

Amphipoda of the 'Southern Cross' Antarctic Expedition.

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[Read 18th December, 1902.]

(PLATES 7-11.)

THE Amphipoda which form the subject of this paper were collected during the Expedition of the 'Southern Cross,' commanded by Capt. Borchgrevink, to the Antarctic Seas from April 5, 1889, at Cape Adare, to Feb. 18, 1900, at Franklin Island. By far the larger part of the collection was made after the lamented death of Mr. N. Hanson, the Zoologist of the Expedition, by Mr. Anton Fougner, partly by dredging at depths varying from 10 to 26 fath. and partly on the beach at Cape Adare.

It is impossible not to be struck with the general resemblance of the collection, both as regards the number and size of individuals and the great preponderance of the Lysianassidæ, to such a collection as might be found in the Arctic Seas; and with the equally great difference in these respects from any collection that might be made under similar conditions of depth, &c., on our own or on tropical coasts. Although I have only ventured to refer one species to a known Arctic form (*Ampelisca macrocephala*, Lilljeborg, found also on our own coasts), yet I have only had occasion to make a single new genus (*Oradarea*). And several of the new species are only separated from Arctic forms by very slight differences—indeed the genera of the Lysianassidæ have been separated by G. O. Sars on such fine distinctions that the species are reduced to almost infinitesimal differences. Thus *Orchomenella pinguides* is very near to *O. pinguis*, Boeck; *O. Franklinii* to *O. minuta* (Krøyer); *Oediceros Newnesii* to *O. saginatus*, Krøyer, &c. One of the most interesting forms is *Atylus antarcticus*, which differs only in very unimportant details from *A. carinatus* (Fabr.), a species that according to G. O. Sars has only once been taken south of the Arctic Circle, and then in the stomach of a fish! Yet, with perhaps the exception of *Halirages Huxleyanus* (Bate), which Sars thinks ought to be referred to *Atylus** (notwithstanding a quite different telson), no other species of the genus as restricted by Sars has been found as yet in the enormous intervening area.

* Crustacea of Norway, vol. i. p. 471; cf. p. 436.

I have no intention of putting forward any theory to account for the similarity of the two Polar Amphipodal faunas: our knowledge of this class of animals and the material at our disposal are quite insufficient for generalization. But it is worth while to consider the distribution of the small genus *Orchomenopsis*, established by G. O. Sars in his beautiful work on the Amphipoda of Norway in 1895. So far as I know, the following are all the species yet obtained:—

O. obtusa, G. O. Sars. The type. Trondhjemsfiord, 100 fath.

O. (Orchomene) musculosus (Stebbing). 'Challenger.' S. of Japan, N. lat. 26°, E. long. 138°. 2425 fath. Temperature 35°·6.*

O. abyssorum (Steb.). 'Challenger.' E. of Buenos Ayres, S. lat. 36°, W. long. 51°. 1900 fath. Temp. 33°.

Do. G. Murray in the 'Oceana,' Nov. 1898 [Ann. & Mag. Nat. Hist. ser. 7, xii. (1903) p. 232, ined.]. N. lat. 52° 18', W. long. 15° 53', 1610 and 1410 faths.

Do. Chevreux (Camp. Sci. de l'Hirondelle, p. 23). N. lat. 48°, W. long. 51°. 1103 fath. [Chevreux has also described (Bull. Soc. Zool. France, xxviii. (1903) pp. 93-96) two new species from the North Atlantic.]

O. nodimanus, A. O. Walker. Cape Adare. 26 fath. Temp. 28°·8.

O. Rossi, A. O. Walker. Franklin Island. Surface; lat. 78° 35'.

If to these we add, as G. O. Sars is inclined to, *Orchomene cavimanus*, Stebbing, from Kerguelen Island, we shall probably have all the known species. It will be seen that *Orchomenopsis* is distributed over a very large part of the world's area, and that in every case it has been taken in water at a low temperature. In fact this, and not light, appears to be essential to the existence of its species.

Another deep-sea form which has not yet been found in Antarctic waters, but which, I confidently expect, will be, is *Cyphocaris anonyx* from the Greenland coast. In the 'Challenger' Report, Mr. Stebbing describes a species, *Cyphocaris micronyx*, from near Tristan da Cunha, taken in 1425 fath., temp. 37°, which I believe he now considers identical with Lütken's species. And in Mr. G. Murray's 'Oceana' gatherings the same species occurs at depths of 510, 1300, and 1670 faths. These facts appear to support the theory of a connection between the Poles by the cold abyssal stratum of the Ocean.

* Bottom temperature is always to be understood.

Among the Lysianassidæ, notwithstanding the large size of most of the specimens, I have not met with an ovigerous female or a male with fully developed lower antennæ. Probably, like *Amathilla homari* of our own seas, they reach maturity in deep water.

The collection consists of 22 species belonging to the following genera :—

<i>Hyperia</i>	1	species.
<i>Hyperietta</i>	1	„
<i>Cheirimedon</i>	2	„ new.
<i>Orchomenopsis</i> . . .	2	„ new.
<i>Orchomenella</i> . . .	2	„ new.
<i>Tryphosa</i>	2	„ new.
<i>Hoplonyx</i>	2	„ 1 new.
<i>Ampelisca</i>	1	„
<i>Oediceros</i>	1	„ new.
<i>Epimeria</i>	1	„ new.
<i>Eusirus</i>	1	„ new.
<i>Oradarea</i> , new . . .	1	„ new.
<i>Atyloides</i>	1	„
<i>Atylus</i>	1	„ new.
<i>Liljeborgia</i>	1	„
<i>Haplocheira</i>	1	„
<i>Jassa</i>	1	„ new.

AMPHIPODA.

Fam. HYPERIIDÆ.

Genus HYPERIA, *Latreille*, 1823.

H. GAUDICHAUDI, *H. Milne-Edwards*.

Cape Adare, "surface," Nov. 2, 1899, 2 young ♂ ; Nov. 11, 1899, "from jelly-fish caught on surface," 9 specimens, ♂ ♀ and young ; surface, S. lat. 78° 35', Feb. 18, 1900.

Length of largest female 23 mm.

Genus HYPERIELLA, *Bovallius*, 1887.

H. DILATATA, *Stebbing*, 'Challenger' Amphipoda, p. 1403, pl. 171.

Cape Adare, on the beach, April 5, 1899. Two males.

Length 5 mm.

GAMMARIDEA.

Fam. LYSIANASSIDÆ.*

This appears to be by far the most important family of Amphipoda in the Antarctic, as it probably is also in the Arctic Seas. The number both of species and specimens much exceeds those of any other family, and most of them are remarkable for their great size as compared with their nearest allies from warmer waters.

Genus CHEIRIMEDON, *Stebbing*, 1888,
Chall. Amph. p. 638.

Except as to the posterior angle of the 3rd segment of the metasome, which is not upturned in the following species nor in *C. latimanus*, G. O. Sars.

C. FOUGNERI, n. sp. (Pl. 7. figs. 1-6.)

Lat. 78° 35' S.; surface, Feb. 15, 1900. Many specimens.

Body somewhat compressed. Mesosome segments subequal, those of the metasome about half as long again, also subequal, the 3rd having the hind margin nearly straight, forming approximately a right angle with the lower margin. First four side-plates about as deep as the segments.

Urosome with a deep dorsal depression in the 1st segment.

Head as long as the 1st segment; lateral angle rounded; eyes irregularly reniform, wider below, dark in spirit.

Upper antennæ as long as the head and next four segments †, the 1st joint of the peduncle about twice as long as wide and as the next two joints; flagellum 27-jointed, the 1st longer than the next three; accessory appendage 6-jointed, the 1st as long as the next four, the last minute.

Lower antennæ about one-fourth longer than the upper, the joints of the peduncle increasing in length distally, rather densely fringed on the lower margin with short setæ.

* For the definitions of the genera of this family, see G. O. Sars, 'Amphipoda of Norway.'

† The word "united" after "segments" or "joints" must always be understood. Also, in all cases, by "1st joint" of the antennal peduncle is meant the 1st *exposed* joint or the antepenultimate. The "1st joint" of a limb is the *basipodite*.

First gnathopod very robust, the 1st joint rather longer than the 4th and 5th, the 2nd longer than the 3rd and 4th; the propodos expanding slightly distally, as wide as the posterior margin is long, palm slightly oblique and sinuous, and densely fringed with short spines and setules. Carpus very short. Side-plate widening and rounded below, anterior margin uneven.

Second gnathopod normal: the side-plate oblong with rounded angles.

Pereopods: the first two pairs with the 3rd and 5th joints longer than the 4th. The 3rd and 4th pairs have the 1st joint wide at the top and produced downwards: in the last pair it is more expanded and widest in the middle, longer than the next three joints: in all three the hind margin is faintly serrate.

Uropods: the 1st and 2nd reach nearly to the end of the shorter ramus of the 3rd; peduncles long and angular, the margins fringed with short spines. Third pair with peduncle about as long as the inner (shorter) ramus, which, as well as the outer, has a few long setæ on the inner margin; the outer ramus has two spines on the outer margin near the point.

The telson reaches a little beyond the end of the peduncles of the 3rd uropods, cleft with a wide sinus for nearly half its length, a small terminal spine only on each division.

Length 20 mm.

Differs from *C. crenatipalmatus*, Stebbing, in the shape of the 3rd metasome-segment, &c., and from *C. latimanus*, G. O. Sars, in the less widely expanded hand of the 1st gnathopods, the shape of the telson, &c.

Named after Mr. A. Fougner, one of the scientific assistants of the 'Southern Cross' Expedition, who collected it.

C. HANSONI, n. sp. (Pl. 7. figs. 7-12.)

Cape Adare, 7 fath., Nov. 1, 1899. Nine specimens.

Body rather rounded: the first two segments severally shorter than the 3rd and 4th, which again are shorter than each of the last three, each set being subequal. The first 4 side-plates slightly deeper than the segments. *Third segment of the metasome with the posterior angle produced and turned up to a rather blunt point*, posterior margin above the angle straight. First segment of the urosome with an acute dorsal elevation.

Head as long as the first 2 segments, *lateral angle produced beyond the end of the 1st joint of the lower antennæ, acute*. Eyes almost obliterated, apparently oval.

Upper antennæ about as long as the head and first 4 segments; 1st joint thick and as long as the next two and first 2 joints of the flagellum united; flagellum 15-jointed. *Accessory appendage 2-jointed, the 1st nearly twice as long as the 2nd*.

Lower antennæ: first joint short, 2nd and 3rd nearly twice as long, subequal.

First gnathopods: side-plates oblong, narrowing slightly downwards. First joint almost as long as the next four; the 2nd, 3rd, and 4th subequal in length and about as long as the 5th; the 4th triangular and produced behind in a short lobe: the propodos wide, scarcely dilated distally, palm rather oblique, dactylus with a minute secondary tooth near the point.

Second gnathopods as in *C. crenatipalmatus*, Steb.

Pereopods: first and second nearly as in *C. crenatipalmatus*: side-plates of the 3rd rather wider than, but not so deep as the 1st joint, which is oblong and as long as all the remaining joints; the 3rd joint short and wide; dactylus half as long as the 5th joint. The last two pairs resemble the 3rd, but the 1st joint is wider, all being about the same length and with the hind margin of the 1st joint serrate.

Uropods: peduncles of the 1st a little longer than the rami, a few small spines on the inner side; rami equal, without spines or setæ; peduncles of the 2nd shorter than the equal rami, 2 or 3 small spines on the inner margins; peduncles of the 3rd about two-thirds the length of the outer ramus, with 2 short spines on the inner margin near the end, inner ramus slightly shorter than the outer, both with a few long setæ on the inner margins.

Telson cleft nearly to the base, with a terminal spine in an unequal-sided notch on each division.

Length 6 mm.

Very near *C. crenatipalmatus*, Steb., but differs in the shape of the hand of the 1st gnathopod, the armature of the telson and uropods, and the less upturned and blunter angle of the 3rd metasome-segment.

Named after Nicolai Hanson, the Naturalist of the 'Southern Cross' Expedition, who succumbed to the terrible rigors of the climate in Oct. 1899.

Genus ORCHOMENOPSIS, *G. O. Sars*, 1895.

Except as to the telson.

O. NODIMANUS *, n. sp. (Pl. 7. figs. 13-17.)

Cape Adare, Nov. 4 & 5. 26 fath. Many specimens.

Body slightly compressed; segments of the mesosome subequal. First 4 side-plates about twice as deep as the segments, expanded downwards, the 1st produced in front beyond the head, finely granulate and pitted. Metasome with a dorsal carina on the posterior half of each segment: hind and lower margins of the 3rd segment almost straight, the former smooth; posterior angle obtuse but well defined.

Urosome hardly so long as the last segment of the metasome; 1st segment carinate, 2nd very short.

Head almost concealed by the 1st segment and side-plate, lateral angle prominent, rounded. Eyes large, dark, reniform, expanded below.

Upper antennæ: peduncle reaching to the end of the penultimate (2nd) joint of the peduncle of the lower antennæ, 1st joint more than twice as long as the next two; flagellum 16-jointed, rather longer than the peduncle, the 1st joint about as long as the next seven: the accessory appendage 7-jointed, the 1st as long as the next three.

Lower antennæ: the last three joints of the peduncle subequal, reaching the middle of the flagellum of the upper antennæ.

Maxillipedes: outer plate with two curved spines on the outer side of the tip; inner plate with three blunt spines at the tip.

First gnathopods very robust, the 1st joint expanded distally and posteriorly, the 2nd also much stouter and longer than the 3rd and 4th, concave above, convex and setose beneath; carpus very short and produced behind to an irregular conical projection. Propodos narrowing distally, the hind margin about two-thirds the length of the front, concave, setose, *with a nodiform tubercle about the middle*; the palm rectangular, with a cleft in the middle; the dactylus projecting beyond the palm.

Second gnathopods normal.

Peræopods: 1st and 2nd robust, 3rd joint broad with parallel

* From *nodus*, a knot, in allusion to the tubercle on the propodos of the first gnathopods.

margins, as long as the 5th and twice as long as the 4th joint, the 2nd, 3rd, and 4th joints setose, the 5th spinous on the hind margins. The last three pairs increasing slightly in length successively, similar in form; the 1st joint much expanded, the upper margin straight, the hind margin slightly serrate in the middle; remaining joints spinous. The side-plate of the 3rd pair about as wide as deep.

Uropods extending equally behind; peduncles of the 1st pair twice as long as the equal rami; those of the 2nd pair about one-fourth longer than the subequal rami; third pair lanceolate, peduncles two-thirds the length of the rami; outer ramus one-fourth longer than inner, both spinous on the outer, setose on the inner margin.

Telson reaching considerably beyond the end of the peduncle of the third uropods, widely cleft for three-fourths of its length, with submarginal spines along the outer and inner margins, and two spines at the tip of each division.

Length 16 mm.

O. Rossi *, n. sp. (Pl. 7. figs. 18-23.)

Lat. 78° 35' S.; Feb. 18, 1900; near surface. Many specimens.

Body slightly compressed. *First 4 side-plates about as deep as the segments*, the 1st expanded in front, the rest very slightly expanded below, subrectangular. Second segment of the mesosome shorter than the rest, which are subequal. Third segment of the metasome with the hind margin almost straight, smooth, *posterior angle subacute*, lower margin convex. First segment of the urosome with a dorsal depression.

Head as long as the 2nd segment; *lateral angle rounded*. Eyes large, black, long-oval, expanded below.

Upper antennæ little longer than the head: 1st joint almost as broad as long, 2nd very short, 3rd rather longer than the 2nd. Flagellum 13-jointed; 1st joint as long as the next five, with the usual long setæ and rows of setules; accessory appendage 6-jointed, the 1st as long as the next four.

Lower antennæ: first and third joints subequal, the 2nd rather longer.

First gnathopods: first joint strong, rather longer than the next three. Carpus short and produced behind beyond the base of the propodos, setose; propodos truncate, contracted below

* After the well-known Antarctic navigator.

the palm; dactylus reaching a little beyond the strong spine at the palmar angle. Side-plates expanded and rounded in front.

Second gnathopods normal.

Peræopods: first and second with a few setæ on the hind margin of the 2nd, 3rd, and 4th joints and about 11 small spines on that of the 5th joint. Side-plates of the 3rd pair about half as large again as the 1st joint; this, in the last three pairs is expanded, slightly serrate on the hind margin, and produced downwards to the 3rd joint, which is much dilated behind; the spines few and short.

Uropods: first and second pairs with rami a little shorter than the peduncles, subequal, sparingly spinous; rami of the 3rd pair lanceolate, subequal, longer than the peduncle, almost spineless, with four or five setæ near the base of the inner margin of the inner ramus; margins minutely serrate.

Telson reaching to about one-third the length of the rami of the 3rd uropods, cleft for two-thirds of its length, with three or four very small submarginal and one apical spine on each division.

Length 25 mm.

This large species appears to be nearly related to *Orchomenopsis obtusa*, G. O. Sars, from which it differs in its smaller side-plates and distinctly angulated 3rd metasome-segment.

Genus ORCHOMENELLA, G. O. Sars, 1895.

O. PINGUIDES, n. sp. (Pl. 8. figs. 24-30.)

Cape Adare, Nov. 4 & 5, 1899. Many specimens.

Body stout: 1st segment of the mesosome longer than the 2nd and about equal to the remaining segments. First 4 side-plates about twice as deep as the segments, the 1st narrowed, the two next widened below. *Third segment of the metasome produced behind in a smooth-edged subquadrangle lobe with rounded angles.* First segment of the urosome with a dorsal carina.

Head about half as long as the 1st segment: *lateral angle produced, slightly rounded at the tip.* Eyes moderately large, dark, oval, expanded below.

Upper antennæ: 1st joint very stout and twice as long as the next two united; flagellum as long as the peduncle, the 1st joint about three-fourths as long as the remaining fourteen; the accessory appendage 5-jointed, the 1st longer than the rest united.

Lower antennæ a little longer than the upper, the 2nd joint of the peduncle the longest.

Maxillipedes: the outer plate reaching to the middle of the 3rd joint of the palp, and having apparently a double edge; inner plate toothed at the apex, the innermost tooth the largest.

First gnathopods: 1st joint almost as long as the remaining joints. Front margin of the carpus $\frac{1}{4}$ ths of the same in the propodos; this has parallel margins and is rectangularly truncate; dactylus short, strong, and curved. Side-plates tapering and rounded distally.

Second gnathopod with the posterior margin of the propodos acutely produced; side-plates subrectangular, rather the widest near the middle.

First and second peræopods longer than the rest. Third pair short, the 1st joint greatly expanded behind, the 3rd joint expanded and produced downwards: the side-plate more than twice as large as the 1st joint, deeper than wide. Fourth and fifth pairs with the 1st joint less expanded and subequal in length. The 1st joint in the last three pairs is indistinctly crenulate; the 2nd and 3rd joints have a few long setæ and short spines on the front margin.

Third uropods have the peduncle slightly longer than the outer ramus, which is longer than the inner by the terminal nail. The outer ramus has 6 or 7 long setæ on the inner side; the inner has several slighter setæ on the inner, and 2 or 3 spines on the distal half of the outer side.

Telson as long as the peduncle of the 3rd uropods, concave above, and divided rather more than one-third of its length; a small spine at the tip of each division.

Length 7 mm.

Very near *Orchomenella pinguis* (Boeck) from the Siberian Polar Sea (Stuxberg).

O. FRANKLINI, n. sp. (Pl. 8. figs. 31-36.)

Franklin Island, 10-24 fath., Feb. 9, 1900. One female.

Body very tumid. First three segments severally rather shorter than the next four. First 4 side-plates much deeper than the segments. Posterior angle of the 3rd metasome-segment bluntly rectangular; the hind and lower margins almost straight. Urosome rather longer than the 3rd metasome-segment, the 1st segment without carina or depression, and longer than the next

two segments; the 2nd shorter than the 3rd. Head rather longer than the 1st segment; lateral angle acute. Eyes oval, dark.

Upper antennæ: the 1st joint three times as long as the next two, the peduncle naked except for a few scattered hairs. Flagellum about as long as the peduncle, 9-jointed, with a few long-jointed setæ; *the 1st joint entirely naked*, as long as the 3rd and longer than the 2nd joint. Accessory appendage 4-jointed, the 1st joint as long as the 3rd and longer than the 2nd.

Lower antennæ a little longer than the upper, the peduncle nearly twice as long as the 8-jointed flagellum, the first two joints subequal and each nearly twice as long as the last; the whole very sparsely setose.

First gnathopods: the 1st joint as long as all the rest; carpus two-thirds the length of the rectangular propodos; posterior margins of the 3rd, 4th, and 5th joints pilose, the rest of the limb sparsely setose. Side-plates expanded below.

Second gnathopods normal.

First and second peræopods with the 1st joint as long as the next three; dactylus about one-third the length of the 5th joint.

Third peræopods: the 1st joint widening out gradually from the base to a cycloidal lobe, about as broad as long, the hind margin scarcely serrate; the side-plates more than twice as large as the 1st joint, deeper than wide.

Fourth and fifth peræopods: the 1st joint deeper than wide, scarcely serrate.

Uropods: the 1st extending beyond the 2nd and these beyond the 3rd; the first two pairs almost naked, with the outer ramus longer than the inner. The 3rd pair have the peduncle longer than the inner ramus, which is quite smooth; the outer has one or two spines on the inner margin.

Telson concave above, pointed and divided to about one-third of its length.

Incubatory lamellæ very narrow. Branchial vesicles pyriform. Length 6 mm.

Near *O. minuta* (Krøyer), but differs in the form of the urosome and telson, and in the small and naked 1st joint of the flagellum of the upper antennæ.

Genus TRYPHOSA, Boeck, 1870.

T. ADAREI, n. sp. (Pl. 8. figs. 38-44.)

Cape Adare, Nov. 4 & 5, 1899. 26 fath.

Body moderately compressed. Segments of mesosome increasing in length successively. First 4 side-plates deeper than their segments; 5th side-plate wider than deep. *Posterior angle of the 3rd metasome-segment obtuse, the hind margin convex, smooth, lower margin straight.* First segment of urosome with a dorsal depression.

Head as long as the 1st segment; *lateral angle subacute.* Eyes generally not discernible, probably red, reniform.

Mouth-organs normal.

Upper antennæ: 1st joint of the peduncle stout, as long as the other two joints and 1st joint of flagellum; 2nd and 3rd joints very short. Flagellum with 13 joints in the female, 24 joints in the male. Accessory appendage 6-7-jointed, reaching beyond the 5th joint of the flagellum, the 1st joint longer than the next two.

Lower antennæ: 1st joint short and thick, 2nd about the same thickness and twice as long, the 3rd more slender and one-third longer than the 2nd; flagellum with 21 joints in the female, 31 in the male.

First gnathopods: side-plates narrowed and rounded below, with a small tooth at the distal end of the hind margin. First joint considerably longer than the next three; anterior margin of the carpus almost as long as that of the propodos, which has the proximal half of the posterior margin somewhat dilated and furred; palm oblique, setose, with very strong defining spines and a smaller spine placed obliquely at the base of the dactylus; this is strong, with a secondary tooth.

Second gnathopods: propodos five-sixths the length of the hind margin of the carpus; dactylus distinct. Side-plates oblong, widening downwards, with a small tooth at the hinder angle, not shown in the figure.

First and second peræopods: side-plates somewhat dilated below, the front margin rounded, the hind margin with a small tooth and setule; 4th and 5th joints spinous on the hind margin.

Third peræopods: side-plates as wide but not as deep as the 1st joint, which is almost as wide as deep, narrowing below and much longer than the next three joints.

Fourth peræopods longer and stronger than the 3rd and 5th, the 1st joint oblong.

Fifth peræopods: the 1st joint oblong and longer than the rest of the limb.

All the last three pairs of peræopods have the hind margin of the 1st joint rather deeply serrate, the front margin of all the joints spinous, and the dactyli one-third the length of the 5th joint, slightly curved.

Uropods subequal in extent, the 1st and 2nd with the peduncles and rami subequal and spinous; the peduncle of the 3rd shorter than the rami, with a few strong spines at the distal end; rami spinous, the inner slightly shorter than the outer.

Telson longer than the peduncle of the 3rd uropods; cleft almost to its base, with 4 or 5 submarginal and a terminal spine on each division.

Length 20 mm.

This species much resembles *T. antennipotens*, Stebbing, and *T. barbatipes*, Stebbing, but differs from both in its shorter first joint and longer accessory appendage of the flagellum of the upper antennæ, in the shape and relative proportions of the hand and wrist of the 1st gnathopods, &c. It is also very near *T. angulata*, G. O. Sars, but differs in the shape of the lateral angle of the head.

TRYPHOSA MURRAYI *, n. sp. (Pl. 9. figs. 45-51.)

One male specimen. Tube A. 39. No locality given.

Body moderately compressed. First 4 side-plates at least twice as deep as the segments. Third segment of metasome with the hind margin almost straight, the lower margin slightly convex; posterior angle subrectangular. First segment of the urosome with a prominent triangular carina.

Head: lateral angles produced and subacute. Eyes obsolete.

Mouth-organs normal. Epistomal plate prominent, evenly rounded.

Upper antennæ: 1st joint stout and twice as long as the 2nd and 3rd united. Flagellum 23-jointed, the first as long as the next four, with a double row of setiferous ridges; the 5th very short. Accessory appendage 6-jointed, reaching a little beyond the 5th joint of the flagellum, the 1st joint about as long as the next three.

Lower antennæ: second joint of the peduncle longer and stouter than the last. Flagellum with about 30 joints.

First gnathopods: the 1st joint as long as the 3rd, 4th, and 5th; the carpus about as long as the propodos, which is somewhat

* Named in honour of my friend Mr. G. Murray, F.R.S.

expanded at the proximal end; palm oblique. Side-plates narrowing downwards, with a small tooth at the posterior angle.

Second gnathopods: the propodos fully as wide as the carpus, upper and lower margins subparallel, the latter not produced. Side-plates slightly expanded below, with a small tooth at the posterior angle, not shown in the figure.

First and second peræopods rather slender, the 5th joint spinous on the anterior margin.

Third peræopods: the 1st joint wide but narrower than the side-plate and about as deep; the 3rd joint considerably expanded behind; the 4th joint wider than the 5th, and also than the 4th joint in the last pair of peræopods.

Fourth and fifth peræopods: the 1st joint larger than in the 3rd peræopods; the 3rd joint less expanded; the 1st joint in the last three pair of legs is serrate behind, and all the joints are more or less spinous.

Uropods: the 1st pair extend beyond the 2nd, the inner ramus shorter than the outer: the rami of the 2nd and 3rd pairs are subequal, in the last both rami are spinous and setose on the inner margin, and the outer has two large spines on its outer margin, the inner a little the shorter.

Telson long, cleft almost to its base, with 3 or 4 spines on each margin and the usual single apical spine.

Length about 15 mm.

T. Murrayi belongs to a group of northern species with the hind margin of the 3rd metasome-segment almost or quite straight, and with a triangular carina on the 1st urosome-segment. Of these, *T. Höringii*, Boeck, and *T. angulata*, G. O. Sars, differ in the form of the lateral angle of the head; while *T. compressa*, G. O. Sars, differs in the much compressed body, in the form of the propodos of the 2nd gnathopod, and the relative proportions of this and the 1st gnathopod.

Genus HOPLONYX, G. O. Sars, 1895.

H. KERQUELENI (*Miers*).

Lysianassa Kergueleni, Miers, Ann. & Mag. Nat. Hist. ser. 4, xvi. 1875 p. 74.

Anonyx Kergueleni, Miers, Zoology of Kerguelen Island, 1879.

Hippomedon Kergueleni (Miers), Stebbing, 'Challenger' Amphipoda.

Duke of York Island, Oct. 1899; 6 fath. Cape Adare, Nov. 1899; 26 fath.

The most abundant species in the collection. The largest specimen measured 20 mm.

HOPLONYX STEBBINGI, n. sp. (Pl. 9. figs. 52-57*.)

Cape Adare, Nov. 4 & 5, 1899; 26 fath. Several specimens.

Body moderately compressed. *Third segment of the metasome with the posterior angle recurved, but less so than in H. Kergueleni.* First segment of the urosome neither dorsally depressed nor carinate.

Head rather shorter than the 1st segment. *Lateral angle produced to the end of the 1st joint of the upper antennæ, the point rounded.* Eyes not seen.

Mouth-organs normal.

Upper antennæ: first joint almost as broad as long; next two very short. Flagellum 15-jointed, the 1st rather longer than the next three, the 2nd very short. Accessory appendage 6-jointed, the 1st as long as the next two, the 6th minute.

Lower antennæ: second joint of peduncle almost as long as the 1st and 3rd together. Flagellum 17-jointed.

First gnathopods: first joint about as long as the next three; carpus as long and, in its distal portion, as wide as the propodos; sides of the latter parallel. Dactylus deeply divided. Side-plates narrowed and rounded below.

Second gnathopods of the usual form, with dense tufts of setæ on the 3rd, 4th, and 5th joints. Length of propodos to width as 5:3.

First peræopods: 1st and 3rd joints about equally long, with subparallel margins; 3rd and 4th with a few fascicles of setæ, and the 5th with about six spines on the hind margin.

The last three pairs of peræopods have the 1st joint almost as long as the remaining joints, the hind margin expanded and slightly serrate. The 3rd pair is rather shorter, and has the 3rd joint more expanded than the 4th and 5th pair.

First and second uropods have the peduncles rather longer than the subequal rami and are sparsely spinous. The peduncle of the 3rd uropods is shorter than the rami, of which the outer is slightly the longer; both rami are sparsely setose on the inner margin.

Telson long and narrow, cleft almost to the base.

Length 18 mm.

Differs from *H. Kergueleni* in the absence of a depression on the 1st urosome-segment, the less upturned angle of the 3rd metasome-segment, the blunt lateral angle of the head, the narrowed side-plates of the 1st gnathopods, &c.

Genus *AMPELISCA*, *Kröyer*, 1842.

A. MACROCEPHALA, *Lilljeborg*. (Pl. 9. figs. 58-61*.)

One female with ova. Tube "A."

With the exception of the hind margin of the 3rd segment of the metasome, which is rather less convex, and the lower margin of the 1st joint of the last peræopods, which is less truncate than in Northern specimens, the present example agrees with Lilljeborg's species, even to the peculiar spine on the outer ramus of the 2nd uropods. This species is widely distributed in the Arctic seas, and occurs in the British seas.

Genus *OEDICEROS*, *Kröyer*, 1842.

O. NEWNESI *, n. sp. (Pl. 9. figs. 62-66, Pl. 10. figs. 67, 68.)

Cape Adare, beach, April 5 & 15, 1899. Two specimens.

Female with ova.

Body compressed. First four side-plates almost as deep as the segments. First three segments shorter than those succeeding, raised at the hind margin. Third segment of the metasome rounded behind.

Head as long as the first two segments; rostrum strongly deflexed, pointed, and reaching nearly to the end of the 1st joint of the upper antennæ; lateral angles rounded. Eyes dark. Mouth-organs normal.

Upper antennæ reaching a little beyond the 2nd joint of the lower, 1st joint about as long but twice as thick as the 2nd, 3rd joint about one-third as long as the 2nd. Flagellum 10-jointed.

Lower antennæ imperfect.

First gnathopods: first joint barely as long as the carpus and propodos, with long setæ on the upper and lower portions; carpus about two-thirds the length of the propodos, produced behind into a rounded setose lobe; propodos oval, the palm, which is slightly contracted at the proximal end, about twice as long as the rest of the hind margin. Dactylus slender. Side-plates expanded below and fringed.

Second gnathopods: *first joint longer than the rest of the limb*; carpus more produced than in the first gnathopods; *palm of propodos shorter than the rest of the hind margin*. Side-plates rounded, oblong, fringed with more or less plumose setæ.

* Named in honour of Sir George Newnes, Bart., M.P., who provided the funds for the expedition of the 'Southern Cross.'

First and second peræopods: fourth joint about as long but twice as thick as the 5th, densely clothed with long setæ on the posterior margin; the 5th joint similarly clothed on the anterior margin. Dactylus acutely ovate.

Remaining parts as in *O. saginatus*, Krøyer.

Length 8 mm.

Very near *O. saginatus*, from which it differs principally in the more compressed body, and in the longer and narrower form of the 2nd gnathopod.

Fam. EPIMERIDÆ.

Genus EPIMERIA, Costa, 1851.

E. INERMIS *, n. sp. (Pl. 10. fig. 69.)

Cape Adare, 28 fath. One specimen.

Body robust; 1st segment a little longer than the 2nd, but shorter than the 3rd, remaining segments of mesosome longer, with elevated dorsal carinæ. First three side-plates narrow, pointed, angularly convex, and about as deep as the segments. Fourth side-plate broad, *the lower margin obtusely angulated*, and forming an acute angle with the hind margin. The 5th and 6th side-plates quadrangular and convex, the posterior angle subacute, *not produced*; the 7th small, rounded, and partly concealed by the downward prolongation of the segment. The lower part of the mesosome-segments is slightly raised, forming a low tubercle.

The 1st segment of the metasome is narrowed and rounded below; the 2nd and 3rd segments have the posterior angle acute, the hind margin in the last being convex; the dorsal carina on the 2nd segment has a shallow median notch; the carina of the 3rd segment is lower with an irregular margin.

The 1st segment of the urosome is dorsally depressed, scarcely carinate; the 2nd segment very short, the hind margin elevated; the sides of the last segment are elevated behind.

The telson is rather more tapering than is usual in this genus, with a small terminal notch.

The rostrum is about as long as the rest of the head; the eye as in *E. cornigera* (Fabr.) and other species.

Length 28 mm. Colour red.

* "Unarmed," from the absence of the blade-like prolongations of the 4th and 5th side-plates that are found in the other species of the genus.

As the important characters in this genus are external, and as it was desirable not to mutilate the single fine specimen, I have not attempted to describe the mouth-organs or limbs, the latter of which appear to resemble those of *E. cornigera* (Fabr.). The absence of the acute prolongations of the 4th and 5th side-plates distinguishes it from the Northern species.

Fam. EUSIRIDÆ.

Genus EUSIRUS, Kröyer, 1845.

E. LÆVIS *, n. sp. (Pl. 10. figs. 70-76.)

One specimen; no locality given.

Body compressed, *without dorsal teeth or posterior projections.*

Third segment of metasome with the posterior margin rounded and smooth.

Head as long as the first two segments, with a short rostrum. Eyes rather small and round.

Maxillipedes with the dactylus largely developed.

Upper antennæ nearly twice as long as the lower; first two joints subequal, the 3rd shorter than the 1st joint of the flagellum, the distal margin somewhat dentate; secondary appendage about three-fourths the length of the 1st joint of the flagellum. Flagellum 11-jointed, the 1st and 10th joints the longest.

Lower antennæ: peduncle reaching beyond the middle of the 2nd joint of the upper antennæ. Flagellum 5-jointed.

Gnathopods of the usual structure in this genus; the propodos much wider than long; carpal projection shorter than usual; the 1st joint of the 1st gnathopods much wider than that of the 2nd pair, otherwise they are alike.

First and second peræopods about as long as the gnathopods, slender, without spines, and with only a few setules; dactyli strong.

First joints of the last three pairs of peræopods moderately wide *with smooth margins.*

Telson reaching to the end of the peduncle of the 3rd uropods.

Length 4 mm.

This species may be easily distinguished from the other known species by the absence of dorsal teeth on the segments and by the entire margins of the 3rd metasome-segment and the 1st

* *Lævis*, smooth, from the absence of dorsal prolongations and of teeth on the margins of the 3rd metasome-segment and 1st joints of peræopods.

joints of the peræopods. From *E. cuspidatus*, var. *antarcticus*, Thomson, it is separated by the conspicuous dactylus of the maxillipedes.

Fam. CALLIOPIDÆ.

Genus nov. ORADAREA*.

Body compressed.

Third joint of mandibular palp rather shorter and narrower than the 2nd.

Maxilla and maxillipedes as in *Amphithopsis*, G. O. Sars.

Upper antennæ with a small secondary appendage.

Lower antennæ considerably longer than the upper.

Gnathopods very unequal, the 2nd much longer and proportionately narrower than the 1st.

Telson entire.

This genus is very near to *Amphithopsis*, Boeck, 1870, as restricted by G. O. Sars ('Amphipoda of Norway,' p. 455), but differs in the more compressed body, the narrow 3rd joint of the mandibular palp, and the relative inequality of the gnathopods and antennæ. From Boeck's definition it also differs in the dorsal prolongation of the first two segments of the metasome (Boeck says "*Corpus compressum, nec carinatum, nec spinosum*"). The greater length of the lower antennæ than the upper justifies the placing of this genus in the Calliopiidæ even more than *Amphithopsis*, but, as G. O. Sars remarks of the latter, both show considerable affinity with the Paramphithoidæ.

O. LONGIMANA, n. sp. (Pl. 10. figs. 77-89.)

Cape Adare beach, after gale, April 5, 1899; Jan. 17, 1900.
Dredged, 8 fath., Jan. 17, 1900.

Body rather swollen. Segments of mesosome subequal, except the last which is as long as the two preceding. First two segments of metasome in adults dorsally produced in a sharp tooth; the 3rd segment has the hind margin straight, but hollowed out just above the acute posterior angle, lower margin convex. Urosome about as long as the last two segments of the metasome. Anterior side-plates of the mesosome slightly turned outwards, convex.

Head as long as the first two segments; rostrum very short, acute. Eyes not discernible.

* From *Ora*=beach, and *Adare*.

Upper antennæ with the 1st joint twice as long and half as thick again as the 2nd, which bears the same proportion to the 3rd, this reaches to the end of the 2nd joint of the peduncle of the lower antennæ. Flagellum very long and slender. Accessory appendage one-third the length of the 1st joint of the flagellum, which is transversely striated and as long as the next three joints.

Lower antennæ longer than the upper; 1st joint less than half as long as the 2nd, which is rather shorter than the 3rd.

First gnathopods: side-plates rather small, oblong-oval, the lower part of the anterior margin slightly serrate. First joint rather longer than the next three; carpus rather shorter than the propodos; sides of the propodos almost parallel, the length being to the width as 3·5 to 1·5; the hind margins of the 3rd, 4th, and 5th joints are furnished with dense fascicles of setæ, which are plumose and generally forked at the tip.

Second gnathopods about twice as long as the 1st; the side-plates like those of the 1st; 1st joint a little longer than the propodos; carpus about three-fourths as long as the propodos, the length of which is to the width as 7 to 1·5, both these joints have the hind margins furnished with fascicles of setæ.

First and second peræopods: the 1st joint narrow and about as long as the 5th; dactylus strong, slightly curved and about one-third as long as the 5th joint.

Last three pairs of peræopods alike; the 1st joint broadly oval, slightly serrate on the hind margin, and about as long as the 4th joint; the 5th joint the longest; 3rd, 4th, and 5th joints spinous on both margins.

Uropods subequal in extent; outer ramus of 1st pair rather *more* than half as long as the inner; outer ramus of 2nd pair rather *less* than half as long as the inner; outer of 3rd pair *more* than half as long as the inner, which is wider than the rami of the first two pairs, lanceolate, and finely denticulate on the inner margin. All the uropods are sparsely spinous.

Telson reaching a little beyond the end of the peduncle of the 3rd uropods, concave above.

Length of female with ova, 9 mm.

This species affords a good illustration of the unsatisfactory nature of characters taken from modifications of the segmental margins. Along with the specimens as described above were taken a number of others, as a rule smaller, but some very nearly

as large as the egg-bearing females. These (and also the embryos from the female described above) had the posterior margin of the first two segments of the metasome simple, *i. e.* not produced into a dorsal tooth, and with a slight difference in the sculpture of the posterior margin of the 3rd segment. In other respects they are identical with the adult specimens, and there can be no doubt that these differences are only due to immaturity. The same thing is found in *Paramphithoë bicuspis* (Kröyer), the immature form having been made a distinct species (*P. monocuspis*, G. O. Sars). Canou A. M. Norman has called attention to the variability of the sculpturing of the posterior margins of the segments of the pleon (metasome and urosome) in *Melita obtusata* (Montagu) [Ann. & Mag. Nat. Hist. ser. 6, vol. iv. 1889, p. 132.]

Fam. ATYLIDÆ.

Genus ATYLOIDES, *Stebbing*, 1888.

A. SERRATICAUDA, *Stebbing*, Report on 'Challenger' Amphipoda, p. 920, pl. 78. (Pl. 11. fig. 90.)

Cape Adare beach, after gale, Jan. 25, 1900.

Many specimens of various ages.

Length 12 mm.

The above specimens differ from that described by Mr. Stebbing, which was taken off Melbourne in 33 fath., only in having seven teeth on the posterior margin of the 3rd metasome-segment instead of two. As I have pointed out under the species last described, this is not of sufficient importance to warrant the making of a new species.

Genus ATYLUS, *Leach*, 1817.

A. ANTARCTICUS, n. sp. (Pl. 11. figs. 91-97.)

Cape Adare beach, April 5 & 15, 1899.

Many of various ages.

Body moderately compressed. First four side-plates not so deep as the segments, increasing in width successively. Last three segments of mesosome and first two segments of metasome with an elevated and acutely-angled dorsal carina; *carina of the 3rd segment of the metasome rounded posteriorly; the hind margin of this segment forms a continuous curve with the lower margin and has four or five shallow teeth.* Urosome with a dorsal depression on the 1st segment.

Head about as long as the first two segments; rostrum about one-fourth the length of the 1st joint of the upper antennæ; lateral angle as in *A. carinatus* (Fabr.). Eyes rather large, oval, dark.

Mouth-organs as in *A. carinatus* (Fabr.) except the mandibular palp, the 3rd joint of which is rather shorter than the 2nd.

Upper antennæ about one-third longer and thicker than the lower, about two-thirds the length of the body; 1st joint of flagellum longer than the 2nd and 3rd, the 2nd more than twice as long as the 3rd. Flagellum about twice as long as the peduncle. Accessory appendage half as long as the 1st joint of the flagellum.

Lower antennæ: the peduncle reaches to the end of the 2nd joint of the upper; 1st joint one-third the length of the 2nd, which is rather longer than the 3rd.

Gnathopods almost alike, the first a trifle the smaller; they closely resemble those of *A. carinatus* (*vide* G. O. Sars, 'Amphipoda of Norway,' p. 471, pl. 166), except in being less setose, especially on the anterior margin of the propodos. Side-plates oblong, narrowing slightly below, with the angles rounded.

First and second peræopods longer and more slender than in *A. carinatus*, the 3rd joint very little expanded distally and almost as long as the 5th.

Third peræopods with the 1st joint oblong, narrowed below, the margins straight, rather longer than the 3rd joint, which is very slightly expanded distally; 3rd, 4th, and 5th joints subequal.

Fourth peræopods similar in form but rather longer than the 3rd; 1st joint oblong, the hind margin slightly concave. All three pairs have five pairs of spines on the anterior margin of the 5th joint. The 5th pair have the 1st joint rather wider, with the hind margin convex and serrate.

First and second uropods subequal in extent, the 3rd reaching a little beyond them. The outer rami are shorter than the inner, especially in the 2nd pair; the peduncles are longer than the rami in the 1st and 2nd and rather shorter in the 3rd, these have a few spines on both margins, but no setæ.

Telson reaching just beyond the end of the peduncles of the 3rd uropods, tapering distally, with a narrow cleft about one-third of its length; the ends of the divisions truncate, with a seta and setule a little before the end of each.

Length of female with ova 15 mm.

Very near *A. carinatus*, from which it differs in the carina and hind margin of the third metasome-segment, the length of the rostrum, size of eyes, 1st joint of the last peræopods, proportions and armature of 3rd uropods, form of telson, &c. It is nevertheless very remarkable that two forms—the one a strictly Arctic species—should be found at opposite poles, when not one other species of the genus, as restricted by G. O. Sars, has, so far as I know, been found elsewhere, unless, as suggested by G. O. Sars, *Atylus Huxleyanus*, Sp. Bate (*Halirages Huxleyanus* in the 'Challenger' Amphipoda), ought to be referred to it. From this species *A. antarcticus* differs considerably more than it does from *A. carinatus*.

Bovallia gigantea, Pfeffer, Krebse v. Süd-Georgia, is also nearly related to this species, from which it differs in the keels on the segments, which in *Atylus antarcticus* begin on the 5th and in *Bovallia* on the 6th segment; also in the form of the eye and telson, in the armature of the peduncle of the upper antennæ, and probably in other respects. The 3rd segment of the metasome is not described by Dr. Pfeffer.

Fam. GAMMARIDÆ.

Genus LILJEBORGIA, *Sp. Bate*, 1862.

L. HASWELLI, *Stebbing*, 'Challenger' Amphipoda, p. 985, pl. 92.

Eusirus dubius, Haswell.

Four specimens. Cape Adare, 26 fath., Dec. 1, 1899.

Length of largest 20 mm.

The specimens agree with Mr. Stebbing's description except as to the armature of the hind margin of the segments of the mesosome and metasome, which varies with the age of the individual. The 'Challenger' specimen was from Bass Straits.

Fam. PHOTIDÆ.

Genus HAPLOCHÆIRA, *Haswell*, 1880.

H. PLUMOSA, *Stebbing*, 'Challenger' Amphipoda, p. 1172, pl. 126.

Cape Adare, Nov. 4 & 26, 1899; 26 fath. Franklin Island, 10–24 fath., Feb. 9, 1900.

Several specimens. Length 6 mm.

Fam. ISCHYROCERIDÆ, *Stebbing*.*Genus *JASSA* †, *Leach*, 1815.(Syn. *Podocerus*, auctorum.)*J. GONIAMERA* ‡, n. sp. (Pl. 11. figs. 98-106 a.)

Many specimens, Cape Adare, Nov. 10, 14, & 26, 1899 :
26 fath.

Body scarcely compressed. First four side-plates small, rounded below ; 5th smaller than the 4th, obtusely angled below. First segment the shortest, remaining segments subequal. Hind margin of 3rd metasome-segment convex, forming an obtuse angle with the lower margin.

Head almost as long as the first two segments. Eyes rather large, dark, prominent.

Upper antennæ reaching a little beyond the last joint of the peduncle of the lower, 2nd and 3rd joints subequal, 1st about half as long. Flagellum rather longer than the last joint of the peduncle, 14-jointed, the 1st joint as long as the next three. Accessory appendage 1-jointed, about one-third the length of the 1st joint of the flagellum. The whole rather sparingly clothed with long setæ on the underside.

Lower antennæ : the 1st joint barely half as long as the 2nd ; the 3rd one-third longer than the 2nd. Flagellum shorter than the 3rd joint, the 1st joint as long as the next three ; very sparsely clothed with short setæ.

Dactylus of palp of maxillipedes blunt at the tip, which is clothed with long setæ. Other mouth-organs normal.

First gnathopods as in *Jassa falcata* (Montagu).

Second gnathopods : first joint about half as long as the propods. Carpus very short, cup-shaped, not produced behind. Propodos about three times as long as wide ; a strong tooth near the proximal end and another irregular one near the distal end of the posterior margin. Dactylus strong, reaching almost to the proximal tooth.

First peræopods : first joint almost as long as the remaining

* Ann. & Mag. Nat. Hist. ser. 7, vol. iv. 1899, p. 211.

† See G. O. Sars, 'Amphipoda of Norway,' under *Podocerus*, p. 593, for definition of genus, except as to 3rd uropods.

‡ From γωνία, angle, μῆρος, thigh, alluding to the form of the 1st joint of the last peræopods.

joints; the 3rd as long as the next three; the 4th shorter than the 5th, which has tufts of setæ on both sides.

Third peræopods: first joint oblong, hind margin almost straight and scarcely produced downward, *posterior angle rounded*; 3rd joint enlarged.

Fourth and fifth peræopods rather longer than the 3rd, *the posterior angle of the 1st joint produced downwards in a subacute angle*.

First and second uropods: peduncles longer than the rami; inner rami longer than outer; peduncles and rami spinous.

Third uropods reaching to the end of the shorter ramus of the 2nd uropods; peduncle about four times as long as the inner ramus, with a close transverse row of small spines on the upper side and a group of larger spines at the inner angle at the distal end; inner ramus almost straight, with a microscopic spine near the tip; outer much curved and twisted, rough with minute denticles, and a minute excavation with a forked setule near the point, *but without secondary teeth*.

Telson very short, triangular, acuminate, a seta at each side of the point.

Length 20 mm. Colour in spirit olive-green.

The only difference I have observed between male and female in this species is that the propodos of the 2nd gnathopod is slightly smaller in the female. Even in the very young, under 3 mm. long, this limb has the same form and proportion to the body as in adults. The third uropods agree rather with those of *Janassa*, Boeck (*Parajassa*, Stebbing), while the antennæ resemble those of *Jassa*. Should it be thought desirable to form a new genus on this account, I suggest the name of *Hemijassa*, because of its intermediate character.

I have received from Mr. J. A. Clubb a specimen of this species found among the tentacles of a sea-anemone (*Urticina Carlgreni*, Clubb), described by him in the Brit. Mus. Report on the 'Southern Cross' Collection, p. 299, and considered by him to be a commensal. I suggest that, as it appears to be an abundant species, the specimens so found may have been accidentally entangled in the tentacles while in the dredge.

EXPLANATION OF THE PLATES.

PLATE 7.

- Fig. 1. *Cheirimedon Fougneri*, n. sp., upper antenna. 2. First gnathopod.
3. Second gnathopod. 4. Third peræopod. 5. Fifth peræopod.
6. Urus.
- Fig. 7. *Cheirimedon Hansoni*, n. sp., upper antenna. 8. First gnathopod.
9. Second gnathopod. 10. Third peræopod. 11. Fifth peræopod.
12. Telson and 3rd uropods.
- Fig. 13. *Orchomenopsis nodimanus*, n. sp., upper antenna. 14. First gnathopod.
14 a. Part of hind margin of same more highly magnified. 15. Third
peræopod. 16. Fifth peræopod. 17. Telson.
- Fig. 18. *Orchomenopsis Rossi*, n. sp., upper antenna. 19. First gnathopod.
20. Second gnathopod. 21. Third peræopod. 22. Fifth peræopod.
23. Telson.

PLATE 8.

- Fig. 24. *Orchomenella pinguides*, n. sp., upper antenna. 25. First gnathopod.
26. Second gnathopod. 27. Third peræopod. 28. Fifth peræopod.
29. Telson and 3rd uropods. 30. Third metasome-segment.
- Fig. 31. *Orchomenella Franklini*, n. sp. 32. Head. 33. Upper antenna. 34.
First gnathopod. 35. Third peræopod. 36. Fifth peræopod. 37.
(Figure cancelled.)
- Fig. 38. *Tryphosa Adarei*, n. sp. 39. Upper antenna. 40. First gnathopod.
41. Second gnathopod. 42. Third peræopod. 43. Fifth peræopod.
44. Telson.

PLATE 9.

- Fig. 45. *Tryphosa Murrayi*, n. sp. 46. Upper antenna. 47. First gnathopod.
48. Second gnathopod. 49. Third peræopod. 50. Fifth peræopod.
51. Third uropods and telson.
- Fig. 52. *Hoplonyx Stebbingi*, n. sp., upper antenna. 53. First gnathopod.
54. Second gnathopod. 55. Third peræopod. 56. Fifth peræopod.
57. Third uropods and telson. 57*. Third segment of metasome.
- Fig. 58. *Ampelisca macrocephala*, Lilljeborg. 59. Third segment of metasome
and urosome. 60. Third peræopod. 61. Fifth peræopod. 61*.
Second uropods.
- Fig. 62. *Oediceros Newnesi*, n. sp., upper antenna. 63. First gnathopod. 64.
Second gnathopod. 65. First peræopod. 66. Third uropods and
telson.

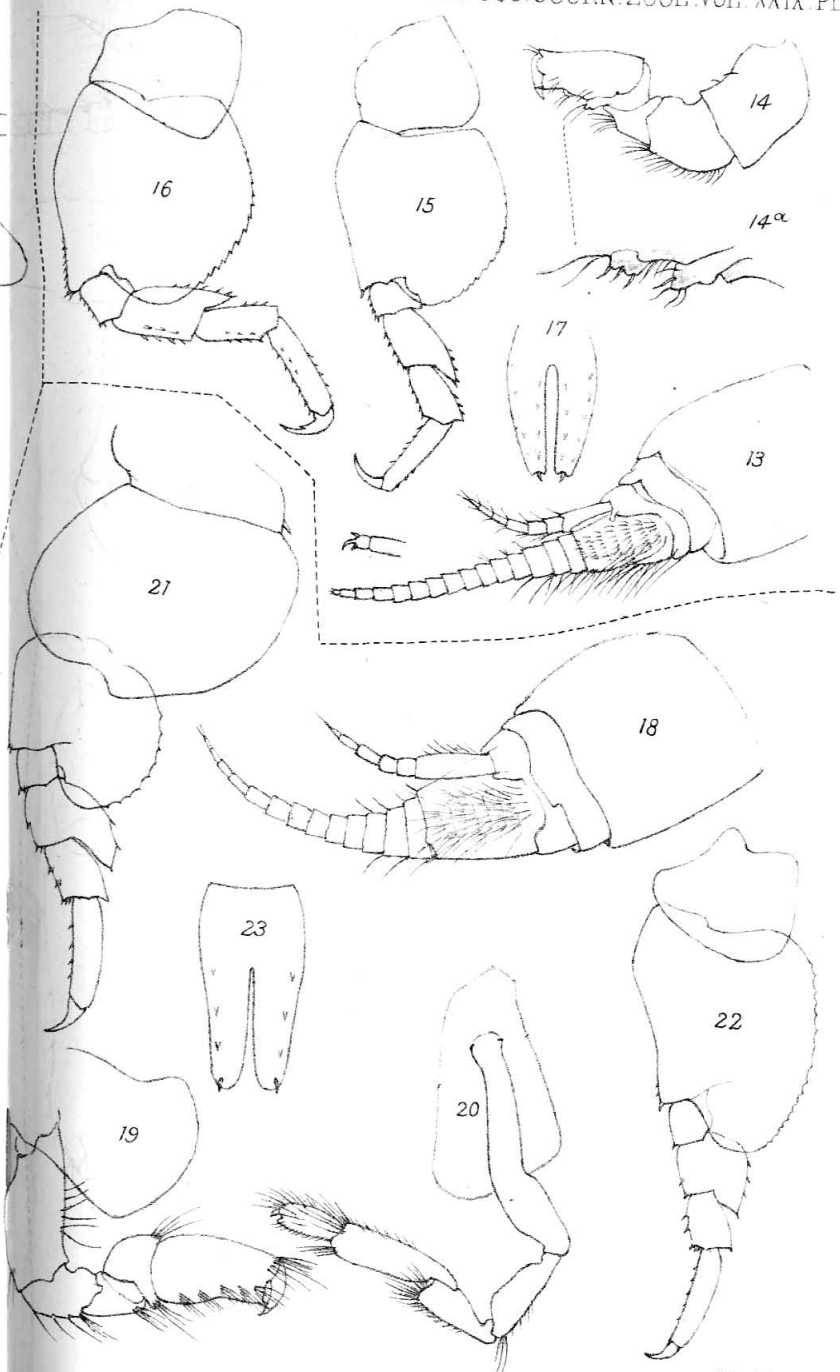
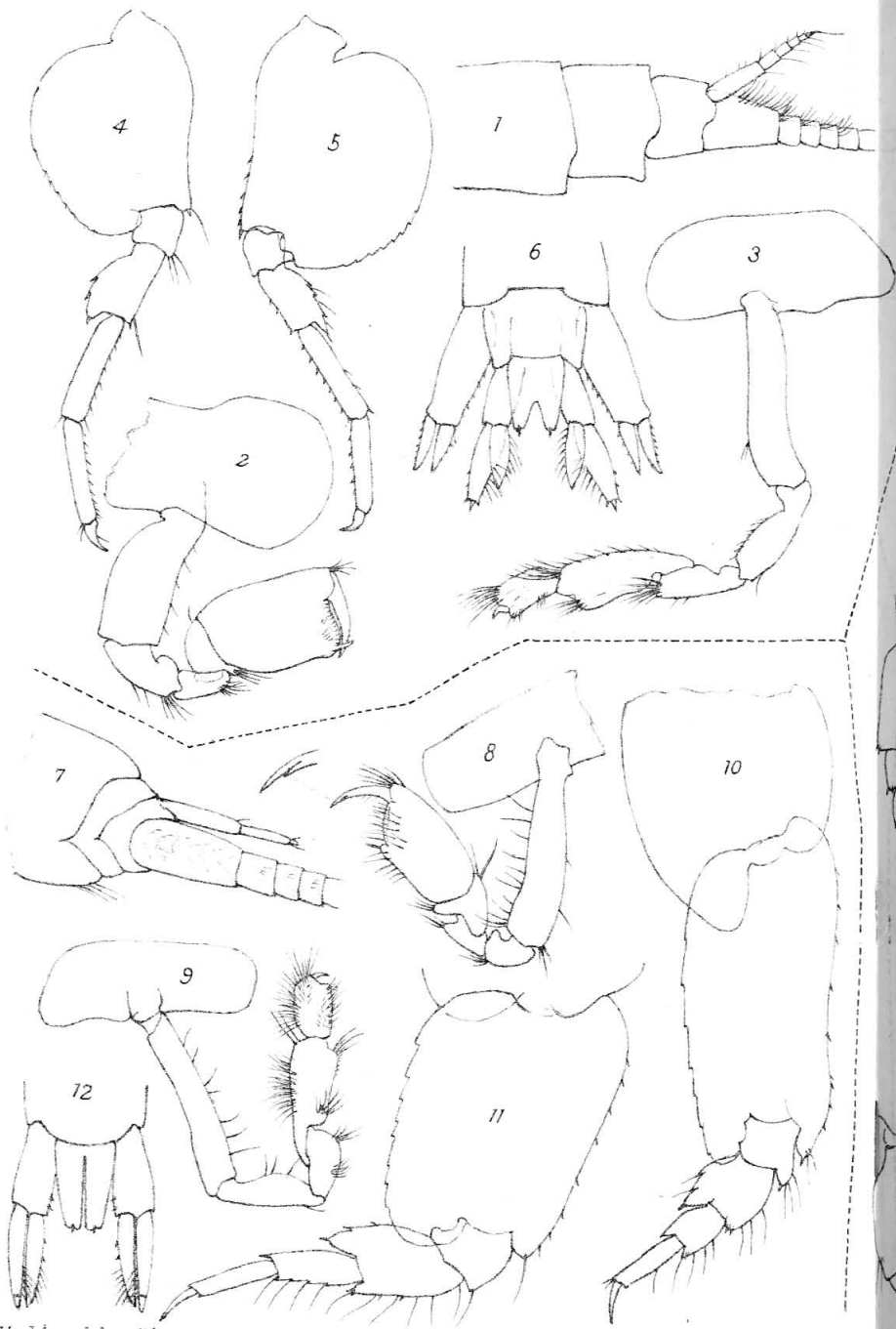
PLATE 10.

- Figs. 67, 68. *Oediceros Newnesi*, seen from above and sideways.
- Fig. 69. *Epimeria inermis*, n. sp.
- Fig. 70. *Eusirus lavis*, n. sp. 71. Upper antenna. 72. Lower antenna. 73.
Palp of maxillipedes. 74. First gnathopod. 75. Second gnathopod.
76. Upper portion of 5th peræopod.

Figs. 77, 78. *Oradarea longimana*, n. g. & n. sp. 79. Third segment of metasome. 80. Upper antenna. 81. Mandible. 82. Posterior lip. 83. First maxilla. 84. Second maxilla. 85. Maxillipedes. 86. First gnathopod. 87. Second gnathopod. 88. Fifth peræpod. 89. Third uropods and telson.

PLATE 11.

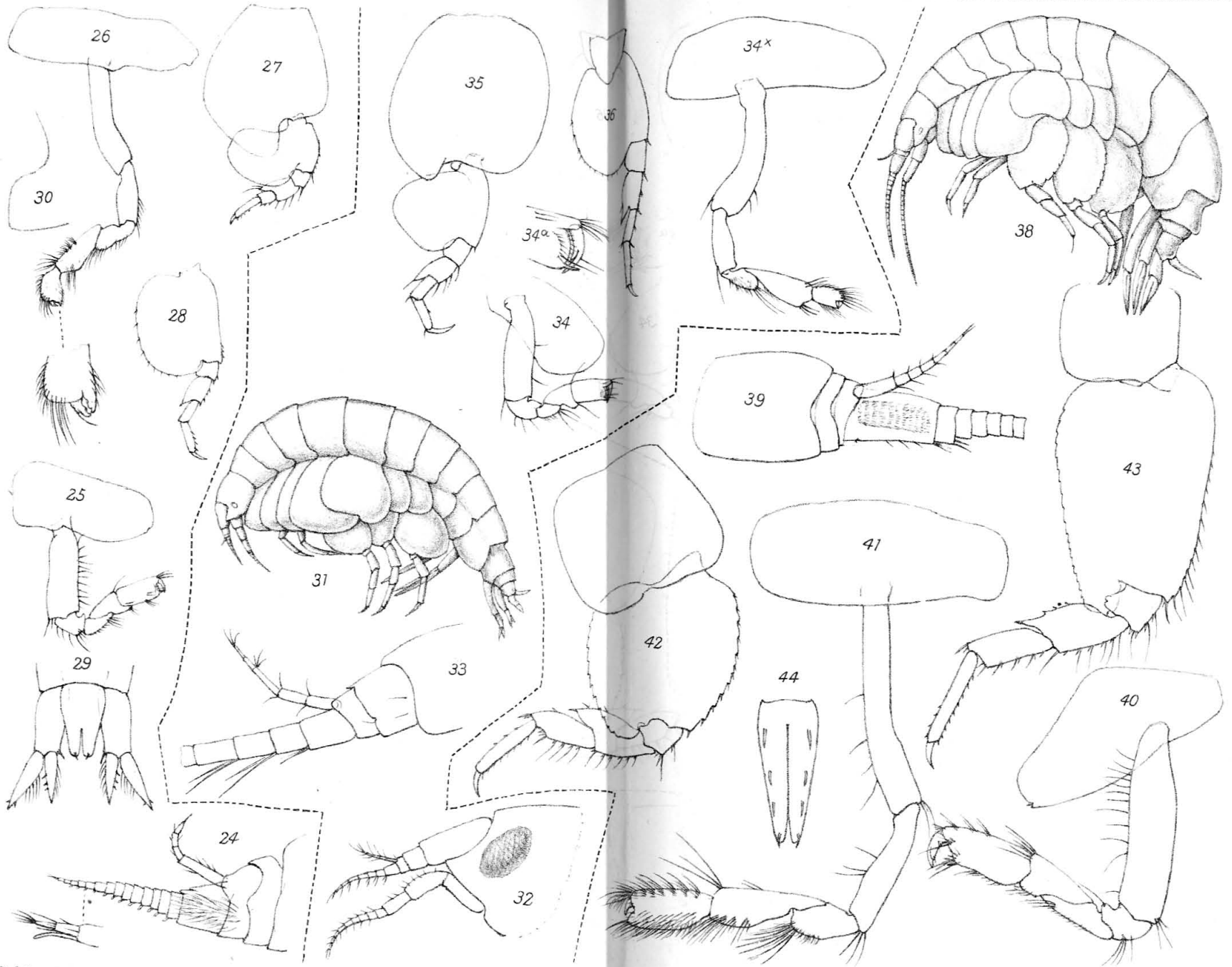
Fig. 90. *Atyloides serraticauda*, Stobbing. Third segment of metasome.
Fig. 91. *Atylus antarcticus*, n. sp. 92. Upper antenna. 93. First gnathopod. 94. First peræpod. 95. Upper part of 3rd peræpod. 96. Upper part of 5th peræpod. 97. Third uropods and telson.
Fig. 98. *Jassa goniamera*, n. sp. 99. Upper antenna. 100. Maxillipedes. 101. First gnathopod. 102. Second gnathopod. 103. First peræpod. 104. Third peræpod. 105. Fifth peræpod. 106. Second and third uropods and telson. 106 a. Extremity of 3rd uropods.



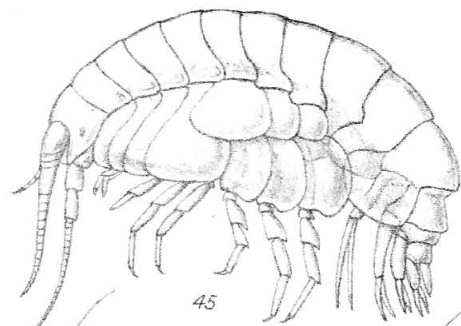
P. Highley del. et lith.

ANTARCTIC AMPHIPODA.

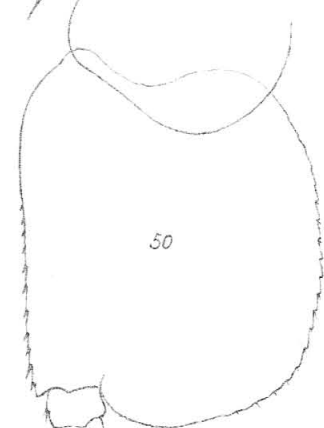
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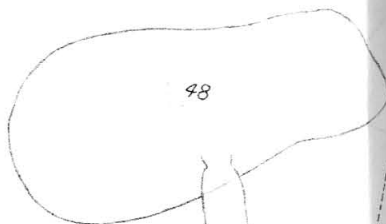
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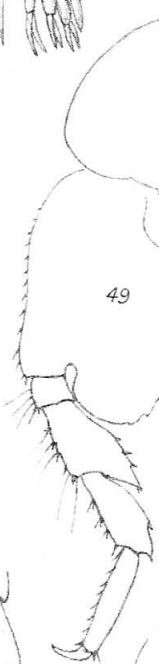
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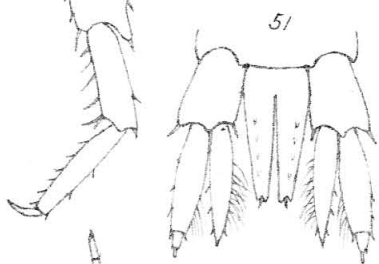
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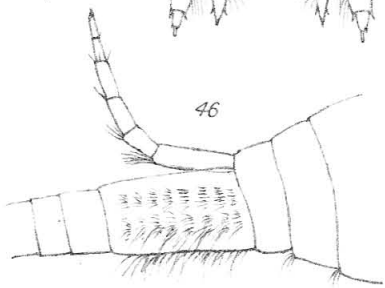
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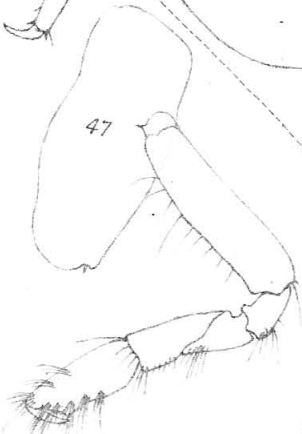
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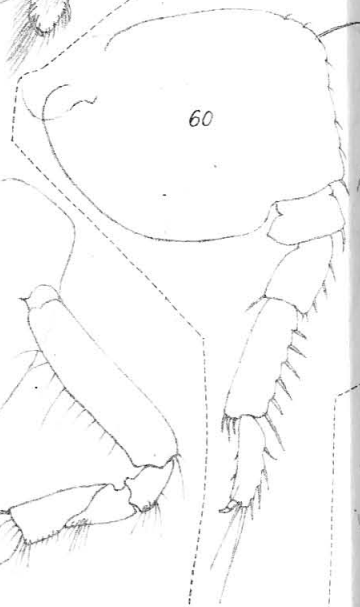
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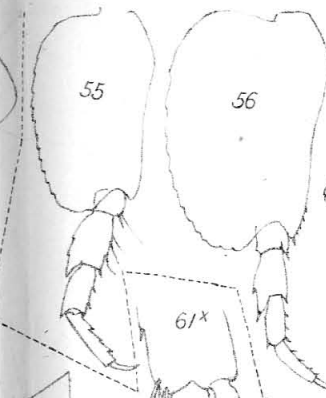
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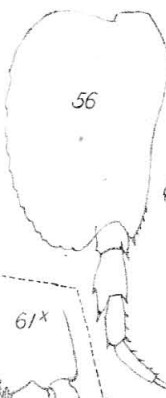
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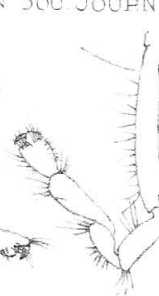
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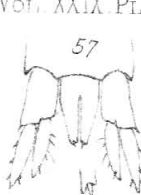
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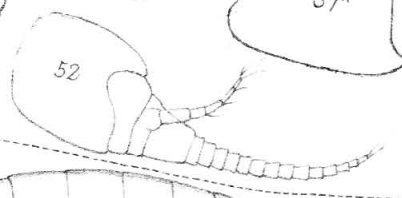
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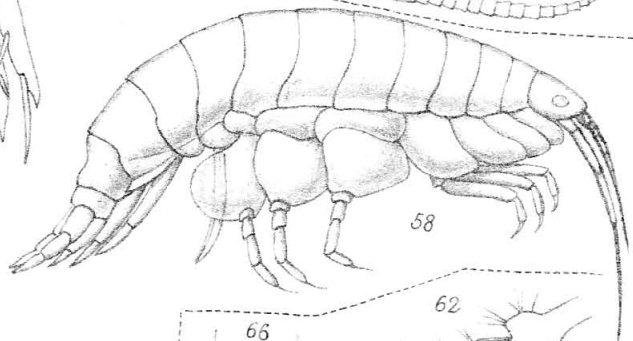
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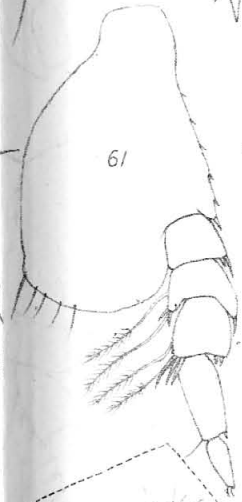
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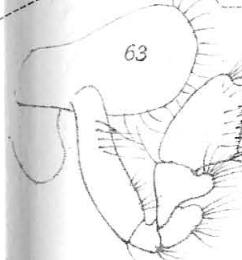
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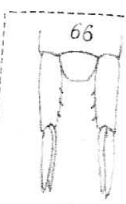
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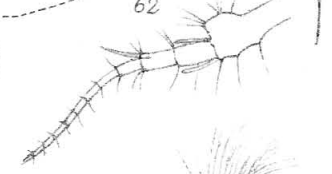
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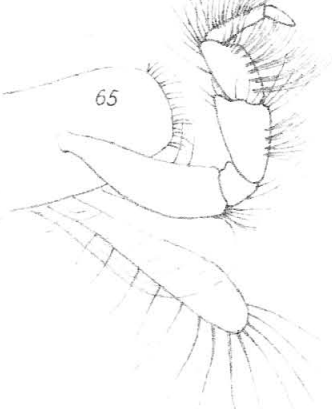
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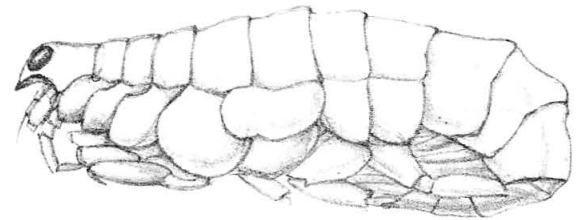


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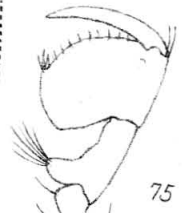
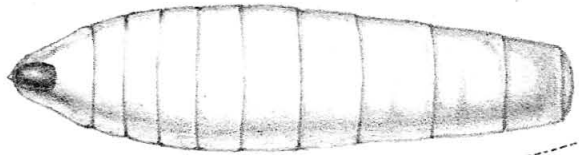


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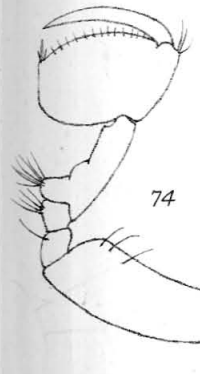
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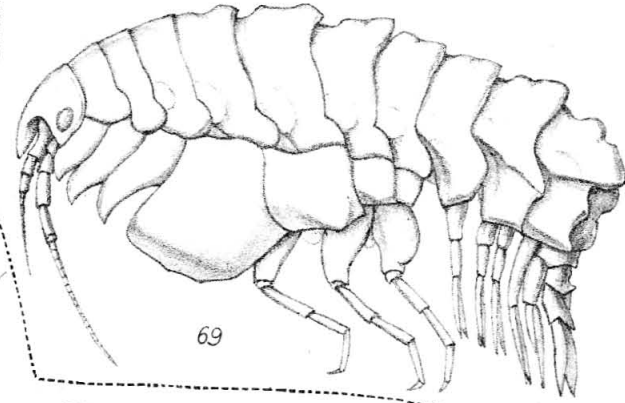
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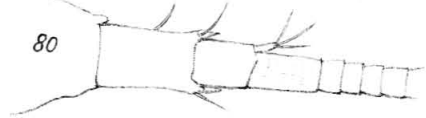


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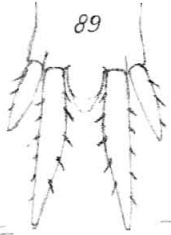


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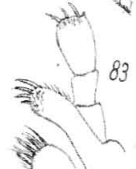


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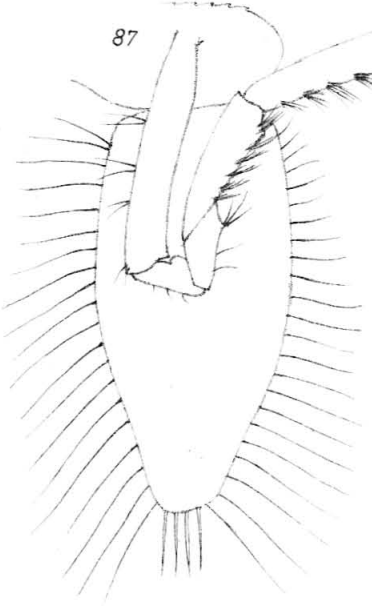
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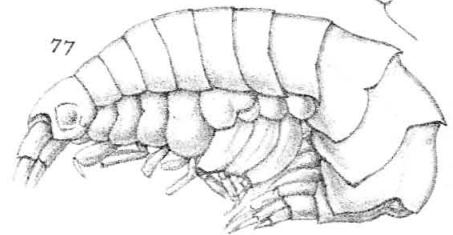
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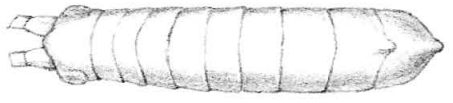
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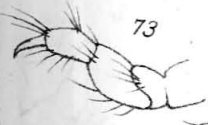
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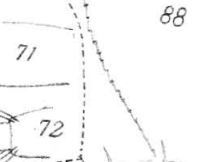
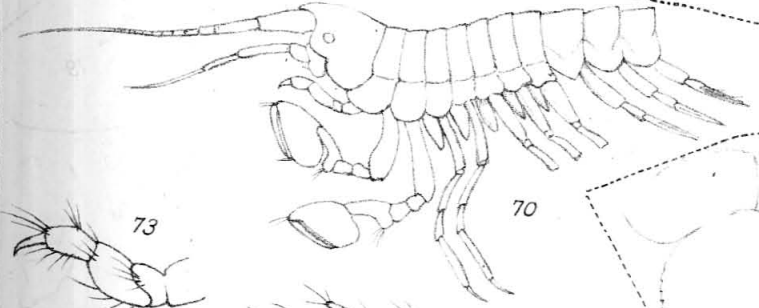
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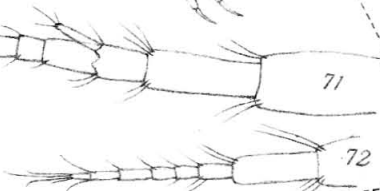


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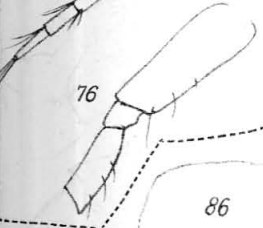


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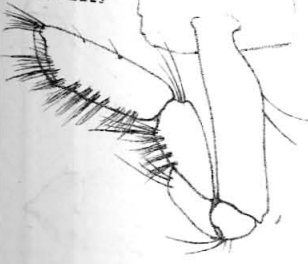
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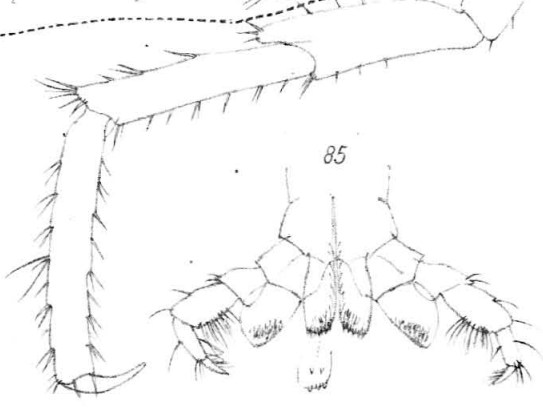
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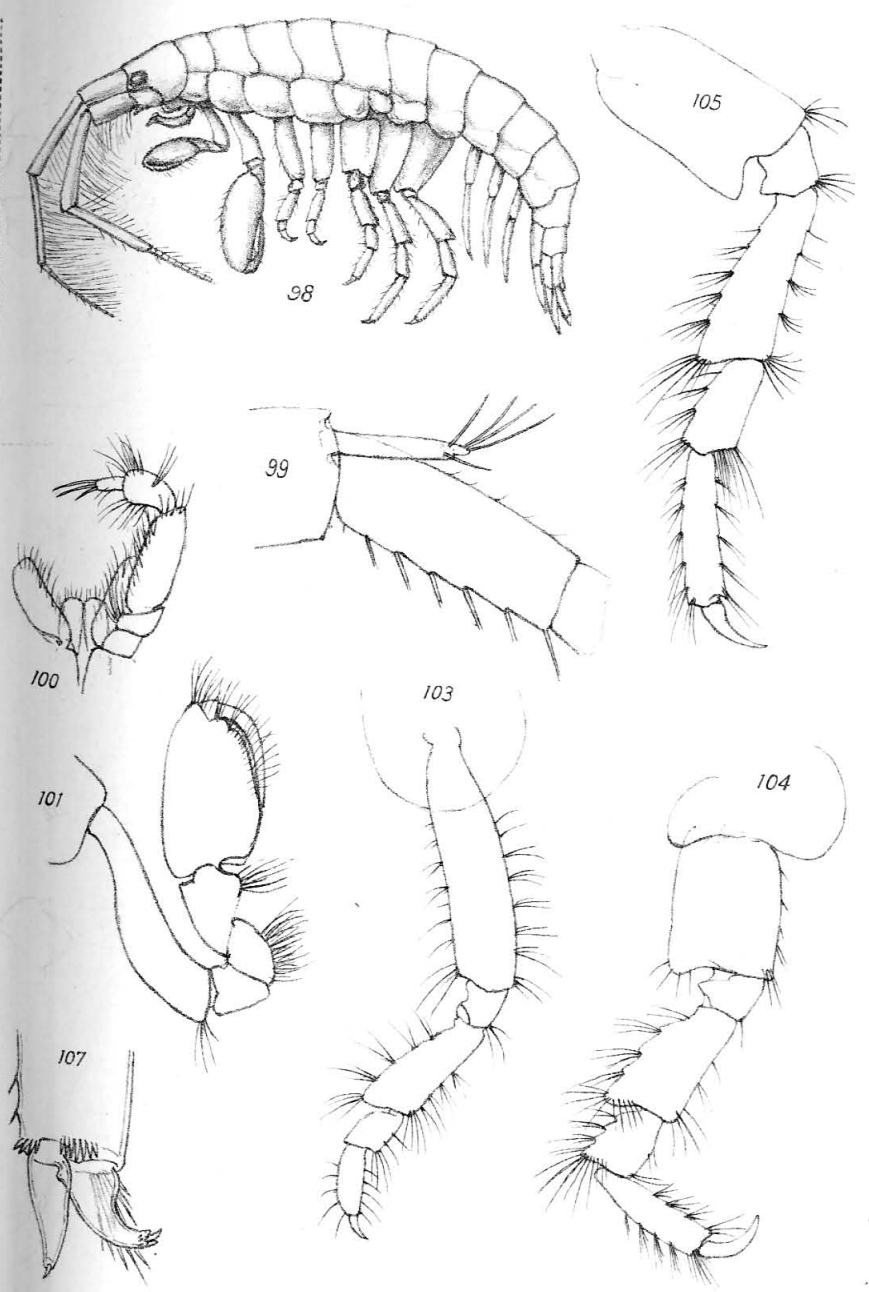
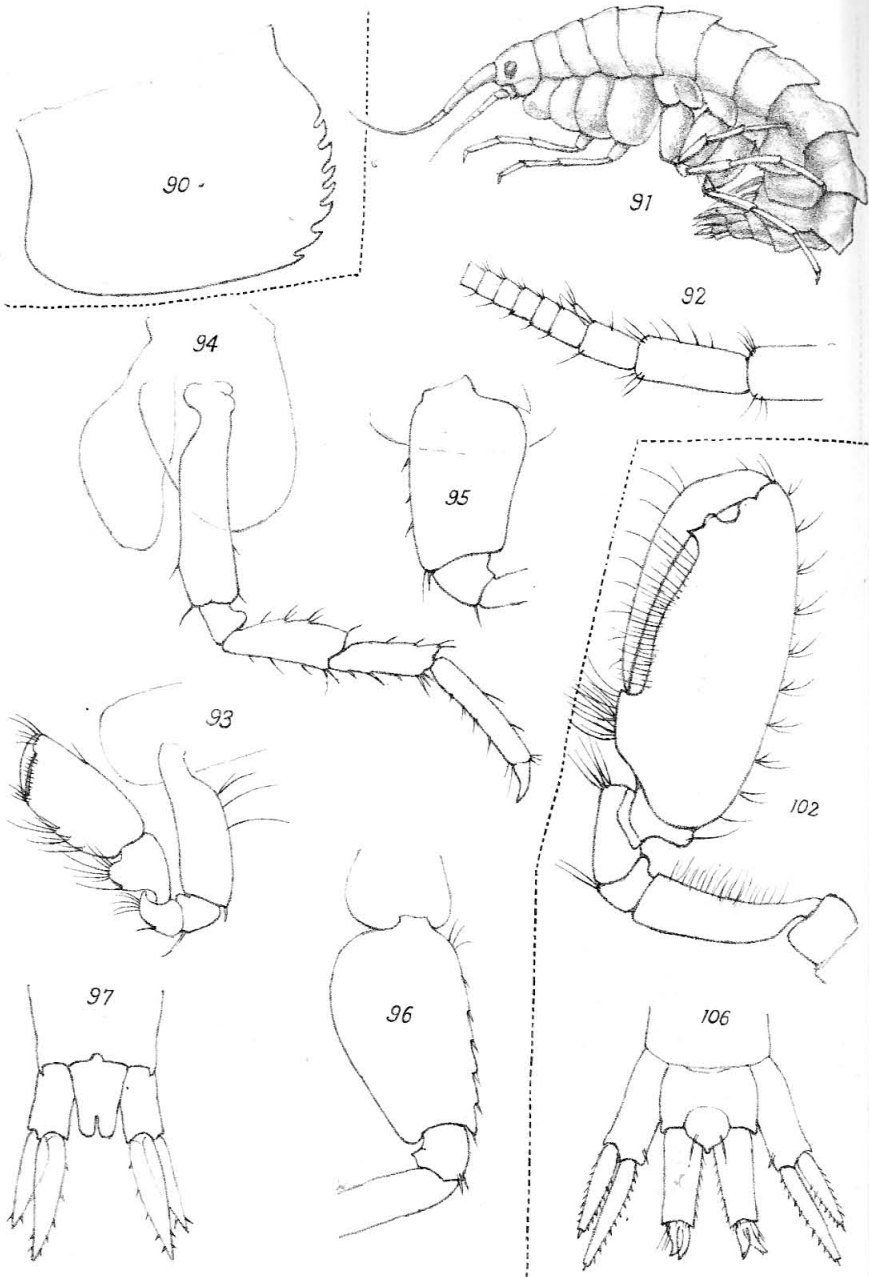


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P. Highley del. et lith.

ANTARCTIC AMPHIPODA.

Highley imp.