H. NOUVEL

BIHANG

TILL

KONGL. SVENSKA VETENSKAPS-AKADEMIENS
HANDLINGAR.

Tjugosjunde bandet.

 STOCKHOLM 1901. 1902. F. A. NORSTEDT & SÖNER.
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 hamuncula G. O. Sars.

Colour: bright red.

Length of largest spec. 62 mm.

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**Schizopoda.**

**Fam. Euphausiidae.**

**Nycitophanes 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 Cowchi Bell and Thysanopoda norvegica M. Sars and a new nearly related form, viz. Nycitophanes australis from Bass Strait. It is mainly characterized by a membranous reflexed leaflet on the basal joint of the antennule, and by the rudimentary and dissimilar state of the two hindmost pairs of legs.

25. **Nycitophanes norvegica** (M. Sars).

1864. nana M. Sars, Tilleg til etc., l. c. p. 84.


1892. STERNING, Hist. Crustacea, l. c. p. 263.

Localities:

In 1898:

stat. 41. lat. 75° 56' N., long. 13° 18' E., 56 miles S.W. of South Cape, Spitzbergen, depth 350 m., bottom temp. + 2,13° C., grayish clay, 1/IX, one spec.

In 1899:

stat. 3. lat. 63° 58' N., long. 10° 26' E., depth 1900 m., 2/VI, many spec.

In 1900:


29. lat. 72° 45' N., long. 14° 49' W., between Greenland and Jan Mayen, depth 2000 m., clay, 27/VIII, many spec.

11. lat. 73° 30' N., long. 2° W., depth 1500-0 m., vertical net, 18/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 takes thereby a peculiar brownish tint. Smith 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, KOCH from Jan Mayen, and GÖDS from Bohulän and lat. 75° N., long. 12° E. It also occurs in Foröö 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.
Strangely enough, it was not obtained either on the Challenger Expedition or on the German Plankton Expedition. G. O. Sars says: "May be the British form, Thysanopoda Conchii, observed by Bell, is identical with the present species. Norman has, however, clearly proved that Nyctiphanes Conchii is a very distinct species, nearly related to Nyctiphanes australis G. O. Sars from Bass Strait, Australia. Length 37 mm.

Rhoda Sim 1872. (= Borophassa G. O. Sars 1885).

Steering is the first who, in his History of Crustacea, pointed out that two Northern Euphausiids, viz. the well-known Thysanopoda inermis Krøyer and a closely-allied form Thysanopoda Raczki 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 Raczki. Sars, in his Preliminary Notices on the Schizopoda of H. M. S. Challenger Expedition, established for Krøyer's Thysanopoda inermis a new genus, viz. Borophassa, but without giving any generic diagnosis. Two years afterwards he added to this genus Thysanopoda neglecta Krøyer and Thysanopoda Raczki M. Sars and, with some hesitation, Thysanopoda longicaudata Krøyer. Of these species, Thysanopoda Raczki is the only one that ought properly to be referred to Borophassa, the other two belonging, according to Harms and Norman, to the genus Thysanopoda, established by Brandt in 1851. Since Rhoda Jardineana has proved to be identical with Borophassa Raczki, Sars' genus must yield priority to the much older name Rhoda. The genus thus includes Rhoda inermis (Krøyer) and Rhoda Raczki (M. Sars).

\(^1\) L. c. p. 12.
26. Rhoda inermis (Krøyer).

1846. Thysanopoda inermis Krøyer, Voy. in Scand. etc., p. 7, fig. 2 a—t.
1879. Smith, Stalk-eyed Crust. All Coast North America, I. c. p. 91.

Localities:
in 1899:
3. lat. 63° 24' N., long. 0 26'E., depth 1900 m., 2 VI, four spec. (together with Nectophausia norvegica).
26. lat. 72° 50' N., long. 21° 48' 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° 25' N., long. 24° 38' W., Kaiser Franz Joseph Fjord, 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.
16. lat. 72° 25' N., long. 17° 26' W., E. of Greenland, depth 300 m., stones and sand, 30 VII, one spec.
21. East Greenland, on Kaiser Franz Joseph Fjord, between Bontekoe Island and Markenzi 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 incrustis 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 Nectesphantus macrocerus.

My largest specimen measured 28 mm.

Thysanoessa Brandt 1851.

This genus was established by Brandt in Miogenus's Sibirische Reise with the following diagnosis: Pedum maxillarium par externum reliquis pedibus longius. It included Thysanopoda (Thysanoessa) 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 longiscaridata. In 1882 Sars described two more species from the coasts of Norway, viz., Thysanoessa bicornis and Thysanoessa tenera, but Hansen, who has examined Kröyer's type-specimens, preserved in the Museum of Copenhagen, comes to the conclusion that Thysanoessa bicornis must be identified with Thysanopoda neglecta, and Thysanoessa tenera with Thysanopoda longiscaridata. In the 'Challenger report', Sars has added two new species to the genus, viz., the cosmopolitan Thysanoessa gregaria and Thysanoessa maccarona from the Antarctic and South Atlantic Oceans. The genus which is closely allied to Nematocereus G. O. Sars and Stylocheiron 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.
27. *Thysanoessa longicaudata* (Krøyer).


1892. *Norman, Lophogastridae* et Euphausiidae etc., l. c. p. 465.


Locality:
in 1900:
II. lat. 73° 30' N., long. 3° 2 W., depth 1500—6 m., vertical net, 13 VII, one spec.

This species has been obtained off the Western and Northern coasts of Norway, off Scotland, in the Faeroe Channel, off Greenland (*Valorous* Exp., *iloc. 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 Labrador Current, and the West Greenland Current, and the Labrador Current. Krøyer'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: 15.3 mm.

Fam. *Mysidæ*.

*Borcomysis* G. O. Sars 1869.

This genus was instituted in 1869 by G. O. Sars in his *Undersøgelse over Christianiafjordens Dbyvandefauna* to receive *Mysis arctica* Krøyer, which, at that time, was only
known from a single specimen from Greenland. Later on, in his classical Monographi over de ved Norges Kyster forekomnende 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 lamellae, whilst, in all other Mysideans, it is formed by three pairs at the utmost.

Petalocephalum WILLEMES-SCHM is the only one that shares that characteristic with Boreomysis. Besides that, the structure of theep 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 tridentis 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 micros 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 bathy pelagic forms.

28. Boreomysis nobilis G. O. SARS.

Fig. 3.


Localities:

in 1900:

25. East Greenland, entrance of Kaiser Franz Joseph Fjord, 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. 78° 39' N., long. 5° 40' E. from a depth of 380 metres. Two other localities are recorded by HANSEN for this species, viz. lat. 69° 15' N., long. 52° 55' W., and lat. 75° 20' N., long. 67° 27' W., both, thus, situated, in the northern part of Baffin Bay. The depths were 265 and 290 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. *Boreopsis arctica* (KRÖNER) 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' specimens of *Boreopsis nobilis* had the uropoda somewhat mutilated, I give herewith a figure of them.

Length of largest male 45 mm.

female 49 mm.

29. *Boreopsis scyphops* G. O. SARS.

*C. Holthuis* incert. *WILLEMOES-SEUM* MS.


Localities:

in 1898:

stat. 26. lat. 78° 19' N., long. 3° 41' E., Swedish Depth, depth 2700 m., bottom temp. —1.5° C., *Biloculina* clay. 25 VII, six spec. (more or less mutilated).

stat. 27. lat. 77° 52' N., long. 3° 3' W., 40 miles S.W. of the Swedish Depth, depth 2750 m., bottom temp. —1.8° C., *Biloculina* clay. 29 VII, two spec.
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-Sum 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 Sars, 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 Horcomysis, and, in his Challenger Report, he explains the reasons why he thinks it inadvisable to adopt Willemoes-Sum'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° 58' 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. Sars, obtained by the Challenger at two stations south of the Cape of Good Hope and Amblyops Crozetii Willemoes-Sum, 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
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 antennae 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.

**Amblyopsis 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 'Underensselser over Christianiafjordens Dybvande fauna,' to receive a Mysidacean closely allied to *Pseudonana*, and first mentioned in 1868 by the great Norwegian carcinologist's illustrious father in his 'Portasatte Bemærkninger over det dyriske Liva Uthredning i Havets Dybler' under the name of *Pseudonana 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 to 300 fathoms at several places on the coast of Norway, e.g. off Lofoten, in the Hardanger- and Christiania-Fjords. 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. My greatest 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 bathyplagic *Hecromia angulata*. I am unable to

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 shipar" Schizopoda, 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 WILLEMSEN-SCHM. MS.

Amblyops crozetii WILLEMSEN-SCHM. M. N.


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 inclination of the end of the telson is, in the Northern specimens, a little more pronounced, and the antero-lateral corners of the eye-scales 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 dilated 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.
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. Pereiopeds and pleopods of the usual structure.

As mentioned above, a single specimen of _Amblyope Crozetii_ was taken in the Southern Ocean off Crozet Islands in lat. 46° 16′ S. long. 27° 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 Curz 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. _Amblyope Sarrai_ 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 suture and arched above. The frontal margin ends in an angle, which, seen en profil, seems to form a short, somewhat upturned rostrum. The anterolateral corners evenly rounded.

The eye-scales, or ocular plates, as compared with those in the other species of the genus, rather small, not continuous, 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 antennules 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 *Amphipods abbreviata* and third joint longer, in fact nearly as long as preceding joint.

*Maxillos* 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 *Amphipods abbreviata* scarcely longer) and of a very slender form.

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

Three pairs of incunabulum lamella, the first of which, unusual, 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 sete. 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.

**Pseudoma G. O. Sars 1869**

In his paper on *Nye Dybkvændercestaceer fra Lofoten*, G. O. Sars introduced in the science a new genus of *Schizopoda* closely allied to *Amphipoda*, but differing from that genus in having coalesced eye-plates and more slender pereiopods without any unguiform terminal joint. The species
mentioned below was described as the type of the genus. Another species, *Pseudoma annulata*, was also for the first time recorded in the same memoir. In 1879, Smith further enlarged the genus with *Pseudoma truncatum* from the Gulf of St. Lawrence, and, in his Challenger Report, Sars described two new species, *Pseudoma Sarsii* WILLEMORS-SUH M.S. and *Pseudoma australi*: the former was dredged off Kerguelen Islands and at a station far south as lat. 63° 12' S., and the latter in Bass Strait. To these I am here going to add a new form collected in the course of the Swedish Arctic Expedition 1870. 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 *Pseudoma australi* was obtained at a depth of 33 fathoms and *Pseudoma truncatum* once at a depth of 45 fathoms.


1870. G. O. SARS, Carcinol. Bidrag til Norges Fauna etc., l. c. p. 54, tab. IV.

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. (♀).


This pretty Myaidean 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 and Flora Greenland", l. c. p. 200, VANNIER shortly described another species, *Pseudoma porrum*, but without giving any details or figures at all.
station off the West coast of Norway, and at another S.W. of Jan Mayen. Metzker mentions it from Skagerack S.W. of Lindesnes, and Smith from Gulf of Maine and Gulf of St. Lawrence. It was also obtained at Matotschkin Schar (Stux- nero). 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. Pseudoma Thoëli n. sp.

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 sinuated, contrary to what is the case in the other known species, at the apex of the scale. In this respect it comes nearest to Pseudoma Sarsi Willemoes-Sten, and is farthest remote from Pseudoma anatrace, in which this spine is situated very near the base of the scale. Pseudoma Thoëli and Pseudoma anatrace thus represent the extreme poles in regard to the relative length of the outer margin as compared with the inner setose 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 Pseudoma Thoëli resembles the type species, viz. Pseudoma roseum. In the structure
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 pereiopods, the gnathopods, are also relatively much shorter and thicker than in *Pseudomima rosea*, 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 1890:

stat. 27. East Greenland, Franz Joseph Fjord; entrance of Mask-o-
Fjord depth 220 m., mud, 21 VIII, two spec. (females, the
one very mutilated, without pleon and the half of the
peron).  

*Length* 20 mm.

**Erythrops** G. O. **Sars** 1863.  

*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 erythropthalma* described by Goës nearly at the same time. Then, in his most important paper, especially with regard to *Schizopoda*, viz. *Undersøgelse over Christianiasfjordens Dyvandafauna*, he enlarges the genus with a new species, but, at the same time, changed the generic name into *Erythrops*, the old name being preoccupied. For one, of the former species he also instituted a new genus, viz. *Parerythrops* to indicate the close relationship with the typical genus. In his *Monografi over de ved Norges Kyster forekommande Mysider*, the genus was thus made to include the following species: *Erythrops Goësii* (= *Mysis erythropthalma* Goës), *Erythrops servata*, *Erythrops microphthalmus* (= *Nematopus microsus*), *Erythrops jugmatum* (= *Nematopus elegans*). *Erythrops abyssonae*.  

Another species was described in his report on the crusta-
ceans of the Norwegian North Atlantic Expedition, viz. *Ery-
Erythrops 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; Erythrops pigmaeus 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.

34. Erythrops Goezi (G. O. Sars).

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 Loven off Finnmarken, by Lilloeberg at Christian Sound, 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 Stysberg and Jarzynsky from the White Sea, Murman Coast, Matotschin Schar, and Kara Sea. Vannhöffen 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.
Further 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.


Localities:

in 1869:

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

in 1870:

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 Fjord where it occurred on muddy bottom, in depths ranging from 150 to 230 fathoms. There it was living together with *Munnoapis typica*, *Eurycope cornuta*, and other Arctic crustaceans. Afterwards it was observed off Lofoten Islands, and, on the Norwegian North Atlantic Expedition, in the Porsanger Fjord, and also off Jan Mayen. It was, moreover, obtained during the Bjiophana Expedition at four stations in the Kara Sea. It was also obtained by *Vanhoffen* in Karajok Fjord, 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 pereiopods. The deeper the water in which it lives, the smaller become the eyes; and, on muddy bottom, the legs are...
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 perceliopods, the same author also states with regard to the other species of the genus. *Erythrops paguma*, which dwells very often on sandy bottom, has also relatively the shortest legs, whilst *Erythrops verrucata* and *Erythrops micropthalma*, 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 largest male 18 mm.

female 15½ mm.

36. *Erythrops glacialis* G. 0. Sars.


Locality:

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.

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.*
Parerythrops G. O. Sars. 1869.

Among the species belonging to *Nematopus* (*Erythrops*), 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 obesus*, he established then in 1869, in his *Undersøgelser over Christianiafjordens Dybvandsfauna* a new genus, viz. *Parerythrops*, for this species. Two other species, viz. *Parerythrops abyssicola* from the deep basins of the Sogne Fiord, and *Parerythrops 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 *Meterythrops 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. *Parerythrops robusta* (Smith).

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


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-
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 Fyresanger 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 *Paro- rythrops*, he includes it in this genus.

It also occurs in the Kara Sea (Djimphna 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.


**Localities:**

in 1899:
stat. 18. lat. 74° 32' N., long. 11° 16' W., depth 350 m., muddy clay, sand and pebbles, 1 VII, one spec. (♂);

in 1900:
stat. 21. East Greenland between Bontekoe Island and Mackenzie Bay, depth 250 m., mud, 3 VII, several spec. (1♂; 1♀).

This species, which is distinguishable by its considerable size, the its eyes, and the armature of the apex of telson.
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 Storøyaen NW. off Cape Stadl and the other SW. of Jan Mayen. It also occurs off West Greenland, Karajok Fiord (Van
maren).

Its vertical range is from 230 up to 763 metres, and it is undoubtedly of Arctic origin.

Length of largest male . . . . 23 mm.

female . . . . 20

**Mysideis G. O. Sars 1863.**

In his *Undersøgelser over Christiani­a fjordens Dyvande­fauna*, 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 *Bkatning om en i Sommeren 1853 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 maxillae. 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 Gøs as *Mysis grandis* and occurring rarely off the coasts of Finnmarken and Spitsbergen. No other species have as yet been described.

**39. Mysideis grandis (Gøs).**

1892. Stilonysis STEBBING. Arctic Crustacea etc., L. c. p. 118.

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

in 1908:

stat. 39. lat. 73° 45' N., long. 10° 52' E., Bånes' Island, Virgo's Harbour, depth 25–30 m., gray clay, Laminaria, 27/VIII, one spec.

in 1906:

stat. 2. West Spitzbergen, Ice Fjord, Coal Bay, depth 100 m., rocks, 16 VI–20 VI, one spec. (♀).

3. ibidem, depth 50–100 m., stones, 12 VI, three spec. (♂), (♀).

5. ibidem, Green Harbour, depth 10–30 m., stones, 25 VI, one spec.

8. West Spitzbergen, Kings Bay, depth 10–30 m., stones and sand with Laminaria, 29 VI, one spec. (♀).


26. East Greenland, Franz Joseph Fjord, the innermost part of Muskot Fjord, 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 GöE from specimens collected at Spitzbergen. Stéring mentions it from the Barunts Sea from lat. 70° 51' N., long. 58° E. HANSEN from West Greenland in lat. 65 35' N., long. 54° 50' W. and VANHÖPPEN from Karajok Fjord. Its area of distribution has now, by the Swedish Arctic Expedition, been enlarged by the addition of East Greenland. Its area of distribution has now, by the Swedish Arctic Expedition, been enlarged by the addition of East Greenland. 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.
40. **Mysia oculata (O. Fabricius)**.

1780. Cancer oculatus O. Fabricius, Fonna Groenlandica, p. 215, Fig. 1 A—B.

1846. Mysia oculata Kroyer, Voy. en Scand. etc., I. c., Pl. 8, Fig. 2 a—7, Fig. 3 a—6.


1879. G. O. Sars, Carcinol. Bidr., etc., III. p. 69, Tab. XXXI.


**Localities:**

in 1888:

stat. 1. lat. 74° 21' N., long. 19° 15' E., Bearen Island, depth 14—18 m., rocky bottom with algae, pebbles, and sand, 17/VII, one spec.

8. lat. 74° 50' N., long. 17° 26' E., Stor Ford, depth 14—16 m., stony bottom with Laminariae, 26/VII, 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° C., soft, grayish-black sand, stones, mud, and algae, 6/VIII, two spec.

30. King Charles Land, Swedish Foreland, depth 10—13 m., soft, grayish-black sand, stones, mud, and algae, 19/VII, many spec.

31. King Charles Land, Swedish Foreland, depth 12—20 m., soft, grayish-black clay, 8/VIII, many spec.

32. King Charles Land, Barents Sound, depth 100—110 m., bottom temp. —1.4° 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, Laminariae, 27/VIII, two spec.

in 1899:

stat. 10. Jan Mayen, Mary, Moe's Bay, depth 7—9 m., sand and algae, 19/VII, two spec.

29. lat. 70° 37' N., long. 22° 35' W., Scoresby Sound, Cape St. Peter, depth 13—18 m., mud, stones, sand, and algae, 30/VII, two spec.

North Spitzbergen, Danes Gat, depth 20—30 m., 7/VII, many spec. Witz.
in 1900:

3. West Spitzbergen, Ice Fiord, Coal Bay, depth 50—100 m., stones, 22/VI, one spec.
4. West Spitzbergen, Ice Fiord, Green Harbour, depth 10—80 m., stones, 22/VI, eight spec.
5. West Spitzbergen, King's Bay, depth 10—30 m., stones and sand with Laminaria, 29/VI, six spec.
6. East coast of Jan Mayen, depth 70—80 m., sand, 22 VII, many spec.
8. ibidem, depth 3—10 m., mud and sand with Laminaria, 11 VIII, many spec.

**Distribution:**

*Mysis oculata* is, without doubt, the most common among Arctic Mysideans, and at the same time, sometimes occurs in enormous shoals, rivalling *Ihada inermis* and *Nectophanes norvegica* in its multitude of specimens. In fact, these species supply some Baleenopterids 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 Taimyr Peninsula, Kara Sea, Murman Sea, round Spitzbergen, off Finnmarken, Iceland, Jan Mayen, and East Greenland. It must, therefore, be considered an Arctic species; although it was not obtained, according to Steenbarg, during the Vega Expedition E. of Taimyr 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 circum-polar.

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.
Length of largest spec. 28 mm. A specimen which I dredged in 1891 in Smith Sound, measured 35 mm. (OHLIN, l. c. p. 9).

41. **Mysis mixta** LILJEBORG.

1861. latifrons KROKER, Myside, l. c. p. 50, tab. I, fig. 4 a—b.
1878. mixta G. O. SARS, Caricr. Bidr. etc., l. c. III, p. 76, tab. XXXIII.

**Localities:**
in 1900:
27. ibidem, depth 3—10 m., mud and sand with Laminaire, 1—4 VIII, several spec.

This species was first described by LILJEBORG from specimens obtained in Ørsoynd. Nine years afterwards Krøker redescribed it as *Mysis latifrons* after specimens from Greenland; but, as Sars has pointed out, both are identical. The species is very often to be found together with *Mysis occulta*, which it closely resembles, but from which it is easily to be distinguished by the pointed *squamae 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 Finnmarken. 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 Ørsoynd, 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 Sars, 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.
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 *Borermysis sephos*. 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 abyssi G. O. Sars.


Locality:
in 1898:
stat. 26. lat. 76° 19' N., long. 6° 44' E., the "Swedish Depth", depth 2700 m., bottom temp. — 1° C., Illoculina 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 *Borermysis* 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.
1. Carapace from side. II. Second, third, and fourth segments of pleon. a₁, antennula, a₂, scale of antenna, mzp₁, third maxilliped, p₂, second pereiopod.


Mp. palp of mandible, U, uropods.

> 4. *Amblyops Sarsi* n. sp.
1. From above. II. Cephalic portion, from above, III. same from side. T + U, telson and uropods.

> 5. *Pseudonoma Théel* n. sp.

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