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AMPHIPODA FROM THE COPENHAGEN MUSEUM AND OTHER SOURCES

BY

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L O N D O N :

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II. *Amphipoda from the Copenhagen Museum and other Sources.* By the Rev.  
 THOMAS R. R. STEBBING, M.A., F.R.S., F.L.S

(Plates 6-14.)

Read 19th November, 1896.

INTRODUCTORY REMARKS.

THE Zoological Museum at Copenhagen is rich in Amphipoda. It is rich also in living authorities on this group of Crustaceans, since Inspektor Dr. Meinert and Professor Lütken are two of its Directors, and Dr. H. J. Hansen is on the staff. This might well seem a happy concurrence of a fine collection in the hands of those well qualified to make its value known to the world. But the masters in science find their work continually expanding, while time remains remorselessly inelastic. Hence it is that these gentlemen, being themselves beset by other duties, have passed over to me the task of reporting on the Amphipoda of the Danish University.

In this first memoir on the subject some of the more striking rarities are described, together with one or two of a less uncommon type. As the collection is not local but cosmopolitan, the opportunity has been taken of bringing into notice certain other new or insufficiently known forms, in addition to those received from Denmark. For some of these I am indebted to Professor W. A. Haswell, D.Sc., of Sydney, New South Wales, and G. M. Thomson, Esq., F.L.S., of Dunedin, New Zealand. A specimen, which in the Report on the 'Challenger' Amphipoda was unavoidably presented without adequate ceremony, and which in consequence subsequently became the subject of misunderstanding, is now set forth with due illustration, and a specimen from the Clyde, some years ago described without figures, now in like manner makes a more formal appeal for acceptance as the representative of a valid species.

The range of the various specimens described extends from the shore to the deep sea, from Cuba to Ceylon, from the North Atlantic to the South Pacific, from the western coast of Scotland to the eastern coasts of Australia and New Zealand. Nine genera and ten species are discussed. Six of each are new. The species afford an illustration of two difficulties which not unfrequently arise in systematic natural history. Some of them are so like their previously known neighbours that a short-sighted person might think them not worth distinguishing. Others stand oddly apart, with so queer a combination of characters that more than one existing family must look at them askance, unwilling to embrace, reluctant to repulse, in truth not very well able either "to do with them or without them." Opinions will differ on the policy of promptly establishing new families for eccentric forms, or of postponing that responsibility to as late a date as

possible. In the amiable endeavour to oblige the partisans of either view, I of tentatively a new family for one of these perplexing species, boldly assign one to old family, and leave one for the present homeless.

Fam. ORCHESTIIDÆ.

PARHYALE, n. g.

*First antennæ* longer than the peduncle of the second.

*First maxillæ* with the palp one-jointed, not extending beyond the distal margin the outer plate.

*Maxillipeds* with the palp four-jointed.

Both pairs of gnathopods subchelate, differing in the two sexes.

The third uropods carrying a minute inner ramus.

*Telson* bipartite.

The character of the Orchestiidæ has to be slightly modified for the reception of this genus, since in it the third uropods are not absolutely one-branched, but show gradation towards the more normal biramous condition.

PARHYALE FASCIGER, n. sp. (Plate 6.)

Specimens in spirit are slightly iridescent. The skin has some minute setæ scattered over it. The second and third pleon-segments are squared at the posterior lateral angles. The fourth segment almost reaches to the telson, overlapping the very short fifth segment, while the sixth is dorsally obsolete. The telson is divided to the base, its two oblong or sometimes somewhat triangular leaves standing nearly upright.

*Eyes* oval, dark, obliquely set near the top and front of the head; ocelli numerous.

*First antennæ.* The second and third joints together approximately equal in length to the much stouter first joint; the flagellum of ten or eleven joints is longer than the peduncle.

*Second antennæ.* The last two joints of the peduncle nearly equal in length; the flagellum not once and a half as long as the peduncle, with about twenty joints in the male and fourteen to sixteen in the female.

*Upper lip.* The apical margin is rounded and furred in the usual manner.

*Mandibles.* The cutting-edge has six teeth. The secondary plate on the left mandible is strong and quinquedentate, on the right it is slighter, with comb-like, slightly concave edge; the spine-row on the left attains the number of six spines, which have the appearance of plumose setæ; the molar tubercle is strong, prominent, finely denticulate, with a hairy tuft at one corner, and a long feathered seta at the other. Above and a little in advance is the articulating process.

*Lower lip.* The lateral processes are short.

*First maxillæ.* The inner plate is slender, surmounted by two feathered setæ, of which the inner is the shorter. The outer plate is rather broad, surmounted by nine spines.

variously denticulate, in two rows, which are set so closely together that it is difficult to count and discriminate the spines. The palp is slender, tipped with a minute hair and small seta. There is often a slight constriction of the margins near the apex, as though a second joint were being thought of.

*Second maxillæ.* The setæ round the apex of the outer plate are longer than those of the inner. The fringe on the inner plate is bounded by a seta conspicuously longer than the rest.

*Maxillipeds.* The inner plates have the usual setæ and three apical teeth. The outer plates reach but little beyond the first joint of the palp, and have their spinules set a little within the margin. Both the second and third joints of the palp are broadly lobed at the inner distal extremity. The third joint has a little rounded and shining process for the apex of its outer margin. On the inner surface there is a graduated row of spines, and in the male a dense tuft of setæ on the outer surface, from among which the sharp curved finger projects. The inner margin of the finger carries some spinules or small hairs.

*First gnathopods.* The side-plates are widened below, and have the front margin straighter than the hinder one. The fifth joint is distally widened, and has the projecting hind margin fringed with setæ. The hand or sixth joint is as long as the preceding, and in the male fully as wide, but narrower in the female. The hind margin has a central fringe of setæ, bounded by a slight contraction in the width of the hand. The palm is rather oblique, fringed with little hairs and setules, and carrying two unequal but stoutish spines at the extremity, against which the rather broad finger impinges. There are spines on the inner surface of both hand and wrist, and minute hairs on the inner margin of the finger.

*Second gnathopods.* The side-plates are oblong, with rounded corners below, but with the hind margin somewhat excavate above. The branchial vesicles of these limbs and the four following pairs have at the base a small vesicle accompanying the ordinary large one. The marsupial plates of the female are long, distally acute, and, at least in the distal part, closely fringed. As in the first pair, the second joint widens distally, the third is short, the fourth is of nearly uniform breadth, but having the hind margin longer than the front. The wrist in the male is almost triangular, with convex front border, and behind masked by the fourth joint, whereas in the female it protrudes a spine-fringed lobe between that joint and the hand. In the male the hand is massive, with very oblique palm, uniformly convex till near the distal end, bordered with numerous little spines, over which the long and broad finger closes tightly, sending its point into a little pocket on the inner surface of the hand, from which arises a small group of stoutish spines. The hind margin is almost smooth, but has a small indent similar to that in the first pair. In the female the hand is less massive, but still much larger than the wrist, with a very oblique palm, leaving a shorter hind margin, which is fringed with spines. In both sexes the finger has little hairs set at right angles to the inner margin.

*First peræopods.* The side-plates are a little broader than the preceding pair, but similarly shaped. The fourth joint is longer and much broader than the fifth or sixth.

The finger is short, curved, with a spinule from its inner margin curving towards the small but decided nail. The fingers are similarly shaped in all the peræopods.

*Second peræopods.* The side-plates are broader than the preceding pairs, with the hind margin doubly excavate above. The limbs closely resemble the preceding pair.

*Third peræopods.* The side-plates are broad, bilobed, not very deep. The second joint has the breadth and depth about equal, with the margins very slightly indented. The fourth joint is much broader, but not longer than the sixth, which is narrower but a little longer than the fifth. The fourth joint has spines on both margins, the apical groups being large. The same applies to the fifth joint, except that its hind margin is only armed at the apex. The sixth joint has spines along the front.

*Fourth peræopods.* These are similar to the preceding, but with the joints from the second to the sixth decidedly larger.

*Fifth peræopods.* The side-plates are not bilobed. The limbs are like the preceding pair, but larger.

*Pleopods.* There are two, or in some cases three, small coupling-spines. The spines of the inner margin of the first joint of the inner ramus have a distal thickening, but no cleft could be distinguished. The rami appear to be as nearly as possible equal in length, with about thirteen joints apiece, each carrying the usual pair of plumose setæ.

*Uropods.* The first pair are the longest, with peduncle longer than the rami, having spines on its upper margin and a large spine at the apex. The rami are of equal length, with one large and other small spines at the apex, the inner having two in addition on the upper margin. The second pair are much shorter, but similarly armed. The third pair are short, the peduncle not being so long as the telson. It carries some apical spines. So does the outer ramus, which is a little shorter. The inner ramus is conical, almost rudimentary, tipped with a minute seta.

*Length.* In the partially-folded position which seems natural to animals of this genus, the length of the specimens averages a quarter of an inch.

*Hab.* Harbour, Antigua, West Indies (specimens received from W. R. Forrest, Esq.). Specimens from the Copenhagen Museum were labelled "St. Thomas, Havnen, 1877. Eggers."

The specific name refers to the appearance presented by the extremity of the maxillipeds, which in the male is very striking.

#### Fam. LYSIANASSIDÆ.

##### LYSIANAX CINGHALENSIS, n. sp. (Plate 7 A.)

First three segments of pleon large, postero-lateral angles of third segment rounded.

The *eyes* large and black, occupying most of the surface of the head, on the top of which they meet.

*First antennæ.* First joint tumid, scarcely longer than deep, nearly twice as long as the second and third combined; flagellum six-jointed, shorter than first joint of peduncle; accessory flagellum three-jointed, less than half the length of the primary.

*Second antennæ.* In the male about two-thirds the length of the animal, the ultimate joint of the peduncle considerably longer than the penultimate, flagellum of about thirty-five slender joints.

*Mouth-organs* closely agreeing with the generic account given by Sars in 'The Crustacea of Norway.' The slender mandibular palp has the first joint characteristically elongate, and there are but few spines on the palp of the first maxillæ.

*First gnathopods.* The side-plates widened below, so that they are as wide as deep; the second joint as long as the four succeeding joints combined, the third larger than the fourth, the fifth much wider but rather shorter than the narrow, tapering sixth; the finger curved, small.

*Second gnathopods.* The second and third joints slender and elongate, the fifth as long as the third, the sixth more than half the length of the fifth, gradually widening distally, with short transverse palm, on which the finger closes tightly, without overlapping it.

*First and second peræopods.* The side-plates of the second pair are deeply and rather widely excavate behind. The second joint of the limbs comparatively short; the fourth, fifth, and sixth joints rather long, with some plumose setæ.

*Third peræopods.* The side-plates wider than deep, pretty evenly bilobed; the second joint as broad as long, smaller than the side-plates; the fourth joint rather broad, produced to an acute point.

*Fourth and fifth peræopods.* The second joint broader and much longer than in the preceding pair, roundly produced behind.

*Branchial vesicles* strongly pleated.

*Uropods* slender. First pair with the rami subequal, more than three-fourths as long as the peduncle, each with three marginal spines. Second pair, with subequal rami, almost as long as the peduncle; the outer ramus with four marginal spines, the inner constricted near the end, with a spine in the notch. Third pair with the peduncle longer than the rami, produced to a point at the outer angle; the inner ramus a little shorter than the outer, both with long setæ on the inner margin.

*Telson* oval, not reaching far along the peduncle of the third uropods, having a feathered setule on each lateral margin, and the apex smoothly rounded.

*Length* three-tenths of an inch.

Labelled "Trincomali (Ceylon), 3/89, surface. *K. Fristedt*," Copenhagen Museum.

LYSIANAX CUBENSIS, n. sp. (Plate 7 B.)

Lateral angles of the head considerably produced, broadly rounded. Postero-lateral angles of third pleon-segment quadrately rounded.

*Eyes* reniform, moderately large.

*First antennæ.* First joint large, longer than deep, not very much longer than second and third combined, neither of these being extremely short; flagellum six-jointed, shorter than the peduncle; accessory flagellum three-jointed, less than half the length of the primary.

*Second antennæ.* Last two joints of the peduncle (in the female) subequal; flagellum broken.

*Mouth-organs* of the character usual in the genus, but palp of first maxilla with the apex rather wide, carrying one little spine and six very distinct teeth.

*First gnathopods.* Side-plates widened below, deeper than wide. The second joint shorter than the four succeeding joints combined, the fifth rather stouter than the tapering sixth and quite as long; finger small.

*Second gnathopods.* The second and third joints rather long and slender, the fifth as long as the third, the sixth much more than half as long as the fifth, at first gradually but distally rather abruptly widened; palm transverse, finger very small.

*First and second peræopods.* Side-plates of the second pair broad, the excavation being moderate in breadth and depth. The joints of the limbs of moderate dimensions, fringed with smooth setæ or spines.

*Third peræopods.* Side-plates much wider than deep, the front lobe deeper than the hinder. Second joint much wider than deep, almost as large as the side-plate, the fourth joint little widened.

*Fourth peræopods.* Second joint longer than broad, front margin strongly bowed, hind margin sinuous, fourth joint scarcely widened.

*Fifth peræopods.* Second joint much larger than in the preceding pairs, very broad, but rather longer than broad; fourth joint scarcely widened.

*Marsupial plates* slender, branchial vesicles rather strongly pleated.

*Tropods.* First pair with the rami subequal, slender, carrying a few marginal spines, somewhat shorter than the peduncle. Second pair shorter than the first; peduncle scarcely as long as outer ramus, which has four marginal spines; inner ramus slightly shorter, stout, with two spines, then strongly constricted with a spine in the notch. Third pair much shorter than second; peduncle rather longer than the rami, with one lateral margin running out into a point, the other notched near the middle, the rami almost smooth, equal.

*Telson* reaching little beyond the sides of the sixth pleon segment, little longer than broad, boat-shaped, apex truncate.

Colour of specimen, in spirit, brownish. *Length* about three-tenths of an inch.

Specimen labelled "*Lysianassæ* aff. *Paa en Reise til Cuba.*" Copenhagen Museum, Studer Collection.

#### Fam. STEGOCEPHALIDÆ.

##### ANDANIOTES, n. g.

Head with small rostrum. First segment of peræon the longest. Sixth segment of pleon longer than the fourth or fifth. Each of the first three side-plates socketed in a groove on the underside of that next succeeding; the fourth very large, subequal in breadth and depth, with a wide shallow excavation behind, overlapping the fifth and in part the sixth. Eyes wanting. First antennæ with very thick first joint; flagellum tapering, the first joint very long, longer than the remaining three combined; the accessory flagellum small, one-jointed, tipped with a long spine. Second antennæ with the last joint of the peduncle shorter than the penultimate, flagellum short. Epistoma carinate. Upper

lip broader than deep, slightly bilobed. Lower lip with the front lobes wide apart, not larger than the hind lobes, and surmounted with a single spinule at the outer corner. Mandibles a slightly sinuous oblong in shape, with straight smooth cutting-edge; a tooth-like accessory plate on the left \* mandible. First maxillæ with inner plate rather large, bordered with 7-11 long plumose setæ; outer plate moderately broad, carrying nine slender spines and a tuft of setules; the palp one-jointed, nearly reaching the end of the outer plate, tipped with seven setæ or slender spines. Second maxillæ with inner plate very broad, with a fringe of 18 or 19 setæ, most of them plumose; the outer plate shorter and greatly narrower, tipped with nine setæ. Maxillipeds with inner plates very broad, the apical margin sloping outward, with three little spine-teeth; the outer plates not nearly reaching the end of the palp's second joint, fringed with 13 spine-teeth on the inner margin; the joints of the palp successively diminishing in size, the third and fourth slender and small. Appendages of the peræon nearly as in *Andania*. Uropods with the peduncles robust, much longer than the rami; both peduncles and rami successively diminishing. In the male, outer ramus of first pair thick, curved, smooth, inner rather shorter, straight, slender, each with two marginal spinules; rami of second pair slender, smooth, subequal; rami of third pair minute, the outer nearly twice as long as the inner, with a tiny second joint. In the female all the rami slender; those of the third pair not minute, subequal, nearly as long as the peduncles. Telson broadly oval, but ending almost acutely, cleft nearly to the middle, but without any dehiscence, shorter than the peduncles of the third uropods.

ANDANIOTES CORPULENTUS (Thomson). (Plate 8.)

1882. *Anonyx corpulentus* G. M. Thomson, Trans. New Zealand Institute, vol. xiv. p. 231, pl. 17. figs. 1 a-f.

1888. *Andania abyssorum* Stebbing 'Challenger' Amphipoda, p. 739, pl. 37.

1893. *Stegocephalus abyssorum* Della Valle, Gammarini, p. 629, pl. 59. fig. 38.

*Head* with lateral angles rounded and below them produced downward in long straight triangular lobes hidden under the first side-plates, below which the mouth-organs of the down-bent head are visible. Third pleon-segment with the postero-lateral angles narrowly rounded, the dorsal line distally bent abruptly downward, having (in the male) two little eminences below the bend, the distal margin somewhat squared; the fourth segment dorsally convex; the fifth depressed; the sixth long, dorsally convex, forming two longitudinal eminences, between which the telson is concealed in a lateral view.

*First antennæ.* The third joint of the peduncle is transversely oval; the first joint of the flagellum carries transparent filaments; the setiform spine at the apex of the accessory flagellum is longer than the joint.

*Second antennæ.* The flagellum is eight-jointed.

*First gnathopods.* The side-plates are roughly triangular. The second joint is long and broad, stronger in the male than in the female; the third joint longer than broad; the fifth joint in the male longer and much wider, in the female wider but only little

\* Not on the right, as stated in the 'Challenger' Amphipoda, p. 739.



longer than the sixth, with many setæ on both margins, those in front elongate; the sixth joint abruptly narrows distally, so as to leave no palm, carrying long setæ in front, more in the male than in the female, and a row of shorter ones at right angles to the hind margin; the finger is small, curved.

*Second gnathopods.* The second joint is slender, curved at the base, the third longer than the fourth, the fifth and sixth rather slender, subequal; the curved finger impinging against the sinuous hind margin of the sixth joint, which is armed with plumose setæ.

*Third peræopods.* The second joint is scarcely dilated; the fourth is not very wide, acutely outdrawn below.

*Fourth peræopods.* Second joint twice as broad as in the preceding pair, fourth joint also larger.

*Fifth peræopods.* Second joint longer and much broader than in the preceding pair, subequal in length to the rest of the limb, broadly overlapping the third joint; the fourth joint rather wide, but much shorter than in the preceding pairs.

*Pleopods.* Coupling-spines rather long.

*Length* nearly three-tenths of an inch.

*Hab.* New Zealand. A male and a female specimen received from G. M. Thomson, Esq., F.L.S., the first describer of the species. A female specimen was also taken by the 'Challenger' Expedition.

#### Fam. PHOXOCEPHALIDÆ.

##### PONTHARPINIA, n. g.

1880. *Urothoë* Haswell, Proc. Linn. Soc. N. S. Wales, vol. iv. p. 325.

1891. *Harpinia*? Stebbing, Trans. Zool. Soc. London, vol. xiii. pt. 1, p. 4.

Back very broad, tapering to the rostrum and telson. Third pleon-segment setose on the lower hind margin. Eyes small, lateral, set rather far back. First antennæ with first joint tumid, second more slender, setose, third short; accessory flagellum many-jointed, more than half as long as the primary. Second antennæ with the basal joints of the peduncle short and stout; the penultimate long, broad, and setose; the ultimate much shorter and narrower, but also carrying long setæ; the flagellum shorter than the peduncle. Upper lip distally rounded, wide. Lower lip quadrilobate. Mandibles with cutting-plate and left mandible's accessory plate small, divided into a few teeth; spine-row of 8-10 spines, the first on the right mandible conspicuously the largest (perhaps representing the accessory plate); molar small, prominent, tipped with a few unequal spinules; palp much longer than the trunk of the mandible, third joint rather shorter than second, with many long setæ near the base and the apex. First maxillæ: inner plate small, carrying three short setæ, outer with eleven spines, very slight in size and armature; second joint of palp with 4 spinules and 4 setules on truncate apex. Second maxillæ: inner plate shorter and narrower than the outer, its armature not occupying more than half the inner margin. Maxillipeds with the plates narrow and not very long; the outer scarcely reaching the middle of the long and broad second joint of the palp, fringed with half a score of graduated spines; the fourth

joint of the palp slender and curved, considerably longer than the third. Gnathopods apparently varying in the two sexes. First and second peræopods with the fourth joint much longer than the fifth or sixth; fifth much wider than the sixth, fringed with long spines at the hinder apex; the finger small, spine-like, scarcely so large as a knife-like spine on the apex of the sixth joint. Third and fourth peræopods with the second, fourth, and fifth joints greatly widened; fifth pair much smaller than the others, its second joint much expanded, widest distally, produced to the end of the fifth joint; third joint wider than those following, which are all narrow and small; the finger straight, acute. First uropods with a long spine at apex of peduncle, rami subequal, rather longer than peduncle, spinose; second pair short, rami equal, one spinose; third pair with lanceolate rami. Telson divided into two suboval plates.

*Marsupial plates* of the female narrow.

The generic name is intended to indicate the intermediate character of this genus between such forms as those in the genera *Urothoë* and *Haustorius* of the Pontoporeiidæ and *Harpinia* in the Phoxocephalidæ. By the character of the mandibles it is better placed in the latter family.

PONTHARPINIA PINGUIS (Haswell). (Plate 9 B.)

1880. *Urothoë pinguis* Haswell, Proc. Linn. Soc. N. S. Wales, vol. iv. p. 325, pl. 19. fig. 2.

1882. " " " Catalogue of the Australian Stalk- and Sessile-eyed Crustacea, p. 240.

1891. *Harpinia?* *pinguis* Stebbing, Trans. Zool. Soc. London, vol. xiii. pt. 1, p. 4.

1893. *Urothoë irrostrata?* Della Valle, Gammarini, p. 667.

*Head* long, tapering from a broad base. First side-plates tending to quadrate, but widened below; fourth with rounded lower margin, widest just below the shallow excavation; fifth broad, not deep, the hinder lobe the deeper; seventh very small. Third pleon-segment with a very small produced point at the lower hinder angles, above which the hind margin is finely serrulate. The fourth segment appears dorsally to overlap the fifth and sixth.

*First antennæ.* Flagellum consisting of 15 joints, accessory flagellum of 10; in a female specimen of 9 and 7 respectively. A peculiarity of these joints is that the apical margin being oblique, they overlap one another. This is shown in Haswell's figure of the primary flagellum, though he does not mention it in his text.

*Second antennæ.* Last joint of peduncle narrow at base, thence a little widening; flagellum in female with 10 joints, shaped as in the first pair. Haswell's figure shows 21 joints.

*Upper lip* wider than deep. *Lower lip* with very small principal lobes.

The *mouth-organs* in general are small, except the palps of the mandibles and maxillipeds.

*First gnathopods.* ♀. Second joint reaching much beyond the side-plate; fifth nearly as long as second and rather wider, fusiform; sixth shorter and rather narrower, widening from a narrow base, then preserving an almost uniform width to the transverse slightly convex palm, which ends in a short tooth, the convex front margin of the widened part

fringed with many seta-like spines; the finger closely fits the palm and projects a very little beyond it.

*Second gnathopods.* ♀. Almost exactly like the first, but the sixth joint rather longer and more slender, with a smaller palmar tooth, and the finger not extending beyond the palm. The marsupial plate is as long as the second joint but much narrower, while the branchial vesicle is considerably longer and much wider; the side-plate is oblong, with the lower margin slightly convex, and like the side-plates in general partly fringed with setæ.

*Gnathopods.* ♂. The species now being described is assigned to Haswell's *Urothoë pinguis* on the supposition that the account given by Haswell refers to the male, and that in that sex the gnathopods are strikingly different from those of the female. Haswell's description says:—"Gnathopoda large; anterior pair with the carpus three-fourths of the length of the propodos; the propodos ovoid, swollen; the palm not defined; the dactylos half as long as the propodos; posterior pair longer than the anterior; carpus small, subtriangular; propodos ovate, palm defined by a prominent angle; dactylos rather more than half as long as the propodos."

*Third peræopods.* Second joint expanded, longer than broad, front margin sinuous, serrulate, carrying slender spines and setæ, hind margin smooth; fourth joint broader than long, with a long free upper margin armed with slender spines, hind margin cut into 5 teeth, this and the lower margin spinose; fifth joint narrower than fourth, but still very broad, breadth and length equal, fringed with many spines and setæ; sixth joint not longer, and less than half as broad; finger quite small.

*Fourth peræopods* similar to third, but larger; second joint broader in proportion to length; fourth very large and setose, with 7 teeth on hind margin, of which the lowest two are formed by deep incisions; fifth joint rather longer than broad, about twice as broad as the sixth.

*Fifth peræopods.* The large expansion of the second joint has a smooth front margin, the hind one serrate, the lower serrulate and fringed with setæ; the fifth joint is apically finely pectinate; the finger is more than half the length of the sixth joint.

*Pleopods.* The peduncles are short; the rami with about 21 rather broad joints.

*Uropods.* The rami of the first pair are slightly curved, each with a short stout nail; the rami of the second pair are straight; those of the third pair (at least in the male) lanceolate, long, plumose.

*Telson* with length and breadth equal, the apices rather divergent, each with a spinule in a small emargination, the outer margins (in the male) setose.

*Length* of male  $\frac{4}{10}$  inch, of female  $\frac{3}{10}$  inch.

"Bondi, New South Wales, cast on the beach during a storm," is the source assigned for the specimen described by Professor Haswell; the specimen here described was contained in a gathering from Jervis Bay, kindly forwarded to me by the same author.

## Fam. LEUCOTHOIDÆ.

## LEUCOTHOË INCISA, Robertson. (Plate 10.)

1888. *Leucothoë furina* Chevreux (not Savigny), Bulletin de la Société d'études scientifiques de Paris, 11<sup>e</sup> année, 1<sup>er</sup> sem., Extr. p. 9.
1892. *Leucothoe incisa* Robertson, Transactions of the Natural History Society of Glasgow, vol. iii. p. 217 (sep. copy, p. 23).

The drawings of this species were made many years ago, but have waited till now for a suitable opportunity for publication. The species of *Leucothoë* are separated by rather fine distinctions. In 1860 Boeck named a new species *Leucothoë Lilljeborgii*, but in his later works he was willing to let this lapse as a synonym of the long known *Leucothoë spinicarpus* (Abildgaard). In 1889 Norman gave the name *imparicornis* to a form from Shetland, which Sars in 1892 determines to be the same as Boeck's *Lilljeborgii*, the latter name having priority. To this species, as figured and described by Sars, *Leucothoë incisa* makes a tolerably close approximation, yet it seems difficult to unite the two. In *incisa* the fourth side-plates have the front angle rounded, not acute; the first gnathopods have the tip of the process of the fifth joint strongly hooked, the inner margin of the hand not quite smooth but faintly crenulate, and the finger not very small; in the second gnathopods the palm is convex and faintly but broadly crenulate, the finger is not abruptly bent at the base; the telson, instead of being little longer than broad, is fully twice as long as broad, with the apex almost acute. As in *Lilljeborgii*, the inner margin of the wrist in the first gnathopods is serrate, and the postero-lateral angles of the third pleon-segment are sharply upturned, forming a sinus with the bulging hind margin. There is a tendency to this in the preceding segment. The mandibles have the cutting-edge divided into about eight teeth; the secondary plate on the left mandible is large, with ten teeth, that on the right is much slighter (Sars denies its existence in this genus); the second joint of the palp is not much longer than the narrower third. In the maxillipeds the first and second joints of the palp have the length and breadth subequal.

*Length* not quite three-tenths of an inch.

Taken off Cumbrae, in the Clyde, at low water and also in 20 fathoms, by Dr. David Robertson, LL.D., F.L.S.

## ANAMIXIS, n. g.

Head hood-like. First side-plates small, three following pairs very large. Eyes well developed. First antennæ attached below the apex of the head, with elongate peduncle and no secondary flagellum. Second antennæ remote from the first, shorter and thinner, with small flagellum. Mouth-organs (at least in the adult) degraded and abnormal. Maxillipeds with the full number of joints, the third simple. First gnathopods delicately chelate; second massive, complexly subchelate; the other limbs slight, normal. Branchial vesicles small, simple. Pleopods small. First and second uropods biramous, third at present unknown. Telson simple.

The shape of the head calls to mind the genus *Dulichia*, the situation of the antennæ *Platyischnopus*, the size of the side-plates *Metopa*, the massiveness of the second gnathopods *Microprotopus*, the structure of both pairs of gnathopods and of the antennæ and

maxillipeds *Leucothoë*. In reference to this combination of characters the name of the genus has been chosen, from the Greek word ἀνάμιξις, mingling. Among existing families it stands nearest to the Leucothoidæ, but the extraordinary nature of the mouth-organs—whether due to a parasitic mode of life or to a marital stage of existence, or falling under any other explanation—so far isolates the species now to be described that it may have to be placed alone in a separate family, Anamixidæ, which would for the present bear the characters of the genus.

ANAMIXIS HANSENI, n. sp. (Plate 11.)

The *head* is longer than any one of the pereon-segments, and is narrowed distally, with rounded apex, with no distinct lateral angles. The second pleon-segment has the posterolateral angles acute, slightly produced; those of the third are a little blunted. The fifth segment is very short, scarcely distinguishable from the fourth; the sixth projects on either side of the telson, in a way to suggest that the missing third pair of uropods may be of a fairly large size.

The *eyes* are round, placed in the middle of the sides of the head, consisting of about eighteen short ocelli.

*First antennæ*. The first joint long and rather stout, the second nearly three-quarters as long as the first, but much more slender, the third about two-fifths of the second; the flagellum eleven-jointed, a little longer than the first joint of the peduncle. A sensory filament is present on several of the joints. These antennæ depend from the head, being inserted just below its apex.

*Second antennæ*. These are inserted at the other extremity of the head. The first two joints are very small, the third is little more than half as long as the first of the upper antennæ, the fourth is slightly longer than the second in the other pair, and the fifth is a little longer than the third joint of its own pair. The slender flagellum is four-jointed, less than half as long as the penultimate joint of the peduncle.

*Mouth-organs*. The underside of the head is slightly carinate, and apparently attached to the keel there projects from between the second antennæ a vertical plate, which may be called the oral lamina. Its truncate front edge has some minute microscopic teeth. With this curious and abnormal exception, no mouth-parts could be detected other than the pediform maxillipeds.

*Maxillipeds*. The second joint bulges slightly on the upper or inner side, while on the outer or lower side it has a shallow cleft, between two smoothly rounded apices, which just overlap the bases of the third joint. The third joint has no lobe or lamina, but in appearance is the basal joint of a five-jointed palp. Of the actual palp the first and second joints are about equal in length, the second the wider, carrying some setæ on the lower margin, the third joint is longer than either of the preceding, armed with several setæ, and having its surface minutely furred. The fourth joint or finger is slender, strongly curved, nearly as long as the third joint. Owing to the absence of plates from the joints of the protopod the palps are in close contiguity. The appearance is rather that of legs than of mouth-organs. In dissection the head came easily away, leaving the maxillipeds very firmly attached to the first gnathopods.

*First gnathopods.* The side-plates are small, triangular, with the apex to the rear. The second joint is slender, narrowest at the base. The small third joint is larger than the fourth. The fifth joint is very much wider and much longer than the second joint. It may be regarded rather as the hand than the wrist, its long and slender curved apical process, tipped with a slightly curved needle-like spine, forming the immovable finger of the chela, while the sixth and seventh joints form the movable finger. The sixth joint is slender, rather straighter than the process of the fifth, but otherwise very like it, and tipped with a similar spine, which must be regarded as the seventh joint. It might be supposed that the fifth joint in this remarkable form represented a coalescence of the wrist and hand, did not a comparison with the first gnathopods in *Leucothoë* make it reasonably certain that the chela is composed in the way just described.

*Second gnathopods.* The side-plates are very large, rounded in front, produced beyond the first segment. The second joint is narrow, distally somewhat widened, a little curved. The third joint is of stouter build than usual, apparently articulating with all the three following joints. The fourth joint is small, most of it lying flatly on the inner surface of the fifth joint, with which it seems to be in coalescence. The fifth joint is subequal to the second, but broadest at its base and apically pointed. The hand is broad and between three and four times as long as its breadth, the hind margin distally cut into three teeth. The finger, more than half the length of the hand, has a curved acute tip, and two slight projections on the inner margin. The complex clasper is formed by its impinging against the apex of the wrist and the denticulations of the hand. The peculiar arrangement of the third and fourth joints may be explained by the extraordinary massiveness of these limbs and especially of the hand, which is in striking contrast to that of the preceding pair as well as to the general structure of the other limbs.

*First peræopods.* The side-plates are as deep as the preceding pair, but of much less width. The branchial vesicles are all of remarkably small size. The second joint reaches a little below the side-plate. Of the other joints the fourth is the widest, the fifth is shorter than the sixth, the nail is slender and curved.

*Second peræopods.* The side-plates are rather wider than the preceding pair, with a faint emargination at the farther end of the lower margin and a very shallow excavation at the upper part of the hind margin. The limb differs but little from the preceding.

*Third peræopods.* The side-plates are bilobed, with the hinder lobe the larger. The second joint is not much longer than wide. The fourth joint has the hind margin slightly produced. The rest of the limb is missing. The spiny armature in these and the other limbs is insignificant.

*Fourth peræopods.* The side-plates are lobed behind. The second and fourth joints are rather larger than in the preceding and following pairs.

*Fifth peræopods.* The side-plates are small, rounded behind. The second joint is rather more strongly spined along its front margin than is the case in the other limbs.

*Pleopods.* The rami are small, five- or six-jointed, shorter than the peduncles.

*Uropods.* The first pair are the longer. In both, the inner ramus is a little longer and the outer considerably shorter than the peduncle. The third pair are missing.

*Telson.* This is a little longer than broad. The broadly rounded apex does not reach so far back as the projecting points of the preceding segment, which are in turn overlapped by the peduncles of the second uropods and these by the peduncles of the first pair.

The *length* of one specimen, with tail folded in, was less than a tenth of an inch, of the other rather more than a tenth.

*Hab.* West Indies. From *Goniastreæ varia* Dana.

The name is given in compliment to my friend, Dr. H. J. Hansen, the accomplished naturalist by whom it was obtained.

#### Fam. PARDALISCIDÆ.

##### PARDALISCOIDES Stebbing.

1888. *Pardaliscoides* Stebbing, 'Challenger' Amphipoda, p. 1725.

1893. *Pardalisca* Della Valle, Gammarini, p. 691.

First antennæ longer than second, second joint of the peduncle longer than the first, both flagella many-jointed. Mandibles with broad cutting-edge; that on the left side having two blunt teeth above and two that are acute below, one of them small, the other large, a rather broad accessory plate with crenulate edge, and two plumose spines; that on the right having a similar cutting-edge minus the smaller acute tooth, no accessory plate, but three plumose spines; the three-jointed palp slender, fringed with setiform spines. First maxillæ with one seta on the small inner plate, seven very unequal spines on the inner plate, one of them plumose; the second joint of the palp broad, with many spinules about the apical margin. Second maxillæ with the plates slender, the outer carrying three, the inner seven setæ. Maxillipeds with inner plates very small, outer plates short and narrow, fringed with spinules, the supporting joint not very large; palp with first joint short, second robust and long, but scarcely longer than the third, the finger long and slender with minute setules on the inner margin. The triturating organs (anterior lateral gastric lobes) are armed with six long spines. The gnathopods are similar, simple, with the fifth joint robust, fusiform, the sixth and seventh slender, the seventh fringed with minute setules. The peræopods are slender, elongate. The second uropods have the rami unequal, the third have the rami foliaceous. The telson is deeply cleft.

##### PARDALISCOIDES TENELLUS Stebbing. (Plate 12.)

1888. *Pardaliscoides tenellus* Stebbing 'Challenger' Amphipoda, p. 1725.

1893. *Pardalisca abyssii* Della Valle, Gammarini, p. 692.

*Head* with acute rostrum. There appears to be a small dorsal denticle on each of the last two or three segments of the pleon.

*First antennæ.* The first joint stout, the third half the length of the second; of the flagellum thirteen joints remain, the first much the longest; of the accessory flagellum seven or eight joints remain, the first as long as that of the primary.

*Second antennæ.* Last two joints of the peduncle elongate, the last shorter than the preceding; the flagellum half the length of the peduncle, twelve-jointed.

*First and second gnathopods.* There are numerous spines of various sizes on and near the margins. On the hind margin of the wrist and hand, commencing at the narrowed distal end of the wrist, is a series of short spines which are plumose. The setules on the inner margin of the fingers are exceedingly small.

*First and second peræopods.* The fifth joint longer than the fourth or the sixth; the second pair rather longer than the first, and further distinguished by having the hind margin of the sixth joint fringed with about a dozen short blunt spines.

*Third peræopods.* Second joint very slightly expanded, fourth joint the longest; finger slender, acute.

*Fourth peræopods* like the third, but with rather longer joints.

*Fifth peræopods* considerably longer than the fourth, the second joint expanded above, narrowing downward, fourth joint very long. Branchial vesicle small, narrowly oval.

*Telson* much longer than broad, cleft three-fourths of the length, dehiscent, with a spinule at each apex and a setule on each lateral margin.

*Length* not quite a third of an inch.

*Hab.* South Pacific, lat.  $37^{\circ} 29' S.$ , long.  $83^{\circ} 7' W.$  Taken by H.M.S. 'Challenger,' in tow-net at trawl, from a depth of 1775 fms.

#### Fam. EUSIRIDÆ.

##### EUSIROPSIS, n. g.

Head distinctly rostrate; body without dorsal projections; side-plates of peræon shallow. Antennæ of male with calceoli on peduncle and flagellum in both pairs; first antennæ shorter than the second, secondary flagellum one-jointed; the second antennæ of male with the last joint of the peduncle very elongate. Mouth-organs nearly as in *Eusirus*, but the mandibles have the molar feebly developed and the first maxillæ have the second joint of the palp narrower and scarcely longer than the first. Gnathopods nearly as in *Eusirus*, but with the backward projection of the carpus almost obsolete. First and second peræopods slender, with the finger ending obtusely and tipped with long setæ. The three following peræopods slender, elongate, plumose, with the fingers acute. The uropods of the first two pairs with outer branch much shorter than inner, the third pair very plumose in the male, the outer ramus shorter than the inner. The telson narrow, apically incised.

##### EUSIROPSIS RIISEI, n. sp. (Plates 13, 14.)

Head with triangular rostrum longer than broad; second, third, and fourth the shortest of the peræon-segments; first three segments of pleon large, with the postero-lateral angles rounded, hind margin not serrate.

*Eyes* to all appearance entirely wanting.

*First antennæ.* First joint rather bulky, carrying eight tufts of setules on the lower margin; second joint rather shorter and much narrower than the first, with calceoli along the lower margin; third joint almost like a joint of the flagellum; the latter rather



stout, carrying a calceolus on each of the thirty-one joints remaining, the end being broken off. The secondary flagellum is minute and quite unobtrusive.

*Second antennæ.* The first three joints very short; the fourth stout, not so long as the first of the upper antennæ, furnished on the upper margin with nine tufts of setules; the fifth slender, longer than the whole peduncle of the other pair, armed above with many calceoli; the flagellum longer than the peduncle; of the forty-two joints twenty-seven carry each a calceolus on the upper side, the terminal fifteen, which are more slender and elongate than most of the others, having each a sensory filament. It may be supposed that the abundant armature of the antennæ compensates the animal for its want of eyes.

*Upper lip.* The apical margin is rounded, and the usual fringing moustache is strongly developed.

*Mandibles.* As in the neighbouring genus *Eusirus* the cutting-plate is scarcely dentate, the secondary plate on the left mandible is quinque-dentate, on the right it is more spine-like; the spine-row contains five or six small spines; the molar is very feeble and unobtrusive; the second joint of the palp is robust, the third is narrower but rather longer, fringed with many spinules.

*Lower lip.* The inner lobes are small.

*First maxillæ.* The inner plate is feeble, short, and seemingly not armed with any setæ; the outer plate carries ten spines, of which the two outermost are the largest, the rest are denticulate; the palp has a stout first joint, but the second is weak and tapering, scarcely longer than the first, tipped with five setæ.

*Second maxillæ.* The inner plate is broader than the outer, but its apical armature is shorter and very scanty.

*Maxillipeds.* The inner plates reach only to the base of the palp, and are not strongly armed, but have the usual apical teeth; the outer plates reach scarcely to the middle of the palp's second joint, and are fringed with not numerous setules. The palp's second joint is broad and carries a conspicuous row of setæ near the apex; the third joint is similarly armed; and the finger, which is long and strong, has a few small setules on its inner margin.

*First gnathopods.* The side-plates are very shallow, covering no part of the limb's second joint. The fourth joint is subequal to the third, its broad apex reaching almost to the base of the hand, and having the wrist attached to its front margin. The distal end of the wrist is attached to the front margin of the hand, not to the side as might be supposed from the drawings made from mounted and somewhat flattened dissections. On the inner side of the wrist there is a small process, probably homologous with the large one in *Eusirus* which intervenes between the fourth joint and the base of the hand. The hand is massive, distally widened, with long convex palm carrying setules, and ending in a spinigerous pocket, into which the long curved finger inserts its tip.

*Second gnathopods.* The side-plates are shallow, longer above than below. The branchial vesicles attached to these and the five following pairs of limbs have accessory lobes. The joints of the second gnathopod show scarcely any difference in shape from those of the first.

*First pereopods.* The side-plates have a curious sort of axe-head shape, the front

corner rounded, the hinder acutely produced. The whole limb is very slender, and, like all the other peræopods, is adorned with long plumose setæ. The second joint is elongate, with four or five setæ on the hinder margin and two on the front. The fourth joint has four setæ on the front margin; the fifth has one on the front and two on the hind margin; the sixth, which is rather longer than either of the two preceding, has two setæ of great length on the hind margin and two or three on the front. The seventh joint is not finger-like, less than half the length of the sixth, its apical margin not acute, fringed with six plumose setæ, mostly of great length.

*Second peræopods.* The side-plates are almost oblong, twice as long as deep, with the upper margin slightly excavate. The limbs are in near agreement with the preceding pair.

*Third peræopods.* The side-plates are bilobed, the hinder lobe the deeper. The second joint is expanded, rather deeply notched on the hind margin. The third joint is short. The remaining joints are all very elongate, armed with numerous spines and long plumose setæ on both margins, except in the case of the finger, which has the setæ only on the hind margin. The fourth, fifth, and sixth joints are severally much longer than the second, which is scarcely, if at all, longer than the straight acute finger.

*Fourth peræopods.* The hind lobe of the side-plates is rather long, the front one evanescent. The limb is like that of the preceding pair, but with a larger second joint, and the fifth decidedly shorter than the sixth.

*Fifth peræopods.* The side-plates are not bilobed. As already noticed, there are branchial vesicles. The second joint is rather longer than in the preceding pair, while the fifth and sixth are not quite so long. As in the two preceding pairs, the setæ fringing the margins of the sixth joint are of great length, and the hinder apex carries a remarkable tuft of these elongate appendages, which, together with those on the fingers, produce a striking effect.

*Pleopods.* There are three or four cleft spines on the first joint of the inner ramus, this ramus consisting of seventeen joints, while the outer, which is slightly longer, has nineteen.

*Uropods.* In the first pair the peduncle is nearly as long as the inner ramus, and carries some small plumose setæ on its outer, and spines on its inner margin. The outer ramus is a little more than half the length of the inner. Both have many spines along the margins, those on the inner margin of the inner ramus being small but very close-set. The peduncle of the second pair is about as long as the outer ramus, which is less than half the length of the inner. These rami are armed as in the preceding pair, which they a little exceed in length. In the third pair the peduncles rather exceed in length those of the preceding pair. The outer ramus is a little shorter than the inner of the second pair; it has spines at six points of the outer margin, and the inner fringed with spines and many long plumose setæ. The inner ramus is rather longer than that of the second pair, and is fringed on both margins with spines and long plumose setæ.

*Telson* longer than the peduncles of the third uropods, distally cleft for about a quarter of its length; a little way above the acute apices a notch on either outer margin carries a long seta, and there is another a little higher up than the top of the cleft.

*Length*, not including the antennæ, in the slightly curved position of the specimen figured, two-fifths of an inch.

*Hab.* Tropical Atlantic. The label accompanying the specimen figured contained the words "*Riisei* 55. Stud. Saml. ded. 1892." A second specimen, in less satisfactory condition, was labelled "22° N.B. 36° V.L. Hygom. Stud. Saml. ded. 1892." Copenhagen Museum.

The specific name was given in MS. by Professor Lütken in compliment to Herr Riise.

Fam. undetermined.

SANCHO, n. g.

Rostral point small. Peræon depressed, very broad at the centre; first segment short, seventh unusually long. Pleon narrow, much of it flexed. Eyes on the top of the head, separate. First antennæ with principal flagellum longer than peduncle; accessory flagellum small, one-jointed. Second antennæ with last joint of peduncle longer than the preceding joint. Upper lip not emarginate. Lower lip without inner lobes. Mandibles with cutting-edge, accessory plate, and spine-row small, but molar and three-jointed palp powerful. First and second maxillæ normal. Maxillipeds with outer plates smaller than, and scarcely reaching beyond, the inner; fourth joint of palp small. Gnathopods subchelate, the first pair in both sexes feeble; the second also feeble in the female, but in the male very long with very bulky sixth joint. Peræopods normal, the fifth pair the longest. Second uropods with peduncle scarcely shorter and rami much longer than those of the first, third with short peduncle but very long inner ramus; in all three pairs the outer ramus is shorter than the inner. Telson short, triangular.

The name is taken from a character famous in fiction.

SANCHO PLATYNOTUS, n. sp. (Plate 9 A.)

The second and third pleon-segments have the postero-lateral angles minutely produced; at the second segment the pleon is bent and the remainder closely adpressed to the ventral surface of the trunk.

*Eyes* round, separated by more than the diameter of either, composed of numerous ocelli, of which those of the outer ring appear to be larger than the rest. Specimens preserved in spirit have a light pinkish pigment.

*First antennæ.* First joint stout, about once and a half as long as broad, second much shorter and thinner, third about half the length of second; flagellum in male of forty-one joints, the first longer than the last of the peduncle, followed by many joints not longer than broad, to which succeed several much longer than broad.

*Second antennæ.* The basal joints short, the last joint of the peduncle rather long, longer and thinner than the penultimate, which has an apical tooth; the flagellum in the male similar in structure to that of the first antenna, but perhaps shorter; thirty-three joints in an example not quite perfect.

*Upper lip* with broad front, the margin little curved.

*Mandibles.* The cutting-edge small, little dentate, the molar massive; the third joint of the palp broad, distally fringed with spinules.

*First maxillæ.* Inner plate oval, tipped with two setæ, outer plate with the eleven apical spines very small, inconspicuously denticulate; second joint of the palp broad, with some apical setules.

*Second maxillæ.* The inner plate broader than the outer, both apically fringed with spines, which are longer on the outer plate.

*Maxillipeds.* The inner plates broad and with the inner margins protruding; the outer plates reaching scarcely beyond the end of the first joint of the palp, fringed with slender spines on the inner margin; the second joint of the palp rather large, fringed with long setæ, the third joint much narrower but not much shorter, the fourth both short and narrow, tipped with spines or setæ.

*First gnathopods.* Side-plate distally widened. The second joint is moderately long and narrow, unarmed; the fourth little longer than the third; the fifth in the male considerably longer and narrower than the sixth, both having the hind margin fringed with spinules; the sixth is rather longer than broad, with spinules at the front apex, and a small palm which matches the weak finger. In the female there is little difference in the length and breadth of the fifth and sixth joints.

*Second gnathopods.* Side-plates broader and of more uniform width than the preceding pair. In the male the second joint is narrowed at the point of attachment and broadest near the centre, though nowhere very broad; the fourth joint is longer than the third, but shorter than the fifth, all three being narrow; on the contrary, the sixth, besides being longer than the fifth, is from the very base enormously broader, its front margin nearly straight, the opposite curved, slightly crenulate, the broad, slightly sloping palm divided into three or four irregular teeth; the smooth, curved, and rather massive finger closes down over the palm into a great pocket excavated in the thickness of the hand. In the female these limbs closely resemble the feeble first gnathopods, but with the fifth and sixth joints a little longer.

*First peræopods.* Side-plates with convex front and concave hind margin. The second joint moderately long, the sixth longer than the fourth or fifth, which are subequal; the finger short, acute, slightly curved, having a spinule on the concave margin.

*Second peræopods.* Side-plates larger than the preceding, the hind margin excavate, serrate below the excavation. The limb resembles that in the preceding pair, but with the fourth and fifth joints a little longer.

*Third peræopods.* Side-plates not very large, pretty equally bilobed, the hind lobe produced below the front. The second joint tending to oval, the hind margin feebly serrate; the fourth joint rather strongly produced downward.

*Fourth peræopods.* Side-plates with hind lobe produced much below the front. The second joint more oblong than in the preceding pair, the hind margin nearly straight, fringed with long setæ; the fourth joint strongly produced.

*Fifth peræopods.* Side-plates small. Second joint larger than in the preceding pair, the straight hind margin more strongly produced downward; the fourth joint similar to that in the preceding pair, but with more numerous spines; the fifth and sixth joints

are narrow, elongate, subequal, with numerous marginal spines and spinules; the finger comparatively small.

*Pleopods.* Inner margins of the peduncles closely adjacent; coupling-spines small; rami with eleven or twelve joints, and two cleft spines on the first joint of the inner ramus.

*Uropods.* Of these little more can be said than is stated in the account of the genus. The short peduncle of the third pair has a dentate apex, to which the long inner ramus is perhaps very loosely attached, as it was wanting from the majority of specimens, notwithstanding the protection given by the folding of the pleon; in young ones not yet released from the maternal pouch it was well developed.

*Telson* not longer than broad, scarcely so long as the peduncle of the third uropods, the sides convex till near the apex.

*Length*, without the flexed portion of the pleon, from about a tenth to an eighth of an inch, or 3 mm.

*Locality.* Port Jackson, in Australia. Sent by Professor W. A. Haswell, M.A., D.Sc. The specific name is derived from  $\pi\lambda\alpha\tau\acute{\upsilon}\varsigma$ , broad, and  $\nu\hat{\omega}\tau\omicron\varsigma$ , a back.

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#### EXPLANATION OF THE PLATES.

*a.s.*, upper antenna; *a.i.*, lower antenna.

*l.s.*, upper lip; *l.i.*, lower lip.

*m.*, mandible; *mx.* 1, 2, 1st and 2nd maxilla; *mzp.*, maxillipeds.

*gn.* 1, 2, 1st and 2nd gnathopods; *prp.* 1-5, 1st to 5th peræopods; *br.*, branchial vesicle.

*plp.*, pleopods; *ur.* 1, 2, 3, 1st, 2nd, and 3rd uropods.

T., telson.

A line above the figure of a whole specimen indicates the natural size.

#### PLATE 6.

*Parhyale fasciger*, n. g. et sp.

The lateral view of the whole animal and the figures on the left hand and down the centre of the Plate are from male specimens, those on the right hand are from a female specimen.

The antennæ and appendages of the peræon and pleon have a uniform enlargement; so also, but on a higher scale, the mouth-organs, portions of the gnathopods of both sexes, the third uropods and telson of the male, second and third uropods and telson of the female, portions of the first maxilla and mandibles being still more highly magnified.

#### PLATE 7.

**A.** *Lysianax cinghalensis*, n. sp.

All the parts are magnified to the same scale, except a portion of *mx.* 1, which is more highly magnified than the rest.

**B.** *Lysianax cubensis*, n. sp.

The antennæ, limbs, uropods, and telson are drawn to the same scale, while still more magnified figures are given of the mouth-organs, part of the second gnathopod, second and third uropods, and telson in two positions.

## PLATE 8.

*Andaniotes corpulentus* (Thomson).

Antennæ, mouth-organs, uropods, and telson, more magnified than the limbs and figures of uropods and telson at foot of Plate. Mandibles seen from the outside, so that the accessory plate is not visible.

## PLATE 9.

A. *Sancho platynotus*, n. g. et sp.

Dorsal view of a male specimen, the last three joints missing in the third, fourth, and fifth peræopods. The mouth-organs, uropods, and telson (in both sexes) are magnified more highly than the other parts.

B. *Pontharpinia pinguis* (Haswell).

The mouth-organs and telson are more highly magnified than the other parts.

## PLATE 10.

*Leucothoë incisa* Robertson.

Antennæ, appendages of peræon and pleon, on a uniform scale, other parts more enlarged. *Pls.* 1, 2, 3, postero-lateral angles of 1st, 2nd, and 3rd pleon-segments. *plp.sp.*, coupling-spines from peduncle of pleopod.

## PLATE 11.

*Anamixis Hanseni* n. g. et sp.

In the lateral view of the animal the ends of the 3rd, 4th, and 5th peræopods are missing.

*a.s.A.*, *a.i.A.*, the antennæ of a second specimen.

*or.L.*, supposed oral lamina projecting vertically from underside of head.

*mxp.* (in middle line of Plate), maxillipeds as seen from within; *mxp. A.*, from a different specimen, the lower figure giving a lateral view, the upper an exterior one.

*gn. 1*, *gn. 2*, the figures on the left hand are from the inner side of the limbs, those on the right from the outer side. In the latter the finger and part of the hand of *gn. 2* are missing.

## PLATE 12.

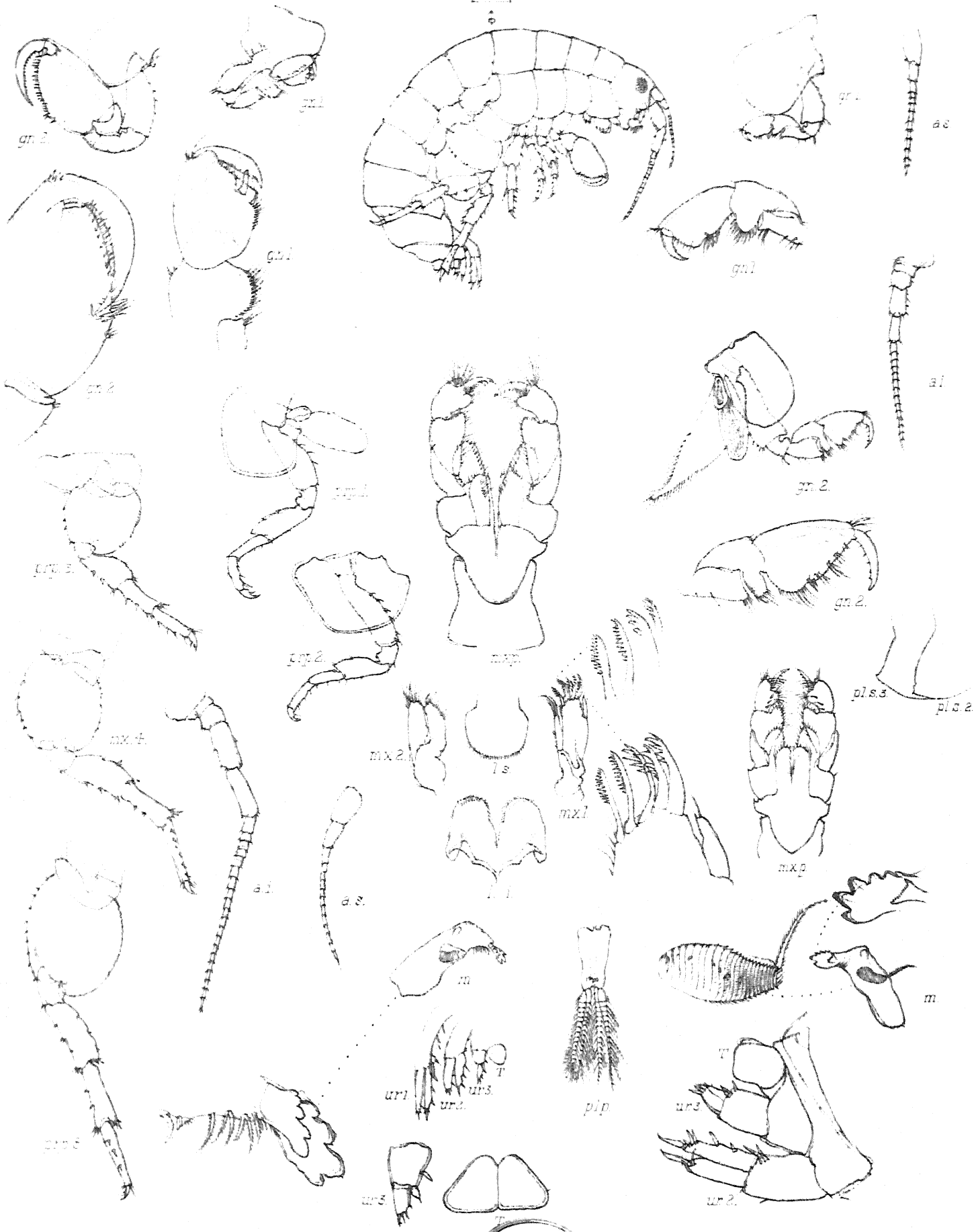
*Pardaliscoides tenellus* Stebbing.

The mouth-organs are more highly magnified than the other parts.

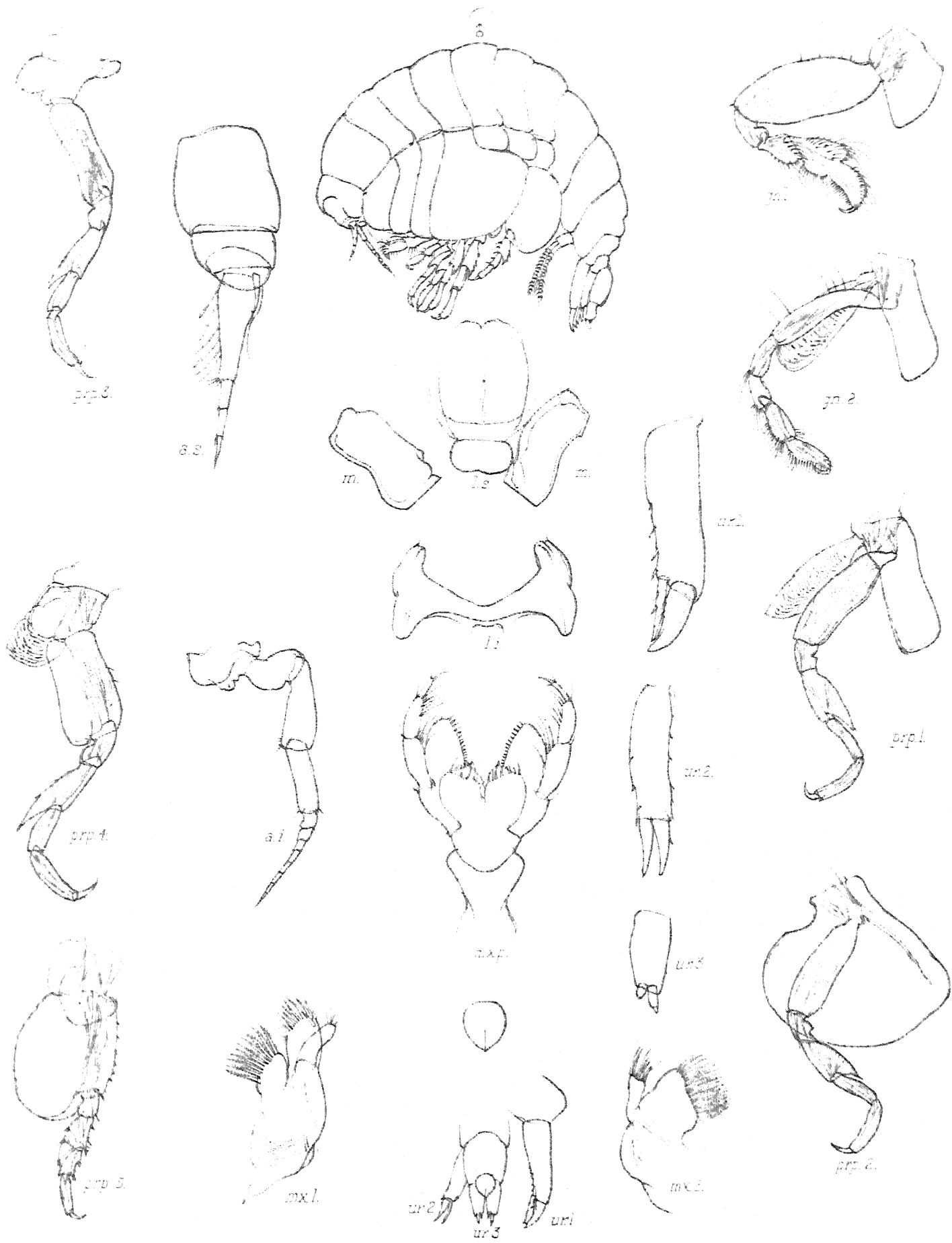
## PLATES 13, 14.

*Eusiropsis Riisei*, n. g. et sp.

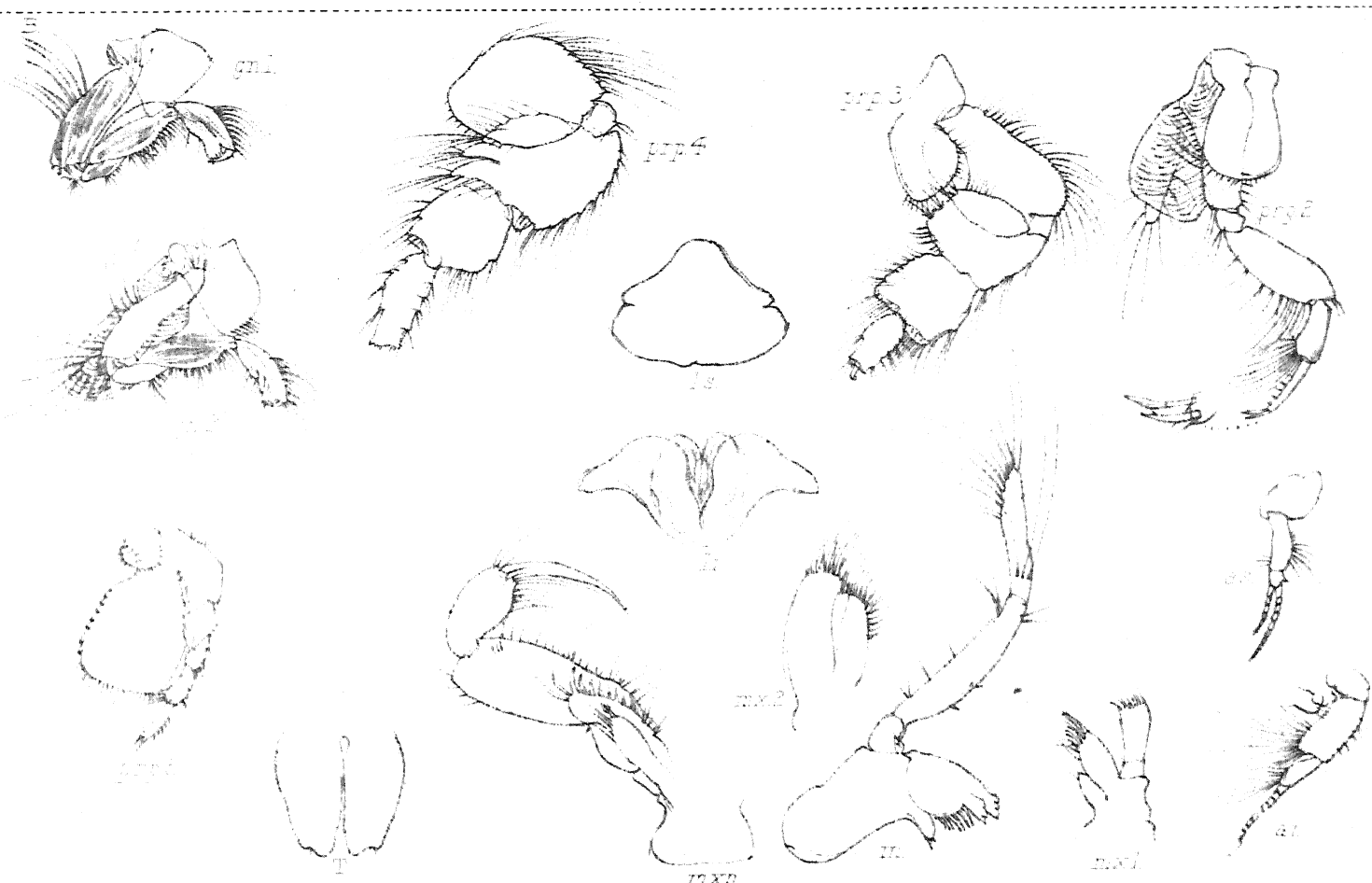
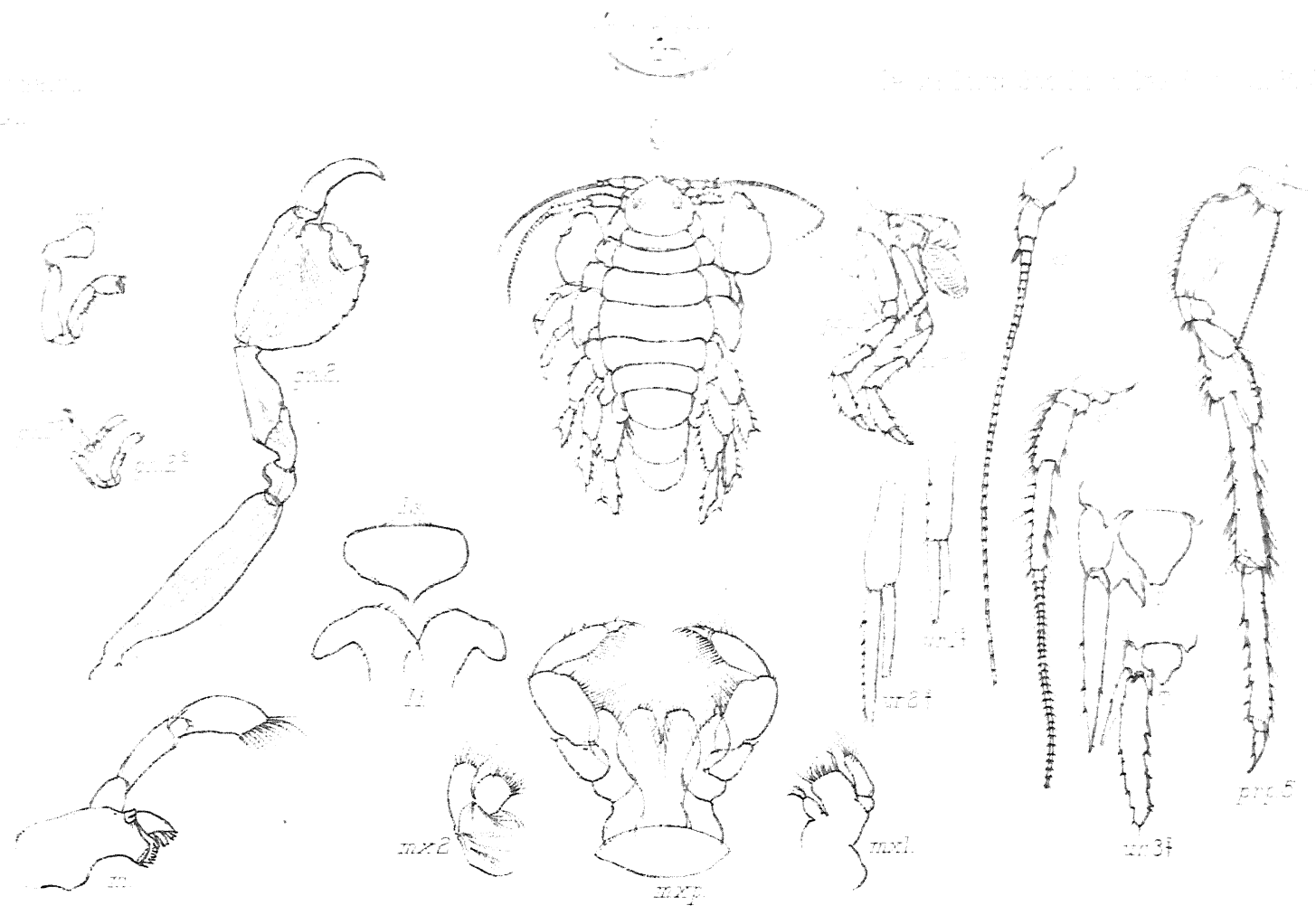
In Plate 13 the first gnathopod is seen from the outer side, in Plate 14 from the inner side.



W. Stebbing del.



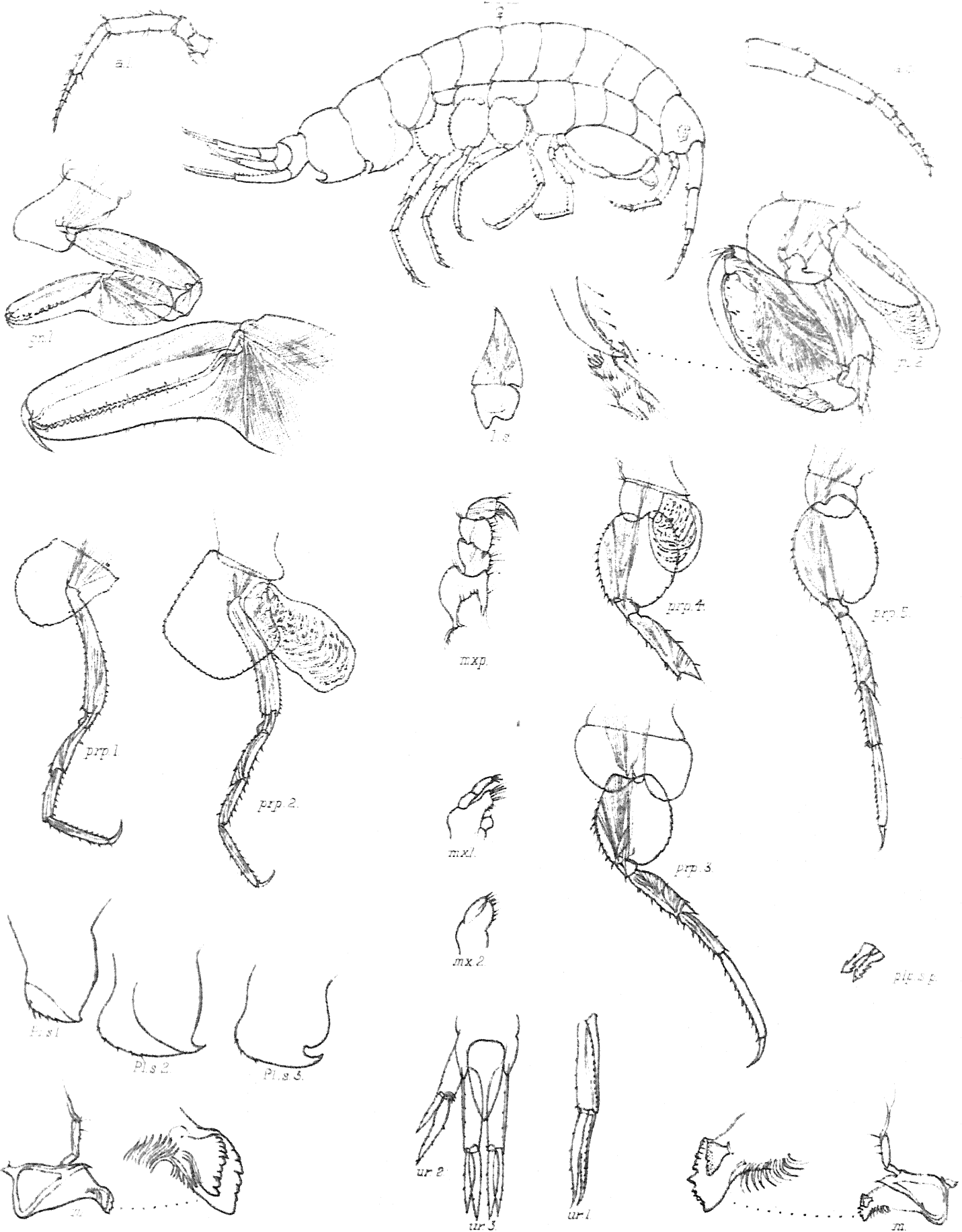




A. *SINCHO PLATYNICUS* NOV. GEN. ET SP.

B. *PENTHARPINIA PINGUIS* HAWFIELD.

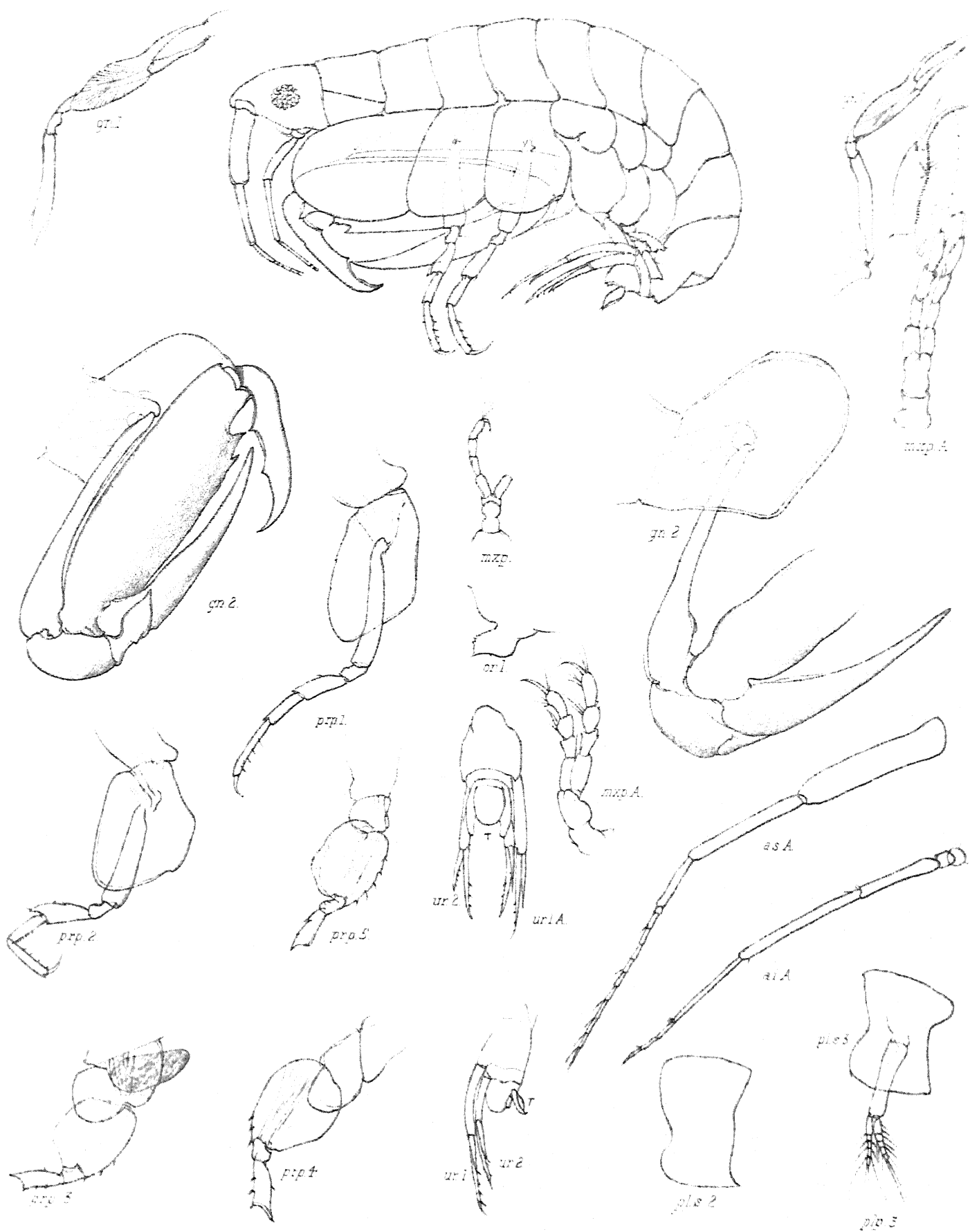




J.R. Stebbing del.

LEUCOTHOE INCISA, ROBERTSON

J.R. Stebbing lith.



J.F.R. Stebbing del.

J.T.P. Reid Lit.



T.F.R. Stebbing del.

J.T.R. Reid Lit.

PARDALISCOIDES TENELLUS STEBBING.



FIGURE 1. Dorsal view of the whole animal.

JTR:Red lln

372220

Trans. Entom. Soc. Lond. 1911, p. 10, pl. 1, fig. 1

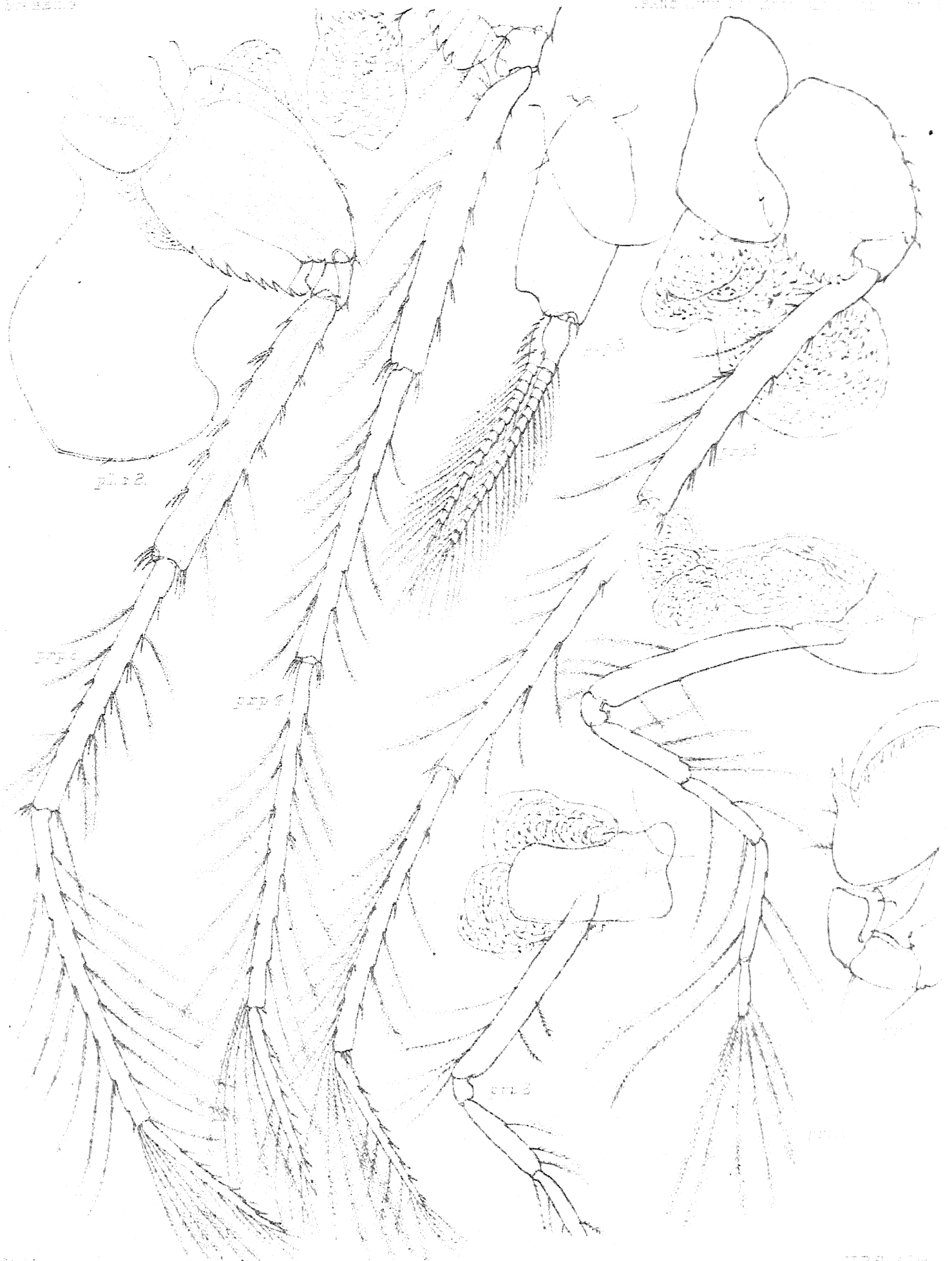


Fig. 1 as

*Euclyptopsis rufi* NOV. GEN. ET SP.

J. P. R. 1911