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AMPHIPODA COLLECTED AT THE  
ARCTIC LABORATORY, OFFICE OF  
NAVAL RESEARCH, POINT  
BARROW, ALASKA, BY  
G. E. MACGINITIE

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CLARENCE R. SHOEMAKER

Associate in Zoology  
Smithsonian Institution



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The material upon which this report is based was taken in the vicinity of Point Barrow, Alaska, at the United States Naval Research Station, from 1948 to 1951. Arctic species naturally predominate, but some North Atlantic and North Pacific species have intruded into the area, and one Antarctic genus, *Prothaumatelson*, is present. The range of several species has been extended northward, and of others, eastward or westward.

The collection contains 24 families, 64 genera, and 100 species of which 9 are new to science. There is also one new variety. The family Caprellidae is not included. The bulk of the collection is the result of the energetic work of Prof. George E. MacGinitie, while J. Bohlke and Dr. Ira L. Wiggins added valuable material in 1950 and 1951. All distances given as miles out are measured from the Point Barrow base.

In the literature cited under each species there is always a reference to a published figure if there is one. The length of a species is measured from the front of the head to the end of the uropods. The plan for the designation of the appendages is that used by T. R. R. Stebbing in *Das Tierreich*, I, Amphipoda: gnathopods 1 and 2, and peraeopods 1 to 5.

Suborder GAMMARIDEA

Family LYSIANASSIDAE

**ANONYX NUGAX** (Phipps)

*Anonyx nugax* SARS, 1891, p. 88, pl. 31.—STEPHENSEN 1923, p. 78; 1944b, p. 26.  
*Anonyx nugax* + *A. lagena* STEBBING, 1906, p. 54.

*Material collected.*—Many specimens of all sizes were taken from beach down to 522 feet, from 1948 to 1951.

<sup>1</sup> This paper has been published in part through a grant from the Office of Naval Research, through Johns Hopkins University.

*Anonyx nugax* is a circumpolar species that dips down into the North Atlantic and North Pacific. It has been taken off the coast of New England and off the coast of California.

The Point Barrow Expedition of 1881-1883 took considerable numbers of this species, which had been washed up on the beach in September 1882, but were identified as *Eurytenes gryllus* (Mandt). *Anonyx nugax* reaches a length of 45 mm. and has been taken as low as 1,184 m.

#### SOCARNES BIDENTICULATA (Bate)

*Socarnes bidenticulatus* Sars, 1885, pp.139, 276, pl. 12, fig. 1.—Stebbing, 1906, p. 56.—Stephensen, 1923, p. 87; 1944b, p. 28.

*Material collected.*—In 125 feet, September 9, 1948, 1 specimen. In 453 feet, 8 miles out, October 11, 1949, 1 specimen. In 175 feet, 4 miles out, October 14, 1949, 1 specimen. In 138 feet, 3.5 miles out, August 1, 1950, 1 specimen.

*Socarnes bidenticulata* is a circumpolar species. In the U. S. National Museum there are specimens taken off Newfoundland; Nakvak and Hebron, Labrador; Bering Sea; Aniwa Bay, Sakhalin Island; and Sea of Japan. It reaches a length of 36 mm., and Stephensen says that it is rarely found deeper than 100 m.

#### PSEUDALIBROTUS LITORALIS (Kröyer)

*Alibrotus littoralis* Sars, 1891, p. 102, pl. 35, fig. 2.

*Pseudalibrotus littoralis* Stebbing, 1906, p. 33.

*Pseudalibrotus littoralis* Stephensen, 1944b, p. 19.

*Material collected.*—Taken near the shore, July 1948 and 1949, 22 adults and 44 young. Washed ashore July 20, 1949, 6 specimens; July 26, 1949, 2 specimens; October 5, 1949, 1 specimen; and September 24 and 28, 1950, 2 specimens.

A mainly littoral species, distributed from Arctic America and Greenland to Nova Zembla; but replaced in the eastern part of the Arctic area (Kara Sea and Siberia) by a closely allied species, *P. birulai* Gurjanova. In the U. S. National Museum there are specimens from Nain, Labrador, and Kotzebue Sound, Alaska. Stebbing gives the length as 13 to 18 mm. According to published records, this species appears to range between the littoral and 200 m.

#### PSEUDALIBROTUS BIRULAI Gurjanova

*Pseudalibrotus birulai* Gurjanova, 1929a, p. 316, fig. 8; 1932, pp. 160, 181, pl. 2, figs. 1-8.

*Material collected.*—Taken in plankton tow 10 feet from shore, July 23 and 25, 1948, 2 specimens.

This species, which was described by E. Gurjanova from the Russian Arctic, measured about 11.5 mm. and was recorded from 6 and 22 m. The present records are the second of its occurrence.

#### ORCHOMENELLA MINUTA (Krøyer)

*Orchomenella minuta* SARS, 1890, p. 66, pl. 24, fig. 1; 1895, p. 683.—STEBBING, 1906, p. 82.—STEPHENSEN, 1925, p. 123.

*Material collected.*—Taken near Elson Lagoon, August 3, 1948, 1 specimen. In 120 feet, September 15, 1948, 3 specimens. In 741 feet, 12.1 miles out, August 17, 1949, 1 specimen. In 150 feet, 3.5 miles out, October 14, 1949, 1 specimen. Taken in fish trap in 33 feet, 0.75 mile out, January 27, 1950, 1 specimen. In 135 feet, 3.1 miles out, March 9, 1950, 1 specimen. Taken in screen trap through hole in ice in 80 feet, 1.8 miles out, April 15, 1950, 5 specimens.

*Orchomenella minuta* is a circumpolar species which occurs down to about 160 m. It dips down into the North Atlantic to the southern coast of Norway and the coast of Maine. On the Alaskan coast it appears to be a common species and occurs south as far as Chignik Bay. It was taken by the Canadian Arctic Expedition, 1913-1918, at Bernard Harbor and Dolphin and Union Strait, Northwest Territories. This species reaches a length of 11 mm.

#### ORCHOMENELLA PINGUIS (Boeck)

*Orchomenella pinguis* SARS, 1890, p. 67, pl. 24, fig. 2; 1895, p. 683.—STEBBING, 1906, p. 82.—STEPHENSEN, 1935, p. 107.

*Material collected.*—In 295 feet, 5 miles out, October 6, 1949, 2 specimens. In 152 feet, 3.5 miles out, October 14, 1949, 2 specimens. In 33 feet, 0.75 mile out, January 27, 1950, 1 specimen. In 80 feet, April 15, 1950, 30 specimens. In 64 feet, 1.25 miles out, May 17, 1950, 2 specimens (caught in fish trap through hole in ice).

Dr. Stephensen says that this species is probably circumpolar. It dips down on the Atlantic coast of America as far as Cape Hatteras, N. C. On the coast of Alaska it is an abundant species, and it occurs also at Kamchatka. It reaches a length of about 7 mm., and has been taken from shallow water down to about 565 m.

#### ORCHOMENELLA GROENLANDICA (Hansen)

*Anonyx groenlandica* HANSEN, 1887a, p. 72, pl. 2, figs. 5-5g.

*Orchomenella groenlandica* SARS, 1891, p. 70, pl. 26, fig. 1; 1895, p. 648.—STEBBING, 1906, p. 83.—SHOEMAKER, 1920, p. 6.—STEPHENSEN, 1925, p. 122; 1935, p. 109; 1944b, p. 38.

*Material collected.*—Off Point Barrow base in 120 feet, Septem-

ber 15, 1948, 1 specimen; and in 213 feet, 4 miles out, October 6, 1949, 1 specimen.

This species has been taken at East Greenland; Tromso, Norway, to White Sea; and Bernard Harbor, Northwest Territories. In the U. S. National Museum there are specimens from Bay of Fundy; off Newfoundland; Dobbin Bay, Ellesmere Land; and southern part of Fox Basin.

*Orchomenella groenlandica* measures about 7 mm., and Stephensen has recorded it off northern Norway between 40 and 100 m.

#### ARISTIAS TUMIDA (Kröyer)

*Aristias tumidus* Sars, 1890, p. 49, pl. 18, fig. 1.—Stebbing, 1906, p. 49.—Stephensen, 1923, p. 71; 1944b, p. 24.

*Material collected*.—In 125 feet, 4 to 5 miles out, September 9, 1948, 4 specimens, taken from the atrial cavity of ascidian, *Molgula retoviformis*. In 175 feet, 4 miles out, October 14, 1949, 2 specimens.

This species has been recorded from Siberian Polar Sea, Spitzbergen, North Norway, East and West Greenland, Newfoundland Bank, and now from Point Barrow.

*Aristias tumida* is occasionally found in the branchial chamber of ascidians. It reaches a length of 8 mm., and has been taken from the littoral down to 105 m.

#### ORCHOMENE SERRATA (Boeck)

*Orchomene serratus* Sars, 1890, p. 62, pl. 23, fig. 1; 1895, p. 682, pl. IV, fig. 1.—Stebbing, 1906, p. 44.—Stephensen, 1944b, p. 23.

*Material collected*.—Taken off Point Barrow base in 125 feet, September 9, 1948, 1 specimen.

This species has been recorded from Siberian Polar Sea, Spitzbergen, coast of Norway, Skagerrak, and east coast of Greenland. The present record is the first for Alaska. Stebbing gives the length as, ♀ 10 mm., ♂ about 6 mm. It has been taken down to about 660 m.

#### PARATRYPHOSITES ABYSSI (Goës)

*Lysianassa abyssi* Goës, 1866, p. 519, pl. 37, fig. 5.

*Paratryphosites abyssi* Stebbing, 1906, p. 43.—Shoemaker, 1930a, p. 18, fig. 10.—Gurjanova, 1938, pp. 245, 383.

*Hippomedon abyssi* Stephensen, 1913, p. 111.

*Hippomedon stephensei* Frost, 1936, p. 7, fig.

*Material collected*.—In 741 feet, 12.1 miles out, August 17, 1949, 1 specimen.

This species has been recorded from West Greenland; east of Nova Scotia; off Newfoundland (*Hippomedon stephenseni* Frost); off Labrador; Sea of Japan; and now from Point Barrow, Alaska.

There are in the U. S. National Museum specimens from Cape Mugford and Port Manvers, Labrador; Cape Cod, Mass.; off Newport, R. I.; Nash Harbor, Nunivak Island, Alaska; and Cockburn Point, Arctic Canada. One specimen was taken by the *Albatross* at station 2314 ( $32^{\circ} 43' 00''$  N.,  $77^{\circ} 51' 00''$  W.) in 159 fathoms, constituting the most southern record for this species, which has been considered a northern and arctic form. *Paratryphosites abyssi* reaches a length of 17 mm., and occurs from shallow water down to 528 m.

#### ONISIMUS AFFINIS Hansen

*Onisimus affinis* HANSEN, 1887b, p. 216, pl. 21, fig. 9.—STEBBING, 1906, p. 28.—STEPHENSEN, 1923, p. 47; 1944b, p. 18.

*Onisimus botkini* SHOEMAKER, 1920, p. 4, figs. 1, 2.

*Material collected*.—In 438 feet, 12.1 miles out, August 17, 1949, 2 specimens. Washed ashore August 21, 1949, 1 specimen; September 19, 1949, 2 specimens; September 26, 1949, 2 specimens. Near shore in 7 feet, February 7, 1950, 1 specimen. Washed ashore September 24, 1950, 1 specimen; and September 28, 1950, 4 specimens.

This species has been recorded from New Siberian Islands; Kara Sea; Jan Mayen; East Greenland; King William Land, Arctic Canada; Collinson Point, Alaska; and now from Point Barrow, Alaska.

In the Report of the Canadian Arctic Expedition, 1913-18, this species was identified as *Onisimus botkini*, but Stephensen believes that Birula's species is a synonym of *Onisimus affinis* Hansen. It reaches a length of about 16 mm., and Stephensen says that the species is probably a circumpolar arctic littoral one (0 to 40 m.), which occasionally may be found in greater depths (162 to 207 m.).

#### ONISIMUS NORMANI Sars

*Onisimus normani* SARS, 1891, p. 106, pl. 36, fig. 2; 1895, p. 686.—STEBBING, 1906, p. 26.—STEPHENSEN, 1935, p. 38.

*Material collected*.—Taken off Point Barrow radio mast in 60 feet, September 8, 1948, 1 specimen.

This species has been recorded from the Siberian Polar Sea; North and South Norway; Cape Sable, Nova Scotia; Cabot Strait, Gulf of St. Lawrence; West Greenland; and now from Point Barrow, Alaska. It reaches a length of 9 mm. and has been taken down to 791 m. off West Greenland.

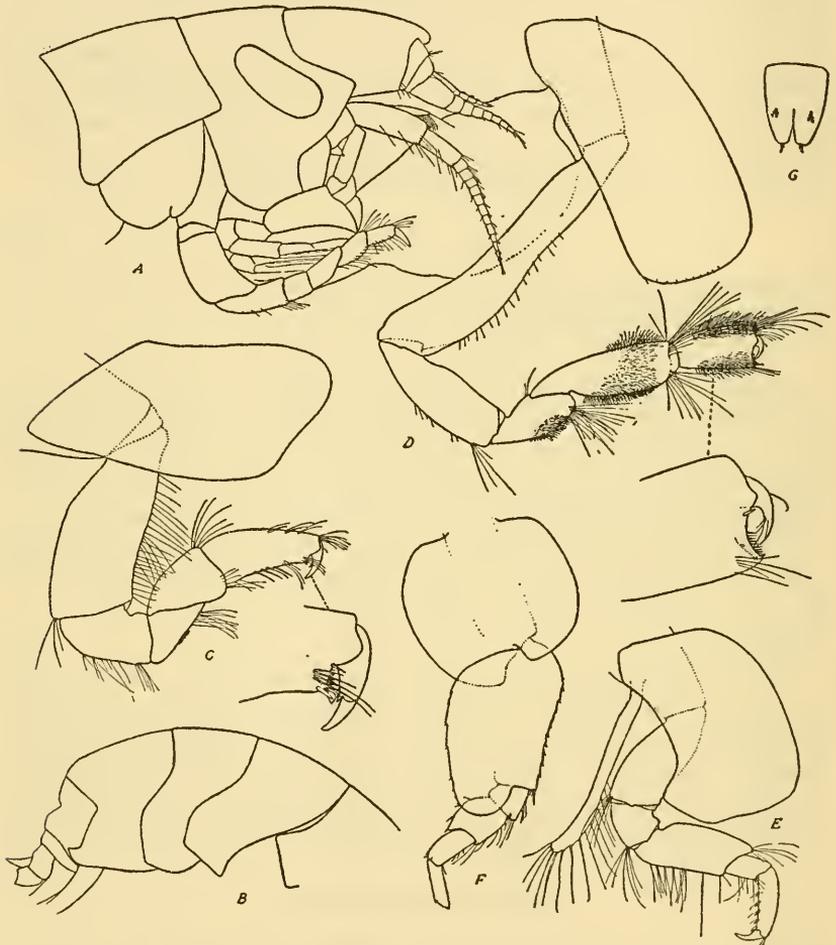
**PARONESIMUS BARENTSI** StebbingFigures 1, *a-g*, and 2, *a-m**Paronesimus barentsi* STEBBING, 1894, p. 14, pl. 2; 1906, p. 43.—STEPHENSEN, 1935, p. 51, fig. 5.—GURJANOVA, 1936a, pp. 34 and 44.

FIG. 1.—*Paronesimus barentsi* Stebbing. Female: *a*, front of animal; *b*, hind end of animal; *c*, gnathopod 1; *d*, gnathopod 2; *e*, peraeopod 2; *f*, peraeopod 3; *g*, telson.

*Material collected*.—Washed ashore, October 5, 1949, 1 specimen. In 152 feet, 3.5 miles out, October 14, 1949, 1 specimen. Near Point Barrow, 300 yards offshore, July 29, 1951, 1 specimen.

This species was described from Barents Sea in 1894, and has since been recorded from west of Nova Zembla and Kara Sea, and Stephen-

sen says that it is not known outside of this area. The present specimens from Point Barrow, therefore, extend the range of this species halfway around the polar regions. The length of the female here figured is about 14 mm. Stebbing gives 125 m. as the depth for this species.

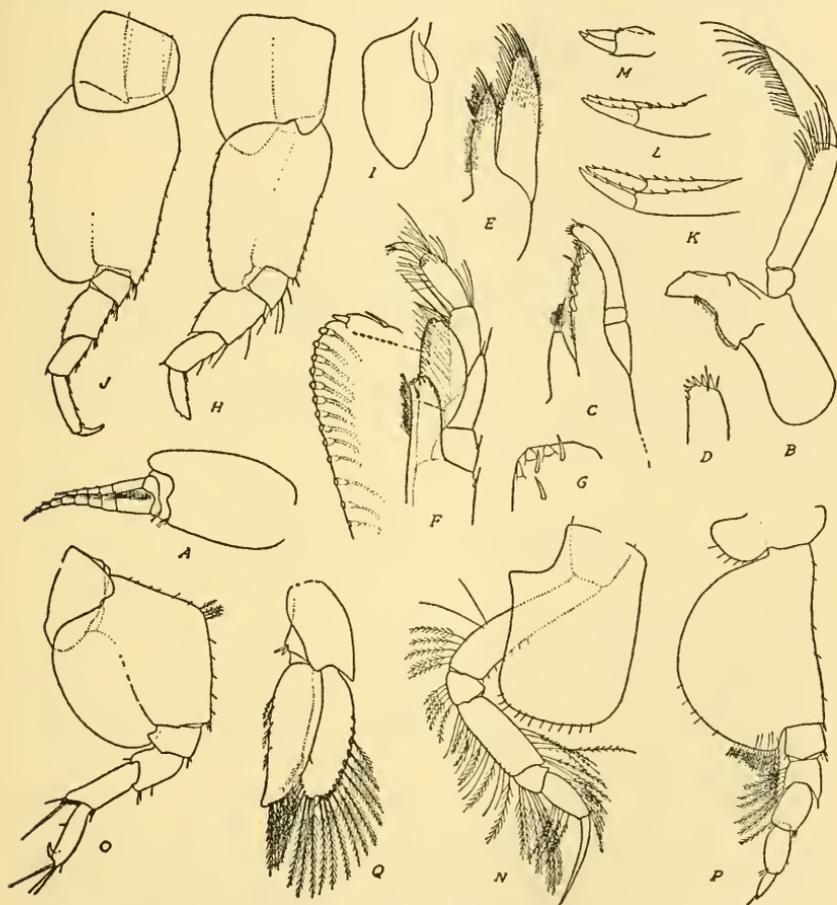


FIG. 2.—a-m, *Paronesimus barentsi* Stebbing. Female: a, right antenna I, inside view; b, right mandible, inside view; c, maxilla 1; d, end of palp, maxilla 1; e, maxilla 2; f, right maxilliped; g, end of inner plate, right maxilliped; h, peraeopod 4; i, gill of peraeopod 4; j, peraeopod 5; k, uropod 1; l, uropod 2; m, uropod 3. n-q, *Ampelisca birulai* Brügger. Female: n, peraeopod 2; o, peraeopod 3; p, peraeopod 4; q, uropod 3.

#### TRYPHOSA TRIANGULA Stephensen

*Tryphosa triangula* STEPHENSEN, 1925, p. 104, fig. 24; 1940b, p. 13.—GURJANOVA, 1936b, p. 246.

*Material collected*.—Taken from fish trap off Point Barrow base, in 33 feet, 0.75 mile out, January 27, 1950, 1 specimen ♀.

*Tryphosa triangula* was described from 4 males measuring 7 mm., taken southwest of Iceland ( $63^{\circ} 15' N.$ ,  $22^{\circ} 23' W.$ , 216 to 326 m.). Gurjanova, in 1936, recorded 8 specimens from the Kara Sea. The present specimen from Point Barrow, a female, measuring about 10 mm., makes the third record of the occurrence of this species.

#### TRYPHOSA GROENLANDICA Schellenberg

*Tryphosa groenlandica* SCHELLENBERG, 1935, p. 20.—STEPHENSEN, 1944b, p. 33, fig. 1.

*Material collected*.—Taken in 37 feet, March 10, 1950, 2 specimens (caught in screen trap through hole in ice).

This species was described by A. Schellenberg from East Greenland in 1935, and Stephensen recorded it from East Greenland in 1944. The two specimens taken at Point Barrow agree in all details with the original description, and show plainly the unusually long peduncle of the second uropod, as figured by Stephensen. The present record is the first for the occurrence of this species outside of East Greenland. *Tryphosa groenlandica* reaches a length of 10 mm., and it has been taken down to 12 m.

#### Family STEGOCEPHALIDAE

##### STEGOCEPHALOPSIS AMPULLA (Phipps)

*Stegocephalus ampulla* MURDOCH, 1885b, p. 145.—BRÜGGEN, 1909, p. 14, pl. 1, fig. 1; pl. 3, figs. 11-19.

*Phippsia ampulla* STEBBING, 1906, p. 89.

*Stegocephalopsis ampulla* SCHELLENBERG, 1924, p. 200.—STEPHENSEN, 1935, p. 112, fig. 18; 1944b, p. 39.

*Material collected*.—Taken in 125 feet, 4 to 5 miles out, September 9, 1948, 1 specimen.

A large species, probably circumpolar. It was recorded by Murdoch from Point Barrow in 1885, from specimens taken by the Point Barrow Expedition of 1881-1883. In the U. S. National Museum there are specimens from Hare Island, West Greenland; Indian Point, Bering Strait; and a specimen, measuring 56 mm., taken by the steamer *Albatross* at station 5018 in Okhotsk Sea. It has been taken between 165 and 672 m.

##### STEGOCEPHALUS INFLATUS Kröyer

*Stegocephalus inflatus* SARS, 1891, p. 198, pl. 69.—STEBBING, 1906, p. 91.—SHOEMAKER, 1920, p. 9; 1930b, p. 244.—STEPHENSEN, 1925, p. 129; 1944b, p. 39.—GURJANOVA, 1935a, p. 72.

*Material collected*.—Taken in 130 feet, 4 miles out, August 9,

1949, 1 specimen; and in 138 feet, 3.5 miles out, August 1, 1950, 1 specimen. At Point Barrow base, summer 1951, 3 specimens, and June 4-5, 1951, 5 specimens.

This is a rather common Arctic and North Atlantic species. In the U. S. National Museum there are specimens from the east coast of America from Frobisher Bay, Baffin Land, to Marthas Vineyard; and on the west coast from Alaska. It has been recorded from Plover Bay, East Siberia; Bering Sea; off Cape Clonard, Korea; Sakhalin Island; and Sado Island, Sea of Japan. Large specimens reach a length of 47 mm. It has been taken down to 640 m.

### Family AMPELISCIDAE

#### AMPELISCA MACROCEPHALA Lilljeborg

*Ampelisca macrocephala* Sars, 1890, p. 172, pl. 60, fig. 1.—Stebbing, 1906, p. 101.—Stephensen, 1935, p. 123; 1944b, p. 48.

*Material collected*.—In 162 feet, 3.2 miles out, February 18, 1950, 1 specimen.

Dr. Stephensen says that this is a widely distributed circumpolar species, and occurs in the Atlantic at Jamaica Bay, Long Island, N. Y.; southern Greenland; northern Iceland; and the Danish waters.

In the U. S. National Museum there are specimens of this species from the Bay of Fundy and Delaware on the east coast of America, and off San Diego, Calif., on the west coast. K. H. Barnard (1932, p. 82) has recorded specimens from South Georgia which he says are extraordinarily close to *macrocephala* Lillj., and which he has identified as that species. Dr. A. Schellenberg has described two forms of *A. macrocephala* from the South Pacific (1931, pp. 52 and 53).

The present specimen from Point Barrow is a male measuring 26 mm. This species has been recorded between 350 and 400 m.

#### AMPELISCA ESCHRICHTII Krøyer

*Ampelisca eschrichtii* Sars, 1891, p. 174, pl. 61, fig. 1.—Stebbing, 1906, pp. 100, 721.—Stephensen, 1935, p. 121; 1944b, p. 47.

*Material collected*.—In 100 feet, August 21, 1948, 1 specimen. Washed ashore at Point Barrow base, October 16, 1949, 1 specimen. Taken under ice along shore  $\frac{1}{4}$  mile south of base, November 20, 1949, 1 specimen.

Dr. Stephensen says that this is a widely distributed circumpolar species; also in the Atlantic with adjacent waters north of a line from northern United States, southern Greenland, southern Iceland and Faroe Channel to West Norway; and two hauls south and east of Ireland.

In the U. S. National Museum there are specimens from Big Diomed Island; Punuk Island, Bering Sea; and Parlof Bay, Alaska. Dr. Charles Chilton (1917, p. 75) says that *A. eschrichtii* is widely distributed in Antarctic seas. He believed that *A. macrocephala* Lilljeborg should be united with this species. *A. eschrichtii* reaches a length of 34 mm., and has been taken as low as 400 m.

#### AMPELISCA BIRULAI Brüggén

Figures 2, n-q, 3, a-c

*Ampelisca birulai* BRÜGGÉN, 1909, p. 17, pl. 1, fig. 5, pl. 3, figs. 1-10.

*Ampelisca derjugini* BULYCHEVA, 1936, p. 244, figs. 4-6.

*Material collected.*—In 80 feet, September 9, 1948, 1 specimen. In 216 feet, 4.3 miles out, October 6, 1949, 1 specimen. In 175 feet, 4 miles out, October 14, 1949, 2 specimens. In 162 feet, 3.2 miles out, February 18, 1950, 2 specimens. In 118 feet, 2.75 miles out, August 1, 1950, 1 specimen. Dredged at 6 to 50 m., July 29, 1951, 1 specimen.

This is the third record of the occurrence of this species, which was described by Ernst von der Brüggén (77° 20' 30" N., 138° 47' E.) from 80 m. in the Arctic Ocean. The present records extend the range about 67° eastward. Eight specimens were taken off Point Barrow, the largest of which, a female, measures about 10 mm.

*Ampelisca derjugini*, measuring 16 to 18 mm., described by A. Bulycheva from the northern part of the Sea of Japan, appears to be a synonym of *A. birulai* Brüggén.

#### HAPLOOPS TUBICOLA Lilljeborg

*Haploops tubicola* SARS, 1891, p. 192, pl. 67.—STEBBING, 1906, p. 117.—STEPHENSEN, 1925, p. 150; 1933, p. 25; 1935, p. 135; 1944b, p. 49.

*Material collected.*—On the beach at Point Barrow base, September 24, 1950, 1 specimen. On the beach at Point Barrow base, September 28, 1950, 3 specimens.

Dr. Stephensen says that this is a circumpolar, boreoarctic species. It dips down into the Atlantic to the Bay of Fundy and West Morocco. In the Pacific it has been recorded from Japan by Derjavin (1930, p. 327). The largest specimen in the present collection, a male, measures 19 mm. It has been taken off East Greenland between 400 and 600 m.

#### HAPLOOPS LAEVIS Hoek

*Haploops laevis* HOEK, 1882, p. 61, pl. 3, fig. 31.—STEBBING, 1906, p. 117.—STEPHENSEN, 1935, p. 137, fig. 19.—GURJANOVA, 1935a, p. 73.

*Material collected.*—In 741 feet, 12.1 miles out, August 17, 1949,

2 specimens. In 477 feet, 16 miles out, September 6, 1949, 1 specimen. In 246 feet, 7 miles out, September 8, 1949, 1 specimen. In 213 feet, 4 miles out, October 6, 1949, 7 specimens. In 453 feet, 8 miles out, October 11, 1949, 1 specimen. In 175 feet, 4 miles out, October 14,

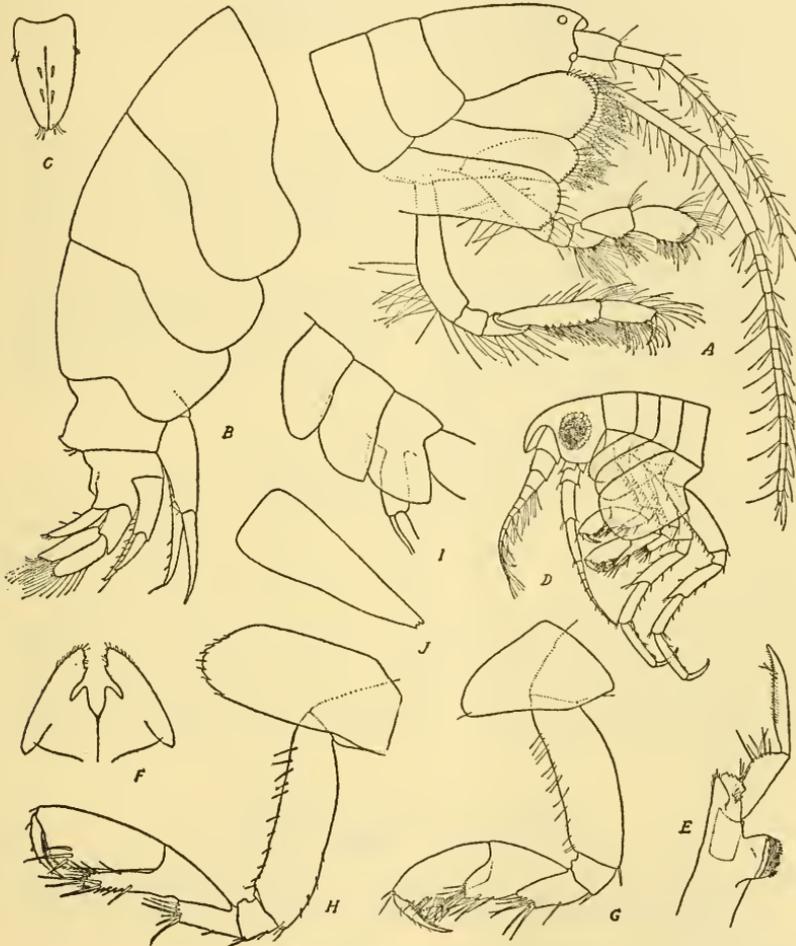


FIG. 3.—*a-c*, *Ampelisca birulai* Bruggen. Female: *a*, front of animal; *b*, hind end of animal; *c*, telson, *d-j*, *Gitanopsis arctica* Sars. Male: *d*, front end of animal; *e*, mandible, showing side view of palp; *f*, lower lip; *g*, gnathopod 1; *h*, gnathopod 2; *i*, metasome; *j*, telson.

1949, 5 specimens. In 152 feet, 3.5 miles out, October 14, 1949, 5 specimens. In 129 feet, 2.5 miles out, February 13, 1950, 1 specimen. In 162 feet, 3.2 miles out, February 18, 1950, 12 specimens. Dredged in 45 m., July 24, 1951, 1 specimen. Dredged at 6 to 50 m., July 29, 1951, 3 specimens.

*Haploops laevis* is widely distributed in the Arctic and is probably circumpolar. The present records are the first for Alaska. It reaches a length of 19 mm. and has been taken between 360 and 380 m.

#### BYBLIS GAIMARDII (Kröyer)

*Byblis gaimardi* SARS, 1891, p. 183, pl. 64.—STEPHENSEN, 1935, p. 132; 1944b, p. 48.

*Byblis gaimardii* STEBBING, 1906, p. 113.

*Material collected.*—In 150 feet, August 23, 1948, 1 specimen. In 80 feet, September 9, 1948, 22 specimens. In 420 feet, August 9, 1949, 1 specimen. In 217 feet, 7.5 miles out, September 6, 1949, 1 specimen. In 246 feet, 7 miles out, September 8, 1949, 5 specimens. In 213 feet, 4 miles out, October 6, 1949, 14 specimens. In 216 feet, 4.3 miles out, October 6, 1949, 2 specimens. In 162 feet, 3.2 miles out, February 18, 1950, 1 specimen. In 1,170 feet, April 11, 1950, 1 specimen. Off Point Barrow, July 27, 1950, 12 specimens. In 138 feet, 3.5 miles out, August 1, 1950, 40 specimens. Dredged in 6 to 5 m., July 29, 1951, about 100 specimens.

Dr. Stephensen says that this species is widely distributed in the northern Atlantic north of a line from the Bay of Fundy and West Greenland about 64° N. to South Iceland and British and Danish waters. It is probably circumpolar. S. J. Holmes recorded it from Monterey Bay, Calif. E. Gurjanova recorded it from the Sea of Japan in 1938. There are specimens in the U. S. National Museum from Vineyard Sound off Marthas Vineyard. The present records are the first for Alaska. This species reaches a length of 23 mm. The lowest recorded depth appears to be 475 to 575 m. (Norman, 1895, p. 484).

#### Family HAUSTORIIDAE

##### PONTOPOREIA FEMORATA Kröyer

*Pontoporeia femorata* SARS, 1891, p. 123, pl. 41, fig. 1, ♀.—STEBBING, 1906, p. 128.—STEPHENSEN, 1925, p. 157; 1938, p. 144; 1944b, p. 50.—SEGERSTRÅLE, 1937, p. 168.

*Pontoporeia sinuata* EKMAN, 1913, p. 3, figs. 1-8, ♂.

*Pontoporeia ekmani* BULYCHEVA, 1936, p. 246, figs. 7-11, ♀.

*Material collected.*—In 741 feet, 12.1 miles out, August 17, 1949, 18 specimens. In 477 feet, 16 miles out, September 6, 1949, 2 specimens. Washed ashore September 19, 1950, 2 specimens; September 26, 1949, 29 specimens; and September 24, 1950, 61 specimens.

*Pontoporeia femorata* is a circumpolar species which dips down into the cold waters of the North Atlantic and North Pacific. In the

U. S. National Museum there are specimens from *Albatross* Station 2497 (45° 04' N., 59° 36' W.); Casco Bay, Maine; and Salem, Mass.

Sven G. Segerstråle (1937, pp. 1-183) has given a revision of *Pontoporeia* and has concluded that *P. sinuata* Ekman is the male of *P. femorata* Kröyer. *Pontoporeia ekmani* Bulycheva (1936, p. 246), described from the Sea of Japan, appears to be a synonym of *P. femorata*. His figures 7-11 show the characters of the female of *P. femorata*, some of the specific characters of which are quite variable. Bulycheva's description and figures of the dorsal protuberance of the first urosome segment agree with those given by Ekman for *P. sinuata*, which Segerstråle believes is a synonym of *P. femorata*.

Both male and female specimens were taken in 471 feet of water off Point Barrow. The characters of the male agree well with those given by Ekman for *P. sinuata*. *Pontoporeia femorata* reaches a length of 17 mm., and occurs as low as 188 m.

#### Family AMPHILOCHIDAE

##### GITANOPSIS ARCTICA Sars

Figures 3, *d-j*, 4, *a-j*

*Gitanopsis arctica* Sars, 1892, p. 227, pl. 77, fig. 2.—Stebbing, 1906, p. 155.—Stephensen, 1938, p. 161; 1940b, p. 28.

*Material collected*.—In 125 feet, 4 to 5 miles out, September 9, 1948, 1 specimen. In 216 feet, 4 $\frac{1}{3}$  miles out, October 6, 1949, 1 specimen. In 175 feet, 4 miles out, October 14, 1949, 1 specimen.

*Gitanopsis arctica* has been recorded from south of Nova Zembla, North Norway, Iceland, and South Greenland. In the United States National Museum there are specimens from Northumberland Island, Murchison Sound, North Greenland; and the Bay of Fundy. The present records from Alaska extend the range of this species considerably westward. This is a small species reaching a length of 5 mm. It has been recorded from shallow water down to 90 m.

#### Family STENOTHOIDAE

In the Stenothoidae several of the characters are apparently undergoing a change. The accessory flagellum may be retained as a rudimentary 1-jointed appendage, but is usually missing. The palp of the mandible may be reduced to two joints or one, or may be entirely missing. In maxilla 1 the palp may be reduced to one joint. The second joint of the last two pereopods may be expanded, or reduced to the linear state in one or both of these appendages. In

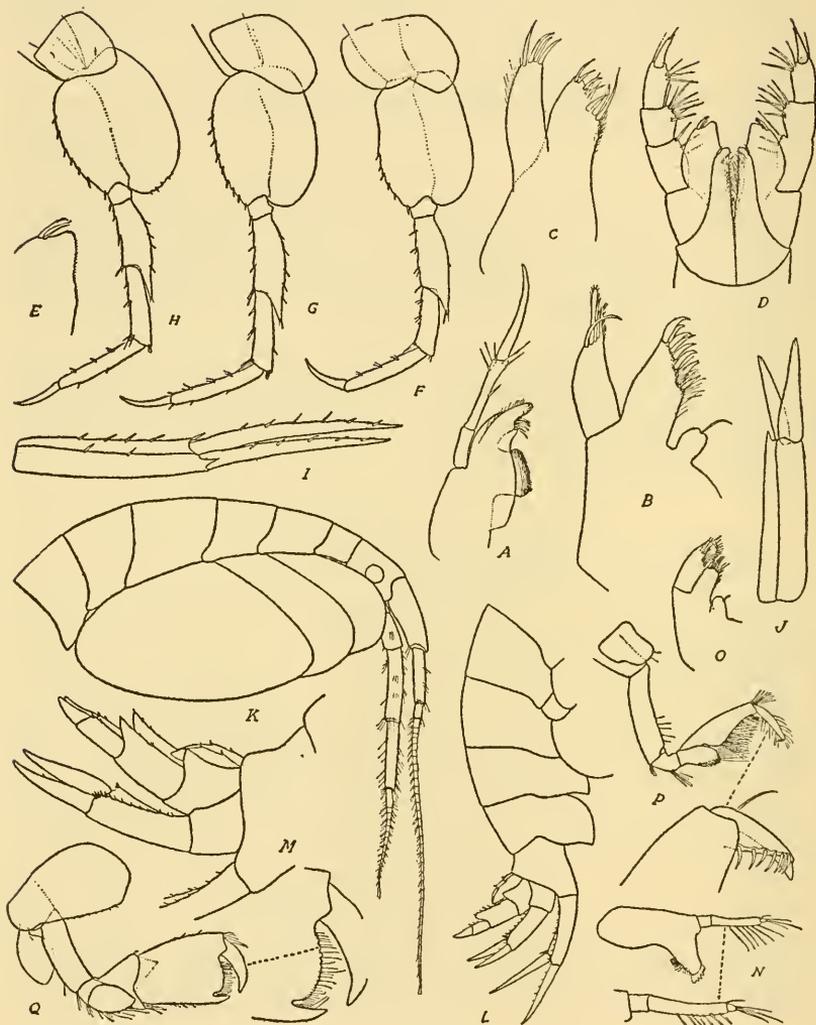


FIG. 4.—*a-j*, *Gitanopsis arctica* Sars. Male: *a*, mandible, giving side view of palp; *b*, maxilla 1; *c*, maxilla 2; *d*, maxillipeds; *e*, end of inner plate of maxilliped, greatly enlarged; *f*, peraeopod 3; *g*, peraeopod 4; *h*, peraeopod 5; *i*, uropod 1; *j*, uropod 3. *k-q*, *Metopa clypeata* (Kröyer). Male: *k*, front end of animal; *l*, hind end of animal; *m*, uropods 2 and 3 and telson of another male; *n*, mandible; *o*, maxilla 1; *p*, gnathopod 1; *q*, gnathopod 2.

the third uropod one of the rami has been lost. The first coxal plate has been lost. The fourth coxal plate in most cases is moderately expanded, but may become so greatly expanded that all of the body appendages are covered when the animal is flexed.

Eupraxie Gurjanova (1938, p. 261) constructed a key to the genera of the Stenothoidae based upon the variation in these appendages. The present key is based upon that of Gurjanova with the characters arranged in a somewhat different order.

### KEY TO THE GENERA OF THE STENOTHOIDAE

- A. Peraeopods 4 and 5, second joint linear.
1. Maxilla 1, palp 1-jointed.
    - Mandibular palp absent.....*Parametopella* Gurjanova 1938
    - Mandibular palp 1-jointed.....*Metopelloides* Gurjanova 1938
    - Mandibular palp 2- or 3-jointed.....*Metopella* Sars 1892
  2. Maxilla 1, palp 2-jointed.
    - Mandibular palp 3-jointed.....*Probolisca* Gurjanova 1938
- B. Peraeopod 4, second joint linear; peraeopod 5, second joint expanded.
1. Maxilla 1, palp 1-jointed.
    - Mandibular palp 1-jointed or absent  
*Mesostenothoides* Gurjanova 1938
    - Mandibular palp 2- or 3-jointed.....*Mesometopa* Gurjanova 1938
  2. Maxilla 1, palp 2-jointed.
    - Mandibular palp 3-jointed.....*Mesoproboloides* Gurjanova 1938
- C. Peraeopods 4 and 5, second joint expanded.
1. Maxilla 1, palp 1-jointed.
    - Mandibular palp absent.....*Parametopa* Chevreux 1901
    - Mandibular palp 1-jointed.....*Stenothoides* Chevreux 1900
    - Mandibular palp 2- or 3-jointed.
      - Without accessory flagellum.....*Metopa* Boeck 1871
      - With rudimentary 1-jointed flagellum *Prometopa* Schellenberg 1926
  2. Maxilla 1, palp 2-jointed.
    - Mandibular palp absent.
      - Without accessory flagellum.....*Stenothoe* Dana 1852
      - With rudimentary 1-jointed accessory flagellum  
*Microstenothoe* Pirlot 1933
    - Mandibular palp 1-jointed.....*Prostenothoe* Gurjanova 1938
    - Mandibular palp 2- or 3-jointed.
      - Without accessory flagellum.....*Proboloides* Della Valle 1893
      - With rudimentary 1-jointed accessory flagellum  
*Metopoides* Della Valle 1893

### METOPA CLYPEATA (Kröyer)

Figures 4, *k-q*, 5, *a-f*

- Leucothoe clypeata* KRÖYER, 1842, p. 157; 1845, p. 545, pl. 6, fig. 2a-f.  
*Metopa clypeata* BOECK, 1871, p. 140.—HANSEN, 1887a, p. 90, pl. 3, figs. 3-3b.—  
 STEBBING, 1906, p. 175.—STEPHENSON, 1913, p. 137; 1931, p. 183; 1933, p. 26;  
 1944b, p. 57.—SHOEMAKER, 1930b, p. 263.

*Material collected.*—Eluitkak Pass, Elson Lagoon, August 10, 1948, 15 specimens. In 125 feet, 4-5 miles out, September 9, 1948, 1 specimen. In 120 feet, 3 miles out, August 8, 1949, 4 specimens. In 184 feet, 5 miles out, August 30, 1949, 5 specimens. In 217 feet, 7.5 miles out, September 6, 1949, 5 specimens. In 477 feet, 16 miles out,

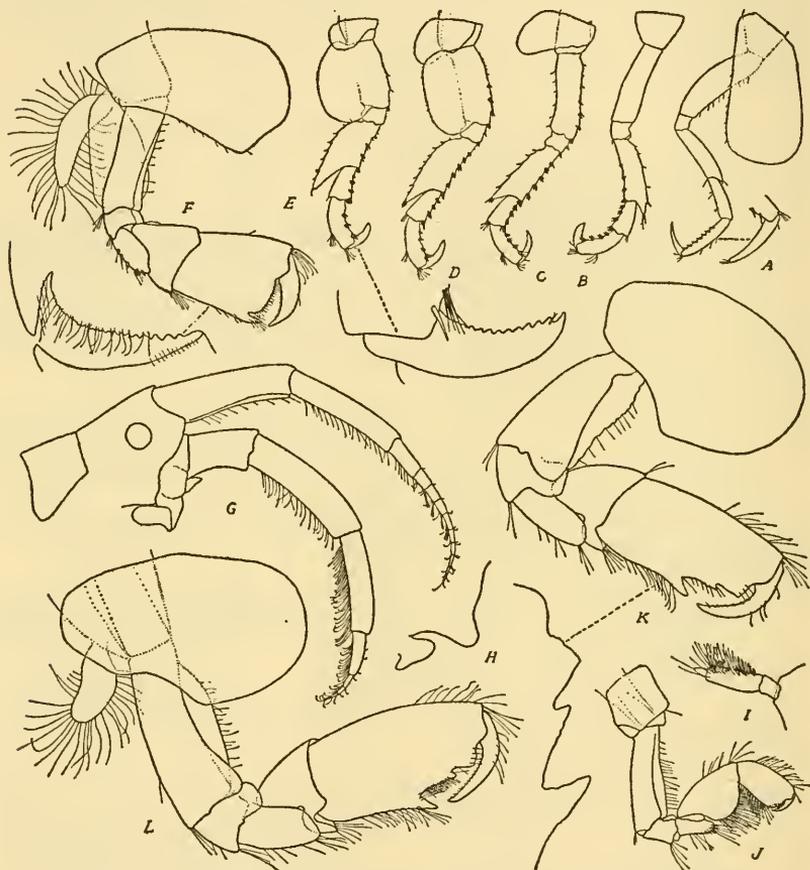


FIG. 5.—*a-f*, *Metopa clypeata* (Kröyer). Male: *a*, peraeopod 1; *b*, peraeopod 2; *c*, peraeopod 3; *d*, peraeopod 4; *e*, peraeopod 5. Female: *f*, gnathopod 2. *g-l*, *Metopa glacialis* (Kröyer). Male: *g*, front end of animal; *h*, upper lip and epistome; *i*, palp of mandible; *j*, gnathopod 1; *k*, gnathopod 2. Female: *l*, gnathopod 2.

September 6, 1949, 1 specimen. In 213 feet, 4 miles out, October 6, 1949, 4 specimens. In 216 feet, 4.3 miles out, October 6, 1949, 1 specimen. In 453 feet, 8 miles out, October 11, 1949, 3 specimens. In 152 feet, 3.5 miles out, October 14, 1949, 2 specimens. In 175 feet, 4 miles out, October 14, 1949, 9 specimens.

*Male*.—Figures of some of the appendages have been given here which will help in the identification of this species. The lateral lobes of the head are broadly rounding and the eye is of medium size and light in color in alcohol. Antenna 1 longer than antenna 2, both rather slender. Maxilla 1 with a 1-jointed palp. Mandible with a 3-jointed palp. Gnathopod 1 slender and much like that of *Metopa spitzbergensis* Brügger. Gnathopod 2 strongly developed, the fourth joint with several groups of short spines on the lower margin; sixth joint widening distally, palm transverse with a deep indentation adjacent to the strong defining tooth; seventh joint strong and curved. Peraeopod 1 slender. Peraeopod 2 stouter than 1; seventh joint with a row of blunt teeth on inner margin. Peraeopods 4 and 5 with second joint greatly expanded. Peraeopod 4 with fourth joint much longer than wide. Peraeopod 5 with fourth joint considerably expanded but proportionally shorter than that of peraeopod 4. Uropod 3 with peduncle distally produced. Telson with 2 small spines on either lateral margin. *M. clypeata* is a large species measuring 14 mm.

*Female*.—The female is very much like the male. Gnathopod 2 is not quite so strongly built and the characters are not so pronounced, but it closely resembles that of the male. The largest females are as large as the fully developed males.

*Metopa clypeata* has been recorded from East and West Greenland and the Gulf of St. Lawrence, and has been taken as low as 300 m. The present records are the first for Alaska.

#### METOPA GLACIALIS (Kröyer)

Figures 5, *g-l*, 6, *a-d*

*Leucothoe glacialis* KRÖYER, 1842, p. 159; 1846b, pl. 22, fig. 3a-p.

*Stenothoe clypeata* STIMPSON, 1854, p. 51.

*Metopa glacialis* HANSEN, 1887a, p. 93, pl. 3, figs. 6, 6a.—STEPHENSON, 1913, p. 139.

*Proboloides glacialis* STEBBING, 1906, p. 189.—STEPHENSON, 1931, p. 194; 1938, p. 178, fig. 21.

*Metopa cariana* GURJANOVA, 1929a, p. 313, fig. 5.—SCHELLENBERG, 1935, p. 23.—STEPHENSON, 1944b, p. 56.

*Material collected*.—In 477 feet, 16 miles out, September 6, 1949, 4 specimens.

*Metopa glacialis* (Kröyer), *Stenothoe clypeata* Stimpson, and *Metopa cariana* Gurjanova appear to be one and the same species. They are alike in form, occur at about the same depths, are of the same length, and inhabit the cold waters of the North Atlantic and Arctic Oceans. Schellenberg states that in *glacialis* the first maxilla

has a 2-jointed palp, which would place it in the genus *Proboloides*. Specimens of *clypeata* from the Bay of Fundy and *glacialis* from Point Barrow and Nunivak Island, Alaska, have been dissected and all have been found to have a 1-jointed palp to the first maxilla. The

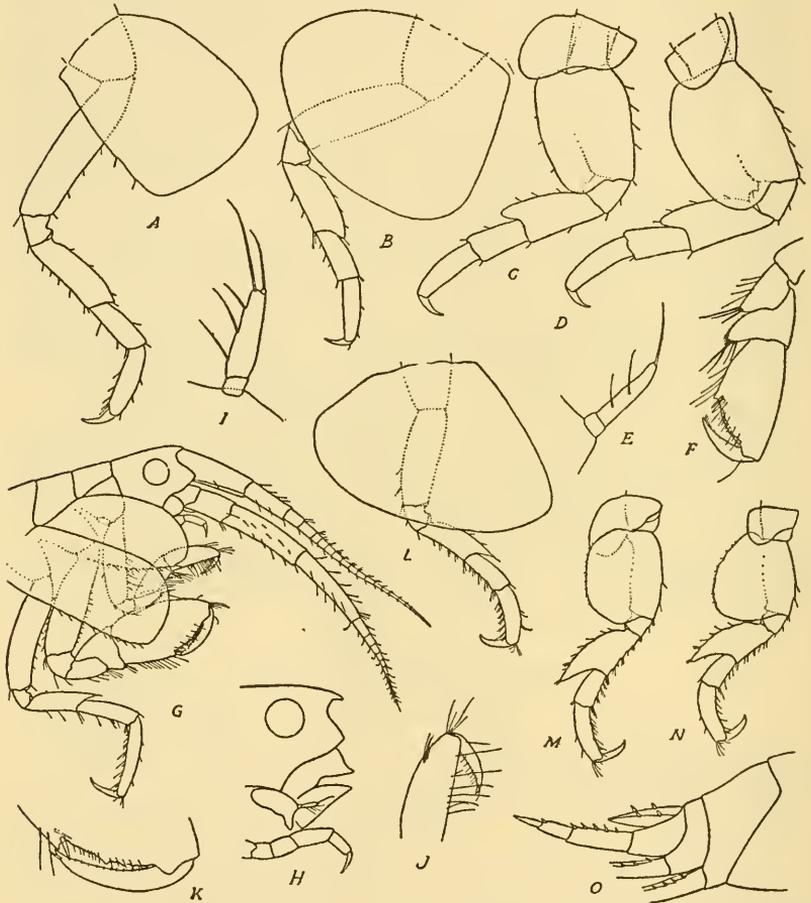


FIG. 6.—*a-d*, *Metopa glacialis* (Kröyer). Male: *a*, peraeopod 1; *b*, peraeopod 2; *c*, peraeopod 4; *d*, peraeopod 5. *e-f*, *Metopa brusclii* (Goës). Female: *e*, palp of mandible; *f*, gnathopod 1. *g-o*, *Metopa spinicoxa*, new species. Male: *g*, front part of animal; *h*, head, showing upper lip and epistome; *i*, palp of mandible; *j*, end of gnathopod 1; *k*, palm and seventh joint, gnathopod 2; *l*, peraeopod 2; *m*, peraeopod 4; *n*, peraeopod 5; *o*, hind end of animal.

specimen of *Metopa cariana*, which Stephensen received from Gurjanova, was dissected and found to have a 1-jointed palp. In view of the extreme similarity of these three species, it seems possible that the number of joints in the palp of the first maxilla may be a variable

character, and that this palp is being reduced to a 1-jointed appendage. The mandible of *Metopa glacialis* has a 3-jointed palp, as shown in figure 5, *i*.

The specimens here figured measure about 7.5 mm. and were taken at Dodge Harbor, Nunivak Island, Alaska, by Woodbridge Williams. These specimens agree in every particular with specimens taken at Point Barrow, and all have a 1-jointed palp to the first maxilla. Specimens of *Stenothoe clypeata* Stimpson taken in the Bay of Fundy near Grand Manan agree with the specimens of *glacialis* taken at Point Barrow. In the Alaskan specimens the telson appears to be a little longer, reaching just beyond the end of the peduncle of uropod 3.

*Metopa glacialis* (Kröyer) has been recorded from Spitzbergen, White Sea, Iceland, and West Greenland.

*Metopa clypeata* (Stimpson) has been recorded from the Bay of Fundy.

*Metopa cariana* Gurjanova has been recorded from Nova Zembla and East Greenland.

The animals described under these three names appear to represent one and the same species and are being placed under the oldest name, *Metopa glacialis* (Kröyer). *Metopa clypeata* (Kröyer) is a distinct species and not at all like *Stenothoe clypeata* Stimpson. Stebbing (1906, *Das Tierreich*, p. 725) makes *Stenothoe clypeata* Stimpson a synonym of *Metopa groenlandica* (Hansen), but this is not correct, as the two species, though related, are distinct.

Stephensen and Thorson (1936, pp. 1-7) record *M. groenlandica* as being commensal in the mantle cavity of the lamellibranch, *Pandora glacialis* Leach, found on the east coast of Greenland. Ten specimens of *Metopa glacialis* have been found in the mantle cavity of a lamellibranch, *Mediolaria discors* Linn., dredged in about 3 fathoms in the St. Croix River, New Brunswick, near the Atlantic Biological Station.

There are in the United States National Museum specimens of *M. glacialis* taken at Dodge Harbor, Nunivak Island, Alaska, by Woodbridge Williams in the summer of 1937, and 5 specimens taken by Dr. Waldo L. Schmitt, October 8, 1940, between Inner Iliasik and Goloï Island, Alaska, while on the Alaska king crab investigation. The present records are the first for *Metopa glacialis* in Alaska. This species reaches a length of 7 to 8 mm., and has been recorded as low as 275 m.

**METOPA BRUZELII** (Goës)Figure 6, *e-f**Montagua bruzelii* GOËS, 1866, p. 522, pl. 38, fig. 10.*Metopa bruzelii* SARS, 1892, p. 261, pl. 92, fig. 1.—STEPHENSEN, 1931, p. 181; 1938, p. 169; 1944b, p. 56.*Probolooides bruzelii* STEBBING, 1906, p. 188.—SHOEMAKER, 1930b, p. 270.

*Material collected*.—In 80 to 125 feet, September 8 to 15, 1948, 4 specimens. In 453 feet, 8 miles out, October 11, 1949, 11 specimens. In 175 feet, 4 miles out, October 14, 1949, 1 specimen.

*Metopa bruzelii* has been recorded from Spitzbergen, North Norway, Kattogat, Isle of Man, North Wales, Firth of Forth, Iceland, East and West Greenland, and Gulf of St. Lawrence. The present records are the first for Alaska. This is a small species measuring about 4 mm., and has been taken from 10 to 200 m.

As Stephensen has noted (1931, p. 182) the first maxilla of this species has a 1-jointed palp. The specimens from Point Barrow also have a 1-jointed palp and the mandible has a 2-jointed palp, which correctly place the species in the genus *Metopa*.

**METOPA LONGICORNIS** Boeck*Metopa longicornis* BOECK, 1871, p. 143.—SARS, 1892, p. 258, pl. 90, fig. 2; 1900, p. 33.—STEBBING, 1906, p. 179.—STEPHENSEN, 1931, p. 188; 1938, p. 174.

*Material collected*.—In 60 feet, September 8, 1948, 1 specimen. In 100 to 130 feet, 4 to 5 miles out, September 9 to 15, 1948, 6 specimens. In 216 feet, 4.3 miles out, October 6, 1949, 1 specimen. In 295 feet, 5 miles out, October 6, 1949, 1 specimen. In 175 feet, 4 miles out, October 14, 1949, 25 specimens.

*Metopa longicornis* has been recorded from North Norway and West Greenland. It is a small species measuring about 4 mm. The present records are the first for Alaska. It has been taken off West Greenland between 10 and 130 m.

**METOPA SPINICOXA**, new speciesFigure 6, *g-o*

*Material collected*.—In 60 to 125 feet, September 8 to 15, 1948, 21 specimens. In 184 feet, 5 miles out, August 30, 1949, 1 specimen. In 175 feet, October 14, 1949, 30 specimens.

*Male*.—Head equal in length to the first two body segments combined; lateral lobes angular, but not sharply so; eye rather large and very light-colored in alcohol. Antennae somewhat stout. Antenna 1

shorter than antenna 2; peduncular joints decreasing consecutively in length and thickness; flagellum a little longer than the peduncle and composed of about seventeen joints. Antenna 2, third joint one-half the length of the fourth, which is equal in length to the fifth; flagellum short, a little longer than the fifth joint and composed of 11 joints.

Epistome prominent, projected forward and cleft in the center by a deep sinus (fig. 6, *h*). Mandible with 3-jointed palp. Maxilla 1 normal, inner lobe with 1 seta, palp 1-jointed. Maxilla 2 normal. Maxilliped normal. Gnathopod 1 slender; fifth and sixth joints subequal in length; sixth joint with hind margin straight and without palm; seventh joint with a row of setae on inner margin. Gnathopod 2 moderately developed; sixth joint a little wider than the fifth and a little shorter than the second, front and hind margins slightly convex, and widest in the middle; palm oblique, a little shorter than hind margin of joint, convex, bearing low wavy teeth, the central one of which is the largest, defined by an angular process adjacent to which is a shallow sinus bearing a spine; seventh joint fitting palm and bearing a row of spinules on inner margin.

Peraeopods 1 and 2 slender, much alike, 1 the longer. Peraeopod 3 slender and a little longer than peraeopod 4. Peraeopod 4 a little longer than 5, second joint broadly expanded, fourth joint considerably expanded with the hind corner dipping down almost to the end of the fifth joint, fifth joint shorter than the sixth, seventh joint strong and over half the length of the sixth. Peraeopod 5 very much like peraeopod 4.

Uropod 1 reaching a little farther back than 2 and uropod 2 a little farther than 3. Uropod 3, peduncle about equal in length to the ramus and armed on upper margin with a row of spines. Telson narrowly oval in outline, armed on either margin with two spines, and reaching about to the middle of the peduncle of uropod 3. Coxal plates 2 and 3 rather narrow, much deeper than their body segments, and bearing a row of short spines on their hind margin. Length of male about 5 mm.

*Female*.—The female is like the male, except a little smaller, and the antennae are a little shorter.

*Type*.—A male, U.S.N.M. No. 96250, taken in 175 feet of water 4 miles off Point Barrow base, Alaska, October 14, 1949, George E. MacGinitie, collector.

*Remarks*.—This new species is close to *Metopa bruzelii* (Goës) as figured by Sars (1892, pl. 92, fig. 1). *Metopa spinicoxa* is a stouter animal. The second gnathopod is more robust, with the palm armed

with low teeth, the center one of which is the largest. The palm of *bruzelii* is smooth and does not have a sinus adjacent to the defining angle.

#### METOPA TENUIMANA Sars

*Metopa tenuimana* Sars, 1892, p. 259, pl. 91, fig. 1.—STEBBING, 1906, p. 181.—STEPHENSEN, 1931, p. 189, fig. 56; 1944b, p. 58.

*Material collected.*—In 80 to 125 feet, September 8 to 15, 1948, 4 specimens. In 184 feet, 5 miles out, August 30, 1949, 1 specimen. In 175 feet, 4 miles out, October 14, 1949, 6 specimens.

*Metopa tenuimana* has been recorded from West Norway, Shetland, and East Greenland. It has not heretofore been recorded from Alaska. This is a small species, measuring about 3 mm. and it has been taken down to 40 m.

#### METOPA PROPINQUA Sars

*Metopa propinqua* Sars, 1892, p. 264, pl. 93, fig. 1.—STEBBING, 1906, p. 174.—BRÜGGEN, 1909, p. 22, pl. 3, fig. 21.—SHOEMAKER, 1930b, p. 263.—STEPHENSEN, 1938, p. 168.

*Material collected.*—In 110 to 125 feet, September 9 to 15, 1948, 1 specimen.

This species has been recorded from Barents Sea, West Norway, Firth of Forth, North Sea, and Gulf of St. Lawrence. It measures about 3 mm. and has been taken as low as 153 m. It is new to the Alaskan fauna.

#### METOPA ROBUSTA Sars

*Metopa robusta* Sars, 1892, p. 270, pl. 96, fig. 1.—STEBBING, 1906, p. 173.—STEPHENSEN, 1931, p. 180; 1938, p. 168.

*Material collected.*—In 175 feet, 4 miles out, October 14, 1949, 1 specimen. In 216 feet, 4.3 miles out, October 6, 1949, 2 specimens.

*Metopa robusta* has been recorded from North and West Norway, Denmark, Scotland, South and West Greenland. The present records are the first for Alaska. This species measures about 6 mm. and has been taken between 62 and 3,521 m.

#### METOPELLA NASUTA (Boeck)

*Metopa nasuta* BOECK, 1871, p. 144.—Sars, 1892, p. 276, pl. 98, fig. 1.—STEBBING, 1906, p. 182.

*Metopella nasuta* STEPHENSEN, 1931, p. 192; 1938, p. 176; 1940b, p. 30.

*Material collected.*—In 341 feet, 8 miles out, October 11, 1949, 1 specimen. In 741 feet, 12.1 miles out, August 17, 1949, 1 specimen.

*Metopella nasuta* has been recorded from North and West Norway, Denmark, Iceland, Scotland, Gulf of St. Lawrence, and West Greenland. The present records are the first for Alaska. This species measures from 3 to 4 mm., and it has been taken between 10 and 250 m.

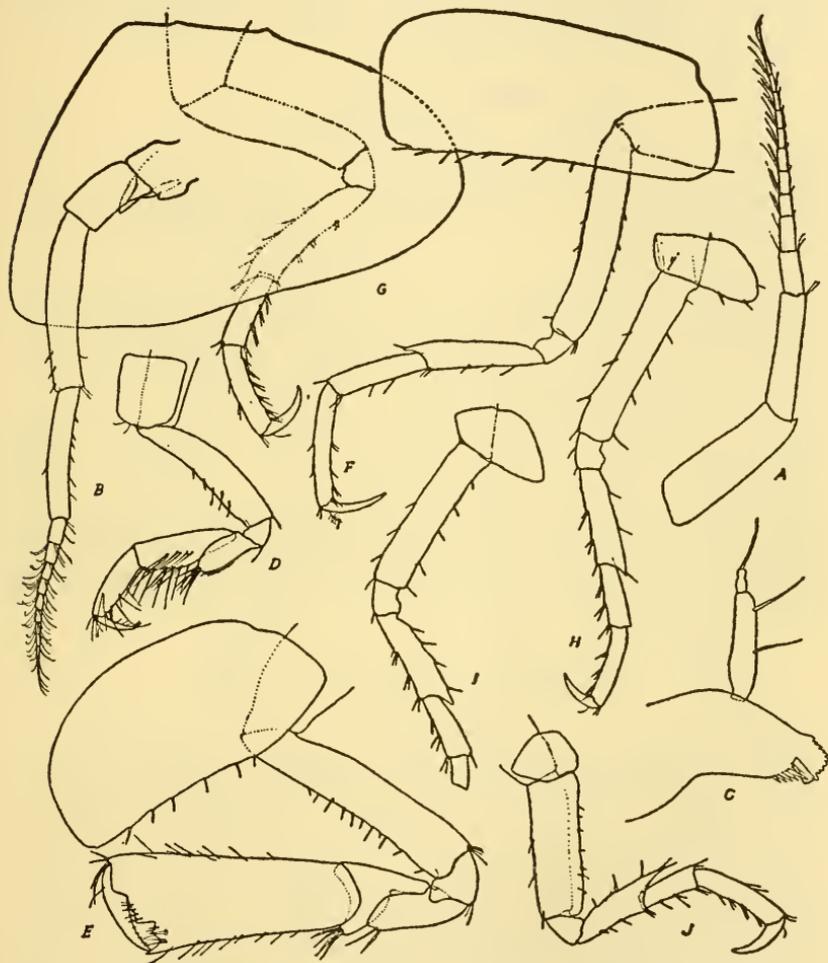


FIG. 7.—*Metopella longimana* (Boeck). Male: *a*, antenna 1; *b*, antenna 2; *c*, mandible; *d*, gnathopod 1; *e*, gnathopod 2; *f*, peraeopod 1; *g*, peraeopod 2; *h*, peraeopod 3; *i*, peraeopod 4; *j*, peraeopod 5.

#### METOPELLA LONGIMANA (Boeck)

Figure 7, *a-j*

*Metopa longimana* BOECK, 1871, p. 144.—HANSEN, 1887a, p. 95, pl. 3, figs. 8-8b.

—SARS, 1892, p. 273, pl. 97, fig. 1.

*Metopella longimana* STEBBING, 1906, p. 185.—STEPHENSON, 1944b, p. 59.

*Material collected.*—In 100 to 341 feet, 4 to 7.5 miles out, September 1948 and August, September, and October, 1949, 40 specimens. Elson Lagoon, Eluitkak Pass, in 40 feet, August 30, 1948, 1 specimen.

*Metopella longimana* occurs in the Arctic Ocean, North Atlantic, and North Sea. It has been recorded from Norway, Denmark, East and West Greenland. The present records are the first for Alaska. It measures about 3 mm., and occurs down to about 115 m.

#### MESOMETOPA NEGLECTA (Hansen)

Figure 8, a-f

*Metopa neglecta* HANSEN, 1887a, p. 96, pl. 3, figs. 9-9b.—STEBBING, 1906, p. 184.  
*Metopella neglecta* SARS, 1892, p. 274, pl. 97, fig. 2.—STEPHENSON, 1931, p. 194; 1938, p. 177.

*Material collected.*—In 80 to 125 feet, September 8 to September 15, 1948, 4 specimens. In 175 feet, 4 miles out, October 14, 1949, 3 specimens. In 184 feet, 5 miles out, August 30, 1949, 2 specimens. In 216 feet, 4.3 miles out, October 6, 1949, 1 specimen.

This species has been transferred to *Mesometopa*, as the mouthparts agree with that genus as defined by Gurjanova. It is easily identified by the very characteristic shape of the second joint of the fifth pereopod (fig. 8, f). *Mesometopa neglecta* has been recorded from Franz Joseph-Land, West Norway, and West Greenland. The present records are the first for Alaska. This species measures about 3 mm., and it has been taken between 12 and 115 m.

#### MESOMETOPA GIBBOSA, new species

Figure 8, g-m

*Material collected.*—In 110 to 140 feet, August 21, 1948, 3 specimens. In 80 to 125 feet, September 8, 1948, 4 specimens. In 120 feet, September 15, 1948, 6 specimens. In 180 feet, 5 miles out, August 30, 1949, 1 specimen. In 130 feet, 6 miles out, September 15, 1949, 1 specimen. In 216 feet, 4½ miles out, October 6, 1949, 3 specimens. In 420 feet, 7 miles out, October 9, 1949, 1 specimen. In 6 to 50 m., July 29, 1951, 6 specimens.

*Male.*—Head with lateral lobes rather sharply angular. Eye large, red in alcohol. Antennae short and slender. Antenna 1 shorter than 2; first peduncular joint thicker and longer than the second, which is over twice as long as the third; flagellum about two-thirds as long as the peduncle and composed of 10 joints. Antenna 2, third peduncular joint expanded proximally with upper margin noticeably raised above that of the second joint; fourth joint longer than either

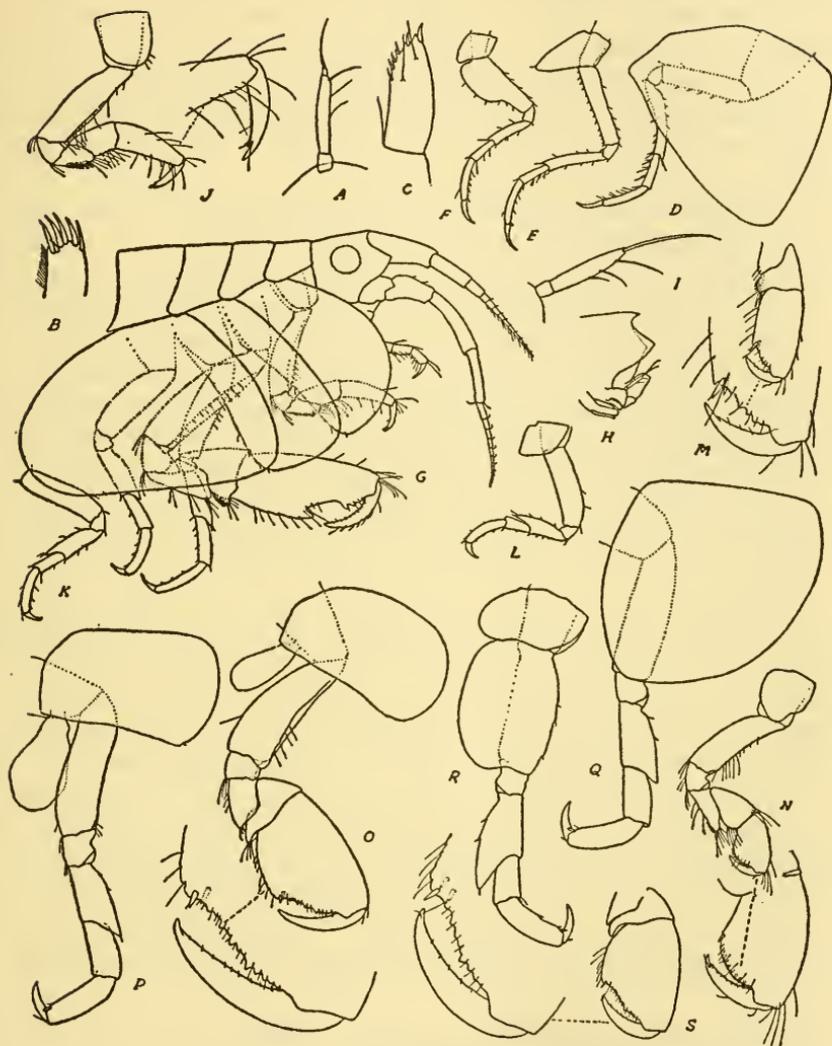


FIG. 8.—a-f, *Mesometopa neglecta* (Hansen). Female: a, palp of mandible; b, end of outer plate, maxilla 1; c, palp of maxilla 1; d, peraeopod 2; e, peraeopod 4; f, peraeopod 5. g-m, *Mesometopa gibbosa*, new species. Male: g, front end of animal; h, head, showing epistome; i, palp of mandible; j, gnathopod 1; k, peraeopod 4; l, peraeopod 5. Female: m, gnathopod 2. n-s, *Stenothoe barrowensis*, new species. Male: n, gnathopod 1; o, gnathopod 2; p, peraeopod 1; q, peraeopod 2; r, peraeopod 4. Female: s, gnathopod 2.

the third or fifth; flagellum a little longer than fourth peduncular joint, and composed of 10 or 11 joints. Epistome defined from the upper lip, projecting upward, rounding distally, and defined behind by a deep sinus. Maxilla 1, inner plate with 1 seta; outer plate with 5 long spines and 1 short one; palp 1-jointed and armed distally with spines and setae. Mandibular palp consisting of 1 short and 1 longer joint.

Gnathopod 1 slender; second joint about as long as the fifth and sixth combined; fifth joint nearly four-fifths as long as the sixth; sixth slightly curved and tapering distally; seventh joint slender, curved, and a little over half the length of the sixth joint. Gnathopod 2, second joint equal in length to the sixth; fifth joint a little over half the length of the sixth; sixth joint very little wider than the fifth, the front and hind margins slightly convex, palm equal in length to the hind margin of the joint, defined by a tooth beyond which is a long sinus followed by a prominence bearing several teeth; seventh joint curved and a little shorter than palm, bearing a row of minute setules on the inner margin and a row of short spinules on the outer margin.

Peraeopods 1 and 2 alike in form, but 1 the longer. Peraeopods 4 and 5 alike, second joint not expanded; fourth joint very little expanded and produced behind into a narrow lobe which reaches to about the middle of the fifth joint; seventh joint rather short and stout. Telson long and narrow, without lateral spines, and reaching the middle of the peduncle of uropod 3. Length of male 3 mm.

*Female*.—Much like the male except in gnathopod 2, which is not as stout as that of the male, sixth joint with palm shorter than the hind margin of the joint, defined by a slight tooth followed by a shallow sinus and then by a slight convex prominence bearing a few low teeth; seventh joint equal in length to the palm and bearing a small forward-pointing tooth distally. Length about equal to that of the male.

Type.—A male, U.S.N.M. No. 95194, dredged at 6 to 50 m., July 29, 1951, off Point Barrow, Alaska.

#### STENOTHOE BARROWENSIS, new species

Figure 8, *n-s*

*Material collected*.—In 341 feet, 6 miles out, October 11, 1949, 2 specimens.

*Male*.—Head with lateral lobes rounding. Eye medium in size and colorless in alcohol. Antennae about equal in length and about half

the length of the body. Antenna 1, first and second joints about equal in length; third joint half the length of the second; flagellum perhaps a little longer than the peduncle and consisting of about 13 joints. Antenna 2, fourth and fifth joints about equal in length; flagellum a little longer than the fifth joint and consisting of 11 joints. Maxilla 1, inner plate with 1 apical seta; outer plate with 5 long and 1 short spine tooth; palp 2-jointed, second joint bearing 7 spines on inner distal margin. Mandible without palp, but having a slender seta in its place; accessory plate with broad, very finely toothed edge like a very fine comb; spine row of about 12 slightly curved spines. Coxal plates shallow and not much deeper than their body segments; fourth coxal plate small.

Gnathopod 1, second joint not as long as the fifth and sixth combined; fourth joint as long as the fifth and produced forward beneath the fifth; fifth joint a little longer than wide and about as wide as the sixth; sixth joint a little longer than wide, and widest in the middle, palm oblique, convex, finely dentate, merging into the hind margin of joint with a scarcely perceptible angle bearing a short spine; seventh joint fitting palm and bearing fine teeth on the inner margin. Gnathopod 2 with second joint about as long as the sixth; fifth joint short and narrowly produced below between the fourth and sixth; sixth joint stout, about two-thirds as wide as long, and widest in the middle; palm oblique, armed with low teeth and defined by a blunt angle bearing a short spine on outside and one on inside; seventh joint slightly curved and about as long as palm. Peraeopods are short and rather stout. Peraeopods 4 and 5 are alike; fourth joint expanded and produced behind nearly to the end of the fifth joint. Telson is without lateral spines and reaches to about the middle of the peduncle of uropod 3. Uropod 3 bears a few small spinules. The male is a little shorter than the female.

*Female*.—The female closely resembles the male even in the second gnathopods; the antennae, however, are shorter. Length 7 mm.

*Type*.—A male, U.S.N.M. No. 95193, taken 6 miles off Point Barrow base, Alaska, in 341 feet of water, October 11, 1949, by George E. MacGinitie.

#### STENOTHOIDES ANGUSTA, new species

Figure 9, a-i

*Material collected*.—In 140 feet, August 21, 1948, 4 specimens ♀. In 110 feet, September 8, 1948, 1 specimen. In 10 to 125 feet, September 8 to 15, 1948, 1 specimen. In 120 feet, September 15, 1948,

8 specimens. In 175 feet, 4 miles out, October 14, 1949, 1 specimen. In 184 feet, 5 miles out, August 30, 1949, 1 specimen. In 216 feet, 4½ miles out, October 6, 1949, 3 specimens. Dredged at 6 to 50 m., July 29, 1951 (No. B51-23), 1 specimen.

*Female*.—Head with lateral lobes rather sharply angular. Eye large, colorless and inconspicuous in alcohol. Antennae short, about

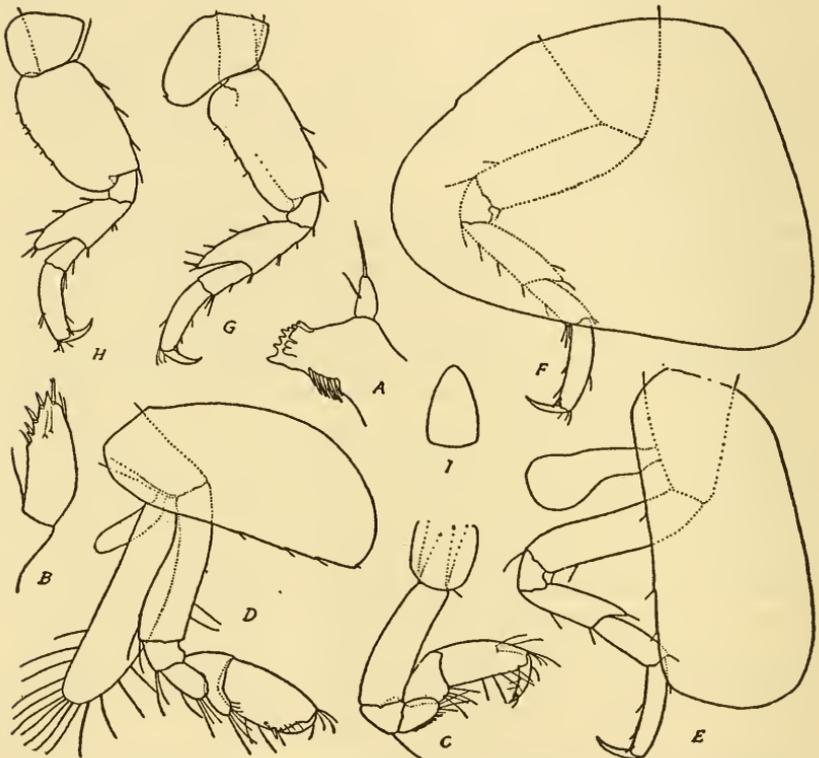


FIG. 9.—*Stenothoides angusta*, new species. Female: *a*, mandible; *b*, palp of maxilla 1; *c*, gnathopod 1; *d*, gnathopod 2; *e*, peraeopod 1; *f*, peraeopod 2; *g*, peraeopod 4; *h*, peraeopod 5; *i*, telson.

one-fourth the length of the body. Antenna 1 about two-thirds as long as antenna 2, first peduncular joint rather stout, flagellum equal in length to the peduncle. Antenna 2 slender; flagellum as long as the peduncle. Maxilla 1, inner plate with 1 seta, outer plate with 5 long spine teeth and 1 short one, palp 1-jointed, the obliquely truncate end armed with 5 spines. Mandible with spine row of 8 spines; accessory plate of right mandible divided into 3 broad teeth; palp consisting of 1 short joint. Second, third, and fourth coxal plates much deeper than their body segments.

Gnathopod 1 rather short and stout; second joint as long as the fifth and sixth combined; fifth joint about two-thirds as long as the sixth and a little wider; sixth joint about twice as long as wide and tapering distally, hind margin with a few slender spines; seventh joint over half the length of the sixth, inner margin bearing a row of very fine teeth and a larger distal tooth. Gnathopod 2, second joint as long as the fifth and sixth combined; fifth joint half the length of the sixth and produced below into a narrow lobe; sixth joint oval, palm oblique, shorter than the hind margin of the joint and defined by a spine, below which on the inner surface is another spine. Peraeopod 4 a little longer than 5, second joint not greatly expanded, twice as long as wide, with a rather shallow distal lobe; fourth joint expanded, with lower distal lobe reaching the end of the fifth joint; seventh joint stout and a little over half the length of the sixth. Peraeopod 5 much like 4, but the second joint is shorter and broader. Telson reaching a little beyond the end of the peduncle of uropod 3, about two-thirds as wide as long, without marginal spines, and with sides converging to a narrow rounding apex. Length 3 mm.

*Type*.—A female, U.S.N.M. No. 95192, taken 5 miles off Point Barrow, Alaska, in 184 feet of water, August 30, 1949, by George E. MacGinitie.

#### PROBOLOIDES NORDMANNI (Stephensen)

Figure 10, *a-k*

*Metopa nordmanni* STEPHENSEN, 1931, p. 187, fig. 55.—GURJANOVA, 1935a, p. 73.

*Material collected*.—In 150 feet, August 23, 1948, 1 specimen. In 80 to 125 feet, September 8 to 15, 1948, 3 specimens. In 125 feet, 4 to 5 miles out, September 9, 1948, 1 specimen. In 184 feet, 5 miles out, August 30, 1949, 3 specimens. In 217 feet, 7.5 miles out, September 6, 1949, 2 specimens. B51-23, near Point Barrow, dredged in 6 to 50 m., July 29, 1951, 1 specimen.

Stephensen described this species from a single female that was taken in northern Strömfjord, which is on the lower part of the west coast of Greenland. His specimen measured about 5 mm., while the specimens from Alaska are about 4 mm. A male has been figured here, the proportions of the appendages of which vary somewhat from those of the female. The mouthparts of the original female were not dissected out, but the specimens from Alaska have a 2-jointed palp to the first maxilla and a 3-jointed palp to the mandible, which place the species in the genus *Proboloides*. In the male the antennae are longer. Gnathopod 1 in the male is proportionately shorter, the fourth joint not equaling half the length of the fifth, whereas in the

female it is over half the length of the fifth; the sixth joint is not conspicuously wider in the middle, as it is in the female. Gnathopod 2, about as in the female except the coxal plate is widest in the middle. The pereaeopods are much like those of the female, though the fourth joint in pereaeopods 4 and 5 dips down a little farther behind. The

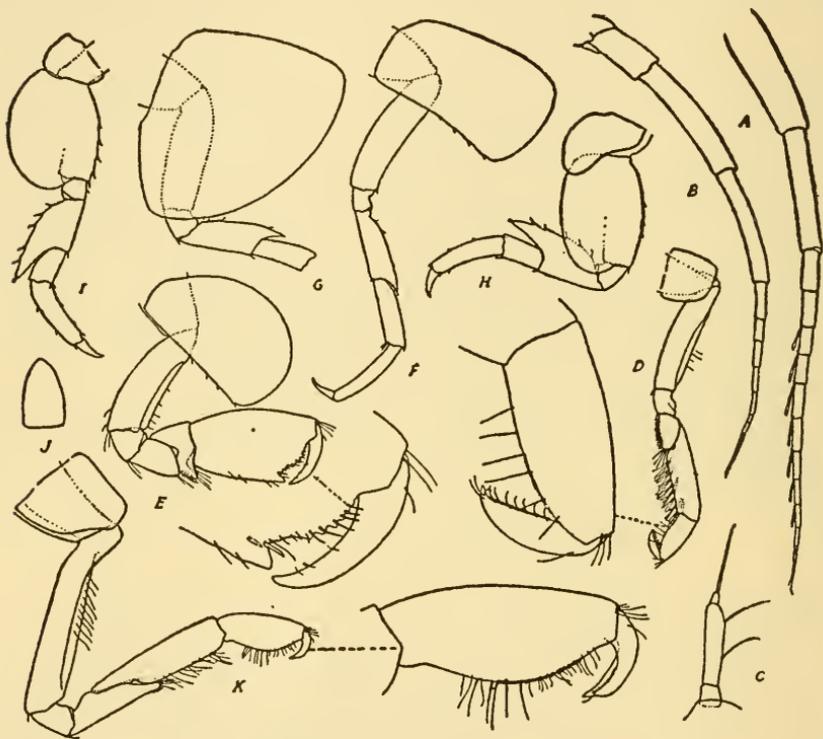


FIG. 10.—*Proboloides nordmanni* (Stephensen). Male: *a*, antenna 1; *b*, antenna 2; *c*, palp of mandible; *d*, gnathopod 1; *e*, gnathopod 2; *f*, pereaeopod 1; *g*, pereaeopod 2; *h*, pereaeopod 4; *i*, pereaeopod 5; *j*, telson. Female: *k*, gnathopod 1 of specimen from St. Croix River, New Brunswick.

telson is without spines and reaches back nearly to the end of the peduncle of uropod 3.

This species measures 4 to 5 mm. Gurjanova's specimens were taken at 17 m.

#### METOPELLOIDES STEPHENSENI Gurjanova

Figure 11, *a-k*

*Metopelloides stephenseni* GURJANOVA, 1938, pp. 285, 391, fig. 13.

*Material collected*.—In 150 feet, August 23, 1948, 1 specimen. In

120 feet, 3 miles out, August 8, 1949, 3 specimens. In 217 feet, 7.5 miles out, September 6, 1949, 1 specimen.

This species was described by Gurjanova from the Sea of Japan in 1938. The present records from Alaska are the second of its occurrence.

The first maxilla has 1 seta on the inner lobe and 5 spine teeth on the outer lobe; palp is 1-jointed. Peraeopod 2 is a little longer than 1. Peraeopod 4, second joint not expanded. Peraeopod 5, second joint

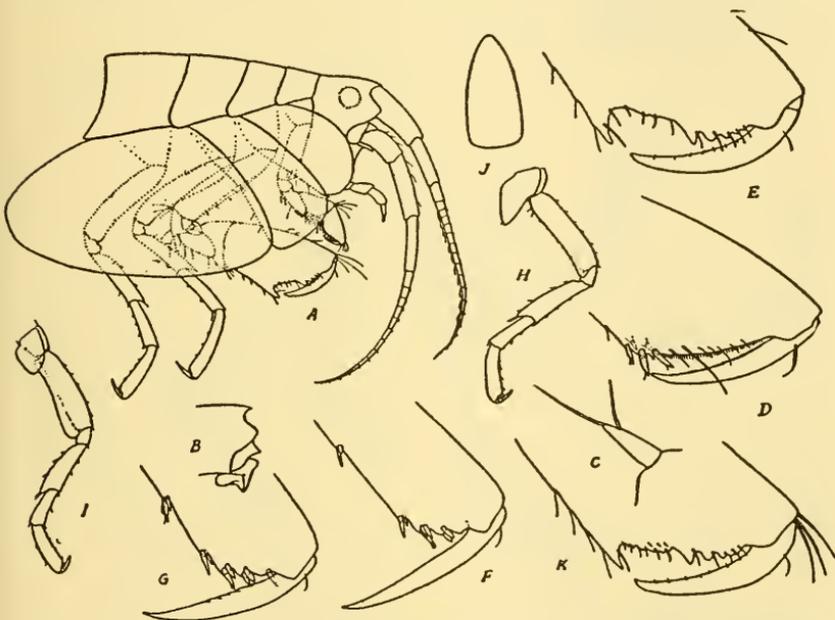


FIG. 11.—*Metopelloides stephenseni* Gurjanova. Male: *a*, front end of animal; *b*, head, showing upper lip and epistome; *c*, palp of mandible; *d*, palm of gnathopod 1, greatly enlarged; *e*, palm of gnathopod 2, greatly enlarged; *f*, end of peraeopod 1; *g*, end of peraeopod 2; *h*, peraeopod 4; *i*, peraeopod 5; *j*, telson. Female: *k*, palm of gnathopod 2.

slightly expanded and produced below into a shallow lobe. All peraeopods with the sixth joint slightly expanded distally and obliquely truncate; the truncate end, which is provided with several pairs of short, stout spines, forming with the dactyl a more or less efficient subchelate grasping organ. A specimen of this species in the National Museum collection, which was identified by Gurjanova, has no spines on the telson. Her figure (1938, fig. 13-2) shows a spine on each lateral margin. The specimens from Point Barrow, which are mature males and females measuring about 6 mm., have no spines on the telson. Gurjanova gives 90 m. for the depth for this species.

**METOPELLOIDES TATTERSALLI** GurjanovaFigure 12, *a-e**Metopelloides tattersalli* GURJANOVA, 1938, pp. 289, 392, fig. 16.

*Material collected.*—In 341 feet, 8 miles out, October 11, 1949, 1 specimen.

This species was described by Gurjanova from the Sea of Japan

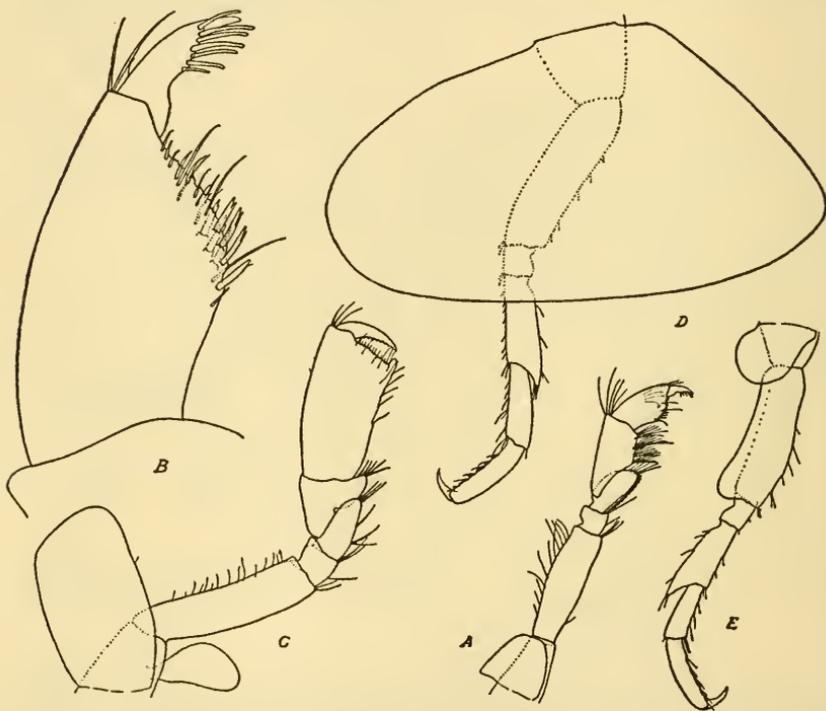


FIG. 12.—*Metopelloides tattersalli* Gurjanova. Male: *a*, gnathopod 1; *b*, sixth and seventh joints of gnathopod 1, greatly enlarged; *c*, gnathopod 2; *d*, peraeopod 2; *e*, peraeopod 5.

in 1938. The present record from Alaska is the second of its occurrence.

In the present male, which is mature and measures about 6 mm., the first gnathopod differs somewhat from that figured by Gurjanova (1938, fig. 16-8). Her specimen, the sex of which is not known, measured only 2.5 mm. and was probably immature.

Gnathopod 1, as shown here in figure 12, *a*, has the sixth joint shorter than the fifth and widening distally. Gnathopod 2 is as shown by Gurjanova. Coxal plate 4 is rather shallow and long. Peraeopod 5 with second joint slightly expanded and produced below

into a shallow lobe. Telson is without spines. Gurjanova gives 62 m. for the depth of this species.

Family THAUMATELSONIDAE

**PROTHAUMATELSON CARINATUM**, new species

Figure 13, *a-c*

*Prothaumatelson* SCHELLENBERG, 1931, p. 113.

*Material collected*.—In 217 feet, 7.5 miles off Point Barrow base, September 6, 1949, 1 specimen. In 120 feet, off Point Barrow base, September 15, 1948, 5 specimens.

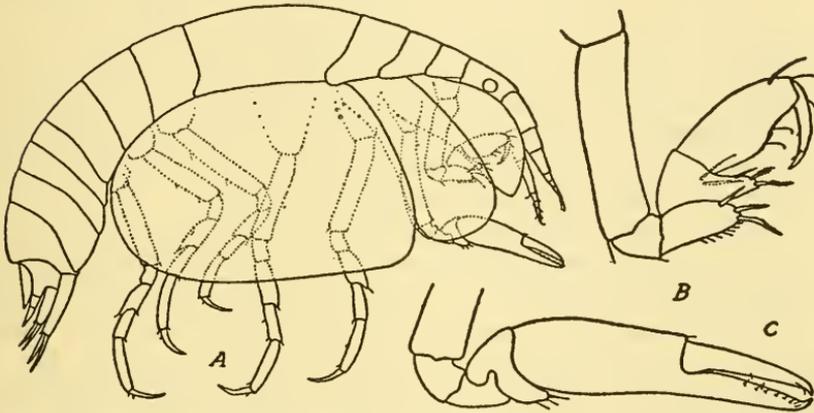


FIG. 13.—*Prothaumatelson carinatum*, new species. Female: *a*, entire animal; *b*, gnathopod 1; *c*, gnathopod 2.

Schellenberg says of *Prothaumatelson* that the second gnathopod is chelate and that the mandibular palp has a reduced number of joints. He places *Thaumatelson nasutum* Chevreux (1913, p. 109) and *Thaumatelson inermis* Chilton (1912, p. 483) in his new genus. With amphipods as small and fragile as these (2 to 3 mm.) it is in many cases difficult to determine the exact number of joints in some of their appendages. The present specimens from Point Barrow have been placed in *Prothaumatelson*, although the mouthparts do not appear to agree in all details with Schellenberg's genus.

*Female*.—Head not quite as long as the first two body segments combined; lateral lobes triangular with sharply rounding apex. Eye of medium size. Antenna 1, very little shorter than antenna 2, first peduncular joint nearly as long as second and third combined; flagellum about as long as the third peduncular joint and composed of four joints. Antenna 2, fifth joint longer than the fourth;

flagellum not quite as long as the fifth peduncular joint and composed of four joints. Mandible is without palp, but it may have been lost in dissecting. Maxilla 1, inner plate rounding and without setae; outer plate bearing 4 or 5 long spine teeth and 1 short one; palp appears to be 1-jointed, obliquely truncate, and bears 4 or 5 apical teeth or spines. Maxilla 2, inner plate with 3 apical spines and 1 slender lateral spine.

Gnathopod 1 small, second joint as long as the fifth and sixth combined; fourth joint produced a little forward; fifth joint half the length of the sixth and produced below into a forward-projecting lobe; sixth joint widest in the middle, palm longer than hind margin of joint, very oblique, slightly concave, bearing 2 slender spines and armed throughout with very fine teeth; seventh joint slightly curved, as long as palm, and bearing 2 setae on inner margin. Gnathopod 2 slender, second joint not quite as long as the sixth; fifth joint short and produced below into a narrow forward-pointing lobe; sixth joint long and narrow, the sharply produced distal end being opposed by the long and narrow seventh joint forming a chela.

The first and second peraeopods linear and longer than the following peraeopods; the fourth joint very little expanded, and the seventh joint slender and over half the length of the sixth. Peraeopods 3 to 5 slender and subequal in length; fourth joint very little expanded; and the seventh joint over half the length of the sixth. Coxal plates 2 to 4 much deeper than their respective segments. The fourth coxal plate is very large and completely covers all the peraeopods when they are folded.

The metasome segments are produced backward below but not sharply. The first urosome segment is compressed dorsolaterally, forming a thin keel or lamella which does not project backward over the telson. The second and third urosome segments are coalesced. Uropod 1 extends back a little beyond uropod 2, and uropod 2 beyond uropod 3. Very few spinules could be observed on the uropods. The telson is rather long and narrow, lies horizontally, and extends back a little beyond the end of the peduncle of uropod 3. Length of the female figured about 2 mm. The other specimens taken were slightly smaller and were all females.

*Type*.—A female, U.S.N.M. No. 93547, taken in 120 feet of water off Point Barrow base, Alaska, September 15, 1948, by George E. MacGinitie.

## Family ACANTHONOTOZOMATIDAE

## ACANTHONOTOZOMA SERRATUM (Fabricius)

*Acanthonotozoma serratus* Sars, 1893, p. 374, pl. 131, fig. 1.—Stebbing, 1906, p. 218.—Stephensen, 1938, p. 186.

*Material collected.*—In 125 feet, September 9, 1948, 2 specimens. In 216 feet, October 6, 1949, 1 specimen. In 175 feet, October 14, 1949, 16 specimens.

*Acanthonotozoma serratum* has been taken at Spitzbergen; Kara Sea; Nova Zembla; Norway; Skagerrak; Iceland; East and West Greenland; Baffin Bay; Port Burwell, Ungava; Labrador; Bay of Fundy; Mount Desert Island, Maine; and off Cape Ann, Mass. It is now for the first time recorded from Alaska.

This species is quite variable. Sars figures the second joint of the last three pereopods with the lower posterior angle acutely produced. Specimens from the east coast of North America have this lower posterior angle quadrate and bluntly rounding. The specimens from Point Barrow also do not have this angle produced but more or less quadrate and bluntly rounding.

Cape Ann is the most southern record for this species, which reaches a length of 12 mm., and has been recorded as low as 753 m.

## ACANTHONOTOZOMA INFLATUM (Kröyer)

*Vertumnus inflatus* Goës, 1866, p. 523, pl. 38, fig. 11.

*Acanthonotozoma inflatum* Stebbing, 1894, p. 32, fig. 6; 1906, p. 219.—Stephensen, 1931, p. 211; 1938, p. 188, fig. 22; 1944b, p. 61.

*Material collected.*—In 150 feet, August 23, 1948, 5 specimens. In 420 feet, 7 miles out, August 9, 1949, 2 specimens. In 213 feet, 4 miles out, October 6, 1949, 1 specimen. In 216 feet, 4½ miles out, October 6, 1949, 1 specimen. In 152 feet, 3.5 miles out, October 14, 1949, 1 specimen. In 175 feet, 4 miles out, October 14, 1949, 20 specimens.

*Acanthonotozoma inflatum*, as with the preceding species, is quite variable in some of its characters. Stebbing's figure (1894, fig. 6) shows the lower posterior angle of the second joint of the last three pereopods sharply produced. Goës's figure (1866, pl. 38, fig. 11) shows the second joint with an evenly rounding lower posterior margin. The specimens of this species from the east coast of America have the lower posterior corner of the second joint about quadrate and narrowly rounding. The specimens taken at Point Barrow resemble Goës's figure, but have the lower posterior border of the second joint broadly rounding without any angle whatever.

This species has been taken in Kara Sea; Spitzbergen; East and West Greenland; Baffin Bay; Labrador; Gulf of St. Lawrence; Atlantic coast of Nova Scotia; Collinson Point and Kotzebue Sound, Alaska; off Diomede Island; and now from Point Barrow. Stebbing gives the length of this species as 6.5 to 18.5 mm., and the depth as 10 to 300 m.

#### ODIUS CARINATUS (Bate)

*Odius carinatus* SARS, 1893, p. 381, pl. 133, fig. 2.—STEBBING, 1906, p. 211.—STEPHENSEN, 1938, p. 184; 1944b, p. 59.

*Material collected.*—In 216 feet, 4.5 miles out, October 6, 1949, 1 specimen. In 175 feet, 4 miles out, October 14, 1949, 1 specimen.

*Odius carinatus* has been taken at Spitzbergen; North, West, and South Norway; East coast of England; Iceland; East and West Greenland; off Newfoundland; Pribilof Islands; and now from Point Barrow. It measures about 5 mm. and has been recorded down to 201 to 204 m.

#### Family OEDICEROTIDAE

##### ACANTHOSTEPHEIA MALMGRENI (Goës)

*Amphithonotus malmgreni* GOËS, 1866, p. 526, pl. 39, fig. 17.

*Acanthostepheia malmgreni* STEBBING, 1906, p. 254.—STEPHENSEN, 1938, p. 217, fig. 25; 1944b, p. 70.

*Material collected.*—Taken on beach at Point Barrow base, September 24, 1950, 20 specimens.

This is probably a circumpolar species. It has been recorded from New Siberian Islands, Kara Sea, Franz Josef Land, Spitzbergen, Iceland, East Greenland, West Greenland, Baffin Bay, Dolphin and Union Strait, Alaska, Bering or Okhotsk Sea.

In the U. S. National Museum there are specimens from Labrador; Hudson Bay; Ellesmere Island; and Cape York, North Greenland. This species reaches a length of 45 mm., and has been recorded from the beach down to about 550 m.

##### ACANTHOSTEPHEIA BEHRINGIENSIS (Lockington)

*Oedicerus behringiensis* LOCKINGTON, 1877, p. 47.

*Acanthostepheia behringanus* HOLMES, 1904a, p. 315, pl. 36, figs. 25-28.

*Acanthostepheia pulchra* + *Acanthostepheia behringiensis* STEBBING, 1906, p. 254, 726.

*Acanthostepheia pulchra* SHOEMAKER, 1920, p. 11.

*Acanthostepheia behringiensis* STEPHENSEN, 1938, p. 218, fig. 25 (2).

*Material collected.*—Taken in Eluitkak Pass, Elson Lagoon, in 30 to 40 feet, August 8 and September 8, 1948, 5 specimens. Washed

ashore at Point Barrow base, August, September, and October, 1949, 12 specimens.

This is a widely distributed arctic species, probably circumpolar. It was described by W. N. Lockington in 1877 from specimens taken on the west coast of Alaska, north of Bering Strait (1877 [1876], p. 47). Five specimens were taken off Point Barrow by the Point Barrow Expedition, 1881-1883, but were identified as *Acanthostepheia malmgreni* Goës. *Acanthostepheia behringiensis* is a large species, reaching a length of at least 37 mm. and it has been taken as low as 60 m.

#### MONOCULODES BOREALIS Boeck

*Monoculodes borealis* Sars, 1892, p. 298, pl. 106, fig. 2.—STEBBING, 1906, p. 262.—STEPHENSEN, 1931, p. 243; 1938, p. 225; 1944b, p. 72.

*Material collected.*—Washed ashore, August 21, 1949, 5 specimens, and September 22, 1949, 7 specimens. From screen trap through ice, 1.8 miles out, March 29, 1950, 1 specimen.

This is a circumpolar species which dips down into the cold North Atlantic. The present records are the first for Alaska. It reaches a length of 10 mm., and has been recorded between 80 and 200 m.

#### MONOCULODES LATIMANA (Goës)

*Monoculodes latimanus* Sars, 1892, p. 304, pl. 108, fig. 1.—STEBBING, 1906, p. 264.—STEPHENSEN, 1931, p. 244; 1938, p. 226; 1944b, p. 73.

*Material collected.*—In 110 feet, off Point Barrow base, September 8, 1948, 1 specimen. In 120 feet, 3 miles out, August 8, 1949, 1 specimen. In 741 feet, 12.1 miles out, August 17, 1949, 1 specimen.

This is a circumpolar species that dips down into the cold North Atlantic. It has not heretofore been recorded from Alaska. It measures about 7 mm., and has been recorded from shallow water down to about 120 m.

#### MONOCULODES LONGIROSTRIS (Goës)

*Monoculodes longirostris* Sars, 1892, p. 306, pl. 108, fig. 3.—STEBBING, 1906, p. 260.—STEPHENSEN, 1931, p. 242; 1938, p. 223; 1944b, p. 72.—GURJANOVA, 1935a, p. 75.

*Material collected.*—From beach at Point Barrow base, September 28, 1950, 1 specimen.

This is probably a circumpolar species that dips down into the North Atlantic to the Kattegat and the Gulf of St. Lawrence. It has been recorded from Bernard Harbor, Northwest Territories, but not

heretofore from Alaska. It reaches a length of 12 mm., and has been taken as low as 887 m.

#### MONOCULODES PACKARDI Boeck

*Monoculodes packardi* Sars, 1892, p. 307, pl. 109, fig. 1.—STEBBING, 1906, p. 266.  
—STEPHENSEN, 1931, p. 247; 1938, p. 229; 1940b, p. 40.

*Material collected.*—Taken in screen trap through hole in ice in 80 feet, April 15, 1950, 2 specimens. From beach at Point Barrow base, September 24, 1950, 1 specimen.

This species has been recorded from Gulf of St. Lawrence, Iceland, Norway, Nova Zembla, and Danish waters. It is new to the Alaskan fauna. It reaches a length of 12 mm., and has been taken from shallow water down to 235 m.

#### MONOCULODES SCHNEIDERI Sars

*Monoculodes schneideri* Sars, 1895, p. 692, Suppl., pl. VI, fig. 1.—STEBBING, 1906, p. 263.—GURJANOVA, 1935a, p. 76.—STEPHENSEN, 1938, p. 226.

*Material collected.*—Washed ashore at Point Barrow base August 21, 1949, 2 specimens.

This species has been recorded from North Norway; White Sea; Franz Joseph Land; Gulf of St. Lawrence; Cape Smyth, Alaska; and Kara Sea. It measures about 6 mm. and has been taken from shallow water down to about 60 m.

#### ACEROIDES LATIPES (Sars)

*Aceropsis latipes* Sars, 1892, p. 341, pl. 120, fig. 2.  
*Aceroides latipes* STEBBING, 1906, p. 255.—SHOEMAKER, 1920, p. 11.—STEPHENSEN, 1931, p. 239; 1938, p. 219; 1944b, p. 70.—GURJANOVA, 1935a, p. 75.

*Material collected.*—Washed ashore July 26, 1949, 1 specimen, and September 20, 1949, 1 specimen. From screen trap through hole in ice, 1.8 miles out in 80 feet, March 29, 1950, 1 specimen.

This species has been recorded from West Greenland, East Greenland, North Norway, Kara Sea, New Siberian Islands, and Alaska. It measures about 5 mm., and has been recorded as low as 660 m.

### Family TIRONIDAE

#### TIRON SPINIFERUM (Stimpson)

*Lysianassa spinifera* STIMPSON, 1854, p. 49.  
*Tiron acanthurus* LILLJEBORG, 1865, p. 19.—SARS, 1893, p. 399, pl. 140.—STEBBING, 1906, p. 276.—SHOEMAKER, 1930b, p. 291.—STEPHENSEN, 1938, p. 231; 1944b, p. 76.

*Material collected.*—In 216 feet,  $4\frac{1}{3}$  miles out, October 6, 1949, 3 specimens.

This species has been recorded from the White Sea, Spitzbergen, North and West Norway down to the Skagerak, Iceland, Scotland, East and West Greenland, Gulf of St. Lawrence, off Nova Scotia, and Sea of Japan. There are specimens in the United States National Museum from the Bay of Fundy. The present specimens, which are not fully mature, are the first to be recorded from Alaska.

*Lysianassa spinifera* was described by William Stimpson from Grand Manan, Bay of Fundy, in 1954. He gives no figures, but his description, as far as it goes, applies accurately to *Tiron acanthurus* Lilljeborg. It is unfortunate that the specific name *acanthurus*, which has been in use so long, will have to be put into synonymy, but the law of priority should prevail. This species reaches a length of 8 or 9 mm., and has been taken down to about 120 m.

#### SYRRHOË CRENULATA Goës

*Syrrhoë crenulata* Sars, 1893, p. 390, pl. 136.—Stebbing, 1906, p. 282.—Shoemaker, 1930b, p. 291.—Stephensen, 1938, p. 234; 1944b, p. 76.

*Material collected.*—In 216 feet, 4.3 miles out, October 6, 1949, 3 specimens.

*Syrrhøe crenulata* has been recorded from Franz Joseph Land; Nova Zembla, Kara Sea; White Sea; Murman Coast; Spitzbergen; North and West Norway; Iceland; East and West Greenland; Newfoundland; Gulf of St. Lawrence; and the Sea of Japan. There are specimens in the United States National Museum from the Bay of Fundy; Casco Bay, Maine; coast of Massachusetts; off Marthas Vineyard; Block Island, R. I.; 15 miles north of Big Diomedé Island; and mouth of Kotzebue Sound, Alaska. This species reaches a length of about 10 mm., and has been taken as low as 300 m.

#### Family CALLIOPIIDAE

##### APHERUSA GLACIALIS (Hansen)

*Amphithopsis glacialis* Hansen, 1887a, p. 137, pl. 5, fig. 6a-c.

*Apherusa glacialis* Stebbing, 1906, p. 307.—Stephensen, 1931, p. 277, fig. 79; 1944b, p. 81.

*Material collected.*—Found clinging to under side of ice cakes at Point Barrow base, August 29, 1948, 12 specimens.

*Apherusa glacialis* is probably a circumpolar species, but has not heretofore been recorded from Alaska. It has been recorded from East and West Greenland, Gulf of St. Lawrence, and Northeast

Canada. This species measures from 7 to 10 mm., and occurs from shallow water down to 300 m.

### Family PLEUSTIDAE

#### PLEUSTES PANOPLA (Kröyer)

Figure 14, *a*

*Amphithoe panopla* KRÖYER, 1838, p. 270, pl. 2, fig. 9.

*Amphithonotus cataphractus* STIMPSON, 1854, p. 52.

*Pleustes panoplus* HANSEN, 1887a, p. 119.—SARS, 1893, p. 344, pl. 121.—ORTMANN, 1901, p. 150.—HOLMES, 1905, p. 488, text fig.; pl. 7, fig. 3.—STEBBING, 1906, p. 310.—SHOEMAKER, 1930b, p. 309.—STEPHENSON, 1938, p. 253, fig. 28; 1944a, p. 4; 1944b, p. 48.

*Material collected*.—In 80 feet, September 9, 1948, 1 specimen. In 37 feet, 0.75 mile out, in screen trap through hole in ice, March 10, 1950, 1 specimen. From beach at Point Barrow base, September 28, 1950, 1 specimen.

*Pleustes panopla* is a circumpolar species that dips down into the cold waters of the North Atlantic and North Pacific. There are specimens of this species in the U. S. National Museum from Labrador, Gulf of St. Lawrence, Bay of Fundy and south of Marthas Vineyard (*Fish Hawk* station 987, 40° 54' N., 70° 48' 30" W.); and in the Pacific from Bering Sea and off Japan (*Albatross* station 4828, 37° 23' N., 137° 36' E.). It was recorded from the Sea of Japan in 1930 by A. N. Derjavin.

William Stimpson in 1854 described *Amphithonotus cataphractus* from Grand Manan, Bay of Fundy, but gave no figures. His description applies very well to *Pleustes panopla* (Kröyer), which occurs at Grand Manan. I have examined many specimens of *P. panopla* from New England, Gulf of St. Lawrence, Bay of Fundy, and Labrador, and they all agree in all characters with a typical specimen from Grand Manan, the second gnathopod of which is here figured. The palm of this gnathopod is evenly convex, the proximal end passing into the three rounding lobes, which form a protruding angle with the palm, and each of which bears on its inside surface a group of spines; the seventh joint fits the convex palm and reaches the first group of spines. Stebbing considered the three spinose lobes to be a part of the palm, but believed that Sars regarded them as a part of the hind margin of the sixth joint. Sars was undoubtedly correct. The first gnathopod is like the second, but is not so stout and the characters are less pronounced. The specimens from Alaska, Bering Sea, and Japan agree with those from Grand Manan. Cecchini (Mem. 142, R. Comitato Talassografico Italiano, p. 8, pl. 2, fig. 5) figured the second

gnathopod of a specimen from Spitzbergen which she identified as *Pleustes cataphractus*, and her figure agrees with the corresponding appendage of the specimen from Grand Manan. The early figures of this species are crude and show very little detail and are of little help in these matters. Bate's (1862, pl. 9, figs. g, h, i) figure of the second gnathopod shows a protruding angle bearing two small lobes at the

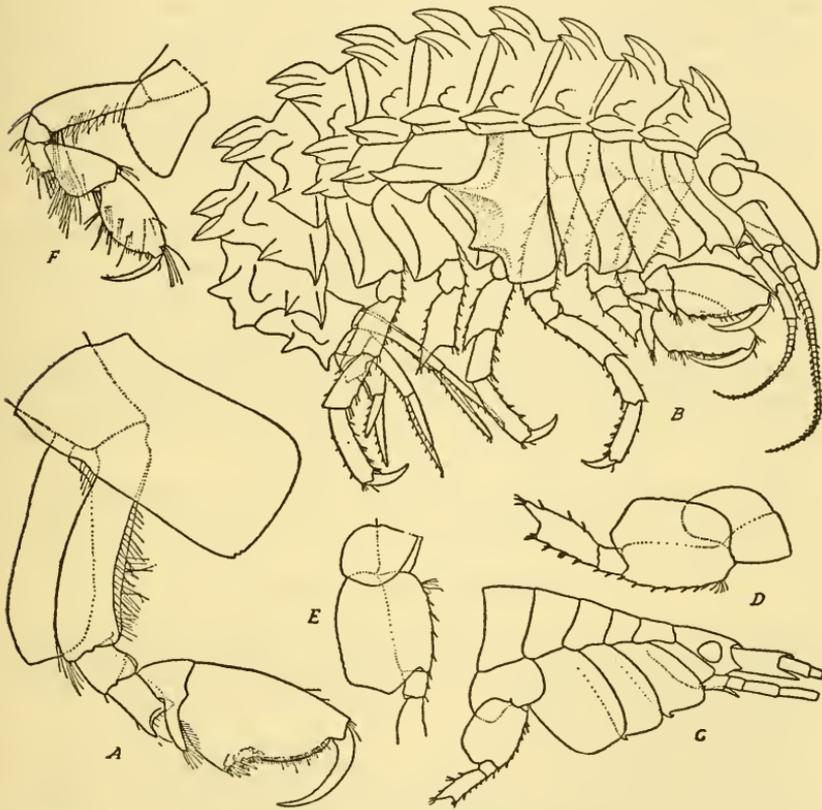


FIG. 14.—*a*, *Pleustes panopla* (Kröyer), Male: gnathopod 2. *b*, *Pleustes panopla*, variety *angulata*, new variety, Male: entire animal. *c-e*, *Sympleustes uncigera* Gurjanova. Male: *c*, front end of animal; *d*, peraeopod 4; *e*, peraeopod 5. *f*, *Sympleustes kariana* Stappers. Male: gnathopod 1.

proximal end of the palm, but his figure of the entire animal is so crude that it bears little resemblance to *P. panopla*. Sar's figure (1893, pl. 121, fig. p<sup>2</sup>) does not show a protruding angle, but figures the three groups of spines as occupying slight depressions in the hind margin of the joint. In typical *panopla* the lower margins of the first four coxal plates are evenly rounding, and the mesosome segments bear median dorsal carinae but no teeth or other protuberances except

low, backward-pointing ridges at the lower end of the segments just above the coxal plates.

The waters around Alaska and Bering Sea are inhabited by an assortment of forms which appear to be varieties of the typical *panopla*. E. Gurjanova (1938, p. 313, fig. 28) has figured and described one of these varieties, which she has named variety *obtusirostris*. The animal she has figured is an extreme case, having the rostrum decidedly truncate. This is a character which varies from the extreme to almost no truncation at all. There are forms possessing carinae and teeth in a number of different arrangements and combinations. A form has been here figured with an extreme assortment of teeth, knobs, and ridges, which is being named *Pleustes panopla*, var. *angulata* (fig. 14, b).

*Type*.—U.S.N.M. No. 92422. This specimen, a female, measuring about 10 mm., with fully developed marsupial plates, was taken by the Fisheries steamer *Albatross*, at station 4804 (46° 42' N., 151° 47' E.) at 229 fathoms, June 24, 1906. Gurjanova (1938, p. 313, fig. 27) has figured a variety which is much like the one here figured; however, she identified it as *Pleustes cataphractus* Stimpson. It is difficult to decide where varieties end and species begin in such cases as these.

*Pleustes panopla* reaches a length of 27 mm. and occurs from the littoral down to about 1026 m.

#### PLEUSTES MEDIA (Goës)

*Paramphithoe media* Goës, 1866, p. 523, pl. 38, fig. 13.—BOECK, 1871, p. 176.  
*Pleustes medius* BOECK, 1876, p. 302.—STEBBING, 1906, p. 311.—SHOEMAKER, 1930b, p. 307, fig. 38.—GURJANOVA, 1935a, p. 76.—FROST, 1936, p. 6.—STEPHENSEN, 1938, p. 250, fig. 27.

*Material collected*.—In 420 feet, 7 miles out, August 9, 1949, 3 specimens. In 217 feet, 7.5 miles out, September 6, 1949, 1 specimen. In 295 feet, 5 miles out, October 6, 1949, 1 specimen.

*Pleustes media* was described from Spitzbergen in 1866. It was next recorded from the White Sea by Jarzynsky in 1870. In 1930 a single specimen was taken in the Gulf of St. Lawrence by the Cheticamp Expedition. In 1935 Gurjanova recorded it from the Kara Sea. A single specimen was recorded from the Newfoundland waters by Nancy Frost in 1936.

Five specimens of this rarely seen amphipod were taken in the offshore waters at Point Barrow in 1949. There are in the United States National Museum two specimens of *Pleustes media* taken by the Fisheries steamer *Albatross* in 1885, one at station 2461 (45° 47'

00" N., 54° 13' 30" W.), and one at station 2490 (45° 27' 30" N., 58° 27' 45" W.); and 3 specimens in 1890 at station 3252 (57° 22' 20" N., 164° 24' 40" W.). One fine specimen was taken in Constantine Harbor, Alaska, in 1873, by Dr. W. H. Dall. *Pleustes media* measures about 8 mm., and has been taken between 40 and 85 m.

#### PARAPLEUSTES PULCHELLA (Kröyer)

*Paramphithoe pulchellus* Sars, 1893, p. 346, pl. 122, fig. 1.

*Neopleustes pulchellus* Stebbing, 1906, p. 312.—Shoemaker, 1930b, p. 306.

*Parapleustes pulchellus* Stephensen, 1938, p. 255; 1944a, p. 4.

*Material collected.*—In 341 feet of water, 6 miles out, October 11, 1949, 1 specimen.

This is an arctic species that dips down into the North Atlantic and North Pacific. It is common off the New England coast, and has been taken off Newfoundland and in the Gulf of St. Lawrence. Fine specimens were taken in 1940 in Pavlof Bay, south side of the Alaska Peninsula, by Dr. Waldo L. Schmitt while on the Alaska king crab investigation. *Parapleustes pulchella* reaches a length of 17 mm., and has been recorded from shallow water down to 300 m.

#### SYMPLEUSTES PULCHELLA (Sars)

*Amphithopsis pulchella* Sars, 1885, p. 175, pl. 14, fig. 6.

*Parapleustes pulchellus* Sars, 1893, p. 359, pl. 126, fig. 2.

*Sympleustes pulchellus* Stebbing, 1906, p. 319.—Stephensen, 1938, p. 263; 1940b, p. 46; 1944a, p. 5.

*Material collected.*—In 125 feet, 4 to 5 miles out, September 9, 1948, 2 specimens. In 438 feet, 12.1 miles out, August 17, 1949, 1 specimen. In 453 feet, 8 miles out, October 11, 1949, 1 specimen.

*Sympleustes pulchella* is an arctic species that has been taken at northern Norway, Murman Coast, south of Spitzbergen, east of Iceland, and East and West Greenland. The present records are the first for Alaska. This species measures about 7 mm., and has been taken as low as 763 m.

#### SYMPLEUSTES UNCIGERA Gurjanova

Figure 14, c-e

*Sympleustes uncigera* Gurjanova, 1938, p. 320, fig. 33.

*Material collected.*—In 60 feet, September 8, 1948, 1 specimen. In 125 feet, 4 to 5 miles out, September 9, 1948, 25 specimens. In 420 feet, 7 miles out, August 9, 1949, 4 specimens. In 184 feet, 5 miles out, August 30, 1949, 6 specimens. In 477 feet, 16 miles out, Sep-

tember 6, 1949, 1 specimen. In 216 feet, 4.3 miles out, October 6, 1949, 30 specimens. In 152 feet, 3.5 miles out, October 14, 1949, 2 specimens. In 175 feet, 4 miles out, October 14, 1949, 35 specimens.

The present records are the second of the occurrence of this species, which was described by Gurjanova from the Sea of Japan in 1938. It appears to be fairly abundant in the waters around Point Barrow. Some figures of an Alaskan specimen are here given in order to help establish the identity of the species.

The lateral angles of the head are produced sharply forward. The lower distal margin of the first joint of the first antenna is produced forward. The lower hind corner of the first three coxal plates is produced into a prominent hook. The lower hind margin of the second joint of the last three pereopods is obliquely truncate. The telson extends a little beyond the peduncle of the third uropod. The largest specimen in the present collection measures about 10 mm. This species has been taken down to about 125 m.

#### SYMPLEUSTES KARIANA Stappers

Figure 14, f

*Sympleustes kariamus* STAPPERS, 1911, p. 48, pl. 2, figs. 10-20.

*Material collected.*—In 110 feet, September 9, 1948, 1 specimen. In 175 feet, 4 miles out, October 4, 1949, 1 specimen.

The lateral lobes of the head are rather broadly rounding. The first three coxal plates do not have a hook at the lower hind corner, but only a shallow indentation bearing a setule. The second joint of the last three pereopods has the hind margin evenly rounding below and not truncate as in *Sympleustes uncigera* Gurjanova. There are no dorsal teeth. At the outer distal end of the peduncle of uropod 1 there is a small spine, which is no larger than the spines on the outer margin of the peduncle. The telson extends a little beyond the peduncle of uropod 3. There is no hook or tooth at the lower hind corner of the third metasome segment.

The present record appears to be the second of the occurrence of this species, which was described from the Kara Sea. It measures about 5 mm., and has been taken at 165 m.

#### Family PARAMPHITHOIDAE

##### PARAMPHITHOE POLYACANTHA (Murdoch)

*Acanthozone polyacantha* MURDOCH, 1885a, p. 520; 1885b, p. 146, pl. 1, fig. 4.

*Paramphithoe polyacantha* STEBBING, 1906, p. 325.—GURJANOVA, 1935a, p. 76.—

STEPHENSON, 1938, p. 269, fig. 30.

*Paramphithoe polyacantha* BRÜGGEN, 1909, p. 32, pl. 1, fig. 3.

*Material collected.*—In 35 feet in Eluitkak Pass, Elson Lagoon, August 6, 1948, 1 specimen. In 130 feet, 4 miles out, August 9, 1949, 1 specimen. In 420 feet, 7 miles out, August 9, 1949, 2 specimens. Washed ashore September 26, 1949, 1 specimen, and October 5, 1949, 1 specimen. In 40 feet in Eluitkak Pass, Elson Lagoon, August 1, 1950, 2 specimens.

*Paramphithoe polyacantha* was described by John Murdoch from specimens taken off Point Franklin, Alaska, in 13.5 fathoms, in 1885, by the Point Barrow Expedition of 1881-1883. It has since been recorded from Nova Zembla, Kara Sea, and New Siberian Islands. The largest specimen in the present collection, a female, measures about 34 mm. This species has been recorded as low as 24 m.

### Family ATYLIDAE

#### ATYLUS CARINATUS (Fabricius)

*Atylus carinatus* Sars, 1893, p. 471, pl. 166, fig. 1.—Stebbing, 1906, p. 328.—Gurjanova, 1932, p. 167; 1935a, p. 76.—Stephensen, 1938, p. 276; 1944b, p. 91.

*Material collected.*—In 10 feet, 300 feet out, July 20, 1948, 4 specimens. In 30 to 40 feet in Eluitkak Pass, Elson Lagoon, August 18, 1948, 1 specimen. In 30 to 40 feet, September 10, 1948, 3 specimens. Washed ashore September 26, 1949, 1 specimen. From beach at Point Barrow, September 28, 1950, 2 specimens.

*Atylus carinatus* is a circumpolar species that occasionally dips down into the cold northern waters. It has been recorded from East Greenland and James Bay, which is in the southern end of Hudson Bay.

There are in the U. S. National Museum specimens from Pendulum Island and Shannon Island, Northeast Greenland; Disko Island, West Greenland; Davis Strait; Frobisher Bay, east coast of Baffin Land; Collinson Point, Alaska; Dobbin Bay, East Ellesmere Island; Melville Island, Northwest Territory, Canada; Kotzebue Sound and Port Clarence, Alaska. This species reaches a length of 43 mm., and has been taken down to about 50 m.

#### NOTOTROPIS BRÜGGENI Gurjanova

*Nototropis brüggeni* Gurjanova, 1938, p. 325, figs. 36, 37; p. 397.

*Material collected.*—In 120 feet, 3 miles out, August 8, 1949, 1 specimen.

This species was described in 1938 from the Sea of Japan by E. Gurjanova. The present specimen, which measures about 20 mm.,

constitutes the second record of the occurrence of this species. It is, however, well represented in the collection of the U. S. National Museum, where there are specimens from Bay of Islands, Newfoundland; Port Franklin and Kiska Island, Alaska; Bering Island; and Indian Point, Siberia. *Nototropis Brüggeni* has been taken between 45 and 80 m.

### Family EUSIRIDAE

#### RHACHOTROPIS ACULEATA (Lepechin)

*Tritropis aculeata* HANSEN, 1887a, p. 139, pl. 5, fig. 7.

*Rhachotropis aculeata* SARS, 1893, p. 424, pl. 149.—STEBBING, 1906, p. 348.—SHOEMAKER, 1930b, p. 316.—GURJANOVA, 1938, p. 329.—STEPHENSON, 1940b, p. 48; 1944b, p. 96.

*Material collected.*—In 100 to 150 feet, August 21, 1948, 3 specimens. In 150 feet, August 23, 1948, 7 specimens. In 110 and 125 feet, September 8 and 9, 1948, 2 specimens. In 213 feet, 4 miles out, October 6, 1949, 1 specimen. In 138 feet, 3.5 miles out, August 1, 1950, 1 specimen. At Point Barrow base, June 4, 1951, 1 specimen. Dredged at 75 m., July 26, 1951, 4 specimens.

*Rhachotropis aculeata* is a circumpolar species that dips down into the North Atlantic and North Pacific. On the coast of the United States it has been recorded from Cape Ann, Mass., and on the Asiatic coast from the Sea of Japan by Gurjanova. The International Polar Expedition to Point Barrow, 1881-1883, took it at Point Franklin, Alaska. This species reaches a length of 44 mm. and has been taken down to 250 m.

#### EUSIRUS CUSPIDATUS Kröyer

*Eusirus cuspidatus* SARS, 1893, p. 416, pl. 146.—STEBBING, 1906, p. 339.—STEPHENSON, 1940a, p. 283; 1944b, p. 95.

*Material collected.*—In 150 feet, August 23, 1948, 1 specimen. In 125 feet, September 9, 1948, 1 specimen. In 130 feet, 4 miles out, August 9, 1949, 1 specimen. In 420 feet, 7 miles out, August 9, 1949, 5 specimens. In 741 feet, 12.1 miles out, August 17, 1949, 1 specimen. In 217 feet, 7.5 miles out, September 6, 1949, 1 specimen. In 246 feet, 7 miles out, September 8, 1949, 1 specimen. In 216 feet, 4.3 miles out, October 6, 1949, 1 specimen. In 295 feet, 5 miles out, October 6, 1949, 1 specimen. In 341 feet, 6 miles out, October 11, 1949, 10 specimens. In 175 feet, 4 miles out, October 14, 1949, 9 specimens (young). In 204 feet, August 5, 1950, 1 specimen.

This species has been recorded from North Norway, Spitzbergen, White Sea, Barents Sea, Franz Joseph Land, northern Russia, Nova

Zembla, New Siberian Islands, East and West Greenland, and Grand Manan.

In the U. S. National Museum there are specimens of this species from off Nova Scotia (45° 22' N., 58° 43' W.); off Newfoundland; Port Burwell, Labrador; Cook Island, Unalaska; Kotzebue Sound and Point Barrow, Alaska. The largest specimen in the present collection measures 45 mm. This species has been recorded from shallow water down to 400 m.

#### ROZINANTE FRAGILIS (Goës)

*Paramphithoe fragilis* GOËS, 1866, p. 524, pl. 39, fig. 16.

*Tritopsis fragilis* BOECK, 1871, p. 160.

*Rozinante fragilis* STEBBING, 1906, p. 354.—SHOEMAKER, 1930b, p. 325, fig. 45.—STEPHENSON, 1940a, p. 291, fig. 33; 1944b, p. 99.

*Material collected*.—Taken from the stomach of arctic cod (*Boreogaidus saida*) caught in a lath trap through hole in ice in 21 feet of water, 0.5 mile out, February 3, 1950, 2 specimens.

*Rozinante fragilis* is probably a circumpolar species, which, in the western Atlantic, has been recorded as far south as the Gulf of St. Lawrence. It reaches a length of 22 mm., and has been recorded from shallow water down to 400 m.

### Family GAMMARIDAE

#### GAMMARUS (RIVULOGAMMARUS) LACUSTRIS Sars

*Gammarus lacustris* Sars, 1863, p. 210.—SMITH, 1871, p. 453.—SCHELLENBERG, 1934, p. 210, figs. 1-4.

*Gammarus limnacus* SMITH, 1874, p. 651, pl. 2, figs. 6, 7.—HUBRICHT, 1943, p. 684.

*Gammarus pulex* Sars, 1895, p. 503, pl. 177, fig. 2.

*Gammarus (Rivulogammarus) lacustris* SCHELLENBERG, 1937, p. 490, figs. 2-6.—STEPHENSON, 1940a, p. 353, figs. 50, 51.

*Material collected*.—Lake at Anaktuvuk Pass, Brook Range, Alaska, August 1949, 25 specimens.

*Gammarus lacustris* is a fresh-water species that inhabits cold lakes of northern Europe and northern America. It is found in the cold lakes of Alaska, in Canada, and the northern parts of the United States from Maine to Washington, and has been recorded by Leslie Hubricht from Michigan, Illinois, Missouri, Arkansas, and Oklahoma. It reaches a length of 22 mm.

#### GAMMARUS LOCUSTA (Linn.) var. SETOSA Dementieva

*Gammarus locusta* var. *setosa* DEMENTIEVA, 1931, p. 80.—STEPHENSON, 1940a, p. 321, fig. 41; 1944b, p. 109, fig. 8.

*Material collected.*—Near shore at Point Barrow base, July 15, 1948, 1 specimen. In shallow water, 300 feet from shore, July 20, 1948, 5 specimens. In 5 to 40 feet in Eluitkak Pass, and west side of Elson Lagoon, August 10, 1948, 4 specimens. From mouth of bearded seal, *Erignathus barbatus*, August 31, 1948, 11 specimens. In 120 feet, September 15, 1948, 2 specimens. West shore of Elson Lagoon, September 19, 1948, 5 specimens. Washed ashore August 21 and 22, 1949, 4 specimens. Elson Lagoon, October 4, 1949, 27 specimens.

This variety of *Gammarus locusta* has been recorded from North and South Norway, Spitzbergen, Iceland, East Greenland, Barents Sea, Jan Mayen, and Arctic America. The largest specimen in the present collection, a male, measures 50 mm. This variety has been taken down to 40 m.

#### GAMMARACANTHUS LORICATUS (Sabine)

*Gammaracanthus loricatus* STEBBING, 1906, p. 508.—STEPHENSON, 1940a, p. 356, fig. 52, 1; 1944b, p. 115, fig. 10.

*Material collected.*—In shallow water, 300 feet from shore, July 20, 1948, 2 specimens. In 30 feet, Eluitkak Pass, Elson Lagoon, August 6, 1948, 6 specimens, and August 10, 1948, 3 specimens. Washed ashore August 21 to 25, 1949, 2 specimens, September 6, 1949, 3 specimens, and September 12, 1949, 2 specimens. In Eluitkak Pass, Elson Lagoon, September 21, 1949, 3 specimens. Washed ashore October 4, 1949, 2 specimens. In 40 feet in Eluitkak Pass, August 1, 1950, 1 specimen. From beach at Point Barrow base, September 28, 1950, 2 specimens.

*Gammaracanthus loricatus* is a circumpolar species that dips down into the North Atlantic along the east coast of Greenland and Labrador, and in the Pacific along the coast of Alaska as far as Nushagak Bay. There are in the U. S. National Museum specimens from the southern end of Hudson Bay; Hudson Strait, Frobisher Bay, Baffin Land; Port Burwell and Rigolet, Labrador; and Collinson Point, Elson Lagoon, Point Barrow, Cape Smyth, Kotzebue Sound, Norton Sound, and Nushagak Bay, Alaska. The largest specimen, a female, in the present collection measures 58 mm. This species occurs from shallow water down to about 35 m.

#### WEYPRECHTIA PINGUIS (Kröyer)

*Amathilla pinguis* BUCHHOLZ, 1874, p. 353, pl. 9, fig. 2.

*Weyprechtia pinguis* STEBBING, 1906, p. 382.—SHOEMAKER, 1920, p. 21; 1926, p. 9.—GURJANOVA, 1935a, p. 77.—STEPHENSON, 1940a, p. 297, fig. 34, 2; 1944b, p. 101.

*Material collected.*—Taken in Eluitkak Pass, Elson Lagoon, August 30, 1948, 1 specimen. Off Point Barrow base in 80 feet, September 9, 1948, 1 specimen. From beach at Point Barrow base, September 24, 1950, 1 specimen.

*Weyprechtia pinguis* is a circumpolar species that dips down into the cold North Atlantic. It has been recorded from Nova Zembla; Franz Joseph Land; White Sea; Spitzbergen; Murman coast; East and West Greenland; Baffin Bay; Hudson Strait and Hudson Bay; Bernard Harbor, Northwest Territory; and Okhotsk Sea.

There are specimens in the U.S. National Museum taken off Halifax, N. S. It reaches a length of 29 mm. and has been taken as low as 120 m.

#### WEYPRECHTIA HEUGLINI (Buchholz)

*Weyprechtia heuglini* STEBBING, 1894, p. 41, pl. 7; 1906, p. 381.—GURJANOVA, 1932, p. 168.—STEPHENSEN, 1940a, p. 296, fig. 34, 1.

*Material collected.*—In 8 to 10 feet, September 9, 1948, 3 specimens. In 80 feet, July 21 and September 9, 1948, 7 specimens. Washed ashore August 21, 1949, 1 specimen. In 37 feet, .75 mile out, June 23, 1950, 3 specimens (from baited screen trap through hole in ice).

*Weyprechtia heuglini* has been recorded from Nova Zembla, Kara Sea, Barents Sea, Spitzbergen, New Siberian Islands, north of Bering Strait, and Bering Sea or Okhotsk Sea (Derjavin, 1930, p. 328). There is a specimen in the U. S. National Museum from Bering Sea. This is a large species reaching a length of 51 mm. It has been recorded between 9 and 40 m.

#### MELITA DENTATA (Kröyer)

*Gammarus dentatus* KRÖYER, 1842, p. 159.

*Gammarus subteuer* STIMPSON, 1864, p. 157.

*Melita leonis* MURDOCH, 1885b, p. 148, pl. 2, fig. 2.

*Melita dentata* SARS, 1894, p. 513, pl. 181, fig. 1.—STEBBING, 1906, p. 427.—STEPHENSEN, 1944b, p. 105.

*Material collected.*—In 120 to 150 feet, 4 to 5 miles out, September 9, 1948, 7 specimens. In 80 to 125 feet, September 15, 1948, 4 specimens. In 184 feet, 5 miles out, August 30, 1949, 1 specimen. Washed ashore September 22, 1949, 1 specimen. In 175 feet, October 14, 1949, 15 specimens. In 295 feet, 5 miles out, October 6, 1949, 6 specimens. In 341 feet, 6 miles out, October 11, 1949, 3 specimens. Washed ashore September 22, 1949, 1 specimen. In 175 feet, October 14, 1949, 15 specimens. In 162 feet, 3.2 miles out, February 18, 1950, 1 specimen.

*Melita dentata* is a circumpolar species that dips down into the colder waters of the North Atlantic and North Pacific. It is a large species, some of the specimens in the present collection reaching a length of 30 mm. In the U.S. National Museum there are no specimens taken south of Marthas Vineyard on the east coast of the United States. There is a published record of the occurrence of *M. dentata* at Cameron, La. I have examined these specimens and find that they are *Melita appendiculata* (Say) (1818, p. 377), of which *Melita fresnelii* (Audouin) is a synonym. On the west coast of America *Melita dentata* extends south at least to Corona Del Mar, Orange County, Calif. The description of *Gammarus subtener* Stimpson from Puget Sound agrees with *Melita dentata*, with the exception of the third uropods, which were missing. His specimen, which was not quite a quarter of an inch in length, was very immature. *Melita dentata* has been recorded from shallow water down to 113 m.

#### MELITA FORMOSA Murdoch

*Melita formosa* MURDOCH, 1885b, p. 147, pl. 2, fig. 1.—STEBBING, 1906, p. 427.—GURJANOVA, 1929b, p. 39; 1935a, p. 77.—STEPHENSEN, 1940a, p. 309, fig. 37. *Melita goesii* HANSEN, 1887a, p. 146, pl. 5, fig. 8; 1887b, p. 228, pl. 21, fig. 13.

*Material collected*.—Washed ashore at Point Barrow base, August 21 to 25, 1949, 10 specimens; September 6, 1949, 30 specimens; September 19, 1949, 2 specimens; September 22, 1949, 8 specimens; August 23, 1950, about 50 specimens; September 24, 1950, 38 specimens; and September 28, 1950, 1 specimen.

*Melita formosa* has been recorded from Point Barrow, Alaska; North Norway; Spitzbergen; Murman Coast; Barents Sea; Nova Zembla; New Siberian Islands; Japan; and West Greenland.

Many fine specimens of this species were washed ashore at Point Barrow, the largest of which measure about 30 mm. It has been recorded from shallow water down to 480 m.

#### MELITA VALIDA, new species

Figure 15, a-j

*Material collected*.—Beach at Point Barrow, September 28, 1950, 2 specimens.

*Male*.—Head with broadly rounding lateral margin, and with a small notch on lower margin. Eye small and indistinct. Antenna 1 much longer than antenna 2, first joint stouter than, but equal in length to, the second, which is twice as long as the third; flagellum much longer than peduncle and composed of about 40 joints; acces-

sory flagellum of 3 long and 1 small terminal joint. Antenna 2 about as long as the head plus the first three or four body segments; third joint nearly half the length of the fourth, which is a little longer

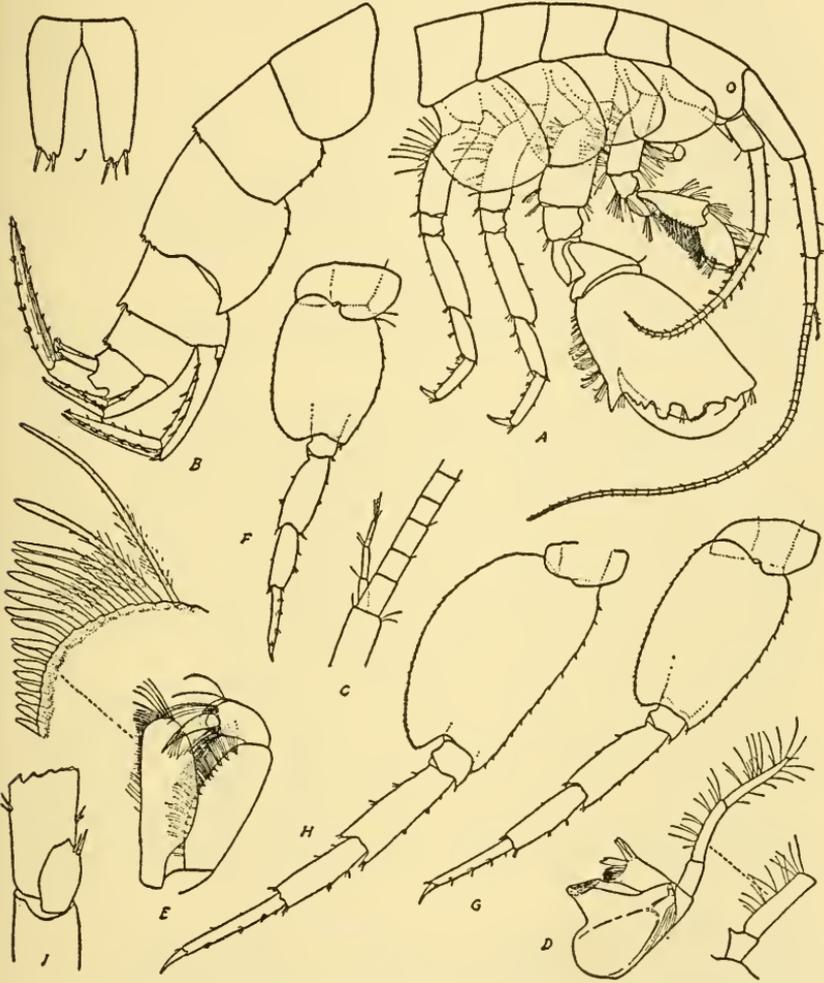


FIG. 15.—*Melita valida*, new species. Male: *a*, front end of animal; *b*, hind end of animal; *c*, antenna 1; *d*, mandible; *e*, outer lobe and palp of maxilliped; *f*, peraeopod 3; *g*, peraeopod 4; *h*, peraeopod 5; *i*, uropod 3; *j*, telson.

than the fifth; flagellum short and composed of about 14 joints; gland cone prominent.

Mandible with strong molar, which extends at its base into a prominent angular lobe; cutting edge narrow; accessory plate narrow with bifid apex; spine row of many spines; first joint of palp with a tooth

on its outer margin; third joint longer than the second. Maxilla 1 much as that figured by Sars for *M. palmata* (1894, pl. 179<sup>m1</sup>); inner lobe long with narrow angular apex and the inner margin bearing a row of setae; outer lobe normal; first joint of palp with 3 groups of long slender spines on outer margin; second joint large, widening distally and with the broad, slightly convex distal margin bearing many slender spines. Maxilla 2 much as that figured by Sars for *M. palmata* (1894, pl. 179<sup>m2</sup>), but inner and outer lobes are of equal width, with inner lobe being slightly shorter. Maxilliped, inner lobe reaching beyond middle of outer lobe and armed with the usual spines, but no teeth; outer lobe long, reaching about to the end of the second joint of palp, armed distally and on the inner margin with spines which become shorter toward the base.

Gnathopod 1, second joint a little longer than the fifth, which is longer than the sixth; all joints with many long setae; sixth joint with front and rear margins convex; palm oblique, convex, finely dentate throughout, armed throughout with closely set short spinules, and without defining angle or defining spines. Seventh joint fitting palm and provided on inner margin with very fine setae or spinules. Gnathopod 2 very large and robust; sixth joint about as long as the second to fifth joints combined; palm very oblique, armed with 2 large teeth, several small teeth, and a strong defining tooth. Seventh joint strong and curved with the distal end resting on the inside surface of the sixth joint when it is closed against the palm.

Peraeopods 1 and 2 alike but 1 slightly the longer. Peraeopods 3 to 5 increasing consecutively in length, second joint expanded, somewhat produced below posteriorly, and with hind margin very finely serrate. The mesosome segments and first metasome segment are without dorsal teeth. Metasome segment 2 has 5 dorsal teeth, and segment 3 has 5 dorsal teeth and a small tooth just above the lower posterior angle. Urosome segment 1 has 3 dorsal teeth; segment 2 has 4 dorsal teeth and segment 3 has a mere suggestion of 2 dorsal teeth. The uropods are shown in figure 15, *b* and *i*. The telson extends to about the end of the peduncle of uropod 3, and is cleft to its base with each lobe ending in a central triangular lobe, on either side of which is a spine. Length of male 28 mm.

*Type*.—A male, U.S.N.M. No. 93809, taken from beach at Point Barrow, Alaska, September 28, 1950, Ira L. Wiggins, collector.

*Remarks*.—In the smaller male the armature of the palm of gnathopod 2 is somewhat different from the larger male, the arrangement giving the impression of 3 major teeth.

## MAERA DANAE (Stimpson)

*Leptothoe danae* STIMPSON, 1854, p. 46, pl. 3, fig. 32.

*Moera danae* BATE, 1862, p. 190, pl. 34, fig. 6.

*Moera fusca* BATE, 1864, p. 667.

*Maera dubia* CALMAN, 1898, p. 269, pl. 32, fig. 3.—HOLMES, 1904b, p. 239; 1908, p. 539.

*Maera danae* HOLMES, 1905, p. 525, pl. 12, fig. 2.—STEBBING, 1906, p. 440.—BLAKE, 1933, p. 252.

*Material collected.*—In 125 feet, 4 to 5 miles out, September 9, 1948, 4 specimens. In 110 feet, September 16, 1948, 3 specimens. Washed ashore at Point Barrow base, August 25, 1949, 1 specimen. In 328 feet, September 1, 1949, 6 specimens. In 217 feet, 7.5 miles out, September 6, 1949, 12 specimens. In 295 feet, 5 miles out, October 6, 1949, 6 specimens. In 175 feet, 4 miles out, October 14, 1949, 8 specimens. In 162 feet, 3.2 miles out, February 18, 1950, 4 specimens.

*Leptothoe danae* was described by Wm. Stimpson from Grand Manan in 1854, and he gave a very small, sketchy figure of the species. In 1862 C. Spence Bate transferred the species to the genus *Moera*, and gave a figure which is little better than Stimpson's. S. J. Holmes recorded it from Eastport, Maine, in 1905, and Charles H. Blake recorded it from Mount Desert Island, Maine, in 1933. There are specimens in the U. S. National Museum from the east coast of North America from Passamaquoddy Bay, New Brunswick; Casco Bay, Maine; off Cape Cod, Mass.; off Newport, R. I.; and Vineyard Sound.

C. Spence Bate in 1864 (p. 667) described *Moera fusca* from Esquimalt Harbor, Vancouver Island; and in 1898 W. T. Calman described *Maera dubia* from Puget Sound. *Moera fusca* and *Maera dubia* undoubtedly represent the same species, and both appear to be synonyms of *Maera danae*. Excellent specimens were taken off Point Barrow which agree specifically with specimens from the New England coast.

The largest specimens from the east coast of North America measure about 18 mm. The largest specimens from the west coast and Alaska are also about this size. In the U. S. National Museum there are specimens from the west coast of Queen Charlotte Islands; Puget Sound; and Monterey Bay, Calif.

Some specimens of *Maera danae* from the west coast differ somewhat from the typical east-coast form. The second joint of the third, fourth, and fifth peraeopods is occasionally wider in proportion to its length, and the rami of the third uropods are proportionately slightly shorter, but these variations do not appear to be of specific value.

*Maera danae* bears a rather close superficial resemblance to *Maera loveni* (Bruzelius), a much larger species, which inhabits the Arctic. In *M. loveni* the defining tooth of the palm of the second gnathopod of the male bears a long, slender spine, and the second joint of the third, fourth, and fifth peraeopods is long and narrow.

#### CERADOCUS TORELLI (Goëss)

*Ceradocus torelli* STEBBING, 1906, p. 432.—BRÜGGEN, 1909, p. 38, pl. 1, fig. 4.—GURJANOVA, 1930, p. 244.—STEPHENSON, 1940a, p. 310, fig. 38; 1944a, p. 22; 1944b, p. 106.

*Material collected*.—Taken on the beach at Point Barrow base, Alaska, September 28, 1950, 3 specimens.

*Ceradocus torelli*, an arctic species, has been recorded from New Siberian Islands, Murman Coast, Iceland, East and West Greenland, and Bering or Okhotsk Sea. The present record is the first for Alaska.

In the U. S. National Museum there is a specimen of this species from North Devon Island, Arctic Canada; and one taken by the Fisheries steamer *Albatross* at station 5009 (46° 24' 10" N., 142° 40' 00" E.), September 24, 1906, in 25 fathoms. *Ceradocus torelli* is a very large species, the largest specimen in the present collection, a female, measuring 54 mm. It has been taken as low as 95 m.

#### ANISOGAMMARUS (EOGAMMARUS) MACGINITIEL, new species

Figure 16, a-f

*Material collected*.—From beach at Point Barrow base (71° 91' N., 156° 41' W.), September 28, 1950, 6 specimens.

*Male*.—Head not as long as the first two thoracic segments; lateral lobes truncate with rounding corners; eye small, oval, and black. Antenna 1 a little longer than antenna 2; first joint about as long as second and third combined; third not half the length of second; flagellum longer than peduncle and composed of about 24 joints; accessory flagellum of 4 or 5 joints. Antenna 2, gland cone of second joint large and prominent, third joint half as long as the fourth joint, which is longer than the fifth; flagellum shorter than peduncle and composed of about 18 joints. Gnathopods rather short and stout. Gnathopod 1 a little larger than gnathopod 2; second joint as long as the sixth joint; fifth joint about half as long as the sixth, and with a small lower lobe; sixth joint nearly as wide as long, palm transverse, slightly concave, armed on outer and inner margin with 4 short, blunt spine teeth, and defined by 2 spines; seventh joint stout, curved,

as long as palm and bearing a slight protuberance on the inner margin. Gnathopod 2 much like 1; second joint a little longer than sixth; fifth joint over half as long as sixth, and with the lower lobe wider than in gnathopod 1; sixth joint a little longer than wide; palm transverse and armed with spine teeth as in gnathopod 1; seventh joint as in gnathopod 1.

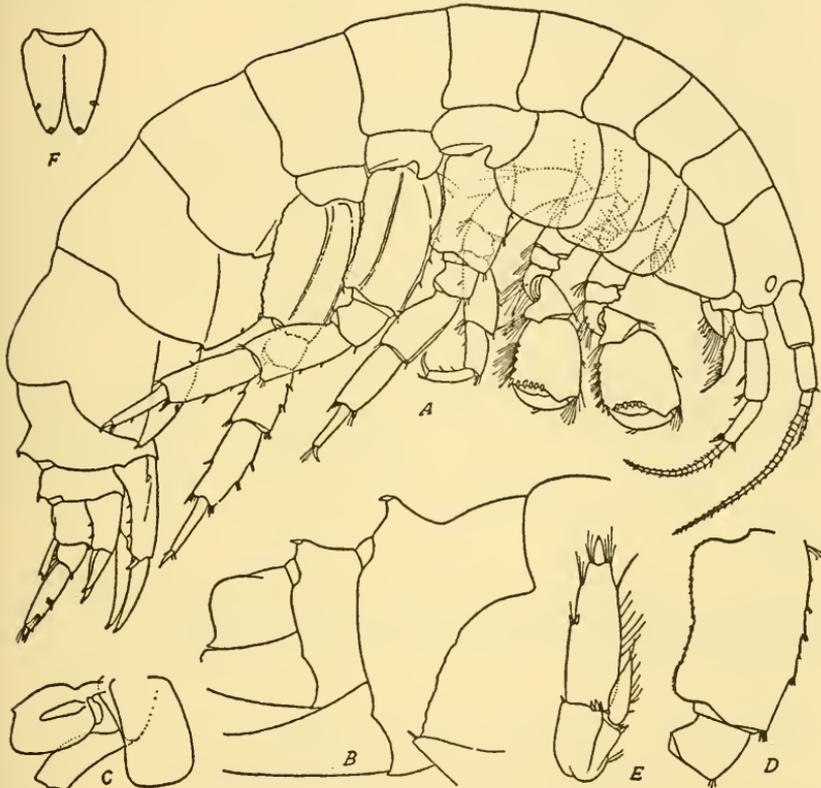


FIG. 16.—*Anisogammarus macginitiei*, new species. Male: *a*, entire animal; *b*, hind end of animal; *c*, gill of gnathopod 2; *d*, peraeopod 3; *e*, uropod 3; *f*, telson.

Peraeopods 1 and 2 alike, but 1 a little the longer. The proportions of peraeopod 1 as shown in figure 16, *a*. Peraeopod 3 longer than peraeopod 1; second joint not much expanded, with hind margin slightly concave and lower hind corner broadly rounding; fourth and fifth joints subequal in length and little expanded; sixth joint slender and shorter than fifth; seventh joint small. Peraeopod 4 longer than 3 and perhaps a little longer than 5; second joint with hind margin slightly concave and lower hind corner narrowly rounding; remaining

joints proportioned as in peraeopod 3. Peraeopod 5 with hind margin of second joint slightly convex; remaining joints as in peraeopod 4. Metasome segments as shown in figure 16, *a*. Urosome segment 1 bearing dorsally a single conical protuberance bearing a small backward-pointing apical spine. Urosome segment 2 bearing 2 transverse dorsal protuberances similar to the one on segment 1 but smaller.

Uropod 1 reaching back farther than uropod 2; peduncle longer than rami, armed on upper lateral margin with 3 small spines and on the outer distal corner with 1 stout upward-curving spine; rami without lateral spines, but bearing a single short apical spine. Uropod 2 similar to uropod 1, but shorter. Uropod 3 extending back farther than uropod 1, peduncle about half the length of the first joint of the outer ramus; outer ramus rather stout and broad, with a group of small spines near the middle of the outer margin, a group of setae near the end, and a row of setae on the inner margin; second joint very small; inner ramus nearly half the length of the outer ramus, inner margin and apex bearing a few setae.

The gill of gnathopod 2 and peraeopods 1, 2, and 3 bears 2 small sausage-shaped appendages; gill of peraeopod 4 bears 3 appendages and that of peraeopod 5 bears 1 appendage. Telson reaching beyond the end of peduncle of uropod 3, cleft nearly to its base, each lobe bearing 1 small lateral and a small apical spine. Length of male 37 mm.

*Type*.—A male, U.S.N.M. No. 92784, taken from beach at Point Barrow base, Alaska ( $71^{\circ} 19' N.$ ,  $156^{\circ} 41' W.$ ), September 28, 1950. Received from Naval Research Laboratory, U. S. Navy.

*Female*.—The female is like the male and is about the same size.

### Family DEXAMINIDAE

#### GUERNEA NORDENSKIÖLDII (Hansen)

*Prinassus nordenskiöldii* HANSEN, 1887a, p. 82, pl. 2, fig. 7; pl. 3, fig. 1.—STEPHENSEN, 1913, p. 128.

*Guernea nordenskiöldii* STEBBING, 1906, p. 522.—SHOEMAKER, 1930b, p. 335.

*Material collected*.—In 125 feet, 4 to 5 miles out, September 9, 1948, 1 specimen. In 120 feet, September 15, 1948, 1 specimen. In 741 feet, 12.1 miles out, August 17, 1949, 1 specimen. In 184 feet, 5 miles out, August 30, 1949, 1 specimen. In 217 feet, 7.5 miles out, September 6, 1949, 1 specimen. In 341 feet, 6 miles out, October 11, 1949, 1 specimen. In 175 feet, 4 miles out, October 14, 1949, 2 specimens.

*Guernea nordenskiöldii* was described by H. J. Hansen from Davis Strait in 1887. In 1917, 9 specimens were taken in the Gulf of St.

Lawrence by the Cheticamp Expedition. In the U. S. National Museum there are 3 specimens from Woods Hole, Mass. The present records from Alaska extend the range of this small amphipod considerably to the west. It measures about 3.3 mm., and has been recorded between 28 and 113 m.

### Family TALITRIDAE

#### HYALE, species

A single male *Hyale* was taken September 15, 1948, off Point Barrow, at a depth of 120 feet, and it appears to be the only representative of this genus ever taken on the northern coast of Alaska. *Hyale prevostii* Milne-Edwards was recorded from Murman Coast by K. M. Derjugin in 1915 (p. 451), and by E. Gurjanova in 1931 (p. 200), but these two identifications are undoubtedly incorrect, as *H. prevostii*, being a temperate-water species, does not occur in cold northern or arctic waters. The male taken off Point Barrow does not agree with any of the described species of *Hyale*; therefore, more material from Point Barrow will have to be studied before the status of this specimen can be determined.

### Family AORIDAE

#### LEMBOS ARCTICUS (Hansen)

*Microdeutopus arcticus* HANSEN, 1887b, p. 231, pl. 22, fig. 3.

*Lembos arcticus* STEBBING, 1906, p. 595.—BRÜGGEN, 1909, p. 39, pl. 3, figs. 22-28.

—DERJAVIN, 1930, p. 327.—GURJANOVA, 1935a, p. 77.—STEPHENSON, 1942, p. 366, fig. 53.

*Material collected*.—Washed ashore September 9, 1948, 1 specimen ♀. In 162 feet, 3.2 miles out, February 18, 1950, 2 specimens ♂ and ♀.

This species has been taken in the Kara Sea, Barents Sea, Nova Zembla, Jugor Strait, Sea of Japan, and now from northern Alaska. It is a large species, measuring as much as 29 mm., and it has been taken as low as 100 m.

### Family PHOTIDAE

#### PHOTIS REINHARDI Kröyer

*Photis reinhardi* SARS, 1894, p. 569, pl. 202.—STEBBING, 1906, p. 607.—STEPHENSON, 1942, p. 369; 1944b, p. 117.—SHOEMAKER, 1945a, p. 3, fig. 1.

*Material collected*.—In 110 feet, September 9, 1948, 1 specimen. In 125 feet, September 9, 1948, 7 specimens. In 120 feet, Septem-

ber 15, 1948, 2 specimens. In 120 feet, August 8, 1949, 1 specimen. In 438 and 741 feet, 12.1 miles out, August 17, 1949, 2 specimens. In 184 feet, 5 miles out, August 30, 1949, 1 specimen. In 216 feet, 4.3 miles out, October 6, 1949, 1 specimen. In 295 feet, 5 miles out, October 6, 1949, 2 specimens. In 341 feet, 8 miles out, October 11, 1949, 1 specimen. In 453 feet, 8 miles out, October 11, 1949, 25 specimens. In 175 feet, 4 miles out, October 14, 1949, 4 specimens. In 162 feet, 3.2 miles out, February 18, 1950, 7 specimens.

*Photis reinhardi* is probably a circumpolar species that extends down into the North Atlantic and North Pacific. It has been recorded from the coasts of northern Europe, Iceland, East and West Greenland, Labrador, Gulf of St. Lawrence, east coast of the United States as far south as the Gulf of Mexico, and in the Pacific from the Sea of Okhotsk. It reaches a length of 5 mm., and has been recorded from shallow water down to about 94 m.

#### EURYSTHEUS MELANOPS Sars

Figure 17, a-d

*Gammaropsis melanops* Sars, 1894, p. 560, pl. 199, fig. 1, ♀.

*Eurystheus maculatus* Stebbing, 1906, p. 617.

*Eurystheus melanops* Stephensen, 1942, p. 370.

*Material collected*.—In 125 feet, 5 to 12.1 miles out, September 8 to 23, 1948, 29 specimens. In 152 to 741 feet, 4 to 16 miles out, August 17 to October 14, 1949, 50 specimens.

As the second gnathopod of the male appears to be quite variable, figures of the gnathopods of a male measuring 8 mm. taken at Point Barrow are given here. A figure of the long, slender epistome, which is characteristic of this species, is also given. *Eurystheus melanops* has been recorded from Murman Coast, White Sea, Nova Zembla, Iceland, East and West Greenland, Gulf of St. Lawrence, Norway, and Denmark. In the U. S. National Museum there are specimens from Eastport, Maine, taken in 1893. It reaches a length of about 12 mm., and has been recorded as low as 100 m.

#### PROTOMEDEIA FASCIATA Krøyer

Figure 17, e-f

*Protomeдея fasciata* Sars, 1894, p. 552, pl. 196.—Stebbing, 1906, p. 623.—Stephensen, 1942, p. 376, fig. 56.

*Material collected*.—In 110 feet, September 8, 1948, about 60 specimens. Washed ashore August 21, 1949, 1 specimen. In 217 feet, 7.5 miles out, September 6, 1949, 2 specimens.

The male here figured, measuring about 8 mm., is as figured by Stephensen (1942, p. 376, fig. 56). The distal lobe at the lower hind margin of the second joint of the first gnathopod of the male is very characteristic of this species.

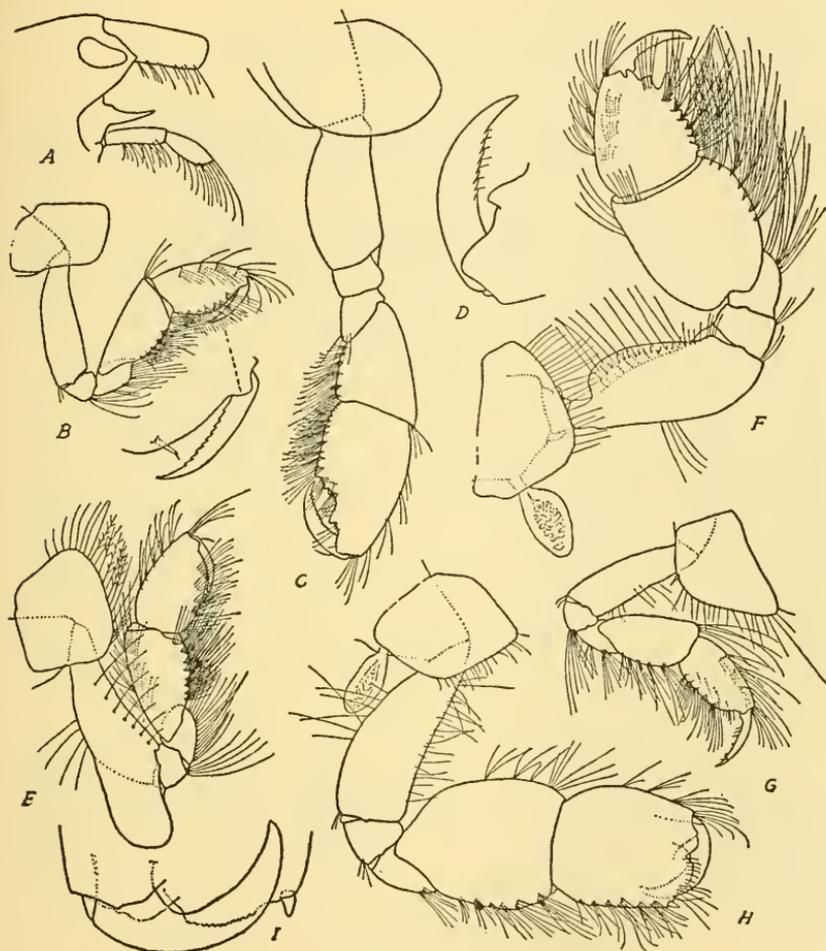


FIG. 17.—*a-d*, *Eurystheus melanops* Sars. Male: *a*, head, showing epistome; *b*, gnathopod 1; *c*, gnathopod 2; *d*, seventh joint of gnathopod 2. *e*, *f*, *Protomedeia fasciata* Kröyer. Male: *e*, gnathopod 1; *f*, gnathopod 2. *g-i*, *Protomedeia grandimana* Brüggén. Male: *g*, gnathopod 1; *h*, gnathopod 2; *i*, end of sixth joint gnathopod 2, showing the overlapping seventh joint.

*Protomedeia fasciata* has been recorded from Kara Sea; White Sea; Murman Coast; North, West, and South Norway; Kattegat and Skagerrak; east coast of England; Shetland Islands; Faröe Island; Iceland; Gulf of St. Lawrence; Woods Hole, Mass.; Greenland;

Dolphin and Union Strait; Kotzebue Sound, Alaska; and Spitzbergen. The present specimens are the first from the north coast of Alaska. This species measures about 8 mm., and it has been taken from shallow water down to about 87 m.

#### PROTOMEDEIA GRANDIMANA Brügger

Figure 17, *g-i*

*Protomedeia grandimana* BRÜGGEN, 1905, p. 223, pl., fig. 5; 1907, p. 233, figs. 8, 9.—STEBBING, 1906, p. 738.—STEPHENSEN, 1942, p. 379 (part), fig. 57; 1944b, p. 122.

*Material collected.*—In 110 feet, September 8, 1948, 3 specimens.

The males taken at Point Barrow agree with a male 9 mm. in length identified by Brügger, which is now in the collection of the U. S. National Museum. The figures here given of an Alaskan male agree with the specimen identified by Brügger. Gnathopod 1 has no lobe at the lower hind margin of the second joint; the fifth joint is about as wide as, but a little longer than, the sixth; sixth joint with short convex palm which merges into the hind margin of joint without defining angle; seventh joint slender, slightly curved, and much longer than the palm. Gnathopod 2 much like Brügger's figure; fifth joint a little wider and longer than sixth; sixth joint has palm nearly transverse, with a raised, finely serrate central ridge, palm defined by a rounding angle bearing a stout spine; seventh joint strong, greatly curved, and closing against the inside surface of sixth joint. This species reaches a length of 9 mm., and has been taken from shallow water down to 160 m.

*Protomedeia grandimana* has been recorded from Murman Coast, Kara Sea, Spitzbergen, and now from Alaska. Many of the localities assigned to this species by Stephensen (1942, pp. 384 and 385) undoubtedly apply only to the following species, *Protomedeia stephenseni*.

#### PROTOMEDEIA STEPHENSENI, new species

Figure 18, *a-l*

*Protomedeia grandimana* STEPHENSEN, 1942, p. 379 (part), figs. 58, 59.

*Material collected.*—Washed ashore at Point Barrow base, Alaska, August 21, 1949, 10 specimens. Washed ashore at Point Barrow base, Alaska, September 22, 1949, 1 specimen.

Stephensen (1942, p. 379, figs. 58 and 59) partially described and figured a male and female specimen of *Protomedeia* which he identified as *P. grandimana* Brügger. His specimens, taken at East Iceland

and North Norway, are undoubtedly the same as the present specimens taken at Point Barrow, Alaska. Mature specimens of this species and mature specimens of *P. grandimana*, both taken at Point

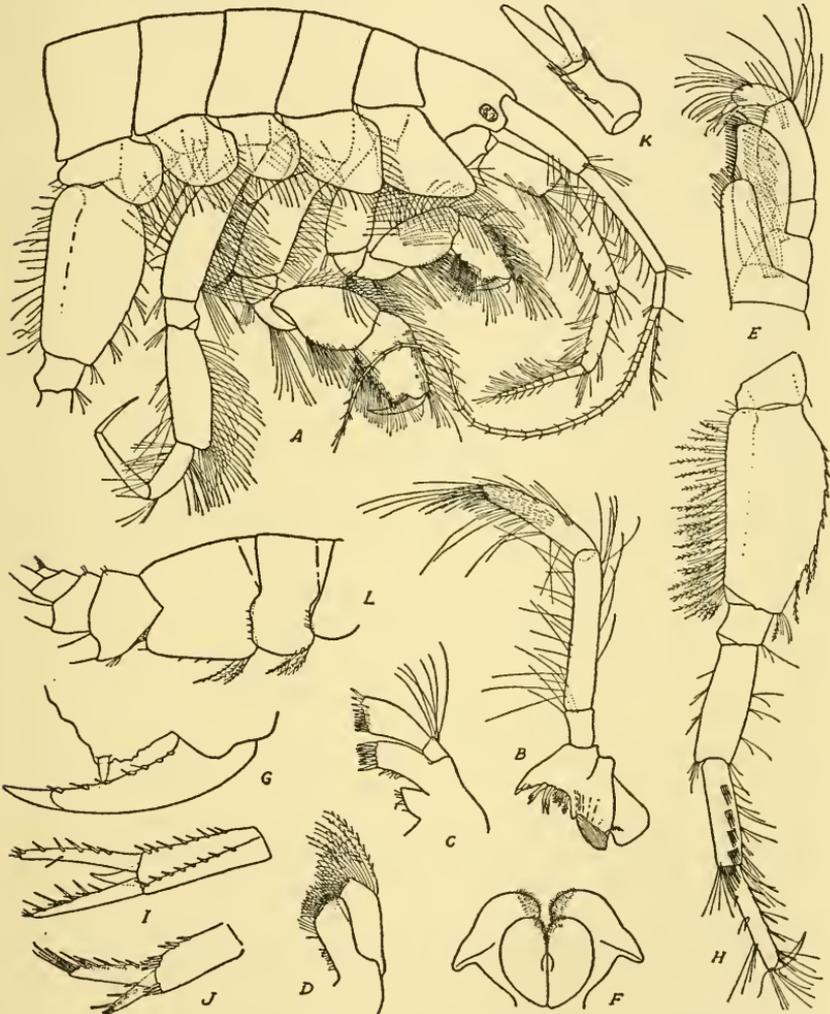


FIG. 18.—*Protomedeia stephenseni*, new species. Male: *a*, front end of animal; *b*, mandible; *c*, maxilla 1; *d*, maxilla 2; *e*, maxilliped; *f*, lower lip; *g*, palm and seventh joint of gnathopod 2; *h*, pereopod 4; *i*, uropod 1; *j*, uropod 3, side view; *k*, uropod 3, top view; *l*, hind end of animal.

Barrow, present characters which definitely separate these two species. I am, therefore, naming this new species in honor of the late Dr. K. Stephensen.

*Male*.—Head about as long as the first two body segments com-

bined; lateral lobes rather prominent; eye small and dark. Antenna 1 considerably longer than antenna 2; first peduncular joint shorter than second; third joint about one-third as long as second; flagellum longer than peduncle and composed of about 30 joints; accessory flagellum of 7 joints. Antenna 2, third peduncular joint about two-thirds as long as fourth, which is about one-third longer than the fifth; flagellum a little longer than the fifth peduncular joint and composed of about 9 joints.

Mandible, cutting edge narrow; accessory plate bearing distal teeth; 2 teeth in spine row followed by a few plumose setules; molar strong with its base produced into a blunt process; palp long, third joint about three-fourths as long as the second, very setose, and armed distally with many long and short spines, a few of the short ones being pectinate. Lower lip with large inner lobes and short blunt mandibular processes. Maxilla 1, inner plate short with only a few marginal setules; outer plate armed with 10 or 11 spine teeth; palp large, expanded distally, its obliquely truncate end armed on the inside with 11 spines and on the outside with 12. Maxilla 2, outer plate longer than inner, both expanded distally and armed with long and short spinules. Maxilliped, inner lobe reaching to middle of outer lobe and armed on the rounding distal end with a few slender spines but no spine teeth; outer lobe reaching nearly to end of second joint of palp, inner margin armed with slender spine teeth; palp with second joint expanded in the middle; third joint short; fourth joint small and slender and bearing a sharp slender nail.

Gnathopod 1, fifth joint a little longer and wider than sixth; sixth joint with short transverse palm which is greatly overlapped by the seventh joint. Gnathopod 2 longer and stouter than 1; fifth joint longer and wider than sixth; sixth joint with short transverse palm defined by a stout spine; seventh joint considerably overlapping palm and armed on inner margin with a few short spinules and setules. Both gnathopods very setose or hairy. Peraeopods 1 and 2 subequal in length with proportions as shown by figure 18, *a*. Peraeopods 3 to 5 much alike and increasing consecutively in length. The armature of peraeopods 3 to 5 as shown for peraeopods 4 (fig. 18, *h*).

Lower posterior margin of metasome segment 3 evenly and bluntly rounding (fig. 18, *l*). Uropods 1 and 2 extending back the same distance and both armed with long slender spines. Uropod 3 extending back a little farther than uropod 2; outer ramus longer than inner, both rami bearing rows of long slender spines, and outer ramus carrying also a group of long apical spines which are characteristic of this species; the peduncle when viewed from above shows an inner

proximal lobe (fig. 18, *k*). Coxal plates overlapping slightly; first plate produced considerably forward below, and all plates furnished with long marginal setae. Length of fully grown male about 14 mm.

*Female*.—The female is like the male except that the gnathopods are a little smaller and weaker. Mature females are as large as the males.

*Type*.—A male, U.S.N.M. No. 92257, washed ashore at Point Barrow base, Alaska, August 21, 1949, collected by Geo. E. MacGinitie.

Beside the Alaskan specimens there are in the U. S. National Museum a specimen of this species taken at Nain, Labrador, August 1908; and one at Port Burwell, Labrador, October 1927.

*Protomedea stephenseni* has been taken at Spitzbergen, North Norway, Iceland, East and West Greenland. Many of the localities assigned to this species by Stephensen (1942, pp. 384 and 385) undoubtedly belong only to *P. grandimana*.

*Remarks*.—The female of *P. stephenseni* can be distinguished from *P. fasciata* by the group of long terminal setae on the outer ramus of the third uropod, the latter species having only one long seta and several short terminal spines. *P. grandimana* has a few long terminal setae, but not a conspicuous brush as in *P. stephenseni*.

#### PODOCEROPSIS LINDAHLII Hansen

Figure 19, *a-g*

*Podoceroopsis lindahlII* HANSEN, 1887a, p. 157, pl. 6, fig. 2.—STEBBING, 1906, p. 619.

*Material collected*.—In 135 feet of water, 3.1 miles out, March 9, 1950, 1 specimen.

The specimen described and figured by Hansen appears to have been a female. As this species has not been taken since its discovery in 1887, the single specimen, a male, taken at Point Barrow, is here described and figured.

*Male*.—Head about as long as the first two body segments combined; lateral lobes produced considerably forward; eye oval and situated in the front of the lateral lobe. Antenna 1 a little over two-thirds as long as antenna 2, which is about one-half as long as the body. Antenna 1, first joint two-thirds as long as the second, and equal in length to the third; second joint one-third longer than third joint; flagellum about two-thirds as long as the peduncle and consisting of about 12 joints. Antenna 2, third joint a little over one-third the length of the fourth, which is equal in length to the fifth; flagellum not quite as long as the fifth peduncular joint, and consisting of about 7 joints, the first of which is the longest.

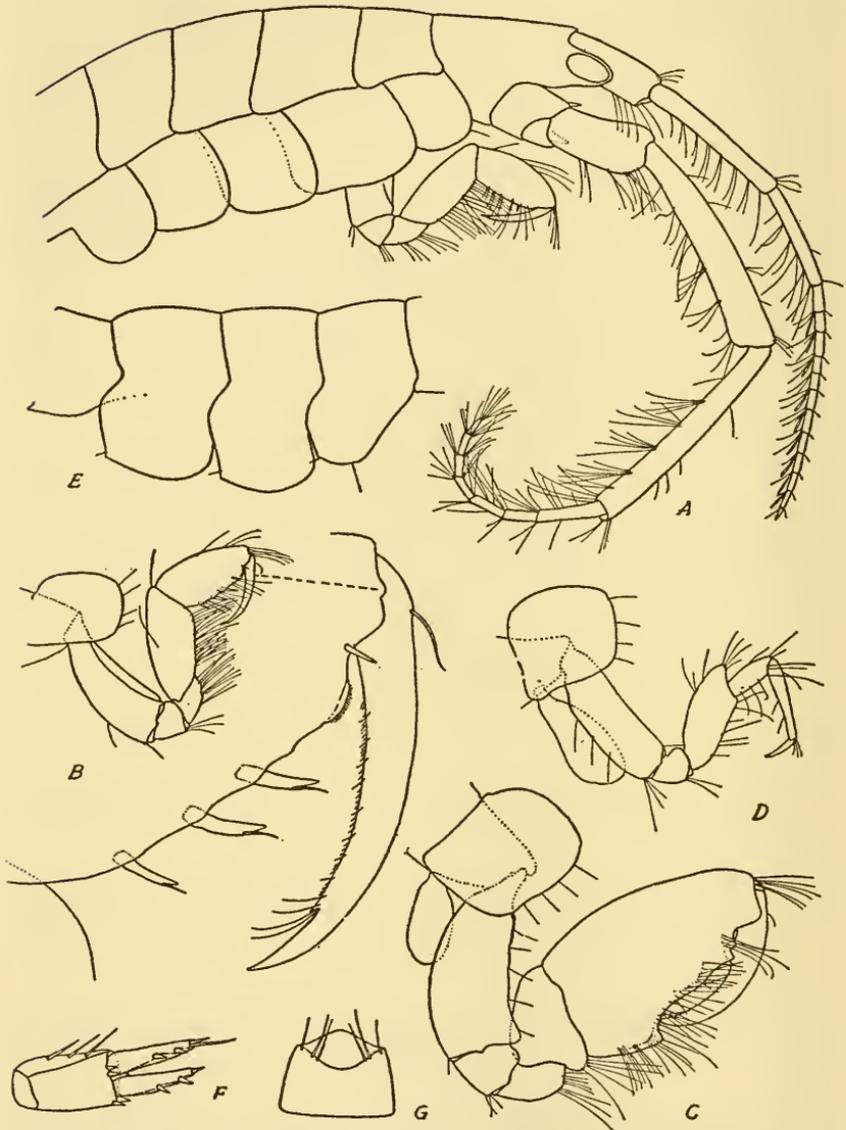


FIG. 19.—*Podoceroopsis lindahlii* Hansen. Male: *a*, front end of animal; *b*, gnathopod 1; *c*, gnathopod 2; *d*, pereopod 2; *e*, hind end of animal; *f*, uropod 3; *g*, telson.

Gnathopod 1 slender; second and fifth joints equal in length; sixth joint a little shorter than the fifth, but equal to it in width; palm very short and oblique and defined by a very thin lamella bearing very fine marginal teeth; hind margin of joint bearing 3 stout spines and several long slender spines; seventh joint reaching down beyond the middle of hind margin of the sixth joint, and armed on the inner margin with very fine teeth and a number of setules. Gnathopod 2 much larger and stronger than 1; second joint short and broad and slightly produced at the lower front corner; fifth joint shorter than wide; sixth joint strongly developed and one-third longer than wide; palm very oblique and nearly twice as long as the hind margin of the joint, a protuberance bearing a notch near the hinge, rest of palm sinuous, and concave near the defining angle; the defining angle and the adjacent border of the hind margin produced into a thin lamella which projects inward toward the axis of the body; seventh joint strongly curved, with the apex resting on the inside of palm near the defining angle, and bearing a prominent knob which rests on the inner surface of the protuberance of the palm when the joint is closed against the palm.

Peraeopods 1 and 2 alike, fourth joint expanded; fifth joint a little over half the length of the sixth; both fifth and sixth joints slender; seventh joint slender and not quite half the length of the sixth. Peraeopods 3 to 5 missing. Metasome segments with the lower lateral hind margin bulging considerably backward, and with the lower hind angle obtuse. The first and second urosome segments with a seta on either side of the posterior dorsal margin.

Coxal plate 1 the narrowest and 2 the broadest. Uropods 1 and 2 extending back about the same distance, with the outer ramus a little shorter than the inner. Uropod 1, peduncle armed on upper outer margin with about 9 short spinules, and with the lower distal end produced into a stout upward-curving tooth or projection. Uropod 2, peduncle with 1 or 2 spinules on upper outer margin, and without a tooth or projection on the lower distal end. Uropod 3 not reaching back quite as far as 2; rami of nearly equal length and as long as their peduncle. Telson not reaching to end of peduncle of uropod 3, wider than long and bearing a few posterior setae. The length of the male, 7 mm. Stebbing gives 91 m. for the depth of this species.

### Family JASSIDAE

#### ISCHYROCERUS LATIPES Kröyer

*Ischyrocerus latipes* KRÖYER, 1842, p. 162.—STEPHENSEN, 1913, p. 212; 1944b, p. 124.—SCHELLENBERG, 1924, p. 210, fig. 10; 1935, p. 29.—GURJANOVA, 1935a, p. 77.

*Podocerus latipes* BOECK, 1876, p. 600, pl. 29, fig. 1.—HANSEN, 1887a, p. 161, pl. 6, fig. 3.

*Podocerus assimilis* SARS, 1885, p. 205, pl. 17, fig. 1.

*Ischyrocerus assimilis* + *latipes* STEBBING, 1906, pp. 659, 660.

*Ischyrocerus assimilis* STEPHENSEN, 1944a, p. 31, figs. 22, 23.

*Material collected.*—In depths from the beach down to 520 feet, between July 21, 1948, to July 29, 1951, about 300 specimens.

There are reasons that lead one to believe that *Ischyrocerus latipes* Kröyer and *Podocerus assimilis* Sars are one and the same species. Kröyer did not give the length of *I. latipes*, but Stebbing gives the length as 14 to 15 mm. *Podocerus assimilis* was described from a small specimen of 8 mm. The discrepancies in the descriptions of these two species could be due to the immaturity of *Podocerus assimilis*. Sars shows the lower hind corner of the third metasome segment as evenly and broadly rounding, which may have been due to the difficulty of observing the outline of the colorless transparent segment. In larger, more-mature specimens, this angle is quadrate or even slightly produced. He figures the first and second uropods as having very few spinules, which is correct for small specimens where the spinules are few and difficult to observe. The number of spinules on the uropods increases considerably with the size of the animal. In the specimen of *assimilis* measuring 9 mm., figured by Stephensen (1944a, p. 31, fig. 22u), there are 10 spinules on the outer margins of the outer ramus of the first uropod, while in specimens from Point Barrow measuring 16 mm. there are at least twice that number. The specimens from Point Barrow that have been identified as *Ischyrocerus latipes* agree with the figures given by Stephensen for *Ischyrocerus assimilis*. Little can be learned from Boeck's figure (1876, pl. 29, fig. 1) which, if it is of *I. latipes*, does not agree in some characters with that species. The specimens from Point Barrow and Stephensen's figure of *I. assimilis* agree with the figures given by Hansen (1887a, pl. 6, fig. 3) of *Podocerus latipes* as far as they go.

This species was correctly placed in the genus *Ischyrocerus* by Kröyer. Later authors placed it in *Podocerus*, and Stebbing in 1906 returned it to *Ischyrocerus*.

*Ischyrocerus latipes* has been recorded from Spitzbergen, White Sea, Kara Sea, Barents Sea, Jugor Strait, New Siberian Islands, East and West Greenland, and now for the first time from Alaska, where it appears to be quite common. This is a large species, reaching a length of 15 mm. or more. It has been taken down to 350 m.

The specimens from Hudson Bay identified as *I. assimilis* (Shoemaker, 1926, p. 10) have been examined and have been found to be *Ischyrocerus latipes* Kröyer.

**ISCHYROCERUS COMMENSALIS** Chevreux

*Ischyrocerus commensalis* CHEVREUX, 1900, p. 104, pl. 12, fig. 2.—STEBBING, 1906, p. 739.—SHOEMAKER, 1930b, p. 344, fig. 51.—GURJANOVA, 1935b, p. 558.—STEPHENSEN, 1944a, p. 28.

*Material collected.*—In 80 feet, July 21, 1948, 3 specimens. In 125 feet, 4 to 5 miles out, September 9, 1948, 16 specimens. In 120 feet, September 15, 1948, 5 specimens. In 420 feet, 7 miles out, August 9, 1949, 1 specimen. In 184 feet, 5 miles out, August 20, 1949, 7 specimens. In 217 feet, 7.5 miles out, September 6, 1949, 9 specimens. In 453 feet, 8 miles out, October 11, 1950, 1 specimen. Dredged in 6 to 50 m., July 29, 1951, 1 specimen.

*Ischyrocerus commensalis* was described by Édouard Chevreux from off Newfoundland in 1900. It was recorded from the Gulf of St. Lawrence in 1930. Gurjanova recorded it from Jugor Strait in 1935; and in 1944 Stephensen recorded it from West Greenland. The present records are the first for Alaska. Numerous specimens of this species were taken in Pavlof Bay, Alaska Peninsula, in 1940, by Dr. Waldo L. Schmitt while on the Alaska king crab investigation.

This species measures about 6 mm., and has been taken as deep as 682 m.

## Family COROPHIIDAE

**UNCIOLA LEUCOPIS** (Kröyer)

*Unciola leucopis* SARS, 1894, p. 620, pl. 222.—STEBBING, 1906, p. 678.—GURJANOVA, 1935a, p. 78.—STEPHENSEN, 1942, p. 405; 1944b, p. 129.—SHOEMAKER, 1945b, p. 451, fig. 3.

*Material collected.*—In 80 feet, September 9, 1948, 1 specimen. In 438 feet, 12.1 miles out, August 17, 1949, 1 specimen. In 477 feet, 16 miles out, September 6, 1949, 3 specimens. In 218 feet, 4.3 miles out, October 6, 1949, 7 specimens. In 295 feet, 5 miles out, October 6, 1949, 4 specimens. In 341 feet, 6 miles out, October 11, 1949, 1 specimen. In 453 feet, 8 miles out, October 11, 1949, 4 specimens. In 152 feet, 3.5 miles out, October 14, 1949, 1 specimen. In 162 feet, 3.2 miles out, February 18, 1950, 2 specimens. Dredged at 38 m., July 29, 1951, near Point Barrow, 1 specimen.

*Unciola leucopis* has been recorded from Nova Zembla, Spitzbergen, west coast of Norway, Iceland, east and west coasts of Greenland, and along the east coast of North America down to Georges Bank off the coast of Massachusetts. The present records are the first for Alaska. This species reaches a length of 15 mm., and has been taken as deep as 1,260 m.

**ERICTHONIUS HUNTERI (Bate)**

*Cerapus hunteri* BATE, 1862, p. 264, pl. 45, fig. 3.

*Erichthonius hunteri* SARS, 1894, p. 605, pl. 216, fig. 2.—STEBBING, 1906, p. 673.—CHEVREUX and FAGE, 1925, p. 354, fig. 363.—STEPHENSEN, 1942, p. 403.

*Material collected.*—In 125 feet, 4 to 5 miles out, September 9, 1948, about 30 specimens. In 125 feet, September 15, 1948, 1 specimen. In 216 feet, 4.3 miles out, October 6, 1949, 3 specimens. In 152 feet, 3.5 miles out, October 14, 1949, 4 specimens. In 175 feet, 4 miles out, October 14, 1949, 15 specimens. In 162 feet, 3.2 miles from beacon light, February 18, 1950, 15 specimens.

Stephensen gives the following distribution: "West coast of Norway; Murman Coast; White Sea; northern Russia; Barents Sea; Jugor Strait; Bay of Biscay; Faroes; Black Sea; and Okhotsk Sea." The present records are the first for Alaska. *Erichthonius hunteri* reaches a length of 15 mm., and has been recorded down to 235 m.

**ERICTHONIUS TOLLI Brüggén**

*Erichthonius tolli* BRÜGGÉN, 1909, p. 41, pl. 1, fig. 6, pl. 3, figs. 29-34.—SHOEMAKER, 1926, p. 10.—STEPHENSEN, 1933, p. 50.—GURJANOVA, 1938, pp. 374, 404.

*Material collected.*—In 125 feet, 4 to 5 miles out, September 9, 1948, 50 specimens. In 130 feet, 4 miles out, August 9, 1949, 2 specimens. In 420 feet, 7 miles out, August 9, 1949, 6 specimens. In 180 feet, 5 miles out, August 30, 1949, 15 specimens. In 217 feet, 7.5 miles out, September 6, 1949, 17 specimens. In 477 feet, 16 miles out, September 6, 1949, 3 specimens. In 130 feet, 6 miles out, September 15, 1949, 7 specimens. In 216 feet, 4.3 miles out, October 6, 1949, 4 specimens. In 341 feet, 6 miles out, October 11, 1949, 30 specimens. In 453 feet, 8 miles out, October 11, 1949, 20 specimens. In 152 feet, 3.5 miles out, October 14, 1949, 1 specimen. In 175 feet, 4 miles out, October 14, 1949, 8 specimens. Dredged at 6 to 50 m., July 29, 1951, 75 specimens.

*Erichthonius tolli* was described by Brüggén in 1909 from off Siberia (76° 37' N., 147° 27' E.) from a depth of 42 m. In 1926 it was recorded from Hudson Bay. Stephensen recorded it in 1933 from West Greenland (76° 40' N., 76° 20' W.), taken in 85 m. It was recorded from Japan in 1930 by Derjavin, and in 1938 by Gurjanova. The present records are the first for Alaska. There are in the U. S. National Museum a considerable number of specimens taken by the Fisheries steamer *Albatross* in Bering Sea in 1890. This species reaches a length of 13 mm., and it has been taken as deep as 235 m.

## Family PODOCERIDAE

**DULICHIA SPINOSISSIMA** Kröyer

*Dulichia spinosissima* Sars, 1894, p. 635, pl. 228.—Stebbing, 1906, p. 709.—Stephensen, 1942, p. 416.

*Material collected*.—Washed ashore September 12, 1949, 1 specimen. Washed ashore October 3, 1949, 1 specimen. Washed ashore October 28, 1949, 1 specimen. In 162 feet, February 18, 1950, 1 specimen. In 80 feet, March 13, 1950, 1 specimen. From beach at Point Barrow, September 24, 1950, 2 specimens.

*Dulichia spinosissima* is a large circumpolar species that has not heretofore been recorded from Alaska. It reaches a length of 31 mm., and has been taken as deep as 100 m.

**DULICHIA PORRECTA** (Bate)

*Dyopodos porrectus* Bate, 1857, p. 151.

*Dulichia porrecta* Stebbing, 1906, p. 712.—Sars, 1894, p. 637, pl. 229.—Stephensen, 1942, p. 419.

*Material collected*.—In 80 feet, August 21, 1948, 9 specimens. In 213 feet, October 6, 1949, 1 specimen. In 175 feet, October 14, 1949, 1 specimen.

*Dulichia porrecta* has been recorded from Norway; Denmark; northwestern France; Shetlands; Iceland; West Greenland; Hudson Bay; Cape Smyth and Point Barrow, Alaska; and Northwest Pacific. It measures about 6 mm., and has been taken down to 118 m.

**DULICHIA ARCTICA** Murdoch

Figure 20

*Dulichia arctica* Murdoch, 1885a, p. 521; 1885b, p. 149, pl. 2, fig. 3.—Stebbing, 1906, p. 710.

*Material collected*.—In 184 feet, 5 miles out, August 30, 1949, 1 specimen. Washed ashore at Point Barrow base, September 12, 1949, 1 specimen. From the beach at Point Barrow, September 28, 1950, 4 specimens.

John Murdoch described this species from Point Barrow and Cape Smyth, Alaska, in 1885. In 1930 it was recorded from the Gulf of St. Lawrence from specimens taken by the Cheticamp Expedition. In the U. S. National Museum there is a male taken at Egg Harbor, Labrador, by Owen Bryant, August 10, 1908.

Murdoch's description being very brief and his figure lacking nearly all detail, a figure of a male 20 mm. in length, and a short diagnosis of the principal characters are given here.

The eye, which is reddish brown in alcohol, is situated in an oval, bulging area. The mesosome segments (with the exception of the seventh) bear on the lower margin an angular projection. The first coxal plate is produced into a long, narrow, pointed process. The second coxal plate bears a pointed process at the lower front and hind corner and a round knob in the middle. The third to seventh coxal plates bear a pointed or angular process on the lower margin. Gnathopod 1, sixth joint with a very short, nearly transverse palm. Gnathopod 2, second joint with the lower front corner produced into an angular process; sixth joint bearing 2 sharp angular processes; and

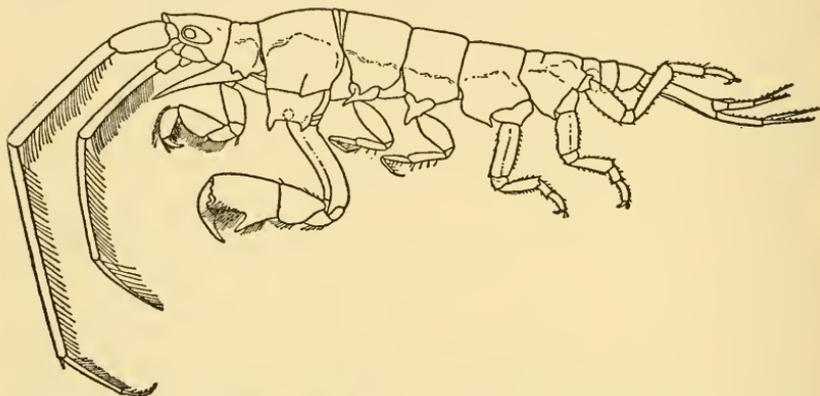


FIG. 20.—*Dulichia arctica* Murdoch. Male. Entire animal.

seventh joint bearing on its lower margin a prominent tooth or tubercle near the hinge and a lower, broader tubercle toward the apex.

Peraeopods 1 and 2 short and slender; second joint very little expanded. Peraeopods 3 to 5 rather short with second joint scarcely at all expanded. Peraeopod 5 longer than 3 or 4. The coalesced first and second urosome segments shorter than uropod 1.

The figure given by Murdoch was of a smaller male, which did not possess fully developed characters. *Dulichia arctica* reaches a length of at least 20 mm., and it has been taken as low as 75 m.

#### PARADULICHIA, species

*Material collected*.—Washed ashore at Point Barrow base, August 21, 1949, 1 specimen. Beach at Point Barrow base, September 28, 1950, No. 528, 1 specimen.

These 2 male specimens, measuring about 9 mm. each, are not in a sufficiently good state of preservation for describing or figuring.

## Suborder HYPERIIDEA

## Family HYPERIIDAE

**HYPERIA MEDUSARUM (Müller)**

*Hyperia medusarum* BOVALLIUS, 1889, p. 147, pl. 9, figs. 1-21.—SARS, 1890, p. 7, pl. 3, fig. 2.—STEPHENSEN, 1923, p. 15; 1924, p. 80; 1933, p. 61; 1940b, p. 4

*Material collected.*—From medusa taken halfway between Point Barrow and Point Barrow base, August 10, 1948, 1 specimen. Washed ashore near Point Barrow base July 20-23, 1949, 8 specimens; August 21, 1949, 1 specimen; September 22, 1949, 2 specimens; September 28, 1949, 1 specimen; October 1-5, 1949, 8 specimens; November 19, 1949, 2 specimens. In fish trap, February 20, 1950, 1 specimen. Washed ashore at Point Barrow base, July 19, 1950, 87 specimens. Beach at Point Barrow base, September 28, 1950, 5 specimens.

*Hyperia medusarum* occurs in the North Atlantic and North Pacific, and there are a few records from the Arctic. It has been recorded from Hudson Bay (Shoemaker, 1926, p. 3) and from Point Barrow by John Murdoch in 1885. It reaches a length of 15 mm., and has been taken as low as 250 m.

**HYPERIA GALBA (Montagu)**

*Hyperia galba* SARS, 1890, p. 7, pl. 2, pl. 3, fig. 1.—CALMAN, 1898, p. 265.—WALKER, 1904, p. 235.—STEPHENSEN, 1923, p. 17; 1944b, p. 9.—BARNARD, 1930, p. 411; 1932, p. 273.

*Material collected.*—In 80 feet, 1.8 miles out, March 20, 1950, 6 specimens.

Dr. Stephensen says of this species: "Very widely distributed in the northern Atlantic, mainly north of 50° N., and arctic seas; probably circumpolar." Barnard (1930, p. 411) records it west of the Falkland Islands, and from Melbourne Harbor, Australia, and later (1932, p. 273) from South Africa. This species reaches a length of about 24 mm., and has been taken as low as 2,000 m.

**HYPEROCHE MEDUSARUM (Krøyer)**

*Hyperoche kroeyeri* SARS, 1890, p. 9, pl. 4.—SHOEMAKER, 1920, p. 24.

*Hyperoche medusarum* STEPHENSEN, 1923, p. 13; 1933, p. 61; 1940b, p. 5.—BARNARD, 1932, p. 276.—CRAWFORD, 1936, p. 105.

*Material collected.*—In plankton off Point Barrow base, August 16, 1948, 1 specimen.

Stephensen says of this species: "A boreo-arctic species, widely distributed in the northern Atlantic with adjacent arctic seas." It

has been recorded from Collinson Point, Alaska (*H. kroeyeri* Shoemaker, 1920, p. 24); and from the Gulf of St. Lawrence (Shoemaker 1930b, p. 350). It ranges in length from 8 to 20 mm., and has been taken between 200 and 1800 m.

#### THEMISTO LIBELLULA (Mandt)

*Themisto libellula* BUCHHOLZ, 1874, p. 385, pl. 15, fig. 1.—SARS, 1890, p. 13, pl. 6, fig. 1.—STEPHENSEN, 1923, p. 24; 1933, p. 63; 1944b, p. 12.

*Material collected.*—In 125 feet, 4 to 5 miles out, September 9, 1948, 3 specimens. Off Point Barrow base in plankton, July 26, 1948, 2 specimens. Washed ashore September 6, 1949, 1 specimen; and September 12, 1949, about 1,000 specimens. Washed ashore at Elson Lagoon, September 20, 1949, 1 specimen. On beach at Point Barrow, September 24, 1950, 4 specimens.

*Themisto libellula* is a circumpolar species which dips down into the North Atlantic to Iceland and southern Greenland. It has been recorded from Bernard Harbor, Northwest Territories, and Dolphin and Union Strait (Shoemaker, 1920); and from Hudson Bay (Shoemaker, 1926). The present records are the first for Alaska. This species measures from 10 to 60 mm., and has been taken as deep as 2,500 m.

#### THEMISTO ABYSSORUM (Boeck)

*Parathemisto oblivia* SARS, 1890, p. 10, pl. 5, fig. 1.

*Themisto abyssorum* STEPHENSEN, 1923, p. 20, chart 4; 1944b, p. 10.

*Material collected.*—Taken at beach, Point Barrow, September 24, 1950, 1 specimen.

*Themisto abyssorum* is an arctic species that dips down into the northern part of the North Atlantic and North Pacific. Stephensen gives 17 to 21 mm. as the length of this species. A depth of 3127 m. has been recorded by Sars between Norway and Jan Mayen.

#### LITERATURE CITED

BARNARD, K. H.

1930. Amphipoda. British Antarctic (*Terra Nova*) Expedition 1910, Nat. Hist. Rep., Zool., vol 8, No. 4, pp. 307-454.

1932. Amphipoda. *Discovery Reports*, vol. 5, pp. 1-326.

BATE, C. SPENCE.

1857. A synopsis of the British edriophthalmous Crustacea. Pt. 1, Amphipoda. *Ann. Mag. Nat. Hist.*, ser. 2, vol. 19, pp. 135-152, 2 figs.

1862. Catalogue of the specimens of amphipodous crustaceans in the collection of the British Museum, pp. 1-399, pls. 1-58.

1864. Characters of new species of crustaceans discovered by J. K. Lord on the coast of Vancouver Island. *Proc. Zool. Soc. London*, 1864, pp. 662-668.

BLAKE, CHARLES H.

1933. Biological survey of the Mount Desert region. Pt. 5, Marine fauna. (Amphipoda, pp. 248-257.)

BOECK, AXEL J.

1871. Crustacea Amphipoda borealis et arctica. Vid.-Selsk. Forh., 1870, pp. 81-284. Christiania.  
1876. De skandinaviske og arktiske Amphipoder [1873-1876], vol. 2, pp. 1-711, pls. 1-32, Christiania.

BOVALLIUS, CARL.

1889. Contributions to a monograph of the Amphipoda Hyperiidea. Part I: 2. Kongl. Svenska Vet.-Akad. Handl., vol. 22, No. 7, pp. 1-443, pls. 1-18.

BRÜGGEN, ERNST VON DER.

1905. Die Amphipoden des Katharinahafens (Murmanküste) und seiner Umgebungen. Trav. Soc. Imp. Nat. St. Petersburg, vol. 36, Compt. Rend. 1905 (1905-1906), pp. 218-228, figs. 1-5. (Russian with German summary.)  
1907. Zoologische Ergebnisse der russischen Expedition nach Spitzbergen. Amphipoda. Ann. Mus. Zool., St. Petersburg, vol. 11 [1906], pp. 214-245, figs. 1-9.  
1909. Beiträge zur Kenntnis der Amphipoden-Fauna der russischen Arctis. Mem. Acad. Sci. St. Pétersbourg, ser. 8, vol. 18, No. 16, pp. 1-57, pls. 1-3, text figs. 1-4.

BUCHHOLZ, R.

1874. Crustaceen. Zweite deutsche Nordpolarfahrt 1869-70 unter Führung des Kapt. Koldewey, vol. 2, Wiss. Ergebn., pp. 262-399, pls. 1-15.

BULYCHEVA, A.

1936. New species of Amphipoda from the Japan Sea. Ann. Mag. Nat. Hist., ser. 10, vol. 18, pp. 241-256, figs. 1-35.

CALMAN, W. T.

1898. On a collection of Crustacea from Puget Sound. Ann. New York Acad. Sci., vol. 11, No. 13, pp. 259-292, pls. 31-34.

CHEVREUX, Éd.

1900. Amphipodes provenant des campagnes de l'Hirondelle. Res. Camp. Sci. Monaco, fasc. 16, pp. 1-195, pls. 1-18.  
1913. Deuxième Expédition Antarctique Française (1908-1910), pp. 79-186, figs. 1-62. Paris.

CHEVREUX, Éd., and FAGE, L.

1925. Amphipodes. Faune de France, No. 9, pp. 1-488, figs. 1-438.

CHILTON, CHARLES.

1912. The Amphipoda of the Scottish National Antarctic Expedition. Trans. Roy. Scottish Soc. Edinburgh, vol. 48, pt. 2, No. 23, pp. 455-520, 2 pls.  
1917. The identity of the two amphipods, *Ampelisca eschrichtii*, Krøyer, and *A. macrocephala*, Lilljeborg. Journ. Zool. Res., vol. 2, pt. 2, pp. 75-93, figs. 1-7.

CRAWFORD, G. I.

1936. Additions to the Plymouth marine fauna (1931) in the crustacean orders Tanaidacea, Isopoda, and Amphipoda. Journ. Mar. Biol. Assoc. United Kingdom, vol. 21, No. 1, pp. 95-106, 1 fig.

## DEMENTIEVA, T.

1931. On the variability of the Amphipoda of the northern seas. Trans. State Oceanogr. Inst., vol. 1, Nos. 2-3, pp. 65-82. Moscow.

## DERJAVIN, A. N.

1930. Arctic elements in the fauna of peracarids of the Sea of Japan. Hydrobiol. Zeitschr., vol. 8, pp. 326-329. Saratow.

## DERJUGIN, K. M.

1915. La faune du golfe de Kola et les conditions de son existence. Mem. Acad. Sci. Petrograd, ser. 8, vol. 34, No. 1. Amphipoda, pp. 439-459. (Russian.)

## EKMAN, SVEN.

1913. Zwei neue europäische Arten der Amphipoden-gattung *Pontoporeia* Krøyer. Ark. für Zool., vol. 8, No. 8, pp. 1-13, pls. 1-3.

## FROST, NANCY.

1936. Amphipoda from Newfoundland waters with a description of a new species. Reports: Faunistic series, No. 1. Dept. Nat. Resources, Div. Fisheries Research, Newfoundland, pp. 1-9, text figs.

## GOËS, A.

1866. Crustacea Amphipoda maris Spitzbergiam alluentis cum speciebus aliis arcticis. Ofv. Vet. Akad. Forhandl., vol. 22, pp. 517-536, pls. 35-41.

## GURJANOVA, E.

- 1929a. Neue Formen arktischer Isopoden und Amphipoden. Zool. Anz., vol. 81, pp. 309-317, figs. 1-8.
- 1929b. On the fauna of Crustacea-Malacostraca of the Barents Sea, White Sea, and Kara Sea. Trav. Soc. Nat. Leningrad, vol. 59, pp. 29-46, figs. 1-7.
1930. Beiträge zur Fauna der Crustacea-Malacostraca des arktischen Gebietes. Zool. Anz., vol. 86, pp. 241-248.
1931. Zur Amphipoda- und Isopoda-Fauna der östlichen Murmanküste (im Gebiet der Purtschnicha-Bucht). Trans. Inst. Sci. Expl. of the North, vol. 48, pp. 196-201.
1932. Some contributions to the fauna of Crustacea of the Brothers Laptev's Sea (of Nordenskjöld's Sea). Explorations des mers d'USSR. Inst. Hydrolog., fasc. 15, pp. 157-187, 3 figs., 4 pls.
- 1935a. Contribution to the fauna of Amphipoda and Isopoda of the southern part of the Kara Sea. Explorations des mers d'USSR. Inst. Hydrobiol., fasc. 21, pp. 65-87, figs. 1-8.
- 1935b. Zur Zoogeographie der Crustacea Malacostraca des arktischen Gebietes. Zoogeographica, vol. 2, No. 4, pp. 555-571, fig. 1.
- 1936a. Contribution to the fauna of Crustacea Malacostraca of the Arctic Region. Trans. Arctic Inst., Leningrad, vol. 33, pp. 31-44, 4 figs.
- 1936b. Neue Beiträge zur Fauna der Crustacea-Malacostraca des arktischen Gebietes. Zool. Anz., vol. 113, No. 9/10, pp. 245-255, figs. 1-5.
1938. Amphipoda, Gammaroidea. Rep. Japan Sea Hydrobiol. Exped. Zool., Inst. Acad. Sci., USSR, of 1934, pt. 1, pp. 241-404, 59 figs.

## HANSEN, H. J.

- 1887a. Malacostraca marina Groenlandiae occidentalis. Oversigt over det vestlige Grønlands Fauna af Malakostrake Havkrebssdyr. Vid. Medd. Naturhist. Foren. i Kjøbenhavn, pp. 5-226, pls. 2-7. (Amphipoda, pp. 55-177.)

- 1887b. Oversigt over de paa Dijnphna-Togtet indsamlede Krebsdyr. Dijnphna-Togtet zoologisk-botaniske Ubdytte, Kjøbenhavn, pp. 183-286, pls. 21, 22). (Amphipoda, pp. 210-234.)

HOEK, P. P. C.

1882. Die Crustaceen gesammelt waehrend der Fahrten des "Willem Barents" in den Jahren 1878 and 1879. Niederl. Arch. Zool., Suppl., vol. 1, pp. 1-75, pls. 1-3. (Amphipoda, pp. 42-65.)

HOLMES, S. J.

- 1904a. On some new or imperfectly known species of west American Crustacea. Proc. California Acad. Sci., Zool., vol. 3, No. 12, pp. 305-330. (Amphipoda, pp. 313-317, pls. 35, 36.)
- 1904b. Harriman Alaska Expedition. Amphipod crustaceans of the Expedition, pp. 233-246, figs. 118-128.
1905. The Amphipoda of southern New England. Bull. Bur. Fish. 1904, vol. 24, pp. 457-529, pls. 1-13, text figs.
1908. The Amphipoda collected by the U. S. Bureau of Fisheries steamer "Albatross" off the west coast of North America, in 1903 and 1904, with descriptions of a new family and several new genera and species. Proc. U.S. Nat. Mus., vol. 35, pp. 489-543.

HUBRICHT, LESLIE.

1943. Studies on the nearctic freshwater Amphipoda, III. Notes on the freshwater Amphipoda of eastern United States, with description of ten new species. Amer. Midl. Nat., vol. 29, No. 3, pp. 683-712.

JARZYNSKY, TH.

1870. Praemissus catalogus crustaceorum amphipodum, inventorum in mari glaciali ad litus Murmanicum anno 1869 et 1870. K. Universität, Zool. Mus. St. Petersburg, vol. 1, pt. 2, 2 pp.

KRÖYER, HENRIK.

1838. Grönlands Amphipoder. Danske Vid. Selsk., Math.-nat. Afh., vol. 7, pp. 229-326, pls. 1-4.
1842. Une nordiske Slaeger og Arter af Amphipodernes Orden, henhørende til Familien Gammarina (Foreløbigt Uddrag af et større Arbejde). Naturh. Tidsskr., vol. 4 (1842-1843), pp. 141-166.
1845. Karcinologiske Bidrag. Naturh. Tidsskr., ser. 2, vol. 1, pp. 453-638.
- 1846a. Ibid., vol. 2, pp. 1-211.
- 1846b. Voyages de la Commission scientifique du Nord, en Scandinavie, en Laponie, au Spitzberg et aux Ferøe pendant les Années 1838, 39 et 40, sur la Corvette *La Recherche*, commandée par Fabvre; publiés par Ordre du Roi sous la Direction de Paul Gaimard. Zoologie. Planches. Paris 2.

LILLJEBORG, W.

1865. On the *Lysianassa magellanica* H. Milne-Edwards, and on the Crustacea of the suborder Amphipoda and subfamily Lysianassa found on the coast of Sweden and Norway. Nova Acta Soc. Sci. Upsala, ser. 3, vol. 6, pp. 1-38.

LOCKINGTON, W. N.

1877. Descriptions of seventeen new species of Crustacea. Proc. California Acad. Sci., vol. 7 [Mar. 20, 1876], pp. 41-48.

## MURDOCH, JOHN.

- 1885a. Descriptions of seven new species of Crustacea and one worm from Arctic Alaska. Proc. U.S. Nat. Mus., vol. 7 [1884], pp. 518-522.  
 1885b. Amphipoda. Rep. Internat. Polar Exped. to Point Barrow, Alaska, 1881-1883, pp. 143-149, pls. 1, 2.

## NORMAN, CANON A.

1895. A month on the Trondhjem Fiord. Ann. Mag. Nat. Hist., ser. 6, vol. 15, pp. 476-494.

## ORTMANN, A. E.

1901. Crustacea and Pycnogonida collected during the Princeton Expedition to North Greenland. Proc. Acad. Nat. Sci. Philadelphia, vol. 53, pp. 144-168.

## PIRLOT, JEAN M.

1933. Un nouvel Amphipode ascidicole. Bull. Inst. Oceanogr. Monaco, No. 633, pp. 1-6, 1 fig.

## SARS, G. O.

1863. Beretning om i Sommeren 1862 foretagen zoologisk Reise i Christianias og Trondhjems Stifter. Nyt Magazin for Naturvidenskaberne, vol. 12, pp. 193-252. Christiania.  
 1885. The Norwegian North-Atlantic Expedition 1876-1878, Zoology. Crustacea. I, pp. 1-280, pls. 1-21.  
 1890-1895. An account of the Crustacea of Norway, vol. 1, Amphipoda, pp. 1-711, pls. 1-240; Suppl., pls. I-VIII. Christiania.  
 1900. Norwegian North Polar Expedition 1893-96, vol. 1, V. Crustacea, pp. 1-141, pls. 1-36.

## SAY, THOMAS.

1818. An account of the Crustacea of the United States. Journ. Acad. Nat. Sci. Philadelphia, vol. 1, No. 2. (Amphipoda, pp. 374-393.)

## SCHELLENBERG, A.

1924. Die Gammariden Spitzbergens nebst einer Uebersicht der von Römer und Schaudinn 1898 im nordlichen Eismeer gesammelten Arten. Mitt. Zool. Mus. Berlin, vol. 11, No. 2, pp. 195-231, figs. 1-10.  
 1931. Gammariden und Caprelliden des Magellangebietes, Sudgeorgiens und der Westantarktis. Swedish Antarctic Exped. 1901-1903, pp. 1-290, 1 pl., text figs. 1-136.  
 1934. Der Gammarus des deutschen Susswassers. Zool. Anz., vol. 108, No. 9/10, pp. 209-217, figs. 1-5.  
 1935. Die Amphipoden der Norwegischen Expeditionen nach Ost-Grönland in den Jahren 1929-1932. Skrift. Svalbard og Ishaven, No. 66, pp. 9-39, figs. 1-3.  
 1937. Kritische Bemerkungen zur Systematik der Susswasser-gammariden. Zool. Jahrb., vol. 69, No. 5/6, pp. 469-516, figs. 1-8.

## SEGERSTRÅLE, SVEN G.

1937. Studien über die Bodentierwelt in Südfinnländischen Küstengewässer III. Zur Morphologie und Biologie des Amphipoden *Pontoporeia affinis*, nebst einer Revision der *Pontoporeia*-Systematik. Soc. Sci. Fennica, Comment. Biol., VII, I, pp. 1-183, pls. 1-19.

## SHOEMAKER, C. R.

1920. Crustacea. Pt. E, Amphipoda. Rep. Canadian Arctic Exped. 1913-18, vol. 7, pp. 1-30, figs. 1-6.

1926. Report on the marine amphipods collected in Hudson and James Bays by Fritz Johansen in the summer of 1920. V, Results of the Hudson Bay Expedition in 1920. Contr. Canadian Biol. and Fish., vol. 3, No. 1, pp. 1-11.
- 1930a. The lysianassid amphipod crustaceans of Newfoundland, Nova Scotia, and New Brunswick in the United States National Museum. Proc. U. S. Nat. Mus., vol. 77, No. 2827, pp. 1-19, figs. 1-10.
- 1930b. The amphipods of the Cheticamp Expedition of 1917. Contr. Canadian Biol. and Fish., vol. 5, No. 10, pp. 221-359, figs. 1-54.
- 1945a. The amphipod genus *Photis* on the east coast of North America. Charleston Mus. Leaf. No. 22, pp. 1-17, figs. 1-5.
- 1945b. The amphipod genus *Unciola* on the east coast of America. Amer. Midl. Nat., vol. 34, No. 2, pp. 446-465, figs. 1-9.
- SMITH, S. I.
1871. Notice of the invertebrates dredged in Lake Superior in 1871, by the U. S. Lake Survey, under the direction of Gen. C. B. Comstock, S. I. Smith, naturalist. Amer. Journ. Sci. and Arts, vol. 2, pp. 448-454.
1874. The Crustacea of the fresh waters of the United States. A synopsis of the higher fresh-water Crustacea of the northern United States. Rep. U. S. Commissioner Fish. for 1872 and 1873, pt. 2, pp. 637-709, pls. 1-3.
- STAPPERS, LOUIS.
1911. Crustacés Malacostracés. Duc d'Orleans, Campagne Arctique de 1907, pp. 1-52+I-XII. (Amphipoda, pp. 1-81.) Bruxelles.
- STEBBING, T. R. R.
1894. The Amphipoda collected during the voyage of the *Willem Barents* in the Arctic Seas in the years 1880-1884. Bijdr. Dierk., Amsterdam, Afl. 17, pp. 1-49, pls. 1-7.
1906. Amphipoda. I. Gammaridea. Das Tierreich, Lief. 21, 806+xxxix pp. Berlin.
- STEPHENSEN, K.
1913. Grønlands Krebsdyr og Pycnogonider (Conspectus Crustaceorum et Pycnogonidorum Groenlandiae). Medd. om Grønland, vol. 22, pp. 1-479.
1923. Crustacea Malacostraca V (Amphipoda I). The Danish *Ingolf*-Exped., vol. 3, pt. 8, pp. 1-100, figs. 1-22.
1924. Hyperiidæ-Amphipoda (pt. 2: Paraphronimidae, Hyperiidæ, Dairellidæ, Phronimidae, Anchylomeridae). Rep. Danish Oceanographic Exped. 1908-1910 to the Mediterranean and Adjacent Seas, vol. 2, D. 4, pp. 71-149, figs. 33-51.
1925. Crustacea Malacostraca VI (Amphipoda II). The Danish *Ingolf*-Exped., vol. 3, pt. 9, pp. 101-178, figs. 23-53.
1931. Crustacea Malacostraca VII (Amphipoda III). The Danish *Ingolf*-Exped., vol. 3, pt. 11, pp. 179-290, figs. 54-81.
1933. Amphipoda. The Godthaab Expedition 1928. Medd. om Grønland, vol. 79, No. 7, 1933, pp. 1-88, figs. 1-31.
1935. The Amphipoda of N. Norway and Spitzbergen with adjacent waters. Tromsø Mus. Skrift., vol. 3, pt. 1, pp. 1-140, figs. 1-19.
1938. *Ibid.*, pt. 2, pp. 141-278, figs. 20-31.

- 1940a. Ibid., pt. 3, pp. 279-362, figs. 32-52.  
1940b. Marine Amphipoda. Zool. Iceland, vol. 3, pt. 26, pp. I-III, figs. 1-13.  
1942. The Amphipoda of N. Norway and Spitzbergen with adjacent waters. Tromsø Mus. Skrift., vol. 3, pt. 4, pp. 363-526, figs. 53-78.  
1944a. Crustacea Malacostraca VIII (Amphipoda IV). The Danish *Ingolf*-Exped., vol. 3, pt. 13, pp. 1-51, figs. 1-38.  
1944b. Amphipoda. Zoology of East Greenland. Medd. om Grønland, vol. 121, No. 14, pp. 1-165, figs. 1-18.

STEPHENSEN, K., and THORSON, G.

1936. On the amphipod *Metopa groenlandica* H. J. Hansen found in the mantle cavity of the lamellibranchiate *Pandora glacialis* Leach in East Greenland. Medd. om Grønland, vol. 118, No. 4, pp. 1-7, figs. 1, 2.

STIMPSON, WM.

1854. Synopsis of the marine Invertebrata of Grand Manan. Smithsonian Contr. to Knowl., vol. 6 [1853], pp. 1-66, 3 pls.  
1864. Descriptions of new species of marine Invertebrata from Puget Sound, collected by the naturalists of the North-west Boundary Commission, A. H. Campbell, Esq., Commissioner. Proc. Acad. Nat. Sci. Philadelphia, pp. 153-162.

WALKER, A. O.

1904. Amphipoda. Report to the Government of Ceylon on the pearl oyster fisheries on the Gulf of Manaar. Suppl. Rep. 17, Amphipoda, pp. 231-300, pls. 1-8.