

MEDDELELSER OM GRØNLAND
UDGIVNE AF
KOMMISSIONEN FOR VIDENSKABELIGE UNDERSØGELSER I GRØNLAND
Bd. 184 · Nr. 6

DE DANSKE PEARY LAND EKSPEDITIONER
LEADER: EIGIL KNUTH

AMPHIPODA
FROM JØRGEN BRØNLUND FJORD,
NORTH GREENLAND

BY
JEAN JUST

WITH 20 FIGURES IN THE TEXT

KØBENHAVN
C. A. REITZELS FORLAG
BIANCO LUNOS BOGTRYKKERI A/S
1970

Abstract

From Jørgen Brønlund Fjord, North Greenland 28 species of Amphipods are listed, one of which is new to science, viz. *Byblis arcticus*. Four known species and one Genus are new to Greenland waters.

Notes on breeding biology are made where possible and maps of distribution of *Monoculodes schneideri* G. O. Sars and *Aceroides l. latipes* G. O. Sars are presented.

Anatomical and morphological problems of *Corophium clarencense* SHOEMAKER are mentioned briefly.

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Manuscript recieved April 16th, 1969

ISBN 87 421 0012 7

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INTRODUCTION

The present paper deals with the amphipods of Jørgen Brønlund Fjord, North Greenland (82°10' N, 30°30' W.). — The material was collected partly during the First Peary Land Expedition 1947–50, and for far the greater part during the Fourth Peary Land Expedition in the summer of 1966.

STEPHENSEN (1944) operates with five zoogeographical regions on the east coast of Greenland, the northernmost being the 'northeast coast area', of which he has no northern limitation. At present I hesitate to include Jørgen Brønlund Fjord, and thus the huge Independence Fjord, in this area. Investigations around Nordostrundingen and along the east and north coasts of Peary Land will be necessary in order to clarify the zoogeographical problems in this part of Greenland.

The material includes 28 species, one of which is new to science, viz. *Byblis arcticus*. — Of the remaining 27, one species of each of the genera: *Monoculodes*, *Metopa* and *Leptocheirus* (the last genus being new to Greenland) could not be determined as to species. — Of the 24 known species 4 are new to Greenland waters, viz. *Anonyx pacificus*, *Harpinia amundseni*, *Rhachotropis macropus* and *Corophium clarencense*, while *Westwoodilla brevicar* and *Protomedeia fasciata* are new to the east coast.

A description of Jørgen Brønlund Fjord with notes on hydrography, type and distribution of algal vegetation (see also LUND, 1952) and working methods has been given by the present writer (JUST, 1970).

The nomenclature of the Order Gammaridea follows BARNARD (1958), while the Order Hyperiidea is brought into agreement with STEPHENSEN (1944).

List of abbreviations used in the text:

- PJ = Samples collected by P. JOHNSEN, M.Sc., during the First Peary Land Expedition.
- St. = Station number from the Fourth Peary Land Expedition, (see JUST, *loc. cit.*).
- Ant. = Antenna.
- Ul. = Upper lip.
- Ll. = Lower lip.

Mand. = Mandible.
Max. = Maxilla.
Mp. = Maxillipeds.
Cox.pl. = Coxal plate.
Ep. = Epimeral plate of metasome.
Gp. = Gnathopod.
Pp. = Pereopod.
Up. = Uropod.

All figures were drawn by the author.

The material is kept in the Zoological Museum, University of Copenhagen.

SYNOPSIS OF THE SPECIES

Hyperiidea

Fam. *Hyperiidae* DANA

Genus *Hyperia* LATREILLE, 1825

1. *Hyperia galba* (MONTAGUE)

Hyperia galba G. O. SARS 1895, p. 7 Pl. 2-3 fig. 1.

— — STEPHENSEN 1944, p. 9.

Material:

19-VII-1966, one male of 10 mm. from the stomach of *Salvellinus alpinus*. — 8-VIII-1966, one female with fully developed marsupium from the stomach of *S. alpinus*.

Genus *Themisto* GUÉRIN

2. *Themisto libellula* (MANDT.)

Euthemisto libellula G. O. SARS 1895, p. 13 Pl. 6 fig. 1.

Themisto — STEPHENSEN 1944, p. 12.

Parathemisto — BARNARD 1959, p. 123 Pl. 22-23.

Material:

Dredge haul: St. 52, 160-180 m., one specimen of 4 mm. (most probably caught pelagically during withdrawal of the dredge).

Others: 8-VIII-1966, one male of 11 mm., from the stomach of *S. alpinus*.

Gammaridea

Fam. *Lysianassidae* DANA

Genus *Onisimus* BOECK, 1871

3. *Onisimus brevicaudatus* H. J. HANSEN

Onisimus brevicaudatus STEBBING 1906, p. 27.

— — BRÜGGEN 1909, p. 7 Pl. 2 fig. 5.

— — STEPHENSEN 1944, p. 17.

— — GURJANOVA 1951, p. 169 fig. 43.

Material:

Bottom grab: PJ No. 596, 28.5 m., clay, one ovigerous female of 15 mm.

Others: PJ No. 135, 50 m., 4 males and 3 females caught benthic on a piece of walrus meat. — The largest male measured 14.5 mm. The largest female had moderately developed marsupium and measured 15 mm.

Genus *Pseudalibrotus* DELLA VALLE, 1893

4. *Pseudalibrotus glacialis* G. O. SARS (fig. 1)

Pseudalibrotus glacialis G. O. SARS 1900, p. 31 Pl. 6.

— — STEPHENSEN 1944, p. 22.

— — GURJANOVA 1951, p. 188 fig. 58.

— — HOLMQUIST 1965.

Material:

Plankton haul: Horizontal haul, 10–12 m., west of Kap Harald Moltke, 5-VIII-1966, one specimen of 3.5 mm.

Others: PJ, 10 specimens from the stomach of *S. alpinus*. — 19-VII-1966, 6 specimens from *S. alpinus* caught off the mouth of Kedelkrogeliv.

Remarks:

The three largest females measured 10 mm., while the largest male measured 11 mm.

As shown by Dr. HOLMQUIST (*loc. cit.*) in her paper revising the present genus, the three marine species which still hold good, viz. *P. glacialis*, *P. nanseni*, and *P. litoralis*, may be due to rather great variations. They could, however, easily be distinguished by comparing the combined characters of Gp. 2 and the inner ramus of Up. 2 in the following way (compiled from HOLMQUIST *loc. cit.*):

	Gp. 2		Inner ramus Up. 2	
	Finger extr. small. $\frac{1}{4}$ – $\frac{1}{5}$ of terminal edge of 6th joint	Finger ab. $\frac{1}{2}$ of terminal edge of 6th joint. Strong	Carrying an obtuse notch with a seta on the inner edge	Inner edge straight
<i>P. glacialis</i>	x			x
<i>P. nanseni</i>		x		x
<i>P. litoralis</i>				
(= <i>birulai</i>) ..	x		x	

Genus *Anonyx* KRÖYER, 1838

5. *Anonyx pacificus* GURJANOVA

Anonyx nugax pacificus GURJANOVA 1962, pp. 219–225 figs. 68 A–B, 69 A–B.

Anonyx pacificus STEELE and BRUNEL 1968 a, pp. 974–983 figs. 9–17.

— — — 1968 b, pp. 19–25.

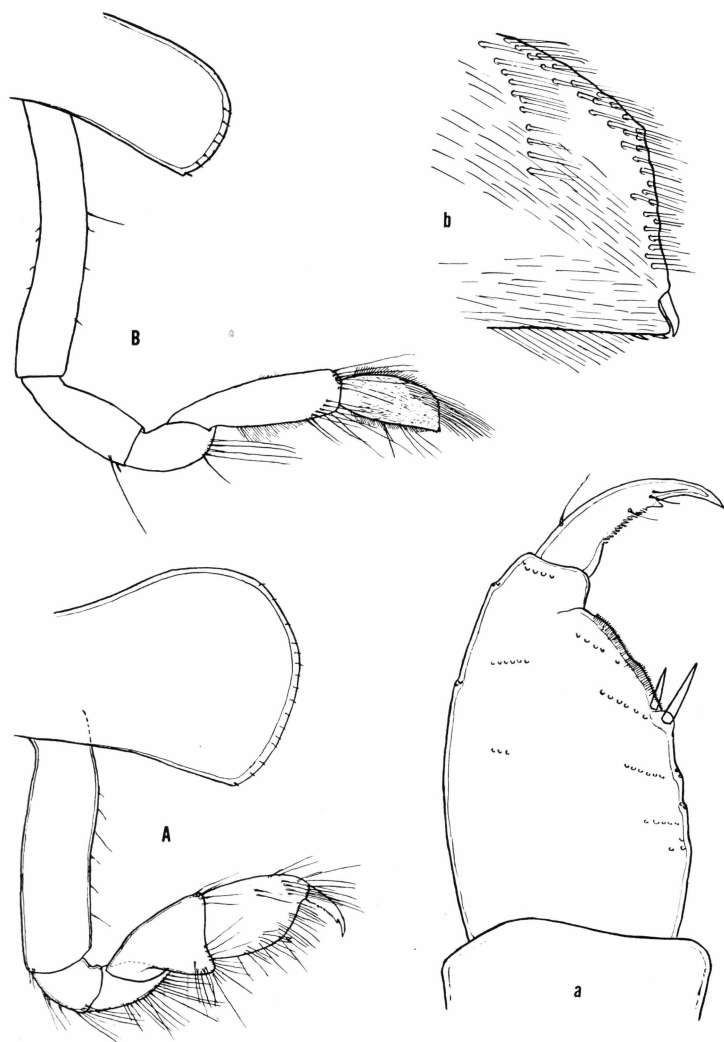


Fig. 1. *Pseudalibrotus glacialis*, A: Gp. 1, a: sixth and seventh joint of the same (setae omitted), B: Gp. 2, b: finger of the same.

Material:

Dredge haul: St. 60, 20 m., clay with some gravel, one specimen of 5 mm. — St. 61, 25–30 m., clay with sand and gravel, 2 specimens of 13 and 7 mm.

Others: PJ No. 135, 50 m., one male ? of 20 mm. caught bentic on a piece of walrus meat.

Remarks:

The specimen of 20 mm. has been dissected in details, and in all essential features it agrees well with STEELE and BRUNEL (1968a). The

upper lip is angularly rounded ventrally; the setae of the third joint of the mandibular palp are pectinate on the medial surface only; the posterior tip of Ep. 3 is fairly long and with the lower margin concave. The inner ramus of Up. 2 is constricted well beyond the middle and the spine at the constriction is as long as one half the distance from the constriction to the tip of the ramus.

STEELE and BRUNEL (*loc. cit.* p. 983) consider *A. pacificus* to be a "newcomer" along the coasts of the western Arctic. Among other reasons they refer to the fact that the species has not yet been recorded from Greenland (and especially West Greenland). When present in Jørgen Brønlund Fjord I find it reasonable to believe that *A. pacificus* is present along the rest of the north coast of Greenland also, whereas it is still an open question how far south along the west coast the species penetrates.

Genus ***Hippomedon*** BOECK, 1871

6. *Hippomedon holbölli* (KRÖYER)

Hippomedon holbölli G. O. Sars 1895, p. 58 Pl. 21 fig. 2.

— — STEBBING 1906, p. 58.

— — STEPHENSEN 1944, p. 31.

— — GURJANOVA 1951, p. 229.

— — — 1962, p. 104 (with key to species and subspecies).

Material:

Bottom grab: St. 11, 105 m., fine clay, one female of 15 mm. with 5 juveniles in the marsupium. The length of the juveniles was 3.5 mm.

Fam. ***Stegocephalidae*** DANA

Genus ***Stegocephalus*** KRÖYER, 1842

7. *Stegocephalus inflatus* KRÖYER

Stegocephalus inflatus G. O. Sars 1895, p. 198 Pl. 69.

— — STEBBING 1906, p. 91.

— — STEPHENSEN 1944, p. 39.

— — GURJANOVA 1951, p. 298 (with reprod. of Sars's figs.).

— — D. H. STEELE 1967.

Material:

Dredge haul: St. 65, 30 m., clay and gravel, 2 specimens of 16 and 18 mm. — St. 69, 40–45 m., fine redbrown clay, one female of 39 mm. with well developed but empty marsupium.

Fam. Ampeliscidae BOECK

Genus *Byblis* BOECK, 18718. *Byblis arcticus* nov. sp. (figs. 2-4)

Material:

Bottom grab: PJ No. 1975, 13 m., clay, one newly hatched specimen. — St. 8, 11.5 m., clay with sand and gravel. — St. 27, 19 m., clay. — St. 28, same data. — St. 29, same data.

Dredge haul: St. 44, 17-18 m., clay. — St. 49, 5-6 m., clay with dense vegetation of algae. — St. 51, 18 m., clay.

Description: (Holotype, female measuring: body 13.5 mm., Ant. 1 8 mm., Ant. 2 13.5 mm. — The Zoological Museum, University of Copenhagen).

Body normal. — Front of head carrying a very short rostral projection. Infralateral corner of head pointed and sharply marked. Inferior edge of head between infralateral corner and lower eye concave. Eye lenses well developed, of medium size and surrounded with brownish red pigment. Lower eye occupying inferior edge of the head at a distance of one lens diameter from the infralateral corner.

Cox. pl. 1 widening distally, evenly rounded apically and fringed with long setae. — Cox. pl. 4 as broad as deep, otherwise normal.

Ep. 3, posterior edge evenly curved.

Ant. 1 about $\frac{2}{3}$ the length of Ant. 2. Peduncle reaching end of penultimate joint of Ant. 2 (when both antennae are stretched out in the direction of the body). First joint of peduncle stout and half as long as the second. Third joint shorter than the first. — Flagellum composed of 24-25 articulations, each apically bearing a pair of long and very slender spines and 1 or 2 ventro-medial setae.

Ant. 2, as long as the entire body (measured from front of head to tip of uropods). Peduncle $\frac{2}{3}$ the length of the flagellum. The third joint of the peduncle as long as the first and second combined. Ultimate and penultimate joints of peduncle slender and of equal length, fringed with long setae on their lower margins. — Flagellum composed of 35 articulations armed as in Ant. 1.

Gp. 1 and 2, the fifth joint not much longer than the sixth. The sixth joint of Gp. 1 oblong oval; the same joint in Gp. 2 slenderer and with almost parallel sides.

Pp. 1 and 2, the sixth joint rather stout and not much longer than the fifth. The dactylus is as long as or slightly longer than the preceding joint.

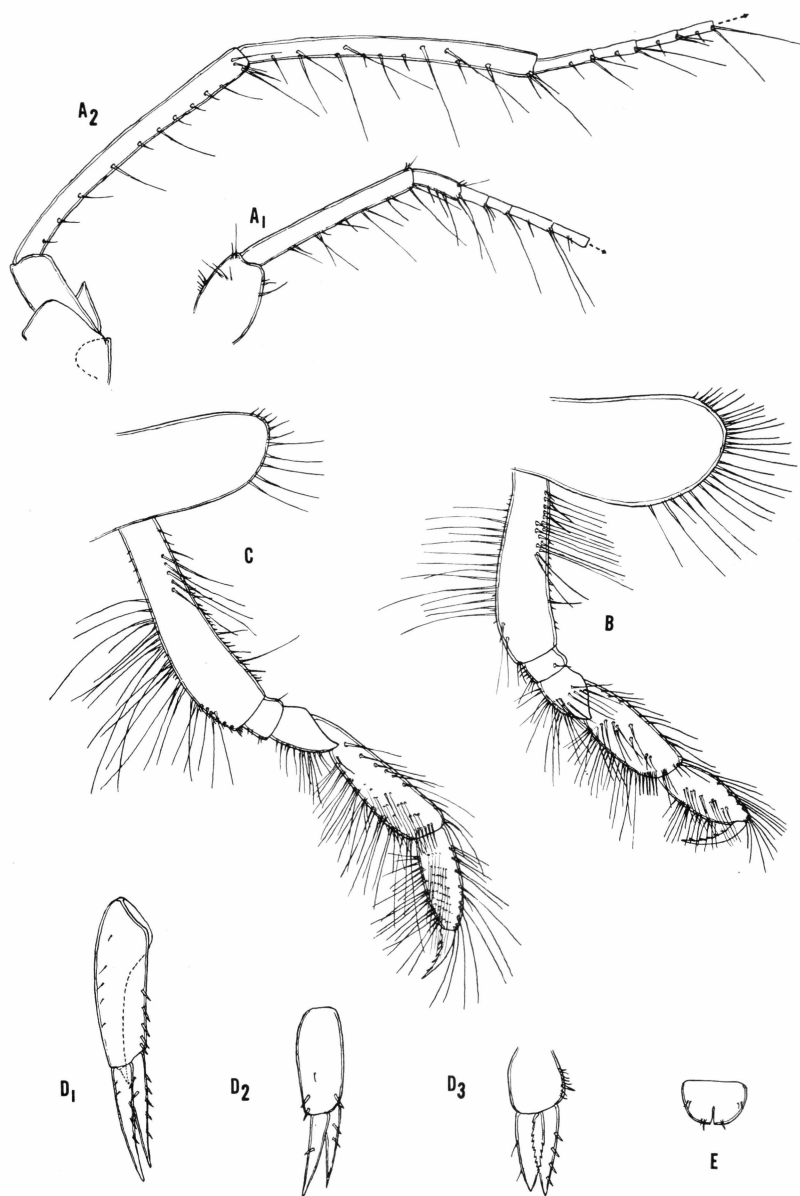


Fig. 2. *Byblis arcticus* nov. sp. (Type), A 1-2: Ant. 1 and 2 (flagellum shortened),
B: Gp. 1, C: Gp. 2, D 1-3: Up. 1-3, E: Telson.

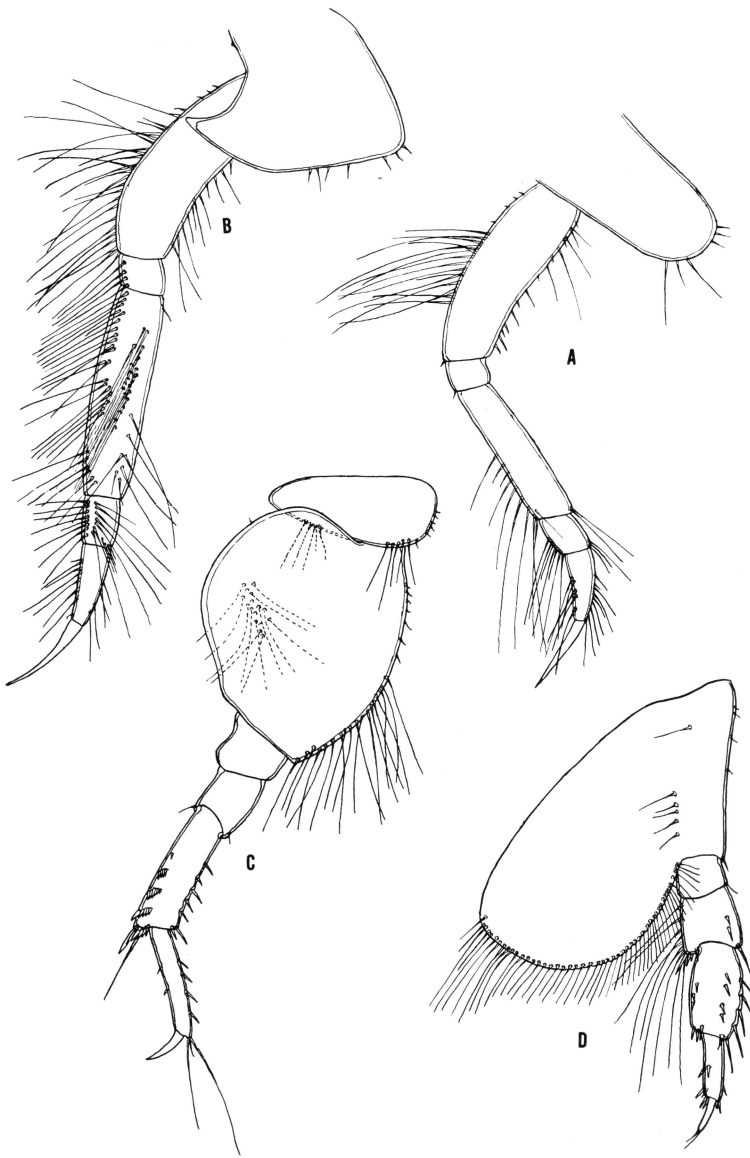


Fig. 3. *Byblis arcticus* nov. sp. (Type), A: Pp. 1, B: Pp. 2, C: Pp. 4, D: Pp. 5.

Pp. 3 and 4, the second joint almost as broad as long, the fifth joint with 4 (5) rows of short, stout spines on the outer side; the sixth joint little shorter than the fifth, and bearing a comparatively strong dactylus.

Pp. 5, posterior expansion of the third joint evenly curved distally and reaching well beyond the middle of the fifth joint, which equals in length the third and the fourth joints together. The fifth joint is armed with 5-6 slender spines on the anterior edge.

Up. 3, inner edge of peduncle with 1 or 2 short spines and many short setae. — Opposing edges of rami serrate. — Outer edge of inner ramus armed with 4-5 spines.

The telson is slightly broader than long and curving evenly to the subtruncate tip. The cleft scarcely reaches to the middle. Apically the telson bears 1 spine and 1 short seta on each side of the cleft. A pair of short setae are present near each lateral margin.

Male:

Two minor differences only could be found between female and male of the present species. In the male the fifth joint of Gp. 2 is somewhat longer in proportion to the sixth than in the female, and the telson in the male is stronger and proportionally larger the breadth not exceeding the length (fig. 4 D).

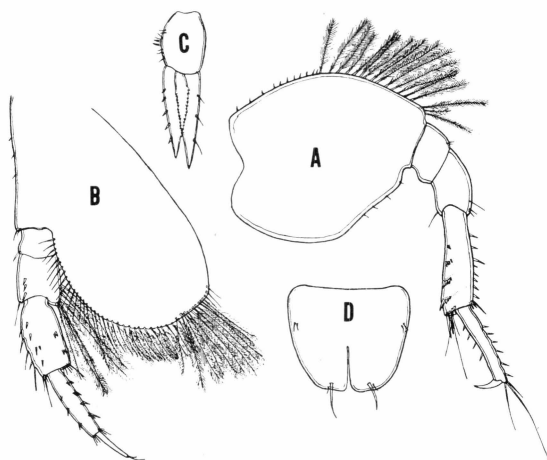


Fig. 4. *Byblis arcticus* nov. sp. (male), A: Pp. 4, B: Pp. 5, C: Up. 3, D: telson.

Remarks:

The present species seems to be closely related to *B. affinis* G. O. Sars (1895), from which, however, it could be separated by the proportionally much longer antennae of *B. arcticus* nov. sp. and by the considerably larger size of the adult female of the same (*B. affinis* about 9 mm.). — *B. veleronis* Barnard (1954a) is stated to be closely related

to *B. affinis*. *B. veleronis*, however, completely lacks the infero-lateral corner of the head (drawing by BARNARD, *loc. cit.*), so that the degree of relationship is in any case less pronounced between *B. veleronis* and *B. affinis* than between *B. arcticus* and *B. affinis*.

B. arcticus differs from *B. longicornis* G. O. SARS (*loc. cit.*) partly in the proportions of the antennae to the body (in *B. longicornis* "Inferior antenna ... considerably exceeding the length of the whole body." G. O. SARS, *loc. cit.*) and mainly in the shape of the telson, where *B. longicornis* has the lateral margins concave and the apical cleft very short.

In *B. erythrops* G. O. SARS (*loc. cit.*) the peduncle of Ant. 1 reaches considerably beyond the penultimate joint of Ant. 2 and the corneal lenses are much smaller than in *B. arcticus*.

Zoogeographical remarks:

Of the genus *Byblis* (not counting blind *Byblis*) only *B. gaimardi* KRÖYER has been recorded from Greenland and North American coastal waters (from Point Barrow to the Gulf of St. Lawrence). — A brief inspection of the material of *B. gaimardi* in the Zoological Museum, University of Copenhagen, however, shows that *B. arcticus* is present along the east coast of Greenland probably down to Scoresby Sund.

The 70 specimens from Jørgen Brønlund Fjord were taken exclusively on the threshold with maximum occurrence between 15 and 20 m.

Further measurings of the species are given below:

Females			
St. No.	Body mm.	Ant. 2 mm.	Ant. 1 mm.
44.....	14.5	14	8
—	15	15	9.5
—	15.5	15.5	9.5 (ovigerous)
29.....	17	broken	10
Males			
29.....	10	10	6.5
—	14	13	8
—	15	15	9.5

Fam. **Haustoriidae** STEBBING (= **Pontoporeiidae** G. O. SARS)

Genus **Pontoporeia** KRÖYER, 1842

9. *Pontoporeia femorata* KRÖYER

<i>Pontoporeia femorata</i>	G. O. SARS 1895, p. 123 Pl. 41 fig. 1.
—	— STEBBING 1906, p. 128.
—	— STEPHENSEN 1944, p. 50.
—	— GURJANOVA 1951, p. 346.

Material:

Bottom grab: St. 1, 10.5 m., clay with a little sand. — St. 7, 11.5 m., clay with sand and stone. — St. 8, same data. — St. 19, 5.5 m., sand and clay. — St. 20, same data. — St. 21, 11.5 m., clay. — St. 22, same data. — St. 23, 5.5 m., clay and sand with some algae. — St. 24, same data.

Dredge haul: St. 31, 8–9 m., clay with dense vegetation of algae. — St. 47, 3 m., clay with some sand and vegetation. — St. 49, 5–6 m., clay with dense vegetation of algae. — St. 50, 10 m., clay with some red algae (*Phyllophora brodiaei* f. *interrupta*). — St. 62, 10 m., gravel, clay, and empty shells.

Remarks:

Some 150 specimens in all were secured from practically all over the fiord at depths less than 12 m., and the maximum occurrence was on the threshold at depths from 5–10 m., i.e. within and just below the narrow belt of brown algae (see JUST 1970).

Of 80 specimens measured, the 5 largest females were 18, 16, 14, 14, and 14 mm. and the 5 largest males 11, 10.5, 10, 10, and 9.5 mm.

No ovigerous or embryo-bearing females were found in the material, but among the specimens from St. 50 (27-VIII) 14 females appeared with highly developed marsupium, which seemed to have been recently emptied. In the same sample some 25 juvenile specimens of about 2 mm. were found. These facts indicate that the breeding period is in the last half of July.

A well-marked difference in colour between the above-mentioned 14 females and all other specimens in the sample could also be noticed, the latter group being brightly flesh-coloured while the females having bred were greyish white, more or less translucent and had heavy red-brown incrustations on metasome and urosome segments and on the plumose setae fringing the second joint of Pp. 5. These 14 females measured from 9 to 12.5 mm.

Fam. Phoxocephalidae G. O. Sars**Genus *Harpinia* BOECK, 1870****10. *Harpinia amundseni* GURJANOVA (fig. 5)**

Harpinia amundseni GURJANOVA 1946, p. 281 fig. 13.

— — — 1951, p. 375 fig. 227 (same fig. as above).

Material:

Dredge haul: St. 56, 190–200 m., fine red-brown clay.

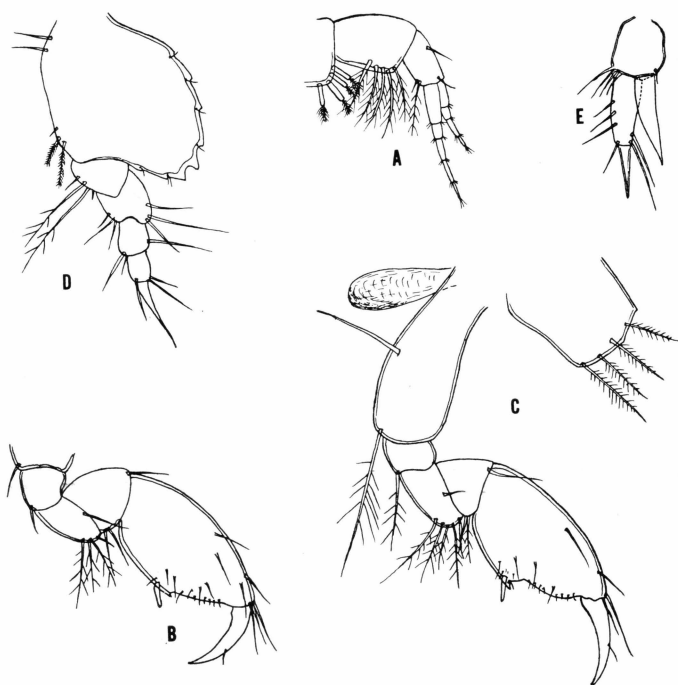


Fig. 5. *Harpinia amundseni*, A: Ant. 1, B: Gp. 1, C: Gp. 2, D: Pp. 5, E: Up. 3.

Remarks:

The two specimens secured measured 3.5 and 2 mm. Fig. 5 shows parts of the larger one.

The species is new to Greenland.

Fam. **Stenothoidae** BOECK

Genus ***Metopa*** BOECK, 1871

11. *Metopa* sp.

From St. 31 (8–9 m., clay with much vegetation) one single specimen of 2 mm. was found. Due to damages on the appendages specific determination is not possible.

Fam. **Oedicerotidae** (BOECK) SCHNEIDER

Genus ***Paroediceros*** G. O. SARS, 1895

12. *Paroediceros intermedius* ? STEBBING (fig. 6)

Oediceros microps HANSEN 1887, p. 220 Table 21 fig. 12.

Paroediceros intermedius STEBBING 1906, p. 245.

— — GURJANOVA 1951, p. 533 (with reprod. af HANSEN's fig.).

Material:

Dredge haul: St. 52, 160–180 m., fine red-brown clay, 1 specimen of 7 mm. (sex unknown). — St. 69, 40–45 m., fine red-brown clay, one specimen of 3.5 mm.

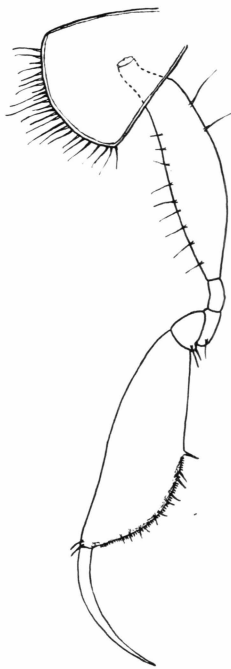


Fig. 6. *Paroedicerus intermedius*? (7 mm.), Cox.pl. 1 and Gp. 1.

Remarks:

Though too small to be fully developed, the two specimens are, with some hesitation, referred to the present species on account of the characteristic shape of the coxal plate of Gp. 1.

13. *Paroedicerus lynceus* (M. Sars)

Paroedicerus lynceus G. O. Sars 1895, p. 292 Pl. 103 fig. 2 and Pl. 104 fig. 1.

- — STEBBING 1906, p. 246.
- — STEPHENSEN 1944, p. 66.
- — GURJANOVA 1951, p. 530.

Material:

Bottom grab: St. 1, 10.5 m., clay. — St. 24, 5.5 m., clay with some sand.

Dredge haul: St. 30, 8–10 m., clay. — St. 31, same data. — St. 32, about 10 m., clay with dense vegetation of algae. — St. 36, about 2.5 m., sand. — St. 47, 3 m., clay with a little sand. — St. 49, 5–6 m., clay with

dense vegetation of algae. — St. 50, 10 m., clay. — St. 62, 10 m., clay and gravel. — St. 63, 5 m., clay and gravel.

Remarks:

According to the above-mentioned account *P. lynceus* was taken between 3 and 10 m. (except one specimen at St. 36) throughout the parts of the fjord investigated, though only some 20 specimens in all were secured with at most 5 — usually 1 or 2 — per sample.

No ovigerous or embryo-bearing females were found in the material. The largest female, of 15 mm., had moderately developed marsupial plates only. — The largest male measured 16.5 mm.

Genus *Arrhis* STEBBING, 1906

14. *Arrhis phyllonyx* (M. Sars)

Aceros phyllonyx G. O. Sars 1895, p. 338 Pl. 120 fig. 1.

Arrhis — STEBBING 1906, p. 263.

— — STEPHENSEN 1944, p. 68.

— — GURJANOVA 1951, p. 534.

Material:

Dredge haul: St. 40, 30 m., clay and sand, 3 specimens of 7, 7.5, and 8 mm. — St. 52, 160–180 m., fine red-brown clay, 1 specimen of 7 mm.

Genus *Monoculodes* STIMPSON, 1853

15. *Monoculodes schneideri* G. O. Sars (fig. 7)

Monoculodes schneideri G. O. Sars 1895, p. 692 Suppl. Pl. VI fig. 1.

— — STEBBING 1906, p. 263.

— — GURJANOVA 1951, p. 575 (with reprod. of Sars's fig.).

Material:

Bottom grab: St. 1, 10.5 m., clay. — St. 17, 16 m., sand, clay, and some gravel. — St. 22, 11.5 m., clay. — St. 27, 19 m., clay.

Dredge haul: St. 31, 8–10 m., clay with dense vegetation of algae. — St. 43, 20 m., clay. — St. 44, 17–18 m., clay.

Remarks:

Nearly 200 specimens were secured, 100 of which were taken at St. 44.

The species is new to East Greenland.

Zoogeographical remarks:

The distribution of *M. schneideri* along the coasts of Greenland seems to be restricted to the northern and western parts. From the east coast it has not been recorded before in spite of extensive investigations. From the west coast C. HOLMQUIST (1959, p. 228) mentions that

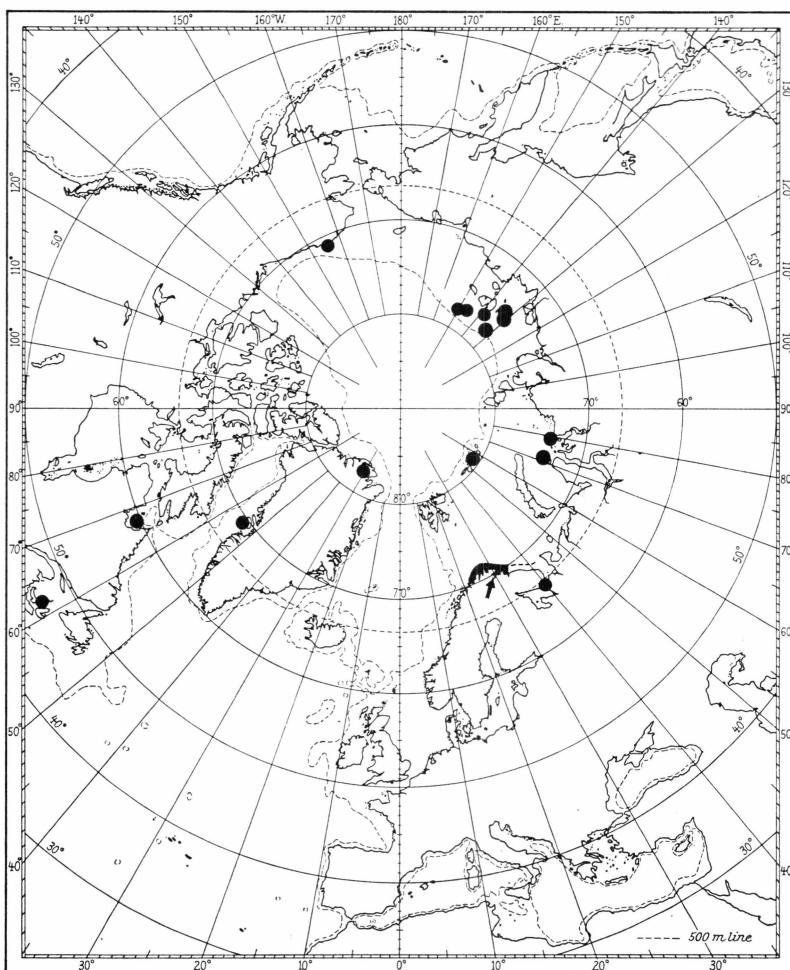


Fig. 7. Distribution of *Monoculodes schneideri*. — Arrow: type-locality, Varanger Fjord (see STEPHENSEN, 1938).

M. schneideri was present in samples collected by her off Godhavn, Disko (first and until now only record of the species from Greenland waters). In a material collected by Dr. G. HØPNER PETERSEN, in the same area in 1959 I have found a few small specimens at a depth of 35–40 m. (unpublished).

16. *Monoculodes* sp.

Material:

Bottom grab: St. 17, 16 m., clay and sand.

Remarks:

One specimen only was found in the material, viz. an adult female

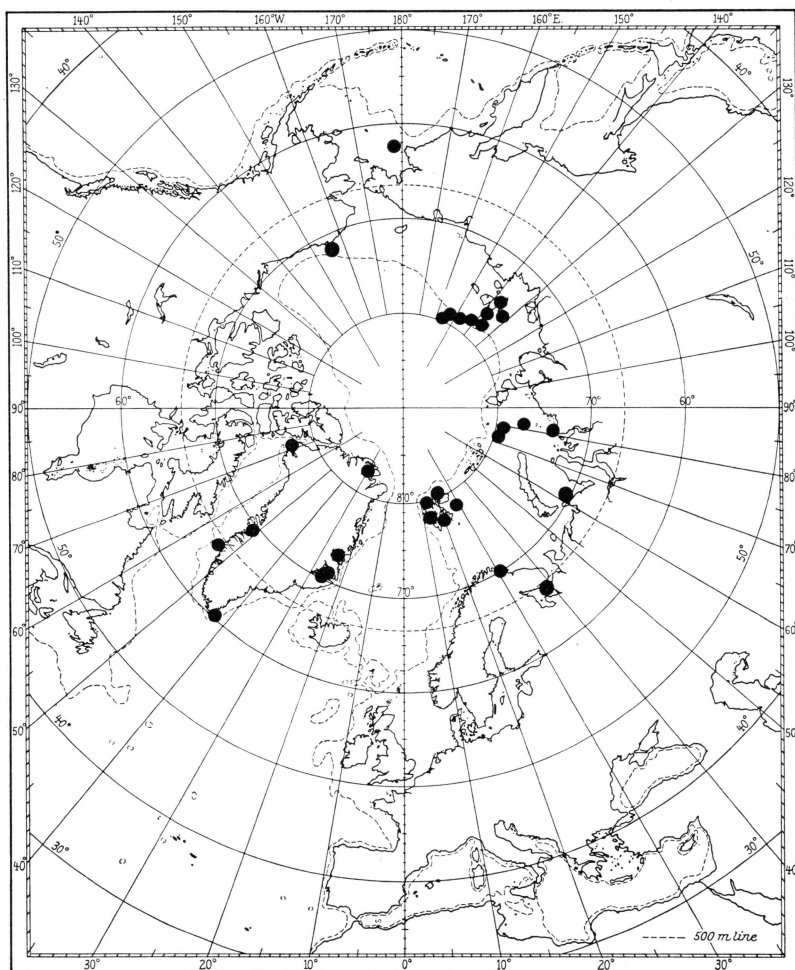


Fig. 8. Distribution of *Aceroides l. latipes*.

with highly developed marsupium. The specimen, however, was much damaged, all gnathopods and pereopods being broken off except the left Gp. 1.

In general appearance it is very close to *M. packardi* BOECK, differing from that species only in having dorsally a very low but distinct carina running from the middle of the cephalon across the eyes almost to the tip of the rostrum. Also the first joint of Ant. 1 in the present species has terminally a small hook-like projection on the ventral edge.

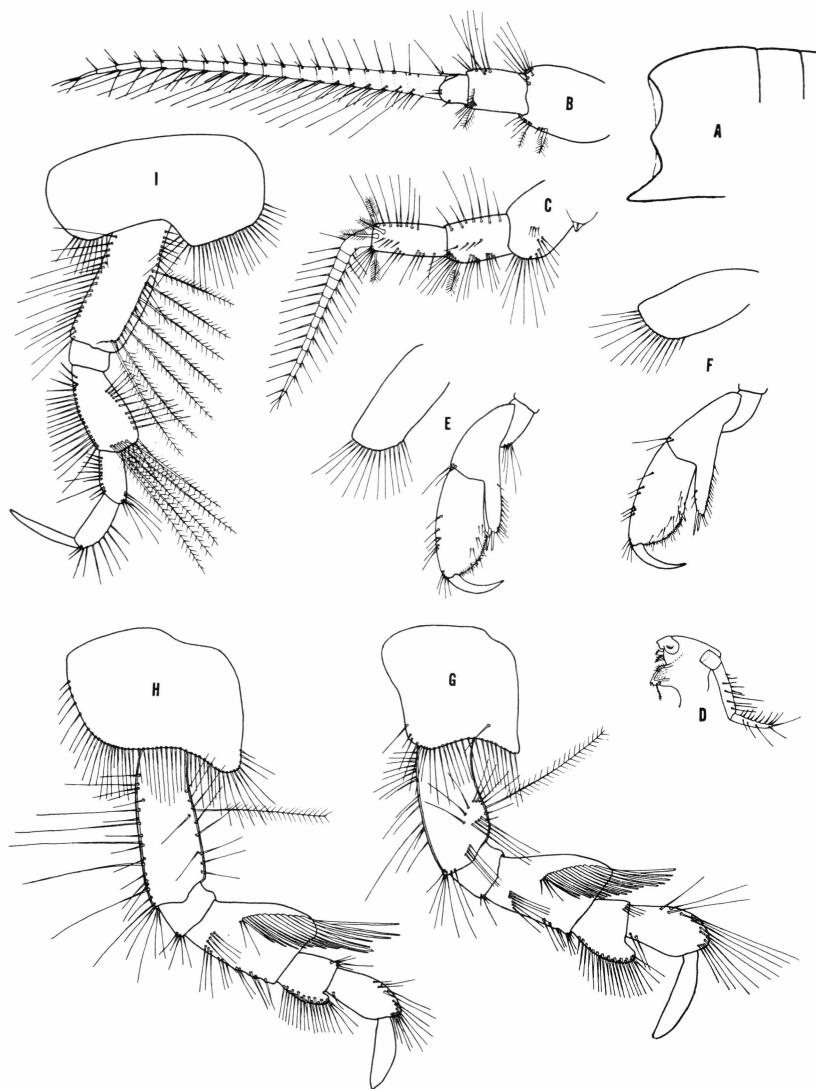


Fig. 9. *Aceroides l. latipes* (adult female of 9 mm.), A: lateral view of cephalon, B: Ant. 1, C: Ant. 2, D: Mand., E: Cox.pl. 1 and Gp. 1, F: Cox.pl. 2 and Gp. 2, G: Pp. 1, H: Pp. 2, I: Pp. 3.

Genus ***Aceroides*** G. O. SARS, 1895

17. *Aceroides latipes latipes* G. O. SARS (fig. 8-10)

Aceros distingendus HANSEN 1887, p. 188 Table 4 fig. 8.

Aceroides latipes G. O. SARS 1895, p. 341 Pl. 120 fig. 2.

— — STEBBING 1906, p. 254.

— — STEPHENSEN 1944, p. 70.

— *latipes latipes* GURJANOVA 1951, p. 537.

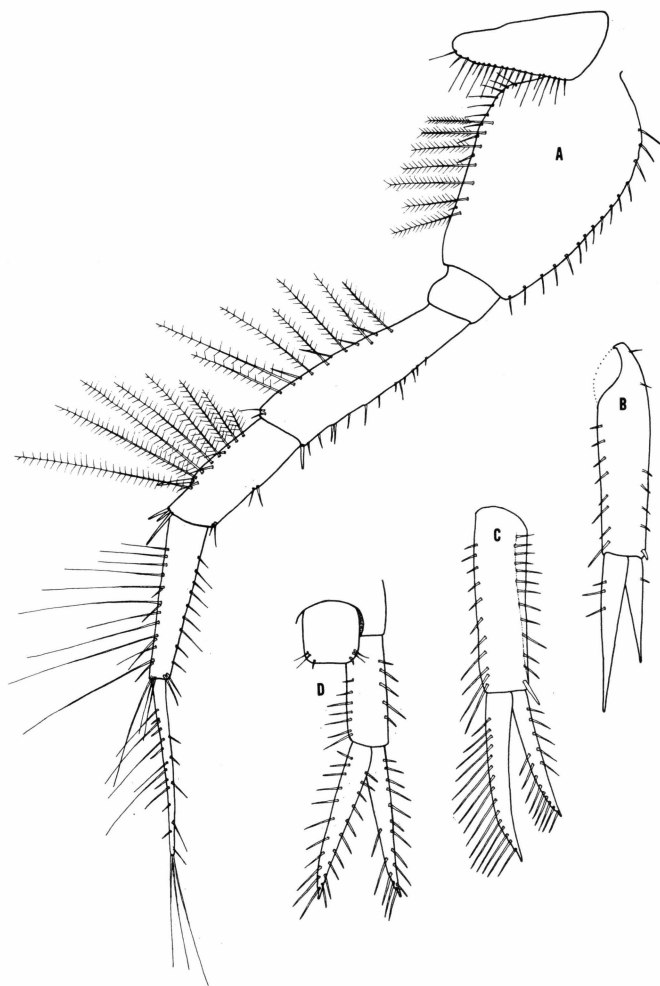


Fig. 10. *Aceroides l. latipes* (the same specimen), A: Pp. 5, B: Up. 1, C: Up. 2, D: Up. 3 and telson.

Material:

Bottom grab: St. 2, 10.5 m., clay with some sand. — St. 13, 7.5 m., sandy clay with gravel. — St. 14, 22 m., clay. — St. 15, same data. — St. 21, 11.5 m., clay. — St. 22, same data. — St. 27, 19 m., clay. — St. 28, same data. — St. 29, same data.

Dredge haul: St. 30, 8–10 m., clay. — St. 31, 8–9 m., clay with dense vegetation of algae. — St. 34, about 15 m., clay, some red algae, and many empty shells. — St. 44, 17–18 m., clay. — St. 50, 10 m., clay. — St. 51, 18 m., clay. — St. 58, 20 m., clay and gravel. — St. 60, 20 m., clay with some gravel. — St. 68, 10–15 m., clay, gravel, and empty shells.

Remarks:

Aceroides l. latipes has been recorded from all parts of the arctic, but according to the literature very few specimens have been secured from the east and west coasts of Greenland and from arctic North America. Normally one or two specimens only have been secured at the different localities shown on fig. 8.

The present material includes at least 400 specimens. Of these some 250 were found at St. 44 in one dredge haul. — The species was taken throughout the investigated parts of Jørgen Brønlund Fjord, but about 90 per cent. were secured from the threshold.

From St. 44 the 15 largest males and females, respectively, were measured. All the females had a fully developed but empty marsupium.

Aceroides l. latipes

Males		Females	
Number of specimens	Length in mm.	Number of specimens	Length in mm.
2	6	1	9
13	5.5	8	6
		6	5.5

These figures — except the one large female — agree with measurements made by SARS (1895), STEBBING (1906, quoting SARS?), and GURJANOVA (1951). — Further measurements, however, were made on the Jørgen Brønlund Fjord material, viz. from St. 22, 30, 31, and 68. In each of these samples from 1 to 5 specimens only were found, all females. The 8 largest measured:

St. No.	Length in mm.
22	10.5 (embryos in marsupium)
—	10
—	10
30	9.5
—	9
31	10
—	8
68	9

This remarkable difference in size between the two groups of females led to a close examination of the material. All specimens proved to be equally well developed and in all details identical. The material was again compared to the description and drawings of SARS (*loc. cit.*), and some marked differences were found.

For further investigations I have had at my disposal: Cotypes of *Aceros distingendus* H. J. HANSEN 1887 (= *Aceroides latipes* in SARS,

loc. cit.), one specimen from the Kara Sea determined by Sars as *Halicreion latipes* (syn. of *Aceroides latipes* in Sars, *loc. cit.*), and various specimens collected along the east and west coasts of Greenland.

The examination showed that all these specimens are identical with the material from Jørgen Brønlund Fjord, and that they all differ from Sars's drawings on the following points (see figs. 9–10): Infero-lateral corner of the head, coxal plates of Pp. 1–2, the setation of Pp. 3–5, the uropods, and the shape of the telson.

Knowing that Sars, when describing and drawing *Aceroides latipes*, had one specimen of 5 mm. at hand only, it seems evident that he overlooked certain characteristics of the species. To complete Sars's description I therefore add new drawings of the species. — Furthermore, the distribution known at present (compiled from the literature) is shown in fig. 8.

On the other problem — the difference in size in mature females — the following points should be noted: where large females were taken, there were very few specimens in the samples and the depth was always between 8 and about 12 m. — Between 17 and 20 m. (especially on the threshold) the species was abundant, and there the mature females measured 5–6 mm. only.

These facts suggest two explanations: (1) The two groups represent different generations. The larger females have migrated upwards after having reached normal size (without having bred at this stage?). They would then live and grow for another year(?) on the less crowded bottom and finally reproduce (again?). (2) No migration takes place and the specimens living between 8 and 12 m. have simply been favored through less specific competition on food.

Genus *Westwoodilla* BATE, 1862

18. *Westwoodilla brevicealcar* (Goëss)

Halimemon brevicealcar BOECK 1876, p. 286 Pl. XV fig. 3.

— — G. O. Sars 1895, p. 331 Pl. 116 fig. 3.

Westwoodilla — STEPHENSEN 1931, p. 234 chart 43 (map of distribution).

— — GURJANOVA 1951, p. 543.

Material:

Bottom grab: St. 8, 11.5 m., clay, sand, and gravel. — St. 22, 11.5 m., clay.

Dredge haul: St. 45, 10 m., clay. — St. 51, 18 m., clay.

Remarks:

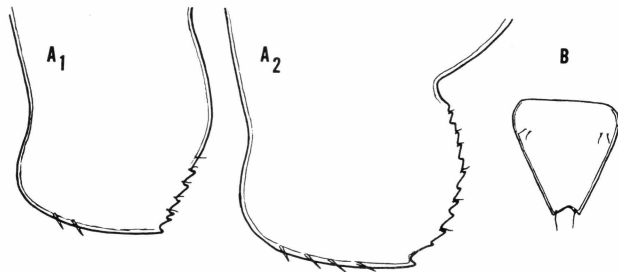
Only four specimens were found in the material. Three of these were females measuring 5 mm. The fourth, a male, measured 4.5 mm.

The species is new to East Greenland.

Fam. Calliopidae G. O. SARS

Genus *Apherusa* WALKER, 189119. *Apherusa megalops* (BUCHHOLZ) (fig. 11)*Apherusa megalops* SHOEMAKER 1930, p. 293-97 with figs.*Halirages* — STEPHENSEN 1931, p. 272 fig. 78.

— — — 1944, p. 80.

Apherusa — GURJANOVA 1951, p. 631 fig. 430.Fig. 11. *Apherusa megalops*, A 1-2: Ep. 2 and 3, B: telson.

Material:

Dredge haul: PJ, about 10 m., 7-VIII-1947, one adult female of 6 mm. — St. 49, 5-6 m., clay with dense vegetation of algae, six small specimens.

Fam. Atylidae G. O. SARS

Genus *Atylus* LEACH, 181520. *Atylus carinatus* (FABR.)*Atylus carinatus* G. O. SARS 1895, p. 471 Pl. 166 fig. 1.

— — — STEBBING 1906, p. 328.

— — — STEPHENSEN 1944, p. 91.

— — — GURJANOVA 1951, p. 679 fig. 466-67.

Material:

Dredge haul: PJ No. 1951, 13 m., one specimen. — St. 32, about 10 m., clay with dense vegetation of algae. — St. 49, 5-6 m., clay with dense vegetation of algae.

Remarks:

A. carinatus was secured from the inner basin and the threshold only, and out of a total of 20 specimens (13 from St. 32) 18 were taken in the inner basin. The material includes three juvenile-bearing females.

The species was found exclusively between 5 and 10 m., (except one specimen of 12 mm., PJ No. 1951), this interval agreeing with the narrow belt of dense vegetation of brown algae.

Atylus carinatus

Females with juveniles. Length in mm.

St. No.	Length of female	Number of juveniles	Length of juveniles
32.....	27	2	4
—.....	26	5	3-4
—.....	23	7	3-4

Atylus carinatus

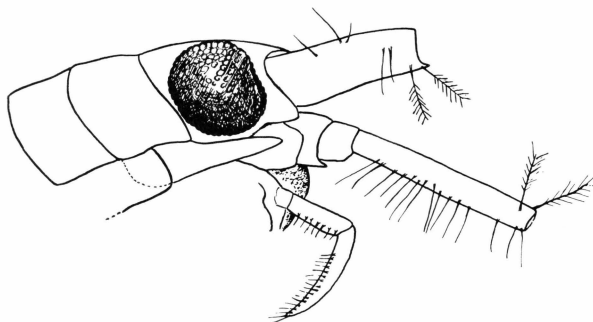
The five largest females (with well developed marsupia full or empty), and the five largest males. Length in mm.

Females		Males	
St. No.	Length	St. No.	Length
39	29	32	24
32	28	49	23
—	27	32	22
—	26	39	21
—	23	32	18.5

Fam. Eusiridae STEBBING

Genus *Rhachotropis* SMITH, 188321. *Rhachotropis macropus* G. O. Sars (fig. 12)*Rhachotropis macropus* G. O. Sars 1895, p. 428 Pl. 151 fig. 1.

— — STEBBING 1906, p. 352.

— (*macropus*?) STEPHENSEN 1944, p. 98.— *macropus* GURJANOVA 1951, p. 709.Fig. 12. *Rhachotropis macropus*.

Material:

Dredge haul: St. 52, 160-180 m., fine red-brown clay, one female of 14.5 mm. with little developed marsupial plates.

Remarks:

STEPHENSEN (*loc. cit.*) refers two damaged specimens to *R. (macropus* G. O. SARS?), but finds that they may possibly belong to *R. helleri* (BOECK). — Apart from that record *R. macropus* has never before been found in Greenland.

In the various drawings of *R. macropus* the eyes are shown somewhat smaller than in the present specimen. This, however, is due to the fact that the pigment of the eyes shrinks exceedingly much when the animal is preserved in alcohol.

Fam. Gammaridae LEACH

Genus *Weyprechtia* STUXBERG, 188022. *Weyprechtia pinguis* (KRÖYER) (figs. 13–15)

Amathilla pinguis BUCHHOLZ 1874, p. 353 Pl. 9 fig. 2.

Weyprechtia — STEBBING 1906, p. 382.

— — STEPHENSEN 1940 (1935–43), p. 297 fig. 34 (reprod. of BUCHHOLZ's figs., *loc. cit.*).

— — STEPHENSEN 1944, p. 101.

— — GURJANOVA 1951, p. 737 fig. 509 (reprod. of BUCHHOLZ's figs., *loc. cit.*).

Material:

Dredge haul: St. 49, 5–6 m., clay with dense vegetation of algae, two males of 15 and 13 mm.

Remarks:

The species differs somewhat from BUCHHOLZ's drawings, especially with regard to the coxal plates of Pp. 2–3, Ep. 2, Ant. 1 and 2, and Gp. 1 and 2. As I have found no other figures than BUCHHOLZ's, I have considered it useful to redraw *W. pinguis* in detail. Fig. 13 A shows the larger of the two males, while all details were drawn from the smaller specimen.

Genus *Gammarus* FABR., 177523. *Gammarus setosa* DEMENTIEVA

Gammarus setosa f. polaris DEMENTIEVA 1931, p. 80.

— *locusta setosus* STEPHENSEN 1940 (1935–43), p. 321 fig. 41.

— — — — — 1944, p. 109 fig. 8.

— (*Gammarus*) *setosa* GURJANOVA 1951, p. 763 (with reprod. of STEPHENSEN's figs. (1940), *in parte*).

Material:

Bottom grab: St. 27, 19 m., clay.

Dredge haul: St. 26, 1.5–2 m., sand and gravel with clay. — St. 37,

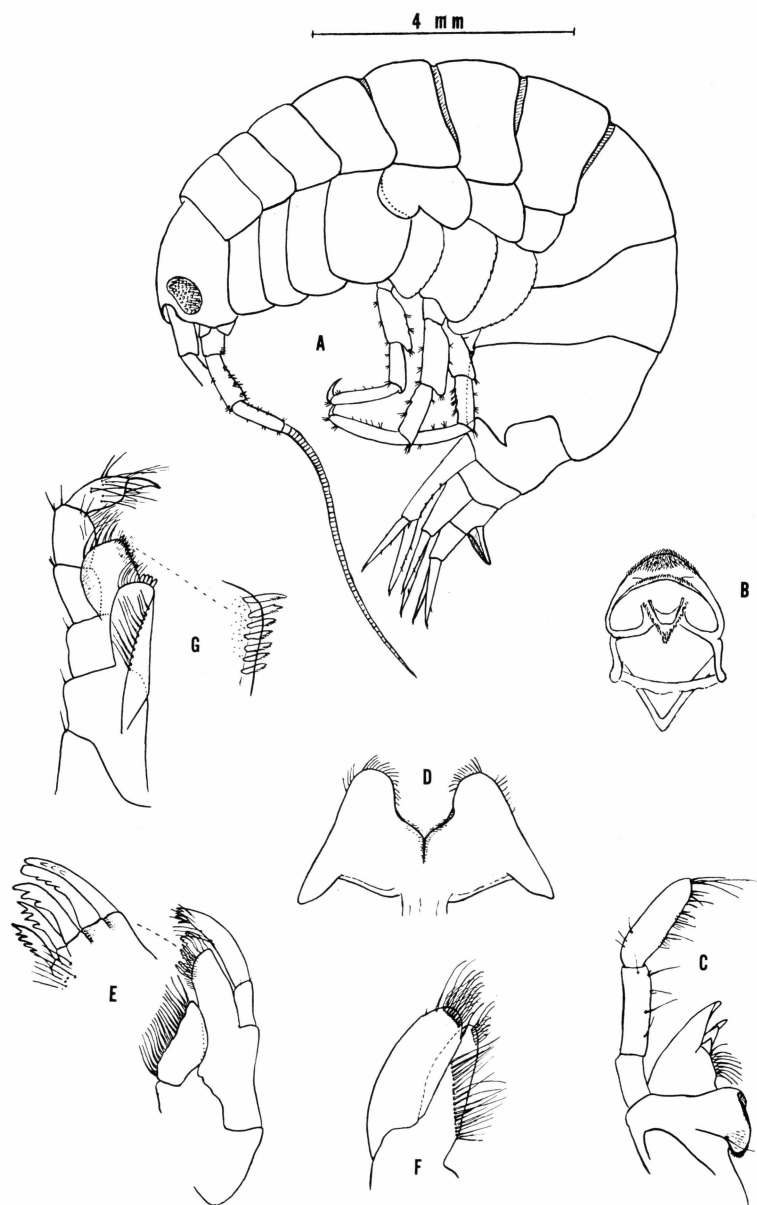


Fig. 13. *Weyprechtia pinguis*, A: male of 15 mm., B: Ul., C: Mand., D: Ll., E: Max. 1, F: Max. 2, G: Mp. — (The scale refers to A only).

about 3 m., sand with some clay and sparse vegetation. — St. 38, 2–2.5 m., same bottom. — St. 47, 3 m., same bottom. — St. 49, 5–6 m., clay with dense vegetation of algae.

Others: PJ No. 1178, 19-VII-1948, from stomach of *Salvellinus alpinus*. — PJ No. 1179, the same data. — 19-VII-1966, from stomach

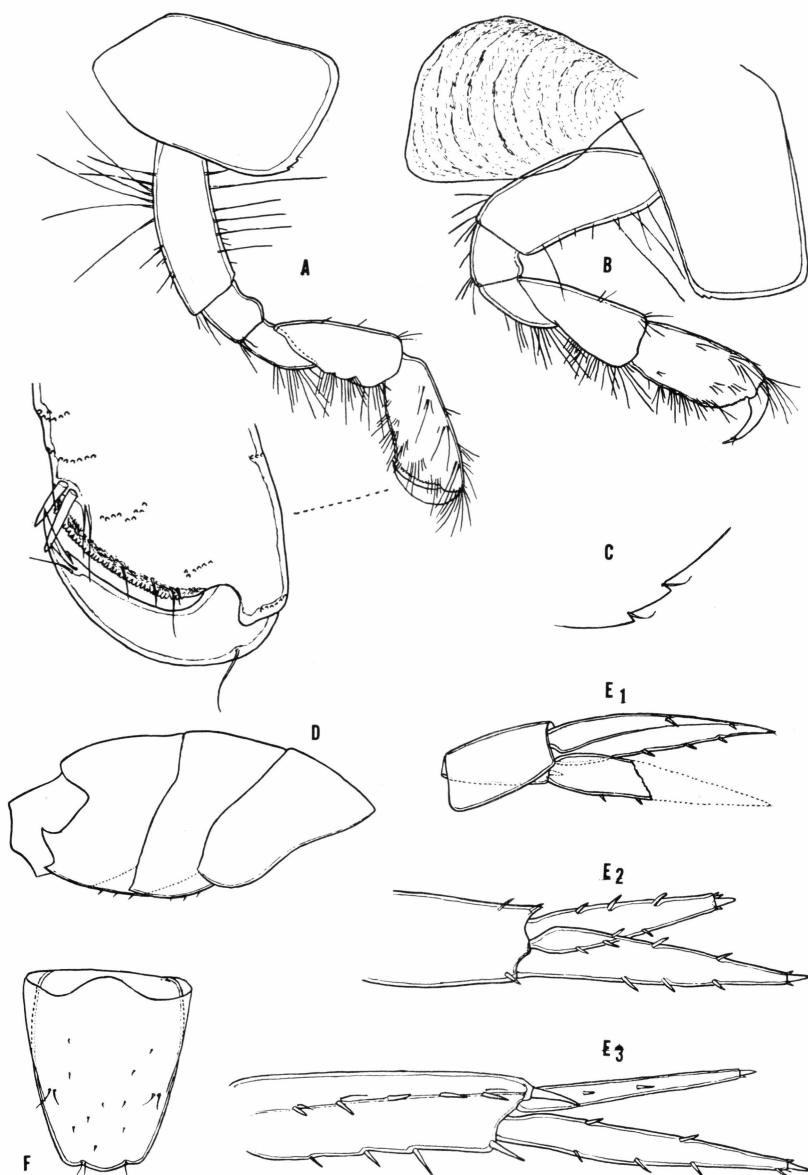


Fig. 14. *Weyprechtia pinguis*, A: Gp. 1, B: Gp. 2, C: lower hind corner of Cox.pl. 1-4, D: metasome, E 1-3: Up. 1-3, F: telson.

of *S. alpinus*. — Off the shore at Kap Harald Moltke, depth of water 5 cm., 1 specimen.

Remarks:

The species was taken between 0 and 6 m. only, except one specimen at 19 m. (St. 27). — 39 specimens were secured and 35 could be

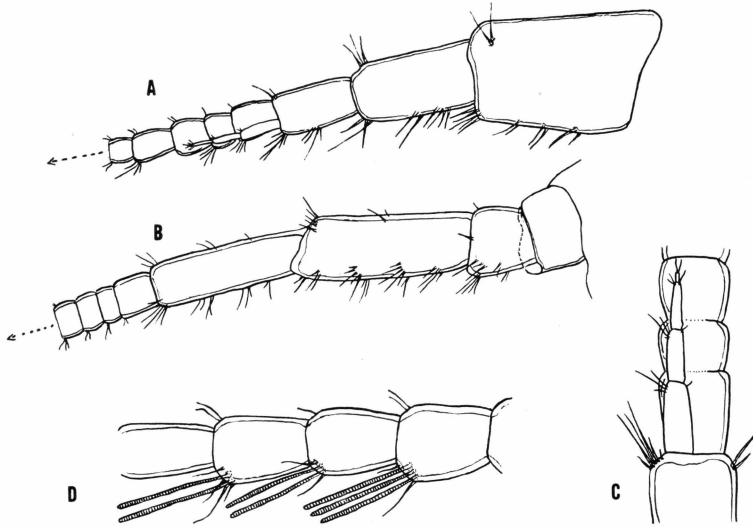


Fig. 15. *Weyprechtia pinguis*, A: Ant. 1, B: Ant. 2, (A and B, flagellum shortened), C: accessory flagellum of Ant. 1, D: sensory hairs on flagellum of Ant. 2 (on all articulations except the terminal one).

determined as to sex. Among these were 17 males and 18 females. The respectively four largest specimens measured 24, 21, 18, 18 mm. and 18, 16, 15, 15 mm. — Only one ovigerous female (13 mm.) was found (St. 47) together with a female of 16 mm. with highly developed and obviously newly emptied marsupium (St. 49).

Genus ***Gammaracanthus*** BATE, 1862

24. *Gammaracanthus loricatus* (SABINE)

Gammaracanthus loricatus STEBBING 1906, p. 508.

- — STEPHENSEN 1944, p. 115 fig. 10 (map of distribution)
- — GURJANOVA 1951, p. 784 fig. 548 A.
- — BARNARD, J. L. 1959, p. 117 figs. 14–16.

Material:

PJ, 19-VII-1949, from stomach of *Salvellinus alpinus*, one small male (?) of 8.5 mm.

Fam. ***Photidae*** BOECK

Genus ***Goësia*** BOECK, 1871

25. *Goësia depressa* (Goës) (fig. 16)

Goësia depressa STEBBING 1906, p. 622.

- — STAPPERS 1911, p. 71 Pl. 3 figs. 26–31.
- — STEPHENSEN 1944, p. 118 figs. 11–12 (fig. 12, map of distribution).
- — GURJANOVA 1951, p. 857 fig. 602 (reprod. of STAPPER's and STEPHENSEN's figs., *loc. cit.*).

Material:

Bottom grab: St. 27, 19 m., clay, one adult female of 6.5 mm. — St. 29, 19 m., clay, one adult female of 8.5 mm.

Remarks:

Both specimens differ somewhat from the descriptions and drawings in the above cited literature. — The larger female has no trace of a spine on the posterior corner of the cutting edge of Gp. 2. — The

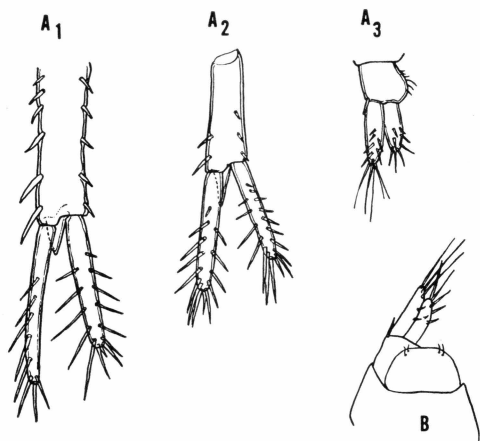


Fig. 16. *Goësia depressa* (female of 6.5 mm.), A 1-3: Up. 1-3, B: Up. 3 and telson.

specimen of 6.5 mm. has fully developed marsupial plates and is thus considerably smaller than adult females normally recorded (11 mm. STEBBING 1906, 8-10 mm. STEPHENSEN 1944). This specimen also lacks the above mentioned spine, and in addition the uropods differ from the normal *G. depressa* in having the terminal spine of the peduncle of Up. 1 and 2 unusually short (fig. 16).

Genus *Protomedeia* KRÖYER, 184226. *Protomedeia fasciata* KRÖYER

Protomedeia fasciata G. O. Sars 1895, p. 552 Pl. 196.

— — STEBBING 1906, p. 623.

— — STEPHENSEN 1944, p. 121 fig. 13 (map of distribution).

— — GURJANOVA 1951, p. 859 fig. 603 A-B.

Material:

Bottom grab: St. 8, 11.5 m., clay with sand and stones. — St. 13, 7.5 m., clay, sand, and gravel. — St. 27, 19 m., clay. — St. 28, the same data. — St. 29, the same data.

Dredge haul: St. 44, 17–18 m., clay. — St. 45, the same data. — St. 51, 18 m., clay. — St. 53, 8 m., clay with coarse gravel. — St. 60, 20 m., clay. — St. 61, 25–30 m., clay, sand, and gravel. — St. 62, 10 m., gravel, clay, and empty shells.

Remarks:

P. fasciata was found exclusively on the threshold and at the mouth of the fjord. Thus it definitely does not enter the inner basin, but may be present in the outer basin, where few samples were taken, even if it seems to be restricted to those parts of the fjord where the current is strongest (see JUST, 1970).

The species was taken between 7.5 and 30 m. with a maximum occurrence at 18–20 m. on the threshold.

More than 150 specimens were secured from May 5th to August 1st, but no ovigerous or embryo-bearing females were found. The breeding period, however, probably is in the middle of July, as juvenile specimens of 1.5–2 mm. appeared in the samples from July 25th. During the probable breeding period sampling was performed in the inner basin only, and — as noted above — the species was not found there at all.

The maximum length of both males and females was found to be 6 mm.

In Greenland waters *P. fasciata* has so far been found along the west coast only, except for one specimen from the southernmost corner of the 'south east coast area' (STEPHENSEN, *loc. cit.*).

Genus ***Leptocheirus*** ZADDACH, 1844

27. *Leptocheirus* sp.

Material:

Dredge haul: St. 56, 190–200 m., fine red-brown clay.

Remarks:

The single specimen secured measured 2.5 mm. and was too small to be determined as to species.

The genus is new to Greenland.

Fam. ***Corophiidae*** DANA

Genus ***Corophium*** LATREILLE, 1806

28. *Corophium clarencense* SHOEMAKER (figs. 17–20)

Corophium bonelli SHOEMAKER 1920, p. 22 E.

— (*bonelli* G. O. SARS?) STEPHENSEN 1944, p. 133–34.

— *clarencense* SHOEMAKER 1949, p. 78 fig. 7.

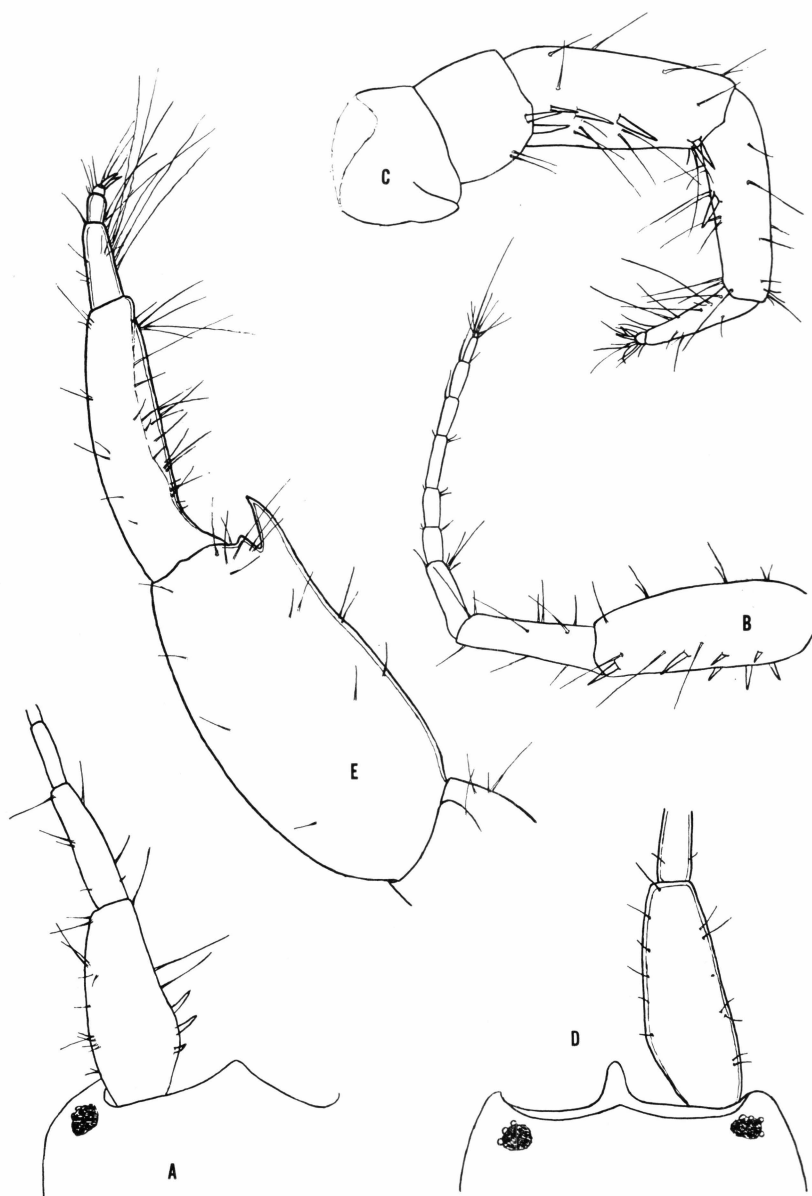


Fig. 17. *Corophium clarencense*, female: A: front of head with Ant. 1, B: Ant. 1, C: Ant. 2. — Male: D: front of head with Ant. 1, E: Ant. 2.

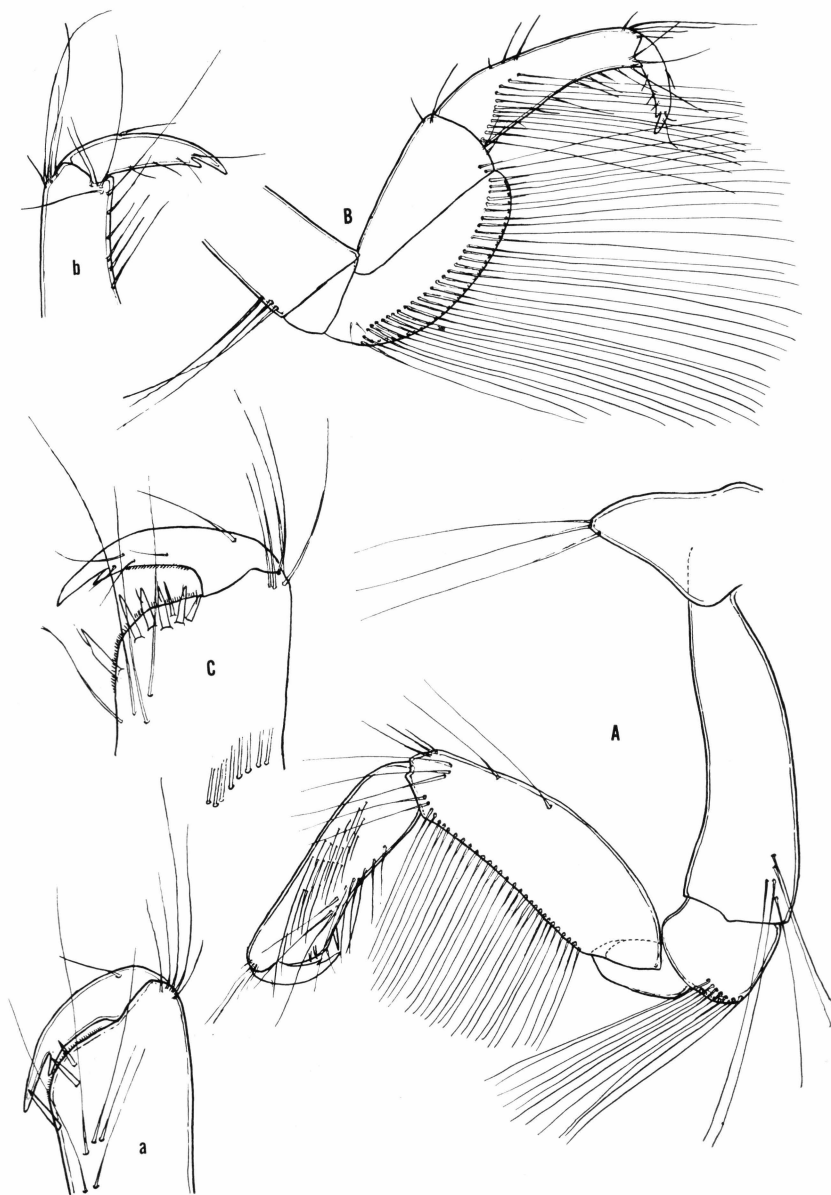


Fig. 18. *Corophium clarencense*, male: A: Gp. 1, a: finger of the same, B: Gp. 2, b: finger of the same. — Female: C: finger of Gp. 2.

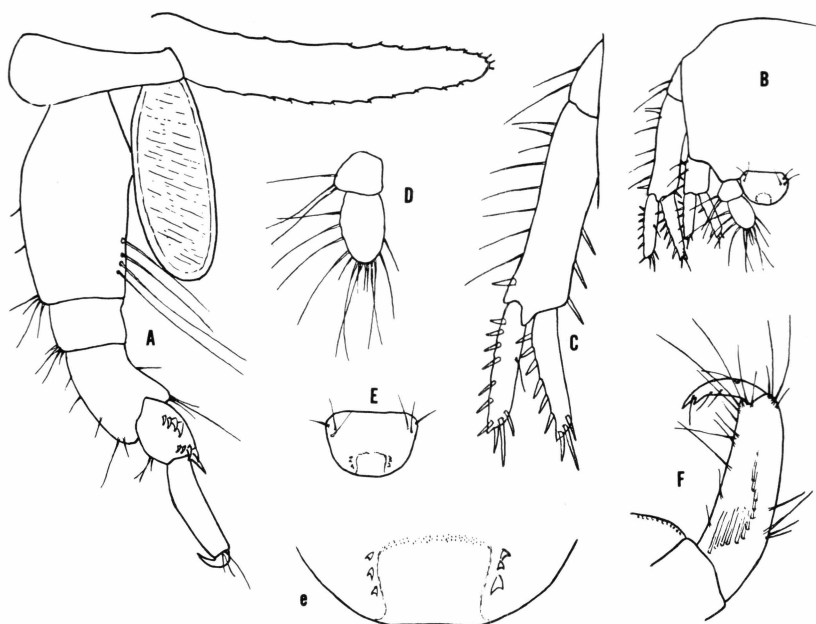


Fig. 19. *Corophium clarencense* (female), A: Pp. 5, B: urosome with telson, C: Up. 1, D: Up. 3, E: telson, e: apical part of the same, F: sixth and seventh joint of Gp. 2.

Material:

Bottom grab: St. 1, 10.5 m., clay with some sand. — St. 16, 16 m., clay and sand. — St. 23, 5.5 m., clay and sand. — St. 24, same data.

Dredge haul: PJ, about 10 m., 7-VIII-1947. — St. 32, 10 m., clay with dense vegetation of algae. — St. 36, 2.5 m., sand and clay. — St. 37, 3 m., sand and clay. — St. 49, 5–6 m., clay with dense vegetation of algae.

Remarks:

C. clarencense was originally described by SHOEMAKER (1949) on one male and four females collected at Grantley Harbor, Alaska in 1913 (*C. bonelli*, SHOEMAKER 1920).

Two specimens recorded as *C. (bonelli* G. O. SARS?) by STEPHENSEN (*loc. cit.*) belong to *C. clarencense*.

In the material from Jørgen Brønlund Fjord I have found some 100 specimens. This has provided an opportunity of a closer examination of the specific characters. Both adult males and females are found in the material and agree fairly well with SHOEMAKER's description and drawings (*loc. cit.*).

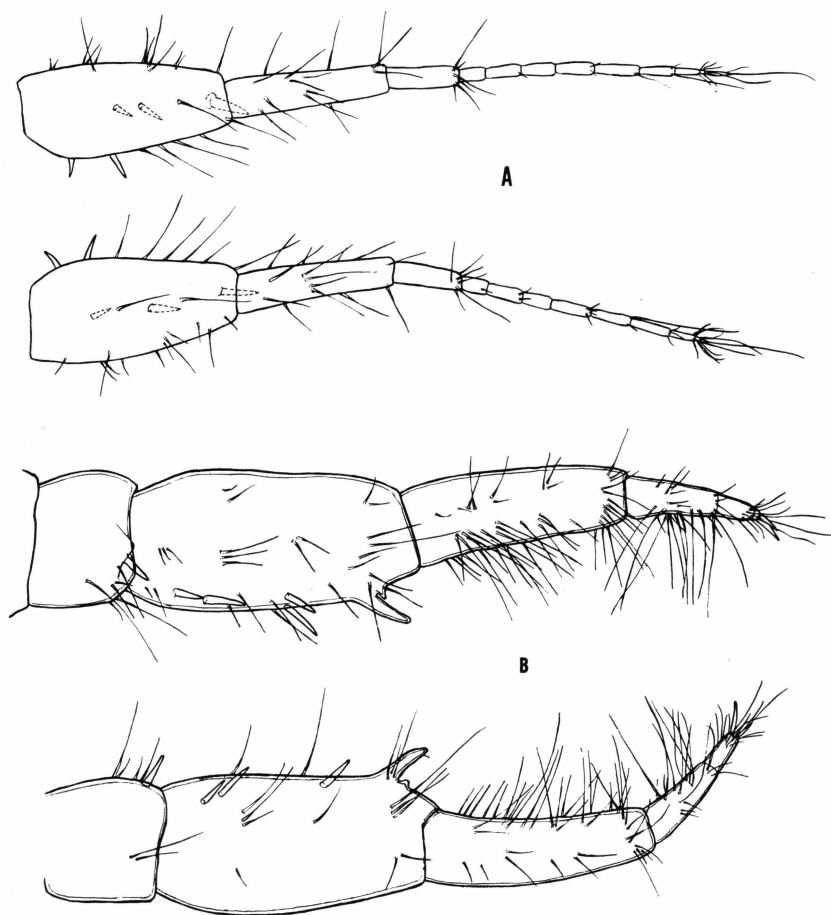


Fig. 20. *Corophium clarencense* (intersexual specimen), A: Ant. 1 right and left as seen from above, B: Ant. 2 right and left, lower margins turned medially.

There is, however, between the true males and females a long sequence of intersexual forms with male as well as female features. If found separately, these forms might lead to establishing new species.

A closer morphological and anatomical study is necessary and will be reported on in a later paper.

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