Professor Dr. [illegible] Coutière
with the authors compliments

Profr H. NOUVEL

REPORT

ON THE

CRUSTACEA SCHIZOPODA

COLLECTED BY THE

SWEDISH ANTARCTIC EXPEDITION

1901—1903

UNDER THE CHARGE OF BARON DR. **OTTO NORDENSKJÖLD**

BY

H. J. HANSEN

WITH SIX COPPER PLATES

PUBLISHED AT THE EXPENSE OF THE CARLSBERG FUND

COPENHAGEN
G. E. C. GAD, PUBLISHER
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Introduction.

The two orders of Crustacea, Mysidacea and Euphausiacea, are generally arranged together under the name Schizopoda, and I find it expedient to adopt this method in the present paper. The collection procured by the expedition is fine, as the material is not only well preserved but rich as to number both of specimens and species; it is in reality much richer than that secured by any other antarctic expedition, comprising, with very few exceptions, all antarctic forms hitherto known and besides several species new to science. The best and most interesting part of the collection is antarctic, but a good deal of material has also been taken at the surface during the voyage from near the Azores to Argentina.

The present paper, which deals chiefly with antarctic animals, ought to be considered as a part of my contributions to our knowledge of the world's fauna of the two orders: Mysidacea and Euphausiacea. The treatment is therefore in accordance with that in my two works respectively on the Schizopoda of the "Siboga" Expedition and on the collections secured by Dr. A. Agassiz in the tropical East Pacific. In many cases I did not find it necessary to give more than two or three references to the literature on the species in question, because the synonymy and the distribution had been fully dealt with in one of those two papers.

I wish to express my warm gratitude to the managing Committee of the Carlsberg Fund for having allowed me a sum to defray the expenses of publication of this treatise, thereby making it possible to get it illustrated with the plates engraved in copper, decidedly the best and finest kind of reproduction for my drawings.

I. The Order *Mysidacea.*

The material comprises 14 species, 6 of which are new to science, but one among these has already been named and briefly characterized by me on an earlier occasion. Thirteen of the species are exclusively antarctic, while the fourteenth is only from the tropical and temperate Atlantic.

A. Suborder Lophogastrida.

1. Eucopia australis Dana.

(Pl. I, figs. 1a—1b.)

1852. *Eucopia australis* Dana, U. S. Explor. Exped., Crust. p. 609, Pl. 40, figs. 10a—10m.
1885. — — G. O. Sars, Challenger Rep. Vol. XIII, Pl. IX, figs. 1 and 2 (but not the other figures or most of the description).
1905. — — H. J. Hansen, Bull. Mus. Océan. Monaco, no. 42, p. 6.
1910. — — H. J. Hansen, Schizopoda, Siboga-Exp. XXXVII, p. 20.

Lat. 48° 27′ S., long. 42° 36′ W., 2500—0 m. June 23, 1902. 1 specimen (less than half-grown).
Lat. 49° 56′ S., long. 49° 56′ W., 2700—0 m., temp. at 2700 m. 1·67°, at the surface 3·36°. June 27, 1912. 3 specimens (all far from adult).
Lat. 63° 51′ S., long. 49° 37′ W., 2000—0 m. February 6, 1902. 1 adult male.

Remarks. — The differences between *E. australis*, *E. unguiculata* Will.-Suhm and *E. major* H. J. H. have been pointed out in the "Siboga" Rep. (l. c.).

Fig. 1a shows the front end of the carapace and the eyes of the adult male specimen; the upper front margin of the carapace is conspicuously more curved than in *E. unguiculata* and almost as curved as in *E. major*. The eye-stalks are longer and proportionately narrower than in the two other species, the eyes are essentially terminal as in *E. major* and occupy less than one-third of the outer margin of the whole appendage, viz. stalk plus cornea. — The uropods (fig. 1b) differ from those of the two other species by having the terminal joint of the exopod a little longer than broad.

The adult male measures 70 mm. in length; the adult female figured by Sars (l. c.) and preserved in the British Museum (Natural History) is about 50 mm.

Distribution. — Dana's specimen was taken in the Antarctic Ocean, at Lat. 66° 12′ S., long. 149° 44′ E. The specimen figured by Sars was from Lat. 50° 1′ S., long. 123° 4′ E.

B. Suborder Mysida.

2. Hansenomysis antarctica Holt & Tatt.

(Pl. I, fig. 2a).

1906. *Hansenomysis antarctica* Holt and Tattersall, Ann. Mag. Nat. Hist. Ser. 7, Vol. XVII, p. 6.
1908. — — Tattersall, Nat. Antarct. Exp., Nat. Hist. Vol. IV, Schizopoda, p. 23, Pl. V, figs. 1—19.

Lat. 65° 19′ S., long. 56° 48′ W., Graham Region. 400 m., gravel with clay. February 18, 1902, 1 adult male.

Remarks. — Tattersall has published an elaborate description with a number of figures of the adult female. The single male at hand, which has the telson mutilated, agrees so well with that representation, that it is only necessary to point out some differences mostly sexual.

The carapace (fig. 2a) has the upper antero-lateral angles less produced than in the female. — The rather large, bifid ocular plate described and figured by Tattersall as existing in the female is wanting in the male, but above at the middle of the insertion of each antennula is seen a quite small, subtriangular, distally acute plate which may be considered the rudiment of the eye-stalk.

The outer lower flagellum of the antennulæ has about the 18 proximal joints strongly thickened, as is the case with the 12 proximal joints in *H. Fyllæ* H. J. H.; the nineteenth joint is considerably thinner, the following joints gradually more slender, but the terminal part of both flagella has been lost. — The antennal squama (fig. 2a) is a little more than four times as long as broad, with 11 spines on the outer margin as in the female.

The pleopods, as far as can be seen without removal and special investigation of these appendages, are in the main similar to those of *H. Fyllæ* shown in an earlier paper of mine (1908), the essential difference being that in *H. Fyllæ* the fifth pleopods have the exopod a little longer than the endopod, while in *H. antarctica* the endopod is elongate and considerably longer than the normal exopod. — The uropods have the endopod slightly longer than the exopod; the distal part of the outer margin of first joint of the exopod with respectively 19 and 17 spines. — The distal half of the telson wanting.

Length. — The single male measures 22·5 mm. in length.

Distribution. — Only two specimens were previously known, both taken "off Coulman Island, 100 fathoms" (Tattersall).

3. **Siriella Thompsonii** H. M.-Edw.

1837. *Cynthia Thompsonii* H. Milne-Edwards, Hist. Nat. Crust. II, p. 462.
1885. *Siriella thompsonii* G. O. Sars, Challenger Rep. Vol. XIII, p. 205, Pl. XXXVI, figs. 1—24.
1910. — *Thompsonii* H. J. Hansen, Schizopoda, Siboga-Exp. XXXVII, p. 31 (With complete synonymy).

Lat. 38° 19′ N., long. 16° 10′ W.	Surface, temp. 18·2°.	November 3, 1901.		1 specimen.
Lat. 34° 2′ N., long. 18° 21′ W.	Surface, temp. 20·1°.	November 5, 1901;	12 p.	1 specimen.
Lat. 32° 54′ N., long. 18° 52′ W.	Surface, temp. 20·3°.	November 6, 1901;	12 a.	1 specimen.
Lat. 31° 49′ N., long. 19° 24′ W.	Surface, temp. 20·9°.	November 6, 1901;	12 p.	9 specimens.
Lat. 29° 52′ N., long. 20° 14′ W.	Surface, temp. 21·1°.	November 7, 1901;	12 p.	1 specimen.
Lat. 28° 21′ N., long. 20° 42′ W.	Surface, temp. 21·5°.	November 8, 1901;	6 p.	2 specimens.
Lat. 27° 54′ N., long. 20° 49′ W.	Surface, temp. 21·42°.	November 8, 1901.		About 30 specimens.
Lat. 26° 47′ N., long. 21° 10′ W.	Surface, temp. 23·3°.	November 9, 1901;	12 a.	38 specimens.
Lat. 25° 51′ N., long. 21° 29′ W.	Surface, temp. 22·50°.	November 9, 1901.		12 specimens.
Lat. 25° 46′ N., long. 21° 31′ W.	Surface, temp. 22·5°.	November 9, 1901;	12 p.	1 specimen.
Lat. 24° 10′ N., long. 22° 6′ W.	Surface, temp. 22·6°.	November 10, 1901;	6 p.	8 specimens.

Lat. 23° 35′ N., long. 22° 19′ W.	Surface, temp. 22·05°.	November 10, 1901.		9 specimens.
Lat. 21° 51′ N., long. 23° 0′ W.	Surface, temp. 23·2°.	November 11, 1901;	12 p.	6 specimens.
Lat. 20° 35′ N., long. 23° 29′ W.	Surface, temp. 23·48°.	November 12, 1901.		4 specimens.
Lat. 19° 17′ N., long. 24° 0′ W.	Surface, temp. 23·6°.	November 13, 1901;	12 a.	1 specimen.
Lat. 18° 10′ N., long. 24° 28′ W.	Surface, temp. 23·8°.	November 13, 1901;	12 p.	1 specimen.
Lat. 12° 21′ N., long. 26° 49′ W.	Surface, temp. 26·1°.	November 16, 1901.		1 specimen.
Lat. 10° 30′ N., long. 27° 33′ W.	Surface, temp. 26·5°.	November 17, 1901;	12 p.	1 specimen.
Lat. 7° 51′ N., long. 28° 25′ W.	Surface, temp. 27·1°.	November 19, 1901;	6 a.	1 specimen.
Lat. 6° 9′ N., long. 28° 45′ W.	Surface, temp. 27·3°.	November 19, 1901.		13 specimens.
Lat. 4° 26′ N., long. 28° 50′ W.	Surface, temp. 27·49°.	November 20, 1901.		Large number of specimens.
Lat. 3° 56′ N., long. 29° 2′ W.	Surface, temp. 27·5°.	November 21, 1901;	6 a.	1 specimen (young).
Lat. 3° 12′ N., long. 29° 2′ W.	Surface, temp. 27·6°.	November 21, 1901;	6 p.	About 30 spec.
Lat. 2° 51′ N., long. 29° 2′ W.	Surface, temp. 27·1°.	November 21, 1901;	12 p.	5 specimens.
Lat. 1° 51′ N., long. 29° 5′ W.	Surface, temp. 27·0°.	November 22, 1901;	6 p.	7 specimens.
Lat. 1° 31′ N., long. 29° 7′ W.	Surface, temp. 26·8°.	November 22, 1901;	12 p.	About 120 spec.
Lat. 1° 8′ N., long. 29° 11′ W.	Surface, temp. 26·7°.	November 23, 1901;	7 a.	1 specimen.
Lat. 0° 26′ N., long. 29° 22′ W.	Surface, temp. 26·4°.	November 23, 1901;	6 p.	1 specimen.
Lat. 0° 7′ N., long. 29° 30′ W.	Surface, temp. 26·2°.	November 23, 1901;	12 p.	1 specimen.
Lat. 0° 56′ S., long. 29° 54′ W.	Surface, temp. 26·3°.	November 24, 1901;	6 p.	1 specimen.
Lat. 1° 50′ S., long. 30° 17′ W.	Surface, temp. 26·1°.	November 25, 1901;	6 a.	1 specimen.
Lat. 2° 39′ S., long. 30° 42′ W.	Surface, temp. 26·3°.	November 25, 1901;	6 p.	1 specimen.
Lat. 5° 6′ S., long. 31° 40′ W.	Surface, temp. 26·1°.	November 26, 1901.		1 specimen.
Lat. 11° 23′ S., long. 32° 57′ W.	Surface, temp. 26·3°.	November 29, 1901.		3 specimens.
Lat. 15° 10′ S., long. 33° 53′ W.	Surface, temp 26·2°.	December 1, 1901.		6 specimens.
Lat. 23° 54′ S., long. 40° 48′ W.	Surface, temp. 23·4°.	December 6, 1901.		1 specimen.
Lat. 24° 7′ S., long. 41° 5′ W.	Surface, temp. 23·3°.	December 6, 1901;	6 p.	1 specimen.
Lat. 24° 21′ S., long. 41° 23′ W.	Surface, temp. 23·2°.	December 6, 1901.		1 specimen.
Lat. 24° 51′ S., long. 42° 1′ W.	Surface, temp. 22·95°.	December 7, 1901.		1 specimen.
Lat. 26° 58′ S., long. 44° 57′ W.	Surface, temp. 22·89°.	December 8, 1901.		5 specimens.

Remarks. It may be mentioned that 6 females with marsupium are infested with the Epicarid *Dajus Siriellæ* G. O. S. The females have been taken at four of the abovenamed localities, viz. at Lat. 27° 54′ N., Lat. 25° 51′ N., Lat. 21° 51′ N. and Lat. 20° 35′ N.

Distribution. — This species is widely distributed in the tropical and warmer temperate areas of the Atlantic, the Indian Ocean and the Pacific. “In the Atlantic it has been taken northwards to Lat. 42° N., long. 44° W., southwards to Lat. 40° 32′ S., long 52° 2′ W.; in the Indian Ocean southwards to Lat. 40° 4′ S., long. 53° 25′ E.” (H. J. Hansen). In the Pacific it has been taken northwards to Lat. 33° 40′ N., long. 119° 35′ W. (H. J. Hansen) and southwards it is known from a point between Sidney and Wellington (G. O. Sars).

4. **Pseudomma Belgicæ** (H. J. H. in MS.) Holt & Tattersall.

(Pl. I, figs. 3a—3b.)

1906. *Pseudomma Belgicæ* Holt & Tattersall, Ann. Mag. Nat. Hist. Ser. 7, Vol. XVII, p. 8.
1908. — — H. J. Hansen, Exp. Antarct. Belge, Zool., Schizopoda and Cumacea, p. 12, Pl. II, figs. 2a—2c.
1908. — — Tattersall, Nat. Antarct. Exp., Nat. Hist. Vol. IV, Schizopoda, p. 23, Pl. VI, figs. 1—8.

Lat. 64° 3′ S., long. 56° 53′ W., Graham Region. 360 m. (?). February 11, 1902. About 10 mutilated specimens.

This species had been named by me but was afterwards really established by Holt & Tattersall on an immature female taken by the "Discovery". In the paper quoted I gave figures of an immature female captured by the "Belgica", and in the description not only that specimen was taken into consideration but besides the whole Swedish material of *Pseudomma* considered as belonging to the same species was mentioned. Shortly afterwards Tattersall gave an elaborate description with several figures of his specimen from the "Discovery".

It is quite certain that the "Belgica" specimen, the "Discovery" specimen and about ten specimens of the Swedish material belong to the same species, *P. Belgicæ*. But after prolonged hesitation and study I have arrived at the result that the major part of the Swedish material, in the "Belgica" Report referred to the same species, ought not to be considered as a variety, consequently it is referred to a new species, *P. armatum*, to be described in the sequel.

Both sexes of *P. Belgicæ* differ from those of *P. armatum* in the ocular plate and the telson, besides the males of the two species seem to differ from each other in the pleopods; finally most adult specimens are much larger than those of *P. armatum*. But in the shape of the antennal squama and in all other features the two species agree so closely with each other that it may be sufficient to refer to Tattersall's elaborate description and his figures of *P. Belgicæ*.

In *P. Belgicæ* the telson (fig. 3b) is a little or somewhat more than half as long again as broad; the terminal margin has three pairs of long spines, the most lateral pair originating from the terminal and not from the lateral margin; the spines on each lateral margin are generally 7—9, but they vary somewhat in number and they increase nearly gradually and very considerably in length towards the end of the margin. The distance between the two spines of the middle terminal pair is rather short.

In both sexes the ocular plate (fig. 3a) is broad and somewhat short; its front margin has a small incision at the middle, and the major part of this margin is nearly straight or flatly convex, but more laterally it is evenly rounded; the entire free margin of the plate shows no trace of any serration and no processes, but seen from the side the upper margin of the plate is a little or conspicuously concave, because the surface is a little or somewhat raised near the front end and at some distance from the median marginal incision, thus showing a feeble vestige of the two processes found in the male of *P. armatum*. In the female the same part is also a little or slightly raised.

In a male, which according to the equipment of the male antennular process and the development of the copulatory tubes seems to be adult, the rami of the last pair of pleopods do not reach the end of sixth abdominal segment; in another much larger male with the copulatory tubes seemingly fully developed but without the characteristic bundle of sensory filaments on the antennular process, the fifth pair of pleopods show the same development. Whether the last-named large male is full-grown I cannot decide, but the much smaller above-mentioned male seems to be so; the rami of all pleopods in these specimens are conspicuously shorter than in the adult males of *P. armatum* (comp. below).

The larger male mentioned measures 27 mm., the other male only 19·5 mm. in length. The females are so mutilated that no measurements can be given. (The specimens from the "Belgica" and the "Discovery" were immature.)

Distribution. — The "Belgica" specimen was from Lat. 71° 19′ S., long. 87° 37′ W. the "Discovery" specimen was secured at Lat. 78° 25′ 40″ S., long. 185° 39′ 6″ E., 300 fathoms (185° must be a misscript in one way or another). — *P. Belgicæ* is thus decidedly antarctic and possibly circumpolar.

5. **Pseudomma armatum** n. sp

(Pl. I, figs. 4a—4b.)

Lat. 54° 11′ S., long. 36° 18′ W., South Georgia. 252—310 m. Grey clay with a few stones. Bottom temp. 1·4°. June 5, 1902. 2 specimens.

Lat. 54° 15′ S., long. 36° 25′ W., South Georgia. 250 m. Clay. Bottom temp. 1·2°. April 22, 1902. 10 mutilated specimens.

Lat. 54° 22′ S., long. 36° 27′ W., South Georgia. 95 m. Clay. May 20, 1902. 3 specimens.

Lat. 54° 24′ S., long. 36° 26′ W., South Georgia. 125 m. Clay with some few stones, Bottom temp. ÷ 0·25°. May 26, 1912. Numerous specimens.

Lat. 54° 24′ S., long. 36° 22′ W., South Georgia. 195 m. Clay with stones. Bottom temp. 1·45°. May 29, 1902. Large number of specimens.

Description. — Closely allied to *P. Belgicæ*, but differs in the following features.

The ocular plate (fig. 4a) is more produced and proportionately longer than in *P. Belgicæ*; its front margin has a minute or rudimentary incision at the middle; the front margin of each half has a feeble or distinct convexity of its own and is in the male produced into a triangular, acute, very conspicuous tooth directed upwards and somewhat forwards, while an acute, raised angle but no tooth is found in the female.

Telson (fig. 4b) is conspicuously shorter and broader than in *P. Belgicæ*, somewhat less than half as long again as broad; the terminal margin has only two pairs of long spines, as the spines of third pair, frequently moderately long, are inserted distinctly on the lateral margins; the distance between the two spines of the middle terminal pairs is longer than in *P. Belgicæ*. The spines on the lateral margins vary somewhat as to number, but each margin has generally 6—8 spines, and they increase considerably in length backwards.

The male pleopods have the rami long; those of fifth pair reach considerably beyond the end of sixth abdominal segment.

Length of both sexes 17 mm.

Remarks. — The material is large, but most of the specimens were broken into pieces. The species is evidently common at South Georgia but has not been taken more southwards and seems therefore to be less antarctic than *P. Belgicæ*.

6. Pseudomma Sarsii (Will.-Suhm in M. S.) G. O. Sars.

1883. *Pseudomma Sarsii* G. O. Sars, Forh. Vid. Selsk. Christiania for 1883, p. 37.
1885. — — G. O. Sars, Challenger Rep. Vol. XIII, p. 189, Pl. XXXIV, figs. 1—3.

Lat. 54° 15′ S., long. 36° 25′ W., South Georgia. 250 m. Clay. Bottom temp. 1·2°. April 22, 1902. 1 adult female.

Lat. 54° 17′ S., long. 36° 28′ W., South Georgia. 75 m. Clay, with some algæ. Bottom temp. 1·5°. May 14, 1902. 1 specimen.

Remarks. — One of the specimens is an adult female, 9·5 mm. long; it agrees excellently with the description and figures of Sars. When the eye-plate in Sars' main figure is examined with a pocket-lens the serration of its margin is easily seen, being well developed excepting near the middle of the front margin and on the posterior major part of each lateral margin, where it is wanting, and quite the same parts of the ocular plate of my female are without serration. — The telson has 8 terminal spines as in Sars fig. 3, while in the text he erroneously stated the existence of 10 terminal spines; each lateral margin respectively with 10 and 11 spines.

Distribution. — Sars' specimens were from the Kerguelen Island, 120 fathoms. Sars had a much larger specimen from Lat. 65° 42′ S., long. 79° 49′ E., 1675 fathoms, which he referred to *P. Sarsii*, but I believe that this specimen belonged either to *P. Belgicæ* or to a hitherto undescribed species.

Dactylamblyops Holt & Tatt.

This genus, established by Holt & Tattersall, comprised hitherto three species, one of which is antarctic. A new species is added here, though it differs materially from the three other forms as to the shape of the antennal squama. — The differences between *Dactylamblyops* Holt & Tatt. and *Dactylerythrops* Holt & Tatt. are in reality so small, that in my opinion the first-named genus ought to be cancelled on a future revision of the subfamily.

7. Dactylamblyops antarctica n. sp.

(Pl. I, figs. 5a—5k.)

Lat. 63° 10′ S., long. 36° 21′ W. 2000—0 m. June 17, 1902. 1 immature male.

Description. — Carapace rather broad in proportion to length, anteriorly considerably produced (fig. 5a) and forming a triangle somewhat more than twice as broad as long, with the apex rounded. — Eyes very large with the cornea seemingly rather flatly convex, thin, colourless and without facets; the eye-stalks are rather short but yet much longer than shown in the figure, because in the natural position they are pressed against the oblique and highly vaulted antero-lateral wall of the carapace; on the right eye-stalk a minute process is found above near the upper front end.

The antennal squama (figs. 5a and 5b) small and narrow, more than five times as long as broad, broadest about at the beginning of the distal fourth; the outer margin has the proximal three-fourths distinctly concave, glabrous and without any denticle at its end, while the terminal fourth of that margin has a number of low serrations where setæ have been inserted; the end of the squama rounded.

Left mandible (figs. 5c and 5d) has the incisive protuberance and the movable lobe well developed; furthermore 10 spiniform setæ, decreasing in length and thickness from in front backwards, constitute a somewhat long row. The mandibular palp in the main as in *Pseudomma*; second joint large, about two and a half times as long as broad. — Maxillæ (fig. 5e) with the lobe from third joint deeply bifid; the distal joint of the palp obliquely oblong-ovate. — Maxillipeds (fig. 5f) without any real lobe from second joint; third to fifth joints broad, somewhat expanded on the inner side.

Thoracic legs rather thin (fig. 5g); sixth joint divided by a very oblique secondary articulation; some of the setæ on sixth joint are somewhat short and peculiarly shaped (fig. 5h), being bipinnate with closely set, fine setæ along a portion somewhat from the end, while the terminal part is extremely thin and naked.

Abdomen slender in proportion to the carapace. Sixth segment (fig. 5i) a little longer than the sum of fourth and fifth segments. Pleopods in the specimen less than half developed, and second to fifth pairs biramous. — Uropods moderately slender; endopod a little shorter than the exopod, with the otocyst very conspicuous. — Telson a little more than half as long as the exopod of the uropods (fig. 5i), not much less than twice as long as broad (fig. 5k), subtriangular; the lateral margins distinctly convex towards the end, and slightly more than their distal third is adorned with a close row of 13 spines increasing much in length towards the end of the telson. This end is transverse, truncate, short, with two pairs of spines, the inner pair thin and shorter than those of the distal lateral pair, while the spines of the outer pair are very long, even one-fourth as long as the whole telson and moderately strong.

Length of the single immature specimen 6.5 mm.

Remarks. — This species is instantly distinguished from all other more or less allied forms by the shape of the antennal squama; besides the size and development of the eyes is very characteristic.

Euchætomera G. O. Sars.

As to *E. typica* G. O. Sars and other species of this genus the carcinologist is referred to my paper on Schizopoda in Memoirs Museum Compar. Zool., Vol. XXXV, No. 4, 1912. No species was hitherto known from any colder area, but the Swedish Antarctic Expedition has captured a single specimen of a fine new species in the subantarctic sea.

8. Euchætomera pulchra n. sp.

(Pl. I, figs. 6 a—6 d.)

Lat. 49° 56′ S., long. 49° 56′ W. 500 m. June 27, 1902. 1 immature specimen.

Description. — Carapace (fig. 6 a) with the rostral process well developed, somewhat long and slender, acute, shaped about as in *E. typica.* The front margin on each half with 8—10 spine-shaped processes increasing much in length from the rostrum to a little from the lateral angle; the surface of the carapace along and a little from the posterior margin with four pairs of somewhat strong, spiniform processes, and along the posterior half of each lateral margin 11—12 somewhat shorter processes. — The eyes somewhat similar to those in *E. tenuis* G. O. S., seen from above (fig. 6 a and 6 b) somewhat more than half as long again as broad, and each with an anterior or terminal and a lateral area of facets, but the lateral, triangular area is quite small, with only about 5 facets in the outer margin; the outer part between the terminal and the lateral area is about as long as the last-named area and furnished with moderately small, spiniform processes covering a small area; when seen vertically from above about 5 such spines in the marginal row (fig. 6 b).

The antennal squama (fig. 6 a) small and very slender, scarcely as long as the eyes and nearly more than seven times as long as broad; on the left squama the denticle is well developed somewhat before the end, while this denticle seems to be undeveloped on the right squama.

The endopods of the seven pairs of thoracic legs are long and slender, with comparatively few long setæ (fig. 6 c), all naked or with very short, inconspicous pubescence along a portion of the distal margin. Fig. 6 c represents the distal part of the endopod of seventh thoracic leg.

All six abdominal segments with their postero-lateral angles produced into a very conspicuous, spine-shaped process (fig. 6 d) and their upper posterior margin between those angles armed with nearly similar processes, four pairs on first and second segment, seven spines on third segment, three pairs on the fourth, two pairs on the fifth and the sixth segment. Sixth segment slightly longer than the sum of the two preceding segments. — Telson somewhat longer than broad (fig. 6 d), its terminal margin a little convex with a single pair of long submedian setæ and on the right half a sublateral, broken spine. — Uropods rather slender (fig. 6 d); exopod between eight and nine times as long as broad; the proximal half of both rami almost naked, the distal half setiferous and the terminal setæ — their distal part is lost — must have been extremely long.

The specimen is subdiaphanous, with the eyes (stalk and visual areas) bright red.

Length of the single immature specimen 3·1 mm.

Remarks. — This species is readily distinguished from all other forms hitherto known. Judging from the structure of the eyes in *E. typica* (vid. Mem. Mus. Comp. Zool. Vol. XXXV, No. 4, p. 200, Pl. 2, fig. 5 b) the spiniform processes at the outer margin are certainly remnants of facets which in the last-named species are spiniferous, while in *E. pulchra* their visual power seems to be lost. — Unfortunately the single specimen at hand is so far from adult that I do not venture to say anything on its sex. The aspect of this subdiaphanous, long-legged animal with its bright red eyes gave rise to its name.

Mysidopsis G. O. Sars.

This characteristic genus comprises a few North-Atlantic species, but hitherto no antarctic species has been recorded. The material contains a couple of poorly preserved specimens of a new subantarctic species.

9. Mysidopsis acuta n. sp.

(Pl. II, figs. 1 a—1 m.)

Lat. 51° 33′ S., long. 58° 0′ W., Falkland Islands, Berkeley Sound. 16 m. Gravel with shells and algæ. Bottom temp. 2·75°. Juli 7, 1902. 2 poorly preserved, immature males.

Description. — Eyes of moderate size, about as in *M. angusta* G. O. S., distinctly depressed, black. — Antennal squama (fig. 1 a) somewhat long, scarcely five and a half times as long as broad, lanceolate, tapering nearly regularly in breadth from the end of the proximal fourth to the tip which is very acute, while the outer margin is a little concave and both margins setiferous to rather near the base.

Mandibles with palps (fig. 1 b) in the main as in *M. didelphys*, but the end of the body of the left mandible shows some peculiarities: the incisive process (fig. 1 c) is well developed with about 8 low teeth, the movable lobe (fig. 1 d) is extremely thick, twice as thick as in *M. didelphys* and terminating in 6 teeth; the margin behind this lobe is moderately long with 4 strong spines and numerous fine hairs, and the lower surface near that margin is also hairy, while the mandible shows the generic character in having no separate molar process. — The maxillulæ (fig. 1 e) have the outer lobe peculiarly shaped, the distal half of its outer margin being considerably concave, with the result that the terminal portion is unusually narrow. — The maxillæ (fig. 1 f) show peculiar features; the proximal lobe is extremely narrow, tapering to the subacute end; the distal lobe is as usually bifid, but the fissure is short and the proximal division of the lobe is very broad; the palp is somewhat long, with the distal joint ovate, more than half as long again as broad and much longer than the proximal joint which is somewhat longer than broad; the exopod is long and narrow, parallel with the palp. — The maxillipeds (fig. 1 g) show the generic character in having the endopod six-jointed, because third joint is completely fused with the fourth; the two distal joints are very broad and the claw long and very strong.

The thoracic legs have the sixth joint divided into three subjoints by transverse articulations (fig. 1 h); seventh joint is short and rather slender; the claw is long and very thin.

Sixth abdominal segment (fig. 1 l) only a little longer than the second. The pleopods of the immature males only half developed, as seen in fig. 1 i and fig. 1 k, representing respectively first left pleopod from in front and fourth left pleopod from behind. — Telson (figs. 1 l and 1 m) nearly linguiform, almost twice as long as broad at the base; a little more than its proximal fourth decreases gradually much in breath, and then the two margins are nearly parallel to considerably beyond the middle; from this place they converge to the end which is truncate, without incision, but with a single pair of long spines; from the base to the end each lateral margin is equipped with 30—31 moderately short spines, which are subequal in length, but more closely set and more outstanding on the proximal than on the distal part of the margin. Telson has two moderately large, black spots on the basal part. — Uropods (fig. 1 l) with the rami moderately slender.

Length of the immature male 9 mm.

Remarks. — This species is easily distinguished from the northern forms by the very acute antennal squama and the shape and armature of the telson. Furthermore, the other features mentioned in the description are of specific value.

Mysidetes Holt and Tattersall.

Some few species from various seas very distant from each other have been referred to this very interesting genus. As already stated in the paper on the "Siboga" Schizopoda (1910) I cannot accept the subfamily Mysidetinæ Holt & Tattersall, but must refer *Mysidetes* to the tribe Leptomysini, and the genus *Uromysis* H. J. H. established in the "Siboga" paper constitutes an excellent connecting link between the genera *Leptomysis*, *Mysideis* and *Mysidetes*.

The antarctic material at hand contains two species, one of which is new.

10. **Mysidetes posthon** Holt & Tatt.

(Pl. II, figs. 2a—2c.)

1906. *Mysidetes posthon* Holt and Tattersall, Ann. Mag. Nat. Hist. Ser. 7, Vol. XVII, p. 10.
1908. — — Tattersall, Nat. Antarct. Exp., Nat. Hist. Vol. IV, Schizopoda, p. 33, Pl. VII, figs. 1—13.

Lat. 54° 15′ S., long. 36° 25′ W., South Georgia. 250 m. Clay. Bottom temp. 1·2°. April 22, 1902. 2 mutilated specimens.

Lat. 54° 17′ S., long. 36° 28′ W., South Georgia. 75 m. Clay with some algæ. Bottom temp. 1·5°. May 14, 1902. 10 mutilated specimens.

Lat. 54° 22′ S., long. 36° 28′ W., South Georgia. 12—15 m. Sand with algæ. May 24, 1902. 1 small specimen.

Lat. 54° 24′ S., long. 36° 22′ W. South Georgia. 210 m. Blue greyish clay with a few pebbles. Bottom temp. 1·5°. May 29, 1902. 5 fine specimens.

Lat. 54° 24′ S., long. 36° 22′ W. South Georgia. 195 m. Clay with stones. Bottom temp. 1·45°. May 29, 1902. 4 specimens.

Lat. 64° 3′ S., long. 54° 37′ W., Graham Region. 360 m. (?). Clay. Febr. 15, 1902. 3 mutilated specimens.

Lat. 65° 19′ S., long. 56° 48′ W., Graham Region. 400 m. Clay with gravel. February 18, 1902. 1 large immature female.

Tattersall has published a detailed description with thirteen figures of this fine species. But finding the spiny armature of the telson differing somewhat in aspect from his figure on that plate I think it useful to give two new figures. These (figs. 2a and 2b) show how the lateral spines differ as to size and besides the kind of regularity in the arrangement of the spines of various size; furthermore the figures show that the end of each terminal lobe of the telson is truncate with two spines, the outer nearly more than twice as long as the inner, and that the spines in the proximal half of the terminal incision are more closely set than the distal spines.

In an apparently adult male I found the copulatory tubes from the base of last pair of thoracic legs horizontal, about as long as the antennal squama and reaching forwards about to the insertion of the maxillipeds.

The largest specimen seen by me is the immature female from the most southern latitude recorded, and it is 24 mm. long; one of the smallest adult females, from Lat. 54° 24′ S., is only 15 mm.

Distribution. — Tattersall recorded this species from the Winter Quarters of the "Discovery", 25—30 and 56 fathoms, and from the Coulman Island, 100 fathoms.

11. **Mysidetes crassa** n. sp.

(Pl. II, figs. 3a—3g; Pl. III, figs. 1a—1c.)

Lat. 52° 11′ S., long. 60° 36′ W.; Falkland Islands, Port Albemarle. 40 m. Sand with algæ. September 8, 1902. 1 immature female.

Description. — The animal is rather robust, much thicker than *M. posthon*. — The carapace anteriorly only a little produced (fig. 3a) with the tip acute but the end about 130°. — Eye-stalks short but broad and considerably depressed; the eyes not broader than the stalk, of moderate size, black. — The antennular peduncles (fig. 3a) somewhat short; the process from the outer angle of first joint reaches beyond the end of the second joint. — The antennal squamæ only slightly longer than the antennular peduncle (fig. 3a), about two and a half times as long as broad (fig. 3b), with both margins convex and setiferous and the end obtuse and obliquely truncate.

The mandibles (figs. 3c and 3d) normal; left mandible has the movable process long and well developed, behind that instead of spines three thick, somewhat curved processes clothed with setæ; the molar process is well developed, transversely truncate; second joint of the palp only a little more than twice as long as broad. — The maxillæ (fig. 1a) in the main as in *Mysidetes posthon*, but the terminal margin of the very broad second joint of the palp is much more oblique than in that species. — The maxillipeds (fig. 3e) have well developed lobes from second and third joints, a shorter broad lobe on fourth joint, and even the fifth joint is a little expanded on the inner side.

The gnathopods (fig. 1 b) resemble considerably those of *M. posthon*, but the lobe from second joint is considerably longer; seventh joint has a close comb of plumose setæ along more than half of its inner margin. — Thoracic legs with sixth joint divided into seven subjoints; seventh joint minute but plainly seen; claw rather long and very thin.

Sixth abdominal segment only a little longer than the fifth and a little broader than long (fig. 3 f). A pleopod of first pair is shown (fig. 1 c); the (inner) branch increases very considerably in breadth from the first to the fifth pair. — Telson (figs. 3 f and 3 g) about as long as the endopod of the uropods, scarcely half as long again as broad, decreasing considerably and only a little irregularly from the base to the end; the proximal half of the lateral margins naked, the distal half with 9 spines increasing considerably in length from the first to the last; the distal lobes truncate, each as in *M. posthon* terminating in two spines, the outer much thicker and more than twice as long as the inner; the terminal incision shaped nearly as in *M. posthon*, but nearly the distal half of its margin quite naked, while the proximal half has about 14 pairs of rather small and closely set spines.

Length of the single immature specimen (with the marsupial lamellæ scarcely half developed) 9 mm.

Remarks. — This species differs much from *M. posthon*, especially by having much shorter and broader antennal squama and a quite different armature of the telson.

Antarctomysis Coutière.

This genus was established on a single species first described by Holt & Tattersall, who adopted the specific name maxima (H. J. H., in M. S.). In the report on the antarctic "Belgica" expedition I pointed out the existence of two gigantic and closely allied antarctic species, and mentioned the main differences between *A. maxima* and the other species *A. Ohlinii*, which was named in honour of the leading Zoologist of Baron, Dr. Otto Nordenskjöld's antarctic expedition, the late Dr. A. Ohlin.

12. **Antarctomysis maxima** (H. J. H. in M. S.) Holt & Tatt.

1906. *Mysis maxima* Holt & Tattersall, Ann. Mag. Nat. Hist. Ser. 7, Vol. XVII, p. 11.
1906. *Antarctomysis maxima* Coutière, Expéd. antarct. Française, Crust. Schizop. et Décap., p. 1, figs. 1—20.
1908. — — H. J. Hansen, Exp. Antarct. Belge, Zool., Schizopoda and Cumacea, p. 13, Pl. II, figs. 3 a—3 m.
1908. — — Tattersall, Nat. Antarct. Exp., Nat. Hist. Vol. IV, Schizopoda, p. 36; Pl. VIII, fig. 1.

Lat. 54° 11' S., long. 36° 18' W., South Georgia. 252—310 m. Grey clay with a few stones. Bottom temp. 1·45°. June 5, 1902. Numerous specimens.

Lat. 54° 12′ S., long. 36° 50′ W., South Georgia. 250 m. Pebbles. May 6, 1902. 34 spec.
Lat. 54° 15′ S., long. 36° 25′ W., South Georgia. 250 m. Clay. Bottom temp. 1·2°. April 22, 1902. 2 specimens.
Lat. 54° 17′ S., long. 36° 28′ W., South Georgia. 75 m. Clay with some algæ. Bottom temp. 1·5°. May 14, 1902. 5 immature specimens.
Lat. 54° 24′ S., long. 36° 26′ W., South Georgia. 125 m. Clay with a few stones. Bottom temp. ÷ 0·25°. May 26, 1902. 13 specimens.
Lat. 54° 24′ S., long. 36° 22′ W., South Georgia. 195 m. Clay with stones. Bottom temp. 1·45°. May 29, 1902. 1 specimen.
Lat. 54° 24′ S., long. 36° 22′ W., South Georgia. 210 m. Blue-greyish clay with a few pebbles. Bottom temp. 1·5 m. May 29, 1902. 15 specimens.
Lat. 64° 3′ S., long. 56° 37′ W., Graham Region. 360 m. (?) Febr. 11, 1902. 3 specimens.
Lat. 65° 19′ S., long. 56° 48′ W., Graham Region. 400 m. Clay with gravel. February 18, 1902. 7 specimens.

Coutière has published a detailed description of this species and in 1908 I added some remarks; numerous figures have been drawn by Coutière and myself, while Tattersall has a figure of the entire animal. Observations on the differences between this species and *A. Ohlinii* are given under the next.

Adult specimens of both sexes from South Georgia vary from 36 to 37 mm. in length, while adults from the two more southern and consequently colder localities are much larger, as an adult male from Lat. 65° 19′ S. is 54 mm. long, a male from Lat. 64° 3′ S. is 57·5 mm., while an ovigerous female from Lat. 65° 19′ S. is 57·5 mm. long.

Distribution. — Tattersall wrote that "the species would seem to be circumpolar in distribution, since, besides the single specimen in the "Discovery" collection, it has been taken by the French, Swedish and Belgian Antarctic expeditions". I quite agree with his supposition.

13. **Antarctomysis Ohlinii** H. J. H.

(Pl. III, figs. 2 a—2 d.)

1908. *Antarctomysis Ohlinii* H. J. Hansen, Exp. Antarct. Belge, Zool., Schizopoda and Cumacea, p. 23.
1908. *Antarctomysis* sp. Tattersall, Nat. Antarct. Exp., Nat. Hist. Vol. IV, Schizopoda, p. 36; Pl. VIII, figs. 2—12.

Lat. 54° 11′ S., long. 36° 18′ W., South Georgia. 252—310 m. Greyish clay with a few stones. Bottom temp. 1·45°. June 5, 1902. 1 adult female.
Lat. 54° 15′ S., long. 36° 25′ W., South Georgia. 250 m. Clay. Bottom temp. 1·2°. April 22, 1902. 8 specimens.
Lat. 54° 24′ S., long. 36° 22′ W., South Georgia. 210 m. Blue-greyish clay with a few pebbles. Bottom temp. 1·5°. May 29, 1902. Numerous specimens.
Lat. 54° 24′ S., long. 36° 22′ W., South Georgia. 195 m. Clay with stones. Bottom temp. 1·45°. May 29, 1902. 11 specimens.

Figs. 2a and 2b represent the anterior part of the body respectively from the left side and from above for comparison with corresponding figures in my "Belgica" report of the same parts of *A. maxima.* These four figures show the strong difference between the eyes and their place on the stalks and besides the very considerable difference between the direction of the antero-lateral margin of the carapace in the two species; these excellent specific characters have been fully described in the "Belgica" paper (p. 15).

Tattersall, who possessed an immature male of each of the two species, mentioned the two main characters just alluded to and besides some other features which may be considered here. He says that in *A. maxima* the rostrum "is produced into a very small spine" which is frequently but not always the case, as I have sometimes found the apex bluntly rounded as in *A. Ohlinii.* The character numbered (3) by Tattersall seems to be good. But his character (4) is not valid, as in some specimens examined I have found the length of the two distal subjoints of the thoracic legs in proportion to the more proximal subjoints of sixth joint similar in both species.

Fig. 2d represents the left fourth pleopod from in front of an adult male. The pleopod, which measures 15·5^{mm}. in length, agrees so closely with that of *A. maxima* that I have not been able to find any real difference. The figure shows that the last joint of the exopod has a moderately long, slender terminal spine, on the inner margin a similar spine near the end, and besides a somewhat longer spine from a point at some distance from the base.

In one of the bottles I found a label indicating the colour of living specimens: "light-coloured with reddish aspect, the stomach shining dark-brown through the skin, the eyes reddish brown with metallic sheen."

One of the largest males is 52·5^{mm}. long, an adult female 50^{mm}.

Remarks. — This species is a little more slender than *A. maxima*, and the narrower and differently shaped eyes give it another aspect.

Distribution. — Tattersall had a specimen from Lat. 78° 25′ 40″ S., long. 185° 39′ 6″ E., 300 fathoms.

Neomysis Czern.

Of this genus a single specimen is at hand; I refer it to *N. patagona* Zimmer, though it differs in a couple of features from Zimmer's description and figures.

14. Neomysis patagona Zimmer.

(Pl. III, figs. 3a—3h.)

1907. *Neomysis patagona* Zimmer, Hamburger Magelh. Sammelreise, Schizopoda, p. 3, Taf., Figs. 1—17.

Lat. 52° 11′ S., long. 60° 26′ W.; Falkland Islands, Port Albemarle. 40 m. Sand with pebbles and algæ. September 8, 1902. 1 female with the marsupium half developed.

Description. — Carapace anteriorly much produced (fig. 3 a) as a long plate which is almost as long as broad at the posterior angles of the eye-stalks and narrowing anteriorly to the rounded, slightly incised end. — Eye-stalks somewhat long; the terminal joint measured to the base of the cornea as broad at this end as long; eyes slightly broader than the stalk, black. — The antennal squama very long and extremely narrow, about twelve times as long as broad and tapering regularly from a little beyond the base to the extremely acute end; the terminal joint short; along the middle of the upper surface of the squama a narrow black stripe runs from the base to rather near the end.

Labrum (fig. 3 b) shaped nearly as in *Neomysis vulgaris*; the front process is narrow, somewhat small, acute. — Maxillæ (fig. 3 c) as in *N. vulgaris* as figured by Sars, but the distal joint of the palp is distinctly narrower, being only a little less than twice as long as broad. — Maxillipeds (fig. 3 d) have the lobe from second joint long and somewhat broad, nearly obtuse; the lobes from third and fourth joints are even a little more developed than in *N. vulgaris* (comp. Sars' figure).

Telson (figs. 3 f and 3 g) about as long as the endopod of the uropods, linguiform, somewhat less than three times as long as broad; a basal part, which increases considerably in breadth backwards, is short and has the lateral margins naked; from the end of this portion the telson at first decreases considerably in breadth, then the margins are parallel and in more than the distal half feebly convex and converging to the somewhat narrow, blunt end. The lateral margins are from the protruding subbasal angles to the end set with a large number of somewhat small spines, and the density of this armature increases from somewhat from the base to the end, the spines on the distal third being very closely set; the end (fig. 3 h) has two pairs of spines, those of the outer pair considerably longer and thicker, those of the inner pair much shorter, than the distal lateral spines.

Length of the specimen with the marsupium half developed 19.5^{mm}.

Remarks. — I think that the specimen described belongs to *N. patagona* Zimmer, though it differs materially in the shape of the rostral plate, about which Zimmer stated: "Das Ende des Vorsprunges ist abgestuzt und ausgeschnitten"; furthermore his figure of the maxilliped shows the lobe from second joint as having a rather different shape and third and fourth joints considerably less broad than in my specimen. In spite of these differences, which I cannot explain with certainty, I think that my reference of the Swedish specimen to Zimmer's species is correct; at least my figures and description render the recognition of the species examined by me very easy.

The species described is distinguished from *N. vulgaris* especially by having the rostral plate elongate with the end rounded, and by the telson which is conspicuously longer and narrower with the armature of the distal half of its lateral margins much closer than in *N. vulgaris*.

Distribution. — The specimens examined by Zimmer were from Punta Arenas, Magelhaës Strait, and two places, Beagle Channel and Lennox Island, both South of Tierra del Fuego.

II. The Order *Euphausiacea*.

The material comprises no less than 25 species. But among these 14 are only from the tropical and temperate Atlantic, and only 7 may be considered as antarctic; 3 species (*Euphausia similis* G. O. S., *Nematobrachion boopis* Calm. and *Stylocheiron maximum* H. J. H.) are widely distributed in warm and temperate seas and besides penetrate more or less into the antarctic region; 1 species (*Thysanoëssa gregaria* G. O. S.) has not been found in the tropical belt but in the northern and southern temperate areas and besides it enters the southern cold area. Only two species are new to science, and they have been briefly characterized in my paper: The Genera and Species of the Order Euphausiacea (Bull. l'Inst. Océanogr. Monaco, No. 210. 1911).

I have found it unnecessary to give full references to the whole literature under most species and have frequently confined myself to quoting either the main paper in question or at most two or three papers. As to the geographical and bathymetrical distribution of twelve of the species I refer to the full accounts in Mem. Mus. Comp. Zool. Vol. XXXV, No. 4; 1912.

Thysanopoda H. Milne-Edw.

Of this genus no species has been found in cold areas, and most of the forms were rarely or never taken at the surface.

1. Thysanopoda tricuspidata H. Milne-Edw.

1885. *Thysanopoda tricuspidata* G. O. Sars, Challenger Rep. Vol. XIII, p. 98, Pl. XVII, and p. 165, Pl. XXXI, figs. 1—22.

Lat. 16° 36′ N., long. 25° 7′ W. Surface, temp. 25·1°. Nov. 14, 1901; 12 p. 1 specimen.
Lat. 14° 28′ N., long. 26° 1′ W. Surface, temp. 25·5°. Nov. 15, 1901; 12 p. 15 specimens.
Lat. 12° 55′ N., long. 26° 38′ W. Surface, temp. 26·6°. Nov. 16, 1901; 6 p. 1 specimen.
Lat. 12° 21′ N., long. 26° 49′ W. Surface, temp. 26·6°. Nov. 16, 1901; 12 p. Very large number of specimens.

Lat. 12° 2′ N., long. 26° 56′ W. Surface, temp. 26·0°. Nov. 17, 1901; 4 a. 1 specimen.
Lat. 10° 44′ N., long. 27° 27′ W. Surface, Nov. 17, 1901. About 20 specimens.
Lat. 8° 54′ S., long. 32° 33′ W. Surface, temp. 26·6°. Nov. 28, 1901; 6 p. 1 specimen.
Lat. 11° 2′ S., long. 32° 54′ W. Surface, temp. 26·5°. Nov. 29, 1901; 6 p. 1 specimen.
Lat. 11° 9′ S., long. 32° 55′ W. Surface. Nov. 29, 1901. 4 specimens.
Lat. 11° 23′ S., long. 32° 57′ W. Surface, temp. 26·3°. Nov. 29, 1901. 2 specimens.
Lat. 24° 51′ S., long. 42° 1′ W. Surface, temp. 22·95°. Dec. 7, 1901. About 50 specimens.
Lat. 26° 58′ S., long. 44° 57′ W. Surface, temp. 22·89°. Dec. 8, 1901. 1 specimen.

All specimens enumerated in this list are larvæ or very young. It is instantly seen that all were taken at the surface in the tropical and subtropical areas.

I have only quoted Sars' well-known description and figures of adult specimens and larval forms. The other literature and the distribution of this species may be looked for in Mem. Mus. Comp. Zool. Vol. XXXV, No. 4, p. 208.

2. Thysanopoda æqualis H. J. H.

1910. *Thysanopoda æqualis* H. J. Hansen, Siboga-Exp. XXXVII, p. 84; Pl. XII, figs. 4a—4c; Pl. XIII, fig. 1a.

Lat. 25° 51' N., long. 21° 29' W. Surface, temp. 22·5°. Nov. 9, 1901. 1 specimen.

The distribution of this species has been given in Mem. Mus. Comp. Zool. Vol. XXXV, No. 4, p. 214.

Nyctiphanes G. O. S.

Only two young of a single species are at hand.

3. Nyctiphanes Couchi Bell.

1905. *Nyctiphanes Couchi* Holt & Tattersall, Rep. Sea and Inland Fisheries of Ireland, 1902—3, Pt. II, No. IV, p. 104 and 134, Pl. XVII.

1910. — — H. J. Hansen, Bull. l'Inst. Océanogr. Monaco, No. 210, p. 18—19.

Lat. 32° 21' N., long. 19° 8' W. Surface, temp. 20·5°. Nov. 6, 1901; 6 p. 1 young.

Lat. 16° 36' N., long. 25° 7' W. Surface, temp. 25·1°. Nov. 14, 1901. 1 young.

The two specimens enumerated are less than half-grown and have the frontal plate cut off transversely; such stages have been established by Illig as *N. latifrons* (vid. my above quoted paper p. 18).

Distribution. — *N. Couchi* is known from the Skager Rak, the North Sea, some places at Great Britain and Ireland, from the western Mediterranean and off West Africa not far from Cape Blanco.

Euphausia Dana.

This rich genus comprises species from all seas excepting the arctic area. Among the species enumerated in this paper 5 may be considered exclusively antarctic. One antarctic species, *E. crystallorophias* Holt & Tatt., is wanting, and it is in reality the only antarctic species hitherto known of this order not taken by the Swedish Expedition.

4. Euphausia Krohnii Brandt.

1851. *Thysanopoda Krohnii* Brandt, Krebse in Middendorff's Sibirische Reise, Bd. II, I. p. 127.

1863. *Euphausia Mülleri* Claus, Zeitschr. wiss. Zool. Bd. XIII, p. 444, Taf. XXVIII—XXIX, Figs. 29—45.

1881. *Thysanopoda bidentata* G. O. Sars, Christiania Vidensk. Selsk. Forh. for 1882, No. 18, p. 50, Tab. I, Fig. 11—14.
1905. *Euphausia Mülleri* H. J. Hansen, Bull. Mus. Océanogr. Monaco, No. 42, p. 11 (partim).
1911. *Euphausia Krohnii* H. J. Hansen, Bull. l'Inst. Océanogr. Monaco, No. 210, p. 22 (with two text-figures).

Lat. 37° 5′ N., long. 16° 21′ W. Surface, temp. 18·4°. Nov. 3, 1901; 12 p. 1 specimen.
Lat. 36° 13′ N., long. 17° 16′ W. Surface, temp. 18·5°. Nov. 4, 1901; 12 p. 1 specimen.

Distribution. — This fine species is known from the western half of the Mediterranean and is common in the North Atlantic both near Europe and off the United States, going northwards to Lat. 51° N. and southwards at least to Lat. 36° 13′ N.; besides a single specimen has been taken off the West coast of Norway (G. O. Sars). — In papers before 1911 I had not separated *E. Krohnii* from the following form, *E. americana* H. J. H., and therefore the earlier statements on the distribution are to be cancelled until the specimens in question have been re-examined.

5. **Euphausia americana** H. J. H.

1911. *Euphausia americana* H. J. Hansen, Bull. l'Inst. Océanogr. Monaco, No. 210, p. 23 (with woodcut).

Lat. 33° 23′ N., long. 18° 39′ W. Surface, temp. 20·1°. Nov. 6; 1901; 6 a. 2 specimens.
Lat. 23° 35′ N., long. 22° 19′ W. Surface, temp. 23·25°. Nov. 10. 1901. 4 specimens.
Lat. 21° 51′ N., long. 23° 0′ W. Surface, temp. 23·2°. Nov. 11, 1901; 12 p. Large number of immature specimens.
Lat. 20° 35′ N., long. 23° 29′ W. Surface, temp. 23·48°. Nov. 12, 1901; 6 p. Very large number of immature specimens.
Lat. 20° 9′ N., long. 23° 39′ W. Surface, temp. 23·5°. Nov. 12, 1901; 12 p. Many immature specimens.
Lat. 18° 10′ N., long. 24° 28′ W. Surface, temp. 23·8°. Nov. 13, 1901; 12 p. 3 specimens.
Lat. 16° 36′ N., long. 25° 7′ W. Surface, temp. 25·1°. Nov. 14, 1901; 12 p. 2 specimens.
Lat. 16° 5′ N., long. 25° 21′ W. 6 fath., temp. 24·7°. Nov. 15, 1901; 6 a. 1 specimen.
Lat. 14° 28′ N., long. 26° 1′ W. Surface, temp. 25·5°. Nov. 15, 1901; 12 p. Very large number of immature specimens.
Lat. 12° 21′ N., long. 26° 49′ W. Surface, temp. 26°. Nov. 16, 1901. Numerous adult specimens.
Lat. 10° 44′ N., long. 27° 27′ W. Surface. Nov. 17, 1901. 6 specimens.
Lat. 6° 9′ N., long. 28° 45′ W. Surface, temp. 27·3°. Nov. 19, 1901. 5 specimens.
Lat. 4° 26′ N., long. 28° 50′ W. Surface, temp. 27·49°. Nov. 20, 1901. 5 specimens.
Lat. 11° 09′ S., long. 32° 55′ W. Surface. Nov. 20, 1901. 3 specimens.
Lat. 19° 19′ S., long. 36° 9′ W. Surface, temp. 25·25°. Dec. 3, 1901. About 30 specimens.
Lat. 20° 35′ S., long. 37° 26′ W. Surface. Dec. 4, 1911; 7 p. 1 specimen.

Lat. 24° 21′ S., long. 41° 23′ W. Surface, temp. 23·21°. Dec. 6, 1901. 9 specimens.
Lat. 25° 28′ S., long. 42° 57′ W. Surface, temp. 23·0°. Dec. 7, 1901. 1 specimen.
Lat. 26° 58′ S., long. 44° 57′ W. Surface, temp. 22·89°. Dec. 8, 1901. 3 specimens.
Lat. 32° 15′ S., long. 50° 14′ W. Surface, temp. 21·90°. Dec. 11, 1901. 1 specimen.

The somewhat small species has been separated from *E. Krohnii* Brandt in the paper quoted; a detailed description with some figures are to be published in a future paper.

Distribution. — *E. americana* has been established on a number of specimens from places in the Atlantic East of the United States. It is common in the tropical and warmer temperate areas of the eastern Atlantic and has also been taken at Lat. 33° N., long. 47 W. (Copenhagen Mus.).

6. Euphausia recurva H. J. H.

1905. *Euphausia recurva* H. J. Hansen, Bull. Mus. Océan. Monaco, No. 42, p. 13.
1912. — — H. J. Hansen, Mem. Mus. Comp. Zool. Vol. XXXV, No. 4, p. 233, Pl. 7, figs. 3a—3n.

Lat. 24° 21′ S., long. 41° 23′ W. Surface, temp. 23·21°. Dec. 6, 1901. 4 specimens.
Lat. 32° 15′ S., long. 50° 14′ W. Surface, temp. 21·90°. Dec. 11, 1901. Numerous specim.

This interesting species has a very wide distribution, as shown in the last-named work.

7. Euphausia brevis H. J. H.

1905. *Euphausia brevis* H. J. Hansen, Bull. Mus. Océan. Monaco, No. 42, p. 15.
1912. — — H. J. Hansen, Mem. Mus. Comp. Zool. Vol. XXXV, No. 4, p. 239, Pl. 8. figs. 1a—1g.

Lat. 37° 58′ N., long. 16° 21′ W. Surface, temp. 18·4°. Nov. 3, 1901; 12 p. 1 specimen.
Lat. 36° 13′ N., long. 17° 16′ W. Surface, temp. 18·5°. Nov. 4, 1901; 12 p. 4 specimens.
Lat. 34° 2′ N., long. 18° 21′ W. Surface, temp. 20·1°. Nov. 5, 1901; 12 p. 12 specimens.
Lat. 33° 23′ N., long. 18° 39′ W. Surface, temp, 20·1°. Nov. 6, 1901; 6 a. 1 specimen.
Lat. 31° 49′ N., long. 19° 24′ W. Surface, temp. 20·9°. Nov. 6, 1901; 12 p. 1 specimen.
Lat. 27° 43′ N., long. 20° 51′ W. Surface, temp. 21·4°. Nov. 8, 1901; 12 p. 1 specimen.
Lat. 26° 47′ N., long. 21° 10′ W. Surface, temp. 23·3°. Nov. 9, 1901; 12 a. 2 specimens.
Lat. 25° 51′ N., long. 21° 29′ W. Surface, temp. 22·5°. Nov. 9, 1901; 1 specimen.
Lat. 23° 35′ N., long. 22° 19′ W. Surface, temp. 23·1°. Nov. 10, 1901; 12 p. 19 specimens.
Lat. 11° 9′ S., long. 32° 55′ W. Surface, Nov. 29, 1901. 11 specimens.
Lat. 11° 23′ S., long. 32° 57′ W. Surface, temp. 26·33°. Nov. 29, 1901. 1 specimen.
Lat. 13° 57′ S., long. 33° 25′ W. Surface, temp. 26·31°. Nov. 30, 1901. 2 specimens.
Lat. 19° 19′ S., long. 36° 9′ W. Surface, temp. 25·25°. Dec. 8, 1901. 12 specimens.
Lat. 24° 21′ S., long. 41° 23′ W. Surface, temp. 23·21°. Dec. 6, 1901. 1 specimen.
Lat. 26° 58′ S., long. 44° 57′ W. Surface, temp. 22·89°. Dec. 8, 1901. Many specimens.

The list shows that *E. brevis* was not taken in the tropical Atlantic between Lat. 23° 35′ N. and Lat. 11° 9′ S. — As to its wide distribution the reader is referred to the last-named work.

8. Euphausia tenera H. J. H.

1885. *Euphausia gracilis* G. O. Sars, Challenger Rep. Vol. XIII, p. 89, Pl. XV, figs. 12—23 (not *E. gracilis* Dana).

1910. *Euphausia tenera* H. J. Hansen, Siboga-Exp. XXXVII, p. 95, Pl. XIV, figs. 3a—3e.

Lat. 20° 35′ N., long. 23° 29′ W.	Surface, temp. 23·48°.	Nov. 12, 1901.	1 specimen.
Lat. 14° 28′ N., long. 26° 1′ W.	Surface, temp. 22·5°.	Nov. 15, 1901.	Many specimens.
Lat. 13° 27′ N., long. 26° 27′ W.	Surface, temp. 26·08°.	Nov. 16, 1901.	1 specimen.
Lat. 12° 21′ N., long. 26° 49′ W.	Surface, temp. 26°.	Nov. 16, 1901.	25 specimens.
Lat. 10° 44′ N., long. 27° 27′ W.	Surface.	Nov. 17, 1901.	11 specimens.
Lat. 9° 7′ N., long. 28° 6′ W.	Surface, temp. 26·9°.	Nov. 18, 1901; 6 p.	2 specimens.
Lat. 6° 9′ N., long. 28° 45′ W.	Surface, temp. 27·30°.	Nov. 19, 1901.	19 specimens.
Lat. 4° 26′ N., long. 28° 59′ W.	Surface, temp. 27·49°.	Nov. 20, 1901.	4 specimens.
Lat. 5° 6′ S., long. 31° 40′ W.	Surface, temp. 26·10°.	Nov. 26, 1901.	3 specimens.
Lat. 11° 9′ S., long. 32° 55′ W.	Surface.	Nov. 29, 1901.	13 specimens.
Lat. 11° 23′ S., long. 32° 57′ W.	Surface, temp. 26·33°.	Nov. 29, 1901.	1 specimen.
Lat. 13° 28′ S., long. 33° 15′ W.	Surface, temp. 26·3°.	Nov. 30, 1901; 12 p.	1 specimen.
Lat. 13° 57′ S., long. 33° 25′ W.	Surface, temp. 26·5°.	Dec. 1, 1901.	1 specimen.

The most complete account of the wide distribution of this small and slender species is found in my recent American paper. .

9. Euphausia superba Dana.

(Pl. IV, figs. 2a—2g.)

Euphausia superba G. O. Sars, Challenger Rep. Vol. XIII, p. 84, Pl. XIV, figs. 5—9 (Male).

— *murrayi* G. O. Sars, — — — — p. 82, Pl. XIV, figs. 1—4 (Female).

— *antarctica* G. O. Sars, — — — — p. 86, Pl. XV, figs. 1—8 (Immature).

— *superba* Tattersall, Nat. Antarct. Exp., Nat. Hist. Vol. IV, Schizopoda, p. 4, Pl. I, figs. 1—12 (With full synonymy).

Lat. 49° 59′ S., long. 49° 59′ W. Surface. June 27, 1902. 1 small specimen.
Lat. 51° 14′ S., long. 38° 50′ W. Surface, temp. 1·14°. June 18, 1902. 3 very small spec.
Lat. 51° 33′ S., long. 38° 42′ W. Surface, temp. 1·13°. June 14, 1902. Numerous larvæ.
Lat. 51° 52′ S., long. 38° 24′ W. Surface, temp. 1·78°. June 18, 1902. Large number of larvæ.
Lat. 52° 40′ S., long. 36° 16′ W. Surface, temp. 0·80°. June 17, 1902. 1 larva.
Lat. 53° S., long. 48° 27′ W. { 100—0 m., temp. 3·05°. 3 larval specimens. / 500—0 m., temp. respect. 1·45° and 3·38. 5 larvæ. } April 17, 1901.
Lat. 53° 10′ S., long. 36° 21′ W. 2000—0 m., temp. 0·53°. June 17, 1901. 1 moderately large specimen and a very large number of larvæ.

Lat. 63° 5′ S., long. 58° 42′ W. Surface. Jan. 11, 1902; 12 p. 1 specimen, half-grown.

Lat. 63° 18′ S., long. 45° 3′ W. Surface, temp. ÷ 0·7°. February 3, 1902. 5 specimens, none of them full-grown.

Lat. 63° 21′ S., long. 45° 22′ W. Surface, temp. ÷ 0·5°. February 4, 1902. 8 specimens (♂ and ♀).

Lat. 63° 54′ S., long. 49° 55′ W. Surface, temp. ÷ 0·7°. February 5, 1902; 12 p. 1 specimen, not full-grown.

Lat. 63° 56′ S., long. 60° 47′ W. Surface. January 12, 1902. 15 small specimens and larvæ.

Lat. 64° 3′ S., long. 49° 26′ W. Surface, temp. ÷ 0·45°. January 29, 1902. 1 specimen, scarcely adult.

Lat. 64° 12′ S., long. 61° 38′ W. Surface, temp. 2·4°. January 13, 1902; 10 p. 1 specimen, half-grown.

About Lat. 64° S., long. 50′ W. Surface, between ice. February 7, 1902. 18 half-grown specimens.

From the oesophagus of a *Scopelus*, found dead at the surface, February 1912. 1 specimen, half-grown.

Found dead on the beach of the Seymour Isl., at ebb tide. January 26, 1902. 14 specimens, half-grown to nearly full-grown.

Sars has given detailed descriptions with numerous figures of both sexes and of immature specimens, though referring these three categories to three different species. Tattersall published a full account of the synonymy and added additions and corrections, together with a number of figures, to Sars' and Hodgson's descriptions. Nevertheless, I find it useful to give here new figures of the curiously built antennular peduncles in both sexes in fully developed specimens and besides of the male copulatory organ of first pleopods, and a description of these appendages may be added.

In the female the antennular peduncles (figs. 2a—2b) are moderately slender. The lobe from first joint is very long and strongly vaulted (fig. 2b), with the highest portion situated above the articulation of second joint; at the base it is as broad as second joint (fig. 2a), the outer margin is somewhat short, the terminal margin somewhat concave and from the outer angle projecting much forwards, so that the distal portion of the lobe is subtriangular with the end obtuse and covers the inner half of the surface of second joint. Second joint is very long in proportion to the third, seen from above (fig. 2a) even almost more than twice as long, but the upper wall of the joint projects forwards as a cover above more than the proximal third of third joint (fig. 2b); from the upper and outer distal angle an oblong-triangular, subacute lobe projects forwards and somewhat outwards and downwards as a lamellar process; near the inner margin of the upper surface runs a somewhat curved, sharp keel (fig. 2a) which terminates in the most protruding joint of the angularly bent front margin. The third joint has the dorsal keel high and sharp.

In the males the antennular peduncles (figs. 2c—2d) are strongly thickened. The lobe from first joint is considerably narrower than the base of second joint, much smaller than in the female, much less protruding forwards, with the distal end broadly rounded (fig. 2 c) and, seen from the side (fig. 2 d), the lobe is more vaulted than in the female. The second joint is not only much thicker than in the female, but besides it looks considerably shorter because the part of the upper wall projecting forwards above the third joint is short (fig. 2 d); this part has the terminal margin straight and transverse, the outer angle rectangular, and this angle is placed somewhat from the outer margin of the joint (fig. 2 c); the process in the female from the outer upper angle of second joint is in the male not only wanting, but here the upper wall does not cover anything of the third joint; the keel on the dorsal surface near the inner margin of the joint is less developed than in the female. Third joint is almost inflated on the outer side towards the base (fig. 2 c) and, seen from the side (fig. 2 d), towards the end; the keel is feeble.

The copulatory organs (figs. 2 e—2 g) show some peculiarities. The terminal process (p^2) is obliquely but strongly inflated at the base and without a distinct heel; seen from behind (fig. 2 f) more than the proximal half of this process is strongly, almost semicircularly curved, while the distal portion is straight and the end obtuse; seen from the inner side (fig. 2 g) the whole process from the strongly inflated base to near the end is considerably curved and the end itself bent strongly in the proximal direction and acute. The proximal process (p^3) has, seen from behind (fig. 2 f), more than the proximal half feebly curved, but then it bends strongly inwards and the proximal part of this incurved portion is expanded forwards, while the distal looks somewhat narrow and terminates in a point; seen from the inner side (fig. 2 g) the incurved portion is observed to be much expanded, but by narrow incisions from both sides divided into a proximal and a distal part. The median lobe *(lm)* is distally obtuse and its lateral process (p^4) somewhat long, strong, distally curved and without any denticle. The setiferous lobe (fig. 2 e) has its distal part considerably produced and triangular; both margins have a large number of plumose setæ.

Length of a fine male 51 mm., of the largest female 52 mm.

Distribution. — This very large species has been secured by all expeditions which captured pelagic animals near to or in the Antarctic Ocean, thus by the Wilkes Expedition (Dana), the "Challenger" (G. O. Sars), the "Southern Cross" (Hodgson), the "Discovery" (Tattersall), the Belgian and the French Antarctic Expeditions (H. J. Hansen, Coutière).

10. **Euphausia similis** G. O. Sars.

(Pl. IV, figs. 3 a—3 e.)

1885. *Euphausia similis* G. O. Sars, Challenger Rep. Vol. XIII, p. 79, Pl. XIII, figs. 1—6.
1911. — — H. J. Hansen, Bull. l'Inst. Océan. Monaco, No. 210, p. 24 (with a text-figure).

Lat. 48° 27′ S., long. 42° 36′ W. 2500—0 m. June 23, 1902. 1 specimen.
Lat. 49° 56′ S., long. 49° 56′ W. 2700—0 m., temp. at the surface 3·36°. June 27, 1902. 3 specimens.

About Lat. 52° S., long 55½° W. 1400—0 m. April 12, 1902. 1 specimen.
Lat. 53° 10′ S., long. 30° 21′ W. 500—0 m. June 17, 1902. 9 specimens, from very small to full-grown.

The specimens at hand are normal, without any process on third abdominal segment and with the frontal plate and rostrum developed in the usual way (figs. 3 a and 3 b), thus differing in this last-named particular from the anomalous specimens described in the "Siboga" Report (1910). Sars has given an elaborate description of the normal form and a number of figures; in the "Siboga" paper I redescribed the antennulæ, and in the Monaco paper quoted above I pointed out some few other characters and curious variation. Nevertheless, I find it useful to give two new figures (figs. 3 a and 3 b) of the front part of a normal specimen, showing the front part of the gastric area, the frontal plate with rostrum, the eyes and the first antennular joint.

The male copulatory organs (figs. 3 c—3 e) show peculiarities. The terminal process (p^2) is moderately long and rather strong; the foot *(f)* is somewhat long and the heel *(h)* moderately long and slightly curved (fig. 3 d); seen from behind this process is a little curved only towards the base, while the apical part is bent vertically inwards with the tip acute, and a little before this part a protruding, triangular tooth is seen on the inner margin (fig. 3 d); seen from the inner side (fig. 3 e) the whole process is somewhat sinuate. The proximal process *(p^3)* has, seen from behind (fig. 3 d), somewhat more than its proximal half nearly straight and a little inflated on the outer side; the distal part is bent abruptly inwards and widens extremely on the inner, proximal side, while the most terminal part is narrow, but seen from the inner side (fig. 3 e) this terminal part forms a very oblong-oval lamella with the end rounded. The whole process has, seen from behind, nearly the aspect of a hatchet with the handle straight and the blade expanded extremely towards the oblique terminal margin, while its distal end is besides produced in a rather slender process. The median lobe *(lm)* is moderately broad with the distal portion, seen from the inner side (fig. 3 e), expanded forwards as a rounded lobe; the lateral process is strong, moderately long, with nearly its distal half semicircularly curved and without any tooth. The auxiliary lobe *(lu)* is somewhat long. The setiferous lobe *(ls)* is moderately broad, its distal part triangular, with about 7 setæ, while a single much shorter seta is found at the middle of the outer margin of the lobe.

Length of an adult male (from Lat. 53° 10′ N.) $28{\cdot}5^{mm}$., of another male (from the same place) 30^{mm}., of a third male (from Lat. 49° 56′ N.) 32^{mm}., of a female (from the last-named locality) 30^{mm}.

Distribution. — The type of Sars was from the South Atlantic, Lat. 37° 17′ S., long 53° 52′ W.; Coutière mentioned specimens from one of the stations of the French Antarctic Expedition. Further statements on the distribution are given in the Monaco paper quoted.

11. **Euphausia frigida** H. J. H.

(Pl. III, figs. 4 a—4 b; Pl. IV, figs. 1 a—1 d.)

1908. *Euphausia,* sp. Tattersall, Nat. Antart. Exp., Nat. Hist. Vol. IV, Schizopoda, p. 14.
1911. — *frigida* H. J. Hansen, Bull. l'Inst. Océan. Monaco, No. 210, p. 27 (with two text-figures).

Lat. 49° 3′ S., long. 46° 54′ W. Surface, temp. 4·18°—4·80°. June 25, 1902. 1 young specimen.

Lat. 52° 55′ S., long. 36° 34′ W. Surface. June 16, 1902. 1 young specimen.

Lat. 53° S., long. 48° 27′ W.
- 250—0 m., temp. at the surface 3·38°, at 250 m. 1·35°. April 17, 1902. 3 very young specimens.
- 500—0 m. temp. at the surface 3·38°, at 250 m. 1·35°. April 17, 1902. 16 specimens, very young to nearly full-grown.

Lat. 53° 10′ S., long. 35° 21′ W.
- 500—0 m., temp. at the surface 0·53°, at 500 m. 1.35°. June 17, 1902. 10 specimens, from very small to adult.
- 2000—0 m., temp. at the surface 0·53°. June 17, 1902. Large number of specimens, from larvæ to adult.

Description. — The frontal plate (fig. 4 a) is short and produced into a small, triangular rostrum conspicuously shorter than broad. The gastric area is rather vaulted, but a median keel is scarcely distinct — The eyes are very large, but yet scarcely as large as in *E. lucens* H. J. H.

The antennular peduncles (figs. 4 a and 4 b) are moderately slender. The lobe from first joint is at most a very small, triangular plate distinctly shorter than broad; it is far from conspicuous and most easily observed when seen from in front with the next joint bent downwards. Second joint is slightly longer than, and scarcely as robust as, in *E. lucens*; it is as long as the third joint; the outer short part of the upper distal margin is transverse (fig. 1 a), and then the margin goes as a distinctly convex line not only inwards but besides somewhat forwards to the inner margin. The dorsal keel of the third joint is, seen from the side (fig. 4 b), somewhat low, with the upper margin straight and the distal corner well developed, nearly rectangular.

The male copulatory organs (figs. 1 b—1 d) show excellent specific characters. The terminal process (p^2) is moderately long, rather far from reaching the end of the median lobe; its foot is moderately long and the heel somewhat short, triangular, acute (fig. 1 c); the proximal half is rather thick, the distal somewhat slender, seen from the inner side (fig. 1 d) bent somewhat forwards; the end is bifurcate with the rami either equal (fig. 1 d) or very unequal (fig. 1 c) in size and shape. The proximal process (p^3) is conspicuously longer than the terminal, somewhat thick, bent considerably inwards at the end of its proximal fourth (fig. 1 c), while the distal fourth is, seen from the inner side (fig. 1 d), considerably expanded, forming nearly an oblong triangle broader towards the end, with the terminal margin deeply incised near the middle and the posterior margin distinctly incised before the middle, so that the posterior distal part of the plate forms an oval, rounded wing not projecting beyond the other end of the process; on the outer side of the process at the base of the distal expansion a very conspicuous, distally much curved, acute process projects outwards and forwards (fig. 1 c). The median lobe is long, somewhat slender, distally rounded (fig. 1 b); its lateral process (p^4) is very long, distally curved and with a tooth a little from the end. The auxiliary lobe (*lu*) is slender and somewhat long (fig. 1 b). The setiferous lobe is somewhat narrow; its distal part is on the inner side abruptly narrowed with about 6 setæ, but otherwise no setæ along the lateral margins of the lobe.

Length of adult males 17—18·5 mm., of females 18—20·5 mm.

Remarks. — *E. frigida* is closely allied to *E. lucens* H. J. H. (= *E. splendens* G. O. Sars, not Dana), but it differs especially by having the lobe of first antennular joint much smaller and broader than long, by having the dorsal keel of third antennular joint lower with its upper margin straight and by having the terminal process of the copulatory organs shorter, the proximal process longer with its expanded portion quite differently shaped.

Distribution. — Tattersall has mentioned specimens taken by the "Discovery" at Lat. 57° 25′ 30″ S., long. 151° 43′ E.

12. Euphausia Vallentini Stebb.

(Pl. V, figs. 1 a—1 f).

1900. *Euphausia Vallentini* Stebbing, Proc. Zool. Soc. London, May 1900, p. 545, Pl. XXXVII.
1908. — — Tattersall, Nat. Antarct. Exp., Nat. Hist. Vol. IV, Schizopoda, p. 13, Pl. IV, figs. 4—6.
1911. — — H. J. Hansen, Bull. l'Inst. Océan. Monaco, No. 210, p. 30.

Lat. 32° 15′ S., long. 50° 14′ W. Surface, temp. 21·90°. December 11, 1901. 1 specimen.

Lat. 44° 49′ S., long 57° 34′ W. 700—500 m. December 27, 1901. 3 young specimens.

Lat. 48° 27′ S., long. 42° 36′ W. 2500—0 m. temp. at the surface 7·88°. June 23, 1902. Large number of specimens.

Lat. 49° 29′ S., long. 49° 47′ W. Surface, temp. 3·20°. June 26, 1902. 1 specimen.

Lat. 49° 56′ S., long. 49° 56′ W. 2700—0 m., temp. at the surface 3·36°, at 2500 m. 1·67°. June 27, 1902. 9 specimens, nearly adult.

Lat. 50° 32′ S., long. 58° 50′ W. Surface, temp. 9·8°. Dec. 30, 1901; 6 a. Large number of specimens, the majority small.

Lat. 50° 39′ S., long. 58° 38′ W. Surface, temp. 9·5°. Dec. 30, 1901. 5 specimens, scarcely half-grown.

Lat. 51° 13′ S., long. 57° 46′ W. Surface, temp. 9·3°. Dec. 30, 1901. 14 specimens, half-grown to very young.

Lat. 52° 43′ S., long. 58° 52′ W. Surface, temp. 9·3°. January 2, 1902; 12 p. 24 specimens, mostly larvæ.

Lat. 52° 58′ S., long. 60° 0′ W. Surface, temp. 8·2°. March 25, 1902; 12 p. 2 very young specimens.

Lat. 53° S., long. 48° 27′ W. 500—0 m., temp. at the surface 3·38°, at 500 m. 1·45. April 17, 1902. 8 specimens, half-grown to nearly adult.

Lat. 53° 21′ S., long. 60° 45′ W. Surface, temp. 8·5°. January 3, 1902; 12 a. 1 male.

Lat. 53° 34′ S., long. 61° 23′ W. Surface. January 3, 1902. 1 immature specimen.

Lat. 53° 43′ S., long. 61° 49′ W. Surface, temp. 8·3°. January 3, 1902; 12 p. 10 specimens, very young to scarcely half-grown.

Lat. 55° 15′ S., long. 65° 17′ W. Surface. March 3, 1902; 10 p. 2 very young specimens.

This species is on the whole well known, but some remarks may yet be made. — The rostral process is more produced than in *E. lucens*, about as long as broad, nearly regularly triangular (fig. 1 a). The gastric area is moderately convex without any median keel. — The antennulæ (figs. 1 b and 1 c) show some characters. The lobe from first joint is plate-shaped, distally broadly but obliquely rounded, subhorizontal and conspicuously more than half as broad as the base of next joint. Second joint has the upper terminal margin in the main oblique, but besides nearer to the outer than to the inner margin with a triangular, acute, horizontally protruding angle (fig. 1 b). The dorsal keel on third joint (fig. 1 c) is extremely high, with the upper margin somewhat convex and the terminal margin long and almost vertical.

The small, thin process from third abdominal segment is generally distinct, but sometimes broken off and in rare cases seemingly wanting.

The copulatory organs are very similar to those of *E. lucens* (Monaco Bull. No. 210, p. 210, figs. 8, A and B). Tattersall's figure and the investigation of my single adult male show that the terminal process is shorter than the proximal and its two apical branches subequal in length (fig. 1 d), both acute, but one much broader than the other (in *E. lucens* the terminal process is longer than the proximal and its apical branches very unequal in length). The proximal process (figs. 1 e and 1 f) almost as in *E. lucens,* with the same protruding branch on the outer side (not drawn by Tattersall), but the obliquely expanded distal part differs somewhat in shape from that in *E. lucens,* as the very oblique terminal margin is incised rather near the middle (fig. 1 f), consequently the two somewhat wing-like parts of the expansion much less differing in size than is the case in *E. lucens.* The lateral process has a tooth a little from the end.

Length of the largest specimen, an immature male from Lat. 53° S., 23^{mm}.; the single adult male, from Lat. 50° 32′ S., measures 19^{mm}.

Distribution. — Tattersall's two "Discovery" specimens had been secured at Lat. 56° 54′ S., long. 170° 28′ E. Some specimens from the "Challenger" referred by Sars to *E. lucens* and by Tattersall correctly transferred to *E. Vallentini* had been captured in the "South Pacific, about midway between New Zealand and Chili." Stebbing's specimens were from the Falkland Islands.

In the long list of localities from the Swedish Expedition it is seen that this antarctic species goes rather far northwards, even to Lat. 32° 15′ S., but the map shows that a branch from the antarctic Cape Horn current runs in a north-eastern direction East of South America at least to near Lat. 32° S.

13. **Euphausia hemigibba** H. J. H.

1910. *Euphausia hemigibba* H. J. Hansen, Siboga-Exp. XXXVII, p. 100, Pl. XIV, figs. 5 a—5 f.

Lat. 23° 25′ N., long. 22° 19′ W. Surface, temp. 23·05°. November 10, 1901. 8 specimens.
Lat. 20° 35′ N., long. 23° 29′ W. Surface, temp. 23·48°. November 12, 1901. 9 specimens.
Lat. 24° 21′ S., long. 41° 23′ W. Surface, temp. 23·21°. December 6, 1901. 5 specimens.
Lat. 26° 58′ S., long. 44° 57′ W. Surface, temp. 22·89°. December 8, 1901. 6 specimens.

An account of the wide distribution of this species has been given by me in Mem. Mus. Comp. Zool. Vol. XXXV, No. 4, p. 247—248.

14. **Euphausia triacantha** Holt & Tatt.

(Pl. V, figs. 2a—2g.)

1906. *Euphausia triacantha* Holt & Tattersall, Ann. and Mag. Nat. Hist. Ser. 7, Vol. XVII, p. 4.
1908. — — Tattersall, Nat. Antarct. Exp., Nat. Hist. Vol. IV, Schizopoda, p. 12, Pl. IV, figs. 1—3.

Lat. 48° 27′ S., long. 42° 36′ W. 2500—0 m., temp. at the surface 7·88°. June 23, 1902. 11 not full-grown specimens.

Lat. 49° 56′ S., long. 49° 56′ W. 2700—0 m., temp. at the surface 3·36°, at 2700 m. 1·67°. June 27, 1902. Numerous specimens.

Lat. 53° S., long. 48° 27′ W. 500—0 m., temp. at the surface 3·38°, at 500 m. 1·45°. April 17, 1902. 11 specimens, from very young to full-grown.

Lat. 53° 10′ S., long. 36° 21′ W.
- 2000—0 m., temp. at the surface 0·53°. June 17, 1902. 11 specimens, most of them full-grown.
- 500—0 m., temp. at the surface 0·53°, at 500 m. 1·35°. June 17, 1902. 1 specimen, with the frontal plate anomalous.

The descriptions of this species have been based on a single and imperfectly preserved specimen, and therefore some points may be mentioned here.

The frontal plate is normally considerably produced (fig. 2a), somewhat more than twice as broad as long, triangular, terminating in a strong but distally slender, somewhat long rostrum as long as or somewhat longer than the plate and almost as long as the diameter of the eye. In a single adult specimen the plate with the rostrum is quite anomalous (fig. 2b), the plate being strongly expanded both laterally and forwards at the expense of the rostrum which is short; the plate, which has the lateral margins considerably convex, covers most of the eye-stalks. In normal specimens the high and sharp keel on the gastric area goes forwards on the frontal plate and the proximal part of the rostrum as a sharp carina, but in the anomalous specimen mentioned this keel is broader and less sharp on the frontal plate. — Two adult specimens I found intermediate as to shape and length of frontal plate and rostrum between normal specimens and the anomalous specimen figured. In the last-named specimen the keel on the gastric area has behind the middle a small vertical protuberance, while in the other specimens this keel, seen from the side, is only subangular, obtuse. — The lateral denticle on the carapace projects from the margin itself behind its middle, and a furrow runs near the lateral margin from its front end to shortly behind the lateral denticle. — The eyes are moderately large.

The lobe from first antennular joint (figs. 2c and 2d) is somewhat small, anteriorly bifid, with the inner process longer and broader than the outer and curved distinctly outwards. Second joint, seen from above (fig. 2c), has the distal margin produced at the middle in a conspicuous, acute tooth directed forwards, and the margin inside the base of that tooth is rather convex. Third joint with the dorsal keel low and feebly developed (fig. 2d). — The antennal squama has the outer distal angle produced in a minute or nearly obsolete denticle.

The dorsal processes on third to fifth abdominal segments are all well developed, either equal in size or that of the third segment larger than the two others. The species is distinguished from the two other forms of the same group by having no other tooth or incision on the posterior margins of the same segments. — The preanal spine simple in both sexes. — The telson has only two pairs of dorsal spinules.

The copulatory organs (figs. 2e—2g) afford some characters. The terminal process (p^2) has the proximal half stout, the distal somewhat slender; the foot is long and strong, the heel long with the end narrow, obtuse; the part beyond the foot is, seen from behind (fig. 2f), a little curved and feebly sinuate, seen from the inner side (fig. 2g) it is somewhat more curved, tapering to the acute end. The proximal process (p^3), which is longer than the terminal, is curved somewhat inwards from the base to somewhat from the end, where it bends feebly in the opposite direction; seen from behind (fig. 2f) nearly the proximal half is moderately robust, the distal half proportionately slender with the end acute; seen from the inner side (fig. 2g) the terminal fifth forms a somewhat curved, very narrow plate with the end obtuse. The median lobe is long, even slightly longer than the setiferous lobe (fig. 2e), with the distal portion, seen from the inner side, nearly quadrangular (fig. 2g); the lateral process (p^4) is middle-sized, without any tooth. The setiferous lobe (fig. 2e) of usual shape, with setæ along the major part of both margins.

Length of one of the largest specimen, an adult male, 36 mm.

Remarks. — *E. triacantha* is large, robust and easily distinguished from the two other species of the group with three well developed processes on third to fifth abdominal segments by having the lateral denticle on each side of the carapace really marginal and by no submedian or lateral teeth or process on third to fifth abdominal segment and only two pairs of dorsal spinules on the telson. From *E. spinifera* G. O. Sars it is further separated by the quite different shape of the lobe from first antennular joint.

Distribution. — The only specimen mentioned by Tattersall had been taken at Lat. 66° 52′ 09″ S., long. 178° 08′ 15″ E., 2030 fathoms.

15. **Euphausia longirostris** H. J. H.

(Pl. V, figs. 3a—3d.)

1908. *Euphausia longirostris* H. J. Hansen, Exp. Antarct. Belge, Zool., Schizopoda and Cumacea, p. 4, Pl. I, figs. 1a—1c.

Lat. 48° 27′ S., long. 42° 36′ W. 400—0 m., temp. at the surface 7·88°, at 400 m. 3·95°. June 23, 1902. 1 adult male.

Lat. 49° 56′ S., long. 49° 56′ W. 2500—0 m., temp. at the surface 3·36°, at 2500 m. 1·67°. June 27, 1902. 8 specimens.

Of this species a description dealing with nearly all characters excepting the telson and the copulatory organs has been given in the paper quoted together with figures of the carapace and the antennulæ. A supplement to that diagnosis may be added here.

The antennal squama has the outer distal angle produced in a small denticle. — Fig. 3a represents third to sixth abdominal segments, showing the armature of these segments to be similar to that in *E. spinifera* G. O. S. The preanal process has in both sexes one to three small spinules behind the well developed main spine. The telson has five or six pairs of dorsal spinules.

The copulatory organs (figs. 3b—3d) differ considerably from those in *E. triacantha*, but are rather similar to those in *E. spinifera* G. O. S., differing from them in some minor particulars. The terminal process is conspicuously shorter than in *E. triacantha*, with the foot moderately long and thick, the heel rather short and broadly rounded, the part beyond the foot only feebly curved and its bifid end with both branches almost spiniform (fig. 3d), placed one behind the other (fig. 3c), curved conspicuously forwards and the posterior branch much longer than the anterior. The proximal process is conspicuously longer than the terminal, somewhat stout and seen from behind (fig. 3c) considerably curved; its terminal portion is much expanded in a peculiar way, forming, seen from the inner side (fig. 3d), a kind of very oblong plate placed in a very oblique direction on the end of the process. The median lobe, seen from the inner side (fig. 3d), with the distal portion tapering to the somewhat narrowly rounded end; the lateral process is somewhat large, proximally robust, distally much curved without any tooth. The setiferous lobe (fig. 3b) has the terminal triangular part a little produced and bearing six setæ; the inner lateral margin has three thinner setæ, and a single small seta is found at the middle of the outer margin.

Length of a large specimen 28 mm.

Remarks. — *E. longirostris* is closely allied to *E. spinifera* G. O. S., but differs especially by a quite different development of the lobe from first antennular joint. The rostrum is a little longer, and the lateral plates of fourth and fifth abdominal segments are less produced than in *E. spinifera*; the copulatory organs of the two species show some few minor differences, which may be pointed when the organs of *E. spinifera* have been figured and described in a future paper.

Distribution. — The single specimen previously recorded had been taken by the "Belgica" at Lat. 56° 49′ S., long. 64° 30′ W. (H. J. Hansen).

Thysanoëssa Brandt.

Of this difficult genus specimens of three valid species have been secured. The material is rich, but most of the specimens are less or more mutilated, because these forms are so fragile, that they are apt to lose the endopods of the thoracic legs and the antennular flagella, and unfortunately these appendages afford valuable characters. To separate adult males of the three species by aid of the copulatory organs is easy; well preserved adult females are not difficult, but immature, especially only half-grown specimens without antennular flagella are sometimes next to impossible to determine with certainty. It was only after a prolonged study that I was able to separate the large majority of the specimens to hand, referring them to three species, one of which was new, but it has been named and briefly characterized by me in 1911 (see below). I am apt to think that most or all earlier authors (myself included) dealing with antarctic specimens of this genus have committed errors as to the naming of some among the animals to hand.

16. **Thysanoëssa gregaria** G. O. Sars.

(Pl. VI, figs. 1a—1b).

1883. *Thysanoëssa gregaria* G. O. Sars, Forh. Vidensk. Selsk. Christiania for 1883, No. 7, p. 26.
1885. — — G. O. Sars, Challenger Rep. Vol. XIII, p. 120, Pl. XXI, figs. 8—17; Pl. XXII.
1905. — — H. J. Hansen, Bull. Mus. Océan. Monaco, No. 30, p. 25 (Comp. the statements in the descriptions of *T. parva*, l. c. p. 25—26.)
1905. — — H. J. Hansen, Bull. Mus. Océan. Monaco, No. 42, p. 28 (Comp. the statements in the remarks on *T. parva*, l. c. p. 27).
1911. — — H. J. Hansen, Bull. l'Inst. Océan. Monaco, No. 210, p. 43, fig. 15.

Lat. 44° 49′ S., long. 57° 34′ W. 700—500 m. December 17, 1901. 8 specimens (1 adult male).
Lat. 48° 27′ S., long. 42° 36′ W. June 23, 1902. { 50—0 m., temp. at 50 m. 7·55°. 1 spec. / 200—0 m., temp. at 200 m. 5·25°. 2 — / 400—0 m., temp. at 400 m. 3·95°. 2 — }
Lat. 49° 40′ S., long. 42° 13′ W. Surface, temp. 4·68°. June 22, 1902. 3 specimens.
Lat. 49° 56′ S., long. 49° 56′ W. June 27, 1902. { 100—0 m. 1 specimen (adult male). / 500—0 m. 2 — (1 adult male). }
Lat. 50° 32′ S., long. 58° 50′ W. Surface, temp. 9·8°. December 30, 1901; 6 a. 2 specimens.
Lat. 52° 43′ S., long. 58° 52′ W. Surface, temp. 9·3°. January 2, 1902; 12 p. 10 specimens (1 adult female and 9 young).
Lat. 53° 34′ S., long. 61° 23′ W. Surface. January 3, 1902. 6 specimens (large, 3 males and 3 females).

Sars has given an elaborate description and numerous figures of this species; in my two papers from 1905 I pointed out various differences between *T. gregaria* and *T. parva* H. J. H., in 1911 (op. cit.) I elucidated differences between *T. gregaria*, *T. parva*, *T. macrura* G. O. S. and *T. vicina* H. J. H.

Adult males are easily separated from all other species by the shape of the terminal and proximal processes of their copulatory organs, as shown in the Monaco Bull. No. 210. The antennulæ differ somewhat in the two sexes: third peduncular joint is in the female (fig. 1b) conspicuously longer and slightly thinner, in the male (fig. 1a) only slightly longer and a little thinner than the second joint; both these joints are in the male proportionately thicker and shorter than in the female. Both flagella a little flattened; upper flagellum about as long as the sum of the third and half of the second peduncular joint, while the lower flagellum is about as long as the sum of the two distal peduncular joints.

The species varies much in size, in length and shape of the rostrum and in the development of the prehensile legs, these legs being generally proportionately much longer in large than in small adult specimens; furthermore the relative length and depth of sixth abdominal segment show considerable variation. An adult male from Lat. 44° 49′ S. is only 8·5 mm. long, while a male from Lat. 53° 34′ S. is 14 mm. and a female from the last-named station even 16 mm.; in specimens from this station the sixth abdominal segment is considerably shorter than the sum of fifth and fourth segments and sixth segment is besides moderately deep; in some small specimens the sixth segment is not much shorter than the sum of the two preceding segments — the real proportion ought to be observed by aid of an ocular micrometer — and the sixth segment looks more produced and more slender posteriorly.

17. **Thysanoëssa vicina** H. J. H.

(Pl. VI, figs. 2a—2k.)

1911. *Thysanoëssa vicina* H. J. Hansen, Bull. l'Inst. Océan. Monaco No. 210, p. 45, figs. 16, A—B.

Lat. 48° 27′ S., long. 42° 36′ W. 2500—0 m., temp. at the surface 7·88°. June 23, 1902. Very large number of specimens.

Lat. 49° 56′ S., long. 49° 56′ W. 2700—0 m., temp. at the surface 3·36°, at 2700 m. 1·67°. June 27, 1902. Very large number of specimens.

Lat. 53° 10′ S., long. 36° 21′ W. 2000—0 m., temp. at the surface 0·53°. June 17, 1902. Very large number of specimens.

Description. — The frontal plate and rostrum constitute a triangle about as long as broad, with the lateral margins a little concave and the apex acute. — The carapace has a small denticle on the lateral margin at its posterior end. The eyes are considerably higher than broad, with a transverse constriction and the upper part much shorter and considerably narrower than the lower.

The antennulæ afford some characters. The third peduncular joint is in the female (fig. 2b) somewhat longer, in the male (fig. 2a) slightly longer than the second joint; both these joints are in the male proportionately thicker than in the female, and third joint is in the female distinctly thinner, in the male feebly or scarcely thinner than the second. The flagella are slender and somewhat long; the upper flagellum is slightly shorter than the lower (fig. 2a) and half or more than half as long again as the sum of the two distal peduncular joints; its joints are difficult or impossible to count with any certainty.

The endopods of the thoracic legs are generally lost, because the exoskeleton is very fragile; when present they look slender and feeble. First pair (fig. 2c) moderately or considerably elongate as compared with the animal; the sixth joint is slender with six setæ along the lower and seven on the upper margin; the terminal setæ on seventh joint not really stiff. Second pair (fig. 2d) with about five long setæ along the lower margin of sixth joint and one of the terminal setæ on seventh joint is very long and thin.

Sixth abdominal segment almost or fully as long as the sum of the two preceding segments.

The copulatory organs (figs. 2e—2k) afford some valuable characters. The spine-shaped process (p^1) is somewhat (fig. 2f) or much (fig. 2h) curved. The terminal process on the whole shaped as in *T. gregaria* or *T. macrura* excepting its terminal part; in a large specimen I found this process cut off nearly transversely (fig. 2h), with the terminal margin feebly convex, the inner corner nearly rectangular, the outer corner a little produced outwards and acute; when inspected from in front under high magnifying power (fig. 2i) this terminal margin shows itself to be abruptly inflexed and adorned with nearly a score of triangular teeth pointing in the proximal direction; in a small specimen the terminal portion of the same process (fig. 2f) is curved considerably outwards but cut off as in the large specimen, with the result that the inner corner has an angle measuring at least 110° and the outer corner is more produced outwards; seen from in front (fig. 2g) the margin shows some 10—11 feeble teeth pointing obliquely in the proximal direction. The proximal process (p^3) is much more slender than the terminal; its distal third is flattened, in fig. 2h showing its full breadth and in fig. 2f seen from the margin, and the last-named figure shows that this flattened part is somewhat curved like a small portion of a circle and at the end very thin, while fig. 2h shows the flattened part increasing a little in breadth to the end which is truncate in a slightly oblique direction and has the outer (anterior) angle a little produced and acute; seen from in front (fig. 2k) the terminal margin is abruptly inflexed and armed with about 8 strong saw-teeth pointing in the proximal direction and especially the outer teeth besides much outwards. The median lobe (fig. 2e) has the end broadly obtuse; the lateral process (p^4) is as long as (fig. 2h) or somewhat shorter than (fig. 2f) the proximal process, with its proximal half rather stout, the distal part gradually tapering to the acute end which is bent less or more outwards. The setiferous lobe (fig. 2e) has its terminal triangular portion somewhat produced, with its normal number of six setæ; the inner margin of the lobe besides with a single seta.

Length of a very large female (from Lat. 48° 27′ S.) 16·5 mm., while an adult male from the same locality is 12 mm., and the majority of adults seem to be 11—13 mm. — The specimens are yellowish.

Remarks. — By the long antennular flagella and the male copulatory organs this species is excellently distinguished from *T. gregaria* and *T. macrura*. The specimens are extremely fragile, the endopods of thoracic legs being generally and the antennular flagella frequently lost.

Distribution. — Tattersall kindly lent me a number of specimens referred by him to *T. macrura* and taken by the "Discovery" at Lat. 61° 13′ 30″ S., long. 173° 33′ E.; they belonged all to *T. vicina*. I am inclined to think that specimens from several others among Tattersall's eleven stations belong to *T. vicina*, while it is certain that at least some of his specimens really belong to *T. macrura*, as can be judged from the size of the animals and from some of his figures.

18. **Thysanoëssa macrura** G. O. Sars.

(Pl. VI, figs. 3a—3h).

1883. *Thysanoëssa macrura* G. O. Sars, Forh. Vidensk. Selsk. Christiania for 1883, No. 7, p. 26.
1885. — — G. O. Sars, Challenger Rep. Vol. XIII, p. 125, Pl. XXIII, figs. 1—4.
1908. — — Tattersall, Nat. Antarct. Exp., Nat. Hist. Vol. IV, Schizopoda, p. 17, Pl. III, figs. 1—12 (At least partim).
1911. — — H. J. Hansen, Bull. l'Inst. Océan. Monaco No. 210, p. 45, fig. 17.

Lat. 48° 27′ S., long. 42° 36′ W. 2500—0 m., temp. at the surface 7·88°. June 23, 1902. 1 adult female.

Lat. 49° 29′ S., long. 49° 47′ W. Surface, temp. 3·20°. June 26, 1902. 8 very young spec.
Lat. 49° 56′ S., long. 49° 56′ W. 2700—0 m., temp. at the surface 3·36°, at 2700 m. 1·67°. June 27, 1902. 5 very young specimens.

Lat. 52° 6′ S., long. 55° 32′ W. 100—0 m., temp. at the surface 5·78°. April 14, 1902. 1 very young specimen.

Lat. 53° 1′ S., long. 51° 53′ W. 40—0 m. April 15, 1902. 2 very young specimens.
Lat. 53° 10′ S., long. 36° 21′ W. 2000—0 m. June 17, 1902. 10 adult or subadult spec.
Lat. 53° 15′ S., long. 60° 53′ W. Surface, temp. 7·2°. March 25, 1902. 9 very young spec.
Lat. 63° 35′ S., long. 45° 17′ W. 1000—0 m. February 1, 1902. 1 adult female.
Lat. 64° 54′ S., long. 50° 43′ W. 200—0 m., temp. at the surface 1·40. January 26, 1902. 1 adult female.

Description. — The frontal plate is moderately short but expanded above and a little behind the eye-stalks, and these expanded parts are bent upwards and outwards; the rostrum is sometimes rather short, generally long and very oblong-triangular, acute; the frontal plate and the rostrum form together a produced plate with the lateral margins very concave. — The eyes are considerably higher than broad, with a transverse constriction, and the upper section of the eye is much shorter and only somewhat narrower than the lower.

The antennulæ show some characteristic features. In the females (fig. 3b) the two distal joints of the antennular peduncle are slender, third joint is very conspicuously longer and more slender than the second; in the males (fig. 3a) both these joints are conspicuously shorter and thicker than in the female, while third joint is not longer but distinctly thinner than the second. The flagella are distinctly flattened, the upper flagellum depressed, the lower compressed. Upper flagellum is unknown in the male; in the female (fig. 3b) it is longer than third peduncular joint but not as long as the sum of third joint plus half of the second, 10-jointed; lower flagellum (fig. 3b) is about as long as the two distal peduncular joints combined, 9-jointed, with each of 4 of these joints less or more distinctly subdivided into two joints, thus 13-jointed.

First pair of thoracic legs in subadult and adult specimens (fig. 3c) much or very much elongate, strong; sixth joint with 7 strong, stiff setæ along the lower and 9 on the upper margin, not counting a short seta at the proximal end of each margin; seventh joint with three among the terminal setæ very stiff and nearly spiniform. — Second pair of legs (fig. 3d) somewhat or considerably longer than third pair; fifth joint longer than the two following joints combined; sixth joint with only 3 long setæ along the lower margin and sometimes with a much shorter proximal seta; one of the terminal setæ is as long as sixth and seventh joints combined.

Sixth abdominal segment from almost as long as to a little longer than the two preceding segments combined.

The copulatory organs (figs. 3e—3h) afford a few excellent characters. The spine-shaped process (p^1) is rather small (figs. 3e and 3f), well curved. The terminal process is very broad at the base, broad, with the distal part flattened and expanded both inwards and outwards; the terminal margin is long, somewhat oblique and conspicuously emarginate; the inner lobe of the distal expansion projects much beyond the outer, is directed forwards and a little inwards and broadly rounded, while the outer lobe is directed mainly outwards and is subtriangular with the outer end moderately broadly rounded; inspected from in front under high magnifying power the terminal margin shows feeble vestiges of saw-teeth (fig. 3g). The proximal process (p^3) is almost as long as the terminal but much narrower, tapering from near the base to the end which, seen from behind, is turned outwards and nearly beak-shaped, while seen from in front (fig. 3h) a triangular, subapical tooth on the front side of the process is sharply bent in the proximal direction. The median lobe (fig. 3e) is somewhat obtuse, its lateral process (p^4) a little shorter and conspicuously thinner than the proximal, tapering from the base to the end, and with its apical part curved outwards, hook-shaped (fig. 3f). The setiferous lobe has the terminal part not produced, but is as usually adorned with six setæ, while about 4 somewhat short setæ project from the inner margin of the lobe.

Length of the largest females (from Lat. 48° 27′ S. and Lat. 64° 54′ S.) 29^{mm}.; two adult males from Lat. 53° 10′ S. respectively 19 and 20^{mm}. and females from the last-named station have about the same length.

Remarks. — Large specimens of *T. macrura* are easily distinguished from the two above-mentioned species by their size. Smaller but adult or subadult specimens are separated from *T. vicina* by the antennular flagella, the shape of the frontal plate with rostrum, and adult males besides and above all by the terminal process of the copulatory organs. Very juvenile, small specimens, 8—13^{mm}. long, are easily separated from *T. vicina*, but are similar to *T. gregaria*, being distinguished from this species especially by the length of sixth abdominal segment, but as pointed out above, this segment and the two preceding segments ought to be measured by the aid of a micrometer. Very small specimens of *T. gregaria* and *T. macrura* are frequently scarcely distinguishable.

Sars had evidently only quite young specimens at his disposal, and his figures agree on the whole better with *T. macrura* as interpreted by me than with *T. vicina*, and the latter species is more fragile than *T. macrura* and most or all endopods of the thoracic legs are generally lost; these endopods had been preserved in the type of Sars, and this feature strenghtens my supposition, that he has figured a specimen of the species described here as *T. macrura*.

Distribution. — Sars' type was from the "Antarctic Ocean, at the ice-barrier, February 14, 1874", thus near the "Challenger" Station 153: Lat. 65° 42′ S., long. 79° 49′ E., Febr. 14, 1874. Above it has been stated that the specimens seen by my from one of Tattersall's "Discovery" localities for *T. macrura* belong to *T. vicina*, and that the same may probably be the case as to specimens from some others of those localities, but it is certain that his specimen measuring 28 mm. and taken at Lat. 72° 29′ 27″ S., long. 168° 51′ 46″ E. belongs to *T. macrura*, and I think that at least some of his specimens from Lat. 61° 46′ S., long. 141° 12′ E. and from Lat. 57° 25½′ S., long. 151° 43′ E. also belong to the last-named species. According to the relative length of the antennular flagella in my figure of a small specimen of *Thysanoëssa* mentioned in my report on the Shizopoda in "Expédition Antarctique Belge" this specimen belonged to *T. macrura* and it had been captured at Lat. 70° 33′ S., long. 89° 22′ W. — All other statements in the literature on the occurrence of *T. macrura* ought to be discarded as untrustworthy until the specimens in question have been re-examined by the aid of the present paper.

Nematoscelis G. O. Sars.

This genus comprises no species inhabiting cold waters.

19. Nematoscelis atlantica H. J. H.

1910. *Nematoscelis atlantica* H. J. Hansen, Siboga-Exp. XXXVII, p. 107.

Lat. 25° 51′ N., long. 21° 29′ W. Surface, temp. 22·5°. November 4, 1901. 1 specimen.

Distribution. — This species is known only from the warmer temperate area of the North Atlantic.

20. Nematoscelis tenella G. O. Sars.

1910. *Nematoscelis tenella* H. J. Hansen, Siboga-Exp. XXXVII, p. 110, Pl. XV, figs. 4a—4m.

Lat. 16° 6′ N., long. 25° 21′ W. Surface, temp. 24·7°. November 15, 1901; 6a. 1 young specimen.

Distribution. — A full account has been given in Mem. Mus. Comp. Zool. Vol. XXXV, No. 4, p. 263—264.

Nematobrachion Calm.

This genus comprises no cold water form, but one species, *N. boopis* Calm., goes far northwards and southwards in the Atlantic.

21. Nematobrachion boopis Calm.

1896. *Nematodactylus boopis* Calman, Trans. Roy. Irish Acad. Vol. 31, p. 17, Pl. II, figs. 19—28.

1905. *Nematobrachion boopis* Calman, Rep. Sea and Inland Fisheries of Ireland, 1902—3, Part 2, App. 4, p. 153, Pl. 26.

1912. *Nematobrachion boopis* H. J. Hansen, Mem. Mus. Comp. Zool. Vol. XXXV, No. 4, p. 267, Pl. 10, figs. 4a—4d.

Lat. 48° 27′ S., long. 42° 36′ W. 2500—0 m., temp. at the surface 7·88°. June 23, 1902. 1 specimen.

The occurrence of this species so far southwards is of interest.

The distribution has been given in the last-named paper.

Stylocheiron G. O. Sars.

The forms of this genus are, with a single exception, confined to the tropical and temperate areas of the Oceans, but *S. maximum* H. J. H. goes northwards to near the Færoe Islands and southwards so far that it enters into the antarctic area.

22. Stylocheiron carinatum G. O. Sars.

1885. *Stylocheiron carinatum* G. O. Sars, Challenger Rep. Vol. XIII, p. 137, Pl. XXVI.
1910. — — H. J. Hansen, Siboga-Exp. XXXVII, p. 113, Pl. XVI, figs. 1a—1h.
1912. — — H. J. Hansen, Mem. Mus. Comp. Zool. Vol. XXXV, No. 4, p. 274, Pl. 11, figs. 2a—2b.

Lat. ab. 30° N., long. 20° W.		November 7, 1901.	2 specimens.	
Lat. 21° 51′ N., long. 23° W.	Surface, temp. 23·22°.	Nov. 11, 1901.		2 specimens.
Lat. 16° 36′ N., long. 25° 7′ W.	Surface, temp. 25·1°.	Nov. 14, 1901;	12 p.	1 specimen.
Lat. 14° 28′ N., long. 26° 1′ W.	Surface, temp. 25·50°.	Nov. 15, 1901.		1 specimen.
Lat. 11° 9′ S., long. 33° 55′ W.	Surface.	Nov. 29, 1901.		12 specimens.
Lat. 17° 32′ S., long. 34° 55′ W.	Surface, temp. 25·6°.	Dec. 2, 1901.		2 specimens.
Lat. 19° 19′ S., long. 36° 9′ W.	Surface, temp. 25·25°.	Dec. 3, 1901.		3 specimens.
Lat. 24° 21′ S., long. 41° 23′ W.	Surface, temp. 23·21°.	Dec. 6, 1901.		10 specimens.
Lat. 26° 58′ S., long. 44° 57′ W.	Surface, temp. 22·89°.	Dec. 8, 1901.	Numerous	—
Lat. 30° 27′ S., long. 48° 19′ W.	Surface.	Dec. 10, 1901.	About 130	—

A full account of the distribution is found in my last-named paper (from 1912).

23. Stylocheiron Suhmii G. O. Sars.

1885. *Stylocheiron Suhmii* G. O. Sars, Challenger Rep. Vol. XIII, p. 142, Pl. XXVII, figs. 1—4.
1912. — — H. J. Hansen, Mem. Mus. Comp. Zool. XXXV, No. 4, p. 277, Pl. 11, figs. 3a—3b.

Lat. 34° 2′ N., long. 18° 21′ W. Surface, temp. 20·1°. Nov. 5, 1901; 12 p. 4 specimens, 2 among them probably adult.

Lat. ab. 30° N., long. 20° W. Nov. 7, 1901. 2 specimens.
Lat. 19° 19′ S., long. 36° 9′ W. Surface, temp. 25·25°. Dec. 3, 1901. 1 specimen.

Lat. 24° 21′ S., long. 41° 23′ W. Surface, temp. 23·2°. Dec. 6, 1901. 4 specimens.
Lat. 25° 28′ S., long. 42° 57′ W. Surface, temp. 23·0°. Dec. 7, 1901; 12 p; 1 specimen.
Lat. 26° 58′ S., long. 44° 57′ W. Surface, temp. 22·89°. Dec. 8, 1901. 18 specimens, probably all immature.

In all specimens the eyes, seen from the outer side, have only three crystal cones in a transverse row. The majority of the specimens seem to be immature, with their eyes produced a little less upwards than in the adults, and the sixth abdominal segment is frequently more similar to that in *S. affine* than to the shape observed in Pacific specimens of *S. Suhmii.* A more detailed account based on Atlantic specimens shall be given in a future paper.

Distribution. — A full account of this topic has been given in my above-named paper from 1912.

24. Stylocheiron abbreviatum G. O. Sars.

1885. *Stylocheiron abbreviatum* G. O. Sars, Challenger Rep. Vol. XIII, p. 147, Pl. XXVII, figs. 12—13.
1910. — — H. J. Hansen, Siboga-Exp. XXXVII, p. 122.
1912. — — H. J. Hansen, Bull. Mus. Comp. Zool. Vol. XXXV, No. 4, p. 280, Pl. 11, figs. 5a—5f.

Lat. 21° 51′ N., long. 23° W. Surface, temp. 23·22°. November 11, 1901. 1 specimen.

Distribution. — This topic has been dealt with in my last-named work.

25. Stylocheiron maximum H. J. H.

1908. *Stylocheiron maximum* H. J. Hansen, The Danish Ingolf-Exp. Vol. III. 2, p. 92.
1910. — — H. J. Hansen, Siboga-Exp. XXXVII, p. 121, Pl. XVI, figs. 6a—6d. 6 specimens.

Lat. 48° 27′ S., long. 42° 36′ W. June 23, 1902. { 400—0 m., temp. at the surface 7·88°. at 400 m. 3·95°. 1 specimen. 2500—0 m., temp. at the surface 7·88° 11 specimens.
Lat. 49° 56′ S., long. 49° 56′ W. 2700—0 m., temp. at the surface 3·36°., at 2700 m. 1·67°. June 27, 1902. 3 specimens.
Lat. 52° 6′ S., long. 55° 32′ W. 100—0 m. April 12, 1902. 1 young specimen.

Distribution. — It is interesting that this large and fine species goes so far southwards, even entering into the antarctic area; northwards it goes to Lat. 61° 49′ N., long. 14° 11′ W. ("Ingolf" Exp.). Besides it has been taken in the Indian Archipelago and the tropical East Pacific (H. J. Hansen).

Fig. 1. *Eucopia australis* Dana.

Fig. 1a. Front end of the carapace, with eyes and basal part of antennulæ of an adult male, from above; scarcely × 5.
— 1b. Distal part of the exopod of left uropod of the adult male, from the outer side; × $^{22}/_{3}$.

Fig. 2. *Hansenomysis antarctica* Holt & Tatt.

Fig. 2a. Front part of the carapace with the proximal parts of left antennula and left antenna of an adult male, from above; × 9.

Fig. 3. *Pseudomma Belgicæ* Holt & Tatt.

Fig. 3a. Ocular plate of a large subadult male, from above; × 8.
— 3b. Telson of a large subadult male, from above; × 11.

Fig. 4. *Pseudomma armatum* n. sp.

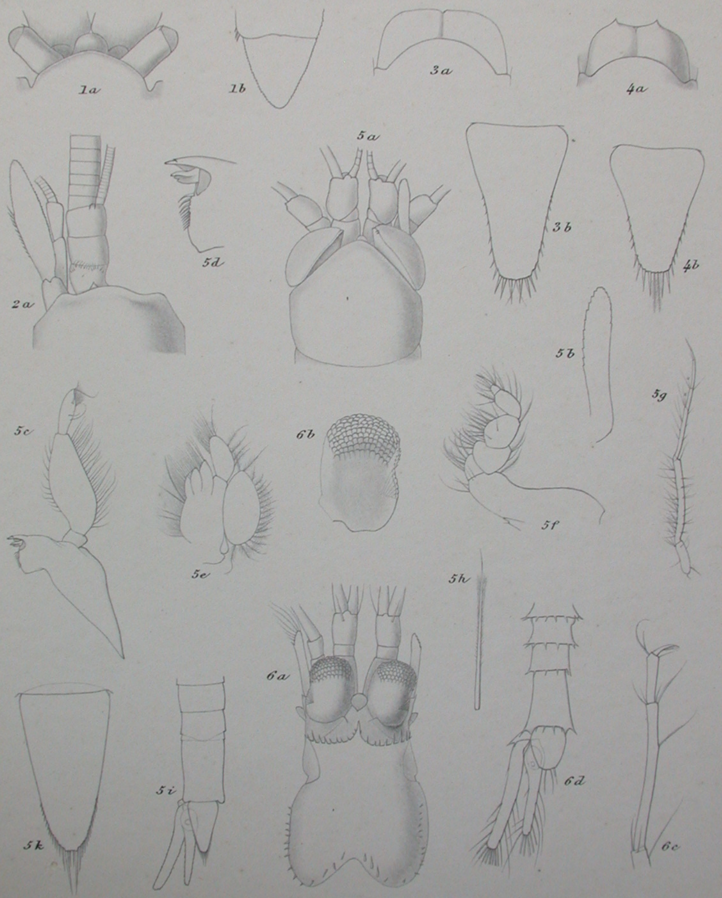
Fig. 4a. Ocular plate of a male, from above; × 10.
— 4b. Telson of a male, from above; × 15.

Fig. 5. *Dactylamblyops antarctica* n. sp.

Fig. 5a. Anterior part of the carapace with eyes, proximal portions of antennulæ and antennæ and right antennal squama of an immature male, from above; × 20.
— 5b. Right antennal squama, from above; × 50.
— 5c. Left mandible of the same specimen, from below; × 37.
— 5d. Terminal part of the mandible shown in fig. 5c, from below; × 94.
— 5e. Left maxilla of the same specimen, from below; × 37.
— 5f. Left maxilliped — exopod and epipod omitted — of the same specimen, from below; × 34.
— 5g. Endopod of a thoracic leg of the same specimen; × 17.
— 5h. Short seta from the penultimate subjoint of sixth joint of the leg shown in fig. 5g; × 200.
— 5i. Distal half of the abdomen of the same specimen — right uropod omitted — from above; × 15.
— 5k. Telson of the same specimen, from above; × 48.

Fig. 6. *Euchætomera pulchra* n. sp.

Fig. 6a. Cephalothorax with eyes and the proximal portions of the anterior appendages of the single immature specimen, from above; × 33.
— 6b. Right eye-stalk with eye, from above; × 57.
— 6c. Distal part of last right thoracic leg, from behind; × 47.
— 6d. Posterior half of abdomen — right uropod omitted — from above; × 35. The terminal and subterminal setæ of left uropod were mutilated, and therefore only their most proximal part was drawn.



1. *Eucopia australis* Dana. 2. *Hansenomysis antarctica* Holt & Tatt. 3. *Pseudomma Belgicæ* Holt & Tatt.
4. *P. armatum* n. sp. 5. *Dactylamblyops antarctica* n. sp. 6. *Euchætomera pulchra* n. sp.

H. J. Hansen del.

T. N. Möller sc.

Fig. 1. *Mysidopsis acuta* n. sp.

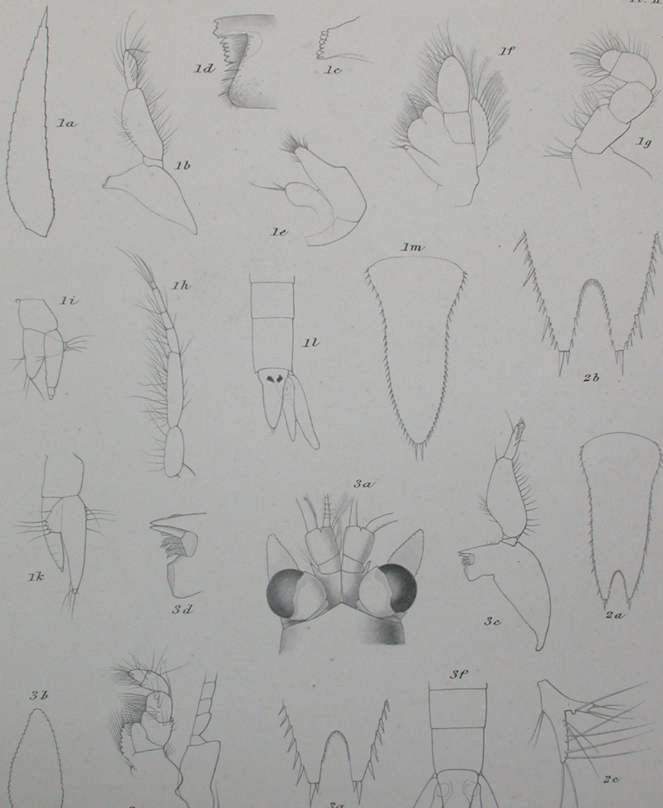
Fig. 1 a. Right antennal squama of an immature male, from above; × 33.
— 1 b. Left mandible of an immature male, from below; × 30.
— 1 c. Distal end of the mandible shown in fig. 1 b, from below; × 75.
— 1 d. Distal part of the mandible shown in fig. 1 b and somewhat turned, so that the large movable lobe and the armature behind that lobe are plainly seen; × 130.
— 1 e. Left maxillula of the same immature male, from below; × 56.
— 1 f. Left maxilla of the same specimen, from below; × 50.
— 1 g. Major part of the endopod of the left maxilliped of the same specimen, from below; × 47.
— 1 h. Endopod of one of the thoracic legs of the same specimen; × 40.
— 1 i. Left first pleopod of an immature male, from in front; × 80.
— 1 k Left fourth pleopod of the same immature male, from behind; × 80.
— 1 l. Distal part of abdomen of an immature male — left uropod omitted — from above; × 9.
— 1 m. Telson of the same specimen, from above; × 28.

Fig. 2. *Mysidetes posthon* Holt & Tatt.

Fig. 2 a. Telson of an immature female, from above; × 15.
— 2 b. Distal part of the telson shown in fig. 2 a, from above; × 37.
— 2 c. First left pleopod of an adult male, from in front; × 30.

Fig. 3. *Mysidetes crassa* n. sp.

Fig. 3 a. Anterior part of an immature female, from above; × 21.
— 3 b. Left antennal squama of the same specimen, from below; × 32.
— 3 c. Left mandible of the same specimen, from below.; × 32.
— 3 d. Distal part of the mandible shown in fig. 3 c, from below; × 80.
— 3 e. Left maxilliped of the same specimen, from below; × 33.
— 3 f. Distal part of abdomen of the same immature female, from above; × 13.
— 3 g. Distal part of the telson, from above; × 52.



1. *Mysidopsis acuta* n. sp. 2. *Mysidetes posthon* Holt & Tatt. 3. *M. crassa* n. sp.

H. J. Hansen del. T. N. Möller sc.

Fig. 1. *Mysidetes crassa* n. sp. (continued).

Fig. 1a. Left maxilla of an immature female, from below; × 41.
— 1b. Left gnathopod of the same specimen, from below; × 33.
— 1c. First left pleopod of the same specimen, from in front; × 53.

Fig. 2. *Antarctomysis Ohlinii* H. J. H.

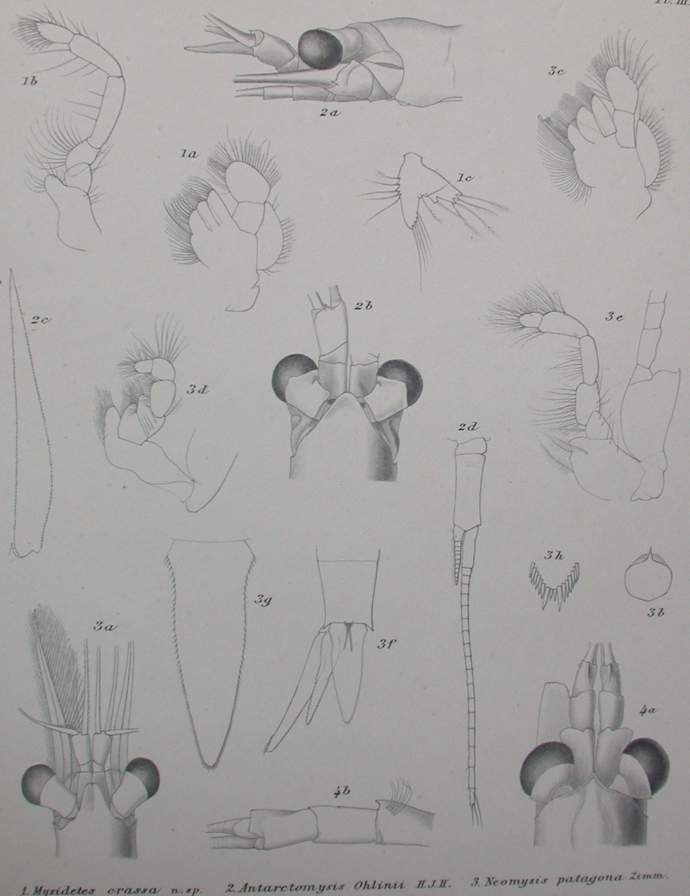
Fig. 2a. Anterior part of an adult male, from the left side; × 5.
— 2b. Anterior part of an adult male, from above; × 5.
— 2c. Right antennal squama of a male, from below; × 17/3.
— 2d. Left fourth pleopod of an adult male, from in front; × 17/3.

Fig. 3. *Neomysis patagona* Zimmer.

Fig. 3a. Anterior part of a subadult female; from above; × 17/2.
— 3b. Labrum, from below; × 12.
— 3c. Left maxilla of a subadult female, from below; × 33.
— 3d. Left maxilliped of the same specimen, from below; × 26.
— 3e. Left gnathopod of the same female, from below; × 26.
— 3f. Posterior part of abdomen of the same female — right uropod omitted — from above; × 7.
— 3g. Telson, from above; × 16.
— 3h. Terminal part of telson, from above; × 48.

Fig. 4. *Euphausia frigida* H. J. H.

Fig. 4a. Anterior part of an adult female, from above; × 12.
— 4b. Left antennular peduncle of an adult female, from the outer side; × 23.



1. Mysidetes crassa n. sp. 2. Antarctomysis Ohlinii H. J. H. 3. Neomysis patagona Zimm. 4. Euphausia frigida H. J. H.

H. J. Hansen del. T. N. Möller sc.

Fig. 1. *Euphausia frigida* H J. H. (continued).

Fig. 1a. Left antennular peduncle of an adult female, from above; × 23.
— 1b. Male copulatory organ of first left pleopod of a specimen from Lat. 53° 10′ S., unrolled and seen from behind; × 35; *li.* inner lobe; *lm.* median lobe; *ls.* setiferous lobe; *lu.* auxiliary lobe; *p*2. terminal process; *p*3. proximal process; *p*4. lateral process.
— 1c. Inner and median lobes of the left copulatory organ of another male, from behind; × 49. Lettering as in fig. 2a.
— 1d. Distal part of inner lobe and the median lobe with their processes of left copulatory organ of a third male, from the inner side; × 52.

Fig. 2. *Euphausia superba* Dana.

Fig. 2a. Left antennular peduncle of an adult female, from above; × 9.
— 2b. Left antennular peduncle of an adult female, from the outer side; × 9.
— 2c. Left antennular peduncle of an adult male, from above; × 9.
— 2d. Left antennular peduncle of an adult male, from thè outer side; × 9.
— 2e. Male copulatory organ of first left pleopod, unrolled and seen from behind; × 13.
— 2f. Inner and median lobes of the organ shown in fig. 2e, from behind; × 26. *lm.* median lobe; *p*2. terminal process; p3. proximal process; *p*4. lateral process.
— 2g. Inner and median lobes of left copulatory organ of another male, from the inner side; × 33. The lettering as in fig. 2f.

Fig. 3. *Euphausia similis* G. O. Sars.

Fig. 3a. Anterior part of the carapace with eyes and the proximal antennular and antennal joints of an adult male, from the left side; × 8.
— 3b. Anterior part of the carapace with eyes and the proximal antennular joints of an adult male, from above; × 7.
— 3c. Male copulatory organ of first left pleopod of a specimen from Lat. 53° 10′ S., unrolled and seen from behind; × 26. *ls.* setiferous lobe; *lu.* auxiliary lobe.
— 3d. Inner and median lobes of the organ shown in fig. 3c, from behind; × 58. *lm.* median lobe; *p*2. terminal process; *f.* its foot; *h.* its heel; *p*3. proximal process; *p*4. lateral process.
— 3e. Inner and median lobes of the organ shown in fig. 3c, from the inner side; × 50. The lettering as in fig. 3d.

1. Euphausia frigida H.J.H. 2. E. superba Dana 3. E. similis G.O.S.

H. J. Hansen del.

T. N. Möller sc.

Fig. 1. *Euphausia Vallentini* Stebbing.

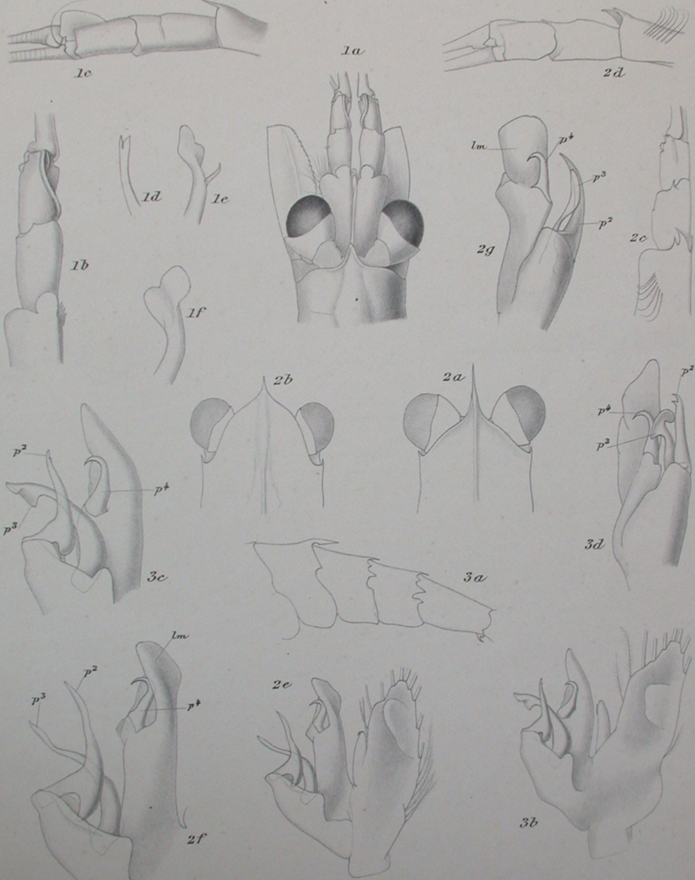
Fig. 1a. Anterior part of a female, from above; × 11.
— 1b. Left antennular peduncle of a female, from above; × 22.
— 1c. Left antennular peduncle of a female, from the left side; × 22.
— 1d. Distal part of the terminal process of left copulatory organ; × 58.
— 1e. Distal part of the proximal process of left copulatory organ, from the inner side; × 58.
— 1g. Distal part of the same proximal process, from behind; × 55.

Fig. 2a. *Euphausia triacantha* Holt & Tatt.

Fig. 2a. Anterior part of the carapace with eyes of an adult normal specimen from Lat. 49° 56′ N., from above; × 8.
— 2b. Anterior part of the carapace with eyes of a specimen with the frontal plate abnormally expanded and the rostrum small (from Lat. 53° 10′ S.), from above; × 8.
— 2c. Left antennular peduncle of an adult specimen, from above; × 11.
— 2d. Left antennular peduncle of an adult specimen, from the left side; × 13.
— 2e. Male copulatory organ of left first pleopod, unrolled and seen from behind; × 25.
— 2f. Inner and median lobes of the organ shown in fig. 2e, from behind; × 44. *lm.* median lobe; $p.^2$ terminal process; $p3$. proximal process; $p4$. lateral process.
— 2g. Inner and median lobes of left copulatory organ of another male, from the inner side; × 43. The lettering as in fig. 2f.

Fig. 3. *Euphausia longirostris* H. J. H.

Fig. 3a. Major part of abdomen of an adult female, from the left side; × 5.
— 3b. Male copulatory organ of left first pleopod, unrolled and seen from behind; × 40.
— 3c. Inner and median lobes of the organ shown in fig. 3b, from behind; × 60. p^2. terminal process; $p3$. proximal process; $p4$. lateral process.
— 3d. Inner and median lobes of the organ shown in fig. 3b, from the inner side; × 58. The lettering as in fig. 3c.



1. *Euphausia Vallentini* Stebb. 2. *E. triacantha* Holt & Tatt. 3. *E. longirostris* H.J.H.

T. N. Möller sc.

H. J. Hansen del.

Fig. 1. *Thysanoëssa gregaria* G. O. Sars.

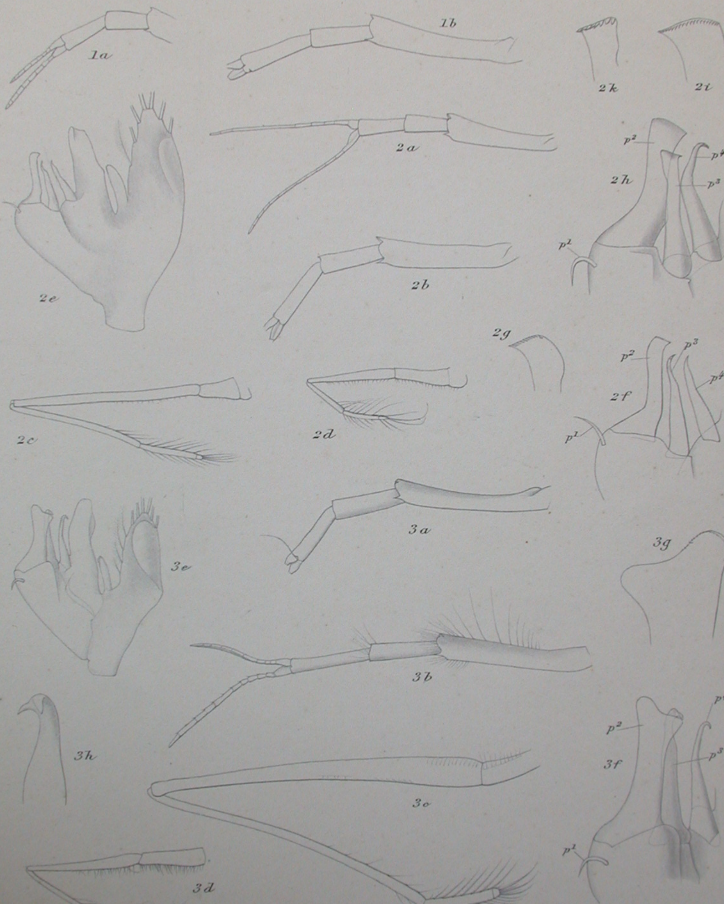
Fig. 1 a. Left antennula of an adult male — major part of the basal joint omitted — from the left side; × 25.
— 1 b. Left antennular peduncle of a female, from the left side; × 25.

Fig. 2. *Thysanoëssa vicina* H. J. H.

Fig. 2 a. Left antennula of an adult male, from the left side; × 33/2.
— 2 b. Left antennular peduncle of an adult female, from the left side; × 33/2.
— 2 c. First left thoracic leg of an adult specimen, from the outer side; × 15.
— 2 d. Second left thoracic leg of the same specimen, from the outer side; × 15.
— 2 e. Male copulatory organ of left first pleopod of a specimen from Lat. 53° 10′ S, unrolled and seen from behind; × 86.
— 2 f. Distal part of the inner lobe and proximal inner part of the median lobe of the organ shown in fig. 2 e, from behind; × 175. p^1. spine-shaped process; p^2. terminal process; p^3. proximal process; p^4. lateral process.
— 2 g. Distal part of the terminal process of the organ shown in fig. 2 e, from in front; × 240.
— 2 h. Distal part of the inner lobe and proximal inner part of the median lobe of left copulatory organ of a male from Lat. 49° 56′ S., from behind. The lettering as in fig. 2 f.
— 2 i. Distal part of the terminal process shown in fig. 2 h, from in front; × 240.
— 2 k. Distal part of the proximal process shown in fig. 2 h, from in front; × 240.

Fig. 3. *Thysanoëssa macrura* G. O. Sars.

Fig. 3 a. Left antennular peduncle of an adult male, from the left side; × 27/2.
— 3 b. Left antennula of an adult female, from the outer side; × 27/2.
— 3 c. Left first thoracic leg of an adult specimen, from the outer side; × 10.
— 3 d. Left second thoracic leg of the same specimen, from the outer side; × 10.
— 3 e. Male copulatory organ of left first pleopod, unrolled and seen from behind; × 40.
— 3 f. Distal part of the inner lobe and proximal inner part of the median lobe of the organ shown in fig. 3 e, from behind; × 92. The lettering as in fig. 2 f.
— 3 g. Distal part of the terminal process shown in fig. 3 f, from in front; × 200.
— 3 h. Distal part of the proximal process shown in fig. 3 f, from in front; × 200.



1. Thysanoessa gregaria G.O.S. 2. T. vicina H.J.H. 3. T. macrura G.O.S.

T. N. Möller sc.

H. J. Hansen del.