

STUDIES ON MARINE GAMMARIDEAN AMPHIPODA  
OF THE SETO INLAND SEA. II

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*With 11 Text-figures*

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Family SYNOPIIDAE

*Synopia ultramarina* DANA

*Synopia ultramarina*, STEBBING 1906, p. 271; SCHELLENBERG 1926, p. 341; K. H. BARNARD 1930, p. 367; PIRLOT 1936, p. 301.

*Synopia scheeleana*, STEBBING 1888, p. 799, pl. 52; STEBBING 1906, p. 272; WALKER 1909, p. 332; REID 1951, p. 233.

*Synopia orientalis*, STEBBING 1906, p. 273.

*Material examined*: Area IX-d, 84 specimens, up to 5.0 mm in length; from many plankton collections at night.

*Distribution*: Atlantic (42° N to 18° S), Red Sea, Indian Ocean (Amirante, and Cargados), East Indies seas, and Pacific (34°29' N, 138°34' E).

Family TIRONIDAE

*Syrrhoites pacificus*, sp. nov.

(Fig. 16)

*Material examined*: Many specimens from the stomachs of benthos-feeding fishes caught extending over Bungo Suidō and Tosa Bay, September 1957 to August 1958, 20–100 m in depth. Length: 3.2–6.0 mm.

*Description*: Dorsally carinate, but not prominent throughout, posterior elevation usually raised from peraeon segment 5 or 6 (from the segment 2 in a small specimen of 3.2 mm long, figured here). Pleon segments 4–6 in male just like in *S. serrata* figured by Sars (1895, pl. 137). Head; rostrum

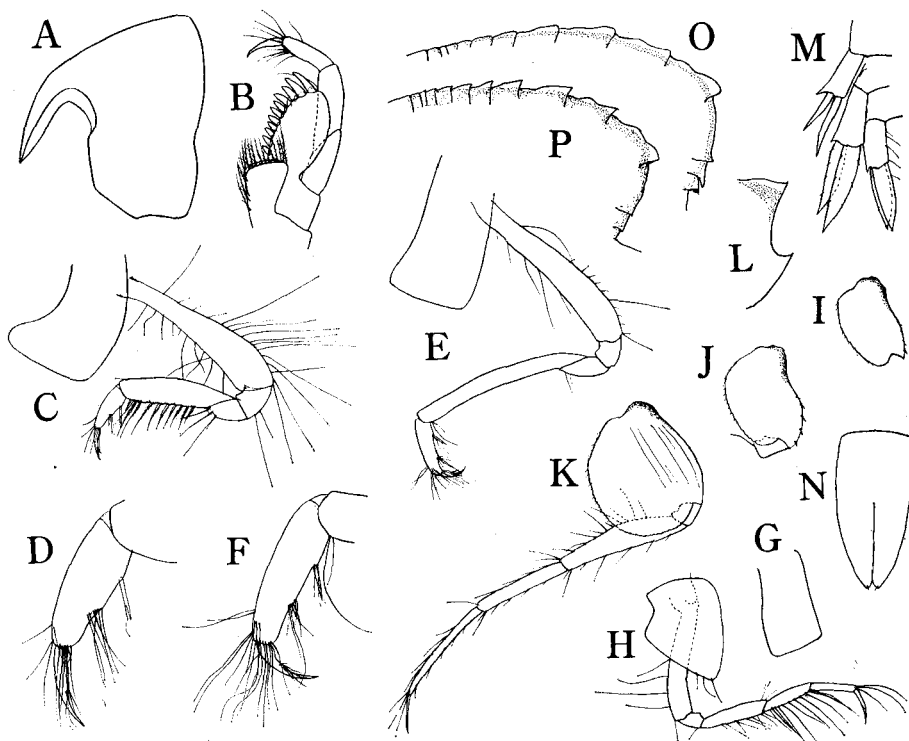


Fig. 16. *Syrrhoites pacificus*, sp. nov. Female, holotype, 6 mm: A, head; B, maxilliped; C, D, gnathopod 1 and its article 6 further enlarged; E, F, gnathopod 2 and its article 6 magnified; G, coxa 3, right; H, peraeopod 2; I, J, article 2 of peraeopods 3, 4; K, peraeopod 5; L, epimeral plate 3; M, uropods 1–3; N, telson. O, P, dorsal profile of male, 5.0 mm and female, 3.2 mm respectively.

strongly deflexed, extending to the end of the first peduncular article of antenna 1, lateral lobes somewhat slightly angular. Peraeon segment 2 very short. Coxa 1 produced forwards below; coxa 4 comparatively broad, nearly as deep as coxa 3. Third pleonal epimeron with the hind corner produced to an acutely upturned tooth, the margin above evenly concave, not serrate.

Antenna 1 in female, the second peduncular article nearly as long as the first, about 1.5 times as long as the third, flagellum shorter than peduncle,

accessory flagellum 2-jointed; in male the first peduncular article about as long as the second and third combined, flagellum longer than peduncle, with 8 joints, the first setose, as long as the following three articles combined, accessory flagellum 3-jointed, the first long, the third short. Antenna 2 in female typical, flagellum 7-jointed; in male the peduncular article 5 nearly 1.5 times as long as the article 4, flagellum much longer, filiform, nearly reaching to the end of the animal. Mandible: cutting edge conical, not dentate; article 3 of palp about as long as article 1. Maxilla 1: inner plate with 8 setae, outer with 11 spines. Maxillipeds: outer plate fringed with 11 spine-like teeth; article 4 of palp relatively long.

Gnathopod 1: article 2 distally widening, article 5 rather broad, more than twice as long as article 6, spinose on the hind margin, article 6 narrow, without a sharply distinctive palm, the hind margin with a strong spine at one third the length from the proximal end. Gnathopod 2 much slender, article 5 extremely long, about three times as long as article 6, of which both margin nearly parallel all along in both sexes, the hind margin with a strong spine at one third the length from the proximal end. Peraeopods 1 and 2: article 4 relatively long; article 7 also long and slender. Peraeopods 3-5: article 2 with the upper front corner a little carinate; article 2 of peraeopod 5 fully expanded nearly to the rounding form, the hind edge minutely serrated, article 4 considerably long. Uropod 1 much shorter than the others; uropod 2 reaching beyond the others, with outer ramus only slightly shorter than the inner; uropod 3 relatively short, bearing the rami subequal in length; rami of uropods 2-3 broadly lanceolate; outer ramus of uropod 3 probably not 2-jointed. Telson nearly or quite reaching the end of uropod 3, cleft slightly beyond the center, apices subacute, minutely notched, each bearing one setule.

*Holotype*: KN No. 3450, female, 6.0 mm, Bungo Suidō, Sept. 23, 1957.

*Remarks*: Although all the specimens are taken only from the stomachs of fishes, their exoskeleton of cutin is well preserved, and fully of use for examination. The above-mentioned characters are, therefore, trustworthy for their taxonomical features. The new species has some remarkable coincidences with *S. pusillus* ENEQUIST (1949, p. 338, figs. 57-60) from Skagerrak, in the conditions of uropods, third pleonal epimeron, lateral lobes of head, slender form of finger of peraeopods 1-2, and gnathopods 1-2, but the boundary of both species is here defined by the following differences: In his specimens, dorsal carinae more acutely armed, rostrum more sharply and right-angularly deflexed, the posterior edge of article 2 of peraeopods 3-5 more sharply serrated, while in the new species coxa 1 with the antero-distal corner strongly produced forwards, coxa 4 more broader and deeper, nearly as long as coxa 3, gnathopod 1 with article 5 comparatively long, peraeopods

1-5 with article 4 relatively long, article 2 of peraeopod 5 more rounding, and madibular palp with articles 1 and 2 relatively long, ratio of articles 1, 2 and 3 as 2:3:2.

### Family CALLIOPIIDAE

#### *Leptamphopus novaezealandiae* (THOMSON)

*Leptamphopus novaezealandiae*, STEBBING 1906, p. 294; CHILTON 1920 (part, only in New Zealand specimens), p. 1, figs. 1-5.

*Pherusa novaezealandiae* THOMSON 1879, p. 239, pl. 10-c, fig. 2 (part, mixed with *Panoploea spinosa*).

*Panoploea debilis* THOMSON 1880, p. 3, pl. 1, fig. 3.

*Material examined*: Area IV (1), VII (2), XI-a (3); 2.8-4.0 mm in length; from depths of *Zostera* belt near low-water marks to 49 m.

*Remarks*: The specimens agree well with THOMSON's figure for *Panoploea debilis*, and also with K. H. BARNARD's details and figures given for some New Zealand specimens of *L. novaezealandiae* collected by CHILTON (1932, p. 162, fig. 95). However, BARNARD did not give any information concerning the oral parts of the specimens, therefore the characters have not been still known.

In the specimens at hand, the oral parts are well allied with those of *Oradarea longimana* (BOECK) figured by SHOEMAKER (1930, p. 299, figs. 35-37), particularly both with the shape of mandibular palp and with lower lip bearing well developed inner lobes. CHILTON says in his paper of 1920 (l. c.), "a minute accessory flagellum present in Antarctic specimens but not in those from New Zealand", and this fact is also made no mention by BARNARD. Unfortunately, antennae and also uropod 3 are missing on all of the specimens in the present collection, but it is pretty sure that the specimens at hand are well referred to *L. novaezealandiae* (THOMSON). A new genus may be probably more suitable for this species, or at least the genus name of *Oradarea* would be more preferable than *Leptamphopus*.

*Distribution*: New Zealand (Dunedin Harbour, Lyttelton, Akaroa, etc.).

### Family PLEUSTIDAE

#### *Key to the species of Pleustidae*

Rostrum strong, gnathopods 1-2 powerful..... *Pleustes panopla*  
 Rostrum not strong, gnathopods 1-2 not powerful..... *Parapleustes bicuspides*

#### *Pleustes panopla* (KRÖYER)

(Fig. 17)

*Pleustes panoplus*, SARS 1895, p. 344, pl. 121; STEBBING 1906, p. 310; SHOEMAKER 1930, p. 309; STEPHENSEN 1938a, p. 253; STEPHENSEN 1944a, p. 4; STEPHENSEN 1944-b, p. 84; GURJANOVA 1951, p. 635, fig. 433, p. 637; DUNBAR 1954, p. 750.

*Pleustes panopla*, SHOEMAKER 1955, p. 40, fig. 14, a-b; NAGATA 1960, p. 170, pl. 14, figs. 46-49.

*Pleustes cataphractus*, STEPHENSEN 1938a, p. 252, fig. 28; GURJANOVA 1951, p. 637, fig. 434 & p. 638, fig. 435; STEBBING 1906, p. 310.

*Pleustes tuberculatus*, STEBBING 1906, p. 311; STEPHENSEN 1938a, p. 252.

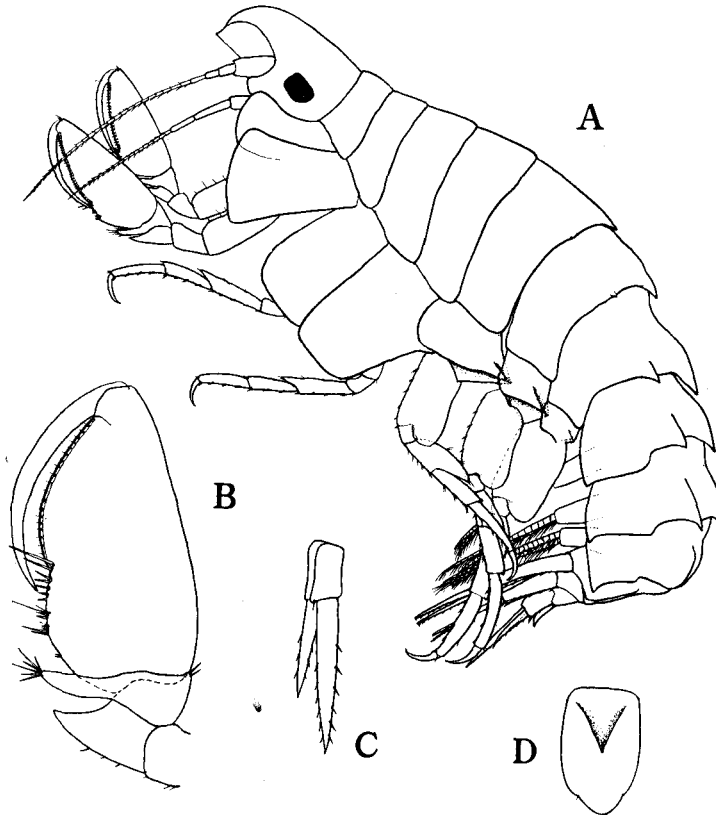


Fig. 17. *Pleustes panopla* (KRØYER). A, lateral view; B, gnathopod 2; C, uropod 3; D, telson.

*Material examined*: Areas IV (126), VI (1), VII (3), IX-b (2); up to 13.0 mm in length; found in *Zostera* belt near low water marks.

*Distribution*: Known as a circumpolar arctic and subarctic species; in North Atlantic, southerly to the New England coast, and to North Sea; in Pacific, through Alaska, Bering Sea, south to Japan Sea. In the shallow waters of the Japanese coast, this species is found by me from Mutsu Bay to the west coast of Kyūshū, particularly inhabits commonly in *Zostera* belt.

*Parapleustes bicuspoides*, sp. nov.

(Fig. 18)

*Material examined*: 33 specimens from the stomachs of benthos-feeding fishes taken extending over Bungo Suidō and Tosa Bay, Sept. 1957 to Aug. 1958, 20-100 m in depth. Length: 3.1-6.5 mm.

*Description*: Pleon segments 1 and 2 each with a backward pointing dorsal tooth. Third pleonal epimeron with the hind margin slightly convex, and with the lower corner produced to a small tooth, minutely sinuated above. Eyes of moderate size, almost rounded. Coxae 1-4 as deep as those of *P. assimilis*, which is figured by Sars for *Paramphithoe a.* (1895, pl. 124, fig. 1), and their lower hind corner each with 4-5 microscopically minute denticles;

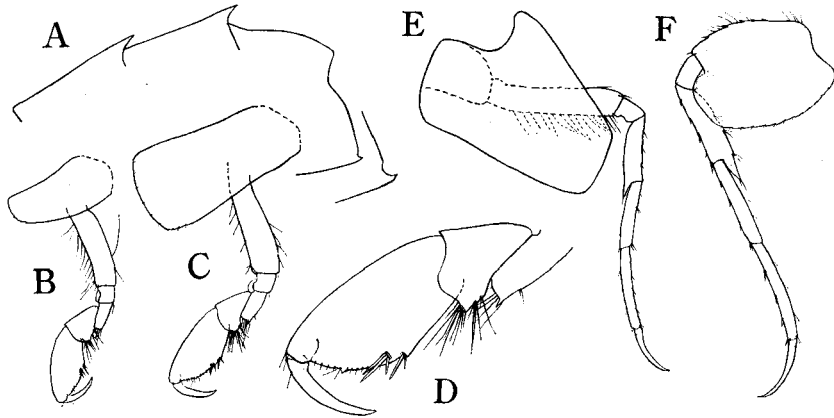


Fig. 18. *Parapleustes bicuspoides*, sp. nov. Female, ovig., holotype, 6.5 mm : A, dorsal profile of pleon segments 1-3, with third pleonal epimeron ; B, C, gnathopods, 1, 2 ; D, distal portion of gnathopod 2 magnified ; E, F, peraeopods 2 and 5. All legs the same proportion of enlargement.

coxa 1 very small, narrowing distally ; coxa 4 fairly resembles that of *assimilis* in shape. Oral parts typical of the genus ; mandible with molar small and simple, third article of maxillipedal palp lacks distal process.

Antennae appear to be comparatively short, though not well preserved on all of the specimens at hand. Gnathopods 1-2 comparatively small and feeble ; gnathopod 2 slightly larger than gnathopod 1, otherwise both almost similar in shape to each other except for coxae ; article 5 not produced to a narrow lobe, but triangular in shape ; article 6 a little widening towards the palm, which is evenly convex, bearing a small cusp at the middle, and defined by two groups of spines from the posterior margin, the margin straight and smooth, nearly as long as the palm. Peraeopods 1-5 slender, articles 6 and 7 proportionally long.

*Holotype*: KN No. 3472, female ovig., 6.5 mm, Bungo Suidō, Sept. 23, 1957.

*Remarks*: The new species falls undoubtedly into the genus *Parapleustes* according to J.L. BARNARD's revisional key (1960, p. 39). It resembles *P. bicuspis* (KRØYER) (SARS 1895, pl. 123, fig. 1, as *Paramphithoe c.*) in dorsal armature, but is rather closely related to *P. assimilis* (SARS) (l. c.), and to *P. gracilis* (BUCHHOLZ) (SARS 1895, pl. 124, fig. 2, as *Paramphithoe brevicornis*) in the other characters. Differing from *assimilis* in the third pleonal epimeron, in the form of article 5 of gnathopods 1-2, in the shape of coxa 1, in somewhat smaller eyes, in relatively longer articles 6-7 of pereopods 1-5, and in the dorsal appearance; from *gracilis* in the depths of coxae 1-4 in comparing to the corresponding pereon segment, in having no projecting posterior lobes of article 5 of gnathopods 1-2, and in the dorsal appearance. In *P. assimilis*, article 6 of gnathopods has the palm shorter than the hind margin, therefore more slender than in the new species, whereas in *P. gracilis* it is similar in shape to that of the new one.

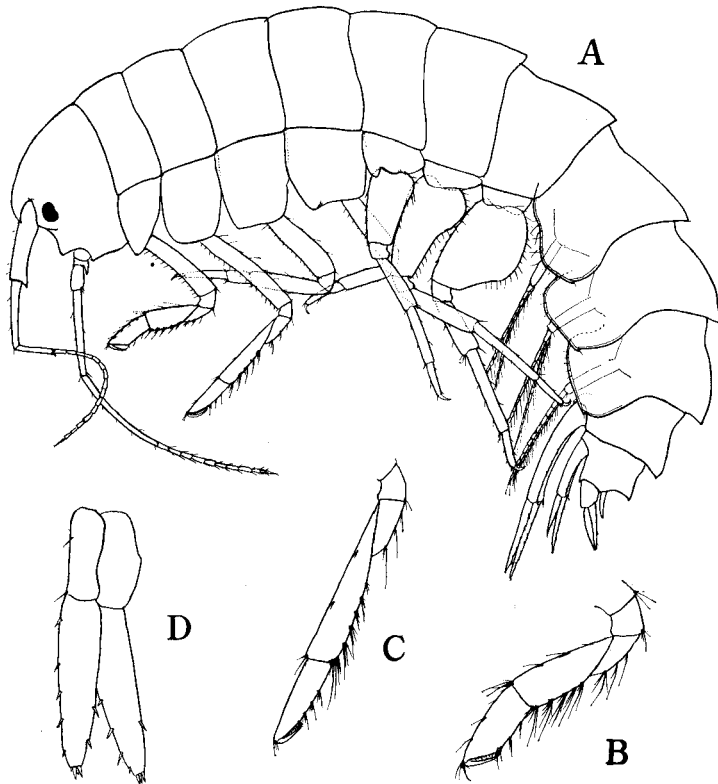


Fig. 19. *Atylus japonicus* NAGATA. A, lateral view; B, C, gnathopods 1, 2; D, uropod 3.

## Family ATYLIDAE

*Atylus japonicus* NAGATA

(Fig. 19)

*Atylus japonicus* NAGATA 1961, p. 216, figs. 1-2.

*Material examined*: Areas IV (1), VI (1); 2 female specimens, 3.5 and 9.0 mm in length; from depths of 3-10 m.

*Distribution*: Known only from Japan; it is found by me from Tomioka Bay, the west coast of Kyūshū, after my paper of 1961 on this species was published.

## Family MELPHIDIPPIDAE

*Key to the species of Melphidippidae*

1. Telson emarginate, not cleft.....*Melphisana japonica*
2. Telson deeply cleft..... 2
  2. Telson very narrow, nearly thrice as long as broad..... *Melphidippa borealis*
  2. Telson moderate, nearly twice as long as broad..... 3
3. Third pleonal epimeron with lower hind corner produced into a large tooth.....*Melphidippella sinuata*
3. Third pleonal epimeron with hind lower corner not produced into a large tooth.....*Melphidippa globosa*

*Melphidippa borealis* BOECK

(Fig. 20)

*Melphidippa borealis*, Sars 1895, p. 486, pl. 170, fig. 2; STEBBING 1906, p. 336; GURJANOVA 1951, p. 696, fig. 481.



Fig. 20. *Melphidippa borealis* BOECK.  
Female, 3.8 mm : articles 5-7 of  
gnathopod 2.

*Material examined*: Area XI-a, 11 specimens, 3.5-4.2 mm in length; from depths of 32-53 m.



*Remarks*: The specimens are all not good for full observation, nearly all of the appendages mutilated; both antennae, all of peraeopods, and uropod 3 are entirely missing on all of the specimens. In spite of it, these specimens appear to be referable to the present species without hesitation by the dorsal appearance, the third pleonal epimeron, the shape of telson, the small eyes, the broadly rounding lateral lobes of head, and gnathopod 1. They are well allied to those of Sars' figures for this species.

Gnathopod 2 is somewhat different from that of Sars' one; the articles 5 and 6 in my specimens are a little more elongate and slender than in Sars' one, as seen in the figure inserted here. However, it does not appear to be the discrepancy such as to be distinctive my specimens from this Boeck's species.

*Distribution*: From the whole coast of Norway, 54-260 m.

*Melphidippa globosa*, sp. nov.

(Figs. 21-22)

*Material examined*: Areas XI-a (45), XI-b (9); up to 6.5 mm in length; from depths of 32-56 m.

*Description of female*: Each posterior margin of pleon segments 1-3 produced to a medio-dorsal tooth, with one pair of latero-dorsal teeth on either side of it, showing no denticulation between them; the lateral teeth on pleon segment 1 very weak. Pleon segments 4 and 5 each with a spiniform medio-dorsal projection flanked more or less with minute denticles. Pleonal epimera 1-3 with the lower posterior corner bearing no distinctive projection, the hind margin of the two posterior epimera much minutely serrate. Eyes not very large, but well developed, hemispherically projecting. Head not short, lateral lobes of head with the rounding apex. Coxa 1 triangularly produced at the antero-distal corner. The third article of mandibular palp about two thirds as long as the second; maxillipedal palp somewhat elongate, the fourth article with a slender nail. Antenna 1 in female, 4.0 mm long specimen, the only representation on all the specimens at hand, about as long as the head to pleon segment 1 combined, flagellum 17-jointed, accessory flagellum 4-jointed, peduncular articles given here may be more broadly figured than in the actual one on account of being depressed by cover-glass, but the proportions of length between them are fully appreciable, and somewhat similar to those of *M. borealis* figured by Sars. Gnathopods 1 and 2 not densely setose than in three Norwegian species. Gnathopod 1: article 5 less expanded than in *M. goesi* (Sars 1895, pl. 169), article 6 not greatly constricted at the base, palm not distinctly defined. Gnathopod 2: article 5 subtriangularly in form, somewhat resembles that of *M. borealis*, but much broader and longer

than article 6, which is oblong oval, having the palm not defined. Peraeopods 1 and 2; article 5 relatively shorter and article 6 considerably longer in comparison with those of the Norwegian species, article 7 bearing no setae on both margins. Peraeopods 3 and 4: articles 6-7 each considerably longer. Finger of gnathopods and peraeopods all long and slender, with a slender nail. Telson nearly twice as long as broad, cleft extending a little beyond the middle, apices unequally bidentate, the notch each with one pair of long and short spines, and having also a long seta (?) on each outer side close to the apex. Antenna 2, peraeopod 5, and uropods 1-3 are missing or mutilated

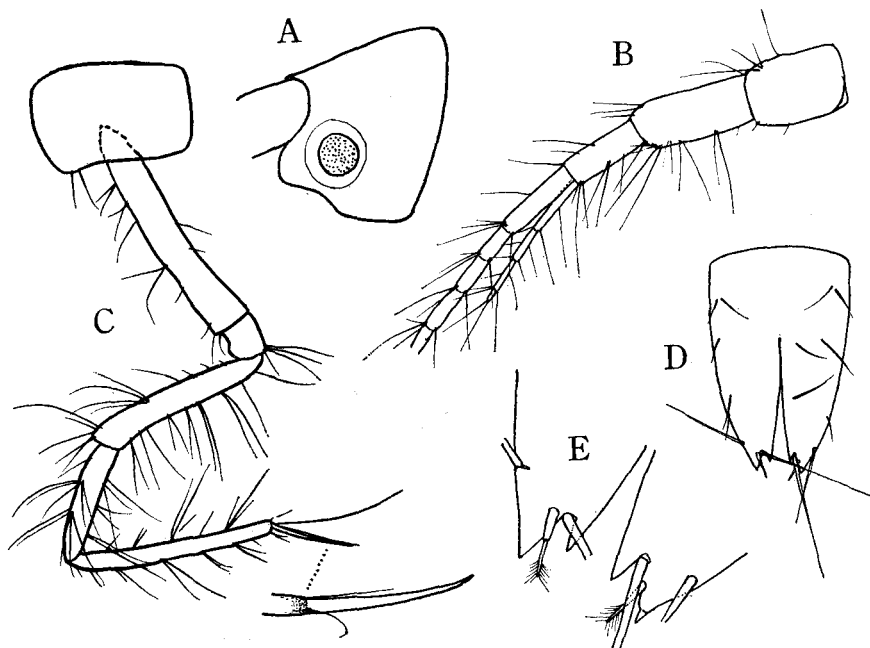


Fig. 21. *Melphidippa globosa*, sp. nov. Female, 5.2 mm : A, head ; D, telson ; E, apex of telson magnified. Female, 4.0 mm : B, antenna 1, left ; C, peraeopod 2, with nail of finger magnified.

in all of the specimens at hand. The specimens are probably all female.

*Holotype*: KN No. 2243, female, ovig., 5.5 mm. *Type locality*: St. 11 in Area XI-a, 47-53 m, June 15, 1959.

*Remarks*: As is seen in *Melphidippa antarctica* SCHELLENBERG, eyes of my specimens is similar in structure to that of the genus *Melphidippella*, but otherwise the new species has many characters fitting to this genus. There have hitherto been known 6 species in the world; *M. goesi* STEBBING, *M. borealis* BOECK, *M. macrura* SARS, *M. serrata* (STEBBING), *M. antarctica* SCHELLENBERG, and *M. macruroides* GURJANOVA. The new one is distinguished obviously

from any of them by the combination of the following characters: the structure of eyes, the dorsal armature, the third pleonal epimeron, gnathopod 2, all fingers of gnathopods and peraeopods, telson, and proportional lengths between articles in each of peraeopods 1-5.

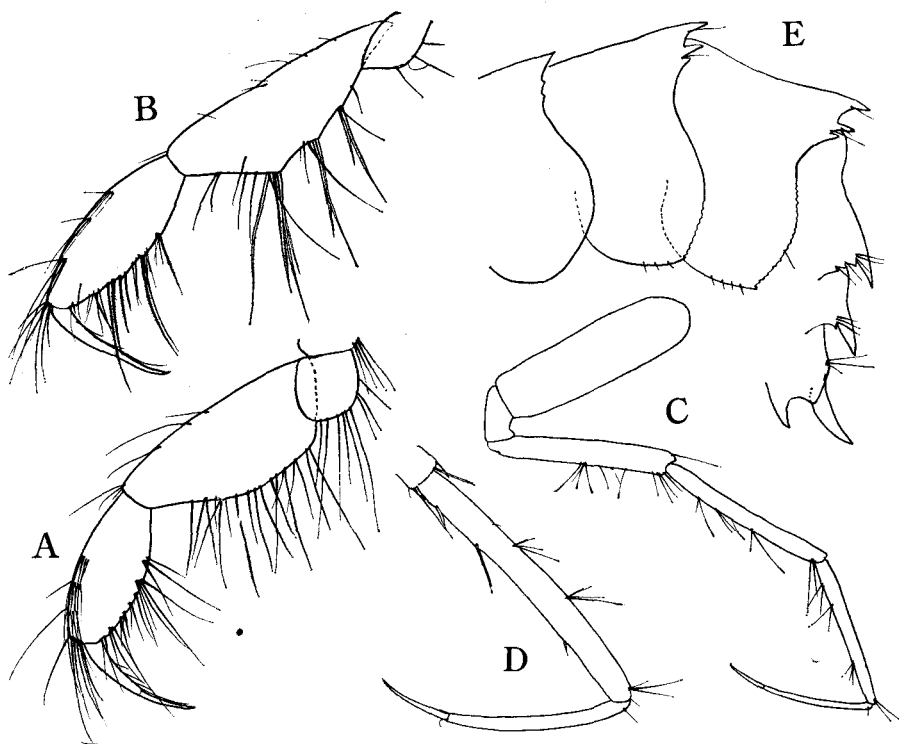


Fig. 22. *Melphidippa globosa*, sp. nov. Female, ovig., holotype, 5.5 mm : A, B, gnathopods 1, 2. Female, ovig., 5.5 mm : C, peraeopod 3. Female ovig., 4.2 mm : D, peraeopod 4, articles 6 and 7. Female, 5.8 mm : E, dorsal profile and epimera of pleon segments.

*Melphidippella sinuata*, sp. nov.

(Figs. 23-24)

*Material examined*: Areas XI-a (2), XI-b (8); up to 4.9 mm in length; from depths of 32-56 m.

*Description*: Pleon segments 1-3 each dorsally bearing a medial spiniform tooth, finely serrate on either side of it; pleon segments 4 and 5 each produced to a long prominent medial tooth, more or less denticulated on both sides of it. The dorsal appearance is fairly similar to that of *Melphidippa*

*macrura* (SARS 1895, pl. 170, fig. 1). Pleonal epimera 1-3 each with a tooth at the lower posterior corner, the hind margin of the last pair narrowly and prominently convex. Head short, eyes large, semiglobose, lateral lobes with a small acute point; they are just like in *Melphidippella macrura* (SARS 1895, pl. 171). Coxa 1 fully produced at the anterodistal corner, coxa 2 not produced downwards behind. Antenna 1, peduncular articles in male short and stout, article 1 of primary flagellum much elongate, somewhat laminar, longer than the peduncle, accessory flagellum 3-jointed, delicate and feeble. Antenna 1 of female and antenna 2 of both sexes are missing on all of the specimens

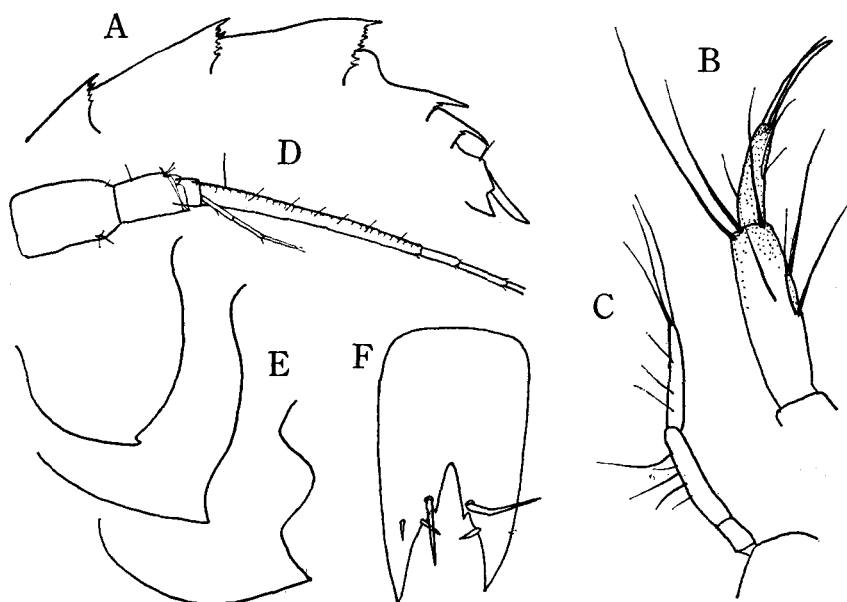


Fig. 23. *Melphidippella sinuata*, sp. nov. Male, holotype, 4.2 mm : A, dorsal profile of pleon segments 1-6 ; B, end of maxillipedal palp. Female, ovig., 4.9 mm : C, mandibular palp ; F, telson. Male, 4.0 mm : D, antenna 1, right from medial view ; E, pleonal epimera 1-3.

at hand. Third article of mandibular palp as long as the second; fourth article of maxillipedal palp with a long and slender nail. Gnathopods 1 and 2 not densely setose; gnathopod 1, article 5 moderately expanded proximally, narrowing distally, article 6 much shorter and smaller than article 5, bearing 4-5 slender spines on the middle of the posterior edge, palm ill-defined, finger long and slender, bearing a long nail, the inner edge with 5-6 spinules; gnathopod 2, in female resembles that of *M. macrura*, but in male shows no distinctive palm, and finger long and slender, bearing a nail, palm in female with 2-3 rows of spine-group, a nail presents also in female. Telson cleft

to the half, inner edge of each lobe with a small point at a distance of the apical end, and armed with one long and one short spines.

*Holotype*: KN No. 3157, male, 4.2 mm. *Type locality*: St. 6 in Area XI-a, 32-56 m in depth, sandy mud, June 13, 1959.

*Remarks*: The new species is referred to the genus *Melphidippella* by the short head, the structure of eyes, by having an acute point on lateral lobes of head, and by the short peduncle of antenna 1, but has also some important characters which have been used as generic distinction of the genus *Melphidippa* BOECK from the genus *Melphidippella* Sars, that is, the comparatively long article 3 of mandibular palp, accessory flagellum well developed, coxa 1 tri-

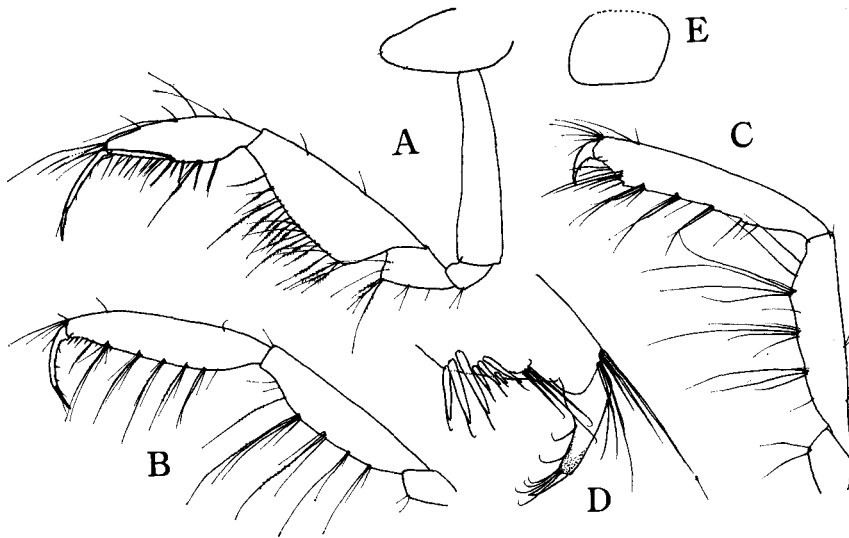


Fig. 24. *Melphidippella sinuata*, sp. nov. Male, holotype, 4.2 mm : A, B, gnathopods 1, 2. Female, ovig., 4.9 mm : C, D, gnathopod 2 and inside view of the end. Male, 4.0 mm : E, coxa 2, left.

angularly produced. The occurrence of the new species is certainly weakening the boundary line between the two genera. Only one species of *M. macrura* is known in the world. All of peraeopods and uropods are missing or mutilated on all the specimens at hand.

*Melphisana japonica*, sp. nov.

(Fig. 25)

*Material examined*: Areas IV (3), XI-a (2), XI-b (1), up to 4.5 mm long, from depths of 10-52 m.

*Description*: Pleon segments 2 and 3 each dorsally tridentate, not serrated;

pleon segments 4 and 5 each dorsally elevated to a compressed carina, and posteriorly produced into an acute point directed backwards. The second and third pleonal epimera with the posterior lower corner produced to an acute tooth, and the hind margin slightly convex, not serrate. Head short, eyes large, semi-globose on lateral lobes which terminate in an acute point, just as seen in *Melphidippella macrura*. Coxa 1 slightly produced forwards. Antenna 1: peduncle very short in female, rather resembles that of female

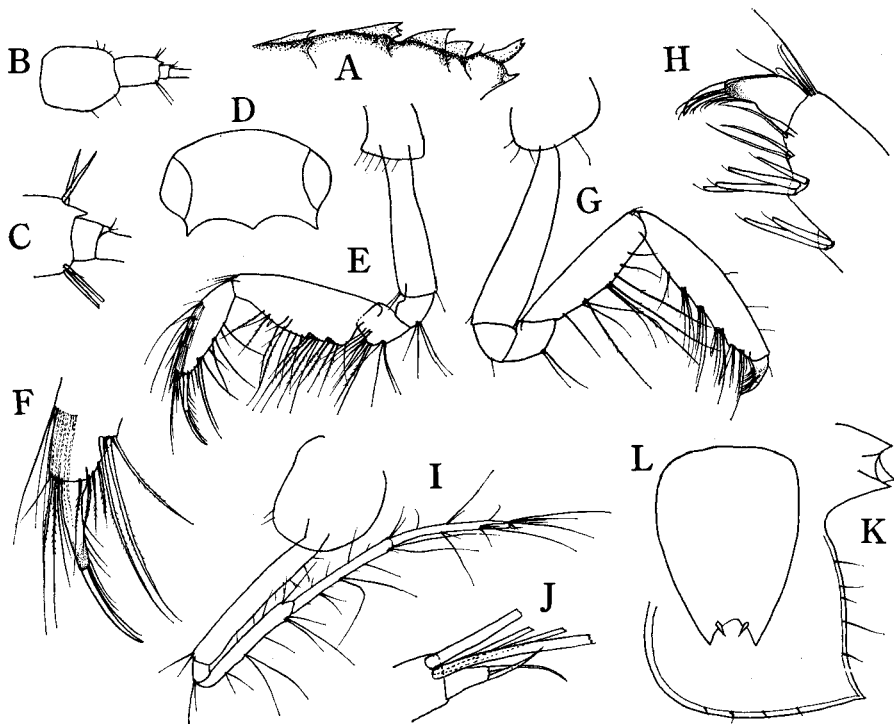


Fig. 25. *Melphisana japonica*, sp. nov. Female, holotype, 4.5 mm: A, dorsal profile of pleon segments 2-6; B, C, peduncle of antenna 1, and accessory flagellum magnified; D, head from upper view; E, F, gnathopod 1 and its end magnified; G, H, gnathopod 2 and inside view of its end magnified; I, J, peraeopod 1 and its finger magnified; K, pleon segment 3; L, telson.

of *M. bola* figured by J. L. BARNARD (1962a, p. 81, fig. 7), but the article 1 more stout and longer than articles 2 and 3 combined; accessory flagellum forms a minute nodule distinctly articulated, bearing two small apical setae. Third article of mandibular palp very short as in *M. bola*; fourth article of maxillipedal palp with a long and slender nail, inner edge of outer plate of maxillipeds margined with short, stout spines (or teeth). Gnathopod 1: article 5 moderately expanded proximally, finger long and slender, bearing a nail, and

lined with 6 slender setules on the inner edge. Gnathopod 2 more longer and slender than gnathopod 1, rather similar to that of *Melphidippella macrura*; palm ill-defined, bearing two groups of 2-4 spines, finger short and stout, bearing a nail, and armed with 8-9 setules on the inner edge. Peraeopods 1 and 2 extremely slender and delicate, and fairly well resemble those of *M. macrura*, but finger much short, with the apical end truncated, bearing two small bristle. Uropods 1 and 2 like in *Melphisana bola*. Telson emarginate, not cleft, the emargination with one pair of short spinule on the inner edge.

*Holotype*: KN No. 3173, female, 4.5 mm. *Type locality*: St. 18 in Area XI-b, 5-52 m, Sept. 4, 1960.

*Remarks*: The new species is referred to the genus *Melphisana* by the prominent feature of the uncleft telson, but has also many coincidences with *Melphidippella macrura* (NORMAN). Differing from *Melphisana bola* in the dorsal appearance of pleon segments, pleonal epimera 2-3, the shape of coxa 1, gnathopod 2, peraeopods 1-2, and having an acute point in the lateral lobes of head. J. L. BARNARD established newly the genus *Melphisana* in his paper of 1962a, in which he says, "fourth palp article of maxilliped short, stout, not claw-like, bearing 2 apical setae", and this feature was described as one of diagnostic characters. In my specimens, the fourth article of maxillipedal palp has certainly a slender nail which is apt to be mistaken for two apical setae, and finger of gnathopods 1 and 2 has also a nail, the characters in gnathopods likewise seen in his figures.

On the other hand, however, it is noteworthy that the finger of peraeopods 1 and 2 in my specimens indicates the same feature as in the fourth article of maxillipedal palp of BARNARD's figure. Marginal armature of outer plate of maxillipeds in my specimens is also nearly alike to that of *Melphidippella macrura*. The specimens at hand are all female, and antenna 2, peraeopods 3-5, and uropod 3 are missing in all of the specimens.

### Family PONTOGENEIIDAE

#### *Pontogeneia rostrata* GURJANOVA

(Fig. 26)

*Pontogeneia rostrata* GURJANOVA 1951, p. 719, fig. 500; J. L. BARNARD 1962a, p. 81.

*Pontogeneia* sp., NAGATA 1960, p. 171, pl. 14, figs. 50-53 & pl. 15, figs. 54-71.

*Material examined*: Areas II (1), IV (7331), V (27), VI (186), VII (13), IX-b (131), IX-c (1), IX-d (21), XIII-a (3), XIII-b (6), XIV (2). Total: 7722 specimens, up to 8.0 mm in length; from *Zostera* belt near low-water marks to a depth of 5 m.

*Remarks*: My specimens described as *Pontogeneia* undet. sp. in my preceding paper were referred to the present species by J. L. BARNARD (1962, l. c.).

However, some questions seem to still remain in the following respects: In GURJANOVA's specimens, head is pretty long, as long as the first three peraeon segments combined, whereas in my specimens it is only as long as the first two combined; inner plate of the first maxilla has 4 setae in him,

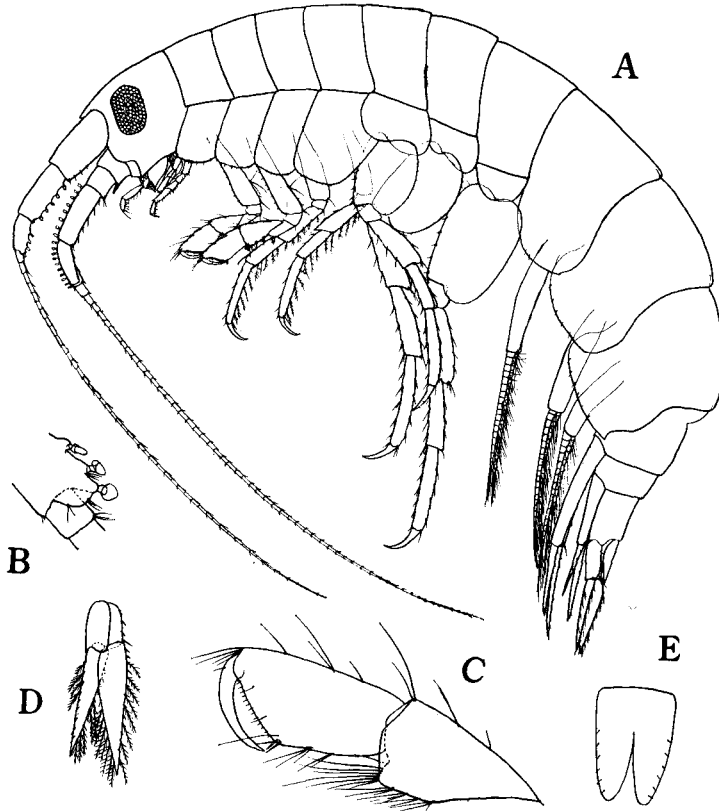


Fig. 26. *Pontogeneia rostrata* GURJANOVA. A, lateral view of male; B, accessory flagellum of antenna 1; C, gnathopod 2; D, uropod 3 of male; E, telson.

whereas has 6 setae in me. It may be noted that the specimens at my hand are also fairly well allied to *P. arenaria* BULYCHEVA (1952, p. 222, fig. 22).

*Distribution*; Bering Sea, Okhotsk Sea, Japan Sea (Russian side coast), and southern California.

(To be continued)