Stebbing, <i>Arctic Crustacea etc.</i> , l. c. p. 11. |

¹ In 1892, Norman made this the type of a new genus, for which he proposes the name *Stilomysis*, but without giving any detailed description of the genus. It seems to me very uncertain how far he is right in establishing this genus.

germe au point de vue de leurs constituants cytoplasmiques
cellule, en plus du noyau, on ne distingue que des chondri-
plus en plus nombreux, toutefois. Et ces

Localities:

in 1898:

- stat. 39. lat. 79° 43' N., long. 10° 52' E., Danes' Island, Virgo's Harbour, depth 25—30 m., gray clay, Laminariae, 27/VIII, one spec.

in 1900:

- stat. 2. West Spitzbergen, Ice Fiord, Coal Bay, depth 100 m., rocks, 16 VI—20 VI, one spec. (♀).
3. ibidem, depth 50—100 m., stones, 12 VI, three spec. (2♂, 1♀).
5. ibidem, Green Harbour, depth 10—80 m., stones, 25 VI, one spec.
8. West Spitzbergen, Kings Bay, depth 10—30 m., stones and sand with Laminariae, 29 VI, one spec. (♂).
19. East Greenland, S.E. of Pendulum Island, lat. 74° 35' N., long. 18° 15' W., depth 150 m., mud and stones, 5/VIII, three spec. (♀).
26. East Greenland, Franz Joseph Fiord, the innermost part of Muskox Fiord, depth 100 m., clay, 17 VIII, one spec. (♀).

This species was first obtained by the illustrious Swedish zoologist LOVÉN off the coast of Finmark where it was afterwards observed by SARS. It was described by GÖSS from specimens collected at Spitzbergen. STEBBING mentions it from the Barents Sea from lat. 70° 51' N., long. 53° E. HANSEN from West Greenland in lat. 65° 35' N., long. 54° 50' W. and VANHÖFFEN from Karajok Fiord. Its area of distribution has now, by the Swedish Arctic Expedition, been enlarged by the addition of East Greenland. Thus, it seems to belong exclusively to the Atlantic part of the Arctic Ocean.

It ranges vertically from a few (5) up to 100 fathoms. Length of largest spec. (a female from stat. 26) 39 mm.

Mysis LATREILLE 1803.

This genus, in its widest sense, comprises many species, but it has now been subdivided into several genera, mainly by SARS and NORMAN (l. c.). LATREILLE's original genus has been restricted by the last author to the species to be mentioned below and to the well-known fresh-water form *Mysis relicta* LOVÉN.

Fig. 5.-P. truncatum - Cellules ~~parmyximus~~; coloration rouge neutre. - A, B, C, trois stades de l'évolution du vac.

40. *Mysis oculata* (O. FABRICIUS).

1780. *Cancer oculatus* O. FABRICIUS, Fauna Groenlandica, p. 245, n. 222, Fig. 1. A—B.
 1846. *Mysis oculata* KRÖYER, Voy. en Scand. etc., l. c., Pl. 8, Fig. 2 a—r, Fig. 3 a—f.
 1861. > > KRÖYER, Myside, l. c. p. 13.
 1879. > > G. O. SARS, Carcinol. Bidr. etc., III. p. 69, Tab. XXXI.
 1887. > > HANSEN, Dijnphna-Togtets zool. bot. Udbytte etc., l. c. p. 251, tab. XXIII, fig. 2—2 b.

Localities:

in 1898:

- stat. 4. lat. 74° 21' N., long. 19° 15' E., Booren Island, depth 14—18 m., rocky bottom with algae, pebbles, and sand, 17/VI, one spec.
 > 8. lat. 76° 50' N., long. 17° 20' E., Stor Fiord, depth 14—18 m., stony bottom with *Laminaria*, 26/VI, two spec.
 > 21. one spec.
 > 29. lat. 78° 40' N., long. 27° 10' E., King Charles Land, Swedish Foreland, depth 14—16 m., bottom temp. + 0,9° C., soft, grayish-black sand, stones, mud, and algae, 5/VIII, two spec.
 > 30. King Charles Land, Swedish Foreland, depth 10—16 m., soft, grayish-black sand, stones, mud, and algae, 6/VIII, many spec.
 > 31. King Charles Land, Swedish Foreland, depth 12—20 m., soft, grayish-black clay, 8/VIII, many spec.
 > 32. King Charles Land, Bivalen Sound, depth 100—110 m., bottom temp. — 1,45° C., soft clay with boulders, 8/VIII, one spec.
 > 39. lat. 79° 43' N., long. 10° 52' E., Danes Island, Virgo's Harbour, depth 25—30 m., gray clay, *Laminaria*, 27/VIII, two spec.

in 1899:

- stat. 10. Jan Mayen, Mary Muse Bay, depth 7—9 m., sand and algae, 19/VI, two spec.
 > 29. lat. 70° 27' N., long. 22° 35' W., Scoresby Sound, Cape Stewart, depth 13—18 m., mud, stones, and algae, 30/VII, two spec.
 North, Spitzbergen, Danes Gat, depth 20—30 m., 7/VIII, many spec. WOLFF.

23/93
 24/93

Fig. 6. - *P. truncatum* - Cellule primaire - Coloration vitale d'un jeune

in 1900:

- stat. 3. West Spitzbergen, Ice Fiord, Coal Bay, depth 50--100 m., stones, 22/VI, one spec.
- 5. West Spitzbergen, Ice Fiord, Green Harbour, depth 10--80 m., stones, 25/VI, eight spec.
- 8. West Spitzbergen, King's Bay, depth 10--30 m., stones and sand with Laminarie, 29/VI, six spec.
- 15. East coast of Jan Mayen, depth 70--80 m., sand, 22 VII, many spec.
- 17. East Greenland, Mackenzie Bay, N. of Kaiser Franz Joseph Fiord, depth 12--35 m., mud, 1/VIII--3 VIII, several spec.
- 23. ibidem, depth 3--10 m., mud and sand with Laminarie, 11/VIII, many spec.
- 24. East Greenland, Mackenzie Bay N. of Kaiser Franz Joseph Fiord, depth 1--3 m., sand, 11 VIII, two large and many young spec.

Distribution:

Mysis oculata is, without doubt, the most common among Arctic Mysideans, and at the same time, sometimes occurs in enormous shoals, rivalling *Rhoda inermis* and *Nyctiphanes norvegica* in its multitude of specimens. In fact, these species supply some Balænopterids and sea-birds with their essential food. *Mysis oculata* has been obtained off West Greenland, in Smith Sound, off Baffin Land, Labrador, and New England, in the Siberian Polar Sea W. of Tajmur Peninsula, Kara Sea, Murman Sea, round Spitzbergen, off Finmarken, Iceland, Jan Mayen, and East Greenland. It must, therefore, be considered an Arctic species; although it was not obtained, according to Stuxberg, during the Vega Expedition E. of Tajmur Peninsula, and although it has not yet been observed, as far as I know, in the Behring Sea or the adjacent parts of the Arctic Ocean, further discoveries in these tracts of the sea, hitherto so little explored for zoological purposes, will, I think, prove that it must also be regarded as circumpolar.

It lives in moderate depths from a few up to 20 fathoms. Such depths as 80--100--110 metres, which are recorded above in the list of localities, are the greatest I have found for the species; but, as HANSEN has pointed out, it is very probable that it lives pelagic a great deal of the year, and, therefore, the above figures are not very trustworthy, as the animal might have been taken by the trawl when carried up.

Le vivent dans des conditions favorables d'éclairage que
en diaphragmant assez fortement et en produisant un éclair
Le vert Janus les colore faiblement. elles sont allongées

Length of largest spec.: 28 mm. A specimen which I dredged in 1891 in Smith Sound, measured 33 mm. (OHLIN, l. c. p. 9).

41. *Mysis mixta* LILLJEBORG.

1852. *Mysis mixta* LILLJEBORG, Hafs-Crust. vid Kullaberg etc., l. c. p. 6.
1861. *latitans* KRÖYER, Mysida, l. c. p. 30, tab I, fig. 4 a—b.
1879. *mixta* G. O. SARS, Carcinol. Bidr. etc., l. c. III, p. 76, tab. XXXIII.

Localities:

in 1900:

- stat. 17. East Greenland, Mackenzie Bay, N. of Kaiser Franz Joseph Fiord, depth 12—35 m., mud, 1/VIII—3/VIII, four spec.
23. ibidem, depth 3—10 m., mud and sand with Laminariae, 11 VIII, several spec.

This species was first described by LILLJEBORG from specimens obtained in Öresund. Nine years afterwards KRÖYER redescribed it as *Mysis latitans* after specimens from Greenland; but, as SARS has pointed out, both are identical. The species is very often to be found together with *Mysis oculata*, which it closely resembles, but from which it is easily to be distinguished by the pointed *squamæ antennarum*, the somewhat different form of the incisure of the telson, and by a lighter colour, the black star-formed spots being here of smaller size.

Mysis mixta has been obtained off East and West Greenland, New England as far south as Massachusetts Bay, Iceland, Lofoten Islands, and Finmarken. Although it is on this account, to be regarded as an Arctic species, it occurs, however, farther south, viz. in the interior part of Christiania Fiord, in Öresund, and in the Baltic.

It seems to live in the Arctic in the same depths as the preceding species, but, farther south, it dwells in deeper water. Thus according to SMITH, it has been obtained, off the coasts of New England, only in depths varying from 20 up to 90 fathoms.

Length of largest spec. 30 mm.

Au sein du cytoplasme, on distingue, en outre, des granules en bleu verdâtre pâle par la technique de Dietrich-Papanicolaou. Ces formations sont surtout abondantes contre l'amas mitochondrial.

Pseudomysis G. O. SARS 1879.

Among the new and interesting finds with which our knowledge about Arctic crustaceans was enriched by the Norwegian North Atlantic Expedition, is a Schizopod for which Sars has established a new genus, viz. *Pseudomysis*. Unfortunately he had only two very mutilated specimens, both females, at his disposal, so that his description is, in some respects, incomplete. During the Swedish Arctic Expedition 1898 I got a fragment of this remarkable Mysidean from the Swedish Depth together with a few specimens of *Boreomysis scyphops*. As that fragment happens to be the very mutilated pleon of a male, I am here able to complete Sars' description with regard to that important part.

42. *Pseudomysis abyssal* G. O. Sars.

1879. *Pseudomysis abyssal* G. O. Sars, Crust. et Pycnog. nova etc., l. c. p. 430.
1885. " " " " G. O. Sars, Norweg. North Atl. Exp. I, p. 50, pl. 5, fig. 13-21, pl. 20, fig. 18-20.

Locality:

in 1898:

stat. 26. lat. 78° 19' N., long. 8° 41' E., the "Swedish Depth", depth 2700 m., bottom temp. — 1.4° C., Biloculina clay, 25/VII, one spec. (very mutilated pleon of a male).

Although my fragment of this species is in a very bad condition, it evidently proves that this deep-sea Mysidean comes nearest to *Boreomysis* or *Mysideis*, as Sars has already suggested, on account of the structure of the oral parts. The pleopods of the male are developed as two-branched swimming-plates. It is, however, impossible for me to give any exact description or complete figures of them, because they are broken and much mutilated. Contrary to what is usually the case, they all seem to be of about the same size and structure. Even the first pair has the endopodite well developed and is not rudimentary. I have figured the fifth pleopod, which was most complete. The endopodite is here

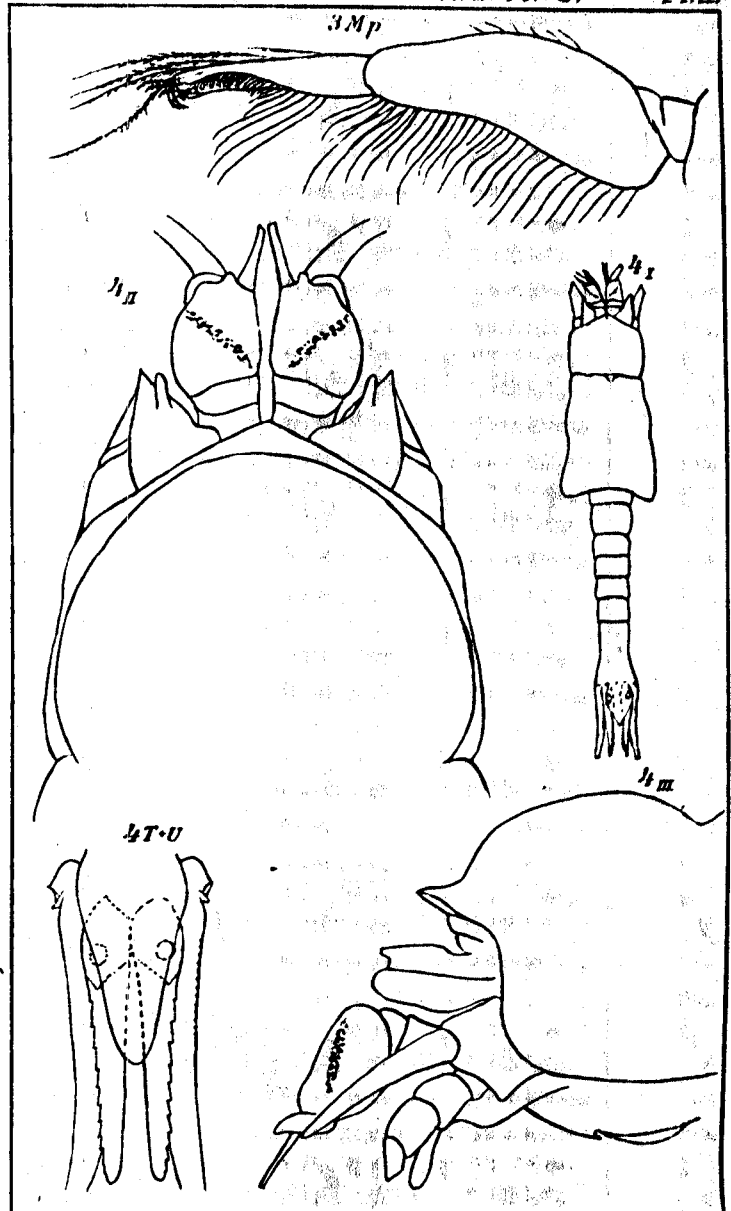
Explanation of the figures.

- Fig. 1. *Bythocaris simplicirostris* G. O. SARS.
- I. Carapace from side. II. Second, third, and fourth segments of pleon. a_1 . antennula a_2 . scale of antenna, $m.x.p.$, third maxilliped p_2 . second pereopod.
 2. *Pandalus borealis* KRÖYER, chela of first pereopod.
 3. *Boreomysis nobilis* G. O. SARS.
 $M.p.$ palp of mandible, U . uropods.
 4. *Amblyops Sarsi* n. sp.
I. From above, II. Cephalic portion, from above, III. same from side. $T + U$, telson and uropods.
 5. *Pseudomma Théeli* n. sp.
I. Cephalic portion, from above, a_2 . antenna, $M.p.$ palp of mandible, $m.x.p.$ maxilliped, p_1 , first pereopod (gnathopod). U , uropods, T . telson.
 6. *Pseudomysis abyss* G. O. SARS, fifth pleopod of male.

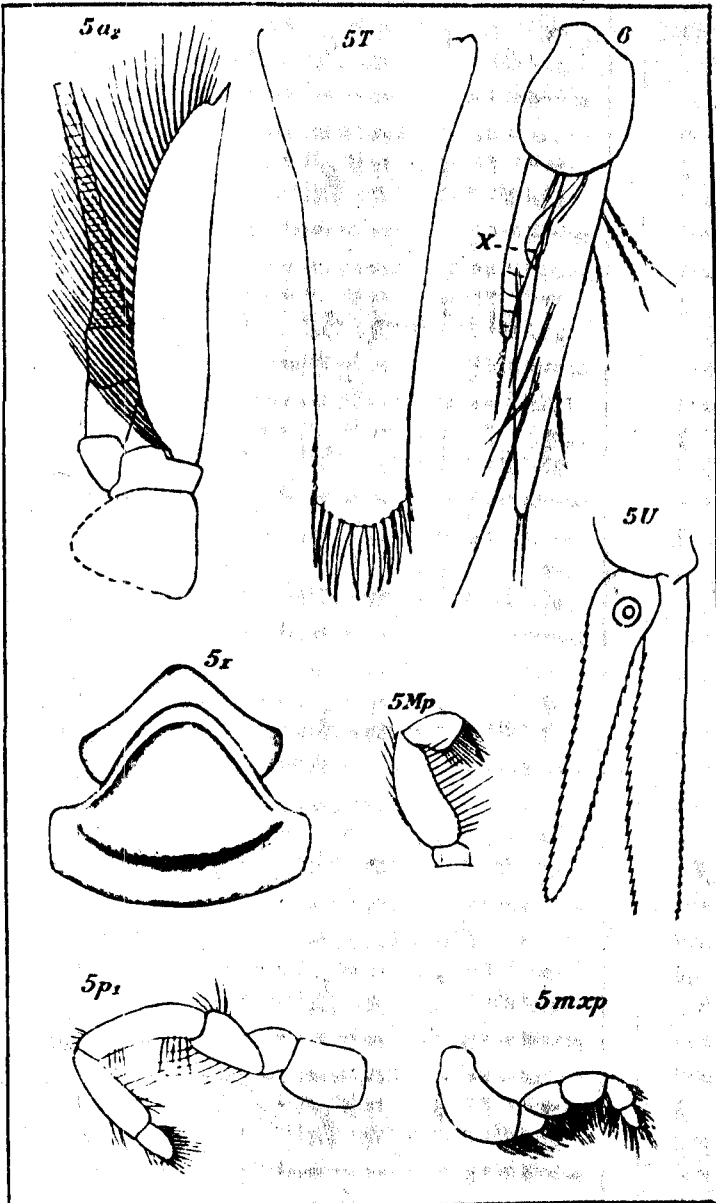
718. II.-P. *Bythocaris*. - *Bythocaris* types at the University of Michigan.

(Dietrich-Paret-Volkonsky)

que uniquement sous la surface/ciliée externe des cellule
 plus rares, sont voisines de la face en contact avec la ce
 Il ne s'en trouve que tout à fait exceptionnellement dans



les cellules-germes; ils ne sont pas encore groupés en masses
 Parat-Volkonsky).
 des fuseaux petits ou de taille...



A. Ohlin. del.

Ö. Cederquist. f. 3