

3.—*Contributions to the Crustacean Fauna of South Africa.*—  
By K. H. BARNARD, M.A., Assistant.

(Plates XXVI.—XXVIII.)

5.—THE AMPHIPODA.

THE collections made by the Cape Government trawler s.s. "Pieter Faure" and by members of the Museum staff have formed the bulk of the material for the following report, which supplements Mr. Stebbing's reports in the "Marine Investigations." Many of the "Pieter Faure" specimens were found by searching through bottles of hitherto unsorted material—sponges, ascidians, hydroids and the like.

The result is a large increase in the fauna-list of South African Amphipoda. The range of many known species is shown to extend to South African waters, and many species are considered to be new to science. In the former category the most interesting are certain species which were known only from the North Atlantic, e.g. *Byblis gaimardii*, *Nicippe tumida* and *Epimeria cornigera*. The South African specimens are not, or only in minute details, distinguishable from the northern specimens. It may, however, be stated that the first two species above mentioned have recently been found off California by the U.S. exploring vessel "Albatross." The Indian Ocean, Australasian and Subantarctic faunal elements are also represented by a number of well-known forms.

The Amphipodan fauna of Table Mountain has been investigated for the first time, and has yielded four interesting Gammarids. In this respect the mountain streams in other districts of South Africa are still quite unknown.

Unfortunately the discussion of several species has had to be postponed owing to lack of material from other regions for direct comparison (e.g. in the genera *Orchomenopsis*, *Paramoera* and *Hyale*). Representatives of the families *Calliopiidae* and *Pleustidae* have also been recognised among the "Pieter Faure" collection, but were too badly preserved or mutilated for generic and specific determination.

Certain species—*Leucothoe miersi*, *Stenothoe crenulata*, *Paramoera*

*austrina*, *Elasmopus serrula*, *Hyale novae-zealandiae*—have been relegated to synonymy for reasons which, I trust, will be considered sound.

Except where otherwise stated, the specimens were collected in the littoral zone at low-water mark.

The types of all new species are in the South African Museum.

My thanks are again due to Mr. J. H. Orton of the Plymouth Marine Laboratory, Mr. F. W. Edwards of the British Museum, and Mr. H. Watson of Cambridge for tracings of figures otherwise inaccessible to me; and also to Dr. Chilton of Christchurch, N.Z., and Prof. Haswell of Sydney.

*Corrigenda*.—I may take this opportunity of correcting two unfortunate mistakes in my last paper on South African Isopods (Ann. S.A. Mus. vol. 10, pt. 11, 1914: *Aega urotoma* n. sp. most probably = *A. semicarinata* Miers, 1875, and *Dynamenella kraussi* n. sp. = *D. huttoni* (Thomson), 1879. The latter I have confirmed by a comparison with New Zealand specimens, which I owe to Dr. Chilton's kindness. On Plate XXXVII. C. of the same paper one of the figures of *Jais pubescens* has been inadvertently printed upside down and labelled "mxp" instead of "plp 3."

## TRIBE GAMMARIDEA.

### FAMILY LYSIANASSIDAE.

1906. *Lysianassidae* Stebbing, Das Tierreich, 21, pp. 8, 717. (References.)  
 1908.        "        Chevreux, Bull. Mus. Ocean, Monaco, No. 117, p. 1.  
 1908.        "        Holmes, Proc. U.S. Nat. Mus. vol. 35, 1909, p. 492.  
 1910.        "        Stebbing, Sci. Res. "Thetis," p. 568.  
 1910.        "        Chevreux, Mem. Soc. Zool. Fi. vol. 23, 1910, p. 135.  
 1911.        "        id. C.R. Ac. Sci. cliii. p. 1167.

### GEN. TRISCHIZOSTOMA Boeck.

1853. *Guerinia* (preocc.) Hope, MS. Costa. Fauna Reg. Napoli., April, 1853, p. 1.  
 1861. *Trischizostoma* Boeck, Forh. Skand. Naturf. Möde 8, p. 637.  
 1906.        "        Stebbing, Das Tierreich, 21, p. 12. (References.)

1908. *Trischizostoma* id. S.A. Crust. pt. 4, p. 59.

1908. „ Sexton, Proc. Zool. Soc. Lond. 1908, pt. 2,  
p. 370.

TRISCHIZOSTOMA PAUCISPINOSUM n. sp.

(Plate XXVI. Fig. 1.)

Head plus rostrum a little longer than 1st peraeon segment, rostrum triangular, broader than long, apex subacute, curved downwards. Eyes large, occupying the greater part of the lateral portions of the head, reniform, not extending above and not nearly meeting on top of head.

Second peraeon segment a trifle shorter than the first and the following segments. Side-plate 1 small, triangular, almost completely hidden by 2, which is a little deeper than long, 3 also a little deeper than long, larger than 2, 4 a little larger still, almost circular, the anterior, inferior and hind margins forming a nearly even curve, posterior margin excised for 5, which is longer than deep (longest of all the side-plates) and bilobed, 6 a little shorter than 5, 7 large, triangular, deeper than long.

Pleon segment 4 hollowed at base, pleuron of 1st narrowed below and ending in a small acute point at the postero-lateral angle, of 2nd large, inferior margin straight or slightly emarginate, postero-lateral angle acute, inferior margin of 3rd convex, postero-lateral angle acute, the posterior margin sinuous above the angle.

Telson a little longer than broad, slightly tapering, cleft to centre, the apices obtuse.

First antenna reaching to about 6th peraeon segment, 2nd and 3rd joints together equal to half length of 1st, flagellum 20-jointed, 1st joint nearly half as long again as whole of peduncle, its anterior margin densely setose, accessory flagellum 3-jointed, 1st joint  $\frac{3}{4}$  length of 1st flagellar joint, lanceolate, with a few widely spaced setae on both margins, 2nd and 3rd joints very slender, 3rd  $\frac{1}{3}$  length of 2nd.

Second antenna reaching to about end of 3rd pleon segment, 5th joint twice length of 4th, flagellum at least twice length of peduncle, ca. 40-jointed.

Mandible, trunk distally from palp of more or less even width throughout, cutting edge straight, the angles rounded, palp long, 2nd and 3rd joints subequal, 2nd not or scarcely broader than 3rd, inner margins of both setose.

First maxilla, inner plate apically acute, outer plate with 5 spines, palp minute, obscurely 2-jointed.

Maxilliped, inner plate very narrow, apex obtuse, outer plate ovate, palp slender, 2nd joint longest, 3rd and 4th subequal, but 4th more slender than 3rd, 4th joint with 1-2 very fine apical setules.

The other mouth parts could not be dissected out satisfactorily on account of the state of preservation.

First gnathopod, 2nd joint as long as rest of limb, 6th transversely oval, in shape more like that of *T. nicaeense* than *T. raschi*, reversed in one specimen, not in the other, anterior (in untwisted position) margin a little shorter than palm, which is  $1\frac{1}{2}$  times inferior margin, palm very slightly convex, with 5 small spines on margin and 4 larger ones within the margin, 3 unequal spines at junction of palm with hind margin, finger strongly curved, just exceeding palm in length.

Second gnathopod slender, 2nd joint equal to 4th, 5th and 6th joints together; 3rd and 5th subequal, 4th and 6th subequal, 5th cylindrical, not swollen, with dense spreading tufts of setae, 6th oblong, not expanded, longer than broad, also with tufts of setae, finger small.

First and second peraeopods, 2nd joint equal to 3rd and 4th together, 4th with 3 spinules on anterior margin and 1 at apex, 5th and 6th joints subequal, but 6th only half width of 5th, 5th with 5 spinules on anterior margin and 1 at apex, 6th likewise, finger  $\frac{1}{4}$  length of 6th.

Third to fifth peraeopods becoming progressively longer, 2nd joint expanded posteriorly, on 3rd peraeopod only a very little longer than broad, on 4th a little longer than broad, on 5th  $1\frac{1}{2}$  times as long as broad, but abruptly narrowed near base, hind margin nearly straight with a few indents, 4th joint of 3rd peraeopod with 2 spinules on anterior margin and 1 on apex, of 4th peraeopod with 4 and 1 respectively, of 5th peraeopod with 5 and 1, 5th joint of 3rd peraeopod with 4 and 1, of 4th peraeopod with 6 and 1, of 5th peraeopod with 9 and 1 respectively, the anterior apex of 5th joint on each peraeopod produced into a sharp triangular process, anterior margin of 6th joint of 3rd peraeopod with 5 spinules, of 4th peraeopod with 5, and of 5th peraeopod with 7, inner margin of finger finely serrulate.

First uropod, outer ramus shorter than inner, outer margin with 5-7 deep indents, each with a spinule at its base, outer margin of inner ramus with 1 or 2 such indents near apex, inner margin with 3 spinules near base, whole of inner and outer margins of inner ramus and inner margin of outer ramus in addition finely serrulate.

Second uropod shorter and more slender than 1st, rami subequal,

outer with 6 deep indents on outer margin, inner ramus with 2 such indents on outer margin (1 near middle, the other nearer apex) and 1 in middle of inner margin, both margins of inner ramus and inner margin of outer ramus finely serrulate.

Third uropod, rami subequal, equal to those of 2nd in length, but broader, ovate, more rapidly narrowed distally, 2nd joint on outer ramus indistinguishable, both margins of inner ramus and inner margin of outer ramus finely serrulate.

*Length*: 16 mm.

*Colour*: In spirit, pale pinkish, eyes red.

*Locality*: Lion's Head N. 67° E. distant 25 miles (off Cape Peninsula). 131 fathoms. 2 ♂♂. s.s. "Pieter Faure." 28/3/00. (S.A.M. No. A130.)

The specific name in allusion to the small number of spines on the palm of the 1st gnathopod, compared with the other three species of the genus.

This species resembles *T. nicaeense* Costa in the general shape of the hand of 1st gnathopod, the trunk of the mandible and the rostrum; it resembles *T. raschi* Esm and Boeck in the inner plate of the maxilliped. It is, however, far more closely allied to the other South African species *T. remipes* Stebbing; the characters in which it agrees being: rostrum, trunk of mandible and palp, palp of maxilliped, first and second antennae, second gnathopod, 2nd joint of 3rd-5th peraeopods, telson and uropods. It is distinguished from the latter in having none of the joints of the peraeopods expanded except the 2nd on 3rd-5th peraeopods, in the details of the uropods, as well as in the three characters which separate it from the two northern species, namely: eyes, palm of 1st gnathopod and side-plates.

#### GEN. STOMACONTION Stebbing.

1888. *Acontiosstoma* (part) Stebbing, *Challeng. Rep.* vol. 29, p. 709.

1899. *Stomacontion* id. *Ann. Mag. Nat. Hist. Sci.* 7 vol. 4, p. 205.

Chilton (1912, *Tr. Roy. Soc. Edinb.* vol. 48, pt. 2, p. 463) doubts whether this genus should be separated from *Acontiosstoma*. The present species in having, apparently, no palp to the 1st maxilla and a quite rudimentary 4th palpal joint to the maxilliped affords further evidence that the two genera should be reunited.

STOMACONTION CAPENSE n. sp.

(Plate XXVIII. Figs. 27, 28.)

Very like *S. pepinii* (Stebb.), but differing from it, and from

*Acontiosstoma marionis* Stebb. (including *A. magellanicum* Stebb.), in the shape of the 1st side-plate. This is triangular, not oblong, and narrows below to a somewhat blunt point. The whole surface is finely pubescent, and the inferior and posterior margins of the side-plates are more setulose than in *S. pepinii*. Peduncular joints of 1st antennae progressively shorter, flagellum inserted obliquely, 4-jointed. Second antenna as figured for *S. pepinii*. First maxilla apparently without palp; 4th palpal joint of maxilliped quite rudimentary. Finger of 2nd gnathopod inserted in the middle of the distal margin of 6th joint, *i.e.* the apices of this joint are produced equally above and below the finger. Postero-inferior apex of 2nd joint of 5th peraeopod rectangular, with a small indent just above the apex on the posterior margin. Posterior margins of 2nd joints of 3rd-5th peraeopods strongly setulose.

In other respects agreeing with *S. pepinii*. The specimen is not full-grown, as shown by the new integument forming within the old.

*Length*: 2.5 mm. in contracted position.

*Colour*. In spirit, pale pinkish, eyes reddish.

*Locality*: False Bay. 24 fathoms. 1 immature specimen. s.s. "Pieter Faure." 11/11/02. (S.A.M. No. A3815.)

#### GEN. EUONYX Norman.

1867. *Euonyx* Norman, Rep. Brit. Ass. vol. 36, pp. 197, 202.  
 1888. ,, Stebbing, Challeng. Rep. vol. 29, p. 668.  
 1891. ,, G. O. Sars, Crust Norw. vol. 1, p. 116.  
 1906. ,, Stebbing, Das Tierreich 21, p. 19.  
 1908. ,, Chevreux, Bull. l'Inst. Océan. Monaco. no. 117, p. 1.

#### EUONYX BISCAYENSIS Chevreux.

1908. *Euonyx biscayensis* Chevreux, l.c. p. 1, fig. 1.

Eyes invisible in the spirit specimen.

Fourth pleon segment with a basal depression, the posterior portion slightly swollen, rounded.

First antenna equal to first two peraeon segments together, 1st joint with anterior margin slightly emarginate, but not apically produced, flagellum 12-jointed, 1st joint equal to peduncle, accessory flagellum 5-jointed, 1st joint equal to the remaining 4 joints.

Second antenna equal to first 3 peraeon segments together, 1st joint dilated below, gland-cone subacute and extending almost to end of

3rd joint, 4th and 5th joints subequal, flagellum longer than peduncle, 16-jointed.

Mandibles resembling those of *E. normani* Stebbing (1888, l.c., pl. 19), accessory cutting-edge in left strap-shaped, apex blunt, spine-row with 2 spinules and several plumose setules.

First maxilla, inner plate with 3 apical plumose, and some simple setae, outer plate with 8 spines (the terminal one apically bidentate, the next apically 4-dentate, the rest laterally denticulate) and several setae, palp not narrowing distally, apex rounded, with 5 spines.

Maxilliped, inner plate with 3 apical stout spines and several ordinary spines and setae, outer plate almost reaching apex of 2nd joint of palp, outer distal margin with ca. 12 spines which become subclavate near the inner angle, inner margin crenulate.

First gnathopod, middle of inner margin of apical projection of 6th joint setose.

Second gnathopod, 6th joint a little more than half the length of anterior margin of the 5th, widening distally, palm slightly convex near base, straight distally, joining the inferior margin at a right angle, which is without a spinule, 7th joint shorter than palm.

First and second peraeopods, 5th joint shorter and narrower than 4th, with 3 pairs of spines on posterior margin and an apical group, 6th subequal to 4th, posterior margin with 6 groups of 3 spines each, and a large blunt spine on apex, 7th joint not quite  $\frac{1}{3}$  6th, curved, bluntly denticulate at base.

Third peraeopod, 2nd joint expanded, broader than long, posterior margin feebly indented, 4th joint strongly expanded on posterior margin, anterior margin with 5 groups of 3 spines each and a group on apex, 5th shorter than 4th and equal to half its distal width, anterior margin with 2 groups of spines, outer and inner apices each with a group of spines, 6th subequal to anterior margin of 4th, anterior margin with 5 groups of spines and a large pointed spine at apex.

Fourth peraeopod similar, but 2nd joint longer than broad, posterior margin nearly straight, faintly indented, greatest width of 4th joint near base and not near apex, inner margin of 6th with only 4 groups of setae.

Fifth peraeopod, length of 2nd joint proportionately to width greater than in 4th peraeopod, posterior margin convex, the indents rather stronger and more numerous than in 3rd or 4th.

First and second uropods, inner ramus a little longer than outer, inner margins of both spinose.

Third uropod, outer ramus longer than inner, with small 2nd joint,

outer and inner margins of both rami spinulose, inner margin of inner ramus with some plumose setae in addition.

Side-plates and postero-lateral angles of pleon segments 1-3 as in *E. chelatus* Norman (see Sars, l.c. pl. 40, fig. 1).

Telson as in Chevreux's figure but with 2 spinules on each apex.

*Length*: 17 mm.

*Colour*: In spirit, yellowish white.

*Locality*: Cape Point NE. by E.  $\frac{1}{4}$  E., distant 38 miles. 755 fathoms, 1 ? ♂. s.s. "Pieter Faure." 23/6/03. (S.A.M. No. A129.)

*Geogr. Distribution*: Gulf of Gascony, 1453 metres (Chevreux).

The main differences between this and the northern form are: the larger size, the number of flagellar joints in 1st and 2nd antennae, the relative lengths of 4th and 5th joints of peduncle of 2nd antennae, the shape of the palp of 1st maxilla and the palm of 2nd gnathopod. As regards the last two features, Chevreux's figures are not as clear as could be desired for purposes of an exact comparison. The other features cannot be deemed of specific value.

#### PARA VALETTIA n. g.

Body not compressed. Side-plates not large, 4th only slightly emarginate behind. Mandible short and broad, cutting-edge obscurely dentate, palp central. Inner plate of maxilliped with 4 apical teeth, outer plate with 2 spine-teeth on inner apex, palp 4-jointed. First gnathopod fairly stout, strongly chelate. Second gnathopod elongate, slender, chelate. Third to fifth peraeopods with 2nd joint moderately expanded. Uropod 3 with 2-jointed outer ramus only. Telson ovate, entire.

This genus is near to *Valettia* Stebbing in having a dentate cutting-edge to the mandible, but is distinguished by the chelate 1st and 2nd gnathopods, uniramous 3rd uropod and entire telson. These last two features it possesses in common with *Onesimoides* Stebbing, from which, however, the chelate 1st gnathopod separates it.

*Valettiopsis* Holmes, 1908, appears to differ very little from *Valettia*.

#### PARA VALETTIA CHELATA n. sp.

(Plate XXVI. Figs. 2-3.)

Body rounded dorsally. Antero-lateral angles of head obtuse. Eyes not discernible. Side-plate I oblong, not narrowed below, smaller than 2, 2-4 subequal, subquadrate, inferior margin rounded, 5 twice

as long as deep, bilobed, lobes subequal, 6 smaller than 5, slightly bilobed. Postero-inferior angles of 3rd pleon segment quadrate, entire.

Telson longer than broad, ovate-lanceolate, apically acute, entire, without setae.

First antenna, 1st joint fairly broad, 2nd subequal to 1st, 3rd  $\frac{1}{2}$  length of 2nd, flagellum equal to 2nd and 3rd together, slender, 4-jointed, 1st joint longest, accessory flagellum slender, a trifle longer than 1st flagellar joint, 2-jointed, 2nd joint minute.

Second antenna subequal to 1st, ultimate joint  $\frac{2}{3}$  length of penultimate, flagellum scarcely equal to ultimate joint, slender, 3-jointed.

Mandibles stout, cutting-edge obscurely 4-dentate, secondary cutting-edge obscure, molar weak, 1st joint of palp half 2nd, 3rd a trifle longer than 1st, tipped with 3 setae.

First maxilla, inner plate not observed, outer plate obliquely truncate, with (<sup>p</sup>) 5 spines, palp 2-jointed, 1st joint minute, 2nd extending beyond outer plate and tipped with 3 spinules.

Second maxilla, plates about equal in length, inner broader, with 3 apical setae, outer with 4 apical setae.

Maxilliped, inner plate with 4 blunt teeth on apex, outer plate reaching to a little beyond end of 1st joint of palp, inner apex not produced, but bearing 2 ovate spine-teeth, inner margin with 1-2 setules, palp 4-jointed, 1st not as large as 2nd, 4th as long as 3rd, unguiform, curved.

First gnathopod, 2nd joint straight, slightly wider distally, 3rd and 4th subequal, 3rd with 2 apical setae, 4th with 5, 5th triangular, inferior lobe with 6 setae, increasing in length, 6th longer and broader than 5th, inferior apex produced as a triangular thumb nearly equal in length to front margin of 6th, both its margins straight, apex obscurely bifid, inferior margin with a notch at base of thumb bearing 4-5 curving setae, finger matching and fitting closely to thumb, strong, straight, curved only at apex.

Second gnathopod slender, almost unarmed, 2nd joint longest, somewhat fusiform, 3rd and 5th subequal, 4th shorter, 6th equal to 4th and 5th together, apex produced as a straight thumb, nearly half length of front margin, apex upturned, finger straight, as long as and fitting closely to thumb, apically curved.

First and second peraeopods, 4th joint produced halfway along 5th, inner margin of 5th with 3 setae, of 6th with 4 setules, finger with unguis scarcely half length of 6th.

Third peraeopod, 2nd joint not greatly expanded, half as long again as broad, oblong, hind margin straight, slightly serrate, postero-

inferior angle rounded, reaching almost to end of 3rd, 4th produced  $\frac{2}{3}$  along 5th.

Fourth peraeopod, 2nd joint similar to that of 3rd peraeopod, serration on hind margin a little stronger, 4th produced  $\frac{3}{4}$  along 5th.

Fifth peraeopod, 2nd joint more strongly expanded, broader distally than proximally, hind-margin convex, serrate, postero-inferior angle rounded, reaching to end of 3rd, 4th produced to end of 5th.

First uropod, rami subequal, longer than peduncle, smooth, tapering, slightly curved.

Second uropod, rami subequal to one another and to peduncle, smooth, tapering, slightly curved.

Third uropod, ramus longer than peduncle, lanceolate, 2nd joint distinct, short but stout, upturned, upper margins with a row of closely set setules, a minute tubercle on inner apex of peduncle perhaps represents the inner ramus.

*Length*: 3 mm.

*Colour*: In spirit, whitish.

*Locality*: Sea Point near Cape Town. 26/2/14. (K.H.B.)  
1 ovigerous ♀ and 1 juv. (S.A.M. No. A2937.)

#### GEN. AMARYLLIS Haswell.

1880. *Amaryllis* Haswell, Pr. Linn. Soc. N.S.W. vol. 4, p. 253.  
1888. „ Stebbing, Challeng. Rep. vol. 29, p. 698.  
1893. „ Della Valle, F. Fl. Neapel. vol. 20, p. 781.  
1904. *Vijaya* Walker in Herdman's Ceylon Pearl Fish. Rep. 2,  
pp. 231-241.  
1906. *Amaryllis* Stebbing, Das Tierreich 21, pp. 23, 717.  
1910. „ id. Sci. Res. "Thetis," pt. 12, pp. 569, 570.  
1911. „ Chevreux, Bull. l'Inst. Océan. Monaco. No. 204,  
p. 1.

#### AMARYLLIS MACROPHTHALMA Haswell.

1880. *Amaryllis macrophthalmus* Haswell, l.c. p. 253, pl. 8, fig. 3.  
1908. „ „ Stebbing, S.A. Crust. pt. 4, p. 67.  
1909. „ *macrophthalma* Walker, Tr. Linn. Soc. Lond. 2nd  
ser., vol. 12, pt. 4, p. 327.  
1909. „ „ Chilton, Tr. Roy. Soc. Edinb. vol. 48,  
pt. 2, p. 463.  
1910. „ „ Stebbing, l.c. p. 569.  
1910. „ *macrophthalmus* id. Gen. Cat. S.A. Crust. p. 448.

Stebbing has already described specimens of this species from Algoa Bay and remarked upon some of the features in which the South African specimens differ from previous descriptions. These same specimens I have re-examined, and on the whole am able to confirm Stebbing's remarks. I make, however, certain further observations on the sexual differences in the uropods, and as regards the peraeopods I find certain small discrepancies.

The peduncle and outer ramus of the 1st and 2nd uropods are covered with fairly numerous spines along the upper margins, inner ramus of 1st uropod with rather fewer spines, inner ramus of 2nd uropod constricted at its distal third, with 1 spine at the constriction and 3 spines nearer base. Third uropod in ♂ as described by Stebbing; in the ♀, however, with only 3 setae on distal part of inner margin of outer ramus and 3 small spinules on distal part of outer margin of inner ramus.

The fringe of setae on 5th and 6th joints (Stebbing, l.c. p. 68, writes "4th and 5th" by a *laps. cal.*) of 1st gnathopod does not seem to be present *normally*; the 5th joint has 5-6 pairs of setae on hind margin and 2-3 on apex, 6th joint has a row of fine, short and closely-set setules along whole hind margin and in addition 6 isolated tufts of setae. The corresponding joints of 2nd gnathopod on the other hand do have a *dense* fringe of setae. There are no sexual differences in either of the gnathopods.

Specimens from Simon's Bay in False Bay agree with the Algoa Bay specimens.

Stebbing has also mentioned a small specimen, presumably from Algoa Bay like the others, with pale eyes, 1st joint of 1st antenna with 2 *acute* spines, telsonic apices with a small tooth, and other variations. Adult specimens from False Bay have the following characters:

Pale eyes, acute teeth on 1st peduncular joint of 1st antenna, flagellum 30-jointed, accessory flagellum 7-jointed, 2nd antenna with flagellum 30-jointed in ♀, in ♂ reaching to end of body, 2nd joint of mandibular palp with 1 apical seta, 1st and 2nd gnathopods and uropods as above described for the dark-eyed form, with the same sexual differences in the uropods, telson as described by Stebbing.

*Length*: ♂ 10 mm.; largest ovigerous ♀ 13 mm. (light-eyed form).

*Localities*: Dark-eyed form: Algoa Bay, 4-16 fathoms (Stebbing); Saldanha Bay, 25 fathoms (Chilton, presumably dark-eyed, but this point not mentioned); Table Bay, shore. 1 ♂, 1 ♀. 26/3/96 (Dr. J. D. F. Gilchrist), and ♂ ♂, ♀ ♀, 1897 (Dr. W. F. Purcell); Kalk

Bay (False Bay), shore. ♂♂, ♀♀. 1897. (Dr. W. F. Purcell.); Sea Point, near Cape Town. 15/11/13. (K.H.B.) 1 ♂, ♀♀ and young; Simon's Bay (False Bay). 5 ♀♀, Umhlangakulu River mouth NW. by N. distant 7 miles. 50 fathoms. 1 ♂, 1 ♀. Port Shepstone WNW. distant 2 miles. 24 fathoms. 1 ♀. s.s. "Pieter Faure." 10/3/96, 14/3/01, and 15/3/01. (S.A.M., Nos. A233, 1286, 1287, A2933, A2738, A2810 and A2811 respectively.)

Light-eyed form: Algoa Bay, 4-6 fathoms. 1 juv. (Stebbing); Zwartklip NE.  $\frac{1}{4}$  N. distant 1 mile (False Bay). 10 fathoms. 1 ♂, 5 ♀♀; Seal Island SW.  $\frac{1}{2}$  S. distant  $\frac{3}{4}$  mile (False Bay.) 11 fathoms. 1 ♀; Glendower Beacon N.  $\frac{1}{2}$  W. distant 16 miles (off Port Alfred). 66 fathoms. 1 ovigerous ♀. s.s. "Pieter Faure." 17/11/02, 12/11/02, and 10/9/01. (S.A.M. Nos. A136, A2739 and A2740 respectively.)

Thus it seems that the dark- and light-eyed forms exist side by side and are co-extensive in range, although it would be most interesting to have a larger number of localities.

#### GEN. CYPHOCARIS Boeck.

1871. *Cyphocaris* Boeck, Forh. Vidensk. Selsk. Christian. 1870, p.103.  
 1905. ,, Chevreux, Bull. Mus. Océan. Monaco. No. 24, p. 1.  
 1905. ,, id. ibid. No. 27, p. 1.  
 1906. ,, Stebbing, Das Tierreich 21, pp. 28, 717.  
 1909. ,, Walker, Tr. Linn. Soc. Lond. 2nd Ser. Zool. vol. 12, pt. 4, p. 327.

#### CYPHOCARIS RICHARDI Chevreux.

1905. *Cyphocaris richardi* Chevreux, l.c. No. 24, p. 1, figs. 1, 2a-g.  
 1906. ,, ,, Stebbing, l.c. p. 717.  
 1909. ,, ,, Strauss. Wiss. Ergebn. D. Tiefsee Exp. vol. 20, pt. 1, p. 65, pl. 6, fig. 37 and text-figs. 39, 40.  
 1910. ,, ,, Stebbing, Gen. Cat. S.A. Crust. p. 449.

The following variations from the typical form as described and figured by Chevreux are noticeable, the chief differences being in the number of teeth on the 2nd joint of 3rd-5th peraeopods.

Side-plate 4, inferior margin less angularly convex.

Third peraeopod, 2nd joint with postero-inferior angle squarely produced, posterior margin with 10 teeth, very small basally, distally

not as large as in Chevreux's figure, inferior margin without teeth, a very shallow emargination just before postero-inferior angle.

Fourth peraeopod, 2nd joint with 14 teeth on posterior margin, the teeth indistinct basally.

Fifth peraeopod, 2nd joint 4.25 mm.  $\times$  2 mm., basal portion of posterior margin entire, distal portion with 8 teeth, greater part of posterior margin straight, not slightly convex.

Third uropod, the small 2nd joint on outer ramus much shorter.

*Length*: 28 mm.; posterior margin of 1st peraeon segment to apex of horn: 5 mm.; first and second antennae: 10 mm. and ca. 22 mm. respectively.

*Colour*: In spirit, yellowish.

*Locality*: Cape Point NE.  $\frac{1}{2}$  N., distant 49 miles. 700–1000 fathoms. 1 ? ♂. s.s. "Pieter Faure." 27/9/03. (S.A.M. No. A119.)

*Geogr. Distribution*: Azores, 3000 metres (Chevreux); off south point of Africa and at New Amsterdam, 2000–2500 metres (Strauss, "Valdivia").

Chevreux, in discussing the affinities of *C. alicei* Chevr. (l.c. No. 27, p. 6), says: "Il est également difficile d'admettre que le nombre des dents de l'article basal des pattes de la 5<sup>e</sup> paire [3rd peraeopods] puisse diminuer au cours de la croissance de l'animal et que ces dents finissent par disparaître tout à fait. En général, c'est plutôt le contraire qui a lieu," and makes this one reason for separating *C. alicei* from *C. challengerii* Stebbing. The present specimen, however, would seem to contradict this; moreover, Walker (1909, l.c. p. 327), in discussing *C. alicei*, says the teeth are present on the process of the 2nd joint of the 3rd peraeopod in the small specimen (3 mm.), but not in the large specimens (15 mm.). Unfortunately no descriptive account has yet been published of the "Valdivia" material. Since numerous specimens were taken by this expedition, it is probable that they will have some bearing on the question of the variation, according to age and sex, of these teeth.

CYPHOCARIS FAUREI n. sp.

(Plate XXVI. Fig. 4.)

Head half length of 1st peraeon segment; eyes pear-shaped, widest below. First segment of peraeon equal to 2nd and 3rd together, slightly swollen in front, but not projecting overhead. Side-plate 1 semi-circular, 2 triangular, deeper than long, anterior margin distally slightly emarginate, 3 subrectangular, as deep as long, 4 obovate,

anterior and inferior margins strongly convex, posterior margin concave on either side of a small projecting tooth situate a little below the middle, 5 subrectangular, longer than deep, similar to that figured by Chevreux for ♂ of *C. alicei* (l.c. p. 3, fig. 2 F), but the groove along the inferior margin less distinct, 6 subrectangular, as deep as long, 7 semicircular.

Pleon segment 4 concave at base, segments 1 and 2 with a low oblique keel running out to the subacute postero-inferior angles, postero-inferior angle of segment 3 a little produced, acute.

Telson equal in length to 4th, 5th and half 6th pleon segments together, long, narrow, tapering, cleft for  $\frac{3}{4}$  its length, apices entire, both margins and apices without spinules.

First antenna 12 mm. long, flagellum ca. 32-jointed, 1st joint strongly setose on inner and lower surfaces, each of the other joints with a few setules and one calceolus, accessory flagellum 7-jointed, 1st and 7th joints elongate.

Second antenna ca. 32 mm. long, 4th joint strongly convex on posterior margin (as in *C. alicei* Chevreux), 4th and 5th joints with tufts of setae on anterior margin, flagellum ca. 180-jointed.

Epistome shorter than broad, proximally not so produced as in *C. challengerii* Stebbing, not projecting in front of upper lip.

Lower lips as in *C. challengerii*, with thick fringe of setae on outer and inner margins of the lobes.

Mandibles similar to those of *C. anonyx* Boeck, molar distinct, denticulate, palp nearly twice length of trunk, 1st joint as broad as long, 2nd joint equal to trunk, its greatest width nearly equal to half its length, outer margin slightly concave proximally, distally straight, inner margin strongly angled, 3rd joint half length of 2nd, elongate ovate, apically acute, inner distal margin of 2nd and whole of inner margin of 3rd with fringe of long setae, those at apex of 3rd joint pectinate.

First maxilla, inner plate with ca. 12 plumose spine-setae, diminishing and passing gradually into ordinary setae near base, outer plate with 11 spines, the inner ones denticulate, palp with 1st joint broader than long, 2nd joint widest distally, distal margin subtruncate, with ca. 16 stout spine-teeth, increasing in size from inner to outer margin, and a number of setae.

Second maxilla as in *C. challengerii*, but more strongly setose.

Maxilliped, inner plate with 3 stout spine-teeth and several setae on apex and 1 more elongate spine-tooth just below apex, outer plate with ca. 20 close-set spine-teeth, rather more elongate than in *C. challengerii* or *C. anonyx*, at least twice as long as broad, palp strongly setose.

First gnathopod, 2nd joint equal to the 5 following joints, 5th and 6th subequal in length, but 5th rather broader, 7th but not 6th serrate on hind margin.

Second gnathopod, 2nd joint curved, twice as long as 3rd, 3rd and 5th subequal, 4th and 6th subequal and shorter than 3rd or 5th, inner margin of 6th not serrate, 7th not equal to width of 6th, curved, inner margin not serrate, setae on 5th and 6th joints not clavate.

First peraeopod not quite as long as 2nd gnathopod, 4th and 5th joints subequal, 6th a little longer, with 5 groups of spines on inner and 4 on outer margin, 7th half length of 6th.

Second peraeopod, 5th and 6th joints subequal, 4th a little longer, 7th  $\frac{2}{3}$  6th.

Third peraeopod, 2nd joint produced backwards in a long curved spiniform process reaching to end of 5th joint, hind margin quite entire, 4th joint equal to 5th, 6th a little longer, inner margin of 6th with 6 groups of spines, outer margin with 2 groups.

Fourth peraeopod, 2nd joint twice as long as broad, ovate, posterior margin produced a little beyond insertion of 3rd joint, apex acute, posterior margin evenly convex, with 5 quite small teeth, 4th, 5th and 6th joints increasing slightly in length, 5th with 3, 6th with 6 groups of spines on anterior margin, 7th half length of 6th.

Fifth peraeopod, 2nd joint as in 4th peraeopod, but a trifle larger and broader, posterior margin with 7 small teeth, 4th, 5th and 6th subequal, 5th with 4, 6th with 7 groups of spines on anterior margin, 7th half length of 6th.

First and second uropods, rami narrow lanceolate, subequal, a little shorter than peduncle, which is setose on inner margin, 2 spines on inner margin of inner ramus near base, rest of inner margin of both rami with small closely-set spinules.

Third uropod, outer ramus twice as long as peduncle and reaching telsonic apex, inner ramus a little shorter, both rami ovate lanceolate, inner margins fringed with long plumose setae, 2nd joint of outer ramus with a small spinule on either side of its base.

*Length*: 30 mm.; *depth* from back to inferior margin of 5th side-plate: 6 mm.

*Colour*: In spirit, yellowish.

*Locality*: Cape Point N. 70° E., distant 40 miles. 800 fathoms. 1 ♂. East London NW.  $\frac{1}{2}$  N., distant 18 miles. 250-300 fathoms. 1 ♂. s.s. "Pieter Faure." 22/7/03 and 15/4/01. (S.A.M., Nos. A120 and A2768.)

The distinguishing characters of this species are to be found in the 1st peraeon segment, the 4th side-plate, the 2nd joints of 3rd to 5th

peraeopods, the telsonic apex, the palp of 1st maxilla, the outer plate of the maxilliped, and the details of the spines and setae on the various appendages.

Named after the Cape Government trawler s.s. "Pieter Faure."

GEN. *LYSIANASSA* M. Edw.

1820. *Lysianassa* (part) M. Edwards.  
 1888. *Lysianax* (part) Stebbing, Challeng. Rep. vol. 29, p. 681.  
 1904. ,, Walker in Herdman's Ceylon Pearl Fish. Suppl.  
       Rep. 17, p. 242.  
 1906. *Lysianassa*, Stebbing, Das Tierreich 21, p. 37.  
 1909. ,, Walker, Tr. Linn. Soc. Lond. ser. 2, vol. 12, pt. 4,  
       p. 327.  
 1910. ,, Chevreux, Mém. Soc. Zool. Fr. vol. 23, p. 158.

*LYSIANASSA CUBENSIS* (Stebbing).

1897. *Lysianax cubensis* Stebbing, Tr. Linn. Soc. Lond. ser. 2, vol. 7,  
       pt. 2, p. 29, pl. 7, B.  
 1906. *Lysianassa* ,, id. l.c. p. 38.  
 1912. ,, ,, Chilton, Tr. Roy. Soc. Edinb. vol. 48, pt. 2,  
       p. 464, pl. 1, fig. 5.

Chilton has recorded this species from Saldanha Bay, and given a figure of the 3rd uropod, remarking that the keeled peduncle is quite characteristic. Compared with Stebbing's figure, the 3rd uropods of the South African specimens are not so short and stumpy; they are about intermediate between Stebbing's figure and Della Valle's figure of those of *L. bispinosa* (Della Valle). In the ♂ the keel is not so pronounced, and the whole uropod is a little longer than in the ♀, the rami are fringed with long setae. In both sexes the outer upper margin of the peduncle, which in Stebbing's specimen was notched, is in the South African specimens entire, as in *L. bispinosa*.

The 1st joint of the 1st antennae sometimes has indications of 1 or 2 teeth on the apex, but these are never prominent; the flagellum is 8-10-jointed, accessory flagellum 5-6-jointed, equal to half or a little more than half the flagellum.

Ultimate joint of 2nd antenna a little longer than penultimate, flagellum 9-12-jointed in ♀.

Teeth on apex of palp of 1st maxilla evanescent in large specimens, in smaller ones 6, as described by Stebbing.

Apex of hind margin of 6th joint of 2nd gnathopod in ♀ produced

as a narrow, subacute, upwardly curved lobe, scabrous and setose, palm transverse, slightly sinuous; in ♂ slightly produced as a blunt, rounded lobe.

Third to fifth peraeopods, hind margin of 2nd joint slightly serrate. Second uropod, rami more slender than in Stebbing's figure.

The *upper* posterior angle of 3rd pleon segment as well as the lower posterior angle is rounded. This forms a ready mark of distinction between this species and the other South African species *L. variegata* (Stimpson), which has the upper angle somewhat acute. The telson and the 3rd uropods are also distinguishing features between the two species.

*Length*: ♂ 13 mm., ovigerous ♀ 14-17 mm.

*Colour*: Whitish, semipellucid, with a faint pink or pale brown tinge dorsally, sometimes with a brown dorsal patch on peraeon segments 1-3 and 7 and a brown transverse band between pleon segments 1 and 2 and 2 and 3. Eyes black.

*Locality*: Table Bay. 1897 (Dr. W. F. Purcell). 1913-14 (K.H.B.) ♂♂ and ovigerous ♀♀; Buffel's Bay (False Bay). 28/9/13. (K.H.B.) ovigerous ♀♀; Glendower Beacon N.  $\frac{1}{2}$  W., distant 16 miles (near Port Alfred). 66 fathoms. 1 ♀, Cove Rock N.  $\frac{3}{4}$  E., distant 5 miles. 43 fathoms. 1 ♀. s.s. "Pieter Faure." 10/9/01 and 1/8/01. (S.A.M. Nos. 1271-72, 1285, A2929-32, A2536, A128 and A2741.)

*Geogr. Distribution*: Caribbean Sea (Stebbing); Cape Town and Saldanha Bay, 0-25 fathoms (Chilton).

In the character of the 3rd uropods and 1st antennae the South African specimens certainly approach the Mediterranean *L. bispinosa*, and with more material from other localities it might be possible to unite *L. cubensis* with the latter.

#### GEN. ARISTIAS Boeck.

1871. *Aristias* Boeck, Forh. Selsk. Christian. 1870, p. 106.  
 1890 & 95. ,, G. O. Sars, Crust. Norw. vol. 1, pp. 47, 675.  
 1893. ,, Della Valle, F. u. Fl. Neapel. vol. 20, p. 843.  
 1900. ,, Chevreux, Rés. Camp. Monaco. vol. 16, p. 18.  
 1906. ,, Stebbing, Das Tierreich 21, pp. 49, 718.  
 1907. ,, Walker, Ann. Mag. Nat. Hist. ser. 7, vol. 17, p. 454.

#### ARISTIAS SYMBIOTICA n. sp.

Lateral corners of head slightly produced, blunt. Eyes moderately large, oval or nearly circular. Side-plate 1 longer than deep. Postero-

inferior angle of 3rd pleon segment quadrate, hind margin finely serrulate.

Telson as broad as long, cleft for  $\frac{2}{3}$  length, lobes slightly dehiscent, each apex with a stout spine set in a notch, outer lateral margins strongly convex.

First antenna, 2nd joint half length of 1st, 3rd  $\frac{2}{3}$  2nd, flagellum nearly equal to peduncle, setose, ca. 8-jointed in ♂, 6 in ♀, accessory flagellum 2-jointed, the 2nd small.

Second antenna not as long as 1st, 4th and 5th peduncular joints subequal, flagellum  $1\frac{1}{2}$  times last peduncular joint, 5-jointed in ♂, 4 in ♀.

Mandible with the molar prominent but not very acuminate, like that of *A. antarcticus* Walker.

The other mouth-parts normal.

First gnathopod, 2nd joint slightly contracted in the middle, 6th joint a little longer but narrower than 5th, its inferior margin minutely spinulose, with a short spine in the middle and 2-3 at the apex.

Second gnathopod, 6th joint shorter and very slightly narrower than 5th, both joints setose.

First and second peraeopods normal.

Third to fifth peraeopods, hind margin of 2nd joint slightly convex, with 3-4 slight serrations in 3rd and 4th peraeopods, 6 in 5th.

First to third uropods with a short spine at end of peduncles, all the rami minutely spinulose on both margins, both rami of 3rd lanceolate, inner ramus longer than 1st joint of outer ramus, 2nd joint half length of 1st.

*Length*: ♂ 4 mm.; ♀ 3 mm.

*Colour*: In spirit, reddish pink.

*Locality*: Cape Hangklip NE.  $\frac{1}{4}$  E., distant 27 miles (False Bay). 105 fathoms. 1 ♂, several ovigerous ♀♀ and immature specimens. s.s. "Pieter Faure." 26/2/02. (S.A.M. No. A3816.)

All the species of this genus seem to lead a semiparasitic existence either in the branchial cavity of Ascidians (*A. neglectus*) or in sponges (*A. topsenti* Chevreux). Bonnier records his *A. commensalis* as living in association with a sponge and an Asteroid. The present species was found associated with an Ophiuroid occupying cavities and galleries in a sponge covering the gastropod *Tritonium murrayi* (Smith).

#### GEN. ICHNOPUS Costa.

1853. *Ichnopus* Costa, Rend. Soc. Borbon. n. s., vol. 2, p. 169.

1857. ,, id. Mem. Ac. Napoli. vol. 1, p. 188.

1890. *Ichnopus* G. O. Sars, Crust. Norw. vol. 1, p. 39.  
 1893. „ (part) Della Valle, F. Fl. Neapel. vol. 20, p. 800.  
 1895. „ Chevreux, Mem. Soc. Zool. Fr. vol. 8, p. 425.  
 1906. „ Stebbing, Das Tierreich 21, p. 52.  
 1909. „ Walker, Tr. Linn. Soc. Lond. 2nd ser., zool., vol. 12,  
 pt. 4, p. 328.

ICHNOPUS TAURUS Costa.

1851. *Ichnopus taurus* Costa, l.c. p. 172.  
 1861. „ *spinicornis* Boeck, Forh. Skand. Naturf. Møde 8,  
 p. 645.  
 1866. „ *affinis* Heller, Denk. Ak. Wien. vol. 26, 2, p. 19, pl. 2,  
 figs. 19-25.  
 1866. „ *calceolatus* id. ibid., p. 20, pl. 2, figs. 26-28.  
 1871. „ *minutus* Boeck, Forh. Selsk. Christian. 1870, p. 99.  
 1890. „ *spinicornis* G. O. Sars, l.c. p. 40, pl. 15.  
 1893. „ *taurus* Della Valle, l.c. p. 801, pl. 3, fig. 1, pl. 27,  
 figs. 1-22.  
 1906. „ *spinicornis* and *taurus* Stebbing, l.c. pp. 52-53.  
 1909. „ *serricrus* Walker, l.c. p. 328, pl. 43, fig. 1.

The single ♂ specimen agrees in every respect with the figures given by Sars for *I. spinicornis* Boeck (l.c. p. 40, pl. 15) and by Della Valle for *I. taurus* Costa (l.c. p. 801, pl. 3, fig. 1, pl. 27, figs. 1-22) except in the following points: the cutting-edge of mandibles is straight and has a small tooth at each end; the palp of 1st maxilla widens distally and has 6 little projecting teeth; 2nd joint of 3rd peraeopod resembles that figured by Walker for *I. serricrus*; apices of telson project a little beyond the stout spine at the end of outer margin and bear in addition a minute seta set in a small indent; accessory flagellum has 7 joints. The finger of gnathopod 1 expanded and spinose as in *I. taurus*.

There seems little doubt that *I. taurus* and *spinicornis* are conspecific. The discovery of the northern form *spinicornis* in the Java Sea is confirmatory. Sars' figures of the 2nd joint of the 3rd peraeopod give the impression of being intermediate between that of *taurus* and that of *serricrus*.

*Length*: 16 mm.

*Colour*: In spirit, yellowish, eyes pale brown.

*Locality*: Great Fish Point Lighthouse NW., distant 9 miles (near Port Alfred). 51 fathoms. 1 ♂. s.s. "Pieter Faure." 3/9/01. (S.A.M. No. A138.)

*Geogr. Distribution*: North Atlantic; Norway, 20-50 fathoms (Sars,

*spincornis*); Mediterranean (Della Valle, *taurus*); Java, 3° S. 107° E. (Stebbing, *spincornis*); Seychelles, 0–85 fathoms (Walker, *serricrus*).

GEN. SOCARNOPSIS Chevreux.

1910. *Socarnopsis* Chevreux, Mem. Soc. Zool. Fr. vol. 23 (1910), p. 164.

The *Ichnopus schmardae* Della Valle (non Heller), as Stebbing and Chevreux have pointed out, cannot be retained in the genus *Ichnopus*, but must be transferred to the present genus. Chevreux has enumerated the differences between *schmardae* and his own *crenulata*.

SOCARNOPSIS CRENULATA CHEVREUX.

1910. *Socarnopsis crenulata* Chevreux, l.c. p. 165, text-fig. 2 and pl. 7, figs. 1–13 (♂ ♀).

Chevreux's ♀ measured 5.5 mm., whereas the South African ♂ specimen measures double that size, so that it is not surprising to find a few minor points of difference.

First antenna, flagellum 20-jointed, 1st joint as long as peduncle with ca. 18 transverse rows of setae, accessory flagellum 7-jointed, 1st joint equal to the following 4 joints.

Maxilliped, inner apical angle of inner plate projecting, tooth-like, surrounded by several rather stout setae.

First and second gnathopods, 6th joint slightly more setiferous than in Chevreux's figures. The finger of the 2nd gnathopod has a small tooth at apex of interior margin as in 1st gnathopod.

Third peraeopod, anterior margin of 2nd joint with 16 spinules, anterior margin of 6th joint with 6 pairs of spinules.

Fourth peraeopod, anterior margin of 2nd joint with 11 spinules, the basal portion being unarmed.

Fifth peraeopod similarly with 14 spinules, chiefly at the distal end.

First and second uropods, peduncle and rami each with a row of spines along upper margins.

Third uropod, outer ramus with distinct 2nd joint and a small spinule on inner apex of 1st joint.

*Length*: 11 mm.

*Colour*: In spirit, yellowish, eyes pale brown.

*Locality*: Glendower Beacon N.  $\frac{1}{2}$  W., distant 16 miles (near Port Alfred). 66 fathoms. 1 ♂. s.s. "Pieter Faure." 10/9/01. (S.A.M. No. A135.)

*Geogr. Distribution*: Mediterranean, Hyères, Corsica, coast of Tunis, 6-170 metres.

GEN. HIPPOMEDON Boeck.

1871. *Hippomedon* Boeck, Forh. Selsk. Christian. 1870, p. 102.  
 1906. „ „ Stebbing, Das Tierreich 21, pp. 58, 719.

HIPPOMEDON LONGIMANUS (Stebbing).

1888. *Plotamon longimanus* Stebbing, Challeng. Rep. vol. 29, p. 643,  
 pl. 13.  
 1906. *Hippomedon* „ „ id. l.c. p. 60.  
 1910. „ „ „ id. Gen. Cat. S.A. Crust. p. 449.

Stebbing has recorded a specimen from off the Cape Peninsula without further remark than that the eyes were nonapparent. A smaller and presumably young specimen of the same species from off Cape Point shows the following peculiarities:

The dorsal keel on the 4th pleon segment does not end acutely, the 1st joint of the 1st antenna is not produced, second antenna not very much longer than first, flagellum 15-jointed, inner plate of 1st maxilla with 4 setae (as in *H. geelongi* Stebbing), but inner margin not setose, palp not hirsute, with 12 short apical spine-teeth, inner plate of 2nd maxilla not setose along inner margin and not basally widened, maxilliped with inner plates not remarkably broad and 3rd joint of palp broadly oval, palm of 2nd gnathopod not concave, apex of telson more rounded.

The first, second and last of these characters are found also in Stebbing's Cape specimen, the mouth parts of which, however, I have not dissected.

Three other specimens from the Natal coast, also apparently immature, are more typical in having the 2nd antenna much longer than the 1st, inner plate of 1st maxilla with 2 setae and the telsonic apices fairly narrow. On the other hand, they resemble the Cape Point specimen in having no acute keel on 4th pleon segment, palm of 2nd gnathopod not concave, inner plate of 2nd maxilla and inner plate of maxilliped not broad, and 3rd joint of palp of maxilliped broadly oval. The postero-inferior angles of 3rd pleon segment are quite short, shorter even than in the Challenger specimen, whereas in the other two Cape specimens the process is longer than in the Challenger specimen.

*Length*: 9 mm. (Cape), 8 mm. (Natal).

*Colour*: In spirit, yellowish white.



Second antenna in ♂ equal to  $\frac{3}{4}$  total length, 4th and 5th joints subequal, flagellum with 1st joint not large.

Epistome not projecting.

Mandible, molar well developed, palp affixed above it, 3rd joint almost equal to 2nd.

First maxilla, inner plate with 2 plumose setae on apex and fine setules along inner margin, outer plate with 11 spines, palp large widest across the straight distal margin which bears 12-13 short, stout, blunt and closely-set spine-teeth and 1-2 setae.

Second maxilla, plates subequal in width, inner a little shorter than outer, the oblique apex with numerous spines, inner margin setulose.

Maxilliped, apex of inner plate with 2 teeth and several spines, inner margin with ca. 8 stout setae, outer plate reaching a little beyond apex of 2nd joint of palp, inner margin with ca. 14 short, stout, blunt and closely-set spine-teeth, increasing in length distally, palp with 4th joint nearly equal to 3rd.

First gnathopod, 2nd joint equals 4th, 5th and 6th together, 3rd shorter than 4th, 4th and 6th subequal, 5th longer, 6th oblong, palm oblique, with 1 rather strong seta at very ill-defined junction with inferior margin, setae on both margins and palm fairly numerous, finger not quite half length of 6th but longer than palm, without a tooth on inner margin.

Second gnathopod slender, 2nd joint equals 4th, 5th and 6th together, 3rd rather more than half length of 2nd and equal to 5th, 5th not expanded at inferior apex, scabrous, 6th equal to half length of inner margin of 5th, ovate, scarcely any palm, finger minute, inferior margin of 4th and both margins of 5th and 6th densely setose.

First and second peraeopods, 2nd joint equal to 3rd and 4th together, 5th shorter than 4th, 6th subequal to 4th, finger more than half length of 6th, with secondary margins at apex, posterior margin 4th, 5th and 6th joints with long setae, none of the joints expanded.

Third peraeopod, 2nd joint broadly pear-shaped, narrowing distally, about as broad as long, anterior margin with 15 spines, posterior margin with slight indents, 3rd short, 4th not much expanded or produced, 5th subequal to 4th, anterior margin with 3 groups of spinules, 6th longer, anterior margin with 4 pairs of unequal spines, finger  $\frac{2}{3}$  length of 6th, without secondary margins.

Fourth peraeopod, 2nd joint oblong, half as long again as broad, anterior margin distally with 12 spines, posterior margin straight, with slight indents, other joints as in 3rd peraeopod but longer.

Fifth peraeopod, 2nd joint oblong, half as long again as broad,

anterior margin slightly sinuous, distally with 10 spines, posterior margin convex, with indents.

First uropod, rami and peduncle subequal, inner ramus slightly the shorter, 2-3 spines on upper margin of peduncle near apex.

Second uropod, rami and peduncle subequal, the latter with 6 spines on upper margin.

Third uropod, extending beyond 2nd, peduncle with short, stout spine near apex, rami longer than peduncle, subequal, lanceolate, inner margin of both with plumose setae, outer ramus with long tapering 2nd joint indistinctly defined from 1st.

*Length*: ♂ 14 mm.

*Colour*: In spirit, pale yellowish or dull pinkish.

*Locality*: Port Shepstone WNW., distant  $2\frac{1}{2}$  miles (Natal). 24 fathoms. 1 ♂; Glendower Beacon N.  $\frac{1}{2}$  W., distant 16 miles (near Port Alfred). 66 fathoms. 1 ? ♀. s.s. "Pieter Faure." 15/3/01 and 10/9/01. (S.A.M. Nos. A131 and A134.)

Allied to *U. gigas* Dana, but without the carinate and apically produced 4th pleon segment of that species.

## FAMILY STEGOCEPHALIDAE.

1852. *Stegocephalinae* Dana, Amer. J. Sci. ser. 2, vol. 14, p. 310.  
 1882. *Stegocephalidae* G. O. Sars, Forh. Selsk. Christian. no. 18, p. 23.  
 1886. *Lysianassina* (part) Gerstaecker in Bronn's Tierreich vol. 5, pt. 2, p. 499.  
 1888. *Stegocephalidae* Stebbing, Challeng. Rep. vol. 29, p. 727.  
 1891. " G. O. Sars, Crust. Norw. vol. 1, p. 196.  
 1893. *Gammaridi* (part) Della Valle, F. Fl. Neapel. vol. 20, p. 620.  
 1906. *Stegocephalidae* Stebbing, Das Tierreich 21, p. 88.  
 1906. " Chevreux, Exp. Antarct. Franç. Amphip. p. 22.

## GEN. STEGOCEPHALOIDES G. O. Sars.

1891. *Stegocephaloides* G. O. Sars, l.c. p. 201.  
 1893. " (part) Della Valle, l.c. p. 629.  
 1906. " Stebbing, l.c. p. 91.  
 1909. " Strauss, Wiss. Ergebn. D. Tiefsee-Exp. vol. 20, pt. 1, p. 72, text-figs. 44-46.

In the last-mentioned work Strauss has discussed the anatomy of the eye of "*S. valdiviae* n. sp." No specific diagnosis however was given, nor has any been published since; the name "*valdiviae*" there-

fore remains a *nomen nudum*. The species is said to be widely distributed in the South Atlantic and Indian Oceans, from 0–2000 fathoms; it is dark brown in colour, and measures 10 mm. It may be the same as *Stegocephalus globulus* Walker (1909, Tr. Linn. Soc. Lond. 2nd ser., zool., vol. 12, pt. 4, p. 329, pl. 42A) from the Indian Ocean, which measures 12 mm. and has the head completely hidden under the very tumid 1st peraeon segment and the large 1st side-plate; or it may possibly be the following species.

## STEGOCEPHALOIDES AUSTRALIS n. sp.

(Plate XXVIII. Fig. 29.)

Head nearly hidden under the tumid 1st peraeon segment, which is equal to the 2nd and 3rd together. Eyes wanting. Antero-lateral angles not prominent. Side-plate 1 triangular, as deep as its segment and deeper than long, its basal margin longer than either of the others, postero-inferior angle acute, 4 deeper than its segment and deeper than long, posterior and inferior margins differentiated by a slight angle, postero-inferior angle rounded (cf. Sars' figure of *S. christianiensis* Boeck, l.c. pl. 70, fig. 2), postero-inferior angle of 5 subacute, 6 slightly larger, not smaller, than 7, subquadrate, a little deeper than long, postero-inferior angle rounded, 7 deeper than long, postero-inferior angle rounded. Postero-inferior angle of 3rd pleon segment rounded.

Telson ovate, tapering, nearly half as long again as basal width, cleft to a little beyond centre.

First antenna, 1st joint equals 2nd and 3rd combined, flagellum with 1st joint equal to 1st peduncular joint or to 2nd and 3rd flagellum joints combined, 8-jointed, accessory flagellum half length of 1st flagellal joint, 1 jointed with 2 apical unequal setae.

Second antenna slender and a little shorter than 1st antenna, 2nd joint shortest, 4th longer than 3rd, flagellum 8-jointed, scarcely longer than 4th peduncular joint.

Upper lip very asymmetrically bilobed.

Lower lip lobes gradually tapering, with incurved apical triangular tooth.

Mandibles, cutting-edge with 11 teeth in both mandibles, the teeth largest anteriorly, secondary cutting-edge in left with ca. 25 smaller teeth.

First maxilla, inner plate with plumose setae all along upper oblique margin, outer plate with 8 denticulate spines, palp not reaching apex of outer plate, with 4 apical serrulate setae.

Second maxilla, inner plate broad and rounded with plumose setae on inner margin, outer plate much narrower and half as long again, bearing on its apex 8 apically hooked setae, which are rather more than half as long as the outer plate.

Maxilliped, inner apical angles of inner and outer plates nearly right angles, that of inner plate with 3-4 long setae, that of outer plate with a little tuft of setules, distal margin of outer plate rather irregular, reaching to or even a trifle beyond apex of 2nd joint of palp, inner margin not serrate.

First gnathopod, 2nd joint equal to rest of limb, both margins, especially the hinder, with long simple setae, 6th joint longer than 5th, ovate, tapering, inferior margin very slightly concave and thickly set with long setae, otherwise as figured for *S. globulus* Walker.

Second gnathopod, 2nd joint narrow, almost as long as rest of limb, slightly curved, 6th joint half as long again as 5th, narrower both relatively and absolutely than 6th joint of first gnathopod.

First peraeopod, 2nd joint subequal to 4th and 5th combined, 4th a little longer than 5th and apically produced on anterior margin to half way along 5th, 2 setae on its apex, hind margin of 5th with 5 pairs of spines, 6th half as long again as 5th, hind margin with 7 pairs of spinules, 7th  $\frac{1}{2}$  6th.

Second peraeopod, 4th joint  $1\frac{1}{4}$  times 5th, but produced on anterior margin only  $\frac{1}{3}$  length of 5th, 5th and 6th subequal, hind margin of 5th with 6 pairs of spines, of 6th with 5 pairs of spinules.

Third peraeopod, 2nd joint equal to 4th-7th joints combined, narrow, straight, 4th longer than 5th and produced for  $\frac{1}{3}$  along anterior margin of 5th, its apex with 2 setae, anterior margin of 4th with 6 pairs of spines, of 5th with 4 spines and an apical tuft, of 6th with 6 pairs of spinules, 6th longer than 4th, 7th  $\frac{1}{3}$  6th.

Fourth peraeopod similar to third, 2nd joint a little stouter, but still narrow, linear and not expanded.

Fifth peraeopod, 2nd joint (exclusive of apical projection) equal to 3rd-5th joints combined, broadly expanded on hind margin with the rounded apical projection reaching to apex of 4th joint, hind margin feebly serrate, 4th longer than 5th, hind apical projection reaching half way along 5th, 5th with 6 groups of spines on anterior margin, 6th equal to 4th and 5th combined, slender, anterior margin with ca. 12 groups of spines, 7th nearly  $\frac{1}{2}$  6th.

First uropod, upper (outer) and inner margins of peduncle with short, equidistant spines, rami shorter than peduncle, equal, unarmed.

Second uropod, peduncle equal to rami of 1st uropod, margins spinose, rami a little shorter than peduncle, equal, unarmed.

Third uropod, peduncle equal to half the length of 2nd uropod, margins unarmed, rami longer than peduncle, inner a little shorter than outer, both unarmed.

*Length*: 8 mm.; depth at 4th side-plate, 3.5 mm.

*Colour*: In spirit, pale brown.

*Locality*: Cape Point E. by N., distant 29 miles. 250 fathoms. 21 (♂♂ and ovigerous ♀♀); Cape Point N. 81° E., distant 32 miles. 460 fathoms. 4. s.s. "Pieter Faure." 27/8/03 and 20/8/03. (S.A.M. Nos. A143 and A144.)

STEGOCEPHALOIDES ATTINGENS n. sp.

(Plate XXVI. Fig. 5.)

Very close to *S. auratus* (G. O. Sars), but differing in the following respects: postero-lateral angles of pleon segment 3 not serrate; side-plate 4 more evenly curved with the inferior margin shorter; side-plate 6 evenly narrowed; accessory flagellum of 1st antenna scarcely half, sometimes only  $\frac{1}{3}$ , length of 1st flagellar joint; peraeopod 5 with 2nd joint less strongly serrate on hind margin, apex less acute, 6th scarcely less than 4th and 5th together.

*Length*: 8 mm.; depth across side-plate 4, 3 mm.

*Colour*: In spirit, pale pinkish or yellowish.

*Locality*: Cape Point NE., distant 40 miles. 560-700 fathoms. 9 (some ovigerous ♀♀); Cape Point NE. by E., distant 36 miles. 650 fathoms. 1 ♂. 3 ovigerous ♀♀. s.s. "Pieter Faure." 17/9/03 and 15/7/03. (S.A.M. Nos. A2766 and A2782.)

Differs from the preceding species in having the tooth at apex of the lobe of lower lip linear (as in Sars' figure of *Stegocephalus inflatus* l.c. pl. 69) instead of triangular; as well as in the more obvious features of the 4th side-plate and 2nd joint of the 5th peraeopod.

GEN. PARANDANIA Stebbing.

1899. *Parandania* Stebbing, Ann. Mag. Nat. Hist. ser. 7, vol. 4, p. 206.

1906. „ id. Das Tierreich 21, p. 95.

PARANDANIA BOECKI Stebbing.

1888. *Andania boeckii* Stebbing, Challeng. Rep. vol. 29, p. 735, pl. 36.

1893. *Stegocephalus boeckii* Della Valle, F. Fl. Neapel. vol. 20, p. 628, pl. 59, fig. 36.

1899. *Parandania* „ Stebbing, l.c. p. 206.

1906. *Parandania boeckii*, id. l.c. p. 95, figs. 19, 20.

1909. " " Walker, Tr. Linn. Soc. Lond. 2nd ser.,  
zool., vol. 12, pt. 4, p. 330.

The South African specimens call for no remarks except that: the second maxilla has only 1 seta in the middle of the outer margin of the outer plate, the 2nd and 3rd pleon segments are without spines along the inferior margin. The rami of 1st and 2nd uropods as in the typical Challenger specimen, though the spines appear to be less numerous, as far as can be judged, since only their scars remain; outer margin of outer ramus of 1st and 2nd uropods scarcely or not at all serrulate.

*Length*: 21 mm.

*Colour*: In spirit, transparent pinkish.

*Locality*: Buffalo River NW. by N., distant 21 miles (off East London). 490 fathoms. 1 ovigerous ♀; Cape Point NE. by E., distant 36 miles. 650 fathoms. 1 juv. s.s. "Pieter Faure." 23/4/01 and 15/7/03. (S.A.M. Nos. A139 and A2783.)

*Geogr. Distribution*: Off Pernambuco, 675 fathoms (Stebbing); 8° 16' S., 51° 26' E., and NW. of Desroche's Atoll, Indian Ocean, 0-900 fathoms (Walker).

## FAMILY AMPELISCIDAE

1882. *Ampeliscidae* G. O. Sars, Forh. Selsk. Christian. no. 18, p. 29.

1906. " Stebbing, Das Tierreich 21, pp. 97, 721.  
(References.)

1913. " id. Gen. Cat. S.A. Crust. p. 450. (References.)

### GEN. AMPELISCA Kröyer.

1842. *Ampelisca* Kröyer, Naturh. Tidsskr. vol. 4, p. 154.

1906. " Stebbing, l.c. pp. 98, 721. (References.)

1910. " id. l.c. p. 450.

1912. " Chevreux, Bull. Mus. d'Hist. Nat. 1912, p. 210.

### AMPELISCA BREVICORNIS Costa.

1853. *Araneops brevicornis* Costa, Rend. Soc. Bourb. n.s., vol. 2,  
p. 171.

1904. *Ampelisca* " Walker in Herdman's Ceylon Pearl Fish.  
Suppl. Rep. 17, p. 253.

1908. " " Stebbing, S.A. Crust. pt. 4, p. 70.

1910. " " id. Gen. Cat. S.A. Crust. p. 450.

Stebbing has remarked on the large size to which South African specimens grow, in comparison with specimens of the same species from other localities. Thus a ♂ specimen of this species from "Fresh" (error = False) Bay measures, according to Stebbing, 17 mm.

Another specimen from the "Pieter Faure" collection (Cape St. Blaize N. 42° E., distant 11 miles. 10/6/98. S.A.M. No. A151) surpasses this, attaining a length of 21 mm. It is an ovigerous ♀, and agrees with Stebbing's ♂ specimen, although both specimens have the rami of 3rd uropod much broader and the apices more rounded than in Sars' figures.

AMPELISCA DIADEMA (Costa).

1853. *Araneops diadema* Costa, Rend. Soc. Bourb. n.s., vol. 2, p. 171.  
 1862. *Ampelisca gaimardii* (part) Bate, Cat. Amphip. Brit. Mus., p. 91.  
 1867. ,, *diadema* Costa, Ann. Mus. Napoli. vol. 4, p. 45.  
 1871. ,, *assimilis* Boeck, Forh. Selsk. Christian. 1870, p. 222.  
 1891. ,, ,, G. O. Sars, Crust. Norw. vol. 1, p. 168, pl. 58, fig. 2.  
 1893. ,, *diadema* Della Valle, F. u. Fl. Neapel. vol. 20, p. 479, pl. 4, fig. 2, pl. 37, figs. 19, 20, 22-28, 30-38, pl. 38, figs. 2, 7, 8, 11, 12, 14, 15, pl. 40, figs. 39, 40, pl. 41, fig. 23, pl. 44, figs. 4, 8, 9, 11, pl. 45, figs. 17, 18, pl. 46, figs. 4-6, pl. 47, fig. 29, pl. 48, fig. 19.  
 1906. ,, ,, Stebbing, l.c. p. 107.  
 1910. ,, ,, Chevreux, Mém. Soc. Zool. Fr. vol. 23, p. 181.

Agrees with the descriptions and figures of Sars and Della Valle, except for the following differences: postero-inferior angle of 3rd pleon segment in ♂ as figured for ♀ by Sars, in ♀ somewhat more quadrate; telson in ♀ with only 3 marginal setae (in ♂ broken); flagellum of 1st antenna 35-jointed in ♂, 20 in ♀; ventral hooks on peraeon segment 7 very large and prominent, those on segments 5 and 6 small.

*Length*: 8 mm.

*Colour*: In spirit, pale pinkish.

*Locality*: Kalk Bay (False Bay). 1897. (Dr. W. F. Purcell). 1 specimen at low tide; Port Shepstone WNW., distant 2½ miles

(Natal). 24 fathoms. 1 ♂, 2 ♀ ♀. s.s. "Pieter Faure." 15/3/01. (S.A.M. Nos. 1295 and A158.)

*Geogr. Distribution*: Mediterranean (Costa, Della Valle, Chevreux); west and south coasts of Norway (Sars); west coast of France (Chevreux); Great Britain (Norman).

AMPELISCA MIOPS n. sp.

(Plate XXVI. Fig. 6.)

Head longer than first two peraeon segments together, transversely truncate. Eyes, one on each side situate on the margin below the antero-lateral angle, cornea thickened, conspicuous but not large, with (faded) red pigment behind it. Side-plate 1 concealing base of 2nd antenna, 1-3 each with a tooth at postero-inferior angle, inferior margin not strongly convex, 4 with postero-inferior angle rounded, depth scarcely  $1\frac{1}{2}$  times the greatest length. Posterior margin of 3rd pleon segment sinuate above the acute moderately produced postero-inferior angle (cf. *A. eschrichti* Kröyer). Keel on 4th pleon segment ending acutely, but not greatly raised above 5th segment.

Telson with bifid apices, the inner point projecting a good way beyond the outer, 2 unequal setules in the notch, 1-3 fine setules down the middle of the dorsal surface.

First antenna  $\frac{1}{3}$  length of body, 2nd joint twice length of 1st, flagellum a little longer than peduncle, ca. 24-jointed.

Second antenna lost.

Upper lip broader than long, the rounded distal margin with a small shallow notch, setulose.

Lower lip, lobes short and broad, apices rounded truncate.

Mandibles, cutting-edge 5-dentate, secondary cutting-edge 4-dentate in left, 3 in right, spine-row with 5 spines in left, 4 in right, 2nd joint of palp almost linear, but slightly enlarged in basal half, 3rd joint half length of 2nd.

First maxilla, inner plate with 2 apical setae, outer plate with 11 spines, palp large, apex truncate, cut into 3 teeth and armed with 4 spines and several setae.

Second maxilla, outer plate narrower than inner, distally rather broader than proximally.

Maxilliped, inner plate with 1 apical spine and several plumose setae, outer plate reaching to end of the long 3rd joint of palp, inner margin with 11 ovate spines, passing distally into ordinary plumose setae, 4th joint not produced apically beyond insertion of 5th joint.

First gnathopod, 6th joint  $\frac{2}{3}$  length of 5th, both joints linear, densely setose but without special armature.

Second gnathopod similar, but longer and more slender.

First peraeopod, 4th joint linear, not expanded or produced, 6th twice length of 5th and not quite half 4th, finger longer than 5th and 6th together.

Second peraeopod similar, but 4th joint slightly expanded (elongate-ovate), not produced, strongly setose.

Third peraeopod, hind margin of 2nd joint with a strong lobe-like expansion, anterior apex of 4th and 5th each with one long spine-seta, posterior apex of 5th with 2 long unequal spines, anterior margin of 5th with regularly spaced setae, posterior margin with 4 short stout spines, 5th a little longer than 3rd and 4th together, 6th shorter than 5th but longer than 4th.

Fourth peraeopod, posterior margin of 2nd joint evenly curved, 5th as in 3rd peraeopod, but anterior margin with 6 large and several smaller spines, anterior apex with 3 spines, posterior apex with 3 long and 2 short spines, 6th as in 3rd peraeopod.

Fifth peraeopod, 2nd joint evenly expanding distally, distal margin nearly transversely truncate, posterior apical angle rounded, reaching to end of 3rd, which is twice length of 4th, 4th not expanded, but anterior apex shortly produced, 5th subequal to 4th, anterior apex very shortly produced, 6th nearly equal to 3rd and 4th together, oval, twice as long as broad, with 2 short spines on anterior apex, 7th equal in length to width of 6th, ovate, tapering rather rapidly to a fine point.

First uropod, peduncle and rami subequal, upper margin of peduncle spinose.

Second uropod stouter, peduncle longer than rami, upper margin with 3 pairs of spines, apex with a group of 3 spines, outer ramus a little shorter than inner, inner margin with 4 spines and a long spine near the apex, inner ramus with both margins spinose.

Third uropods, peduncle with 1 spine on middle of inner margin, rami subequal, lanceolate, outer with both margins setose, the setae on inner margin springing from rather deep inlets, inner ramus broader, inner margin with small spinules and a tuft of setae on apex.

*Length*: 12 mm.

*Colour*: In spirit, yellowish.

*Locality*: Umhloti River mouth N. by W.  $\frac{1}{2}$  W., distant  $8\frac{1}{2}$  miles. 40 fathoms. 1 (?) ♀. s.s. "Pieter Faure." 18/12/00. (S.A.M. No. A2762.)

The single pair of eyes, 3rd pleon segment and telson serve to distinguish this species.

## AMPELISCA PALMATA n. sp.

(Plate XXVIII. Figs. 30, 31.)

Head equal to first three peraeon segments together, nearly transversely truncate. Corneal lens distinct, small, the lower near the antero-lateral angle. Side-plate 1 large, nearly concealing base of 2nd antenna, inferior margin of 1-3 moderately convex, the tooth at postero-inferior angle large. Pleon segment 3 $\frac{1}{2}$  with postero-inferior angle quadrate, scarcely produced, segment 4 with a low keel not strongly raised above segment 5, apex subacute, no indent at base.

Telson with 3 apical and 4 marginal spines in ♀ (A2760); in the other ♀ ♀ (A2747) the marginal spines are extremely reduced or even absent; in the ♂ only the apical spines present.

First antenna extending well beyond peduncle of 2nd antenna, its peduncle reaching end of penultimate joint of peduncle of 2nd antenna, 2nd joint longer than 1st, flagellum much longer than peduncle, ca. 26-jointed.

Second antenna reaching to end of 2nd pleon segment, ultimate and penultimate joints equal, flagellum longer than peduncle, ca. 34-jointed.

Mandible, 2nd joint of palp oval, 2 or 3 times as long as broad, 3rd joint slender,  $\frac{2}{3}$  length of 2nd.

Maxilliped, outer plate with 10 narrow-lanceolate spine-teeth on inner margin, 3rd joint of palp broadly oval, but not extended beyond insertion of 4th.

First gnathopod, 6th joint a little longer and broader than 5th, palm well defined, a little oblique, shorter than hind margin, with setae and several large spines decreasing in size towards hinge, finger matching palm, inner margin spinose.

Second gnathopod, 5th joint  $\frac{2}{3}$  length of 6th, both narrow linear.

First and second peraeopods, 4th joint not apically produced, 7th longer than 5th and 6th together.

Third peraeopod, front margin of 2nd joint irregularly setose and spinose, posterior apex of 5th with 1 spine nearly as long as, and 1 half as long as 6th, both spines apically serrate, anterior apex with 2 setae (1 very long), posterior margin of 6th with 5 spines, anterior margin with 5 spinules on proximal half, the distal half with setae becoming longer towards the apex, which is prominently produced beyond the insertion of the 7th.

Fourth peraeopod, anterior margin of 5th joint irregularly spinulose, posterior apex with several long serrate spines, anterior margin of 6th spinose, apex with long setae, hind margin with 2 spines on distal half.

Fifth pereopod, 2nd joint obliquely truncate, inferior angle rounded and reaching to end of 3rd, 3rd longer than 4th, anterior apex bevelled off, with 5 spinules. 4th narrowly produced half way along the anterior margin of 5th, 5th longer than 4th, 6th equal to 4th and 5th together, 7th equal to 6th, tapering gradually.

First uropod, rami subequal, longer than peduncle, margins of peduncle sparsely spinose, inner ramus closely spinose, outer unarmed.

Second uropod, rami subequal, shorter than peduncle, both margins of peduncle and both rami spinose.

Third uropod, peduncle with 2 spines on inner margin, rami elongate-lanceolate, outer quite slender, confronted margins feebly setose.

*Length*: 14 mm. and 10 mm.

*Colour*: In spirit, pale pinkish.

*Locality*: Umhloti River mouth NW.  $\frac{1}{2}$  W., distant 15 miles (Natal). 100 fathoms. 1 ovigerous ♀ and 1 young; Beacon E. of East London N.  $\frac{1}{4}$  E., distant 10 miles. 52 fathoms. ♂♂ and ovigerous ♀♀. s.s. "Pieter Faure." 19/12/00 and 12/7/01. (S.A.M. Nos. A2760 and A2747.)

This species is very near *A. spinipes* Boeck, but differs in the 3rd and 4th pleon segments and the 1st gnathopod.

#### AMPELISCA NATALENSIS n. sp.

(Plate XXVI. Fig. 7.)

Except for the serrate outer ramus of 3rd uropods these specimens are very near to the figures of *A. serraticaudata* Chevreux. Della Valle in 1893 unites *serraticaudata* with *rubella* Costa, and in 1900 Chevreux (Rés. Camp. Monaco vol. 16, p. 44) adopts this synonymy. But Chevreux's figure of the 2nd joint of 5th pereopod of his species is utterly different from Della Valle's figure of that of *rubella*. There is also a difference in the eyes, the corneal lens being apparently present in *serraticaudata*, but absent in *rubella*.

As there still remains some doubt, therefore, with regard to Chevreux's species, I consider it best to institute a new one for the present specimens.

Corneal lens distinct, small, the lower in the antero-inferior angles of head, 4th pleon segment slightly indented basally, keel rising gradually, its upper margin straight, posterior end rectangular, postero-inferior angle of 3rd pleon segment with a slightly produced point.

Telson not long, only 1 seta on each apex, which is slightly bifid, the inner point projecting, surface without setae.

First antenna reaching well beyond peduncle of 2nd antenna, peduncle not reaching to end of penultimate peduncular joint of 2nd antenna.

Mandibular palp with 2nd joint strongly laminar, twice as long as broad.

Maxilliped with all the spine-setae on inner margin of outer plate linear.

First gnathopod, 6th joint oval, a little shorter than 5th.

First and second peraeopods, 7th joint a trifle longer than 5th and 6th together.

Fifth peraeopod, 3rd joint equal to 4th and 5th together, 6th equal to 3rd, ovate, 7th shorter than 6th; 2nd joint very distinctive, very obliquely bevelled off from postero-inferior angle, which reaches end of 3rd, this oblique portion of the margin slightly concave.

Third uropod, peduncle with 1-2 spines on inner margin, outer ramus narrow, inner lanceolate, some long setae on the opposed margins.

*Length*: 8 and 10 mm. respectively.

*Colour*: In spirit, whitish or pinkish.

*Locality*: Umhloti River mouth NW.  $\frac{1}{2}$  W., distant 15 miles (Natal). 100 fathoms. 2 specimens; Port Shepstone WNW., distant  $2\frac{1}{2}$  miles (Natal). 24 fathoms. 1 specimen. s.s. "Pieter Faure." 19/12/00 and 15/3/01. (S.A.M. Nos. A2763 and A2954.)

Owing to insufficient or badly preserved material it is impossible to assign names to the following:

#### AMPELISCA sp. ? No. 1.

Three specimens from the s.s. "Pieter Faure" collection (Umhloti River mouth N. by W.  $\frac{1}{2}$  W., distant 8 miles (Natal). 40 fathoms. 18/12/00). The absence of ovigerous ♀ ♀ leaves it uncertain whether these are mature or not.

While agreeing in general with *A. brevicornis*, the head has a gibbous profile, the postero-inferior angle of 3rd pleon segment resembles that of *A. californica* Holmes, and the crest on the 4th pleon segment is like that figured for the ♀ of *A. gibba* by G. O. Sars.

Peduncle of 2nd antennae fringed above with little tufts of setae.

Second joint of mandibular palp thrice as long as wide, 3rd joint not quite as long and more slender:

Peraeopods 1, 2 and 5, like those of *A. brevicornis*.

The rami of third uropod broadly ovate,  $2\frac{1}{2}$  times as long as wide, apices rounded (cf. those of *A. pacifica* Holmes).

*Length*: 10 mm. (S.A.M. No. A159.)

AMPELISCA sp. ? No. 2.

This specimen (Beacon E. of East London N.  $\frac{1}{4}$  E., distant 10 miles. 52 fathoms. s.s. "Pieter Faure." 12/7/01.) differs from *A. brevicornis* only in the non-produced 4th joint of 1st peraeopod, the quadrate postero-inferior angle of 3rd pleon segment, with a slight notch and shortly produced point, and the broadly ovate rami of 3rd uropod, with apex of inner ramus hook-like and incurved. Mandibular palp with 2nd joint linear, 3rd equal to 2nd.

*Length*: 8 mm. (S.A.M. No. A2748.)

It bears some resemblance to *A. californica* Holmes.

GEN. BYBLIS Boeck.

1871. *Byblis* Boeck, Forh. Selsk. Christian. 1870, p. 228.  
 1906. ,, Stebbing, Das Tierreich, 21, p. 111.  
 1908. ,, id., S. African Crust. pt. 4, p. 71.

BYBLIS GAIMARDII Kröyer.

1846. *Ampelisca gaimardii* Kröyer, Voy. Nord. Crust. pl. 23, figs. 1a-y.  
 1871. *Byblis* ,, Boeck, l.c. p. 228.  
 1891. ,, ,, G. O. Sars, Crust. Norw. vol. 1, p. 183,  
 pl. 64.  
 1893. ,, ,, Della Valle, F. u. Fl. Neapel, vol. 20,  
 p. 472, pl. 57, figs. 39-41.  
 1906. ,, ,, Stebbing, l.c. p. 113.  
 1908. ,, ,, Pearse, Proc. U.S. Nat. Mus. vol. 34,  
 p. 518.

These specimens resemble the description and figures of Sars except in the following points: 2nd joint of mandibular palp of nearly same width throughout, the basal half being only slightly wider, 3rd joint not half as long as 2nd; outer plate of maxilliped with only 9 broadly lanceolate (instead of 14 narrow lanceolate) spines; 6th joint of 1st and 2nd peraeopods proportionately longer, being almost twice as long as 5th, 7th longer than 5th but shorter than 6th; transverse rows of spines on 5th joint of 3rd and 4th peraeopods fewer and containing fewer spines in each; postero-inferior angle of 2nd joint of 5th peraeo-

pod not so well marked, 5th not quite equal to 3rd plus 4th and proportionately stouter, with more robust spines.

*Length*: 8-10 mm.

*Colour*: In spirit, uniform pinkish.

*Locality*: Beacon E. of East London N.  $\frac{1}{4}$  E., distant 10 miles. 52 fathoms. 3 ♂♂, 1 ovigerous ♀; Umhloti River mouth NW.  $\frac{1}{2}$  W., distant 15 miles (Natal). 100 fathoms. 1 (immature) ♂. s.s. "Pieter Faure." 12/7/01 and 19/12/00. (S.A.M. Nos. A2750 and A2751.)

*Geogr. Distribution*: Arctic Ocean, North Atlantic, Norway (Krøyer, Sars, etc.); California, 46-57 fathoms (Pearse). Sars regards its occurrence in the Mediterranean (Heller, Costa) as very doubtful.

### TRIODOS n. g.

Head with postero-antennal corners distinct, though not prominent. One pair of eyes. Side-plate 4 obliquely truncate below posterior angle (as in *Ampelisca*). Pleon with tufts of setae as in *Haploops*. Mandibular palp with 3rd joint elongate. Peraeopods 3 and 4 with 2nd joint very wide, anterior margin evenly curved, 5th joint without transverse rows of spines, 7th joint as in *Ampelisca*. Peraeopod 5 with 2nd joint distally expanded, the plumose setae extending round posterior angle but not reaching junction with 3rd, 3rd not shorter than 4th, 5th equal to 3rd and 4th together, 6th narrow, 7th spiniform. Third uropod with rami foliaceous, extending beyond 1st and 2nd uropods. Telson of moderate size, deeply cleft.

This genus combines in a remarkable manner the characters of the three hitherto recognised genera of *Ampeliscidae*, whence the name, signifying a "meeting of three ways."

### TRIODOS INSIGNIS n. sp.

(Plate XXVI. Figs. 8-10.)

Head projecting slightly over base of 1st antenna, 1 pair of very small corneal lenses in upper angles of head. Side-plate 1 strongly convex below, not concealing base of 2nd antenna, inferior margin of side-plates 2-4 not very convex. Pleon somewhat compressed, segment 4 with a triangular keel on its posterior half bearing a tuft of setae behind, segment 5 with a tall upstanding keel on its posterior half also bearing a tuft of setae behind, postero-inferior angle of 3rd segment rounded.

Telson a little longer than broad, ovate, cleft nearly to base, apex with 2 setae.

First antenna shorter than peduncle of 2nd antenna, 2nd joint a little longer than 1st, flagellum longer than peduncle, 12-jointed.

Second antenna nearly as long as body, ultimate and penultimate joints subequal, flagellum ca. 28-jointed.

Lower lip, lobes broad, apically rounded.

Mandibles, cutting-edge 4-dentate, secondary cutting-edge in left 3-dentate, in right represented by a simple spiniform process, spine-row with 5 serrate spines, 2nd joint of palp linear though slightly tapering distally, 3rd slender and a little longer than 2nd.

First maxilla, inner plate with 1 subapical seta, outer plate with 9 spines, 2nd joint of palp with 4 teeth and 4 spines.

Second maxilla, plates subequal in width, apices rounded, outer plate rather broader distally than proximally.

Maxilliped, outer plate rather narrow, inner margin with 6 ovate spines, palp rather slender, 3rd joint externally a little lobed but scarcely produced, 4th spiniform.

First gnathopod, 6th joint shorter than 5th, linear, slightly tapering distally, inferior margin with very distinctly biserrate setae, 7th half length of 6th.

Second gnathopod, 6th joint half length of 5th, 7th half 6th, slender and furnished mostly with simple setae.

First and second peraeopods, 4th joint not apically produced, 7th a little longer than 5th and 6th combined, the 2nd but not the 1st peraeopod densely setose.

Third peraeopod, 2nd joint broader than long, anterior margin evenly convex, with plumose setae, 5th a little longer than 4th, posterior apex with 5 short and 2 long spines, no transverse rows of spines, 6th scarcely longer than 5th with only 3-4 setae on distal anterior margin, 7th stout, recurved, with 2 teeth on outer margin.

Fourth peraeopod similar to 3rd, but 2nd joint a little longer than broad, posterior apex of 5th with 7 short and 2 long spines.

Fifth peraeopod, anterior margin of 2nd joint slightly concave, posterior margin strongly expanded and obliquely truncate, plumose setae not quite extending as far as junction with 3rd joint, apex of 2nd reaching end of 3rd, which is a little longer than 4th, anterior apex of 4th slightly produced, 5th oval, as long as 3rd and 4th together and twice as long as broad, 6th narrow and a little shorter than 5th, 7th slender, spiniform.

First uropod, rami subequal, longer than peduncle, tapering to fine points and strongly curved, unarmed.

Second uropod, rami subequal and equal to peduncle, reaching half way along rami of 3rd uropod, sparsely spinose.

Third uropod, rami subequal, longer than peduncle, foliaceous, ovate, outer margins of both setose.

*Length*: 8 mm.

*Colour*: In spirit, whitish.

*Locality*: Umhloti River mouth NW.  $\frac{1}{2}$  W., distant 15 miles (Natal). 100 fathoms, 2 (?) ♀ ♀. s.s. "Pieter Faure." 19/12/00. (S.A.M. No. A2761.)

### FAMILY HAUSTORIIDAE.

1882. *Pontoporeidae* G. O. Sars, Forh. Selsk. Christian. no. 18, p. 22.  
 1888. " Stebbing, Challeng. Rep. vol. 29, p. 804.  
 1891. " G. O. Sars, Crust. Norw. vol. 1, p. 121.  
 1904. *Argissidae* Walker in Herdman's Ceyl. Pearl Fish. Suppl. Rep. 17, p. 246.  
 1906. *Haustoriidae* Stebbing, Das Tierreich, 21, pp. 118, 722.

I fail to see any imperative need for the creation of the family *Argissidae* for the two genera *Argissa* and *Platyischnopus*; the differences between these two genera being as great as the differences between them and the other genera of *Haustoriidae*.

#### GEN. PLATYISCHNOPUS Stebbing.

1888. *Platyischnopus* Stebbing, Challeng. Rep. vol. 29, p. 830.  
 1893. *Platyischnopus* Della Valle, F. u. Fl. Neapel. vol. 20, p. 784.  
 1897. *Platyischnopus* Chilton; Ann. Mag. Nat. Hist. ser. 6, vol. 19, p. 1, pl. 5.  
 1904. " Walker in Herdman's Ceyl. Pearl Fish. Suppl. Rep. 17, p. 247.  
 1906. " Stebbing, Das Tierreich, 21, pp. 122, 722.

#### PLATYISCHNOPUS MIRABILIS Stebbing.

1888. *Platyischnopus mirabilis* Stebbing, l.c. p. 830, pl. 58.  
 1893. " " Della Valle, l.c. p. 785, pl. 60, fig. 36.  
 1914. " " Stebbing, Ann. S. Afr. Mus. vol. 15, pt. 1, p. 32.

The s.s. "Pieter Faure" collected a specimen of this species at Saldanha Bay. 10 fathoms. 19/3/02. (Stebbing.)

*Geogr. Distribution*: Port Jackson, 2-10 fathoms (Stebbing); Bahia (Stebbing).

## GEN. UROTHOE Dana.

1852. *Urothoe* Dana, Amer. J. Sci. ser. 2, vol. 14, p. 311.  
 1853. *Egidia* Costa, Rend. Soc. Borbon. n.s. vol. 2, p. 170.  
 1891. *Urothoe* Stebbing, Tr. Zool. Soc. Lond. vol. 13, pt. 1, p. 1  
 (references).  
 1904. „ Walker in Herdman's Ceyl. Pearl Fish. Suppl. Rep.  
 17, p. 245.  
 1905. „ Reibisch. Wiss. Meeresunters. Abt. Kiel. vol. 8, p. 163.  
 1906. „ Stebbing, Das Tierreich, 21, pp. 128, 722.

## UROTHOE PULCHELLA (Costa).

1853. *Egidia pulchella* Costa, l.c. p. 172.  
 1891. *Urothoe* „ Stebbing, l.c. p. 11, pl. 4a.  
 1893. „ *irrostrata* (part) Della Valle, F. u. Fl. Neapel. vol. 20,  
 p. 664, pl. 5, figs. 3, 8, pl. 36,  
 figs. 1-18, pl. 60, figs. 11, 12.  
 1910. „ *pulchella* Chevreux, Mém. Soc. Zool. Fr. vol. 23, p. 187.

I have some little hesitation in assigning these specimens to this particular species, having had no specimens of this (or of any of the other) species for comparison. They seem, however, to be in close agreement.

The convex palm of 6th joint of 2nd gnathopod of ♂ is not very prominent, and the distal margin of the 5th joint is semicircularly excavate between the subacute inferior apex and the insertion of the 6th joint. Third pereopod lacks plumose setae, and its finger tapers gradually and is doubtfully serrulate. Rami of 1st uropod armed with 3 spines.

*Length*: ♂ 6mm.; ♀ 4 mm.

*Colour*: In spirit, pale reddish-brown, eyes rather darker.

*Locality*: Cape St. Blaize N. 10° W., distant 33 miles. 60 fathoms.  
 1 ♂, 3 ♀♀. s.s. "Pieter Faure." 13/7/98. (S.A.M. No. A3809.)

*Geogr. Distribution*: Naples (Costa, Della Valle); W. coast France (Stebbing and Chevreux); Algeria, 0-65 metres (Chevreux); Channel Islands (Hornell); Canary Islands and Dakar (Chevreux).

## FAMILY AMPHILOCHIDAE.

1871. Subf. *Amphilochinae* Boeck, Forh. Selsk. Christian. 1870, p. 129.  
 1882. *Amphilochidae* G. O. Sars, id. no. 18, p. 23.  
 1888. „ Stebbing, Challeng. Rep. vol. 29, p. 743.

1891. *Amphilochidae* G. O. Sars, Crust. Norw. vol. 1, p. 212.  
 1906. „ Stebbing, Das Tierreich, 21, pp. 148, 723.  
 1910. „ id. Sci. Res. "Thetis," pt. 12, p. 577.

GEN. GITANOPSIS G. O. Sars.

1891. *Gitanopsis* G. O. Sars, l.c. p. 223.  
 1893. „ Della Valle, F. u. Fl. Neapel. vol. 20, p. 598.  
 1906. „ Stebbing, l.c. p. 153.  
 1912. „ Chevreux, Bull. Mus. d'Hist. Nat. Paris. 1912, no. 4,  
 p. 211.

GITANOPSIS PUSILLA n. sp.

(Plate XXVI. Figs. 11, 12.)

Body smooth, somewhat iridescent. Rostrum curved, reaching to end of 1st joint of 1st antenna. Antero-lateral angles of head rounded, eyes oval. Side-plate 1 very small, half depth of and partly concealed by 2nd, side-plates 2-4 increasing slightly in depth, 4 longer than 3, inferior margin of 2-4 with a few slight indents, 5-7 about equal, bilobed. Pleon without dorsal teeth, postero-inferior angle of 3rd segment quadrate.

Telson short, nearly half the length of peduncle of uropod 3, pyri-form, apically rounded.

First antenna equal to head plus first 2 peraeon segments, 2nd joint longer than 1st, 3rd shorter than 1st, flagellum 9-jointed, equal to peduncle, with sensory filaments, accessory flagellum very minute, 1-jointed.

Second antenna a little longer than 1st, ultimate and penultimate peduncular joints subequal, flagellum a little shorter than peduncle, 11-jointed.

Upper lip with apex angularly excised.

Lower lip, notch on inner margin of lobes small and inconspicuous, apex with a small knob-like tubercle and several setules.

Mandibles, cutting-edge 9 dentate, secondary cutting-edge in left multidenticulate, spine-row with 11 spines, palp slender, 2nd joint half as long again as 1st, 3rd a little longer than 2nd, tapering to an acute nonsetose point.

First maxilla, inner plate apically blunt, with 1 seta set in a small indent, outer plate with 14 spines, palp 2-jointed, 2nd joint half as long again as 1st, apex with 4 (?) spines.

Second maxilla, outer plate longer but much narrower than inner,

4 setae on apex of outer plate, 10 on apical and inner margins of inner plate.

Maxilliped, inner plate reaching to middle, outer plate just beyond end of 1st joint of palp, inner margin outer plate with 3 setules, apex with 1 elongate incurved spine, palp stout, 4th joint unguiform.

First gnathopod, 2nd joint with a small lobe on anterior apex, 5th triangular, cup-shaped, process reaching half way along inferior margin of 6th, apically setose, 6th distally nearly as wide as long, palm transverse, gently convex, minutely denticulate with spinules at regular intervals, 2 spines at defining angle, finger matching palm, inner margin minutely denticulate, with a small tooth at inner apex.

Second gnathopod similar but larger than 1st, process of 5th joint nearly reaching end of inferior margin of 6th, apex setose with a row of setae on margin next to 6th joint.

First and second peraeopods similar to one another, a little stouter than Sars' figures of the northern species, finger with a tooth at inner apex.

Third peraeopod, 2nd joint oblong, twice as long as broad, fore and hind margins straight, postero-inferior angle rounded, joints stouter than in 1st and 2nd peraeopods, spinules on anterior margin stronger.

Fourth peraeopod similar to 3rd, but 2nd joint not twice as long as broad, more oval, fore and hind margins slightly convex.

Fifth peraeopod, 2nd joint half as long again as broad.

First uropod longest, reaching to end of 3rd uropod, rami subequal, not as long as peduncle, narrow, apices acute, margins spinulose.

Second uropod, outer ramus scarcely more than half length of inner, which is subequal to peduncle, margins spinulose.

Third uropod, outer ramus shorter than inner, which is a little shorter than peduncle, margins very feebly spinulose.

*Length*: 2-3.5 mm.

*Colour*: Uniform black, dark brown, or claret, or anterior half of body dark, the posterior half white or very pale yellowish, some specimens pale claret with 2 deeper transverse bands on each of peraeon segments 1-6 and 5 longitudinal stripes from peraeon segment 7 to end of pleon; 4th-6th pleon segments, telson, uropods and all the limbs always lighter than the rest. Eyes black.

*Locality*: Buffels Bay and St. James (False Bay). 28/9/13 and 15/2/14. (K.H.B.) ♂♂ and ovigerous ♀♀ (the latter in far greater numbers); Sea Point near Cape Town. 15/11/13 and 14/12/13. (K.H.B.) ♂♂ and ovigerous ♀♀. (S.A.M. Nos. A2517, A2920, A2918 and A2919 respectively.)

The very short telson serves to distinguish this species from all the others, not only in the genus but also in the family.

GEN. PELTOCOXA Catta.

1875. *Peltocoxa* Catta, Rev. Sci. Nat. vol. 4, p. 161.

1893. „ (part) Della Valle, F. u. Fl. Neapel. vol. 20, p. 647.

1906. „ Stebbing, Das Tierreich, 21, pp. 159, 723.

PELTOCOXA AUSTRALIS n. sp.

(Plate XXVI. Fig. 13.)

Body smooth, firm and rather strongly indurated. Rostrum very small. Antero-lateral angles of head rounded. Eyes round oval. Side-plates 1 and 2 very small, concealed by 3, 3 and 4 very large, adjacent margins closely fitting, inferior margin of 5 concave, 6 and 7 small, ovoid, not hidden. First and second peraeon segments short, together equal to 3rd, 2nd a trifle shorter than 1st.

Pleon smooth, 4th segment longest, with a rather high dorsal crest extending whole length of segment and rounded at fore and hind ends, postero-inferior angles of segments 1-3 rounded.

Telson boat-shaped, short, reaching only as far as apex of peduncle of 3rd uropod.

First antenna short, very stout, 1st a little longer than broad, equal to 2nd and 3rd together, 2nd and 3rd broader than long, flagellum as long as 2nd joint, 4-jointed, 1st joint very stout, with long sensory filaments, 2nd-4th minute, with fine setules, accessory flagellum not recognised with certainty.

Second antenna a little longer than 1st, ultimate joint a little shorter than penultimate, flagellum shorter than peduncle, 4-jointed, tapering, 4th joint ending in a long fine seta.

Upper lip subtriangular with a large apical notch.

Lower lip, lobes tapering to subacute apex, inner margin not notched.

Mandibles, cutting-edge and secondary cutting-edge finely denticulate, molar very large and well developed, palp apparently absent.

First maxilla, inner plate with 1 setule in an apical indent, outer plate with 10 (?) spines, palp 2-jointed, the joints subequal, apex with 4 setae.

Second maxilla, both plates narrow and subequal, apex with 3 spine-setae.

Maxilliped, inner plate reaching to end of 1st joint of palp, apex

subacute, without setae or teeth, outer plate reaching to end of 2nd joint of palp, apex with 1 incurved spine, inner margin very minutely crenulate, 2nd joint palp with a tuft of setae on inner apex, 3rd joint distinctly narrower than 2nd and nearly twice as long, inner apex slightly produced beyond insertion of the narrow, unguiform 4th joint, a subapical group of setules on inner margin of 3rd joint.

First gnathopod subchelate, 2nd joint not lobed on anterior apex, 5th joint produced below into a narrow process, apically subacute and bearing 4 long spines, 6th ovate, broader across junction of palm with inferior margin, which junction is ill defined and non-angular, but bearing a small spine, palm with numerous denticles and 2 short spines, between which margin is convex, as is also the case between the upper spine and the hinge, finger curved, inner margin with 11 strong pointed, outstanding teeth.

Second gnathopod similar to 1st but a little larger, 6th joint expanding a little distally, palm evenly convex, its junction with inferior margin a little more angular, but still not well-defined, studded with minute tubercles.

First and second peraeopods slender, very sparsely spinose, finger without apical tubercle.

Third peraeopod slender, similar to 1st and 2nd, 2nd joint not enlarged.

Fourth and fifth peraeopods stouter, 2nd joint expanded oblong, hind margin straight, entire, postero-inferior angle rounded, 4th produced on hind margin to middle (4th peraeopod) or end (5th peraeopod) of 5th joint, finger without a tubercle.

First uropod reaching beyond 2nd and 3rd, rami subequal, as long as peduncle.

Second uropod, outer ramus  $\frac{3}{4}$  length of inner.

Third uropod, outer ramus equal to peduncle and  $\frac{2}{3}$  inner ramus, not reaching apex of inner ramus of 2nd uropod, apex of peduncle acutely produced. Upper margin of all the rami of all 3 uropods finely serrulate.

*Length*: 2 mm.

*Colour*: Uniform dark claret, 4th-6th pleon segments, telson, uropods and limbs whitish.

*Locality*: Sea Point, near Cape Town. 15/11/13. (K.H.B.) 4 specimens. (S.A.M. No. A2921.)

The short telson and subchelate 1st gnathopod distinguish this species from the two northern ones.

## FAMILY LEUCOTHOIDAE.

1852. *Lencothoinae* Dana. Amer. J. Sci. ser. 2 vol. 14, p. 311.  
 1856. *Leucothoides* Bate and Westwood, Rep. Brit. Ass. Meet. 25,  
 p. 21.  
 1865. *Leucothoina* Lilljeborg, Nor. Act. Soc. Upsal. ser. 3, vol. 6,  
 no. 1, p. 18.  
 1882. *Leucothoidae* G. O. Sars, Fort. Selsk. Christian. no. 18, p. 27.  
 1888. „ Stebbing, Challeng. Rep. vol. 29, p. 771.  
 1892. „ G. O. Sars, Crust. Norw. vol. 1, p. 281.  
 1906. „ Stebbing, Das Tierreich, 21, p. 161.  
 1910. „ id. Sci. Res. "Thetis," pt. 12, pp. 580, 636.  
 1910. „ id. Gen. Cat. S. A. Crust. p. 452.

## GEN. LEUCOTHOE Leach.

1793. *Gammarellus* (part) Herbst. Naturgesch. Krabb. Krebs. vol. 2,  
 p. 106.  
 1813/14. *Leucothoe* Leach. Edinb. Encycl. vol. 7, pp. 403, 432.  
 1816. *Lyceta* Savigny. Mem. Ass. s. Vert. vol. 1, p. 109.  
 1904. *Leucothoe* Walker in Herdman, Ceylon Pearl. Fish. Suppl. Rep.  
 17, p. 258.  
 1906. „ Stebbing, l.c. pp. 163, 724. (Synonymy)  
 1908. „ Chevreux, Bull. l'Inst. oc. Monaco, no. 117, p. 11.  
 1912. „ Chilton, Tr. Roy. Soc. Edinb. vol. 48, pt. 2, p. 478.

## LEUCOTHOE SPINICARPA (Abildg.).

1789. *Gammarus spinicarpus* Abildgaard in C. F. Müller, Zool. Dan.  
 ed. 3, vol. 3, p. 66, pl. 119, figs. 1-4.  
 1804. *Cancer articulatus* Montagu, Tr. Linn. Soc. Lond. vol. 7, p. 70,  
 pl. 6, fig. 6.  
 1880. *Leucothoe commensalis* Haswell, Proc. Linn. Soc. N.S.W. vol. 4,  
 p. 261, pl. 10, fig. 3.  
 1888. „ *antarctica* Pfeffer, Jahrb. Hamb. Anst. vol. 5, p. 128,  
 pl. 2, fig. 4.  
 1888. „ *miersi* Stebbing, Challeng. Rep. vol. 29, p. 772, pl. 46.  
 1892. „ *spinicarpa* G. O. Sars, Crust. Norw. vol. 1, p. 253,  
 pl. 100, pl. 101, fig. 1.  
 1893. „ „ Della Valle, F. u. Fl. Neapel vol. 20,  
 p. 652, pl. 6, fig. 4, pl. 19, figs. 1-20.  
 1904. „ „ Walker, l.c. p. 258.

1906. *Leucothoe spinicarpa* + *miersi* + *commensalis* Stebbing, l.c.  
pp. 165, 166.
1907.     "     "     Walker, Nat. Antarct. Exp. vol. 3, p. 18.
1909.     "     "     id. Tr. Linn. Soc. Lond. vol. 12, pt. 4,  
p. 331.
1910.     "     "     Kunkel, Tr. Conn. Ac. Sci. vol. 16, p. 12,  
fig. 3.
1910.     "     "     Chevreux, Mém. Soc. Zool. Fr. vol. 23,  
p. 194.
1910.     "     *commensalis* Stebbing, Sci. Res. "Thetis," pt. 12, pp.  
580, 636.
1910.     "     *miersi* id. Gen. Cat. S. A. Crust. p. 453.
1912.     "     *spinicarpa* Chilton, l.c. p. 478.
1912.     "     "     Pearse, Proc. U.S. Nat. Mus. vol. 43 [1913],  
p. 370.

After an examination of 4 South African specimens and their comparison with Plymouth specimens of *L. spinicarpa* (Abildg.), I have come to the conclusion that *L. miersi* Stebb. must be added to the synonymy of the former species already given by Chilton.

Although in the South African specimens the 3rd joint of the mandibular palp is somewhat shorter than in Plymouth specimens and Sars' figure (l.c. pl. 100), it is not so extremely short as in the Challenger specimen. It is in fact somewhat variable even among the 4 South African specimens. The other character by which *miersi* is distinguished from the typical *spinicarpa*, namely, the relative lengths of the ultimate and penultimate peduncular joints of the 2nd antenna, is also somewhat variable; in the South African specimens the ultimate joint varies in length from little more than  $\frac{1}{2}$  to  $\frac{3}{4}$  the length of the penultimate. Also the strength of the denticulations on palm of 2nd gnathopod varies.

*Length* : 12 mm. (an ovigerous ♀ from St. James : 4 mm.).

*Colour* : The single specimen collected by myself at low-tide was unfortunately not observed amongst numerous other amphipods until the colours had faded.

*Locality* : Sandy Point N.  $\frac{1}{4}$  E., distant 10 miles (near Cape Morgan). 95 fathoms. 1 juv. ; Port Shepstone WNW., distant  $2\frac{1}{2}$  miles (Natal). 24 fathoms. 1 ovigerous ♀ ; Hood Point Lighthouse N. by W.  $\frac{1}{2}$  W. distant 11 miles (near East London). 49 fathoms. 1 ♂. s.s. "Pieter Faure." 14/8/01, 15/3/01, and 15/7/01 respectively. Sea Point (near Cape Town). 29/11/13. 1 juv. (K.H.B.) ; St. James (False Bay). 15/2/14. 1 ovigerous ♀ (K.H.B.) ; Durban, July, 1915. 2 ♂ ♂ (H. W.



Second antenna nearly as long as 1st, slender, ultimate peduncular joint shorter than penultimate, flagellum half as long as ultimate peduncular joint, 4-jointed.

Mandibular palp rather long, slender, 3rd joint a little longer than 1st, not quite half length of 2nd.

The other mouth parts without particular features.

First gnathopod, interior margin of the process of 5th joint quite smooth, 6th joint slightly tapering distally, inner margin finely denticulate, finger more than  $\frac{1}{3}$ , in ♂ nearly  $\frac{1}{2}$ , length of 6th.

Second gnathopod, 5th joint ending obtusely, 6th elongate-oval (similar to that of *L. lilljeborgii* Boeck), palm convex, denticulate only on its distal half, palm and hind margin in the largest specimen feebly differentiated, finger strongly curved.

Third to fifth peraeopods, posterior margin of 2nd joint entire, or very obscurely serrate, other joints moderately spinose, anterior margin of 6th joint with a very regular and even row of spinules.

First and second uropods feebly spinose; third uropods lost.

*Length*: ♂ from Cape St. Francis 9 mm., ♂ from Glendower Beacon 14 mm.; ovigerous ♀ 8 mm.

*Colour*: In spirit, yellowish or pale pinkish, eyes light red-brown; in life, flesh-pink, eyes crimson.

*Locality*: Cape St. Francis N.E., distant 29 miles. 75 fathoms. 1 ♂, 2 ♀ ♀ (1 ovigerous); Glendower Beacon N.  $\frac{1}{2}$  W., distant 16 miles. 66 fathoms. 1 ♂. s.s. "Pieter Faure." 19/2/02 and 10/9/01. Buffalo Bay (False Bay). 1/3/15. (K.H.B.). 1 ♂, 1 ovigerous ♀. (S.A.M. Nos. A164, A2764, and A3294.

*Geogr. Distribution*: Mediterranean (Lessona, Della Valle, Chevreux).

The depth of the sinus on postero-inferior angle of 3rd pleon segment varies somewhat; it is strongest in the two male specimens, and in one of the females is very feebly developed.

#### LEUCOTHOE DOLICHOCERAS n. sp.

(Plate XXVI. Fig. 14.)

Antero-lateral angles of head rounded. Eyes not distinguishable. Side-plate 1 slightly widened below, 2, 3, and 4 deeper than long, 4 deepest at the blunt antero-inferior angle, thence sloping evenly and without any angle backwards and upwards to emargination. Postero-inferior angles of 2nd and 3rd pleon segments acutely produced, 3rd with deep sinus above.

Telson twice as long as broad, oval, apex broadly rounded.

First antenna reaching to third pleon segment, slender, 2nd joint a

little shorter than 1st, 3rd short, flagellum longer than peduncle, ca. 34-jointed, accessory flagellum minute.

Second antenna reaching to middle of 2nd peduncular joint of 1st antenna, ultimate peduncular joint shorter than penultimate, thin and somewhat laminate, flagellum shorter than ultimate peduncular joint, ca. 10-jointed, but joints very indistinct.

Mandibular palp rather short and stout, 3rd joint a little longer than 1st and shorter than 2nd.

The other mouth parts without particular features.

First gnathopod, inner margin of process of fifth joint not serrulate, 6th joint same width throughout, inner margin finely denticulate, finger  $\frac{1}{3}$  length of 6th.

Second gnathopod, 5th joint ending subacutely, 6th elongate-oval, palm defined by a blunt angle, with 3 large blunt-pointed tubercles and a small one near hinge, the 2 large ones nearest hinge close together, between them and the other large tubercle a narrow and rather deep gap, between the last large tubercle and the angle of palm some small irregular denticles, finger equal to palm with a rather deep semicircular incision at base, bounded by a denticle.

Peraeopods not very slender, almost totally devoid of spines.

First and second uropods also almost spineless; third uropods lost.

*Length* : 12 mm.

*Colour* : In spirit, pale pinkish.

*Locality* : Cape St. Francis NE., distant 29 miles. 75 fathoms. 2 ♂♂; Sandy Point (near Cape Morgan) NE. by N., distant 6 miles. 51 fathoms. 1 juv. ♂; s.s. "Pieter Faure." 19/2/02 and 14/8/01. (S.A.M. Nos. A167 and A3399.)

The distinctive marks of this species are the length of the first antennae, whence the specific name, and the 2nd gnathopod.

## FAMILY STENOTHOIDAE.

- |       |                     |   |
|-------|---------------------|---|
| 1871. | <i>Stenothoinae</i> | Boeck. Forh. Selsk. Christian. 1870, p. 138.          |
| 1888. | <i>Stenothoidae</i> | Stebbing, <i>Challeng. Rep.</i> vol. 29, p. 747. *    |
| 1892. | "                   | G. O. Sars, <i>Crust. Norw.</i> vol. 1, p. 234.       |
| 1900. | "                   | Chevreaux, <i>Rés. Camp. Monaco</i> , vol. 16, p. 55. |
| 1901. | "                   | id. <i>Bull. Soc. Rouen</i> , vol. 36, p. 233.        |
| 1906. | "                   | Stebbing, <i>Das Tierreich</i> , 21, pp. 192, 725.    |
| 1907. | "                   | Walker, <i>Nat. Antarct. Exp.</i> vol. 3, p. 18.      |
| 1910. | "                   | Stebbing, <i>Gen. Cat. S. A. Crust.</i> p. 453.       |

## GEN. STENOTHOE Dana.

1852. *Stenothoe* Dana, Amer. J. Sci. ser. 2, vol. 14, p. 311.  
 1904. „ Walker in Herdman's Ceylon Pearl Fish. Suppl. Rep.  
 17, p. 261.  
 1906. „ Stebbing, l.c. pp. 192, 725.  
 1907. „ Chevreux, Bull. Mus. d'Hist. Nat 1907, no. 6, p. 412.  
 1908. „ id. Bull. l'Inst. océan. Monaco, no. 113, p. 1.  
 1908. „ id. ibid. no. 129, p. 1.  
 1908. „ id. Mém. Soc. Zool. Fr. vol. 20, p. 471.  
 1911. „ id. ibid. vol. 23, p. 197.

## STENOTHOE DOLICHOPOUS n. sp.

(Plate XXVI. Figs. 15-17.)

Body compressed, especially posteriorly. Rostrum half length of head, antero-lateral angles of head subacute, eyes large, projecting, horizontally oval. Side-plate 1 oblong, postero-inferior angle produced downward in a triangular lobe, almost completely concealed under side-plate 2, side-plates 2 and 3 oblong, deeper than long, inferior margin straight, antero- and postero-inferior angles rounded, side-plate 4 subrectangular, nearly twice as long as deep, inferior margin and angles as in side-plates 2 and 3, posterior margin straight not excavate. Pleon segment 3 with postero-lateral angles rounded with a very minute projection. Pleon segments 5 and 6 very short.

Telson nearly twice as long as broad, oval, lateral margins with one blunt spine near base, one larger one in middle and one equally large near apex.

First antenna at least as long as total length, 2nd joint shorter than 1st, 3rd joint very short and indistinctly separated from flagellum, which is ca. 33-jointed, longer than peduncle, no accessory flagellum.

Second antenna subequal to 1st, ultimate peduncular joint slightly shorter than penultimate, flagellum equal to the last two peduncular joints together, ca. 24-jointed.

Mouth-parts normal, without particular features; outer plate of first maxilla with 6 apical spines; in the mandible there are 3-4 setae on the small protuberance where the palp should be, and 4 spines in the spine-row; maxilliped elongate and slender, 4th joint equal to 2nd, 5th nearly equal to 4th, 3rd short.

First gnathopod very elongate, 4th joint subequal to 3rd, forming a broadly rounded lobe, scarcely produced, 5th subequal to 2nd, 6th shorter, narrowly linear, palm oblique and defined by 2 spines, finger matching palm.

Second gnathopod anterior apex of 2nd and 3rd joints forming rounded lobes. 6th joint twice as long as broad, no inferior margin, palm slightly sinuous, setose, with a conical tooth a little beyond the middle, a larger one nearer the hinge, followed by a large triangular, anteriorly crenate and setose tooth just before the hinge, finger nearly as long as palm, inner margin with 3 emarginations, the two distal ones setose.

First and second peraeopods, 2nd joint linear; 4th longer than 5th but shorter than 6th.

Third peraeopod similar but posterior apex of 2nd joint slightly expanded as a rounded lobe, 4th subequal to 6th.

Fourth and fifth peraeopods, 2nd joint expanded, oval, otherwise similar to third peraeopod, 7th joint on all the peraeopods stout.

All the uropods slender.

First uropod, peduncle longer than rami, of which outer is longer than inner, peduncle and both margins of rami spinulose.

Second uropod, peduncle and ramus subequal, outer ramus shorter, peduncle and rami spinulose.

Third uropod, ramus shorter than peduncle, 2nd joint half length of first, peduncle with 4 stout spines, 1st joint of ramus with 2 marginal and 1 apical spines.

*Length* : 6 mm.

*Colour* : In spirit, pale pinkish.

*Locality* : Sandy Point. N.  $\frac{1}{4}$  E., distant 10 miles (near Cape Morgan). 95 fathoms. 1 ♂. s.s. "Pieter Faure." 14/8/01. (S.A.M. No. A214.)

The specific name in allusion to the elongate 1st gnathopods, which are somewhat similar to those of *Metopa norvegica* (Lilj.).

#### STENOTHOE GALLENSIS Walker.

1904. *Stenothoe galleensis* Walker in Herdman's Ceylon Pearl Fish. Suppl. Rep. 17, p. 261, pl. 3, figs. 19.
1906. ,, ,, Stebbing, Das Tierreich, 21, p. 725.
1907. ,, *crenulata* Chevreux, Bull. Mus. d'Hist. Nat. 1907, no. 6, p. 412, and Mém. Soc. Zool. Fr. vol. 20, p. 471, text-figs. 1-3.
1909. ,, *galleensis* Walker, Tr. Linn. Soc. Lond. vol. 12, pt. 4, p. 331.

Since Walker in 1909 corrected his original statement and declares that the 2nd joint of the 3rd peraeopod is as narrow as that of peraeopods 1 and 2, the only outstanding difference between his species and *crenulata* Chevreux vanishes.

With regard to the present specimens, in spite of the absence of an adult ♂, I have no hesitation in assigning them to this species. The flagellar joints of the antennae are a little fewer in number (15 in both antennae), but otherwise the agreement is exact, down to the ornamentation on the 2nd joint of the ramus of the 3rd uropod.

This last character and the much less strongly expanded 4th joint of pereopods 3-5, as well as the hand and finger of the 2nd gnathopod in the ♀, will serve to distinguish this species clearly from *S. adhaerens* Stebbing.

In *S. crenulata* Chevreux has described the mandibles as having in the place of the palp a small setiferous tubercle. The same peculiarity is found in the present specimens, but the tubercle is sharper pointed than in Chevreux's figure and bears a seta at its base.

*Length*: Ovigerous ♀ 3 mm.

*Colour*: Whitish, eyes rather indistinct.

*Locality*: Durban. July, 1915. (H. W. Bell-Marley.) 1 ovigerous ♀ and 3 juv. (S.A.M. No. A3846.)

*Geogr. Distribution*: Ceylon (Walker); Gambier Archipelago, 0-25 metres (Chevreux: *crenulata*); Seychelles, 36 fathoms, and Zanzibar (Walker).

*S. spinimana* Chevreux (Mem. Soc. Zool. Fr. vol. 23, 1910, p. 197, text-fig. 7 and pl. 12, figs. 1-12), from Algeria appears closely allied to this species.

#### FAMILY PHLIANTIDAE.

1899. *Phliadidae* Stebbing, Tr. Linn. Soc. Lond. ser. 2, Zool. vol. 7, p. 414.  
 1906. „ Chevreux, Bull. Soc. Zool. Fr. vol. 31, p. 87.  
 1906. *Phliantidae* Stebbing, Das Tierreich, 21, pp. 200, 726.  
 1909. „ Chilton, Tr. N. Zeal. Inst. vol. 41, p. 61.  
 1910. „ Kunkel, Tr. Conn. Ac. Sci. vol. 16, p. 19.  
 1910. *Phliasidae* Chevreux, Mém. Soc. Zool. Fr. vol. 23, p. 201.

#### PLIOPLATEIA n. g.

Fifth and sixth pleon segments very short and indistinct, telson transverse, entire; 1st antenna larger than second, neither very short; 1st maxilla with inner plate, 6-7 spines on outer plate and a very small but distinct palp; 2nd maxilla with inner and outer plates fused at base; palp of maxilliped long, 4-jointed; 1st and 2nd gnathopods similar, subchelate; the three posterior pereopods stouter and longer than the anterior two, 2nd joints not expanded; rami of 1st and 2nd

pleopods but not those of 3rd pleopods well developed, peduncles not expanded; 3rd uropod represented only by the lobe-like peduncle.

This genus differs from the other genera of the family in having long antennae, a palp on 1st maxilla and the peduncles of pleopods not expanded.

*PLIOPATEIA TRIQUETRA* n. sp.

(Plate XXVI. Figs. 18-24.)

Body about as broad as deep. Head short, rostrum upturned, with a smaller tooth on either side. Eye round. A small tooth on the anterior margin in front of eye, inferior margin keeled, ending in a small tooth at the antero-latero angle.

Peraeon segment 1 equal to head, segments 1-7 each surmounted by a dorsal keel, strongest on 1st, where it is deeply bifid, on the other segments it occupies only the posterior portions, a flat horizontal, backwardly directed prominence on each segment just above the junction with the side-plates. Side-plates not contiguous, 1st nearly as deep as its segment, subtriangular, widening below and projecting forwards to antero-lateral angle of head, 2nd, 3rd, and 4th oblong, not quite twice as deep as long and not as deep as segments, antero-inferior angles of 1st to 4th rounded, inferior margin notched posteriorly, postero-inferior angles subacute, 5th longer than deep, strongly notched, anterior and posterior lobes acute, 6th and 7th similar to 5th but successively smaller.

Pleon not strongly flexed, 1st and 2nd segments with a dorsal tooth on posterior margin as large as that on 7th peraeon segment, a small subdorsal tooth on either side, 3rd segment smooth, unarmed except for the very obscure subdorsal teeth, 4th quite smooth, subequal to 3rd, postero-inferior angles of 1st to 3rd segments obtusely rounded.

Telson transverse, twice as wide as long, apical margin straight, postero-lateral angles rounded.

First antenna reaching to about 6th peraeon segment, 1st joint  $\frac{2}{3}$  2nd, upper apex of both 1st and 2nd joint projecting as an acute tooth, lower margin of 1st with one subapical tooth, 3rd joint  $\frac{1}{2}$  2nd, narrow and unarmed, flagellum longer than peduncle, 15 jointed.

Second antenna reaching to middle of flagellum of 1st antenna, 3rd joint short, 4th as long as broad, upper apex of both produced but not prominently so, 5th equal to 3rd and 4th together, narrow and unarmed, flagellum longer than peduncle, 11-jointed.

Upper lip entire.

Lower lip, lobes broad, apically truncate, inner lobes absent.

Mandibles, cutting-edge 4 dentate, secondary cutting-edge in left with 8 fine teeth, absent altogether in right, molar not prominent, palp absent.

First maxilla, inner plate very small, without setae, outer plate with 6-7 spines, palp very small, with 1-2 apical setae.

Second maxilla, plates fused at base, apically distinct, the outer longer and broader than inner, with ca. 7 setae on apex, and 3 on outer distal margin, inner plate apically subacute with 1 long spine and 3 setules on inner margin.

Maxilliped, inner apical angle of inner plate with 1 spinule and 1 setule, outer plates with very few setules, 4th joint of palp as long as 2nd and 3rd together, curved, with 1 apical seta and crenulate inner margin.

First and second gnathopods similar, 2nd joint longest, 3rd and 4th joints subequal, 5th longer than 6th in 1st gnathopod, subequal in 2nd, 6th joint widening distally, palm nearly transverse, nearly as long as inferior margin, defined by 2 spines and sparsely setose.

First and second pereopods, 2nd joint longest, linear, 3rd and 5th subequal, 4th longer, anterior apex somewhat produced, subacute, 6th a little longer than 4th, 7th half 6th, with 1 spine-seta on inner margin near apex, hind-margin of 4th to 6th joints with short thick pubescence.

Third to fifth pereopods, 2nd joint not expanded, postero-inferior apex with an acute triangular tooth, 3rd joint shortest, 4th subequal to 2nd, hind margin distally expanded, apex subacute, distal margin sinuous, 5th a little shorter than 4th, 6th longest, 7th a little more than half 6th, stout and curved, with a spine seta near apex, hind margin of 4th to 6th joints with short thick pubescence. All the pereopods are sparsely setose.

Marsupial plates very large, oval, twice as long as broad, with thick fringe of plumose setae.

First and second pleopods, peduncle subrectangular, not produced, inner apical angle with 4 curved spines, rami well developed, with plumose setae.

Third pleopod, peduncle as in 1st and 2nd pleopods, rami rudimentary, short and oval, without setae.

First uropod, peduncle stout, equal to inner ramus which is longer than outer, a short blunt spine on apex of outer ramus and one just before the apex of inner ramus.

Second uropod, peduncle stout, longer than rami, which are subequal.

Third uropod represented only by an oval lobe-like peduncle, without spines or setae.

*Length* : 7 mm.

*Colour* : In spirit yellowish.

*Locality* : Great Fish Point Lighthouse N. by W., distant 9 miles. 49 fathoms. 1 nonovigerous ♀. s.s. "Pieter Faure." 4/9/01. (S.A.M. A174.)

The resemblance of the head, 1st peraeon segment and side-plates, and to a less extent the rest of the peraeon and pleon, to *Lepechinella chrysotheras* Stebb. is rather curious.

#### TEMNOPHLIAS n. g.

Lateral portions of peraeon segments not contiguous; telson entire, pyriform, longer than broad; antennae short; lobes of 2nd maxilla fused basally; palp of maxilliped 2-jointed; 1st and 2nd gnathopods similar, simple; 2nd and 3rd peraeopods chelate in ♂; peduncle of all the pleopods strongly produced; all the uropods uniramous (a small fixed rudiment of a second ramus in 1st and 2nd), in 3rd uropod peduncle and ramus fused.

Generic name composed of *τεμνω*, to cut, and *Phlias*, the original genus of the family, in allusion to the discontinuous peraeon segments and side-plates.

#### TEMNOPHLIAS CAPENSIS n. sp.

(Plate XXVI. Figs. 25-35.)

Body broad, oval. Head free, not sunk within 1st peraeon segment, rostrum triangular, reaching to level of antero-lateral angles which are rounded, margin between rostrum and these angles deeply concave. Eyes shortly oval, situate in the antero-lateral angles.

Peraeon smooth, glabrous, the lateral portions of the segments not contiguous. Side-plates subrectangular, inferior margin slightly emarginate.

Pleon segments 4 to 6 flexed under peraeon, segment 2 in the ♂ with a pair of submedian tubercles on anterior portion, another larger pair near posterior margin curving forwards, posterior margin slightly produced backwards as a rounded lobe overlapping segment 3, no tubercles in ♀.

Telson pyriform, longer than broad, lateral margins rather concave in ♂, apex subacute, lateral margins and upper apical surface setose.

First antenna, 1st joint stout, a trifle broader than long, 2nd subquadrate, upper (outer) apex of 1st and 2nd joints subacutely produced, 3rd shorter, cylindrical, flagellum equal to 2nd joint, obscurely 2-3 jointed, lower (inner) apex of 1st joint bevelled off and furnished with

long setae, 2nd minute, with apical setae; in ♀ similar, but 1st and 2nd joints not apically produced.

Second antenna a little longer than 1st, the two basal joints small, penultimate joint subacutely produced on inner (lower) apex, ultimate joint longer than penultimate, cylindrical, flagellum not as long as ultimate peduncular joint, 2-jointed, 2nd joint minute, both apically setose.

Upper lip with truncate distal margin, slightly notched or excavate, lateral angles rounded.

Lower lip, inner lobes absent, outer lobes apically rounded.

Mandibles, cutting-edge, 6-dentate, secondary cutting-edge in left 4-dentate, apparently absent in right, spine-row with 3 spines in left, 2 in right, molar represented by a stout, pellucid spine tipped with a seta as long as itself, no trace of palp.

First maxilla, outer plate with 4 stout, minutely denticulate spines, no inner plate or palp.

Second maxilla, plates fused proximally but slightly separated distally, outer plate with 4 apical setae.

Maxilliped, inner plate apically truncate, with 3 teeth, outer plate reaching to middle of apical joint of palp, outer margin convex, inner margin straight with a few fine setules, palp of 2 joints only, 2nd longer than first; inner margin being indented in middle and the setae disposed in 2 groups show that this joint is really two joints fused, though there is no trace of a suture.

First gnathopod simple, 2nd joint with a blunt lobe on anterior margin subapically, anterior margin of 3rd apically produced, 4th triangular, smaller than 3rd or 5th, 5th not strongly lobed inferiorly, 6th tapering, inner margin entire, setose, a short stout spine on inner apex, unguis curved.

Second gnathopod similar to 1st but stouter and with anterior margin of 2nd joint expanded keel-like and ending before apex of joint, anterior margin straight.

In ♀ 1st and 2nd gnathopods similar to those of ♂.

Peraeopods gradually increasing in length posteriorly. First peraeopod somewhat similar to 2nd gnathopod, but 4th joint expanded anteriorly, 5th likewise expanded, transverse, posterior margin of 4th and 5th setose, anterior margin of 2nd keeled.

Second peraeopod similar to 1st but in ♂ 6th joint broader, oval-oblong, inner apex ("palm") strongly excised forming a rounded notch, apex of inferior margin projecting shortly, finger with unguis reaching this lobe and making the limb almost chelate; in ♀ simple, resembling 1st peraeopod.

Third peraeopod resembling 2nd (chelate in ♂, simple in ♀) but the keel on posterior (upper) margin of 2nd joint, indented in middle, more strongly so in ♂ than ♀, a seta in the indent, the whole margin of keel minutely crenulate, 4th to 6th joints rather densely setose in ♂.

Fourth and fifth peraeopods similar to 1st, keel on 2nd joint crenulate and emarginate in middle, 4th to 6th joints densely setose in ♂.

Branchial lamellae narrow, apically rounded, margins not setose.

Marsupial lamellae oval, apically rounded, setose.

First to third pleopods in both sexes decreasing in size posteriorly, but not at all degenerate, peduncles with inner apices produced as narrow lobes (longest in the 1st pleopod) bearing 4 hooked spines.

First uropod, peduncle straight, cylindrical, ramus shorter than peduncle, narrow, apex with a short blunt spine, upper outer margin very finely and regularly pectinate, inner apex of peduncle with a short blunt tubercle probably representing the inner ramus.

Second uropod in ♂ reaching as far as 1st, peduncle stout, upper margin concave, a blunt lobe at upper outer basal angle, another at lower apex and another at upper inner apex, this latter bearing a tubercle (representing the inner ramus), ramus short and very stout, apically rounded, upper margin of peduncle and ramus with a few setae; in ♀ not quite as long as 1st uropod and not stouter, only the lobe on inner apex present, ramus as in 1st uropod with marginal pectinations and apical spines.

Third uropod reaching just beyond other uropods in ♂, not quite as far in ♀, rapidly tapering to an acute apex, limits of peduncle and ramus observable on the margins, but no trace of a transverse suture, margins setulose, 1 apical seta.

*Length*: (Pleon flattened out) ♂ 7 mm., ♀ 4 mm.; *breadth*: (including side-plates) ♂ 3 mm., ♀ 2 mm.

*Colour*: Pale salmon or buff with numerous circular pink spots, each with a pale centre and a darker circumference, on head, side-plates, lateral portions of peraeon segments, pleon and basal joints of limbs, the largest being the submedian row on the peraeon, and of these the two on the 4th segment are the most conspicuous. Eyes black.

*Locality*: St. James and Kalk Bay (False Bay). July, 1896. 2 nonovigerous ♀♀ (Dr. W. F. Purcell) and 11/8/12. ♂♂ and ♀♀ with ova and embryos (K.H.B.). On underside of boulders at low-tide. (S.A.M. Nos. 8828, A114 and A2893).

## FAMILY PARDALISCIDAE.

1871. *Pardaliscinae* Boeck, Forh. Selsk. Christian. 1870, p. 150.  
 1882. *Pardaliscidae* G. O. Sars, *ibid.* no. 18, p. 28.  
 1888. „ Stebbing, *Challeng. Rep.* vol. 29, p. 990.  
 1893. „ G. O. Sars, *Crust. Norw.* vol. 1, p. 401.  
 1906. „ Stebbing, *Das Tierreich*, 21, p. 220.

## GEN. NICIPPE Bruzelius.

1859. *Nicippe* Bruzelius, *Svenska Ak. Handl. n.s.* vol. 3, no. 1, p. 99.  
 1893. „ G. O. Sars, *l.c.* p. 409.  
 1893. „ (part) Della Valle, *F. u. Fl. Neapel.* vol. 20, p. 657.  
 1906. „ Stebbing, *l.c.* p. 225.

## NICIPPE TUMIDA Bruzelius.

1859. *Nicippe tumida* Bruzelius, *l.c.* p. 99, pl. 4, fig. 19.  
 1868. „ „ Norman, *Ann. Mag. Nat. Hist. sér.* 4, vol. 2,  
 p. 414, pl. 21, figs. 4-6.  
 1876. „ „ Boeck, *Skand. Arkt. Amphip.* vol. 2, p. 492.  
 1893. „ „ G. O. Sars, *l.c.* p. 410, pls. 144 and 145, fig. 1.  
 1893. „ „ Della Valle, *l.c.* p. 658, pl. 59, figs. 66, 67.  
 1906. „ „ Stebbing, *l.c.* p. 226.  
 1908. „ „ Holmes, *Proc. U.S. Nat. Mus.* vol. 35 (1909),  
 p. 526.

The following small differences between the southern and the northern specimens are noticeable :

Telson, lobes narrowing evenly to apices, inner margin scarcely sinuate as in Sars' figure.

First antenna, flagellum ca. 46-jointed, accessory flagellum 5-jointed, 1st-4th joints decreasing gradually in length, 5th small.

Second antenna, flagellum ca. 15-jointed.

Mandible, secondary cutting-edge in right mandible represented by two fairly stout spines.

First maxilla, outer plate with 8 spines, palp with 8 spines, and 2 setae near the inner distal angle.

Maxilliped, inner margin of 4th joint of palp smooth, not spinulose.

First and second gnathopods, inner margin of finger smooth except for the basal tooth, which is fairly prominent.

*Length*: 11 mm.

*Colour*: Pale yellowish.

*Locality* : Cape Point NE. by E., distant 36 miles. 650 fathoms. 1 nonovigerous ♀. s.s. "Pieter Faure." 15/7/03. (S.A.M. No. A2792.)

*Geogr. Distribution* : Norway, 60–300 fathoms (Bruzelius, Boeck, Sars); Shetlands (Sp. Bate); Skye (Norman); Monterey Bay, California, 56 fathoms (Holmes).

### FAMILY OEDICEROTIDAE.

1865. *Oedicerina* Lilljeborg, Nov. Act. Soc. Upsal. ser. 3, vol. 6, no. 1, p. 18.  
 1871. *Oedicerinae* Boeck, Forh. Selsk. Christian. 1870, p. 160.  
 1883. *Oediceridae* Schneider, Tromsø Mus. Aarsh. vol. 6 (p. 1).  
 1888. „ Stebbing, Challeng. Rep. vol. 29, p. 835.  
 1892. „ G. O. Sars, Crust. Norw. vol. I, p. 286.  
 1893. *Oediceridi* Della Valle, F. u. Fl. Neapel, vol. 20, p. 531.  
 1906. *Oedicerotidae* Stebbing, Das Tierreich, 21, pp. 235, 726.  
 1910. *Oedicerosidae* Chevreux, Mém. Soc. Zool. Fr. vol. 23, 1910, p. 205.

For additional genera see also : 1906. Chevreux, Bull. Soc. Zool. Fr. vol. 31, p. 76; and 1911. Stappers, Duc d'Orleans Camp. Arct. 1907, p. 40.

### GEN. OEDICEROIDES Stebbing.

1888. *Oediceroides* Stebbing, l.c. p. 843.  
 1892. „ G. O. Sars, l.c. p. 287.  
 1896. „ Bonnier, Ann. Univ. Lyon. vol. 26, p. 640.  
 1906. „ Stebbing, l.c. p. 267.  
 1906. „ Walker, Ann. Mag. Nat. Hist. vol. 18, p. 15.  
 1907. „ id. Nat. Ant. Exp. vol. 3, p. 22.  
 1910. „ Stebbing, Sci. Res. "Thetis," pt. 12, p. 589.  
 1911. „ Chevreux, Ann. Mus. Nac. Buenos Aires, ser. 3, vol. 14, p. 403.

With the exception of *O. proximus* Bonnier from the Bay of Biscay, the genus has hitherto been recorded only from the southern oceans.

### OEDICEROIDES CINDERELLA Stebbing.

1888. *Oediceroides cinderella* Stebbing, l.c. p. 850, pls. 62, 63.  
 1893. *Halimodon* „ Della Valle, l.c. p. 540, pl. 58, figs 43–45.  
 1906. *Oediceroides* „ Stebbing, l.c. p. 269.

Eyes apparently absent. First maxilla with 5 plumose setae on inner plate, in one of the specimens examined a wide gap between the

basal 3 and the distal 2 setae. First antenna with a row of 7 stout spines, besides several setae, on anterior margin of 1st joint, each spine arising from a small indent, flagellum subequal to peduncle, 17-jointed. Second antenna with peduncle rather longer than first antenna, ultimate joint shorter than penultimate, flagellum 80-90-jointed. First and second uropods with outer basal surface of peduncle setose, upper and inner margins spinose, basal half of outer and inner margins of both rami spinose. Third uropod similar but shorter than 2nd. Telson with apical margin straight, postero-lateral angles rounded, as in *O. lakillei* Chevreux.

*Length*: 17-25 mm.

*Colour*: In spirit, pinkish or yellowish.

*Locality*: Cape Point E.  $\frac{3}{4}$  N., distant 38 miles. 630 fathoms. 1 ♀ ♂;  $36^{\circ} 49'$  S.  $21^{\circ} 14'$  E. 560 fathoms. 4 ♂ ♂, 1 ovigerous ♀. s.s. "Pieter Faure." 9/9/03 and 18/7/06. (S.A.M. Nos. A115 and A116.)

*Geogr. Distribution*: Falkland Islands, 1035 fathoms (Stebbing).

The Cape specimens differ from the typical form only in the small details above mentioned. There are no traces of the eyes or any pigment in any of the specimens; and in this respect the specimens approximate to *O. proximus*, unless the method of preservation, 6 years in formalin and then alcohol, is responsible for this feature. The number of setae on inner plate of first maxilla is also nearer *O. proximus* than *O. cinderella*. In all other points, however, the present specimens are inseparable from the latter species.

#### GEN. BATHYMEDON G. O. Sars.

1871. *Halimedes* (part) Boeck, Forh. Selsk. Christian. 1870, p. 169.

1892. *Bathymedon* G. O. Sars, Crust. Norw. vol. 1, p. 332.

1906. ,, Stebbing, Das Tierreich 21, p. 255.

#### BATHYMEDON PALPALIS n. sp.

(Plate XXVII. Figs. 1-3.)

Rostrum very small. Eyes and apparently all pigment absent. Peraeon and pleon segments dorsally rounded. Side-plate 1 strongly produced forward, narrower in ♂ than in the (supposed) ♀, antero-inferior angle rounded, 2 and 3 oblong, subequal, 4 as deep as preceding but rather longer, whole posterior margin emarginate, 5 bilobed, lobes subequal, 6 subquadrate, 7 shallow. Postero-inferior angles of pleon segments 1-3 rounded.

Telson a little longer than broad, slightly tapering, shallowly notched, apices rounded, each with 1 short stout spine.

First antenna, 1st joint longer and stouter than 2nd, with 1 strong spine on lower apex, 2nd joint with 4 spinules on upper margin and 2 spinules on upper apex, 3rd joint  $\frac{1}{3}$  length of 2nd, flagellum equal to 2nd and 3rd peduncular joints together, 14-jointed.

Second antenna, ultimate joint longer than penultimate, flagellum in ♂ specimen very long, ca. 70-jointed.

Upper and lower lips as figured by Sars for *B. longimanus* (Boeck).

Mandibles stout, cutting-edge thick, apex obtuse, nondentate, secondary cutting-edge represented by a stout spiniform process, apically bifid in left, obtuse in right, spine-row with 3 spines in left, 5 in right, molar denticulate and setose, palp very stout, especially 2nd joint, which is scarcely curved but strongly angular on inner basal margin, 3rd joint not as long as 2nd, more slender than either 1st or 2nd joints.

First maxilla, inner plate with 3 apical setae and some very fine setules on inner margin, outer plate with 9 spines, some of them tending to be bifid, palp with 2nd joint widest in middle, inner distal margin with ca. 8 setae, 4 apical setae, outer distal margin with 2 groups of 3 setae each.

Second maxilla, inner plate broader than outer, both setose.

Maxilliped, inner plate extending just beyond apex of 2nd joint (not of palp), inner apical angle with 1 spine, apical margin setose, outer plate not quite reaching end of 2nd joint of palp, inner margin with setae and strong spines, 2nd joint of palp not strongly expanded distally, 4th joint as long as 3rd.

First gnathopod, 5th joint produced into a lobe bearing several setae and 2 apical spines, 6th joint ovate, almost as long and as broad as 5th, palm convex, not very oblique, subequal to inferior margin, palmar spine present in one specimen only, finger just overlapping palm.

Second gnathopod, 5th joint produced into a lobe but not so strongly as in 1st gnathopod, with numerous setae and 2 long apical spines, 6th joint shorter but a little broader than 5th, similar to that of 1st gnathopod.

First and second peraeopods, 4th and especially 5th joints rather strongly setose and spinose, 4th longer than 5th or 6th, which are subequal, finger in 1st peraeopod not quite as long as, in 2nd a little longer than, 6th, not strongly tapering, ending in a minute curved unguis.

Third and fourth peraeopods, 2nd joint not expanded, oblong, tapering slightly, anterior margin in 3rd peraeopod slightly concave,

in 4th straight, setose, hind margin smooth, 4th joint (in 4th peraeopod) longer than 5th but shorter than 6th, hind margin strongly spinose, finger as long as 6th (5th-7th joints in 3rd peraeopod lost.)

Fifth peraeopod, 2nd joint  $2\frac{1}{2}$  times as wide proximally as distally, hind margin nearly straight, very faintly serrulate, 3rd-7th joints lost.

First and second uropods, rami narrow, finely pointed, outer a little longer than inner, feebly spinose.

Third uropod lost.

*Length*: 9 mm.

*Colour*: In spirit, whitish.

*Locality*: Cape Point N.E. by E., distant 36 miles. 650 fathoms. 3 mutilated specimens (one of them a ♂, other two uncertain). s.s. "Pieter Faure." ~ 15/7/03. (S.A.M. No. A2794.)

Specific name referring to the mandibular palp, which forms one of the distinguishing features of the species. The other features are: the absence of eyes, the shape and size of the 5th and 6th joints of the 1st and 2nd gnathopods, the 2nd joint of the 3rd and 4th peraeopods, and the telson.

(?) GEN. HALICREION Boeck.

1871. *Halicreion* Boeck, Forh. Selsk. Christian. 1870, p. 173.

1876. ,, id. Skand. Arkt. Amphip. vol. 2, p. 294.

1892. ,, G.O. Sars. Crust. Norw. vol. 1, p. 321.

1906. ,, Stebbing, Das Tierreich, 21, p. 247.

Since in the single specimen the 3rd uropods have been broken off, it remains uncertain whether the species is rightly assigned to this genus. The process of the 5th joint of the 2nd gnathopod is certainly like that of *H. aequicornis* as figured by Sars, but the telson is reminiscent more of *Westwoodilla*.

(?) HALICREION OVALITELSON n. sp.

(Plate XXVII. Fig. 4.)

Rostrum long, acuminate, reaching to or a trifle beyond end of 1st joint of 1st antenna, slightly curved downwards. Eyes absent. Antero-lateral angles of head rounded. Peraeon and pleon dorsally rounded. Side-plates fairly large, 1st well expanded below, 2nd, 3rd, and 4th rounded below, 4th deeper than 3rd, 5th bilobed, lobes subequal, but anterior lobe not setose below, 6th subquadrate, a little deeper than long, 7th twice as long as deep, postero-inferior angle rounded. Postero-inferior angles of pleon segments 1-3 rounded.

Telson suboval, longer than broad, the rounded apex with 2 small submedian spines and a small lobe between them, 2 spines on rounded lateral angles.

First antenna shorter than second, 1st joint equal to 2nd and 3rd together, flagellum longer than peduncle, 32-jointed, not calceoliferous.

Second antenna, ultimate and penultimate joints subequal, flagellum ca. 84-jointed, not calceoliferous.

Upper lip rounded, broader than long, distal margin nearly straight, setulose.

Lower lip, outer lobes ovate, setose, inner lobes well-marked, rounded.

Mandibles, cutting-edge straight with one tooth at one end and two at the other, secondary cutting-edge in left 4-dentate, in right represented by a stout spiniform deeply bifid process, spine-row with 5 spines, palp long, 2nd joint nearly straight, 3rd joint equal to 2nd.

First maxilla, inner plate with 2 apical setae and some very fine setules on inner margin, outer plate with 9 spines, 2nd joint of palp apically subacute, 4 setae on outer margin and numerous setae on inner distal margin.

Second maxilla, outer and inner plates subequal in width.

Maxilliped as figured by Sars for *H. longicaudatus* Boeck.

First gnathopod, 5th joint produced in a fairly broad lobe, not quite reaching end of inferior margin of 6th, spinose, 6th joint ovate, palm setose, longer than inferior margin, defined by a stout palmar spine, finger as long as palm.

Second gnathopod similar, but 5th joint with a longer and narrower process, 6th joint more elongate (twice as long as wide), palm longer than inferior margin, but not so much as in 1st gnathopod, defined by a palmar spine.

First and second peraeopods, none of the joints expanded, 5th joint shorter than 4th or 6th which are subequal, 6th joint rather narrower than 4th or 5th, all with long setae, 7th as long as or a little longer than 6th.

Third peraeopod, 2nd joint somewhat pear-shaped, broader proximally, front margin straight, both front and hind margin setose, distal joints lost.

Fourth peraeopod, 2nd joint not so pear-shaped, front margin convex, 4th joint longer than 6th, somewhat expanded on hind margin, 6th joint longer than 5th, 7th joint equal to 4th.

Fifth peraeopod, 2nd joint strongly expanded, twice as wide proximally as distally, hind margin faintly crenulate, setose, distal joints lost.

First and second uropods, outer ramus slightly shorter than inner, peduncle and rami feebly spinulose.

Third uropod lost.

*Length*: 11 mm.

*Colour*: In spirit, pale pinkish.

*Locality*: Cape Point N. 81° E., distant 32 miles. 400 fathoms. 1 mutilated nonovigerous ♀. s.s. "Pieter Faure." 20/8/03. (S.A.M. No. A2772.)

### FAMILY LILJEBORGIIDAE.

1899. *Liljeborgiidae* Stebbing, Ann. Mag. Nat. Hist. ser. 7, vol. 4, p. 211.  
 1910. „ id. Gen. Cat. S.A. Crust. p. 453.

#### GEN. LILJEBORGIA Bate.

1862. *Liljeborgia* Bate, Cat. Amphip. Brit. Mus. p. 118.  
 1910. „ Stebbing, l.c. p. 454.

#### LILJEBORGIA PROXIMA Chevreux.

1907. *Liljeborgia proxima* Chevreux, Bull. Mus. d'Hist. Nat. Paris, 1907, no. 6, p. 413.  
 1907. „ „ id. Mém. Soc. Zool. Fr. vol. 20, p. 475, figs. 4, 5.

Stebbing (1910, Sci. Res. "Thetis," pt. 12, p. 588) has pointed out that the presence of dorsal teeth, albeit very small, the great length of the finger of the 5th peraeopod and the small size distinguish Chevreux's species from *L. aequabilis* Stebbing. Stebbing and Chevreux have specially mentioned two identical characters which distinguish their respective species from *L. brevicornis* Bruz., namely: the absence of a tooth at postero-inferior angle of 1st side-plate, and the equality of the apical lobes of the telson. There are other characters in common between the two species, such as the postero-inferior angle of the 3rd pleon segment, the posterior margins of the 2nd joints of the 3rd-5th peraeopods.

The present specimen corresponds with Chevreux's description, although unfortunately the distal joints of the 5th peraeopods have been lost.

In my opinion *proxima* should become a synonym of *aequabilis*. The size, especially in females, is not so important, as may be seen in

*Paramoera capensis* (*infra*), where ovigerous females vary from 5-12 mm.

*Length*: 6 mm.

*Colour*: In spirit, whitish, 5th and 6th peraeon segments crimson, mouth-parts rose, eyes light brown.

*Locality*: Fish Hoek Bay (False Bay). 5 fathoms. 1 specimen. s.s. "Pieter Faure." 24/12/02. (S.A.M. No. A3807.)

*Geogr. Distribution*: Gambier Archipelago, 20 metres (Chevreux).

### FAMILY TIRONIDAE.

1871. *Syrrhoinae* Boeck, Forh. Selsk. Christian. 1870, p. 146.  
 1888. *Syrrhoidae* Stebbing, Challeng. Rep. vol. 29, p. 787.  
 1893. " G. O. Sars, Crust. Norw. vol. 1, p. 388.  
 1906. *Tironidae* Stebbing, Das Tierreich, 21, p. 273.  
 1908. " Chevreux, Bull. Inst. océan. Monaco, no. 129, p. 7.  
 1910. " Stebbing, Gen. Cat. S.A. Crust. p. 454.  
 1911. " Chevreux, Bull. Inst. océan. Monaco, no. 204, p. 3.  
 1912. " id. Bull. Mus. d'Hist. Nat. 1912, no. 4, p. 213.

### GEN. BRUZELIA Boeck.

1871. *Bruzelia* Boeck, l.c. p. 149.  
 1876. " id. Skand. Arkt. Amphip. vol. 2, p. 477.  
 1893. " G. O. Sars, l.c. p. 394.  
 1893. " Della Valle, F. Fl. Neapel. vol. 20, p. 667.  
 1906. " Stebbing, l.c. p. 274.  
 1910. " id. Sci. Res. "Thetis," pt. 12, p. 590.

### BRUZELIA DIODON n. sp.

Body stout, not very much indurated. Head with long, downwardly curved rostrum, which is parallel-sided and truncate at the apex, antero-lateral angles subquadrate, eyes absent. Peraeon rounded, not carinate except on 7th segment which ends in a tooth. Side-plates 1-4 equal in depth, antero-inferior angles of 1 and 2 rounded, of 3 acute, of 4 rounded, inferior margin of 4 straight, postero-inferior angle of 4 subacute, 5 and 6 with posterior lobes deeper than anterior, 7 small and semicircular. Pleon segments feebly carinate, keel on 1st strongest and ending in a tooth, inferior margin of 1st rounded below, postero-inferior angle of 2nd quadrate with a small tooth, of 3rd acutely produced and somewhat recurved.

Telson tapering as in *B. typica* Boeck, apex entire.

First antenna reaching to end of peduncle of 2nd antenna, 1st joint stout, 2nd not quite as long as 1st, 3rd not quite  $\frac{1}{2}$  1st but more than  $\frac{1}{2}$  2nd, flagellum equal to 2nd and 3rd joints together, 8-jointed, accessory flagellum 1-jointed, reaching to middle of 2nd flagellar joint, apex setose.

Second antenna, inferior apex of 2nd joint reaching to middle of 3rd joint, 4th joint longer than 5th, flagellum equal to 3rd and 4th joints together, 6-jointed.

Upper lip rounded as in *B. australis* Stebbing.

Lower lip, outer lobes distinct from mandibular processes as in *B. australis*.

Mandible, 3rd joint of palp shorter than 1st.

First maxilla, inner plate with 10 setae, outer plate with 11 spines, apex of 2nd joint of palp with 5 spinules and a smaller one on outer distal margin.

First and second gnathopods, palm defined by one simple spine and one denticulate spine (as in other species).

First and second peraeopods without particular features.

Third to fifth peraeopods, 2nd joint narrow oblong as in *B. typica*, hind margin serrate but not so strongly as in *B. australis*, postero-inferior angle in all three peraeopods rounded.

First uropod, outer ramus  $\frac{3}{4}$  length of inner, upper margins of both rami very finely serrulate, that of outer ramus in addition with 3 small spinules.

Second uropod, outer ramus a little more than  $\frac{1}{2}$  length of inner, margins unarmed.

Third uropod, rami subequal, but inner ramus broader, margins unarmed.

*Length* : 7 mm.

*Colour* : In spirit, whitish.

*Locality* : Cape Point N.E. by E., distant 36 miles. 650 fathoms.  
1 ♀. s.s. "Pieter Faure." 15/7/03. (S.A.M. No. A2793.)

The specific name refers to the teeth on 7th peraeon and 1st pleon segments.

This is the fourth species of the genus. It appears that a strongly carinate dorsum is correlated with an acuminate rostrum, and a feebly carinate dorsum with a blunt rostrum. The two North Atlantic species, *B. tuberculata* G. O. Sars and *B. typica* Boeck, respectively show these characters. *B. australis* Stebbing from New South Wales corresponds with the first, while the South African species corresponds with the second form.

## FAMILY PARAMPHITHOIDAE.

1871. *Epimerinae* Boeck, Forh. Selsk. Christian. 1870, p. 183.  
 1888. *Epimeridae* Stebbing, Challeng. Rep. vol. 29, p. 876.  
 1893. „ G. O. Sars, Crust. Norw. vol. 1, p. 362.  
 1906. „ Walker, Ann. Mag. Nat. Hist. ser. 7, vol. 18, p. 17.  
 1906. *Paramphithoidae* Stebbing, Das Tierreich, 21, p. 320.  
 1908. „ id. Journ. Linn. Soc. Lond. Zool., vol. 30,  
 p. 191.  
 1912. „ Chevreux, Bull. Mus. Paris, no. 4, p. 215.

## GEN. EPIMERIA Costa.

1793. *Gammarellus* (part) Herbst. Naturgesch. Krabb. Krebs. vol. 2,  
 p. 106.  
 1851. *Epimeria* Costa in Hope, Cat. Crost. Ital. p. 46.  
 1888. „ Stebbing, l.c. p. 877.  
 1893. „ G. O. Sars, l.c. p. 363.  
 1906. „ Walker, l.c. p. 16.  
 1906. „ Stebbing, l.c. pp. 321, 728.  
 1912. „ Chevreux, l.c. p. 215.

## EPIMERIA CORNIGERA (Fabr.).

1779. *Gammarus corniger* Fabricius, Reise Norweg. p. 383.  
 1871. *Epimeria cornigera* Boeck, l.c. p. 185.  
 1893. „ „ G. O. Sars, l.c. p. 364, pl. 128.  
 1893. *Acanthonotosoma cornigerum* (part) Della Valle, F. u. Fl. Neapel.  
 vol. 20, p. 676, pl. 59, fig. 85.  
 1906. *Epimeria cornigera* Stebbing, l.c. p. 323 (synonymy).  
 1911. „ „ Sexton, J. Mar. Biol. Ass. n.s. vol. 9, pt. 2,  
 p. 210.

The South African specimen differs from Stebbing's description and Sars' figures only in having the ultimate joint of peduncle of 2nd antenna shorter than penultimate and the side-plates 1-3 obtuse (as in Sars' figure of *E. tuberculata*, l.c. pl. 129, fig. 2).

*Length*: 18 mm.

*Colour*: In spirit, pale pinkish.

*Locality*: Buffalo River NW.  $\frac{1}{2}$  W., distant 19 miles (off East London). 300 fathoms. . s.s. "Pieter Faure." 16/4/01. (S.A.M. No. A218.)

*Geogr. Distribution*: Norway, 50-150 fathoms (Sars); Great

Britain (Bate); France (Chevreux); Mediterranean (Costa); Bay of Biscay, 75-246 fathoms (Sexton).

EPIMERIA SEMIARMATA n. sp.

(Plate XXVII. Fig. 5.)

Integument indurated. Rostrum reaching to end of 2nd peduncular joint of 1st antenna. Eyes large, roundish-oval. Side-plates 1-3 subacute, 4 depth not greater than greatest length, inferior margin crescentic, 5 pentagonal, not produced, 6 rectangular, 7 semicircular, but deeper than long. Peraeon broadly rounded, not carinate. Pleon segments rounded, a faint carina on 3rd ending in a shortly produced acute tooth (obsolete in the largest specimen), 4th depressed basally, posteriorly with a low rounded hump, postero-lateral angle of 1st rounded, of 2nd acutely but shortly produced, of 3rd rather more produced (as in *E. parasitica*), no subdorsal carinae or accessory teeth.

Telson oblong, longer than broad, apex rounded with a shallow triangular incision.

First antenna, 1st joint longer than 2nd and 3rd together, flagellum half length of body, ca. 26-jointed.

Second antenna, ultimate joint of peduncle shorter than penultimate, flagellum  $\frac{2}{3}$  length of body, ca. 36-jointed.

Mandible, 2nd and 3rd joints of palp subequal, 2nd only sparsely setose.

Maxilliped, apex of outer plate with 8 spine-teeth.

Upper and lower lips, first and second maxillae as in Sars' figures of *E. conigera*.

First and second gnathopods similar, 5th joint with 3 bunches of setae on inner margin and one on apex, 6th shorter than 5th, palm very oblique, straight, denticulate but otherwise scarcely defined, finger longer than palm, inner margin serrate.

First and second peraeopods, 4th and 6th joints subequal, 5th a trifle shorter, 6th with 2 pairs of spines on hind margin, 7th  $\frac{3}{4}$  length of 6th, inner margin entire.

Third peraeopod, 2nd joint not expanded, of nearly the same width throughout, posterior apex rounded, with 3 indents each with a seta, 4th shorter than 5th, which is shorter than 6th, 7th as in 1st and 2nd peraeopods.

Fourth peraeopod, 2nd joint similar but rather broader, and broader basally than apically, posterior apex as in 3rd peraeopod, 4th-6th joints also similar, 7th  $\frac{2}{3}$  length of 6th.

Fifth peraeopod, 2nd joint pear-shaped, posterior apex scarcely

prominent, subquadrate, without indents, 4th shorter than 5th which is little shorter than 6th, 7th  $\frac{1}{2}$  length 6th.

Uropods without particular features, rami subequal except on 2nd uropod, where the outer is shorter than the inner.

*Length*: 13 mm. (ovigerous ♀).

*Colour*: In spirit, pale pinkish.

*Locality*: Cape Point N. 81° E., distant 32 miles. 460 fathoms. 3; Cape Point N.E., distant 40 miles. 560–700 fathoms. 1 ovigerous ♀ and 3 immature. s.s. "Pieter Faure." 20/8/03 and 17/9/03. (S.A.M. Nos. A219 and A2765.)

The specific name refers to the fact that the 5th side-plate is unarmed, as in *E. inermis* Walker, but the 4th is of the normal crescentic shape.

EPIMERIA LONGISPINOSA n. sp.

(Plate XXVII. Fig. 6.)

Integument indurated. Surface of the whole body, including telson, is seen under a high-power lens to be reticulated in a honey-comb pattern. Rostrum reaching to end of 2nd peduncular joint of 1st antenna. Eyes round. Side-plates 1–3 subacute, 4 deeper than long, lower margin emarginate but not strongly so, 5 strongly produced into a narrow spiniform process reaching to end of 1st pleon segment, 6 oblong, with small boss on lower margin, 7 semicircular. Peraeon not carinate. Pleon segment 1 feebly carinate but not ending in a tooth, 2–4 carinate and ending in a prominent finely pointed tooth, 4 with a notch in middle, postero-lateral angles of 2 and 3 quadrate, no accessory teeth or subdorsal carinae.

Telson oblong, apically subtruncate with shallow, almost semi-circular incision.

First antenna a little more than  $\frac{1}{4}$  total length, 1st joint longer than 2nd and 3rd together, flagellum ca. 27-jointed, accessory flagellum small but distinct.

Second antenna longer than first, ultimate joint of peduncle a little shorter than penultimate, flagellum ca. 32-jointed.

Mandible, 3rd joint of palp a little longer than 2nd.

Maxilliped, apex of outer plate with 10 spine-teeth.

Upper and lower lips, first and second maxillae normal.

First and second gnathopods similar, 5th joint longer than 6th, numerous setae on inner margin (chiefly arranged in 3 groups) and at apex, palm nearly transverse, distinct, convex, denticulate, finger about as long as palm, inner margin serrate.

First peraeopod, 4th joint a little longer than 5th or 6th, which are subequal, inner margin of 5th with 2 groups of 4 spines each, of 6th with three pairs, apical spines on both 5th and 6th, 7th stout, not much more than  $\frac{1}{2}$  6th, not serrate.

Second peraeopod similar but 5th a little shorter than 6th, with 3 groups of spines on inner margin.

Third peraeopod, 2nd joint not expanded, hind margin slightly sinuous, posterior apex rounded with 3-4 indents, each with a seta, 4th longer than 5th, 6th longer than 4th, 7th stout,  $\frac{1}{2}$  length of 6th.

Fourth peraeopod, 2nd joint similar to 3rd but broader basally and narrowing evenly, posterior apex with 4-5 indents, 5th longer than 4th, 6th longer than 5th, 7th stout, scarcely  $\frac{1}{2}$  length of 6th.

Fifth peraeopod, 2nd joint pear-shaped, narrowing very rapidly, posterior apex produced in a small oval lobe to half way along 3rd, without indents, 4th and 5th subequal, 6th longer, 7th  $\frac{1}{2}$  6th.

Uropods without special features, outer ramus of 2nd shorter than inner.

*Length*: Up to 11 mm.

*Colour*: In spirit, pale pinkish.

*Locality*: Cape Point E. by N., distant 29 miles. 250-300 fathoms. 11 specimens of various sizes. s.s. "Pieter Faure." 27/8/03. (S.A.M. No. A220.)

#### FAMILY ATYLIDAE.

1832. *Atylidae* G. O. Sars, Fort. Selsk. Christian. no. 18, p. 26.  
 1906. „ Stebbing, Das Tierreich, 21, p. 327.  
 1910. „ id. Gen. Cat. S. A. Crust. p. 455.

#### GEN. NOTOTROPIS Costa.

1853. *Nototropis* Costa, Rend. Soc. Borb. n.s. vol. 2, pp. 170, 173.  
 1906. „ Stebbing, l.c. pp. 329, 728.  
 1910. „ id. l.c. p. 455.

#### NOTOTROPIS GRANULOSA (Walker).

1904. *Paratylus granulosa* Walker in Herdman's Ceylon Pearl Fish. Suppl. Rep. 17, p. 265.  
 1906. *Nototropis* „ Stebbing, l.c. p. 728.

The single specimen I have assigned to Walker's species, although the granules are not at all well marked.

Moreover, although Walker states that his species closely resembles *N. vedlomensis* (Bate and Westw.), he does not specifically mention the branchial lamellae. The South African specimen is indistinguishable from *vedlomensis* except in respect to this latter point: the branchial lamellae namely are pleated. I rather suspect that a re-examination of Ceylon specimens of *granulosa* would reveal the presence of pleated lamellae and confirm the specific identity of the Ceylon and Natal specimens and their distinctness from the European *vedlomensis*.

*Length*: 7 mm.

*Colour*: In spirit, pale yellowish.

*Locality*: Umkomaas River mouth, NW. by W.  $\frac{1}{2}$  W., distant 5 miles (Natal). 40 fathoms. 1 nonovigerous ♀. s.s. "Pieter Faure." 31/12/00. (S.A.M. No. A223.)

#### FAMILY EUSIRIDAE.

1888. *Eusiridae* Stebbing, Challeng. Rep. vol. 29, p. 953.  
 1893. " G. O. Sars, Crust. Norw. vol. 1, p. 414.  
 1900. " Chevreux, Res. Camp. Monaco, vol. 16, p. 65.  
 1906. " Stebbing, Das Tierreich, 21, pp. 338, 728.  
 1907. " Walker, Nat. Antarct. Exp. vol. 3, pp. 4, 30.  
 1908. " Chevreux, Bull. l'Inst. océan. Monaco, no. 121, p. 1.  
 1910. " Sexton, Proc. Zool. Soc. Lond. 1910, pt. 4, p. 848.

#### GEN. EUSIROIDES Stebbing.

1888. *Eusiroides* Stebbing, l.c. p. 969.  
 1893. " G. O. Sars, l.c. p. 414.  
 1893. " Della Valle, F. u. Fl. Neapel. vol. 20, p. 671.  
 1906. " Stebbing, l.c. p. 345.  
 1909. " Walker, Tr. Linn. Soc. Lond. 2nd ser. Zool. vol. 12,  
 pt. 4, p. 333.

#### EUSIROIDES MONOCULOIDES (Haswell).

1880. *Atylus monoculoides* Haswell, Proc. Linn. Soc. N.S.W. vol. 4,  
 p. 327, pl. 18, fig. 4.  
 1888. *Eusiroides caesaris* Stebbing, l.c. p. 970, pl. 88.  
 1888. " *pompeii* id. ibid. p. 974, pl. 89.  
 1893. " *monoculoides* Della Valle, l.c. p. 674.  
 1906. " " Stebbing, l.c. p. 345.

1907. *Eusiroides monoculoides* Chevreux, Mém. Soc. Zool. Fr. vol. 20, p. 478.  
 1910. „ „ Stebbing, Sci. Res. "Thetis," pt. 12, p. 595.

These specimens present no peculiar features, except that the pleon segments are without a dorsal median tooth; the telsonic apex and the palms of the 1st and 2nd gnathopods resemble in some specimens Stebbing's figures of *E. caesaris*, in others those of *E. pompeii*. The calceoli on the antennae are less numerous, and on the large Sea Point specimen absent altogether.

*Length*: 14 mm., specimen from Sea Point 24 mm.

*Colour*: In spirit, pale pinkish, eyes claret. A specimen picked up on the beach at Sea Point was very nearly dead, and was when found salmon in colour with a large bright red subcircular medio-dorsal patch on each of pereon segments 4 to 7 and pleon segments 1 to 3, surrounded by a lighter ring. In spirit this coloration faded to a uniform white, the eyes dark brown.

*Locality*: Umhlangakulu River mouth NW. by N., distant 7 miles (Natal). 50 fathoms. 3. 14/3/01; Sandy Point N.  $\frac{1}{4}$  E., distant 10 miles (near Cape Morgan). 93 fathoms. 3. 14/8/01; Glendower Beacon N.  $\frac{1}{2}$  W., distant 16 miles. 66 fathoms. 4 ♂♂, 1 ovigerous ♀. 10/9/01; Port Shepstone WNW., distant 2 miles (Natal). 24 fathoms. 2. 15/3/01; and Cape St. Francis NE., distant 29 miles. 75 fathoms. 2. 19/2/02. s.s. "Pieter Faure." Sea Point, near Cape Town. 19/6/14. 1. Washed up on beach after storm. (K.H.B.) (S.A.M. Nos. A228 to A232 and A2908 respectively.)

*Geogr. Distribution*: Port Jackson, low-water mark (Haswell); off Melbourne, 33 fathoms (Stebbing: *E. caesaris*); Heard Island, 75 fathoms (Stebbing: *E. pompeii*); Tuamotu Archipelago, 1 metre (Chevreux); New South Wales (Stebbing).

In 1909 (Subant. Is. N.Z., p. 622) this species was transferred by Chilton to *Bovallia* in the family *Pontogeneiidae*. Without disagreeing with Chilton's conclusions I think it best to keep the present South African specimens under the genus *Eusiroides*.

#### CLEONARDOPSIS n.g.

Very near to *Cleonardo* Stebbing, but differing in the following features: Body carinate, side-plate 6 hardly bilobed, side-plate 7 not deeper behind than in front, pleon segments narrowed and rounded below, upper lip broader than long, 5th joint of 1st and 2nd gnathopods

large, subequal in length and broader than 6th, peraeopods not very slender, telson not very elongate, cleft for less than half its length.

The institution of a new genus for the present species seems justified in view of the fact that the 4 new species of *Cleonardo* described by Chevreux (Bull. l'Inst. oc. Mon. no. 121, p. 1) all agree in possessing the same generic characters as the original species, *C. longipes* Stebbing. The telson is somewhat similar to that of *Rozinante* Stebb., but in this genus the 5th joint of the gnathopods is not lobed.

CLEONARDOPSIS CARINATA n. sp.

(Plate XXVII. Figs. 7-9.)

Body carinate, keel very low on the 5 anterior peraeon segments, on peraeon segments 6 and 7 and pleon segments 1 and 2 increasing in height posteriorly and ending in an acute tooth, on pleon segment 3 highest in the middle, thence descending to posterior end where there is an acute, forwardly directed, curved tooth, pleon segment 4 smooth, not depressed.

Head with very short depressed rostrum, antero-lateral angles truncate, eyes not apparent. Side-plate 1 not produced forwards, short, 2-4 increasing in length, inferior margin straight, antero- and postero-inferior angles rounded, side-plate 4 moderately emarginate, 5 bilobed, posterior lobe rather deeper and apex subacute, 6 sub-rectangular, antero-inferior angle bevelled off, deeper than long, 7 trapezoidal, longer than deep, not deeper behind than in front.

Pleon segments narrowed and rounded below, postero-lateral angles of 2nd and 3rd quadrate, with slightly produced acute point in 2nd, well produced in 3rd.

Telson short, not reaching beyond  $\frac{1}{4}$  length of rami of uropod 3, somewhat pyriform, cleft  $\frac{1}{3}$  its length, apices obtuse, non-dehiscent, unarmed.

First antenna reaching to 2nd pleon segment, 2nd joint  $\frac{2}{3}$  length of 1st, 3rd joint not  $\frac{1}{2}$  length of 2nd, flagellum longer than peduncle, ca. 70-jointed, accessory flagellum small, 1-jointed,  $\frac{2}{3}$  length of 1st flagellar joint.

Second antenna in ♂ as long as first antenna, in ♀ extending to middle of peduncle of first antenna, ultimate joint shorter than penultimate, flagellum longer than peduncle in ♂, nearly equal in ♀, ca. 60-jointed in ♂, ca. 20-jointed in ♀. Flagella of both antennae calceoliferous.

Upper lip broader than long, distal margin rounded, entire.

Lower lip more resembling that of *Cleonardo newvillei* Chevreux

than that of *C. longipes* Stebbing, but the mandibular process narrower and more acute.

Mandible, cutting-edge tridentate in the one (? left), 6-dentate in the other (? right), secondary cutting-edge 3- and 4-dentate respectively, spine-row with 6 spines, molar prominent, denticulate, palp long and slender, 3rd joint equal to 1st and 2nd together.

First maxilla, inner plate rounded, with 3-4 setae, outer plate with 11 spines, palp longer and not much narrower than outer plate, 2nd joint not distally widened, apex with 7-8 spines and 2-3 fine setules, outer distal margin with two widely spaced setae.

Second maxilla, inner plate only a little broader than outer, apices of both plates rounded, setose.

Maxilliped, apex of inner plate with 3 short blunt spines, outer plate reaching to middle of 2nd joint of palp, outer margin and apex setose, inner margin straight, unarmed, but with a row of fine setae some little way within the margin, 4th joint equal to 3rd.

First gnathopod, 2nd joint distally expanded, club-shaped, hind margin with a row of close-set spines, 5th joint large, triangular, inferiorly lobed and bearing stout setae, 6th joint as long as 5th but a little narrower, ovate, palm very oblique, undefined, with 9 spines and 5 groups of setae, 1 long and 2 short in each group, 7th joint long, nearly reaching base of 6th.

Second gnathopod similar, but 2nd joint more prominently club-shaped, and 5th joint more strongly lobed.

First peraeopod, 2nd joint slightly expanded distally, hind margin with spines as in the gnathopods, 4th joint  $\frac{2}{3}$  length of 2nd, 5th nearly  $\frac{1}{2}$  length of 2nd, 6th subequal to 4th, its inner apex with a group of short spines, outer apex with 2 simple setae and 1 long plumose seta, 7th joint rather more than  $\frac{1}{2}$  length of 6th, rather stout, curved.

Second peraeopod similar, but 2nd joint not so much expanded, and spines on hind margin weaker.

Third peraeopod longer than the other peraeopods, 2nd joint 3 times as long as broad, front distal margin very finely setulose, with 5 widely spaced spines, hind margin with a few fine setae, 4th joint longer than 5th, both with very fine pubescence on front margin, 6th joint longer than 4th, subequal to 2nd, inner margin with 8 groups (usually pairs) of small spines, 7th joint  $\frac{1}{2}$  length of 6th, curved.

Fourth peraeopod, 2nd joint twice as long as broad, front distal margin with 2 spines, hind margin as in third peraeopod.

Fifth peraeopod a little shorter than fourth, 2nd joint half as long again as broad, front margin with a few setae only, hind margin convex, with very shallow serrations, each bearing a setule.

First and second uropods, peduncle shorter than rami, which are elongate and tapering, the outer shorter than inner, outer margin of peduncle and, to a lesser degree, outer margins of both rami spinulose.

Third uropod not extending beyond 2nd uropod, more feebly spinulose than 1st and 2nd uropods.

*Length*: 9 mm.

*Colour*: In spirit, pale yellowish.

*Locality*: Cape Point NE. by E., distant 36 miles. 650 fathoms.  
4 ♂♂. 3 ♀♀ (1 ovigerous). s.s. "Pieter Faure." 15/7/03.  
(S.A.M. No. A2786.)

Gen. RHACHOTROPIS S. I. Smith.

1871. *Tritropis* (part) Boeck, Forh. Selsk. Christian. 1870, p. 158.  
1883. *Rhachotropis* S. I. Smith, Proc. U.S. Nat. Mus. vol. 6, p. 222.  
1888. " Stebbing, Challeng. Rep. vol. 29, p. 954.  
1893. " G. O. Sars, Crust. Norw. vol. 1, p. 423.  
1896. *Rachotropis* Bonnier, Ann. Univ. Lyon. vol. 26, p. 653.  
1906. *Rhachotropis* Stebbing, Das Tierreich, 21, p. 347.  
1908. " id. Journ. Linn., Soc. Lond. Zool. vol. 30, p. 194.  
1909. " Strauss, Wiss. Ergebn. Deutsch. Tief-see Exp.  
vol. 20, pt. 1, p. 38.  
1911. " Chevreux, Bull. l'Inst. oc. Monaco, no. 204, p. 11.

RHACHOTROPIS KERGUELENI Stebbing.

1888. *Rhachotropis kergueleni* Stebbing, l.c. p. 955, pl. 85.  
1893. " " G. O. Sars, l.c. p. 424.  
1893. *Acanthozone* " Della Valle, F. u. Fl. Neapel. vol. 20,  
p. 612, pl. 59, fig. 24.  
1906. *Rhachotropis* " Stebbing, l.c. p. 349.

The Challenger specimens were probably males, judging by the length of the antennae; the present specimen is an ovigerous ♀, and agrees in all respects except the shorter antennæ and the slightly more dehiscent apices of the telson.

*Length*: 15 mm.

*Colour*: In spirit pale pinkish.

*Locality*: Cape Point N. 81° E., distant 32 miles. 400 fathoms.  
1 ovigerous ♀. s.s. "Pieter Faure." 20/8/03. (S.A.M. No. A2771.)

*Geogr. Distribution*: Kerguelen Island (Stebbing).

## RHACHOTROPIS PALPORUM Stebbing.

1908. *Rhachotropis palporum* Stebbing, Journ. Linn. Soc. Lond. Zool. vol. 30. p. 194, pl. 28.

The male differs from Stebbing's specimen as follows: The grooves between the head and 1st peraeon segment and between the 1st and 2nd peraeon segments are deeper, side-plates 5 and 6 rather more deeply bilobed, 7 not so acute posteriorly, the teeth on pleon segments less strong, and on pleon segments 2 and 3 the dorsal tooth is larger than the others, 3rd joint of the palp of maxillipeds more oval.

*Length*: 12 mm.

*Colour*: In spirit pale yellowish.

*Locality*: Cape Point NE. by E.  $\frac{1}{4}$  E., distant 38 miles. 755 fathoms. 1 ♂. 23/6/03; Cape Point E. by N., distant 29 miles. 250-300 fathoms. 1 ♀. 27/8/03. s.s. "Pieter Faure." (S.A.M. Nos. A224 and A2773).

*Geogr. Distribution*: 59° 36' N. 7° W. 400 metres (Stebbing).

## RHACHOTROPIS GRIMALDII Chevreux.

1887. *Tritopsis grimaldii* Chevreux, Bull. Soc. Zool. Fr. vol. 12, p. 571 (♀).  
 1888. *Rhachotropis* ,, Stebbing, Challeng. Rep. vol. 29, p. 1641.  
 1896. *Rachotropis elegans* Bonnier, Ann. Univ. Lyon. vol. 26, p. 658, pl. 39, fig. 4 (♂).  
 1900. ,, *grimaldii* Chevereux, Rés. Camp. Monaco, vol. 16, p. 68, pl. 9, fig. 1 (♀).  
 1906. *Rhachotropis* ,, + *elegans* Stebbing, Das Tierreich, 21, pp. 351, 729.

Rostrum not extending to half 1st joint of 1st antenna, antero-lateral angles of head obtusely projecting. Eyes not visible. Peraeon not carinate, but posterior portion of each segment slightly swollen, the 7th segment in ♂ with a small median tooth. Side-plate 1 produced forwards as far as antero-lateral angle of head, apex rounded, side-plates 2-4 quadrangular, anterior margin of 4 rounded, posterior margin slightly emarginate, 5 and 6 bilobed, hind lobe the deeper, 7 half as long again as deep, deepest anteriorly, thence narrowing, postero-lateral angle quadrate, the teeth and serrations on the posterior angles of all the side-plates very obscure. Pleon segments 1-3 tricarinate, the subdorsal carinae obscure, all the carinae ending in acute but scarcely upturned teeth, the median one on 2nd segment being

the strongest, 4th segment with median carina, which is rounded in profile, highest in the middle and stronger in ♂ than in ♀, posterior margins of 2nd and 3rd segments rounded and serrated, more so in the 3rd than the 2nd, postero-lateral margins of 4th and 5th segments each with a tooth.

Telson reaching to end of uropods, gradually tapering, apices acute, contiguous, cleft not quite as far as centre.

First antenna to end of peraeon in ♂, to about 4th peraeon segment in ♀, 1st and 2nd joints subequal, lower apex of 1st ending in ♀ in 2 teeth, both joints in ♂ with 9 bunches of setae on lower margin, 3rd joint half length of 2nd, flagellum scarcely as long as peduncle, ca. 24-jointed in ♂, 8-jointed in ♀, accessory flagellum extremely minute and indistinct.

Second antenna longer than first antennae, reaching in ♂ to end of 3rd pleon segment, in ♀ nearly to end of peraeon, ultimate joint of peduncle in ♂ a little longer than penultimate, in ♀ scarcely as long, upper margin of penultimate joint in ♂ with ca. 18 bunches of setae, flagellum longer than peduncle, ca. 40-jointed in ♂, 16-jointed in ♀.

Upper and lower lips normal, but outer lobes of lower lip more truncate apically.

Mandible, cutting-edge straight, entire, with 1 tooth at one end and 2 at the other, secondary cutting-edge in left 7-dentate, in right very feeble, serrulate, spine-row with 6-7 spines, 3rd joint of palp only a trifle shorter than 2nd.

The other mouth-parts without particular features.

First and second gnathopods, palm defined by 2 blunt tubercles, each surmounted by a spine bearing a cilium near its apex.

Third to fifth peraeopods, hind margin of 2nd joint entire, that of 5th peraeopod serrate, posterior apical angle rounded, in the 4th peraeopod 6th joint longer than 4th, 5th and 7th subequal, shorter than 4th.

Uropods, peduncle of 1st and 2nd spinose on inner margin, inner apex of peduncle of 3rd produced into an acute tooth furnished with a spine, outer ramus of each uropod slightly shorter than inner, inner margin of inner ramus of 1st and 2nd uropods and both margins of both rami of 3rd uropod spinulose.

*Length*: 13 mm.

*Colour*: In spirit, pale yellowish or pinkish.

*Locality*: Cape Point E. by N., distant 29 miles. 250-300 fathoms. 2 ♂♂, 7 ♀♀; Cape Point N. 81° E., distant 32 miles. 460 fathoms. 10 ♀♀; Cape Natal N. by E., distant 24 miles. 440 fathoms.

1 ovigerous ♀. s.s. "Pieter Faure." 27/8/03, 20/8/03 and 4/4/01. (S.A.M. Nos. A221, A222 and A240 respectively).

*Geogr. Distribution*: Cape Finisterre, 363-510 metres (Chevreux: *grimaldii*); Bay of Biscay, 950 metres (Bonnier: *elegans*).

There can be little doubt that these specimens are assignable to Chevreux's species, and that *elegans* is the ♂ of *grimaldii*. The presence of a small tooth on the 7th peraeon segment in the ♂ and the fact that the teeth on the pleon are not upturned are not enough to separate the Cape specimens from the North Atlantic ones.

RHACHOTROPIS PAENEGLABER n. sp.

(Plate XXVII. Fig. 10.)

Rostrum reaching half way along 1st joint of 1st antenna. Eyes absent. Antero-lateral angles of head obtuse.

Peraeon not keeled. Side-plates as in the previous species, but 7th not so long proportionately to its depth and not narrowed so much posteriorly. Pleon segment 1 with very obscure median keel on posterior margin, segment 2 with 3 keels ending in small acute teeth, segment 3 with 3 keels not ending in teeth, segment 4 tricarinate, the median keel ending in a tooth, the subdorsal keels not reaching the posterior margin. Postero-lateral angles of segment 3 rounded and serrate, the margin above also serrate.

Telson narrow, of nearly even width throughout, apices acute, not quite contiguous, cleft for  $\frac{1}{3}$  its length.

First and second antennae subequal, extending in ♂ to end of 3rd pleon segment, in ♀ to end of peraeon, peduncle with calceoli and groups of setae, flagella of both antennae ca. 17-jointed in ♂, ca. 10-jointed in ♀, accessory flagellum of 1st antenna minute but distinct.

Mouth parts normal; mandible with the cutting-edge as in *R. grimaldii*, and 3rd joint of palp a little longer than 2nd.

First and second gnathopods, palm defined by a well-marked obtuse projection bearing 6-8 spines, lobe of 5th narrow.

Third to 5th peraeopods, 2nd joint with entire hind-margin, in peraeopod 5 very faintly serrate and setulose, postero-inferior angle quadrate (as figured by Chevreux for *R. proxima*), distal joints of the peraeopods lost.

*Length*: 10 mm.

*Colour*: In spirit, pale pinkish.

*Locality*: Cape Point E. by N., distant 29 miles. 250-300 fathoms. 3 ♂♂, 16 ♀♀; Cape Point N. 81° E., distant 32 miles. 400 fathoms.

1 ♂. s.s. "Pieter Faure." 27/8/03 and 20/8/03. (S.A.M. Nos. A2769 and A2770.)

Specific name in allusion to the comparative absence of teeth on the pleon.

*RHACHOTROPIS ANOMALA* n. sp.

Rostrum subacute, extending as far as the subacute antero-lateral angles of head. Eyes absent.

Peraeon smooth. Side-plate 1 not strongly produced forward, antero-inferior angle acute, side-plate 5 produced backward but not narrowed, ending quadrately. Pleon with only a single dorsal carina, ending in a small tooth on 2nd and 4th segments only. Postero-lateral angle of 3rd rounded, quite smooth.

Telson reaching to end of 3rd uropod, tapering but slightly until near apex, cleft extremely short, apices acute, non-dehiscent.

Both first and second antennae lost.

Mouth-parts normal; mandible with the cutting-edge as in *R. grimaldii*, secondary cutting-edge 6-dentate in left, feeble and tridentate in right, 3rd joint of palp longer than 1st and 2nd combined.

First gnathopod, palm running into hind margin without break, but defined by two spines (1 large and 1 small) on the margin and a transverse row of 7 spines increasing in length towards the margin, palm setose.

Second gnathopod lost.

All the joints of the peraeopods lost except the 2nd joints; in the 5th peraeopod this is narrow-oblong, not at all expanded, postero-inferior angle acute but not produced, hind margin entire and glabrous.

Uropods, outer ramus of 2nd uropod shorter than inner, rami of 1st and 3rd uropods subequal, peduncles and rami smooth, except inner margin of inner ramus of 3rd, which has a few short spinules, inner apex of peduncle of 3rd acutely but shortly produced.

*Length*: 10 mm.

*Colour*: In spirit, pale yellowish.

*Locality*: Cape Point NE. by E., distant 36 miles. 650 fathoms. 1 nonovigerous ♀. s.s. "Pieter Faure." 15/7/03. (S.A.M. No. A2795.)

Although the single specimen is somewhat mutilated, it shows quite well characters distinct enough on which to found a new species.

The species seems to approximate to *R. gracilis* Bonnier in the dorsal carination, the telson and the postero-lateral margin of the

3rd pleon segment (I have not seen Bonnier's figures). It is, however, more feebly carinate and the apices of the telson are not dehiscent. The 2nd joint of the 5th peraeopod is very similar to that of *R. proxima* Chevreux. The perfectly entire postero-lateral margin of the 3rd pleon segment is quite exceptional in the genus, although *R. gracilis* has "only 3 scarcely visible denticles"; to this feature the specific name refers.

### FAMILY PONTOGENEIIDAE.

1906. *Pontogeneiidae* Stebbing, Das Terreich, 21, pp. 356, 729.  
 1907.        ,,        Chevreux, Exp. Antarct. Franc. p. 74.  
 1910.        ,,        Stebbing, Gen. Cat. S. Afr. Crust. p. 455.

#### GEN. PARAMOERA Miers.

1875. *Paramoera* (part) Miers, Ann. Mag. Nat. Hist. ser. 4, vol. 16,  
           p. 75.  
 1888. *Atyloides* (part) Stebbing, Challeng. Rep. vol. 29, p. 913.  
 1906. *Paramoera* id. l.c. p. 363.

#### PARAMOERA CAPENSIS (Dana).

- 1853 and 55. *Iphimedia capensis* Dana, U.S. Expl. Exp. vol. 13, 2,  
   p. 931, pl. 63, figs. 5a-g.  
 1862. *Atylus capensis* Bate, Cat. Amphip. Brit. Mus. p. 137, pl. 26,  
   fig. 4.  
 1888. *Atyloides assimilis* Stebbing, l.c. p. 918, pl. 77.  
 1888. *Atylopsis magellanica* id. ibid. p. 925, pl. 79.  
 1906. *Pontogeneia*        ,,        Stebbing, l.c. p. 360.  
 1906.        ,,        *capensis* id. ibid. p. 361 ("possibly identical with  
   *P. magellanica*").  
 1909. *Atyloides magellanica* Chilton, Subantarct. Is. N. Zeal. vol. 2,  
   p. 627 (references).  
 1912.        ,,        ,,        id. Tr. Roy. Soc. Edinb. vol. 48, pt. 2,  
   p. 496, pl. 1, fig. 18.  
 1914.        ,,        *magellanicus* Stebbing, Proc. Zool. Soc. Lond, 1914,  
   p. 365.

The reasons for the above synonymy are as follows :

In 1912 Chilton (l.c. p. 498) described a local variety of *Paramoera austrina* (Bate) from Saldanha Bay, South Africa, whose chief peculiarity is the absence of setae and the greater number of apical

teeth on the telson: there are 3-4 teeth on each lobe instead of 2 as in the other forms.

Now specimens from Table Bay, which I have examined, agree with the descriptions of *Paramoera australina* but show according to age from 2-8 apical teeth on the lobes of the telson; in one large ♂ there are even 11 teeth on each lobe. Chilton does not give the length of his specimens, but I cannot doubt that they are exactly similar to my Table Bay specimens.

Moreover, if the multidentate telson be compared with Bate's figure of *Atylus capensis* (presumably copied from Dana) the conclusion is unavoidable that we are dealing with the same form. In other respects the specimens conform to Bate's (Dana's) somewhat meagre description. Differences in the relative lengths of upper and lower antennae are unimportant.

Stebbing's *A. assimilis* is a typical young specimen of *P. capensis*; the length of the rami of 3rd uropod increase with age and become more serrate. Similarly I think *A. magellanica* is a young form of this species.

The question remains: Is *P. australina* (Bate) and its synonyms as given by Stebbing and Chilton (with the exception of *A. assimilis*) to be included under *P. capensis* (Dana)? Dana's name of course has the priority. The series of Cape specimens shows that the number of telsonic teeth increases with age from 2 to 8 (or even more); females begin to bear ova when only 6 mm. long and when the telson has only 3 or 4 teeth. On the other hand, *P. australina* (Bate), *P. australis* Miers and *Stebbingia gregaria* Pfeffer have all been described from specimens about 17 mm. in length and still having only *bidentate* telsonic lobes.

This seems to me to warrant the separation, if not perhaps as a species, then as a well-marked variety, of Bate's *australina* from the typical *capensis* of Dana. With *australina* go the other synonyms as suggested by Stebbing and Chilton, with the exception of Haswell's *megalophthalma*. This I would separate as another variety characterised by a strong rostrum ( $\frac{1}{2}$ - $\frac{4}{5}$  length of 1st joint of 1st antenna), and rounded, entire telsonic apices.

Walker's *P. magellanica* (Nat. Antarct. Exp. vol. 3, p. 33, pl. 12, fig. 20, 1907) does not appear to be specifically the same, in my opinion.

For the sake of comparison I give a detailed description of the Cape specimens.

Body smooth, pleon segments 1-3 not scabrous. Rostrum represented only by a small point. Eyes large, oval-oblong, nearly meeting on the top of the head, larger in ♀ than ♂. Side-plates 1-4 rounded

below, 4 rather strongly emarginate, 5 and 6 with hind-lobe deeper than anterior. Postero-inferior angle of pleon segment 1 rounded, of 2 quadrate with a small point, posterior margin above straight, of 3 rounded-quadrate with small acute point, above which the posterior margin bulges rather strongly.

Telson cleft for  $\frac{2}{3}-\frac{3}{4}$  of its length, outer margins slightly sinuous, inner margins straight and contiguous, apices of lobes sloping away externally from inner apical angle, cut into 5-8 teeth in the adult, fewer in young specimens (one large ♂ has 11 teeth), the intervening notches either with or without very fine short setules.

First antenna extending in ♂ to end of peraeon, in ♀ to end of 5th or 6th peraeon segment, 1st joint longest and stoutest, 3rd  $\frac{1}{2}$  2nd, flagellum ca. 50-jointed in ♂, in ♀ ca. 40-jointed, every alternate joint broader distally and bearing in ♂ 3, in ♀ 2 linear sensory filaments or calceoli (only 1 near the end of the flagellum), accessory flagellum distinct, 1-jointed.

Second antenna either equal to or a trifle longer than 1st antenna, ultimate peduncular joint a little longer than penultimate, flagellum ca. 65-jointed in ♂, in ♀ ca. 45-jointed, shortly setose but not calceoliferous.

Lower lip, inner lobes obsolete.

Mandibles, cutting-edge 7-dentate, the 2 anterior teeth longer than the rest, secondary cutting-edge 5-dentate in left, feeble and tridentate in right, spine-row with 9 spines, palp long, 3rd joint scarcely as long as 2nd.

First maxilla, inner plate with ca. 20 setae, outer plate with 10 spines, palp with 9 teeth and several seta on apex of 2nd joint.

Second maxilla and maxilliped as figured by Stebbing for *Atyloides australis* (Miers). (Challeng. Rep. vol 29, pl. 75.)

First gnathopod, 5th a little shorter than 6th, 6th wider than 5th, ovate, palm oblique, as long as hind margin, defined by a transverse row of 3 setae, finger serrate on inner margin.

Second gnathopod, 5th distinctly shorter than 6th, 6th oblong, wider than 5th, and a little wider distally than proximally, palm more transverse than in 1st gnathopod, shorter than hind margin, defined by a row of 3 setae, hind margin with bunches of setae, finger serrate on inner margin.

First and second peraeopods, 4th and 5th joints subequal, 6th longer than either, its hind margin with 7 pairs of spines, outer margin with 4 pairs of spinules, finger broad basally, rather strongly curved, with a seta at inner apex.

Third to fifth peraeopods, 5th peraeopod longer, 2nd joint in all

oval, postero-inferior angle rounded, anterior margin with groups of spinules, posterior margin finely serrulate, 4th longer than 5th, 6th longer than 4th, anterior margin of 6th with 7 groups of 3 unequal spines, hind margin with 6 pairs of spines.

First and second uropods, outer ramus very slightly shorter in 1st, distinctly shorter in 2nd, peduncle and rami with marginal spines, apices of rami with 5 stout unequal spines.

Third uropod, the distal half of the rami projecting beyond the end of 1st and 2nd uropods, rami subequal, nearly twice length of peduncle, lanceolate, apically acute, margins closely serrate, spinulose and setose, outer margin of the outer ramus with less numerous (only ca. 9) and more widely spaced serrations, with stout spines in the notches; in the young the rami are scarcely  $1\frac{1}{2}$  times length of peduncle, and the margins are smooth with only a few marginal spinules (as in Stebbing's figure of *Atyloides assimilis*, *Challeng. Rep. vol. 29, pl. 77*).

*Length*: ♂ up to 15 mm., ovigerous ♀♀ from 5–12 mm.

*Colour*: Whitish with crimson markings, these either few in number, pale and irregularly scattered, or forming bands on the anterior peraeon segments, or a median dorsal stripe, sometimes so numerous as to cover the whole body with a complete network; sometimes uniform pale crimson-red; eyes dark maroon.

*Locality*: Table Bay (Sea Point, near Cape Town). Dr. W. F. Purcell, Dr. J. D. F. Gilchrist, K.H.B.); Dassen Island, West Coast (R. M. Lightfoot); Hout Bay, Cape Peninsula (K.H.B.); False Bay (Buffels Bay and St. James, K.H.B.); East London (R. M. Lightfoot); Port Elizabeth (W. F. FitzSimons and Mrs. Paterson). ♂♂, ovigerous ♀♀ and young. (S.A.M. Nos. 1282, A2798, A2910, A2923, A2866, A2531, A2915, A2914, and A3034.)

*Geogr. Distribution*: Cape of Good Hope (Dana); off Cape of Good Hope (Stebbing: *A. assimilis*); Straits of Magellan, 55 fathoms (Stebbing: *A. magellanica*); Auckland Islands and South Orkneys (Chilton: *A. magellanica*); South Africa, 25 fathoms (Chilton: *P. austrina* var.); Falkland Islands (Stebbing: *A. magellanicus*). If *P. austrina* and *megalophthalma* be included under *capensis*, the distribution will extend to Australia, New Zealand and the Subantarctic Islands, Kerguelen, South Georgia, etc.

#### FAMILY GAMMARIDAE.

1813/14. *Gammaridae* (part) Leach, *Edinb. Encycl. vol. 7, p. 432*.

1906. „ Stebbing, *Das Tierreich, 21, pp. 364, 729*  
(references).

1907. *Gammaridae* id. J. Linn. Soc. Lond. Zool. vol. 30, p. 160.  
 1908. „ id. Ann. S.A. Mus. vol. 6, pt. 1, p. 81.  
 1908. „ Chevreux, Trav. Soc. Imp. St. Pétersb. vol. 37, pt.  
           2, p. 91.  
 1909. „ id. Arch. Zool. vol. 2, p. 28.  
 1910. „ Stebbing, Gen. Cat. S.A. Crust. p. 456.  
 1911. „ Chevreux, Mém. Soc. Zool. Fr. vol. 23, p. 211.  
 1912. „ Marcus, Zool. Anz. vol. 39, p. 296.

## GEN. ERIOPISA Stebbing.

1890. *Eriopisa* Stebbing, Ann. Mag. Nat. Hist. ser. 6, vol. 5, p. 193.  
 1890. *Eriopsis* Wrzesniowski, Z. wiss. Zool. vol. 50, p. 632.  
 1894. *Eriopisa* G. O. Sars, Crust. Norw. vol. 1, p. 514.  
 1901. „ Chevreux, Mém. Soc. Zool. Fr. vol. 14, p. 403.  
 1906. „ Stebbing, Das Tierreich, 21, pp. 411, 732.

The following species is very near to *E. seychellensis* Chevreux 1901, but differs in having the 3rd joint of the mandibular palp shorter than the 2nd, the apex of 5th joint of 2nd gnathopod rather more angular and the more expanded 2nd joint of 5th peraeopod. Both species are distinguished from the northern species *E. elongata* (Bruz.) by the short and slender 2nd joint of the outer ramus of the 3rd uropod.

## ERIOPIISA CAPENSIS n. sp.

(Plate XXVII. Figs. 16-19.)

Head equal to first two peraeon segments together, rostrum small, antero-lateral angles rounded, eyes absent. Side-plate 1 as deep as the following ones, but much narrower, antero-inferior angle produced forwards as a narrow acute process reaching half way along inferior margin of head, 2 and 3 rotundo-quadrate, 4 rotund, deeper than long, not quite as deep as 2 and 3, 5 and 6 feebly bilobed, the anterior lobe deeper than the posterior, 7 longer than deep, deepest in front, posterior angle rounded.

Pleon segments 1-3 with postero-inferior angles rounded and not serrate.

Telson cleft almost to base, lobes widely dehiscent, apices subacute, with 3-4 unequal spines, usually a spinule on outer margin just beyond the middle.

First antenna about half the length of body, 1st joint rather stout, 2nd subequal in length but more slender, 3rd scarcely half as long,

flagellum longer than peduncle, 17-18-jointed, accessory flagellum scarcely equal to 1st flagellar joint, 2-jointed, the 2nd joint minute.

Second antenna a little more than half 1st, peduncle longer than that of 1st, ultimate and penultimate joints subequal, flagellum equal to ultimate peduncular joint, 5-jointed, 1st joint much the longest.

Upper lip with rounded, entire distal margin.

Lower lip, inner lobes well developed, outer lobes apically truncate, mandibular processes well developed, subacute.

Mandibles stout, cutting-edges tridentate, secondary cutting-edge in left strong and 4-dentate, in right feeble and bidentate, spine-row with 2-3 spines, molar prominent, palp very slender, 3rd joint shorter than 2nd, tipped with 2 long and 1 short setae, no marginal setae on any of the joints.

First maxilla, inner plate with 3 apical setae (2 long, 1 short), inner margin nonsetose, outer plate with 9-10 spines, palp with 2nd joint longer than 1st apex, with 2 teeth and ca. 8 setae.

Second maxilla, plates equal in length, but inner narrower, and without setae on its inner margin.

Maxilliped, inner plate apically truncate, with ca. 5 obscure denticles and some simple setae, a more prominent denticle and a stout spinule on inner apical angle, inner margin nonsetose, outer plate oval, reaching to just beyond middle of 2nd joint of palp, inner margin with spine-setae, palp slender, 2nd joint twice length of 3rd, which is longer than 1st, 4th together with its terminal unguis equal to 1st.

First gnathopod, 5th joint oblong, not distally widened, inferior margin setose, 6th longer and wider than 5th, oval, palm very oblique, nearly 3 times as long as inferior margin, scarcely any defining angle, setose, a spine at  $\frac{2}{3}$  distance from hinge and a row of setae at junction with hind margin, finger equal to palm.

Second gnathopod similar to 1st, but 5th joint strongly produced downwards as a triangular process, wider than 6th, and setose on inferio-distal margin, 6th joint as in 1st gnathopod, but inferior margin relatively to palm a little longer.

First and second peraeopods not very slender, 2nd joint longest, 4th longer than 5th or 6th, which are subequal, 7th passing gradually into slender unguis, both together not quite equal to 6th.

Third peraeopod, 2nd joint not expanded, hind margin with scattered setules only, not apically produced, 4th and 6th subequal, 5th longer, hind apex of 6th with several strong and long setae, 7th half length of 6th, with a fine setule on inner apex, unguis slender, straight.

Fourth peraeopod longer than 3rd or 5th, 4th and 5th joints subequal, 6 shorter, otherwise similar to 3rd peraeopod.

Fifth peraeopod subequal to 3rd, 2nd joint oval, not apically produced, hind margin serrate and setose, 4th and 5th joints subequal, 6th a trifle longer.

First and second uropods, rami of 1st uropod subequal, of 2nd outer a trifle shorter than inner, apices obtuse, spinose, inner apical angle of peduncle of 1st with one strong spine, of 2nd with several spines.

Third uropod elongate, peduncle extending as far back as apices of 1st and 2nd uropods, outer ramus at least thrice as long as peduncle, 2-jointed, 2nd joint small, not  $\frac{1}{4}$  length of 1st, no sexual difference in length of 2nd joint, margins with 2-3 groups of long spines, apices of both joints spinose, inner ramus  $\frac{1}{2}$  length of 1st joint of outer, apex obtuse, spinose.

*Length*: 9 mm.

*Colour*: In spirit, brownish.

*Locality*: Lion's Head SE.  $\frac{1}{2}$  E., distant 42 miles (off Cape Peninsula). 156 fathoms. 3 ♂♂, 3 ovigerous ♀♀. ss. "Pieter Faure." 13/3/00. (S.A.M. No. A194.)

#### GEN. MELITA Leach.

- 1813/14. *Melita* Leach, Edinb. Encycl. vol. 7, p. 403.  
 1875. *Paramoera* (part) Miers, Ann. Mag. Nat. Hist. ser. 4, vol. 16, p. 75.  
 1906. *Melita* Stebbing, Das Tierreich, 21, pp. 421, 732.  
 1908. ,, Chevreux, Bull. de l'Inst. océan. Monaco, no. 122, p. 6.  
 1909. ,, Chilton, Subantarct. Is. N. Zeal. vol. 2, p. 630.  
 1910. ,, Stebbing, Sci. Res. "Thetis," pt. 12, p. 596.  
 1910. ,, Kunkel, Tr. Conn. Ac. vol. 16, p. 31.  
 1911. ,, Chevreux, Mém. Soc. Zool. Fr. vol. 23, p. 213.

#### MELITA FRESNELII (Audouin).

(Plate XXVIII. Fig. 32.)

1826. *Gammarus fresnelii* Audouin in Deser. Égypte, vol. 1, 4, p. 93, Crust. pl. 11, fig. 3.  
 1845. ,, *anisochir* Kröyer, Naturh. Tidsskr. ser. 2, vol. 1, p. 317, pl. 2, figs. 1a-p.  
 1852. *Melita pilosus* Dana, Proc. Amer. Ac. vol. 2, p. 212.  
 1855. ,, *validus* id. U.S. Expl. Exp. vol. 13, 2, p. 966, pl. 66, fig. 6.  
 1855. ,, *setipes* id. ibid. p. 967, pl. 66, fig. 7.

1864. *Melita exilii* Fr. Müller, Für Darwin, p. 6, fig.  
 1879. „ *australis* Haswell, Proc. Linn. Soc. N.S.W. vol. 4, p. 264,  
 pl. 9, figs. 6, 7.  
 1890. „ *cotesi* Giles, J. Asiat. Soc. Bengal, vol. 59, p. 64, pl. 2,  
 fig. 1.  
 1904. „ *anisochir* Walker in Herdman's Ceylon Pearl Fish. Suppl.  
 Rep. 17, p. 270, pl. 4, fig. 28.  
 1906. „ *fresnelii* Stebbing, l.c. p. 423 (synonymy and references).  
 1909. „ „ Walker, Tr. Linn. Soc. Lond. Zool. vol. 12, pt. 4,  
 p. 334.  
 1910. „ „ Stebbing, l.c. p. 596.  
 1910. „ „ Kunkel, l.c. p. 31, fig. 11.  
 1912. „ „ Pearse, Proc. U.S. Nat. Mus. vol. 43 [1913],  
 p. 371.

In these specimens the dorsal teeth on the pleon vary slightly from Stebbing's description in *Das Tierreich*. The median tooth on all the segments is very minute or even absent, on segments 1 and 2 there are 3 subdorsal teeth on either side, on segment 3 two teeth, of which the lower one is the larger and apically bifid, on either side, on segment 4 only 2 large teeth, on segment 5 two small ones.

The eye tends to become oval in the adult.

Twelve of the ♂♂ are "left handed" and eight "right handed."

*Length*: 8 mm.

*Colour*: Pale straw coloured, speckled with brown, a small dark brown median dorsal spot on peraeon segments 2-7 and pleon segment 1, side-plates and pleura also speckled and spotted with dark brown, antennae, peraeopods and uropods spotted and banded with orange, large hand of ♂ blotched with orange and brown, proximal part of finger orange, apex of finger and thumb white, eyes brown.

*Locality*: Morewood Cove NW. by N.  $\frac{3}{4}$  N., distant 3 miles (Natal). 27 fathoms. 20 ♂♂ 15 ♀♀, some ovigerous, and 7 juv.; Umhloti River mouth NNW., distant 1 mile (Natal). 27 fathoms. 1 ♀. s.s. "Pieter Faure." 19/12/00 and 21/12/00. Durban, July 1915. (H. W. Bell-Marley). 4 ♂♂, 5 ♀♀, 2 juv. (S.A.M. Nos. A 193, A3817, and A3845.)

*Geogr. Distribution*: Egypt (Audouin); Singapore, 10 feet (Dana); Rio Janeiro, shore (Dana); Port Jackson (Haswell); Andaman Isles (Giles); Ceylon (Walker); Seychelles, 22-36 fathoms (Walker); Wasin, B.E.A., 10 fathoms (Walker); Suakim, 5 fathoms (Walker); New South Wales, 52 fathoms (Stebbing); Bermuda, 0-12 feet (Kunkel); Gulf of Mexico, 2-30 fathoms (Pearse).

## MELITA INAEQUISTYLIS (Dana).

1852. *Amphitoe* (*Melita*) *inaequistylis* and *tenuicornis* Dana, Proc. Amer. Ac. vol. 2, pp. 214 and 215.
- 1853 and 1855. *Melita tenuicornis* id. U.S. Expl. Exp. vol. 13, 2, p. 963, pl. 66, figs. 5a-m.
1862. *Moera* „ Bate, Cat. Amphip. Brit. Mus. p. 195, pl. 35, fig. 6.
1876. *Paramoera* „ Miers, Cat. Crust. N. Zeal. p. 127, pl. 3, fig. 8 (♀).
1893. *Melita palmata* (part) Della Valle, F. u. Fl. Neapel. vol. 20, p. 714.
1904. *Maera tenuicornis* Walker in Herdman's Ceylon Pearl Fish. Suppl. Rep. 17, p. 273, pl. 5, fig. 33.
1904. *Melita zeylanica* Stebbing, Spolia Zeylanica, vol. 2, pt. 5, p. 22, pl. 5.
1906. „ *inaequistylis* id. Das Tierreich, 21, pp. 429, 732.
1906. „ *tenuicornis* Chilton, Tr. N.Z. Inst. vol. 38, p. 271.
1909. „ *inaequistylis* id. Subant. Is. N. Zeal. p. 630.
1911. „ „ id. Tr. N.Z. Inst. vol. 43, p. 564.
1914. „ „ Stebbing, Proc. Zool. Soc. Lond. 1914, p. 366.

Side-plate 5 in ♀ not hooked.

Pleon segment 4 in ♂ with 1 medio-dorsal acute tooth on hind margin, segment 5 with 2 subdorsal teeth on either side (no medio-dorsal tooth); ♀ sometimes without a tooth on segment 4 and with only 1 subdorsal tooth on either side on segment 5. Postero-inferior angle and posterior and inferior margins of 3rd pleon segment as figured by Walker.

Telson, inner margin slightly concave, apices acute, outer margin with 2 subapical spines, inner margin with 3 (2 large, 1 small) subapical spines, 1 smaller one a little beyond middle of inner margin.

First antenna, 2nd joint longer than 1st, 3rd  $\frac{1}{3}$  2nd, flagellum a little longer than peduncle, ca. 40-jointed, accessory flagellum 5-jointed.

Second antenna, gland-cone acute, reaching half way along 3rd, ultimate and penultimate joints subequal, flagellum scarcely equal to last 2 peduncular joints together, ca. 14-jointed.

Mandibular palp, 1st joint at least  $\frac{1}{2}$  2nd, 2nd and 3rd subequal.

Maxilliped, 3rd joint of palp expanded, obovate.

First gnathopod in ♂ as in Della Valle's figure of that of *M. palmata* (Montagu); in ♀ 6th joint without the process on front

apex, the defining angle of palm rounded and somewhat produced, palm transverse, finger and unguis tapering evenly.

Second gnathopod in ♂ also as in Della Valle's figure of that of *M. palmata* but far more setose along palm and hind margin and on inner surface, finger stout, apex subacute and resting in a small pit; in ♀ not so large as in ♂, palm a little oblique, with a small defining tooth, finely crenulate, finger not closing on to inner surface, apically acute.

First and second peraeopods slender, 2nd joint longest, 4th a trifle longer than either 5th or 6th, which latter are subequal, inner margin of 5th with 5 spinules, of 6th with 6 pairs of spinules, finger and unguis short and stout.

Third to fifth peraeopods much stouter than 1st and 2nd peraeopods, 2nd joint expanded, oval, hind margin straight with very faint serrations, postero-inferior angles rounded, reaching to middle of 3rd joint, 4th joint longer than 5th, 6th longer than 4th, moderately spinose, 3rd peraeopod shorter than 4th or 5th.

First and second uropods, peduncle with spine at apex, rami subequal.

Third uropod long, outer ramus spinose, with a distinct though very small second joint, inner ramus ovate, apically acute, inner margin with 3 spines.

*Length*: ♂ 18 mm. (to end of 3rd uropod), ♀ 10 mm.

*Colour*: Greyish, each segment with one or two transverse bands of purplish grey, peduncles of antennae purplish, peraeopods ringed with the same colour.

*Locality*: St. James (False Bay) and Table Bay. 1897. (Dr. W. F. Purcell); Sea Point, near Cape Town. 19/3/14. (K.H.B.); Port Elizabeth. Nov. 1914. (F.W. FitzSimons); East London. July, 1914. (R. M. Lightfoot). ♂♂ and ovigerous ♀♀. (S.A.M. Nos. 1273, 1291, A2892, A2900, A2905, A3056, and A2907).

*Geogr. Distribution*: New Zealand (Dana, Thomson, Miers, Chilton); Ceylon (Walker); Ceylon (Stebbing, *M. zeylanica*); Auckland, Chatham, and Kermadec Islands (Chilton); Falkland Islands (Stebbing).

For the present *inaequistylis* may be kept separate from *palmata* on account of the shape of the 2nd gnathopods in ♂, but there is no doubt that eventually it must be merged into the latter. The teeth on the pleon of the South African specimens agree exactly with Stebbing's description of *palmata*.

## GEN. MAERA Leach.

- 1813-14. *Maera* Leach, Edinb. Encycl. vol. 7, p. 403.  
 1900. „ Chevreux, Rés. Camp. Monaco, vol. 16, p. 84.  
 1904. „ Walker in Herdman's Ceylon Pearl Fish. Suppl.  
 Rep. 17, p. 271.  
 1906. „ Stebbing, Das Tierreich, 21, pp. 433, 732, 741 (refer-  
 ences).  
 1907. „ von der Brügggen, Ann. St. Petersburg. Mus. vol. 11, p. 17.  
 1908. „ Calman, Ann. N.Y. Ac. vol. 11, p. 269.  
 1908. „ Pearse, Proc. U.S. Nat. Mus. vol. 34, p. 29.  
 1908. „ Holmes, ibid. vol. 35, p. 539.  
 1910. „ Kunkel, Tr. Conn. Ac. vol. 16, p. 44.  
 1910. „ Stebbing, Sci. Res. "Thetis," pt. 12, p. 599.  
 1910. „ id. Gen. Cat. S.A. Crust. p. 457.  
 1912. „ Chilton, Tr. Roy. Soc. Edinb. vol. 48, pt. 2, p. 501.

## MAERA INAEQUIPES (Costa).

1847. *Amphithoe truncatipes* (Spinola in MS.) White, Crust. Brit. Mus.  
 p. 87 (nom. nud.).  
 1851. „ *inaequipes* Costa in Hope, Cat. Crost. Ital. p. 45.  
 1857. *Gammarus scissimanus* id. Mem. Acc. Napoli. vol. 1, p. 221,  
 pl. 3, fig. 7.  
 1866. *Maera scissimana* and *integrimana* Heller, Denk. Ak. Wien.  
 vol. 26, pt. 2, p. 40, pl. 3, figs. 24, 25.  
 1888. *Moera truncatipes* Barrois, Cat. Crust. Açores. p. 35, text-fig.  
 1893. *Maera* „ (part) Della Valle, F. u. Fl. Neapel. vol. 20,  
 p. 725, pl. 1, fig. 2, pl. 22, figs. 26-40.  
 1904. „ *scissimana* Walker, l.c. p. 273, pl. 5, fig. 32.  
 1906. „ *inaequipes* Stebbing, l.c. p. 435.  
 1909. „ „ Walker, Tr. Linn. Soc. Lond. vol. 12, pt. 4,  
 p. 334.  
 1910. „ „ Kunkel, l.c. p. 44, fig. 16.  
 1910. „ „ Stebbing, Sci. Res. "Thetis," pt. 12, p. 599.  
 1910. „ „ Chevreux, Mém. Soc. Zool. Fr. vol. 23, p. 218.

Agreeing with Stebbing's description except in the following points  
 1st antenna with flagellum of 17-19 joints, accessory flagellum 10-  
 jointed, flagellum of 2nd antenna 9-jointed, subequal to ultimate ped-  
 uncular joint which is shorter than penultimate, gland-cone not reaching  
 beyond apex of antepenultimate; 5th joint of 1st gnathopod with a  
 notch near apex on anterior margin; hands of 2nd gnathopods equal,

palm with a slight central notch, denticulate between notch and hinge, very faintly denticulate between notch and the strong defining tooth; hind margins of 2nd joint of peraeopods 3-5 faintly serrulate near distal end only; apices of telson tridentate, outer one smaller than the other two, which are subequal, a spine in the notch between each tooth.

*Length*: 13 mm.

*Colour*: In spirit, pale yellowish or pinkish, eyes red-brown.

*Locality*: Table Bay. 1897. 2 ♂♂, 1 juv. (Dr. W. F. Purcell); Woodstock beach (Cape Town). 6/4/08. 2 ♂♂. (E. P. Phillips and R. M. Lightfoot); Cape Morgan N.  $\frac{1}{2}$  W., distant 10 miles. 77 fathoms. 1 ovigerous ♀; and Hood Point. N. by W.  $\frac{1}{2}$  W., distant 11 miles. 49 fathoms. 1 ovigerous ♀. s.s. "Pieter Faure." 26/7/01 and 15/7/01. (S.A.M. Nos. 1292, A191, A189 and A2873 respectively.)

*Geogr. Distribution*: Mediterranean (Costa, Della Valle, Chevreux); Azores (Barrois); Ceylon (Walker); Seychelles, Red Sea and Wasin, Brit. E. Africa, 10 fathoms (Walker); New South Wales (Stebbing); Bermuda (Kunkel).

#### MAERA HIRONDELLEI Chevreux.

1900. *Maera hirondellei* Chevreux, Rés. Camp. Monaco, vol. 16, p. 84, pl. 11, figs. 1a-j.

1906. " " Stebbing, l.c. p. 732.

1910. " " Chevreux, Mém. Soc. Zool. Fr. vol. 23, p. 218.

The South African specimens agree so well with Chevreux's species that the few differences which are present cannot be regarded otherwise than as local variations and also perhaps as due to age. Chevreux expresses a doubt as to whether his ♂♂ were adult, but does not say whether the ♀♀ were ovigerous.

The 5th joint of 1st gnathopod indented on anterior margin just before the acute apex.

The hand of 2nd gnathopod is broader in proportion to its length than in Chevreux's specimen, the two teeth at defining angle of palm stronger. Chevreux in the enlarged figures of the 2nd gnathopod (figs. 1g and 1j) shows these 2 teeth, but in the text speaks of only one. The insertions of the bundles of setae along the distal portion of the inferior margin of hand rather deep, causing a distinctly serrate appearance.

The mandibular palp is of normal length (cf. Sars' figure of *M. othonis*, Crust. Norw. vol. 1, pl. 182, fig. 1), the 3rd joint a little shorter than 2nd.

Flagellum of 1st antenna ca. 25-jointed, accessory flagellum 9-jointed; flagellum of 2nd antenna ca. 11-jointed, subequal to ultimate peduncular joint which is shorter than penultimate, gland-cone not so long as in Chevreux's specimens.

Eyes fairly large, reniform; side-plate 1 with antero-inferior angle produced acutely forward; postero-lateral angle of 3rd pleon segment somewhat produced, acute, margins not serrate; telsonic lobes rather more ovate than in Chevreux's figure.

*Length*: 15 mm.

*Colour*: In spirit, pale pinkish.

*Locality*: Paternoster Point SE.  $\frac{1}{4}$  E., distant 9 miles (off Saldanha Bay). 80 fathoms. 2 ♂♂, 1 ovigerous ♀. s.s. "Pieter Faure." 17/3/02. (S.A.M. No. A187.)

*Geogr. Distribution*: Azores, 130 metres (Chevreux); Ile Djerba, Algiers, low-tide (Chevreux).

It appears to me to be very doubtful if Chevreux's species is really distinct from *inaequipes*. But since in the South African material the specimens which I assign to *hirondellei* are distinguishable from those I take to be *inaequipes* by the two teeth defining the palm of the 2nd gnathopods and the more produced postero-inferior angle of 3rd pleon segment, I keep them separate here.

#### MAERA MASTERSII (Haswell).

1879. *Megamoera mastersii* Haswell, Proc. Linn. Soc. N.S.W. vol. 4, p. 265, pl. 11, fig. 1.

1884. ,, *thomsoni* Miers, Rep. Voy. "Alert," p. 318, pl. 34, fig. B.

1906. *Maera masterii* Stebbing, Das Tierreich, 21, p. 439.

1911. *Moera* ,, Chilton, Tr. N.Z. Inst. vol. 43 [1910], p. 564.  
(Non-Chilton, 1912, Tr. Roy. Soc. Edinb. vol. 48, pt. 2, p. 501.)

The palm of the right 2nd gnathopod has a defining tooth, a tooth near the hinge and between those another tooth, all three being fairly strong and acute. Between the defining tooth and the middle tooth there is a very small tooth. The left 2nd gnathopod is weak, palm ill defined and without teeth. The telson as in Haswell's description.

*Length*: 8 mm.

*Colour*: In spirit, uniform dull purplish-brown.

*Locality*: Mozambique (Conducia Bay). Nov. 1912. 1 ♂. (K.H.B.).  
(S A M No. A2471)

*Geogr. Distribution:* Port Jackson, Australia (Haswell); Torres Strait (Miers); Kermadec Islands (Chilton).

MAERA HAMIGERA (Haswell).

(Plate XXVII. Figs. 11-12.)

1879. *Moera hamigera* Haswell, Proc. Linn. Soc. N.S.W. vol. 4, p. 333, pl. 21, fig. 1.  
 1885. *Megamoera suensis* var. id. ibid. vol. 10, p. 103, pl. 15, figs. 1-4.  
 1906. *Maera hamigera* Stebbing, Das Tierreich, 21, p. 437.  
 1909. „ „ Walker, Tr. Linn. Soc. Lond. ser. 2, vol. 12, pt. 4, p. 335, pl. 43, fig. 5.  
 1910. „ „ Stebbing, Sci. Res. "Thetis," pt. 12, p. 600.

Side-plate 1 with a notch at postero-inferior angle. Posterior margin of 3rd pleon segment with 5-6 somewhat widely spaced serrations.

Telsonic apices deeply notched, 3 strong spines in the notch, the middle spine nearly as long as the lobe, the other  $2\frac{1}{4}$  as long, inner margin with 2-3 spiniferous notches.

First antenna, 1st joint with spine on lower apex, 2nd longer than 1st, flagellum ca. 40-jointed, accessory flagellum 5-jointed. Second antenna, ultimate joint shorter than penultimate, flagellum ca. 15-jointed.

Third joint of mandibular palp a trifle shorter than 2nd.

First gnathopod, 4th joint apically acute, palm ill defined, microscopically denticulate, set with spines and setae.

Second gnathopods dissimilar on the two sides, the right larger than the left, in ♂ 4th joint apically acute, hind margin of 6th longer than palm, with one or two setiferous notches near the defining tooth, palm concave between this and the 4-5 denticles near hinge, but with a small tooth in the centre of the concavity, a submarginal row of 4-5 stout spines, finger fitting within defining tooth, rather strongly curved and tapering evenly. In a larger specimen, which is otherwise indistinguishable and seems to be the adult form, there are 4 teeth defining the palm, arranged transversely, the largest being on the outside and a little in advance of the others, the tooth in the centre of the concave portion of the palm is larger and nearer the other teeth, so that the convex portion of palm bears 6 teeth which are well defined and acute; finger fitting into the concavity, very stout, scimitar-shaped, widening distally and ending abruptly with a small incurved blunt tooth, inner margin convex except at extreme base.

In the left gnathopod the hand is much weaker and more setose, defining angle of palm rounded, with 3-4 spines, first part of palm concave, second part convex with a small tooth and 2 pairs of spines; in the large specimen the palm is more uniformly straight but armed with spines and setae.

In ♀ right and left 2nd gnathopods equal in size, the hand being similar to that of the young ♂, elongate-oval, tapering distally, palm and hind margin subequal and continuous, without defining tooth, but with a submarginal spine, palm with 2 denticles near the hinge, both flanked by minute subsidiary denticles, some small denticles between first tooth and junction with hind margin, finger tapering, nearly reaching the defining spine.

Hind margin of 2nd joint of 3rd-5th pereopods serrate.

All the pereopods with a straight stout spine-seta on inner apex of 7th joint extending as far as the end of the curved unguis, most noticeable in the posterior three pereopods.

*Length*: ♂ 14 and 18 mm.; ♀ 8 mm.

*Colour*: In spirit, yellowish-white, eyes pale brown.

*Locality*: Glendower Beacon N.  $\frac{1}{2}$  W., distant 16 miles (near Port Alfred). 66 fathoms. 3 juv. ♂♂; Cape Natal W.  $\frac{3}{4}$  N. distant 12 miles, 85 fathoms. 1 ♂ (the large specimen mentioned above). s.s. "Pieter Faure." 10/9/01 and 17/12/00; Dyer's Island. April, 1915. (J. Drury.) 2 ♀♀ (1 ovigerous). (S.A.M. Nos. A188, A192 and A3390.)

*Geogr. Distribution*: Port Jackson and Port Stephens, Australia (Haswell); Red Sea (Walker); New South Wales, 54-59 fathoms (Stebbing).

#### GEN. ELASMOPUS Costa.

1853. *Elasmopus* Costa, Rend. Soc. Bourb. n. s. vol. 2, pp. 170, 175.  
 1906. ,, Stebbing, Das Tierreich, 21, pp. 441, 732.  
 1908. ,, Chevreux, Mém. Soc. Zool. Fr. vol. 20, p. 483.  
 1910. ,, Stebbing, Gen. Cat. S.A. Crust. p. 457.

#### ELASMOPUS PECTENICRUS Bate.

(Plate XXVIII. Fig. 33.)

1862. *Moera pectenocrus* Bate, Cat. Amph. Brit. Mus. p. 192, pl. 34, fig. 8 (on plate spelt *pectinocrus*).  
 1904. *Elasmopus serrula* Walker in Herdman's Ceylon Pearl Fish. Suppl. Rép. 17, p. 277, pl. 8, fig. 37.  
 1906. ,, *brasiliensis* (part) Stebbing, l.c. p. 443.  
 1909. ,, *serrula* Walker, Tr. Linn. Soc. Lond. vol. 12, pt. 4

In 1906 Stebbing doubtfully included this species with Dana's *brasiliensis*. Bate's figures of his own species are very different from those which he gives of Dana's species (presumably copied from Dana's work) as regards the two features which distinguish the species, namely: the 2nd gnathopod of the male and the 2nd joint of the 4th peraeopod. Dana makes no mention of a tooth on the palm of the former and figures the 2nd joint of the 4th peraeopod as uniformly oval. Chevreux (1910, Mém. Soc. Zool. Fr. vol. 23, p. 222, text-fig. 22 and pl. 15, figs. 14-20) follows Dana in the first point and in the second figures the joint in question rather narrower than Dana, but nevertheless not at all similar to that of *pectenicrus*.

These two characters leave no doubt that *pectenicrus* should be retained as a species distinct from *brasiliensis*.

As regards Walker's *serrula*, young specimens from the same gathering as the adults are in perfect agreement with his description and figures; the "flat-topped teeth of peculiar form" becoming at the last (probably) moult longer, more numerous and closely set, and the hind margin becoming distally concave.

The following description, applying to the South African specimens, will supplement that of Bate.

Body smooth. Eyes fairly large, oval. Postero-inferior angle of 3rd pleon segment quadrate, with a very minute point, herein differing from Bate's figure. Telson as figured by Walker for *serrula*.

First antenna reaching to 4th peraeon segment, 1st and 2nd joints subequal, 3rd a little shorter, flagellum not quite as long as peduncle, ca. 20-jointed, accessory flagellum 3-jointed.

Second antenna reaching base of flagellum of 1st antenna, 4th and 5th joints subequal, flagellum longer than 5th joint, ca. 10-jointed.

Mouth-parts without particular features.

First gnathopod, as in *E. rapax* Costa, anterior margins of 5th and 6th joints with several transverse rows of setae in ♂.

Second gnathopod in ♂ as figured for *serrula*; in ♀ and young ♂ the 6th joint is elongate-oval, the palm as long as the hind margin and defined by a spine (but no tooth or projection), the palm bears a few spinules and the setae are simple and less numerous, inner margin of finger serrate.

Third peraeopod, 2nd joint narrowing slightly distally, hind margin nearly straight, obscurely serrate.

Fourth peraeopod, 2nd joint strongly narrowed and concave distally, postero-inferior angle rounded, lower part of hind margin with numerous, closely-set, spiniform teeth in the adult ♂, in young ♂ as figured for *serrula*; in ♀ the 2nd joint narrows distally as in the

adult ♂, but the lower part of hind margin is straight, the teeth are as in the young ♂, but sharper and more closely set.

Fifth peraeopod, hind margin of 2nd joint strongly convex, serrate.

Seventh joint of all the peraeopods with 2-3 spine-setae at inner apex.

Third uropods as figured for *serrula*.

Length: ♂ 9 mm.; ♀ 6 mm.

Colour: White, with a somewhat irregularly reticulated transverse violet band on the head and each of the peraeon and pleon segments, in the median line on the peraeon and pleon there is a lozenge-shaped patch of the white ground colour surrounded by a border of violet, at the hinder end of which is a deep violet spot, side-plates and 2nd joints of 3rd to 5th peraeopods with a broad violet stripe, antennae ringed with violet, eyes black.

Locality: Buffels Bay (False Bay). 28/9/13. (K.H.B.) 1 juv. ♂; Durban, Natal. March and July, 1915. (H. W. Bell-Marley.) ♂♂, ovigerous ♀, and juv. (S.A.M. Nos. A2535, A3376, and A3844.)

Geogr. Distribution: New Guinea (Bate); Ceylon (Walker); Zanzibar (Walker); Suez (Walker).

ELASMOPUS BOECKII (Haswell).

(Plate XXVII. Figs. 13, 14.)

1879. *Megamoera boeckii* Haswell, Proc. Linn. Soc. N.S.W. vol. 4, p. 336, pl. 21, fig. 6.  
 1899. *Elasmopus* ,, Stebbing, Tr. Linn. Soc. Lond. ser. 2, vol. 7, p. 426.  
 1906. ,, ,, id. Das Tierreich, 21, p. 445.

Haswell's description is very brief, and his figure of the 2nd gnathopod is not at all clear, so that it is very doubtful if the present specimen is correctly assigned to his species. Moreover, it is thrice as long as the original one, which was most probably immature.

Eyes elongate oval, vertical. Peraeon and pleon without serrations or setae. Side-plate 1 fairly produced forwards, inferior margins of 1-4 not serrate, 5 not as deep as 4. Postero-inferior angle of 3rd pleon segment quadrate with a very minute point, posterior margin straight, entire.

Telson cleft for  $\frac{2}{3}$  of its length, lobes dehiscent, apices excavate between two teeth, a small tooth at base of excavation, whence arise also 2 unequal stout spines.

First antenna reaching to end of peraeon, 2nd joint a little longer than 1st, 3rd  $\frac{1}{4}$  2nd, flagellum shorter than peduncle, ca. 25-jointed, accessory flagellum 4-jointed, equal to the first 4-5 flagellar joints.

Second antenna reaching to middle of flagellum of 1st, gland-cone inconspicuous, 3rd  $\frac{1}{2}$  4th, 5th a little shorter than 4th, flagellum ca. 13-jointed, equal to 4th joint.

Mandibles short and stout, as figured by Walker and Scott for *E. sokotrae* (Nat. Hist. Sokotra, 1903, pl. 14 B, fig. 1a), cutting-edge obtuse, but with 1 blunt tooth, secondary cutting-edge blunt, obscurely 4-dentate in left, tridentate in right, spine-row with ca. 6 spines, palp slender, 1st joint  $\frac{1}{2}$  2nd, 3rd a little longer than 1st, cylindrical not falcate, sparsely setose.

First maxilla, inner plate fairly stout, with 3 apical plumose setae.

Maxilliped, outer apical angle of inner plate shortly produced.

First gnathopod ♀, 4th joint apically rounded, 5th densely setose on sides and especially on lower margin, 6th as long as but narrower than 5th, not particularly setose, palm oblique, continuous with hind margin, finger matching palm.

Second gnathopod ♀ much larger, 4th joint apically acute, 5th rounded below, setose, 6th large, elongate-ovate, palm oblique, not as long as hind margin, slightly concave with 4 strong teeth, the first defining the palm, the 4th near the hinge and bearing one or two small accessory teeth, a small tooth between the 1st and 2nd teeth, finger fitting within defining tooth, slender, evenly curved.

First and second peraeopods not very spinose or setose, hind margin of 6th with 7 groups of 2-3 spines each.

Third and fifth peraeopods (4th missing), 2nd joint well expanded, hind margin straight in 3rd, gently convex in 5th peraeopod, with a few widely-spaced serrations, rounded postero-inferior angle reaching to end of 3rd, 4th and 5th moderately expanded.

First uropod with marginal spines on inner ramus only.

Third uropod not extending far beyond 1st, rami subequal, thrice as long as peduncle, apices truncate, both margins spinose.

*Length* : 12 mm.

*Colour* : In spirit, whitish, eyes brown.

*Locality* : Port Elizabeth. Nov. 1914. (F. W. FitzSimons.) 1 ♀ with embryos. (S.A.M. No. A3058.)

ELASMOPUS LEVIS, n. sp.

(Plate XXVII. Fig. 15.)

1910. *Maera bruzelii* Stebbing, Gen. Cat. S.A. Crust. p. 457 (non Stebbing, 1888).

1912. ,, *mastersii* Chilton, Tr. Roy. Soc. Edinb. vol. 48, pt. 2, p. 501 (non Haswell, 1879).

An examination of the specimens, referred by Stebbing in 1910 to *Maera bruzelii*, and others from the same locality as the former, has convinced me that they represent a new species, or at least a very distinct littoral variety.

Though at first sight they appear to resemble very closely *M. bruzelii*, yet they differ in a number of characters :

Side-plate 1 not nearly so much produced forwards, inferior margin only very faintly serrate and only on posterior half, side-plate 2 not serrate ; postero-inferior angle of 3rd pleon segment rather more produced than in Stebbing's figure of *M. bruzelii* (corresponding with his description), but posterior margin *not serrate* ; 2nd joint of mandibular palp not bent ; inner plate of 1st maxilla with 3 apical plumose setae ; inner plate of maxilliped with outer distal angle sharply produced ; palm of 2nd gnathopod irregularly dentate, most of the teeth bearing spines, one tooth near hinge and another near defining angle rather larger than the rest.

The 3rd-5th peraeopods are very much stouter than in any species of *Maera*, and from *M. bruzelii* in particular they differ in having very much broader 4th and 5th joints.

First uropod with marginal spines on inner ramus only.

Telsonic apices either rounded off subacutely, or with a minute setuliferous notch on the apex and a similar one subapically on either side, the inner one being further from the apex than the outer.

Further details are as follows : None of the peraeon or pleon segments dorsally dentate or setiferous ; eyes subrotund, 1st joint of 1st antenna rather shorter than 2nd, with a stout spine on lower apex, flagellum ca. 50-jointed, accessory flagellum 9-jointed, equal to 2nd peduncular joint ; gland-cone of 2nd antenna reaching almost to end of 3rd joint, ultimate joint a little shorter than penultimate, flagellum shorter than peduncle, ca. 30-jointed ; 3rd joint of mandibular palp subequal to 2nd, straight and sparsely setose.

First gnathopod very similar to that of *M. bruzelii*, palm minutely serrulate. Both gnathopods in the ♀ similar to those of the ♂, but the 2nd is not so large.

First and second peraeopods not strongly spinose or setose, hind margin of 6th with 6 pairs of diverging spines.

Third to fifth peraeopods, hind margin of 2nd joint straight in peraeopods 3 and 4, slightly convex in 5, serrate in all, rounded postero-inferior angle reaching nearly to end of 3rd, 4th strongly expanded, 5th also expanded, but less strongly.

Third uropods, rami subequal, narrow lanceolate, apices tapering to

subacute points bearing 2-3 minute setules, inner margin of inner, and outer margin of outer ramus with 3 small spines.

*Length* : Up to 17 mm.

*Colour* : Uniform pink, rarely claret, eyes black.

*Locality* : Sea Point, near Cape Town. 29/11/13. (K.H.B.) ♂♂ and ovigerous ♀♀ amongst the roots of *Ecklonia* growing on rocks at low water; Woodstock beach, Cape Town. 19/6/14. (K.H.B.) (S.A.M. Nos. A2889 and A2890.)

The specimens from Saldanha Bay, referred by Chilton to *Maera mastersii*, seem to belong to this species. Chilton notes their resemblance to an *Elasmopus*.

#### GEN. GAMMARUS Fabricius.

1775. *Gammarus* (part) Fabricius, Syst. Ent. p. 418.  
 1906. ,, Stebbing, Das Tierreich, 21, pp. 460, 733.  
 1909. ,, G. Smith, Tr. Linn. Soc. Lond. ser. 2, vol. 11, pt. 4, p. 76.  
 1910. ,, Kunkel, Tr. Conn. Ac. vol. 16, p. 59.  
 1912. ,, Sexton, Proc. Zool. Soc. Lond. 1912, p. 657.  
 1913. ,, Pearse, Proc. U.S. Nat. Mus. vol. 45, p. 571.

The only *Gammarus* hitherto recorded from South Africa is the European and Indian *G. pulex*. Krauss mentions that it was found in *brackish* water, and on this account Stebbing (Gen. Cat. S.A. Crust. p. 456) regards the correctness of the identification as very doubtful. No mention of the occurrence of the genus in South Africa has since been made.

The following 4 species are all found within the Cape Peninsula, and the differentiation is probably the result of long isolation. Up to the present no specimens have been collected in other districts (if we except Krauss' specimens), but it is probable that they will be when a proper search is instituted.

The 4 South African species fall into two sharply marked divisions :  
 1. With the 4th side-plate with a posterior produced angle and the margin above concave, as in the Northern species ; and 2. With the 4th side-plate subrectangular and *similar to the preceding side-plates*. This latter form of side-plate 4 is unknown among the representatives from the Northern hemisphere, but it is noteworthy that among the Australasian species of the genus there is one belonging to the second group, namely, *G. ripensis* Smith 1909, from Tasmania.

Key to the South African species described below :

1. 4th side-plate normal, *i. e.* different from the preceding side-plates, palm of gnathopods slightly oblique.

- i. Eyes small, feebly pigmented . . . *G. capensis* n. sp.
- ii. Eyes large, deeply pigmented . . . *G. nigroculus* n. sp.

2. 4th side-plate rectangular, similar to the preceding side-plates, palm of gnathopods transverse.

- i. White, 1st peraeopod not modified  
in ♂, 2nd antenna in ♂ very stout . . . . . *G. crassicornis* n. sp.
- ii. Brown, 1st peraeopod modified in adult ♂, 2nd antenna in adult ♂ with an ear-like lobe on 3rd peduncular joint . . . . . *G. auricularius*, n. sp.

GAMMARUS CAPENSIS n. sp.

(Plate XXVII. Figs. 20-22.)

Head nearly as long as first 2 peraeon segments together. Antero-lateral angles rounded. Eyes very small, circular, with whitish pigment, glistening, in spirit becoming invisible. Peraeon segments 5-7 frequently with a few short setules on posterior margins. Side-plates 1-3 as deep as their segments, 4 a little deeper and broader than the preceding ones, inferior margins of 1-4 convex and setose, antero-inferior angle of 4 rounded, postero-lateral angle sharp, anterior lobe of 5 not as deep as 4.

Pleon segments 1-3 with a fringe of fine setae on posterior dorsal margin, 4-6 with longer and more numerous setae, 6 in addition with 2-3 spines on either side near the base of the telson, postero-inferior angles of 1-3 quadrate, inferior margin of 2 with 3 spines and a few marginal setae, of 3 with 4 spines and a few marginal setae (the spines and setae not arranged in transverse rows), posterior margin of 3 with slight setuliferous indents.

Telson as long as broad, cleft almost to base, lobes dehiscent only at apex, each lobe subquadrangular, apically obliquely truncate, with 2 apical bundles of long setae and 1 spine on outer apical angle, 1 bundle of setae in middle of the distal half and another on outer margin a little more than one-third from base.

First antenna reaching to end of 3rd pleon segment, its peduncle to end of penultimate peduncular joint of 2nd antenna, 1st and 2nd

joints subequal, 3rd  $\frac{1}{3}$  length of 2nd, flagellum more than twice as long as peduncle, 48-76 jointed, accessory flagellum 6-8-jointed.

Second antenna about half length of 1st, 1st joint stout, as long as 3rd, 2nd half as long as broad, gland-cone scarcely reaching  $\frac{1}{4}$  length of 3rd, 4th and 5th subequal, flagellum shorter than peduncle, 20-30 jointed.

The duct opens at the apex of the gland-cone, but through a small subapical conical papilla on the lower surface.

Upper and lower lips normal.

Mandibles, cutting-edge 4-dentate, secondary cutting-edge in left lamellar, 4-dentate, in right tubercular with 4-5 prongs, some of them denticulate, spine-row in left with 10, in right with 4 spines, 2nd joint of palp thrice 1st, 3rd a trifle longer than 2nd.

First maxilla, inner plate with 8-10 feebly plumose setae, outer with 9 serrate spines, 2nd joint of palp in left with 10 + 4 slender apical spines, in right with 6 teeth and 1 stout and 1 slender spine on outer apical angle.

Second maxilla normal.

Maxilliped, inner plate with 3 apical spines and several setae, inner margin of outer plate with blunt spines passing distally into longer and plumose setae, apex reaching almost half way along 2nd joint of palp, 3rd joint of palp half 2nd, 4th  $\frac{2}{3}$  3rd and much more slender, inner margin of 2nd and 3rd thickly fringed with setae.

First and second gnathopods similar to one another, but 2nd rather larger, 5th joint triangular, 6th oval-oblong, scarcely broader distally than proximally, palm rather oblique, slightly convex, defined by 1-3 spines in 1st and 3-4 spines in 2nd gnathopod, finger matching palm. In ♀ similar but smaller than in ♂.

First and second peraeopods slender, 2nd joint a little longer than 4th, 6th a little longer than 5th, hind margins of 5th and 6th with respectively 4 and 6 groups of spines and setae, hind margin of 7th with 4 spine-setae.

Third to fifth peraeopods, 2nd joint oval, anterior margin spinose and setose, hind margin gently convex, serrulate and setose, postero-inferior angle rounded, reaching to middle of 3rd, 4th a little shorter than 6th, 5th equal to 2nd, 6th a little shorter than 5th, anterior margin of 5th and 6th spinose, of 7th with 11-13 spine-setae, 4th to 6th joints densely setose, especially in 5th peraeopod, and more so in ♂ than ♀.

Branchial lamellae simple.

First uropod, peduncle with 6 spines on inner and 9 on outer upper margin, rami subequal, a little shorter than peduncle, inner with

5 marginal spines and bundles of setae, outer with 5 pairs of marginal spines, both with 3-5 unequal apical spines.

Second uropod shorter, outer ramus shorter than inner, with 4 single marginal spines.

Third uropod extending far beyond 1st and 2nd uropods, peduncle with 4 spines on upper apical margin, outer ramus 3 times length of peduncle, 3 pairs of spines along outer margin, 5 pairs along inner, both margins densely setose, 3-4 apical spines, 2nd joint small, with a terminal spine, inner ramus  $\frac{2}{3}$  length of peduncle, with 6-7 apical spines.

*Length*: ♂ 25 mm., ♀ 15-18 mm.

*Colour*: Pale pinkish, eyes pale red, somewhat glistening; in spirit, whitish, eyes chalky-white, or more frequently becoming almost invisible.

*Locality*: In the streams on Table Mountain, Muizenberg Mountain, and probably throughout the Cape Peninsula, but not apparently descending below 300 feet. (K.H.B.) ♂♂, ovigerous ♀♀ and young. (S.A.M. Nos. A2258, A2552, A2960, A2968, A3033, etc.)

*Ab.*—Two large ♂ specimens, 25 mm. long, caught in the Platteklip Stream (near the "Breakfast Rock"), correspond with the above in all points except the antero-inferior angle of side-plate 4, which is quadrate with a short sharp point similar to that of the postero-lateral angle. I have never found any more specimens resembling these two and regard them merely as an aberration of *capensis*. (S.A.M. No. A195.)

*Var. a.*—A form hitherto only found on Muizenberg and Kalk Bay Mountains and at Buffels Bay, near Cape Point, is distinguished by having the 1st joint of 1st antenna distinctly stouter than the 2nd and the whole 2nd antenna much stouter than 1st. In the ♂ this is especially noticeable, and the 2nd antenna is as long as or sometimes even a little longer than the first. The telson is somewhat shorter (Plate XXVII. Fig. 22). The pleon is in some specimens less, but as a rule very much more densely setose than in the typical *capensis*. (S.A.M. Nos. A2272, A2961, A3084, and A3374.)

*Var. β.*—A very similar form lives on the Cape Flats (Newlands and Wynberg. Dr. W. F. Purcell, S.A.M. Nos. 10017, 10021), but differs in having the 6th joint of gnathopods 1 and 2 distinctly wider distally than proximally. The specimens are smaller than the average of *capensis*, but as there are only 2 and neither is an ovigerous ♀ it is impossible to say whether they are adult. I regard these also, for the present at least, as a variety of *capensis*.

## GAMMARUS NIGROCULUS n. sp.

(Plate XXVII. Fig. 23.)

Head not equal to first 2 peraeon segments, antero-lateral lobe rounded. Eyes moderate, oval, set close to the margin of the lobe. Side-plates 1-4 as deep as their segments, inferior margin of 1-3 rounded, setose but less so than in *capensis*, of 4 sparsely setose, antero-inferior angle rounded, postero-lateral angle subacute.

Pleon segments 1-3 with a few short setae, 4-5 with more numerous and longer setae on posterior margin, 6 with a submedian group of 4 setae and 1 spine on either side near base of telson, postero-inferior angle of 3 quadrate, without produced point, posterior margin with a few slight setiferous indents, inferior margin of 1-3 sparsely setose, the setae not arranged in transverse rows.

Telson as long as broad, cleft nearly to base, lobes dehiscent only at apex, tapering slightly, apices rounded, margins and apices setose, 1 large spine on upper surface just beyond middle of outer margin.

First antenna reaching to end of peraeon, the peduncle to middle of ultimate peduncular joint of 2nd antenna, 2nd joint  $\frac{2}{3}$  1st, 3rd  $\frac{1}{2}$  2nd, flagellum at least twice as long as peduncle, accessory flagellum 4-jointed.

Second antenna a little stouter than and about half the length of 1st, gland-cone acute, reaching nearly to end of 3rd joint, 4th and 5th subequal, flagellum equal to peduncle, ca. 17-jointed.

Mandibles, cutting-edge 5-dentate in left, in right 4-dentate, secondary cutting-edge 3 dentate in left, in right a 4-pronged tubercle, spine-row with ca. 5 spines, 2nd joint of palp scarcely  $2\frac{1}{2}$  times as long as broad, 3rd equal to 2nd, elongate-diamond shaped, thrice as long as broad.

First and second gnathopods similar but 1st a little shorter and stouter, 6th joint not half as long again as 5th, equal in width to 5th, oblong, not distally widened, palm slightly oblique, gently convex, defined by 2 spines, finger matching palm.

First and second peraeopods nearly as spinose as in *capensis*, but much less setose, especially 2nd and 4th joints, hind margin of 5th with 5 spines, of 6th with 6 groups of 1 spine and 2 setae each, 7th with 3 spine-setae on inner margin.

Third to fifth peraeopods, 2nd joint oval, anterior margin spinose but not setose, hind margin serrulate and setose, convex in 3rd peraeopod, straight in distal half in 4th and 5th peraeopods, postero-inferior angle rounded, reaching to middle of 3rd in 3rd peraeopod, to end of

3rd in 4th and 5th peraeopods, 7th with 4-5 spine-setae on anterior margin; all 3 peraeopods spinose but scarcely at all setose.

First uropod, rami subequal and a little shorter than peduncle, 3 marginal pairs of spines and 5 unequal apical spines on both rami, inner ramus nonsetose.

Second uropod, outer ramus shorter, both rami with 3 marginal and four apical spines, inner ramus nonsetose.

Third uropod, only distal half of outer ramus extending beyond ends of uropods 1 and 2, peduncle with 3 unequal spines at outer, 4 at inner apical angle, outer ramus nearly three times length of peduncle, outer margin with 4 groups of 3-4 spines, inner margin with 2 groups, setae not numerous, 2nd joint small, tipped with 1 spine and 2 setae, inner ramus  $\frac{1}{3}$  outer ramus, tipped with 2 spines and 2 setae.

*Length* : 10 mm.

*Colour* : Greyish, eyes black.

*Locality* : Devil's Peak, Newlands (Dr. W. F. Purcell); top of Table Mountain (sed ?); Platteklip Gorge, altitude 1000 feet (K.H.B.); Kirstenbosch, altitude 250 feet (K.H.B.); streams above Oranjezicht, Cape Town, altitude 400-500 feet (K.H.B.). (S.A.M. Nos. 1270, A2966, A3032, A3038, and A3059-62 respectively.)

A few males have the 2nd antennae stout compared with the 1st antennae and a stronger and longer fringe of setae on the anterior margins of the 3rd-5th peraeopods (in those respects somewhat approaching *G. capensis* var. *a*).

GAMMARUS CRASSICORNIS n. sp.

(Plate XXVII. Figs. 24, 25.)

Head not quite equal to first 2 peraeon segments. Antero-lateral lobes rounded truncate. Eyes very small, with whitish pigment, glistening, invisible in spirit specimens. Side-plates 1-3 as deep as their segments, all three rectangular and deeper than long, inferior margin convex and setose, 4 similar to the preceding, without any postero-lateral angle, posterior margin only very slightly emarginate. Pleon segments 1-6 with a few setae on posterior margin, setae most numerous on segments 4 and 5, no spines on 6th near insertion of telson, postero-inferior angle of 3rd rounded quadrate.

Telson scarcely more than half as long as basal width, cleft nearly to base, lobes dehiscent, apices rounded-truncate, with 6 long setae, 2 very fine setules on middle of lateral margin.

First antenna reaching to 5th or 6th peraeon segment, 2nd joint

$\frac{3}{4}$  1st and more slender, 3rd  $\frac{1}{2}$  2nd, flagellum longer than peduncle, ca. 23-jointed in ♂, ca. 19 in ♀, accessory flagellum 4-jointed in ♂, 3 in ♀.

Second antenna in adult ♂ reaching to about the middle of flagellum of 1st antenna, very stout, 2nd joint very short, gland-cone not prominent, with subapical papilla, 3rd swollen, as wide as long, 4th nearly twice as long as 3rd, slightly stouter, 5th  $\frac{1}{3}$  length and  $\frac{1}{3}$  width of 4th, to which it is bent at right angles, flagellum longer than 5th peduncular joint, ca. 10-jointed; in ♀ normal, of about the same thickness as 1st antenna, 4th joint  $\frac{2}{3}$  5th, flagellum nearly equal to 4th and 5th together, ca. 10-jointed. Only in fully adult ♂ ♂ does the 2nd antenna become swollen; in immature ♂ ♂ it resembles that of the ♀.

Mandibles, cutting-edge narrow, bidentate, secondary cutting-edge tridentate, palp narrow, 2nd joint 4 times as long as wide, 3rd equal to 2nd but more slender, apex setose.

First and second gnathopods, 2nd joint widening gradually from narrow base, 5th triangular, 6th longer than 5th and a little wider, oblong, of same width throughout, palm transverse, slightly convex, setose, defining angle blunt, with 2 spines, hind margin just proximal to defining angle, slightly concave, finger not overlapping palm, tapering rapidly; 2nd gnathopod larger than 1st, neither very setose: in ♀ similar to ♂ but relatively shorter and stouter.

First and second peraeopods sparsely setose, hind margin of 5th joint with 3 spines, of 6th with 2 pairs of spines, of 7th with 1 spine-seta.

Third to fifth peraeopods not very setose, 2nd joint not strongly expanded, oblong, postero-inferior angle rounded, reaching to middle of 3rd, hind margin setose but very feebly serrate, anterior margin of 6th joint with 2 (3rd peraeopod) or 3 (4th and 5th peraeopods) pairs of spines, of 7th with 1 spine-seta.

First uropod, upper margin of peduncle with 6 spines, rami subequal, with marginal setae (not spines) and apical spines.

Second uropod, peduncle with 3-4 spines on upper margin, outer ramus shorter than inner, both with apical but not marginal spines.

Third uropod not extending far beyond ends of 1st and 2nd uropods, peduncle with 5-7 apical spines, outer ramus only half as long again as peduncle, margins with 2 groups of spines and setae, apex with 3 unequal spines, 2nd joint obsolete, inner ramus  $\frac{1}{4}$  length of outer, with 4 apical spines.

*Length*: ♂ 8 mm., ovigerous ♀ ♀ 4.5-7 mm.

*Colour*: Whitish, eyes pink.

*Locality*: Table Mountain, at top of Kasteel's Poort, Grotto

Ravine, and Platteklip Gorge; in small streams or moss damped by trickling water (perennial). 25/4/14, 21/6/14, and 1/8/15. (K.H.B.) ♂♂, ovigerous ♀♀ and young. (S.A.M. Nos. A3031, A3034, and A3864.)

GAMMARUS AURICULARIUS, n. sp.

(Plate XXVII. Figs. 26–28.)

Head not equal to first 2 peraeon segments. Antero-lateral lobes rounded truncate. Eyes small, circular, glistening white, invisible in spirit specimens. Side-plates 1–4 as deep as their segments, inferior margins convex, setose, 4 similar to and not much wider than 3, no postero-lateral angle, hind margin very slightly emarginate. Pleon segments 4 and 5 and to a lesser extent also 3 setose on hind margins, postero-inferior angle of 3 rounded-quadrangle, inferior margins of 1–3 sparsely setose.

Telson  $\frac{2}{3}$  as long as basal width, lobes dehiscent, apices rounded, setose.

First antenna reaching to 5th peraeon segment, peduncle reaching just beyond apex of penultimate peduncular joint of 2nd antenna, 2nd joint  $\frac{3}{4}$  1st, 3rd  $\frac{1}{2}$  2nd, flagellum longer than peduncle, ca. 25-jointed in ♂, 20 in ♀, accessory flagellum 3-jointed.

Second antenna reaching to middle of flagellum of 1st antenna, gland-cone not prominent, with subapical papilla, 3rd and 4th joints stout, 3rd in *fully adult* ♂ with a large oval ear-like lobe on outer apex, extending to middle of 4th, 4th and 5th subequal but 5th more slender, flagellum equal to 3rd–5th joints together, ca. 14-jointed; in ♀ 3rd joint normal, 3rd and 4th normal in width, flagellum 8-jointed.

Mandibles, cutting-edge 4-dentate, accessory cutting-edge 4-dentate in left, bidentate in right, palp slender, 3rd joint not equal to 2nd.

First and second gnathopods, 2nd joint of nearly equal width throughout, 6th longer than 5th, oblong, scarcely wider distally, palm transverse, convex, defining angle blunt, with 3 spines, finger matching palm; 2nd gnathopod the larger; in ♀ similar but smaller.

First peraeopod in adult ♂ shorter than 2nd, 4th joint slightly expanded on hind margin, wider distally than proximally, 5th with a subacute lobe at base of hind margin, bearing 1 spine, margin thence to apex sinuous with a central rounded prominence, setose, 6th longer than 4th, slightly curved, hind margin setose but not spinose, 7th with 1 spine-seta near apex of hind margin; in ♀ normal as in 2nd peraeopod.

Second peraeopod normal, 4th and 5th joints cylindrical, not expanded on hind margin, 6th equal to but not longer than 4th, hind margin with 3 groups of 3 spines and several setae.

Third to fifth peraeopods, 4th and 5th peraeopods subequal, 3rd shorter, 2nd joint moderately expanded, postero-inferior angle reaching to middle of 3rd, rounded, hind margin setose and slightly serrate, 7th without spine-setae on anterior margin, 4th and 5th peraeopods setose on anterior margins of joints, 3rd peraeopod almost nonsetose, but with a few spines.

First uropod, peduncle with 1 apical spine and several spinules on upper margin, rami equal, with 2-3 marginal and 4-5 apical spines.

Second uropod, peduncle with 3 marginal spines, outer ramus slightly shorter than inner, both with two marginal and 4-5 apical spines.

Third uropod, peduncle with 4 apical setae, outer ramus not extending far beyond end of 1st and 2nd uropods, twice length of peduncle, 2 marginal groups of spines and setae, 3 unequal apical spines and some setae, 2nd joint obsolete, inner ramus half length of peduncle, with 4 apical spines.

*Length*: ♂ 8 mm., ♀ 6 mm.

*Colour*: Light brown, slightly mottled, eyes glistening white.

*Locality*: In streams on top of Table Mountain; (Echo Valley and top of Kasteel's Poort). 24/8/13, 6/11/13, and 7/12/13. (K.H.B.)  
♂♂, ovigerous ♀♀ and young. (S.A.M. Nos. A2962, A2599 and A2634).

## FAMILY DEXAMINIDAE.

- 1813/14. *Dexameridae* Leach, Edinb. Encycl. vol. 7, p. 432.  
1876. *Dexaminae* Boeck, Skand. Arkt. Amphip. vol. 2, p. 310.  
1888. *Dexaminidae* Stebbing, Challeng. Rep. vol. 29, pp. 573, 900.  
1893. *Dexaminidi* (part) Della Valle, F. u. Fl. Neapel. vol. 20, p. 556.  
1894. *Atylidae* (part) G. O. Sars, Crust. Norw. vol. 1, p. 461.  
1906. *Dexaminidae* Stebbing, Das Tierreich, 21, p. 514.  
1910.        ,,        id. Sci. Res. "Thetis," pt. 12, p. 602.

## GEN. POLYCHERIA Haswell.

1879. *Polychera* Haswell, Proc. Linn. Soc. N.S.W. vol. 4, p. 345.  
1882.        ,,        , *Polychelia* G. M. Thomson, Tr. N.Z. Inst. vol. 14,  
p. 233.

1898. *Polycheria*, *Polycharia* Calman, Ann. N.Y. Ac. vol. 11, pp. 261, 268, 288.  
 1905. „ Walker in Gardiner's Fauna Mald. Lacc. Arch. vol. 2, p. 926.  
 1906. „ Stebbing, l.c. pp. 519, 735.

## POLYCHERIA ANTARCTICA (Stebbing).

1875. *Dezamine antarctica* Stebbing, Ann. Mag. Nat. Hist. ser. 4, vol. 15, p. 184, pl. 15a, fig. 1.  
 1878. *Atylus antarcticus* id. ibid. ser. 5, vol. 2, p. 370.  
 1879. *Polycheria tenuipes* Haswell, l.c. p. 345, pl. 22, fig. 8.  
 1879. „ *brevicornis* id. ibid. p. 346.  
 1882. „ *obtusa* G. M. Thomson, l.c. p. 233, pl. 17, fig. 3.  
 1888. *Tritaeta antarctica* Stebbing, l.c. p. 941.  
 1888. „ *kerqueleni* id. ibid. p. 941, pl. 83.  
 1893. *Polycheria antarctica* Della Valle, l.c. p. 580, pl. 58, figs. 83, 84.  
 1898. „ *osborni* Calman, l.c. p. 268, pl. 32, fig. 2.  
 1904. *Tritaeta antarctica*, Walker in Herdman's Ceylon Pearl Fish. Rep. pt. 2, p. 266, pl. 4, fig. 25.  
 1905. *Polycheria atolli* id. l.c. p. 926, pl. 88, figs. 1-5.  
 1906. „ *tenuipes* Stebbing, l.c. p. 520.  
 1906. „ *antarctica* id. ibid. p. 520, figs. 90, 91.  
 1907. „ „ Walker, Nat. Antarect. Exp. vol. 3, p. 34.  
 1909. „ *atolli* id. Tr. Linn. Soc. Lond. vol. 12, pt. 4, p. 337.  
 1912. „ *antarctica* Chilton, Tr. Roy. Soc. Edinb. vol. 48, pt. 2, p. 502.

Chilton has given reasons for uniting all the above "species" under the one name; and has detailed the points of resemblance and difference found in a single specimen from South Africa.

In order to facilitate comparison and show the range of variation, the characteristics of other South African specimens are here set out. Two specimens from near Saldanha Bay, but from deeper water than Chilton's specimen, may be cited first:

Size of eye, proportionately to head, as figured by Stebbing for *T. kerqueleni*.

Teeth on 4th and 6th pleon segments well marked.

Telson reaching just beyond middle of rami of 3rd uropod, outer margin with only one small spinule at middle and two between this and apex.

Side-plate 4 short, blunt, not acutely produced.

First maxilla with palp strongly enlarged distally, not tapering as in Stebbing's figure of *T. kergueleni*.

Second maxilla with inner margin of inner plate well fringed with plumose setae.

Maxilliped with outer plate equal to palp, the distal half of its inner margin with 7 spinules, the basal half bare.

Sixth joint of 1st and 2nd gnathopods as figured by Stebbing, but that of 2nd rather narrower.

Sixth joint of 1st-5th pereopods parallel-sided, not distally expanded.

Outer ramus of 2nd uropod half length of inner ramus, both unarmed.

Third uropod with subequal unarmed rami.

Specimens from St. James show the following peculiarities:—Seven specimens collected on 29/4/12 have no trace of the teeth on the 4th and 6th pleon segments, whereas many others collected on 15/2/14 have well-marked teeth; eyes variable in size; telson reaching to middle of rami of 3rd uropod, apices acute but frequently stout and appearing almost unguiform, 2-4 spines on lateral margins; side-plate 4 sometimes produced in a rounded lobe, never acute: palp of 1st maxilla slightly wider distally than proximally, 1st joint very obscure; inner margin of inner plate of 2nd maxilla well fringed with plumose setae; inner margin of outer plate of maxilliped with 8-11 spines; gnathopods and pereopods as in the two Saldanha Bay specimens (*supra*); rami of 1st and 2nd uropods unarmed, outer ramus of 2nd uropod half length of inner ramus; rami of 3rd uropod subequal, 3-4 spines on outer margin of outer ramus.

*Length*: 5 mm.; one ♂ from St. James 6.5 mm.

*Colour*: In spirit, dull greyish, eye maroon; in life, cream-coloured, eye brownish, specimens taken out of a blood-red coloured compound Ascidian (*Goodsiria placenta*) were salmon-red with crimson eyes.

*Locality*: Paternoster Point SE.  $\frac{3}{4}$  E., distant 9 miles (off Saldanha Bay). 80 fathoms. 2 specimens. s.s. "Pieter Faure." 17/3/02; St. James (False Bay). 29/4/12 and 15/2/14. Several ♂♂ and immature specimens lying on their backs in holes made in encrusting sponges (*Halichondria*) at low-tide. (K.H.B.); Buffels Bay (False Bay). 1/3/15. (K.H.B.) 3 ♂♂. (S.A.M. Nos. A2791, A2103, A2916 and A3295 respectively.)

Also in the compound Ascidian *Gynandrocampa domuncula* on the backs of the crab *Pseudodromia latens* Stimpson and the compound Ascidian *Goodsiria placenta*.

*Geogr. Distribution*: 77° 30' S. 175° E. 300 fathoms (Stebbing:

*D. antarctica*); Port Jackson, 2 fathoms (Haswell: *P. tenuipes* and *brevicornis*); Paterson Inlet, N.Z., 10 fathoms (Thomson: *P. obtusa*); Kerguelen Island, 28 and 127 fathoms (Stebbing: *T. kergueleni*); Puget Sound (Calman: *P. osborni*); Ceylon (Walker: *T. antarctica*); Maldives (Walker: *P. atolli*); McMurdo Sound (Walker: *P. antarctica*); Seychelles and Wasin, B.E.A., 10 fathoms (Walker: *P. atolli*); South Orkneys; South Georgia, and Saldanha Bay, 25 fathoms (Chilton).

## GEN. GUERNEA Chevreux.

1868. *Hellera* Norman, Ann. Mag. Nat. Hist. ser. 4, vol. 2, p. 418.  
(non Ebner 1868.)
1887. *Guernea* Chevreux, Bull. Soc. Zool. Fr., vol. 12, p. 302.
1887. *Prianassus* Hansen, Vid. Meddel. ser. 4, vol. 9, p. 82.
1890. *Guernea* Stebbing, Ann. Mag. Nat. Hist. ser. 6, vol. 5, p. 192.
1893. „ Della Valle, F. u. Fl. Neapel. vol. 20, p. 570.
1904. „ Walker in Herdman's Ceylon Pearl Fish. Suppl. Rep. 17, p. 266.
1906. „ Stebbing, Das Tierreich, 21, p. 521.

## GUERNEA LAEVIS Chevreux.

1887. *Guernea laevis* Chevreux, l.c. p. 328.
1904. „ „ Walker, l.c. p. 267, pl. 4, fig. 26.
- ?1906. „ *coalita* Stebbing, l.c. pp. 521, 735.

The division between pleon segments 3 and 4 not strongly marked, segments 5 and 6 fused and evenly rounded, with a dorsal median groove between two keels, neither the 4th segment nor the keels serrate.

Side-plate 1 shallower than the other side-plates, narrowed below to subacute apex, 2-4 subequal in depth, rounded below, 2 straight, 3 and 4 slightly curved backwards, hind margins concave, posterior lobe of 5 equal in depth to 4, anterior lobe  $\frac{2}{3}$  depth of posterior lobe, 7 slightly larger than 6. Pleon segment 3 with postero-inferior angles rounded.

Telson ovate, cleft nearly to base, apices subacute, each with a setule.

First antenna, 1st joint oblong, twice length of 2nd, 3rd half length of 2nd, flagellum not quite equal to 1st joint, 4-jointed.

Second antenna, 1st-3rd joints short and broad, 4th nearly twice length of 1st-3rd together and rather broader, the inferior margin

convex and setose, 5th nearly equal to width of 3rd, but narrower than 4th, flagellum equal to 5th joint, 3-jointed, 2nd and 3rd joints minute.

Lower lip, outer lobes apically subacute, with a small incurved apical point, inner lobes well-developed, mandibular process obsolete.

Mandibles stout, triangular, strongly calcified, cutting-edge blunt, secondary cutting-edge a small but stout lamella, acute in the one mandible and bifid in the other, no spine-row, molar blunt.

First maxilla, inner plate apically obtuse, inner apex with 1 seta, outer plate with ca. 7 spines, palp stout, 2nd joint slightly longer than 1st and tipped with 3 setae.

Second maxilla, plates fused at base, inner plate not much broader than outer, slightly curved outwards, apex rounded, with 5 setae on apex and distal inner margin, outer plate a good deal longer than inner, curved inwards, apex rounded and setose, 1 seta on distal outer margin.

Maxilliped, outer plate reaching to end of 2nd joint of palp, inner margin with stout spine-setae, 4th joint of palp very small.

First gnathopod, 5th joint not quite as long as 6th, inferior margin with 4 setae, 6th distinctly longer than wide, palm transverse, slightly convex, defined by 3 spines, finger equal to palm, with accessory tooth at base of unguis.

Second gnathopod similar but more slender, 2nd joint not constricted proximally, 5th not longer than 6th.

First and second peraeopods, 4th joint longer than 6th which is longer than 5th, hind margin of 5th with 6 long spines, increasing in length distally, 6th with 4 spinules on distal hind margin.

Third peraeopod, 2nd joint rhomboidal, anterior margin more expanded distally, proximally straight and setulose, distally rounded, smooth, hind margin with the angular projection in the middle, apically subacute, margin above straight, margin below concave, 4th ovate, shorter than 6th which is slender, finger also slender.

Fourth peraeopod, 2nd joint expanded, a little longer than broad, hind margin evenly rounded, 4th with stout plumose setae, finger and unguis slightly curved.

Fifth peraeopod, 2nd joint longer than broad, widest proximally, distally narrowing, 4th and 5th joints with stout plumose setae, 6th slender, unarmed, finger and unguis straight.

First and second uropods, outer ramus longer than inner, with 3 marginal spines in 1st uropod, apices of rami of both uropods with 1 large and 2 small spines.

Third uropod, rami rather broader than in 1st and 2nd uropods, subequal, unarmed.

*Length* : 2.5 mm.

*Colour* : Dull yellowish, peraeon segments 6 and 7 and pleon segment 1 bright orange.

*Locality* : Sea Point, near Cape Town. 26/2/14. (K.H.B.) ♀ ♀, some ovigerous. (S.A.M. No. A2936.)

*Geogr. Distribution* : Brittany (Chevreux); Ceylon (Walker).

The differences between these and Walker's Ceylon specimens are to be found in the 1st side-plates, 2nd and 4th joints of peraeopod 3 and the plumose setae on peraeopods 4 and 5.

Walker does not specially mention the 2nd maxilla, but says the mouth-parts "seem to agree with Della Valle's figures." In the South African specimens the 2nd maxilla is very different from Della Valle's figure, the inner plate being relatively smaller.

These small differences, however, are scarcely important enough to separate the Ceylon and South African specimens.

## FAMILY TALITRIDAE.

1813/14. *Orchestidae* Leach, Edinb. Encycl. vol. 7, p. 432.

1857. Subfam. *Talitriini* Costa, Mem. Acc. Napoli, vol. 1, p. 173.

1906. *Talitridae* Stebbing, Das Tierreich, 21, pp. 523, 735.

1910. ,, id. Gen. Cat. S.A. Crust. p. 458.

1910. ,, Kunkel, Tr. Conn. Ac. Sci. vol. 16, p. 61.

Among the representatives of this family in South Africa is *Orchestia bottae*, recorded by Krauss and retained in the General Catalogue by Stebbing. It is almost certain that Krauss was wrong in his identification, but as I have not been able to see his specimens I cannot throw any further light on this species. From the habitat given by Krauss, "in algae on the coast," one would suspect it to be a species of *Hyale*. (See *Parorchestia dassenensis* infra.)

## GEN. TALORCHESTIA Dana.

1853. Subgen. *Talorchestia* Dana, Amer. J. Sci. ser. 2, vol. 14, p. 310.

1906 *Talorchestia* Stebbing, l.c. pp. 543, 735 (references).

1914. ,, Tattersall, Rec. Ind. Mus. vol. 8, pt. 5, p. 449.

Bate's South African species *T. africana* still remains rather doubtful owing to the elusiveness of the male. H. W. Bell-Marley, Esq., of Durban, has so far been unable to find this sex, though he has forwarded several females to Mr. Stebbing and to this Museum.

## TALORCHESTIA CAPENSIS (Dana).

1853. *Orchestia capensis* Dana, U.S. Expl. Exp. vol. 13, 2, p. 866,  
pl. 58, figs 3a, b.
1862. " " Bate, Cat. Amphip. Brit. Mus. p. 23, pl. 4,  
fig. 2.
1893. " " Della Valle, F. u. Fl. Neapel, vol. 20, p. 506,  
pl. 57, fig. 69.
1906. " " Stebbing l.c. p. 537.
1910. " " id. Gen. Cat. S.A. Crust. p. 458.

The female of this species has hitherto remained undescribed.

Female. First antenna, 1st joint widest and longest, 3rd not much larger than 1st flagellar joint, flagellum shorter than peduncle, 5-jointed, both peduncle and flagellum very sparsely spinose.

Second antenna, ultimate peduncular joint not twice as long as penultimate, flagellum not as long as peduncle, 13-jointed, peduncle and flagellum very sparsely spinose.

First gnathopod simple, although the inner apical angle of 6th joint is distinct, finger a little shorter than width of 6th, stout, unguis half length of finger.

Second gnathopod, 2nd joint not strongly expanded on anterior margin, apical process of 6th rounded, but not at all curved upwards.

The following details apply to both sexes:

First maxilla, inner plate with 2 plumose setae, outer plate with 9 spines. Remaining mouth-parts as described below for *T. quadrispinosa*.

Second peraeopod, 7th joint oblong, with a sudden constriction near apex, inner margin proximal to the constriction bisinuate and slightly concave, unguis  $\frac{1}{3}$  length of finger.

Third and fourth peraeopods, hind margin of 2nd joint with slight setiferous indents.

Fifth peraeopod, hind margin of 2nd joint slightly crenulate and bearing on distal portion long setae.

First and second uropods, rami subequal, much shorter than peduncle in 1st, a little longer than peduncle in 2nd uropod.

Third uropod, ramus and peduncle subequal.

Telson rounded, with small apical incision, strongly spinose.

In the male the finger of the 2nd gnathopod has a semicircular incision at base of inner margin for the reception of the tubercle on palm.

In a specimen 15 mm. long the palm of 2nd gnathopod has only a very slight indication of the concavity characteristic of the adult ♂;

in one 18 mm. long there is a small but deep notch just proximal to the tooth near the hinge.

*Length* : ♂ 22 mm., ♀ 18 mm.

*Colour* : Whitish, eyes black.

*Locality* : Lambert's Bay, Clanwilliam Div. February, 1898. (R. Pattison.) 1 ♂, 2 ♀ ♀ ; Kommetje (Atlantic coast, Cape Peninsula). 1897. (Dr. W. F. Purcell.) ♂ ♂ ; Atlantic Coast, near Cape of Good Hope. 29/9/13. (K.H.B.) ♂ ♂, ♀ ♀ and young. (S.A.M. Nos. 10018, A235, and A2532 respectively.)

TALORCHESTIA QUADRISPINOSA n. sp.

(Plate XXVII. Figs. 29-32.)

1836. *Orchestia fischerii* Guérin, Iconogr. ou Regne Anim. pl. 26, fig. 3, and 1843. Explication des Planches, p. 22. (non M. Edwards. ? 1828 and 1830.)

1910. *Orchestoidea* ,, Stebbing, Gen. Cat. S.A. Crust. p. 459. (non M. Edwards.)

Bearing a strong superficial likeness to *Orchestoidea fischerii* (M. Edw.)

Body broadly rounded, not compressed. Eyes subrotund, their distance apart dorsally equal to or less than their greatest diameter. Anterior lobe of 5th side-plate as deep as 4th side-plate, length of 5th not greater than that of two peraeon segments.

Pleon segments 1 and 2 each with 2 (not 3 as in M. Edwards' species) medio-dorsal upstanding spines in adult ♂, obscure in immature males, segment 3 with 2 very obscure tubercles, pleon unarmed in ♀, segments 4 and 5 not scabrous (as they are in *O. fischerii* M. Edw.), postero-inferior angle of 3 quadrate, acutely but slightly produced.

Telson about as broad as long, apex with a very shallow emargination in the adult only, in immature specimens apex subacute, upper surface with numerous spines.

First antenna, 1st and 2nd joints subequal, 3rd a little longer, flagellum equal to 3rd joint, 6-jointed in ♂, 5 in ♀, reaching just beyond end of penultimate peduncular joint of 2nd antenna.

Second antenna, ultimate joint equal to penultimate plus antepenultimate, which are subequal, all three joints spinose, penultimate with 2 transverse rows of spines on dorsal surface as well as an apical

circlet, flagellum barely as long as peduncle, ca. 21-jointed in ♂, ca. 17 in ♀.

Upper lip, distal margin strongly convex and setose.

Lower lip, lobes short, broad, apically truncate, inner apical angle rounded, setose.

Mandible, cutting-edge with 2 large and 5 small teeth, secondary cutting-edge in left 5-dentate, in right 3-dentate, spine-row with ca. 5 spines.

First maxilla, inner plate with 3 plumose setae, outer plate with 9 spines.

Second maxilla, inner plate shorter and narrower than outer, more pointed apically, with a large stout plumose seta at junction of inner and apical margins.

Maxilliped, inner plate with 3 blunt teeth on truncate apex, outer plate not extending very much beyond inner plate (to middle of 2nd joint of palp), 4th joint of palp quite obsolete.

First gnathopod in ♂, 4th joint without apical process, 5th longer than 6th, with pellucid apical lobe, 6th not widening much distally, subchelate, inner apex with a rounded lobe, finger (excluding unguis) reaching to end of this lobe, with 2 setules on its inner apex, unguis unusually long, as long as finger; in ♀, 2nd joint wider than in ♂, 5th without apical lobe, 6th simple, slightly tapering, finger and unguis as in ♂.

Second gnathopod in ♂, 6th joint large, cordiform, hind margin short, bearing spines at equal distances apart, a very small defining tubercle, first portion of palm evenly convex and bearing spines as on the hind margin, the distal portion of palm concave, smooth, with a strong triangular tooth, spinuliferous at its apex, situate near the hinge, finger as long as palm, curved, inner margin slightly emarginate at the base; in ♀, 2nd joint rather strongly expanded on anterior margin (half as long again as broad), 4th in the Dassen Island specimens apically produced downwards as a narrow subacute lobe, 5th broader proximally than distally and equal to 6th joint including its apical process, which is rounded and slightly curved upwards, finger and curved unguis very short.

Second peraeopod, 7th joint sharply constricted, but its appearance is better described as having a tubercle in middle of inner margin, unguis long but not equal to 7th.

Third peraeopod, 2nd joint expanded, rather broader than long, hind margin evenly convex, setuliferous, 7th slender, unguis not equal to 7th.

Fourth peraeopod in ♂ very long, 2nd joint enormously expanded,

not regularly oval but widest proximally, where it extends upwards as a rounded lobe, narrowing gradually distally to almost normal width, postero-inferior angle rounded, not extending beyond middle of 3rd, hind margin setuliferous, 4th and 5th joints not expanded, 6th longer than 5th and equal to anterior margin of 2nd, slender, curved; 7th slender, unguis  $\frac{1}{3}$  length of 7th; in ♀ not remarkably long, 2nd expanded, oval a little longer than broad; hind margin evenly convex, setuliferous; 6th equal to 2nd, slender, straight.

Fifth peraeopod in ♂ reaching only to the end of 5th joint of peraeopod 4, 2nd joint strongly expanded, upper posterior angle subquadrate, not produced upwards, width greatest distally, postero-inferior angle rounded, inferior margin transverse, hind and inferior margins crenulate and spinulose, 4th and 5th joints not expanded, 6th equal to 2nd, straight; in ♀ nearly as long as peraeopod 4, 2nd joint expanded similarly to that of peraeopod 4, but as broad as long, with a subquadrate upper posterior angle, margin crenulate and setulose.

First and second uropods, rami shorter than peduncle, outer a little longer than inner in 1st uropod, rami in 2nd subequal, margins of peduncle and both rami spinose.

Third uropod, ramus a little longer than peduncle, with marginal and apical spines.

*Length* : 22 mm.

*Colour* : Whitish, eyes dark brown.

*Locality* : Dassen Island, West and East Coasts of Cape Peninsula. (Dr. W. F. Purcell, R. M. Lightfoot, and K.H.B.) ♂♂, ♀♀ and young. (S.A.M. Nos. 1256, 1283, A2514, and A2875.)

(Plate XXVII. Fig. 32.)

A curious form of 2nd gnathopod is found in 2 small ♂♂ from Dassen Island. They measure 10 mm. and show no trace of the dorsal spines on the pleon or of the expanded 2nd joint of 4th peraeopod. The 1st gnathopod is as described above. The 2nd gnathopod has the 2nd joint cylindrical and stout but not expanded as in ♀, 4th rounded below, 5th shorter than wide, 6th twice as long as 5th, wider at base and increasing in width distally, where width nearly equals the length, palm transverse, rather strongly emarginate, the emarginate portion either straight or slightly convex, armed with a few spinules, defining lobe rounded, semipellucid, finger straight, reaching to base of defining lobe, unguis indistinguishable.

The exact nature of these specimens it is difficult to determine. The series is not very extensive, and all the Dassen Island specimens

were collected at the same time of year, so that we have no idea of the possible seasonal changes in the two sexes. The hand of the 2nd gnathopods (ordinary form) attains its distinctive shape much sooner than in *T. capensis*. Hermaphroditism may be the cause of the present "abnormal" form. A similar specimen with a 2nd gnathopod approaching the ♀ form was found among the specimens of *Parorchestia tenuis* (Dana). (See below.)

TALORCHESTIA AUSTRALIS n. sp.

(Plate XXVII. Figs. 33, 34.)

Body not very broad. Eyes round, their distance apart equal to their diameter. Side-plates not very deep, 2 without a strongly produced lobe on upper posterior angle, 5 almost as deep as 4, its lobes subequal in depth, its length equal to  $1\frac{1}{2}$  segments.

**Pleon unarmed**, postero-inferior angle of segment 3 quadrate, not produced.

Telson with apical incision, spinose.

**First antenna reaching in ♂ to middle, in ♀ to end of penultimate peduncular joint of 2nd antenna**, 1st joint a little broader than long, 2nd and 3rd much more slender, 2nd  $1\frac{1}{2}$  times as long as 1st, 3rd a little shorter than 2nd, flagellum equal to last two peduncular joints together, 6-jointed in ♂, 4 in ♀.

**Second antenna reaching in ♂ to end of 3rd, in ♀ to end of 2nd, peraeon segment**, penultimate joint stout, longer than ultimate, flagellum equal to penultimate joint, 15-jointed in ♂, 13 in ♀. Both antennae feebly spinose.

First maxilla, inner plates with 2 plumose setae, outer plate with 9 spines. Remaining mouth-parts as in *T. quadrispinosa*.

First gnathopod in ♂, **5th joint triangular, with a prominent apical lobe**, 6th shorter than 5th, oblong inner apex produced as a subacute lobe, palm concave, **finger reaching to end of lobe, unguis as long as finger, extending beyond lobe**; in ♀ 6th joint simple, shorter than 5th, 5th and 6th both with a long stout spine, as well as smaller spines, on inner distal margin, finger and unguis as in ♂.

**Second gnathopod in ♂**, 6th joint suboblong, greatest width across the defining angle, **palm nearly transverse**, slightly convex, passing into the slightly shorter hind margin without any prominent angle or tooth, furnished with spines arranged mostly in pairs, finger matching palm, evenly curved; in ♀ 2nd joint not expanded on front margin, 4th with a not very produced apical lobe, 5th broadly lobed, 6th as long as 5th, apical projection rounded, scarcely upturned.

Second peraeopod, 7th joint with a small tubercle in middle of inner margin, unguis scarcely half length of 7th.

Third to fifth peraeopods, 2nd joint expanded, its hind margin in peraeopod 4 nearly straight, in 5 slightly convex, distal part of hind margin and inferior angle slightly serrulate and spinulose.

First and second uropods, rami respectively shorter and subequal to peduncle.

Third uropod, ramus subequal to peduncle.

*Length*: ♂ 17 mm., ♀ 13 mm.

*Colour*: Whitish, eyes dark brown.

*Locality*: West and East coasts of the Cape Peninsula. (Dr. W. F. Purcell and R. M. Lightfoot.) ♂♂, ♀♀ and young. (S.A.M. Nos. 1527-9, 1284, A2460.)

This species is very like *T. brito* Stebbing from the North Devon coast, but possesses certain well-marked features of its own. The 6th joint of the first gnathopod in ♂ has a narrower process and distal margin is more strongly concave, the palm of the second gnathopod in ♂ is more transverse, 2nd antenna in ♂ stouter and telson more deeply incised and more spinose than in *T. brito*.

#### TALORCHESTIA ANCHEIDOS n. sp.

(Plate XXVII. Figs. 35, 36.)

Closely allied to the last species. Body not very broad. Eyes subrotund, their distance apart *less* than their diameter. Side-plates not very deep, 2nd with a strongly produced rounded lobe on upper posterior angle, 5th as deep as 4th, lobes subequal in depth. Postero-inferior angle of pleon segment 3 very slightly produced, posterior margin slightly concave.

Telson with apical incision, spinose.

First antenna reaching to end of penultimate peduncular joint of 2nd antenna, 3rd joint in ♂ longer than 2nd (but not equal to 1st plus 2nd), in ♀ equal to 2nd, flagellum nearly equal to 2nd plus 3rd, 6-jointed in ♂, 4-jointed in ♀.

Second antenna reaching nearly to end of 3rd peraeon segment in ♂, 2nd in ♀, ultimate joint longer than penultimate, flagellum equal to last two peduncular joints together, 17-jointed in ♂, 13-jointed in ♀.

Mouth-parts as in *T. quadrispinosa*.

First gnathopod in ♂, 4th joint not expanded, 5th strongly expanded, the lobe broad and rounded, distal margin only slightly concave, 6th shorter than 5th, also strongly expanded, distal margin

nearly straight, finger and unguis not reaching apex of lobe (cf. *T. novae-hollandiae* Stebb.), numerous scattered spines on the joints; in ♀ 6th joint simple, shorter than 5th, both spinose, but without any specially large spines.

Second gnathopod in ♂, 2nd joint very similar to that of *T. australis* but oval, greatest width just before the middle, whence tapering to hinge, palm and hind margin forming an almost even curve without defining tooth or process, palm convex, spinose, finger strongly curved, a little longer than palm and overlapping the margin at the end; in ♀ 2nd joint expanded on front margin, twice as long as wide, 4th not lobed, 5th not very strongly lobed, 6th a little shorter than 5th, apical projection bluntly rounded.

Second peraeopod, 7th joint with inner margin sinuous, not constricted.

Third to fifth peraeopods, 2nd joint moderately expanded, its hind margin in 3rd and 4th peraeopods with minute setuliferous serrations, in 5th regularly crenulate and setulose.

First uropod, outer ramus with apical spines only.

*Length*: ♂ 12.5 mm., ♀ 10 mm.

*Colour*: Whitish, eyes dark brown.

*Locality*: West and East coasts of the Cape Peninsula. (Dr. W. F. Purcell and R. M. Lightfoot.) ♂♂ and ♀♀. (S.A.M. Nos. 1260-2.)

This species possesses a 1st gnathopod in ♂ like that of *T. novae-hollandiae* Stebb. together with a 2nd gnathopod similar to that of *T. brito* Stebb. It is distinguished from *T. australis* by the greater proximity of the eyes, the 2nd side-plate, the 2nd gnathopod in ♂ and the finger of 2nd peraeopod. The females of this species and *australis* can be distinguished by the 2nd side-plate, the 2nd joint of 2nd gnathopod and absence of large spines on 5th and 6th joints of 1st gnathopod.

The name is compounded of  $\alpha\gamma\chi$ , near, and  $\epsilon\iota\delta\omicron\varsigma$  an appearance.

#### GEN. TALITRIATOR Methuen.

1913. *Talitriator* Methuen, Proc. Zool. Soc. Lond. 1913, pt. 1, p. 109.

In his generic diagnosis Methuen says: "Like *Talitrus* except for the fifth side-plate. . . ." This refers presumably to the difference in the size of the lobes, the anterior lobe being much bigger than the posterior in *Talitriator*, but only a little bigger in *Talitrus* (cf. Sars' figure of *T. locusta* in Crust. Norw. vol. 1, pl. 9).

Now Sayce (Proc. Roy. Soc. Vict. vol. 22, pt. 1, p. 29, pls. 11, 12, 1909) has given detailed descriptions and figures of the two Australian

species *Talitrus sylvaticus* Haswell and *T. kershawi* Sayce, both of which possess a 5th side-plate of the same character as *Talitriator*. In addition they have the palp of maxilliped 4-jointed, telson longer than broad, a triangularly expanded 5th joint in 1st gnathopod, and the 1st antenna only slightly shorter than the peduncle of 2nd antenna.

It seems therefore expedient to transfer the two Australian species to the present genus, which may be defined as follows:

Like *Talitrus*, but with anterior lobe of 5th side-plate much larger than the posterior lobe, 1st antenna only slightly shorter than peduncle of 2nd antenna, palp of maxilliped 4-jointed, 1st gnathopod not so long as 2nd gnathopod and not stronger, 5th joint of 1st gnathopod distally expanded, 2nd joint of 3rd peraeopod moderately or scarcely at all expanded, telson longer than broad. Genotype: *T. eastwoodae* Methuen. Includes also *T. sylvaticus* (Haswell) and *T. kershawi* (Sayce).

There is, however, one feature which separates *T. eastwoodae* from both *Talitrus* and also the two Australian species and to which Methuen has not drawn attention: namely, the subacute projection on the upper posterior angle of the 2nd side-plate.

#### TALITRIATOR EASTWOODAE Methuen.

1913. *Talitriator eastwoodae* Methuen, l.c. p. 110, pls. 10, 11.

I have examined 4 specimens from the original locality in the Transvaal, kindly presented to the South African Museum by Hon. P. A. Methuen and labelled by him as "Types." I find that the postero-inferior angles of pleon segments 2 and 3 are not quite so produced as in Methuen's figure (pl. 11, fig. 12), in fact there is no produced point on the 2nd at all in two of the specimens. The 2nd antenna reaches to the end of the 3rd peraeon segment.

There is also in the Museum a considerable number of specimens from the Cape Peninsula and other districts, all of which I consider to be specifically the same as *eastwoodae*. I have also come to the conclusion that Methuen's specimens were probably not quite mature. Needless to say the specimens show a certain amount of variability, not, however, very great. The size of the adults also varies a little.

The largest specimens measure 16 mm., and in these the 2nd antenna reaches to the 4th-6th peraeon segment, its flagellum 24-28-jointed, that of 1st antenna 6-8-jointed, 5th and 6th joints of 1st gnathopod more elongate than in the Type specimens, the process of the 6th joint of 2nd gnathopod longer and more pointed and curved upwards, the upper margin being concave.

Between these large specimens and the Transvaal specimens (and Cape specimens of the same size as these latter) there is every gradation in the length of the 2nd antennae and number of flagellar joints, and the length of 5th and 6th joints of 1st gnathopod and 6th joint of 2nd gnathopod.

*Length* : 16 mm.

*Colour* : Brown, peraeon and pleon segments banded transversely with reddish, eyes black; in spirit all the colour, except that of the eyes, fades to whitish.

*Locality* : Widely distributed. In the Cape Peninsula it is to be found abundantly in the damp earth and moss near streams and waterfalls, ranging from near sea-level up to the top of Table Mountain, 3500 feet. Also : Stellenbosch ; Sir Lowry's Pass ; Ceres ; Wellington ; Clanwilliam Division ; Swellendam ; George ; Knysna ; Alexandra Division ; Port St. John's, Pietermaritzburg, Howick, and Durban, Natal. (Dr. W. F. Purcell, R. M. Lightfoot, K.H.B.) ♂ ♂, ♀ ♀ and young.

Methuen records it "from streams," The Woodbush, N. Transvaal, and speaks of it as a "fresh-water" Amphipod. So far as my own experience in the Cape Peninsula and at Stellenbosch goes it does not occur actually in the streams ; I should describe it as truly terrestrial.

The gaps in the distribution will no doubt be filled up as soon as the Union has been more thoroughly searched for the smaller invertebrates.

#### GEN. CHILTONIA Stebbing.

1899. *Chiltonia* Stebbing, Tr. Linn. Soc. Lond. ser. 2, vol. 7, pt. 8, p. 408.  
 1901. *Hyaella* Sayce, Proc. Roy. Soc. Vict. n.s. vol. 13, pt. 2, p. 226.  
 1902. *Chiltonia* id. ibid. n.s. vol. 15, pt. 1, p. 47.  
 1906. ,, Stebbing, Das Tierreich, 21, pp. 555, 735.  
 1908. ,, G. Smith, Proc. Roy. Soc. (B), vol. 80, p. 472.  
 1909. ,, id. Naturalist in Tasmania, p. 136.  
 1909. ,, Chilton, Subant. Is. N.Z. p. 644.

Although the following species disagrees with the definition of this genus in having the 1st and 2nd gnathopods alike in both sexes, the 2nd not enlarged, it seems best to widen the definition of the genus rather than institute a new one.

#### CHILTONIA CAPENSIS n. sp.

(Plate XXVII. Figs. 38-40.)

Body rather stout, shiny. Eyes rather large, oval, distance apart

less than their shorter diameter. Side-plates 1-4 increasing in depth, 4 largest, much deeper than 5. Postero-inferior angle of 3rd pleon segment quadrate, scarcely produced.

Telson entire, subrectangular, distal margin straight, 2-3 minute setules at the rounded postero-lateral angles.

First antenna, 1st joint stout, 2nd and 3rd subequal, flagellum in ♂ 7-, in ♀ 6-jointed.

Second antenna subequal to 1st, ultimate joint a trifle longer than penultimate. Flagellum in ♂ 7-, in ♀ 6-jointed.

Upper lip, distal margin evenly rounded.

Mandibles, cutting-edge 4-5-dentate, secondary cutting-edge 3-4-dentate.

First maxilla, outer plate with 9-10 spines, slightly notched on outer margin where palp should be, but no trace of a palp, inner plate with 2 plumose setae.

Maxilliped, the 2 outermost teeth on apex of inner plate large, 4th joint of palp small, conical, ending in a long seta.

First and second gnathopods similar to one another and alike in both sexes, 2nd and 3rd joints not in the least expanded, 5th distally fringed with 6-8 setae, 6th nearly twice as long as broad, inferior margin slightly concave, palm transverse, convex, setulose, defining angle rounded.

First and second pereopods, inferior margins of 5th and 6th joints with 4 and 5 spinules respectively, 6th with 1 apical spine in addition, 7th without constriction, tubercle or setule.

Third and fourth pereopods, 2nd joint oval, hind margin with very faint serrations, anterior margin of 6th with 3 pairs of spinules and 1 apical one, hind margin smooth.

Fifth pereopod, 2nd joint very strongly expanded, as broad as long, hind margin serrulate, 6th as in 3rd and 4th pereopods.

None of the pereopods are strongly spinose, but all are rather stout, 1st, 2nd, 4th and 5th are subequal and longer than 3rd.

First and second uropods, rami shorter than peduncle, with apical spines only, except the inner ramus of 2nd, which has 1 marginal spine.

Third uropod, short, ovate, 1-jointed, with 1 apical seta.

*Length*: ♂ 4.5 mm., ♀ 3-4 mm.

*Colour*: Greenish, eyes black.

*Locality*: Salt River, Cape Town. October, 1898. (Dr. W. F. Purcell.) 9 ovigerous ♀♀ "in brackish pool"; Milnerton, near Cape Town. 25/10/13. (K.H.B.) ♂♂ and ovigerous ♀♀. In brack water, among green weeds. (S.A.M. Nos. A2885 and A2886.)

## GEN. PARORCHESTIA Stebbing.

1899. *Parorchestia* Stebbing, Tr. Linn. Soc. Lond. ser. 2, vol. 7, pt. 8, p. 402.  
 1906. „ id. Das Tierreich, 21, pp. 557, 735.  
 1909. „ Chilton, Subant. Is. N.Z. p. 636.

## PARORCHESTIA TENUIS (Dana).

- 1853 and 55. *Orchestia tenuis* Dana, U.S. Expl. Exp. vol. 13, 2, p. 872, pl. 59, fig. 1.  
 1862. „ „ Bate, Cat. Amphip. Brit. Mus. p. 29, pl. 4, fig. 10.  
 1881. „ *sylvicola* Thomson, Tr. N.Z. Inst. vol. 13, p. 212, pl. 7, fig. 4 (non Dana).  
 1884. *Allorchestes recens* id. ibid. vol. 16, p. 235, pl. 13, figs. 2-5.  
 1893. *Orchestia gammarellus* (part) Della Valle, F. u. Fl. Neapel, vol. 20, p. 501.  
 1899. *Parorchestia tenuis* Stebbing, Tr. Linn. Soc. Lond. l.c. p. 402.  
 1906. „ „ id. l.c. p. 557.  
 1909. „ „ Chilton, Subant. Isl. N.Z. p. 642.

Body fairly compressed. Eyes rather large, equal to half the upper margin of head, circular, almost meeting on the top of the head. Side-plate 1 smaller than and partly concealed by 2, side-plates 2-4 of same depth as their segments, with a posterior point above which hind margin is excavate, inferior margins of 1-4 minutely spinulose, 5 nearly but not quite as deep as 4. Postero-inferior angle of 1st pleon segment quadrate with a very small point, of 2nd and 3rd quadrate, somewhat produced in an acute point, hind margin concave above the point, perfectly smooth.

Telson rather short, triangular, a very faint apical notch, the only setae present are 3 on each apex set just within the margin.

First antenna not quite reaching apex of peduncle of 2nd antenna, 1st, 2nd and 3rd joints subequal, flagellum equal to peduncle, ♂ 7-, ♀ 4-jointed.

Second antenna  $\frac{1}{2}$  length of body, ultimate joint longer than penultimate, flagellum equal to peduncle, ♂ 14-, ♀ 7-jointed.

First gnathopod ♂ exactly resembling Thomson's figure of his *Allorchestes recens* (= *Parorchestia tenuis* (Dana)).

Second gnathopod ♂ also in close agreement with that of *P. tenuis*. The defining angle is a little more prominent than in Thomson's figure, but is not at all tooth-like, and carries one fairly stout spine.

First and second gnathopods ♀ also resembling Thomson's figures

of *A. recens*, 4th and 5th joints with the scabrous lobes small in 1st, but large in 2nd gnathopod.

First and second paraeopods feebly spinulose, 4th and 6th joints with spinules on both margins, 5th spinulose only on hind margin, finger with a very minute setule on inner apex.

Third to fifth paraeopods, 2nd joint oval, hind margin with very slight setiferous serrations, 4th and 6th joints spinulose on both margins, finger with a very minute setule.

First and second uropods with marginal spines on inner ramus only.

Third uropod, peduncle with 3-4 apical spines, ramus nearly as long but only half as wide, tipped with 5 setae.

*Length*: ♂ 9 mm., ♀ 5-6 mm.

*Colour*: In spirit, whitish, eyes dark brown.

*Locality*: Salt River, near Cape Town. October, 1898. (Dr. W. F. Purcell.) 5 ♂♂, 3 ovigerous ♀♀ "in brackish pool"; East London. July, 1914. (R. M. Lightfoot.) 3 ♂♂, 2 ovigerous ♀♀ "found amongst a number of *Talorchestia* on the beach." (S.A.M. Nos. 10030 and A3053.)

*Geogr. Distribution*: New Zealand (Dana, Thomson, Chilton); Campbell Island (Chilton).

Thus it will be seen that the only differences between the South African and the New Zealand specimens lie in the shorter 3rd joint of the 1st antenna, the larger eyes, and the more prominent defining angle of the hand of 2nd gnathopod.

As mentioned above under *Talorchestia quadrispinosa*, there is one specimen 5 mm. long from Salt River which has a normal ♂ 1st gnathopod, but a 2nd gnathopod resembling that of the ♀. It is, however, stouter than in the ♀, the 6th joint especially being much broader than in the ♀.

#### PARORCHESTIA DASSENENSIS n. sp.

(Plate XXVIII. Figs. 1, 2.)

? 1843. *Orchestia bottae* Krauss, Südafr. Crust. p. 60. (non M. Edwards 1840.)

Male. Body fairly compressed, back rounded. Eyes fairly large, round, their distance apart greater than their diameter. Side-plate 1 smaller than and partly concealed by 2, side-plates 2-4 shallower than their segments and longer than deep, upper half of posterior margin above posterior angle excavate, 5 as deep as 4. Postero-inferior angle of pleon segments 1-3 quadrate, with a very shortly produced point, posterior margin quite smooth.

**Telson** with a very small apical notch, lateral margins very slightly concave, **2 apical spines on each apex.**

**First antenna reaching nearly to apex of peduncle of 2nd antenna,** 3rd joint a trifle shorter than 2nd, 1st a little shorter than 3rd, flagellum not quite as long as peduncle, 7-jointed.

**Second antenna not half length of body,** ultimate and penultimate joints subequal, flagellum a little longer than peduncle, 16-jointed.

**First gnathopod ♂, 4th joint with a rounded pellucid lobe, 5th prominently lobed, 6th shorter and narrower than 5th, at least 2½ times as long as greatest width, widening slightly towards lower apex where it is scabrous and pellucid** and produced beyond the short transverse palm as a short rounded lobe, palm with a few setae, finger matching palm.

**Second gnathopod ♂, inner anterior margin of 2nd joint with a well-marked, straight, apically rounded keel, outer front apex has a smaller lobe, 3rd with a strong pellucid lobe on anterior margin, 6th ovate, widest in the middle, palm oblique, spinose, with a fairly deep but small notch near hinge, and a shallow one near the undefined junction of palm and hind margin, finger overlapping palm and tapering to a fine point, inner margin sinuous.**

First and second peraeopods not strongly spinous or setose, 4th-6th joints spinose on both margins, finger with a very minute setule.

Third to fifth peraeopods, 2nd joint increasingly expanded, hind margin nearly straight, with setiferous serrations, strongest on 5th peraeopod, postero-inferior angles rounded, in 5th peraeopod reaching to end of 3rd joint, 4th to 6th joints spinulose on both margins, finger with minute setule, all three peraeopods more slender than in the previous species.

**First uropod with marginal spines only on inner ramus.**

Second uropod with marginal spines on both rami.

**Third uropod, peduncle with 2-3 apical spines, ramus a trifle longer than peduncle, slender, with 3-4 apical setae.**

*Length*: 12 mm.

*Colour*: In spirit, whitish, eyes black.

*Locality*: Dassen Island, West Coast. April, 1897. (R. M. Light-foot.) 2 ♂♂; Hout Bay, Cape Peninsula. 29/12/14. (S. H. Haughton.) 2 ♂♂. (S.A.M. Nos. A3054 and A3067.)

The specimens which Krauss assigned to *Orchestia bottae* M. Edw. may perhaps be referable to this species, though I have not seen Krauss' specimens. The description of the 2nd gnathopod of *O. bottae* as given by Stebbing in Das Tierreich applies very well to that of the present species.

## GEN. HYALE Rathke.

1837. *Hyale* Rathke, Mém. prés. Ac. St. Petersb. vol. 3, p. 377.  
 1849. *Nicaea* Nicolet in Gay's Hist. Chile, vol. 3, p. 237.  
 1888. *Hyale* Stebbing, Challeng. Rep. vol. 29, p. 171, etc.  
 1890. „ G. O. Sars, Crust. Norw. vol. 1, p. 26.  
 1906. „ Stebbing, Das Tierreich, 21, pp. 559, 735 (references).  
 1907. „ Chevreux, Bull. Mus. d'Hist. Nat. Paris, 1907, no. 6, p. 414.  
 1908. „ Walker, Ann. Mag. Nat. Hist. ser. 8, vol. 2, p. 37.  
 1910. „ Kunkel, Tr. Conn. Ac. Sci. vol. 16, p. 72.  
 1911. „ Chevreux, Mém. Soc. Zool. Fr. vol. 23, p. 238.

## HYALE MAROUBRAE Stebbing.

1899. *Hyale maroubrae* Stebbing, Tr. Linn. Soc. Lond. ser. 2, vol. 7,  
 pt. 8, p. 405, pl. 32c.  
 1906. „ „ id. l.c. p. 563.

First gnathopod ♂, 2nd joint with very slight lobe on anterior apex, 3rd not lobed at all.

Second gnathopod ♂, distal expansion on 2nd joint with 5 spiniferous indents, 3rd joint also lobed.

Third uropod, ramus shorter than peduncle.

In other respects agreeing with Stebbing's description. The female, hitherto unknown, has the gnathopods as follows: 1st gnathopod, 2nd joint slightly lobed on anterior apex, the lobe bearing one setule, 3rd and 4th not lobed, lobe of 5th not extending beyond 4th, setiferous, 6th twice as long as broad, palm transverse, convex, defined by a spine, margin setose, hind margin with 1 group of setae, finger matching palm; 2nd gnathopod, similar but a trifle larger.

*Length*: ♂ 5 mm., ♀ 4.5 mm.

*Colour*: Claret, eyes black.

*Locality*: Sea Point, near Cape Town. 26/2/14. (K.H.B.). 6 ♂ ♂, 1 ovigerous ♀; Buffel's Bay (False Bay). 28/9/13. (K.H.B.). 1 ♂. (S.A.M. Nos. A2883 and A2884.)

*Geogr. Distribution*: Sydney, New South Wales (Stebbing).

## HYALE SALDANHA Chilton.

(Plate XXVII. Fig. 37.)

1912. *Hyale saldanha* Chilton, Tr. Roy. Soc. Edinb. vol. 48, pt. 2,  
 p. 509, pl. 2, figs. 24-29.

This very common species occurs in several colour varieties according to the local habitat and the colour of the weeds among which it is

found. The ground-colour is slaty, slaty-brown, purplish, claret, sienna, brownish-green or green, either uniform or speckled and irrorated. A row of small whitish spots just above the junctions of the epimera and segments and frequently other smaller whitish spots, chiefly on the anterior epimera. Sometimes a fawn or yellowish medio-dorsal stripe runs from the head to the end of the pleon, or there is one light irregular patch on the 2nd peraeon segment and another on the 5th. In other specimens the ground-colour is whitish, becoming yellowish dorsally, each peraeon segment (with its side-plate) and each pleon segment with a broad dark brownish-black transverse band. Eyes dark brownish-black. The antennae and posterior limbs of the same colour as the ground-colour, the gnathopods pale.

It reaches a length of 13 mm. in the ♂ and 12 mm. in the ♀.

The lobes on the 2nd and 3rd joints of the 1st and 2nd gnathopods (of both sexes) are frequently more strongly developed than in Chilton's figures.

Besides Table Bay, other localities are: Buffel's Bay and Kalk Bay on the East side of the Cape Peninsula.

The "Scotia" obtained it at Saldanha Bay in 25 fathoms.

#### HYALE GRANDICORNIS (Kröyer).

1845. *Orchestia grandicornis* Kröyer, Naturh. Tidsskr. ser. 2, vol. 1, p. 292, pl. 1, figs. 2a-n.
1849. *Nicaea lucasi* Nicolet in Gay's Hist. Chile, vol. 3, p. 238.
1852. *Allorchestes verticillata* + *peruviana* Dana, Proc. Amer. Ac. vol. 2, pp. 205, 206.
1862. „ *verticillatus* Bate, Cat. Amph. Brit. Mus. p. 43, pl. 7, fig. 1.
1879. *Nicaea novaezealandiae* Thomson, Tr. N.Z. Inst. vol. 11, p. 235, pl. 10B, figs. 1a-f.
1893. *Hyale prevostii* (part) Della Valle, F. u. Fl. Neapel. vol. 20, pp. 519, 520.
1906. „ *grandicornis* + *novaezealandiae* Stebbing, Das Tierreich, 21, pp. 566, 567.
1909. „ *novaezealandiae* Chilton, Subant. Is. N. Zeal. p. 643.
1912. „ *grandicornis* id. Tr. Roy. Soc. Edinb. vol. 48, pt. 2, p. 508.

Stebbing and Chilton have mentioned the nearness of *novaezealandiae* to *grandicornis*. A comparison of the South African form leaves no other course but to unite them. None of the characters

given by Stebbing in 1906, by which Thomson's species can be distinguished from Köyer's, appear to be constantly correlated. The degree of approximation of the lobe of the 5th joint of 1st gnathopod ♂ to the apex varies, as does also the expansion of the 2nd joint of the 2nd gnathopod and the seta on finger of peraeopods 1-5.

The most constantly correlated characters (and even these are not always found together in the same specimen) appear to be: the solitary spines on 4th joint of peraeopods 3-5, marginal spines on both rami of 1st uropod and the 3rd pleon segment with the postero-inferior angle slightly produced. But solitary spines on 4th joint of peraeopods 3-5 may occur with spines on only the inner ramus and a quadrate postero-inferior angle to pleon segment 3. Other combinations of these supposedly distinguishing characters also occur.

The following points about the South African species may be mentioned: Neither the 2nd nor 3rd joints of 1st gnathopod are lobed, lobe of 5th projecting a little beyond 4th, furnished with short spines and longer setae; 2nd joint of 2nd gnathopod with a straight-edged apically quadrate keel on anterior margin but no projecting rounded lobe, 3rd with a small lobe, hind margin of 4th joint of peraeopods 3-5 with 4 spines either solitary or each set in a bunch of setae, anterior margin of 6th with 4 (peraeopod 3) or 5 (peraeopods 4 and 5) spines, all of the same size and not apically serrulate, each set in a group of setae; setule on inner apex of finger varying from very delicate to fairly strong; hind margin of 2nd joint of peraeopods 3-5 with slight setuliferous indent, posterior margin in peraeopod 5 rather deeply excavate between the rounded postero-inferior angle and 3rd joint.

*Length*: Up to 17 mm. ♂, 14 mm. ♀.

*Colour*: Dark reddish or greenish brown, with squarish dorsal lighter spots.

*Locality*: Table Bay (Cape Town). (Dr. W. F. Purcell, K.H.B.); False Bay (Buffel's Bay) and St. James. (K.H.B.); East London. (R. M. Lightfoot.) ♂♂, ovigerous ♀♀ and young; Port Elizabeth. February, 1915. (Mrs. Paterson.) (S.A.M. Nos. 1263, A2516, A3051, A3052, and A3282.)

*Geogr. Distribution*: Valparaiso (Kröyer: *O. grandicornis*, Dana: *A. verticillata*); Otago, N.Z., Macquarie Is. and the Snares (Thomson and Chilton: *N. novaezealandiae*); Gough Island (Chilton: *H. grandicornis*).

Most of the East London specimens belong to the form *novaezealandiae*, but examples of this form occur also among the Cape Peninsula specimens, which are mostly *grandicornis*, and *vice versa*. Specimens which are intermediate and combine the characters of the

two forms are found chiefly in the Cape series, but would probably also be found at East London if a larger series was collected.

HYALE DIASTOMA n. sp.

(Plate XXVIII. Fig. 3.)

♂. Body somewhat iridescent, dorsally rounded. Eyes moderate, subcircular. Side-plate 1 not greatly widened below. Postero-inferior angle of 3rd pleon segment quadrate, not produced, posterior margin with 3-4 very slight serrations. Telson, lobes oblong, apically rounded-truncate.

First antenna reaching beyond peduncle of 2nd antenna, 2nd and 3rd joints subequal, flagellum 12-jointed, with not very dense whorls of short setae.

Second antenna stout, nearly half length of body, ultimate joint longer than penultimate, flagellum 14-jointed, with dense whorls of long setae (denser and longer on lower surface).

First gnathopod ♂, 2nd joint proximally narrow, distally greatly widening but front apex only feebly lobed, 3rd not lobed, inferior margin of 4th straight, lobe of 5th not apical and not extending beyond 4th, setose along whole margin, 6th oblong, inferior margin distally setose, palm a little oblique, defined by 2 spines, setose, finger matching palm.

Second gnathopod ♂, 2nd joint with a well-developed rounded lobe on front apex, 3rd not lobed, 6th shortly oblong, palm nearly transverse, sinuous—*i.e.*, concave near hinge and defining angle, convex in middle, defining angle shortly produced, with 2 spines, finger stout, curved, inner margin sinuous like the palm, concave proximally and distally, convex in middle, so that when finger is closed a more or less circular loophole is left at base of finger.

First to fifth peraeopods, finger distinctly denticulate, seta on inner apex stout, hind margin of 6th joint of peraeopods 4 and 5 smooth, inner margin without serrate spines, hind margin of 2nd joint in peraeopods 3 and 4 smooth, in peraeopod 5 with a few widely spaced setuliferous indents.

First uropod, 1 marginal spine on outer ramus near apex and 1 near apex and 1 in middle on inner ramus.

Third uropod, peduncle and ramus subequal.

*Length*: 7 mm.

*Colour*: Claret, eyes black.

*Locality*: Sea Point, near Cape Town. 13/4/14. (K.H.B.) 4 ♂♂. The ♀ has not yet been recognised. (S.A.M. No. A3039.)

HYALE INYACKA n. sp.

(Plate XXVIII. Fig. 4.)

Body not very shiny, dorsally rounded. Eyes elongate-oblong. Side-plates not deep, 1 widened below. Postero-inferior angle of 3rd pleon segment quadrate, not produced, posterior margin with 4-5 widely spaced and very slight serrations. Telson, lobes oblong, apically truncate.

First antenna reaching well beyond peduncle of 2nd antenna, 1st joint equal to 2nd and 3rd together, flagellum longer than peduncle, 13-jointed.

Second antenna equal to half length of body, ultimate and penultimate joints subequal, flagellum longer than peduncle, 24-jointed.

First gnathopod ♂, 2nd joint scarcely expanded on front apex, 3rd not expanded, lobe of 5th broad and apical, setose along whole margin, 6th wider distally than proximally, palm a little oblique, setose, 2 defining spines, hind margin with a group of setae shortly before apex.

Second gnathopod ♂, 2nd joint with a narrow apical expansion, 3rd not lobed, 6th oval, palm oblique, convex, spinose, equal to hind margin and defined by a small blunt projection bearing 1 spine, finger matching palm.

In ♀ gnathopods similar to one another and to 1st gnathopod of ♂, but 2nd joint in both gnathopods with a narrow apical lobe.

First and second peraeopods, hind margin of 6th joint with 3 groups of 1 spine and 2 setae each, apex with 1 short spine and 2-3 setae, finger with short stout spine (not seta) on inner apex (if finger and unguis be counted together the spine is in middle of inner margin).

Third to fifth peraeopods, hind margin of 2nd joint setulose and serrate, faintly on 3rd and 4th peraeopods, more strongly on 5th, hind margin of 4th with 3 solitary small spines, anterior margin of 6th with 4 pairs of spinules and a fairly stout but not very prominent apical spine, hind margin of 6th smooth in 3rd peraeopod, with 4 (4th peraeopod) or 3 (5th peraeopod) groups of 3 unequal spines and an apical tuft of setae, finger with fairly stout seta, inner margin quite smooth.

First uropod with marginal spines on both rami.

Third uropod, ramus shorter than peduncle.

*Length* : 9 mm.

*Colour* : Pale pinkish, eyes black.

*Locality* : Inyack Island, Delagoa Bay. October, 1912. (K.H.B.)

2 ♂♂, 1 nonovigerous ♀. (S.A.M. No. A2470.) In weed at low-water.

Very like the northern *H. prevostii* (M. Edw.), but distinguished by the serrate hind margin of 2nd joint of peraeopods 3-5 and the more numerous spines on hind margin of 6th joint of peraeopods 4 and 5. Chevreux (1900, Rés. Camp. Monaco, vol. 16, pl. 1, fig. 3f) has figured the 5th peraeopod of an Azores specimen of *H. prevostii* with a serrate hind margin to the 2nd joint and a smooth hind margin to the 6th joint. Della Valle and Sars figure both joints with smooth hind margins.

#### HYALE HIRTIPALMA (Dana).

1852. *Allorchestes hirtipalma* Dana, Pr. Amer. Ac. vol. 2, p. 205.  
 1853/55. " " id. U.S. Expl. Exp. vol. 13, 2, p. 888, pl. 60,  
 fig. 4.  
 1862. " *inca* Bate, Cat. Amphip. Brit. Mus. p. 40, pl. 6, fig. 7.  
 1879. *Nicaea fimbriata* Thomson, Tr. N.Z. Inst. vol. 11, p. 236, pl. 10B,  
 fig. 2.  
 1888. *Allorchestes georgianus* Pfeffer, Jahrb. Wiss. Anst. Hamb. vol. 5,  
 p. 77, pl. 1, figs. 1a-n, 4.  
 1906. *Hyale hirtipalma* Stebbing, Das Tierreich, 21, p. 564.  
 1909. " " Chilton, Subantarct. Is. N. Zeal. vol. 2, p. 643.  
 1913. " " id. Mitt. Naturh. Mus. Hamb. vol. 30, p. 55.

Chilton includes in the synonymy also *H. villosa* Smith 1876, and *H. trigonochir* Walker 1908. These form the two extremes; in the former the 6th joint of the 1st gnathopod does not widen to the palm, in the latter it widens so much that the palm is at least twice the length of the hind margin.

As Chilton (1909) remarks, this character is indeed variable, but appears to be not so much individual as local. Among the Cape specimens those from Kalk Bay (False Bay) belong to the form *villosa*, whereas those from Buffel's Bay (also in False Bay) and from Cape Town in Table Bay have the 6th joint distinctly though not strongly widened. Amongst the specimens from each locality there can be detected no variation, except that due to age as mentioned by Stebbing (1906).

On the other hand, the variation in the brushes of setules on the lower margin of the flagella of the 2nd antennae appears to be more individual. In many cases the flagella are practically destitute of these brushes.

The 6th joint of the 2nd gnathopod of ♂ is not always as elongate as represented in Dana's figure, but the proportion of palm to hind margin is the same.

First and second gnathopods in both sexes with the 2nd joint but not the 3rd apically expanded into a rounded lobe.

*Length*: Up to 10 mm.

*Colour*: Pale pinkish, brownish or greenish, eyes black.

*Locality*: Kalk Bay. (Dr. W. F. Purcell.) 7 ♂♂ and ♀♀; Buffel's Bay (False Bay). 29/9/13. (K.H.B.) ♂♂, ovigerous ♀♀ and juv.; Sea Point, near Cape Town. 13/4/14. (K.H.B.) ♂♂ and ovigerous ♀♀. (S.A.M. Nos. 1269, A3047 and A3049.)

*Geogr. Distribution*: Chile (Dana); Peru (Bate); New Zealand (Thomson, Chilton); South Georgia (Pfeffer); Auckland Islands (Walker, Chilton); Kerguelen (Smith: *H. villosa*).

#### HYALE MACRODACTYLA Stebbing.

1899. *Hyale macrodactylus* Stebbing, Tr. Linn. Soc. Lond. ser. 2, vol. 7, pt. 8, p. 404, pl. 31d.

1906. „ „ Stebbing, Das Tierreich, 21, p. 564, fig. 96.

The form described in 1901 by Chevreux (Mém. Soc. Zool. Fr. vol. 14, p. 397, figs. 13, 14) from Seychelles seems quite distinct enough from Stebbing's form to merit a separate specific name. Chevreux himself was half inclined to this view. I propose the name *H. Chevreuxi*.

The Cape specimens agree well with Stebbing's descriptions and figures except that they reach a rather larger size and there is sometimes a very short, but appreciable and well marked, hind margin to the 6th joint of the 2nd gnathopod of ♂. The finger also is rather variable and is scarcely as long as in Stebbing's specimens.

There is a short upstanding seta on both lobes of the telson.

*Length*: Up to 8 mm., ovigerous ♀ 5 mm.

*Colour*: Pale pinkish or brownish.

*Locality*: Kalk Bay. (Dr. W. F. Purcell.) ♂♂ and ♀♀; Buffel's Bay (False Bay). (K.H.B.) ♂♂, ovigerous ♀♀ and juv.; Sea Point, near Cape Town. (K.H.B.) ♂♂ and ovigerous ♀♀. (S.A.M. Nos. 1628, A3042-5.)

*Geogr. Distribution*: St. Thomas, Danish W. Indies; Rio Janeiro (Stebbing).

## FAMILY AORIDAE.

1899. *Aoridae* Stebbing, Ann. Mag. Nat. Hist. ser. 7, vol. 4, p. 211.  
 1906. „ id. Das Tierreich, 21, pp. 585, 736.  
 1909. „ Chevreux, Bull. de l'Inst. oc. Monaco, no. 150, p. 5.  
 1910. „ Stebbing, Sci. Res. "Thetis," pt. 12, p. 605.  
 1912. „ Pearse, Proc. U.S. Nat. Mus. vol. 43, p. 372.

## GEN. AORA Kröyer.

1845. *Aora* Kröyer, Naturh. Tidsskr. ser. 2, vol. 1, p. 328.  
 1888. „ Stebbing, Challeng. Rep. vol. 29, p. 1072 (Synonymy).  
 1906. „ id. l.c. p. 587.  
 1910. „ id. Gen. Cat. S.A. Crust. p. 459.

## AORA TYPICA Kröyer.

1845. *Aora typica* Kröyer, l.c. p. 328, pl. 3, figs. 3a-l.  
 1906. „ „ Stebbing, l.c. p. 587, fig. 101 (Synonymy).  
 1907. „ „ Chevreux, Mém. Soc. Zool. Fr. vol. 20, p. 510.  
 1908. „ „ Stebbing, S.A. Crust. pt. 4, p. 84.  
 1909. „ „ Chilton, Subantarct. Is. N. Zeal. vol. 2, p. 645.  
 1910. „ „ Chevreux, Mém. Soc. Zool. Fr. vol. 23, p. 242.  
 1911. „ „ Chilton, Tr. N.Z. Inst. vol. 43 [1910], p. 565.

The ♂ and ♀ specimens from South Africa referred to by Stebbing (l.c. 1908, p. 84) are very near to the form described by Stebbing in 1888 as *A. kergueleni*. The 1st gnathopod in ♂ has no setae on 2nd joint, nor tooth on anterior margin, 4th joint projects beyond end of 5th, inferior margin of 5th and 6th and apex of 6th with long setae, finger  $\frac{2}{3}$  length of 6th, inner margin feebly serrate. Fifth peraeopods lost. Rami of 3rd uropod subequal and a little longer than peduncle. Telson broader than long.

Littoral specimens from Table Bay are similar. The spine on inner apex of 6th joint of 1st gnathopod of ♂ appears to be usually absent. Fifth and 6th joints of 2nd gnathopod of ♂ rather narrower than in Stebbing's figure of *A. kergueleni*, nearly 3 times as long as wide. Peraeopod 3 with 2nd joint tapering distally, hind margin straight or slightly concave, infero-posterior angle with 1 spine; 2nd joint of 4th peraeopod similar but rather more pyriform; 2nd joint of 5th peraeopod broadly oval, nearly as broad as long, hind margin convex, postero-inferior angle with 1 spine.

The peculiar feature of these specimens is the length of the rami of the 3rd uropod, which are equal to or even in some cases a little shorter

than the peduncle; both rami have several apical setae but no marginal spines.

*Length*: ♂ 7 mm., ♀ 7.5 mm.

*Colour*: Whitish, speckled dorsally with grey in the following manner: anterior half of the segments with 2 submedian spots, posterior half with 1 median spot; these spots are square so that they form a chequered pattern; a roundish medio-dorsal dark brown spot on peraeon segments 6 and 7 and pleon segments 1-3, those on the pleon segments largest and sometimes alone present; two specimens are white with transverse brown-grey bands, in the one on head, peraeon segment 6 and pleon segment 1, in the other on head, peraeon segments and pleon segment 1.

*Locality*: False Bay (Seal Island, SSE., distant 2½ miles). 10 fathoms. 30/10/02. 1 ovigerous ♀. s.s. "Pieter Faure," Buffel's Bay. 28/9/13. ♂♂, ♀♀. (K.H.B.); Table Bay (Sea Point, near Cape Town). 1913/14. ♂♂, ovigerous ♀♀. (K.H.B.); Durban. July, 1915. 1 ♂. (H. W. Bell-Marley.) (S.A.M. Nos. A2871, A2538, A2896, A3850, etc.)

*Geogr. Distribution*: N. Atlantic (Kröyer, Sars, etc.); Algeria (Chevreux); Azores (Chevreux); S. America (Nicolet); Australia (Haswell); New Zealand (Thomson); Kerguelen Is. (Stebbing); Gambier Archipelago (Chevreux); Auckland Is. (Chilton); Kermadec Is. (Chilton).

A smaller form 4-5 mm. (♂♂ and ovigerous ♀♀) is found with the other form at Sea Point and is distinguished by having a large square dark grey spot on 1st and 2nd pleon segments, instead of the smaller roundish spots. The inner ramus of the 3rd uropod has only 1 or 2 setae.

#### GEN. LEMBOS Bate.

1857. *Lembos* (part) Bate, Ann. Mag. Nat. Hist. ser. 2, vol. 19, p. 142.  
 1906. ,, Stebbing, Das Tierreich, 21, pp. 594-737.  
 1909. ,, Walker, Tr. Linn. Soc. Lond. vol. 12, pt. 4, p. 338.  
 1910. ,, Stebbing, Gen. Cat. S.A. Crust. p. 460.  
 1911. ,, Chevreux, Mém. Soc. Zool. Fr. vol. 23, p. 243.

#### LEMBOS HYPACANTHUS n. sp.

(Plate XXVIII. Figs. 5-6.)

Body not compressed. Lateral lobes of head not strongly produced, subacute. Eyes oval. Peraeon segments 3-7 in ♂ each with a strong

straight, forwardly directed medio-ventral spine, the spines becoming smaller posteriorly, on 7th segment nearly obsolete. Side-plate 1 acutely produced forward in both sexes, 2 larger than 3.

Pleon segment 3 with postero-inferior angle rounded quadrate.

Telson as broad as long, with 2-3 setae in each subapical notch.

First antenna longer than 2nd, 2nd joint a trifle longer and much more slender than 1st, 3rd half the 2nd, flagellum 12-jointed, accessory flagellum equal to first 2 flagellar joints, 3-jointed, 3rd joint very minute.

Second antenna, gland-cone not very prominent, penultimate and ultimate joints subequal, flagellum a little shorter than ultimate joint, 5-6-jointed.

Mouth-parts similar to those of *L. kergueleni* Stebbing.

First gnathopod in ♂, 2nd joint stout, 5th setose on fore and hind margins, 6th equal to 5th (*i.e.*, along anterior margin) and equally broad, oblong, palm a little oblique, with a stout spine at the defining angle and immediately distal to this a spiniform process, a small tooth near the hinge, hind-margin and especially the fore margin setose, finger curved, overlapping the spine, serrate on inner margin; anterior margin of 5th and 6th joints with a number of small circular marks, from each of which arises a seta. In ♀ not so stout, hind margin of 5th setose, 6th longer than 5th, oblong, palm transverse, convex, with a strong spine at defining angle, fore and hind margins sparsely setose.

Second gnathopod in ♂ smaller than 1st gnathopod, 2nd joint nearly linear, the distal anterior apex produced as a recurved hook, 5th more elongate than in 1st gnathopod, 6th equal to but narrower than 5th, narrow-oblong, very slightly tapering, palm transverse, with a small spine at defining angle, fore and hind margins of 5th and 6th setose, the setae on fore margin arising from little circular marks as in 1st gnathopod, finger overlapping palm, serrate on inner margin. In ♀ similar to ♂, but 2nd joint without hook-like projection, 5th shorter and broader proportionately than 6th, both joints apically setose on both margins, both not so strongly as in ♂.

First and second peraeopods not specially setose, 2nd-4th joints glandular.

Third to fifth peraeopods, 2nd joint oval, about twice as long as broad, 6th joint with 4-5 pairs of spines on anterior margin.

First uropod, peduncle with stout apical spine, inner ramus longer than peduncle, outer ramus shorter, both with marginal and apical spines.

Second uropod, rami a little longer than peduncle, outer ramus shorter than inner.

Third uropod, rami subequal, scarcely longer than peduncle.

*Length*: ♂ 4 mm., ♀ 5.5 mm.

*Colour*: Whitish with grey transverse speckled bands. Eyes black.

*Locality*: Sea Point, near Cape Town. 26/2/14. (K.H.B.) 1 ♂, 5 ovigerous ♀ ♀ and 5 immature; St. James (False Bay). 15/2/14. (K.H.B.) 2 ♂ ♂, 13 ovigerous ♀ ♀. (S.A.M. Nos. A2898 and A2958.)

In possessing ventral spines this species approximates to the Mediterranean species *L. spiniventris* (Della Valle), although perhaps this feature is present in other species but has been overlooked.

The 6th joint of the 1st gnathopod in ♂ is somewhat similar to that of *L. kergueleni*, but the 2nd joint of 2nd gnathopod is not expanded as in the latter species.

From the other Cape species *L. hirsutipes* Stebb. it is easily distinguished by the 1st gnathopod in both sexes, the hook-like prominence on 2nd joint of 2nd gnathopod of ♂, and the absence of setae on the 2nd peraeopod of ♂.

#### GEN. LEMBOIDES Stebbing.

1895. *Lemboides* Stebbing, Ann. Mag. Nat. Hist. ser. 6, vol. 16, p. 209.  
 1906. „ id. l.c. p. 600.  
 1910. „ id. Gen. Cat. S.A. Crust. p. 460.

#### LEMBOIDES ACANTHIGER n. sp.

(Plate XXVIII. Figs. 7, 8.)

The single specimen corresponds fairly well with Haswell's description of his *Microdeutopus australis* (Proc. Linn. Soc. N.S.W. vol. 4, p. 271, pl. 11, fig. 5), except in two points, namely: the second gnathopod has the palm of the 6th joint concave, the angle which it makes with the inferior margin blunt, not produced, and furnished with 1 spine; the presence of a large forwardly curved spine on ventral surface of peraeon segments 3 and 4, a small one on segments 5-7, and a small backwardly directed tubercle on segment 1.

Other features of the present specimen are:

First antenna, 3rd peduncular joint  $\frac{1}{4}$  2nd, accessory flagellum equal to 3rd peduncular joint and longer than 1st flagellar joint, 4-nted, 1st-3rd joints increasing in size, 4th joint  $\frac{1}{2}$  3rd.

Mouth-parts, mandibular lobes of lower lip are acute and much

longer, mandible with 5 spines in spine row, palp with 3rd joint subequal to 2nd, in its distal half rather suddenly contracted, apex acute, distal half of inner margin setiferous, outer plate of maxilliped reaching to end of 2nd joint of palp.

First gnathopod, 6th joint with submarginal groups of setae, inferior margin with 2-3 faint serrations, finger longer than in Haswell's figure, inner margin smooth.

First and second peraeopods, finger  $\frac{2}{3}$  length of 6th joint.

Postero-lateral angles of 3rd pleon segment quadrate.

Length: 7 mm.

Colour: In spirit, pale pinkish.

Locality: Umvoti River mouth N. by W.  $\frac{1}{4}$  W., distant 15 miles (Natal). 56 fathoms. 1 ♂. s.s. "Pieter Faure." 8/1/01. (S.A.M. No. A176.)

Were it not for the presence of the ventral spines, I should not hesitate to identify this specimen with *Lembooides australis* (Haswell). Thinking that these spines might have been overlooked, I applied to Prof. Haswell, who kindly looked through the Crustacea in the Macleay Museum, Sydney, but failed to find either the type or any specimens of the species in question. Dr. E. A. Briggs also obliged me by examining the collection in the Australian Museum, without any better result. So that one must regard the type of Haswell's *Microdeutopus australis* as in all probability lost, and institute a new species for the South African form.

#### LEMBOIDES CRENATIPALMA n. sp.

(Plate XXVIII. Figs. 9, 10.)

Head equal to 1st peraeon segment in ♂, to first 2 segments in ♀. Eyes oval, situate in the acutely produced antero-lateral angles. Side-plates 1-3 increasing in size and depth, 1 and 2 narrowed below and directed forwards, 3 widened below, the antero-inferior angle produced forwards subacutely, 4 not so long and not quite as deep as 3, rectangular, postero- and antero-inferior angles rounded, anterior lobe of 5 scarcely more than half as deep as 4, posterior lobe half as deep as anterior lobe, 6 bilobed, 7 semicircular, both shallow. In ♀ side-plates similar but not so deep, 2 not narrowed below, and anterior lobe of 5 nearly as deep as 4. Postero-inferior angle of 3rd pleon segment rounded.

Telson, lateral processes obtuse with a small point, within this spine, apex rounded.

First antenna, 1st and 3rd joints subequal, 2nd longer, flagellum

subequal to peduncle, ca. 17-jointed, accessory flagellum a trifle longer than 1st flagellar joint, 3-jointed, 2nd longer than 1st, 3rd minute.

Second antenna subequal to 1st antenna, ultimate and penultimate joints subequal, flagellum about as long as peduncle, ca. 21-jointed.

Upper lip broader than long, distal margin convex, entire.

Lower lip, inner lobes large, mandibular process narrow, subacute.

Mandible, cutting-edge tridentate, each of the teeth more or less bifid, secondary cutting-edge bidentate, one or both the teeth bifid, spine-row with 7 spines in the left, 10 in the right, molar rounded, denticulate, palp nearly twice length of trunk, 3rd joint shorter than 2nd, wider distally than proximally, 2nd with a few setae, 3rd with numerous setae on apex.

First maxilla, inner plate with 2 unequal apical setae, outer plate with 10 spines.

Second maxilla, inner plate shorter and narrower than outer, apices of both rounded.

Maxilliped, inner plate with 3 spines on distal margin, outer plate extending  $\frac{2}{3}$  along 2nd joint of palp, 4th joint of palp ending in a spine nearly as long as itself.

First gnathopod, in ♂ 2nd joint rhomboidal, very broad, inferior margin with 5 transverse rows (including the apical one) of very long setae, 3rd joint more than twice as broad as long, 4th apically acute, 5th a little longer and broader than 2nd, ovoid, inferior margin with groups of setae, 6th not as long and not quite so broad as 5th, palm transverse, straight, crenulate, inferior margin convex, crenulate and ending in a blunt, lobe-like projection, finger reaching a good way beyond this lobe, inner margin denticulate; in ♀ 2nd joint linear, 4th apically truncate, 5th equal to 2nd, obovate, strongly setose, 6th a little smaller than 5th, ovate, palm and inferior margin forming an even and strongly convex curve, the palm very minutely denticulate and defined by a stout spine set just within the margin, finger overlapping palm, inner margin denticulate.

Second gnathopod, in ♂ almost as large as first gnathopod, 2nd joint exceedingly large, width near base almost equal to length, non-setose, 4th with inferior apex ending in a blunt tooth, beyond which the apical margin is produced on the inside into a more prominent tooth, 5th as long as but not nearly as wide as 2nd, inferior margin setose, 6th shorter and narrower than 5th, inferior margin concave, setose, ending in a long, stout, subacute tooth, denticulate on its inner side, palm very short, transverse, with a short, stout, blunt spine at the base of the large tooth, finger much overlapping, inner margin denticulate; in ♀ similar to first gnathopod, but rather longer, 5th

widening distally more strongly, so that the joint is triangular in shape, 6th longer than 5th, oblong, inferior margin less convex, more strongly setose, palm shorter, but denticulate and defined by 1 spine, as in first gnathopod, finger also similar.

In the adult ♂ the 1st and 2nd gnathopods are carried folded transversely across the body, as is the case in *Aora typica* Kröyer.

First and second peraeopods, 2nd joint not expanded, 4th and 6th subequal, 5th shorter, 7th  $\frac{1}{2}$  length of 6th, only a few scattered setae on the joints.

Third peraeopod, 2nd joint twice as long as broad, 5th scarcely more than  $\frac{1}{2}$  length of 6th, 7th  $\frac{1}{3}$  length of 6th, 6th with 3 spines on anterior margin and 2 on apex.

Fourth and fifth peraeopods much longer than 3rd, 2nd joint longest, not strongly expanded (1 : 2.5), 6th longer than 4th and twice 5th, sparsely spinose, 7th not  $\frac{1}{2}$  length of 6th.

First and second uropods, outer ramus shorter than inner; third uropod, rami subequal; both margins and apices of rami of all 3 uropods spinose.

*Length* : 12 mm.

*Colour* : In spirit, pale yellowish, eyes reddish.

*Locality* : Baboon Point ENE., distant 13 miles (off Saldanha Bay). 32 fathoms. ♂♂, ♀♀ (some ovigerous) and juv. ss. "Pieter Faure." 17/3/02. (S.A.M. No. A209.)

## FAMILY PHOTIDAE.

1872 and 76. *Photidae* (part) Boeck, Skand. Arkt. Amphip. vol. 1, p. 74, and vol. 2, p. 546.

1906. *Photidae* Stebbing, Das Tierreich, 21, pp. 603, 737 (references).

1910. „ id. Sci. Res. "Thetis," pt. 12, p. 608 (references).

1910. „ id. Gen. Cat. S.A. Crust. p. 460.

## GEN. PHOTIS Kröyer.

1842. *Photis* Kröyer, Naturh. Tidsskr. vol. 4, p. 155.

1862. *Enscladus* Bate & Westwood, Brit. Sess. Crust. vol. 1, p. 411.

1876. *Photis* Boeck, l.c. vol. 2, p. 553.

1888. „ Stebbing, Challenger Rep. vol. 29, p. 1063

1893. „ Della Valle, F. u. Fl. Neapel. vol. 20, p. 394.

1894. „ G. O. Sars, Crust. Norw. vol. 1, p. 568.

1906. „ Stebbing, l.c. pp. 605, 738.

1910. „ id. Sci. Res. "Thetis" pt. 12, p. 608.

## PHOTIS LONGICAUDATA (Bate &amp; Westw.).

(Plate XXVIII. Fig. 26.)

1862. *Eiscladus longicaudatus* Bate & Westwood, Brit. Sess. Crust. vol. 1, p. 412, fig.
1893. *Photis reinhardi* (part) Della Valle, F. u. Fl. Neapel. vol. 20, p. 395, pl. 3, fig. 3, pl. 10, figs. 1-19.
1894. „ *longicaudata* G. O. Sars, Crust. Norw. vol. 1, p. 571, pl. 203, fig. 1.
1904. „ „ Walker in Herdman's Ceylon Pearl Fish. Suppl. Rep. 17, p. 286, pl. 6, fig. 43.
1906. „ „ Stebbing, Das Tierreich, 21, p. 608 (synonymy).
1909. „ „ Walker, Tr. Linn. Soc. Lond. vol. 12, pt. 4, p. 339.
1910. „ „ Chevreux, Mém. Soc. Zool. Fr. vol. 23, p. 249.

The South African form is very close to that from Ceylon, the chief difference being in the hand of the 2nd gnathopod of the ♂; the tooth near the hinge, which is so prominent in Walker's figure of the Ceylon specimens, is here absent; but on the contrary the small tooth at the apex of the excavation, small in Walker's figure, is here a large nodular projection.

For comparison, the following description of the present specimens is given.

Ocular lobes reaching to the middle of the 1st joint of 1st antenna; eyes large, round-oval. Side-plate 1 expanded below, longer than deep. Postero-inferior angle of 3rd pleon segment rounded. Telson small, short, apically rounded, without setae.

First antenna, 1st joint stout, shorter than 2nd and subequal to 3rd, flagellum equal to peduncle, 9-jointed.

Second antenna, ultimate joint longer than penultimate, flagellum a little longer than ultimate and penultimate joints together, 10-jointed. Neither antenna densely setose.

Mandible, 2nd joint of palp concave on inner margin.

First maxilla, inner plate with 1 seta, outer plate with 9 spines, palp with 5 spine-teeth.

Maxilliped, inner plate with 3 apical teeth, inner margin of outer plate with 5 ovate and 3 elongate spines (the transition gradual).

First gnathopod, 6th joint a trifle longer than 5th (measured along upper margin) but scarcely as wide, palm very oblique and not defined,

finger half 6th joint, stout, inner margin serrate, 5th and 6th joints setose but not densely; ♀ resembling the ♂.

Second gnathopod, lobe of 5th joint not very prominent, 6th joint oblong, palm angularly emarginate, defining angle rectangular, slightly produced, a blunt nodiform tooth just below the apex of the emargination on the inner surface of the palm, a few backwardly directed serrations near the hinge, finger closing just within the defining angle, leaving a triangular space, 5th and 6th joints setose but not densely; ♀ similar to ♂ but rather weaker.

All the peraeopods very sparsely setose; 2nd joint of 3rd peraeopod broadly oval, narrowing distally.

First uropod, outer ramus a trifle shorter than inner, its outer margin with 8 spines, outer margin of inner ramus with 6 very fine setules.

Second uropod, outer ramus shorter than inner, its outer margin with 3 spines, outer margin of inner ramus with 4 fine spinules, inner margin with 3 spines. Both rami of 1st and 2nd uropods ending in a short blunt spine-tooth.

Third uropod, outer ramus equal to peduncle, the apical setae almost concealing the very small 2nd joint, inner ramus short, bluntly ovate.

*Length*: 6.5 mm.

*Colour*: In spirit, pale pinkish, deeper on the 1st peraeon segment, antennae ringed with crimson.

*Locality*: Morewood Cove NW. by N.  $\frac{3}{4}$  N., distant 3 miles (Natal). 27 fathoms. ♂♂ and ovigerous ♀♀; Umhloti River mouth NW. by W.  $\frac{3}{4}$  N., distant 3 miles (Natal). 25 fathoms. ♂♂ and ovigerous ♀♀; Nahoon Point NW. by W., distant 5 miles (near East London). 45 fathoms. 1 ♂, 1 ovigerous ♀; off Knysna. 40-47 fathoms. ♂♂ and ovigerous ♀♀. s.s. "Pieter Faure." 18-19/12/00, 10/7/01, and 11/10/00. (S.A.M. Nos. A199, A200, A3400, and A3856-7.) One ovigerous ♀ was found in a thin semitransparent tube at the base of a Hydroid.

*Geogr. Distribution*: Shetland Islands, 2-5 fathoms (Bate & Westwood); Norway, 30 fathoms (Sars); France (Chevreux); Naples (Della Valle); Algiers (Chevreux); Ceylon (Walker); Seychelles, 22-34 fathoms (Walker); Wasin, Brit. E. Africa, 10 fathoms (Walker).

#### PHOTIS LONGIMANUS Walker.

1904. *Photis longimanus* Walker in Herdman's Ceylon Pearl Fish. Suppl. Rep. 17, p. 286, pl. 7, fig. 44.

Ocular lobes much produced (but not so much as in *dolichommata*), reaching nearly to middle of 1st joint of 1st antenna. Side-plate 1 scarcely widened below, not longer than deep, rounded antero-inferior angle not produced forward. Anterior lobe of side-plate 5 as deep as 4. Postero-lateral angles of 3rd pleon segment rounded.

Telson as long as broad, triangular, a small spine at each postero-lateral angle, apex between them much produced, forming a little tail (as in Stebbing's figure of *dolichommata* but more produced).

First antenna, 1st and 3rd joints subequal, 2nd longer, flagellum shorter than peduncle, 8-10-jointed.

Second antenna, 4th and 5th joints subequal, flagellum nearly equal to 4th plus 5th peduncular joints, 7-8-jointed.

Mandibular palp with 3rd joint longer than 1st, but shorter than 2nd.

First maxilla, inner plate with 1 seta.

First gnathopod, 2nd joint not distally lobed, 3rd and 4th subequal, 5th a trifle longer than 6th, 6th ovate, narrowing distally, palm not defined, 4th-6th joints inferiorly setose, 7th  $\frac{3}{4}$  length of 6th, inner margin distally serrate.

Second gnathopod in ♂, 2nd joint stout with a large ear-like rounded lobe on the upper outer surface, beginning just beyond the middle of the joint and reaching to end of 3rd joint, 3rd with a rounded lobe on the lower inner surface and projecting horizontally inwards (the limb being considered in its natural vertical position), 4th longer than 3rd, 5th triangular, cup-like, very short, upper apex rounded, setose, lower apex produced in a rounded setose lobe, 6th longer than 2nd, ovate, palm oblique, shorter than hind margin, defined by a little spinule and within this a short, blunt, squarish knob, a prominent triangular tooth in the middle of palm, flanked by shallow concavities, at base of hind margin a strong, triangular, pointed tooth set at right angles to the joint and pointing inwards like the lobe on 3rd joint, finger gently curved, reaching to middle of hind margin, inner margin distally obscurely serrate; in ♀ 2nd joint not very stout, without the distal ear-like lobe, 3rd not lobed internally, 5th not so prominently lobed inferiorly, 6th oblong, palm oblique, concave, equal to hind margin, defining angle quadrate but not projecting, a little way within the defining angle is a low squarish knob, palm thence concave with a triangular pointed tooth, finger matching palm, very obscurely serrate distally.

Third and fourth peraeopods, 2nd joint broadly oval, narrowing distally, 6th joint with a spine in middle of inner margin and another at apex.

Fifth peraeopod, 2nd joint not so broad as in 3rd and 4th peraeopods, upper posterior angle quadrate.

Third uropod, inner ramus  $\frac{1}{4}$  length of outer, 2nd joint of outer smaller than inner ramus, with 2 apical setae. All the uropods without lateral spines or setae, except for one spinule on each peduncle and ramus in 1st and 2nd uropods.

*Length*: ♂ 3 mm.; ♀ 3.5 mm.

*Colour*: Yellowish straw colour, 5th peraeon and 1st pleon segments with a transverse band of brown speckling, side-plates and pleura also speckled with brown, eyes black.

*Locality*: Durban Bay. July, 1915. (H. W. Bell-Marley.) 1 ♂, 1 ovigerous ♀. (S.A.M. No. A3869.)

A second and, in my opinion, not quite mature male from the same locality (S.A.M. No. A3840) is the connecting link between the above described specimens and Walker's. Without it one would have been bound almost to make a new species of these specimens in spite of their likeness in some characters to Walker's *longimanus*.

This second male agrees with Walker's description and figures except that the lobe of the 5th joint of the 2nd gnathopod is not so prominent and the hind margin is longer proportionately to the palm (approaching thus the form of the ♀ described above), and the first of the two palmar teeth is short, blunt and knob-like. The 2nd joint has the ear-like lobe as described above, but of which Walker makes no mention.

Another feature is the telson, which agrees with that described above; Walker says of his specimens "telson . . . of the usual form." In the absence of a more definite description, I think this point need not form a stumbling block, especially as the gnathopods correspond very closely. When more specimens come to light from both localities I think that any doubts there may be as to the specific distinctness of these two forms will vanish.

This male measures 2.75 mm. and possesses a 2nd gnathopod approximating to that of the ♀. Walker's specimens show the defining tooth shifting back, *i.e.*, the reduction of the hind margin at the expense of the palm, until it is right at the base of the joint, when it is bent inwards at a right angle to the hand, as in the first ♂ described above. It is legitimate to suppose that this last infolding of the tooth and the development of the incurved lobe on 3rd joint occur only at the last moult and are signs of sexual maturity; they would certainly form most efficient "claws" for holding the female.

The markings of this second male are a little different from that given above: ground colour as before yellowish, head a little deeper,

a dark brown medio-dorsal spot on peraeon segment 5 to pleon segment 2 inclusive, side-plates speckled, eyes black.

Both these forms were received too late to be figured in the present paper.

*Geogr. Distribution* : Ceylon (Walker).

PHOTIS DOLICHOMMATA Stebbing.

1910. *Photis dolichommata* Stebbing, Sci. Res. "Thetis," pt. 12, p. 609, pl. 55B.

*Locality* : Cape St. Blaize N. by E. distant 73 miles. 125 fathoms, 3 ♂♂, 1 ovigerous ♀ and immature specimens. s.s. "Pieter Faure." 21/12/99. (S.A.M. No. A3812.)

*Geogr. Distribution* : New South Wales, 50-60 fathoms.

GEN. CHEIRIPHOTIS Walker.

1904. *Cheiriphotis* Walker in Herdman's Ceylon Pearl Fish. Suppl. Rep. 17, p. 283.

1906. ,, Stebbing, Das Tierreich, 21, p. 737.

1910. ,, id. Sci. Res. "Thetis," pt. 12, p. 610.

1910. ,, id. Gen. Cat. S.A. Crust, p. 461.

Only two species of this genus are so far known: *C. megacheles* (Giles) from Ceylon and South Africa, and *C. australis* Stebbing 1910, from New South Wales. From both of these the following species is easily separated by the form of the 2nd gnathopods in the ♂.

CHEIRIPHOTIS DURBANENSIS n. sp.

Body slender and somewhat depressed. Antero-lateral angle of head not greatly produced, occupied by about half of the oval-shaped eye. Side-plates shallow, the first produced forwards to a subacute apex. Postero-lateral angle of 3rd pleon segment rounded-quadrate. Telson broader than long, distal margin concave between the postero-lateral angles, near both of which there is a small group of setules.

First antenna, 1st and 2nd joints subequal, 3rd shorter, flagellum 6-8-jointed, accessory flagellum 3-jointed, 3rd joint minute.

Second antenna subequal to first, 4th and 5th joints subequal, flagellum subequal to 5th joint, 6-jointed.

Upper lip slightly bilobed.

Lower lip with the inner lobes larger than the outer, apically abruptly truncate, the inner and outer apical angles being right angles, outer lobes obtusely rounded.

Mandibles, cutting-edge 4-dentate in left, 5 in right, secondary cutting-edge in left 4-dentate, in right represented by a stout spiniform process, spine-row with 7-8 spines, molar minutely denticulate, palp very large, 2nd joint twice length of 1st, 3rd not quite as long as 2nd, not enlarged but apically obtuse, setose.

First maxilla, inner plate with 4 setae, outer plate with 11 spines, 2nd joint of palp elongate.

Second maxilla with inner margin of inner plate setose.

Maxilliped as in *C. australis* Stebb.

First gnathopod similar in both sexes, 6th joint not quite as long as 5th, ovate, palm slightly convex, passing uninterruptedly into hind margin, finger matching palm, 5th joint more strongly setose than 6th.

Second gnathopod in ♂, 2nd joint with a small tooth on anterior apex, 5th well marked off from 6th inferiorly, but not so well on anterior margin, 6th large, ovate, palm a little oblique, longer than hind margin, with 2 strong pointed teeth, that near the hinge being apically bifid, defining angle also with a strong pointed tooth, finger as long as palm, smooth, distally rather strongly curved. In ♀ smaller, 2nd joint without tooth on anterior apex, 6th not quite as long as 2nd, ovate, narrowing distally, palm more oblique than in ♂, crenulate, with a blunt tooth, bearing 1 spine in the middle and another near the hinge, defining angle with a small acute tooth, finger matching palm, not strongly curved.

First and second peraeopods, 4th joint somewhat enlarged, 6th longer than 4th, 7th half length of sixth.

Third to fifth peraeopods increasing in length, 2nd joint broadly ovate, hind margin entire, with fairly numerous plumose setae, anterior margin also setose, especially when near the apex, but setae simple.

First and second uropods with peduncle longer than rami in 1st, only a little longer in 2nd, rami of both subequal.

Third uropod, peduncle stout, outer ramus subequal to peduncle in length but considerably narrower, apically spinulose, a 2nd joint not distinguishable, inner ramus minute, tipped with 1 spinule.

*Length* : 5 mm.

*Colour* : White, head yellowish, 4th and 7th peraeon segments and 3rd pleon segment grey, side-plates also speckled with grey, eyes dark brown.

*Locality* : Durban Bay Channel. July, 1915. (H. W. Bell-Marley.)  
3 ♂ ♂, 1 nonovigerous ♀, 2 juv. (S.A.M. No. A3839.)

As these specimens arrived after the plates accompanying this paper

had been struck, it is unfortunately impossible to give a figure of this species, but I hope to do so on a future occasion.

GEN. EURYSTHEUS Bate.

1856. *Eurystheus* Bate, Ann. Mag. Nat. Hist. ser. 2, vol. 19, p. 143.  
 1906. „ Stebbing, Das Tierreich, 21, pp. 610, 738 (references).  
 1910. „ id. Sci. Res. "Thetis," pt. 12, p. 613.  
 1910. „ id. Gen. Cat. S.A. Crust. p. 460.  
 1910. „ Kunkel, Tr. Conn. Ac. Sci. vol. 16, p. 81.

EURYSTHEUS AFER (Stebbing).

(Plate XXVIII. Fig. 11.)

1888. *Gammaropsis afra* Stebbing, Challenger Rep. vol. 29, p. 1097, pl. 113.  
 1908. *Eurystheus afer* id. S.A. Crust. pt. 4, p. 87.  
 (Non Chilton, Tr. Roy. Soc. Edinb. vol. 48, pt. 2, 1912, p. 510, pl. 2, figs. 30-34.)

As no figure of the 2nd gnathopod of the ♂ has been published it seems advisable to give one here, especially since Stebbing (1908) has made the suggestion that *E. atlanticus* and *E. afer* are varieties of the same species; this suggestion has been more or less endorsed by Chilton (1912).

From the figure it will be seen that the difference between the 2nd gnathopods, though not great, is as well marked as that between the eyes of the two species, and these two characters together seem quite enough to keep the species separate.

The first gnathopods are alike in both sexes.

The second gnathopod is of the same general shape as in *E. atlanticus* but the palm has a very much shallower excavation near the lower angle, where there are two teeth and a stout spine (this spine is present also in *E. atlanticus* but has been omitted in Stebbing's figure, 1908, l.c. pl. 40B); also the palm is more even, cut into several (3-5) rounded lobes, each with secondary crenulations. Second gnathopod of ♀ as in Stebbing's figure (1888, l.c. pl. 113) but palm crenulate, not smooth as drawn (the description is correct)

The Challenger specimen was certainly immature as this species reaches 11mm. in length.

A frequent habitat of this species is in the empty worm tubes

ramifying through a sponge covering the gastropod *Tritonium murrayi* (Smith).

EURYSTHEUS IMMINENS n. sp.

(Plate XXVIII. Fig. 12.)

This species may be briefly characterised as follows: Eyes obliquely oblong; antennae of normal length; 1st gnathopod in ♂ with palm very oblique, without defining tooth, but with a small spine, entire but exceedingly finely crenulate, finger matching palm, inner margin serrulate, in ♀ similar; 2nd gnathopod in ♂ very like that of *E. longicornis* Walker (1907, Nat. Antarct. Exp. vol. 3, p. 35, pl. 12, fig. 21) but longer proportionately to breadth (more like that of *E. atlanticus*), a large spine above the defining tooth, another tooth in centre of palm, and between this and hinge a tooth larger than either of the others, all three apically blunt and surrounded by a pellucid border which is minutely fimbriate, finger matching palm, inner margin basally convex, smooth, in ♀ similar but a small notch above the defining angle of palm, with a spine in it, palm finely serrate, finger equalling palm, inner margin finely serrulate.

Telson and uropods as in *E. afer*.

Length: 6.5 mm.

Colour: In spirit, pale pinkish.

Locality: Morewood Cove NW. by N.  $\frac{3}{4}$  N., distant 3 miles (Natal coast). 27 fathoms. 1 ♂, 2 ovigerous ♀ ♀. s.s. "Pieter Faure." 19/12/00. (S.A.M. No. A2778.)

Closely resembling *E. afer* in most characters, but agreeing with *E. longicornis* as regards the 2nd gnathopod. Distinguished from the latter by the absence of very long antennae and by the characters of the telson and uropods. It cannot be denied that the four Southern species *E. atlanticus*, *afer*, *longicornis* and *imminens* are very closely allied, and it is quite possible that intermediate forms may crop up which will necessitate uniting them all under one name.

It also resembles *E. dentatus* (Chevreux) in the form of the 2nd gnathopod of ♂, but the differently shaped eye, the entire 1st side-plate and absence of teeth on the pleon serve to distinguish it.

EURYSTHEUS SEMIDENTATUS n. sp.

(Plate XXVIII. Figs. 13, 14.)

Lateral angles of head not much produced, obtuse. Eyes small, horizontally oval. Inferior margin of side-plates 1-3 setose, but not

serrate or crenulate. Pleon segment 4 with 3 small dorsal teeth, the median one less prominent than the subdorsal ones, pleon segment 5 with 2 small subdorsal teeth, a seta in the angle of each tooth. Postero-inferior angle of pleon segment 3 with a small point, margin bulging above.

Telson with apex straight or slightly emarginate, a spine at both the lateral angles.

First antenna, 1st joint  $\frac{2}{3}$  2nd and equal to 3rd, flagellum not quite equal to peduncle, accessory flagellum 7-jointed.

Second antenna equal to first, ultimate and penultimate joints equal, flagellum shorter than peduncle. Both antennae fringed with long setae on lower margin.

First gnathopod, 5th joint as wide as and a little longer than 6th, the hind margin and palm of the latter forming one continuous curve.

Second gnathopod in ♂, 6th joint very large, palma little oblique, finely hirsute, defined by a small acute tooth, followed by another similar tooth, middle of palm with a low rounded convexity, a squarish, denticulate tooth near the hinge, finger closing within defining tooth, tapering evenly, not strongly curved; in ♀ 6th smaller and much narrower in proportion to length than in ♂, defining tooth rather stout, near it is an elongate but very stout spine, near hinge a squarish tooth, finger overlapping defining tooth.

Third pereiopod, 2nd joint broadly oval, hind-margin setose and slightly serrate.

Fourth and fifth pereiopods subequal, larger than 3rd, 2nd joint half as long again as broad, postero-inferior angle quadrate, not produced, hind margin straight, in ♂ strongly, in ♀ slightly serrate.

Third uropod, peduncle with 3 stout apical spines, inner ramus smaller than outer.

*Length* : ♂ 4 mm., ♀ 6 mm.

*Colour* : Whitish with a series of grey-brown lateral spots, 1 on each segment above the junction of side-plates, back and 2nd joint of the gnathopods and pereiopods speckled with grey, distal joints of pereiopods speckled and banded with grey, eyes black.

*Locality* : Buffel's Bay (False Bay). 28/9/13 and 1/3/15. (K.H.B.) 1 ♂, 5 ovigerous ♀ ♀, and 3 ♂ ♂, 1 ovigerous ♀. (S.A.M. Nos. A2956 and A3286.)

This species is near *E. dentatus* (Chevreux), (Rés. Camp. Monaco, vol. 16, p. 93, pl. 12, fig. 1), but the side-plates are not dentate, the palm of 2nd gnathopod in ♂ has an additional tooth, and the eye is smaller and horizontal.

Both *dentatus* and *semidentatus* are distinguished from *thompsoni* Walker (Proc. Liverp. Biol. Soc. vol. 12, p. 283, pl. 16, figs. 3-6) by having 3 teeth on pleon segment 4, instead of 2 as in the latter species, and also by the 2nd gnathopod.

The 2nd gnathopod of ♀ bears some resemblance to that of *E. thompsoni* (Stebb.), but that of the ♂ is rather different so far as can be judged from Stebbing's description (Sci. Res. "Thetis," pt. 12, p. 614, 1910). It is compared with the 2nd gnathopod of *Elasmoides chevreuxi* Stebb., but such a comparison will not hold good for the present species.

#### GEN. CHEVALIA Walker.

1904. *Chevalia* Walker in Herdman's Ceyl. Pearl Fish. Suppl. Rep. 17, p. 288.  
 1906. ,, Stebbing, Das Tierreich, 21, p. 737.  
 1912. ,, Pearse, Proc. U.S. Nat. Mus. vol. 43 [1913], p. 374.

#### CHEVALIA AVICULAE Walker.

1904. *Chevalia aviculae* Walker, l.c. p. 288, pls. 7, 8, fig. 50.  
 1906. ,, ,, Stebbing, l.c. p. 737.  
 1909. ,, ,, Walker, Tr. Linn. Soc. Lond. vol. 12, pt. 4, p. 341.

These specimens agree with Walker's description. The 6th joint of the 2nd gnathopod is twice as long as the 5th, the palm is finely crenulate and the defining angle is not quite so prominent as in Walker's figure. The uropods and telson are exactly as Walker figures them.

*Length*: 5 mm.

*Colour*: In spirit, whitish, eyes reddish-brown.

*Locality*: Cape St. Blaize N. by E., distant 73 miles. 125 fathoms. 8 specimens, apparently all ♂♂. s.s. "Pieter Faure." 21/12/99. (S.A.M. No. A3813.)

*Geogr. Distribution*: Ceylon; Seychelles, 22-26 fathoms (Walker.)

#### FAMILY AMPITHOIDAE.

1899. *Ampithoidae* Stebbing, Ann. Mag. Nat. Hist. ser. 7, vol. 4, p. 211.  
 1906. *Ampithoidae* id. Das Tierreich, 21, pp. 631, 738.  
 1910. ,, id. Gen. Cat. S.A. Crust. p. 462.

## GEN. AMPITHOE Leach.

- 1813/14. *Ampithoe* Leach, Edinb. Encycl. vol. 7, pp. 403, 432.  
 1910. „ Stebbing, l.c. p. 462.  
 1910. *Ampithoe* Kunkel, Tr. Conn. Ac. Sci. vol. 16, p. 87.  
 1911. „ Brüggén, Ann. Mus. Zool. St. Petersburg. vol. 12, p. 481.

## AMPITHOE VAILLANTII (Lucas).

1846. *Ampithoe vaillantii* Lucas, Expl. Algérie An. Artic. vol. 1, p. 54,  
 Crust. pl. 5, fig. 3.  
 1880. „ *erythraeu* Kossmann, Reise Roth. Meer. vol. 2, pt. 1,  
 p. 134, pl. 14, figs. 12, 13.  
 1893. „ *rubricata* Della Valle, F. u. Fl. Neapel. vol. 20, p. 456,  
 pl. 2, fig. 2, pl. 13, figs. 1-17, pl. 57,  
 figs. 25, 26 (non Montagu).  
 1900. „ *vaillanti* Chevreux, Rés. Camp. Monaco, vol. 16,  
 p. 100.  
 1901. „ „ id. Mém. Soc. Zool. Fr. vol. 14, p. 418.  
 1904. „ „ Walker in Herdman's Ceylon Pearl Fish.  
 Suppl. Rep. 17, p. 291.  
 1904. „ *intermedia* id. ibid. p. 290, pl. 7, figs. 46.  
 1905. „ „ id. in Gardiner's Fauna Mald. and Laccad.  
 Archip. p. 391.  
 1906. „ *vaillantii* Stebbing, Das Tierreich, 21, p. 639. (Re-  
 ferences and synonyms.)  
 1907. „ *intermedia* Chevreux, Mém. Soc. Zool. Fr. vol. 20,  
 p. 515, fig. 29.  
 1909. „ „ Walker, Tr. Linn. Soc. Lond. vol. 12, pt. 4,  
 p. 341.  
 1910. „ „ Stebbing, Gen. Cat. S.A. Crust. p. 462.  
 1910. „ *vaillanti* Chevreux, Mém. Soc. Zool. Fr. vol. 23,  
 p. 260, pl. 20, figs. 1-4.

The differences between Lucas' and Walker's species appear to be so slight that there seems to be no necessity for keeping them separate. Much importance cannot be attached to the absence in Walker's description and figures (except 2nd gnathopod of ♀) of the distal lobe on the 2nd joint of the 1st and 2nd gnathopods; it is easily overlooked unless the limb be examined exactly in profile. Chevreux figures it in both gnathopods of both sexes of his specimens, which he assigns to *intermedia*, from the Gambier Archipelago. Nor can the length of the flagellum of the 2nd antenna of ♂ be counted as a

specific character except in conjunction with other and constant characters. Chevreux in 1900 described it in *vaillantii* as about equal to the 2 last peduncular joints, at least 25-jointed; Walker says that in *intermedia* it equals the last peduncular joint and is 9-jointed. The South African specimens form a link between these two varieties, the flagellum being equal to the last peduncular joint and 20-jointed.

The following details refer to the South African specimens:

First and second antennae about equal in length.

First maxilla, inner plate with 3-4 setae.

Second maxilla, outer plate wider than inner, widest at distal truncate end.

Maxilliped, outer plate with trifid spines along inner margin.

First gnathopod, lobe on apex of 2nd joint very prominent, crenulate and setose, 6th joint longer than 5th, tapering slightly distally, palm not defined from inferior margin except by a stout spine, finger strongly serrate; there is little difference in the two sexes, in the ♂ the limb is rather longer, 6th joint also proportionately longer. Inferior margin of the side-plate setulose.

Second gnathopod, lobe on apex of 2nd joint very prominent, crenulate and setose, 5th and 6th joints in ♂ as in Chevreux's figure of *intermedia* (l.c. 1907, fig. 29) but defining tooth broad, almost lobe-like (see Walker, l.c. 1904, p. 291, footnote, where a similar variety of the Ceylon form is mentioned), the outer margin straight, inner strongly convex; in ♀ 6th joint as in Walker's figure (l.c. 1904), but palm rather more sinuous; finger in both sexes strongly serrate, inferior margin of side-plate setulose.

Third uropod, peduncle with 4-5 stout spines on upper apical margin, inner ramus broader but shorter than outer, apex with 2-4 spines and 4 setae, outer ramus with 2 strong recurved spines, upper margin very minutely scabrous.

Telson obtusely triangular, with a few setae towards apex, distal margin convex between 2 small tubercles.

*Length*: ♂ 7.5 mm., ♀ 9.5 mm.

*Colour*: Claret or brownish green with a row of whitish irregular dorsal spots, one on each of peraeon segments 6 and 7 and pleon segments 1-3, and a whitish spot in the antero-inferior angle of side-plates 1-5, flagellum and distal joints of peraeopods whitish, eyes similar to the ground colour.

The markings correspond with those described by Chevreux for *vaillantii* (l.c. 1910, p. 260).

*Locality*: Buffel's Bay (False Bay). 28/9/13. (K.H.B.) ♂♂, ovigerous ♀♀ and young; Sea Point, near Cape Town. 15/11/13.

(K.H.B.) ♂♂, ovigerous ♀♀ and young. (S.A.M. Nos. A2519 and A2895.)

*Geogr. Distribution*: Mediterranean (Lucas, Della Valle, Chevreux); Portugal (Chevreux); West Coast France and English Channel, 10–12 metres (Chevreux); Azores, 5–15 metres (Chevreux); Black Sea (Czerniavski); Red Sea (Kossmann); Seychelles (Chevreux); Ceylon, Maldives, Seychelles, Zanzibar, Red Sea (Walker); Tuamotu and Gambier Archipelago (Chevreux); Algoa Bay, 10 fathoms (Stebbing.)

Walker's species *A. lobata* remains obscure. Of the two features which are claimed as distinguishing this species from others, the lobe on apex of 2nd joint of 1st and 2nd gnathopods is present in several other species, and the supposed tertiary cutting-edge in the mandible seems to be only the *new* mandible forming *within* the old (cf. Stebbing's figure of *A. findersi*, Challeng. Rep. vol. 29, pl. 118). The lobe on the third joint of the gnathopods is also stated to be characteristic and is represented in the figures as rather strong, but this is also the case with the South African specimens of *A. vaillantii* and cannot be regarded as a distinguishing character. Walker himself is inclined to regard his specimens as immature, and the structure of the mandible confirms him. I am inclined therefore to regard *lobata* as an immature form of *vaillantii*.

#### AMPITHOE BREVIPES (Dana).

(Plate XXVIII. Fig. 34.)

1852. *Amphithoe brevipes* Dana, P. Amer. Ac. vol. 2, p. 216.  
 1853/55. „ „ id. U.S. Expl. Exp. vol. 13, pt. 2, p. 941,  
 pl. 64, figs. 5a-n.  
 ? 1853/55. „ *peregrina* (juv.) id. ibid. p. 940, pl. 64, figs. 4a-b.  
 1862. „ *falklandi* (? juv.) Bate, Cat. Amph. Brit. Mus.  
 p. 237, pl. 41, fig. 6.  
 1862. „ *brevipes* id. ibid. p. 248, pl. 43, fig. 2.  
 1862. „ *peregrina*, id. ibid. p. 247, pl. 43, fig. 1.  
 1893. „ *rubricata* (part), Della Valle, F. u. Fl. Neapel.  
 vol. 20, pp. 456, 459.  
 1906. „ *brevipes* Stebbing, Das Tierreich, 21, p. 637.  
 1914. „ „ id. Proc. Zool. Soc. Lond. 1914, p. 371.

I have little hesitation in identifying these specimens with Dana's species, appending however a brief description of them.

Eyes subrotund. Side-plate 1 scarcely produced forwards, 5 largest.

Postero-inferior angle of 3rd pleon segment rounded. Antenna 1 half length of body, 1st joint largest. Antenna 2 with ultimate peduncular joint scarcely as long as penultimate. Inner plate of 1st maxilla with 1 seta. Gnathopod 1, 5th joint shorter and broader than 6th, which is narrow, oblong, inferior margin slightly concave, palm transverse, defining angle quadrate, finger longer than palm. Gnathopod 2, 5th joint cup-shaped, 6th elongate ovate, narrowing distally, palm concave but otherwise undistinguished from hind margin, a small rectangular tooth at the finger hinge, palm and hind margin with a few plumose setae, finger  $\frac{3}{4}$  length of 6th joint. Neither 2nd nor 3rd joints of both gnathopods are lobed at distal anterior apex. In ♀ 1st and 2nd gnathopods resemble the 1st gnathopod of ♂. Peraeopods 1 and 2, 2nd joint strongly expanded, 4th distally lobed. Uropod 3, peduncle with 2 spines on distal margin, rami subequal in size, outer ramus with 2 hooked spines and numerous minute serrations on outer (upper) margin. Telson small, subtriangular, 2 setae between the lateral points.

*Length* : 12 mm.

*Colour* : Pale straw-colour, eyes crimson.

*Locality* : Buffel's Bay (False Bay), 28/9/13 and 1/3/15. (K.H.B.) One juv. and several ♂ ♂ and ovigerous ♀ ♀. (S.A.M. Nos. A2537 and A3288.)

*Geogr. Distribution* : Tierra del Fuego, 5 fathoms (Dana); Falkland Islands (Dana, Stebbing).

#### AMPITHOE sp. ?

Two specimens from Port Shepstone WNW., distant  $2\frac{1}{2}$  miles (Natal). (24 fathoms. s.s. "Pieter Faure.") (S.A.M. No. 227), present the following features :

Both antennae lost. Eyes prominent. Inner plate of 1st maxilla with only one seta.

Side-plate 1 oblong, not produced forwards, 2 oblong, nearly twice as deep as long, inferior margins of both setulose, with a tuft of longer setae near the postero-inferior angle.

First gnathopod, 2nd joint with prominent distal lobe, in ♂ 6th joint longer than 5th, stout, oblong, not tapering distally, palm a little oblique, defining angle distinct but not prominent, palm sinuous, concave near defining angle, convex near hinge; in ♀ 6th joint not quite so stout, palm a little more oblique; finger strongly serrate.

Second gnathopod, 2nd joint with prominent distal lobe, in ♂ 6th rather similar in shape to that of *vaillantii* but front apex not pro-

duced beyond base of finger, defining tooth short, and palm not deeply excavate; in ♀ limb resembles 1st gnathopod of ♂, finger strongly serrate.

Second joint of 1st and 2nd peraeopods as in *A. kergueleni* Stebb.

Third uropod, peduncle with 5-6 spines on upper apex, inner ramus a little larger than outer.

These specimens show a very strong likeness to *A. rubricata* (Mont.) and also to *A. kergueleni* Stebb. The latter however has numerous setae on the inner plate of 1st maxilla and only 2 spines on apex of peduncle of 3rd uropod. Until further and better material of the South African form comes to hand, it is not advisable to assign them to a particular species. It is possible that *kergueleni* may be only a southern form of *rubricata*, and that transitional forms may later be discovered.

#### GEN. GRUBIA Czern.

1868. *Grubia* Czerniavski, Syezda Russ. Est. Syezda 1. Zool. p. 103.  
 1888. „ Stebbing, Challeng. Rep. vol. 29, p. 377.  
 1893. „ Della Valle, F. u. Fl. Neapel, vol. 20, p. 464.  
 1900. „ Chevreux, Bull. Soc. Zool. Fr. vol. 25, no. 5/6, p. 95.  
 1901. „ id. Mém. Soc. Zool. Fr. vol. 14, p. 422.  
 1903. „ Walker & Scott in Forbes. Nat. Hist. Sokotra, p. 226.  
 1905. „ Holmes, Bull. U.S. Bur. Fish. vol. 24, p. 510.  
 1906. „ Stebbing, Das Tierreich, 21, pp. 644, 738.  
 1907. „ Chevreux, Bull. Mus. d'Hist. Nat. Paris, 1907, no. 6,  
           p. 417.  
 1910. „ Kunkel, Tr. Conn. Ac. Sci. vol. 16, p. 97.

The International Catalogue No. 7 refers to two new species (*Oduis*<sup>*ius*</sup> *kelleri* and *Grubia esa*) from Vladivostok described by von der Brüggén in "Bull. Ac. Sci. St. Petersb. ser. 6, 1, 1907 (660)." This reference must have been wrongly quoted as there is no paper on Amphipods by this author in the volume for 1907. In no. 2 of this volume, p. 44, however, occurs a notice of v. d. Brüggén's paper which appears to have been published in the following year in Ann. Mus. Zool. St. Petersb. 1907, xii, 4, p. 478. This reference is correctly quoted in the International Catalogue No. 8, where the new species are given as *Oduis kelleri* and *Amphithoe eoa* (v. d. Brüggén writes the latter, *Amphitoe*).

I therefore regard *Grubia esa* as a synonym, or rather a *nomen nudum*, of *Amphitoe eoa* and non-existent as far as the genus *Grubia* is concerned.

In Proc. U.S. Nat. Mus. vol. 43 [1913], p. 376, Pearse gives a figure of *G. compta* Smith (?) and in the text says the specimens differ from Holmes' figures (l.c. *supra*): the chief difference apparently being that the 1st gnathopod is larger than the 2nd. If this is so, the specimens would seem to belong more properly to *Paragrubia* Chevreux 1901. I believe, however, that Pearse has accidentally made a slip and transposed the two limbs, since the so-called " $gn_1 \delta$ " and " $gn_2 \delta$ " in his figures correspond exactly in relative size as well as in the shapes of the component joints with the *second* and *first* gnathopods respectively of an ordinary species of *Grubia*; cf. for example Chevreux's figure of *G. hirsuta* (l.c. 1900).

GRUBIA AUSTRALIS, n. sp.

Body robust, dorsally rounded, not compressed. Eyes subrotund, faint in colour, situate in the antero-lateral angles of head. Side-plate 1 produced forwards but not beyond the vertical from the posterior margin of eye, 1-4 fringed, but not densely, on inferior margin with long simple setae, anterior lobe of 5 larger and deeper than any of the preceding. Postero-inferior angle of 3rd pleon segment bluntly quadrate.

Telson broader than long, distal margin convex between the sub-acute lateral angles, a group of 2-3 setae in the middle of the lateral margin, another group of ca. 6 longer setae near the lateral angles.

First antenna longer than 2nd, reaching to end of peraeon ( $\frac{3}{5}$  length of body), 1st and 2nd joints subequal, 3rd  $\frac{1}{3}$  2nd, flagellum longer than peduncle, accessory flagellum very small, 1-jointed, scarcely half length of 1st flagellar joint, with 2 apical setae.

Second antenna reaching to about 5th peraeon segment, ultimate and penultimate joints subequal, flagellum a little longer than peduncle.

Neither antenna strongly setose.

Upper lip broader than long, apical margin convex and setose.

Lower lip, outer lobes shallowly bifid.

Mandibles, cutting-edge 8-dentate, secondary cutting-edge 7-dentate, spine-row with 6 spines, 2nd and 3rd joints of palp subequal in length.

First maxilla, inner plate with 6 faintly plumose setae, outer plate with 10 spines, palp with 9 spine-setae.

Second maxilla, inner plate only half the width of outer.

Maxilliped, outer plate with ca. 17 simple, not serrate, spine-teeth on inner margin.

First gnathopod ♂, 2nd joint not apically lobed, inferior margin of 4th and 5th subequal, anterior margin of 5th as long as 6th, 6th ovate, palm oblique, straight, slightly concave near the blunt defining angle which bears a spine, irregularly dentate, hind margin crenulate, both with long setae, finger slightly overlapping palm, inner margin serrulate; in ♀ similar to ♂ but not so large, and palm a little more convex.

Second gnathopod ♂, 2nd joint not or only very slightly lobed on front apex, 4th bluntly pointed, setose, inferior margin of 5th equal to that of 4th, straight, finely crenulate, 6th longer than 5th, ovate, palm oblique, concave, defining angle not produced, blunt, with a spine in immature specimens but apparently without in adults, anterior and hind margins of 5th and 6th densely fringed with very long plumose setae in the adult, much less setose in immature specimens, finger stout, tip closing on to surface of defining angle, inner margin serrate; in ♀ similar to ♂ but smaller, inferior margin of 5th not as long as that of 4th, palm more sinuous, *i.e.* convex near hinge, concave only near defining angle, 5th and 6th joints without the fringe of long plumose setae, being only sparsely clothed with simple setae which are most numerous on the inferior margin of the 5th.

First and second peraeopods, 2nd joint not expanded, similar to those of *Amphithoe rubricata* (Mont.).

Third peraeopod, 2nd joint not quite as broad as long, hind margin smooth, anterior margin of 6th with 6 stout spines increasing in length distally.

Fourth and fifth paraepods, 2nd joint half as long again as broad, hind margin smooth, anterior margin of 6th with 6 stout spines, increasing in length distally.

First and second uropods, rami shorter than peduncle, outer a trifle shorter than inner, both with 4-6 marginal spines, peduncle of 1st uropod with 1 very strong apical spine.

Third uropod, peduncle with ca. 10 very stout blunt spines on upper apical margin, rami shorter than peduncle, inner with ca. 6 stout spines on distal half of upper surface, apex with a group of setae, outer ramus with 2 stout, blunt spines in middle of upper outer margin followed by several setae, apex with 2 strong recurved spines.

*Length*: ♂ and ovigerous ♀, 20 mm., one ovigerous ♀ 23 mm.

*Colour*: Brown or greyish, with lighter spots on back, rather irregularly arranged but usually one or two on posterior margin of each peraeon segment, flagella of both antennae and 6th and 7th joints of the peraeopods whitish, apex of 6th and 7th joints of 1st and

2nd gnathopods in ♀ orange-brown, eyes faint, of the same colour as body.

*Locality*: Sea Point, near Cape Town. 15 and 29/11/13. (K.H.B.)  
♂ ♂, ♀ ♀ (with ova and embryos) and immature specimens. (S.A.M. No. A2894.)

#### MACROPISTHOPOUS n. g.

Side plate 1-5 well developed, 5 as deep as 4, with small hind-lobe. First antenna without accessory flagellum. Outer lobe of lower lip deeply notched, the outer portion smaller than the inner. Molar well developed, palp of mandible with 3rd joint shorter than 2nd. First and second gnathopods similar in both sexes, 6th joint not enlarged, very feebly chelate. Sixth joint of peraeopods 3-5 not strongly expanded apically. Fifth peraeopod enormously enlarged, flattened, oar-like. Rami of 3rd uropod short, outer with 2 hooks. Telson with the lateral angles nearly apical.

#### MACROPISTHOPOUS STEBBINGI n. sp.

(Plate XXVIII. Figs. 15-17.)

Body fairly compressed, back rounded, smooth, lateral lobes of head not prominent, eye round. Side-plates 1-5 ovoid, rounded below, increasing in length and slightly in depth, a short row of long setae on postero-inferior angle, 6 shallow, bilobed, 7 shallow, semicircular.

Pleon-segments 1-3 with postero-inferior angles rounded.

Telson triangular, broader than long, apex shortly truncate with a small tubercle at each angle and 2 large and 2 small setae between them, 1 large and 1 small seta in the middle of lateral margin.

First antenna reaching to end of 4th peraeon segment, 1st joint stouter and a little longer than 2nd, 3rd half 2nd, all 3 joints apically setose, 1st and 2nd in ♂ with a fairly dense fringe of long plumose setae on lower margin, flagellum longer than peduncle, ca. 25-jointed in ♂, ca. 20 in ♀, in both sexes with narrow sensory filaments.

Second antenna half as long as 1st, ultimate joint slightly longer than penultimate, joints stouter in ♂ than in ♀, penultimate and antepenultimate joints in ♂ with dense fringe of long plumose setae on lower margin, flagellum equal to or a little shorter than peduncle, 13-jointed.

Upper lip broader than long, entire, distal margin setose.

Lower lip, outer lobes deeply notched, the outer portion being scarcely half the size of inner, mandibular processes curved, stout, apically subacute, inner lobes broad.

Mandibles, cutting-edge 5-dentate in left, 7 in right, secondary cutting-edge in left 8-dentate, 9 in right, spine-row with 9 spines, molar somewhat conical, palp slender, 1st and 2nd joints subequal, 3rd not enlarged, shorter than 2nd, only the 3rd bearing setae, which form an apical tuft.

First maxilla, inner plate broad with 1 apical seta, outer plate with 10 spines, palp slender, 2nd joint narrow, curved, with apical spinules.

Second maxilla, plates equal in length, inner narrow and more tapering than outer, its inner margin setose.

Maxilliped like that of *Ampithoe*, outer plate reaching to middle of 3rd joint of palp, inner margin with ca. 13 spines.

First gnathopod similar in both sexes, 2nd joint not lobed on anterior apex, 5th and 6th joints not lobed, cylindrical, their inferior margins setose, 6th a little longer than 5th, of nearly uniform width, distal margin between acute inferior apex ("thumb") and hinge angularly concave, a row of setae along the thumb, finger a little more than  $\frac{1}{3}$  6th, inner distal margin with 3-4 serrations.

Second gnathopod similar to 1st, but 5th and 6th joints a little stouter, and inferior margin of 5th is lobed, similar in both sexes.

First and second peraeopods, 2nd joint expanded, ovoid, distal half wider than proximal, glandular, tapering, finger half length of 6th, inner margin smooth.

Third peraeopod shorter than 1st and 2nd, 2nd joint ovoid, narrowing distally, 5th a little shorter than 4th, 6th longer than 4th, with 3 spines on posterior margin (anterior when in its natural reverted position) and 2 on posterior apex, finger and unguis short, curved.

Fourth peraeopod longer than 3rd, 2nd joint not greatly expanded, but stout, half as long again as broad, 4th longer than 5th, 6th subequal to 4th, 4 spines on anterior margin and 2 on anterior apex, finger and unguis moderately curved.

Fifth peraeopod longest, oar-like, all the joints very stout and expanded, more so in ♂ than ♀, 3rd not very expanded but distally lobed, 5th a little longer than 4th, 6th equal to 4th in ♂, equal to 5th in ♀, considerably narrower than 5th joint, its outer margin with a subapical and an apical tuft of setae, inner margin with 2 subapical groups consisting of 1 spine and several setae, and an apical one of 3-4 spines and setae, finger moderately curved; the whole surface of this peraeopod in both sexes minutely granulate, so that the margins of the joints appear very finely crenulate.

First uropod, peduncle longer than rami, of which outer is shorter than inner, 5 marginal spines on outer, 2 on inner ramus, both rami with 3 apical spines.

Second uropod, peduncle a little longer than rami, outer ramus a little shorter than inner and distinctly stouter, 5 marginal spines on outer, 3 on inner ramus, both rami with 3 apical spines.

Third uropod reaching a little beyond 2nd uropod, very stout, peduncle with 4 stout spines on upper distal margin and some setae on lower distal margin, inner ramus as long as broad, apically truncate, with 1 large and 1 small stout spine and several setae, outer ramus a little longer but not quite as wide, with 2 strong recurved apical hooks, upper margin setulose.

*Length*: ♂ 7.5 mm., ♀ 7 mm.

*Colour*: Uniform whitish-yellow, eyes red.

*Locality*: Buffel's Bay (False Bay). 29/9/13 and 1/3/15. ♂♂, ovigerous ♀♀ and young. (K.H.B.); Port Elizabeth. November, 1914. 2 ♀♀ with embryos. (FitzSimons). (S.A.M. Nos. A2917, A3287, and A3035.

I have much pleasure in naming this species after Rev. T. R. R. Stebbing, who on many occasions has been kind enough to give me the benefit of his knowledge and experience.

#### FAMILY JASSIDAE.

1888. *Podoceridae* (part) Stebbing, Challeng. Rep. vol. 29, p. 1112.  
 1893. " ( " ) G. O. Sars, Crust. Norw. vol. 1, p. 577.  
 1899. *Ischyroceridae* Stebbing, Ann. Mag. Nat. Hist. ser. 7, vol. 4, p. 211.  
 1906. *Jassidae* id. Das Tierreich, 21, p. 647.  
 1908. *Ischyroceridae* Walker, Nat. Antarct. Exp. vol. 3, p. 38.  
 1910. *Jassidae* Stebbing, Gen. Cat. S.A. Crust. p. 462.

#### GEN. JASSA Leach.

- 1813/14. *Jassa* (part) Leach, Edinb. Encycl. vol. 7, p. 433.  
 1852. *Cratophium* Dana, Amer. J. Sci. ser. 2, vol. 14, p. 309.  
 1853. " id. U.S. Expl. Exp. vol. 13, pt. 2, pp. 832, 840.  
 1899. *Jassa* Stebbing, Ann. Mag. Nat. Hist. ser. 7, vol. 3, p. 239.  
 1905. *Bruzeliella* Norman, *ibid.* ser. 7, vol. 16, p. 83.  
 1906. *Jassa* Stebbing, l.c. pp. 652, 739.  
 1907. " Chevreux, Exp. Antarct. Franç. p. 94.

#### JASSA FALCATA (Montagu).

1808. *Cancer falcatus* Montagu, Tr. Linn. Soc. Lond. vol. 9, p. 100, pl. 5, fig. 2.  
 1813/14. *Jassa pulchella* Leach, l.c. p. 433.

1853. *Cratophium validum* Dana, l.c. p. 841, pl. 56, fig. 2.  
 1879. *Podocerus australis* Haswell, Proc. Linn. Soc. N.S.W. vol. 4, p. 338, pl. 21, fig. 8.  
 1888. *Jassa ingens* Pfeffer, Jahrb. Hamb. Anst. vol. 5, p. 131, pl. 3, fig. 1.  
 1906. „ *pulchella* and *falcata* Stebbing, l.c. pp. 654, 656, 739 (references).  
 1909. *Bruzeliella falcata* Walker, Tr. Linn. Soc. Lond. vol. 12, pt. 4, p. 343.  
 1909. *Jassa pulchella* Chilton, Subant. Is. N. Zeal. vol. 2, p. 647.  
 1910. „ „ Stebbing, Gen. Cat. S.A. Crust. p. 462.  
 1911. „ *falcata* Sexton, J. Mar. Biol. Ass. n.s. vol. 9, pt. 2, p. 212, pl. 3, fig. 10 (side-plate 2 of adult ♂).  
 1912. „ „ Chilton, Tr. Roy. Soc. Edinb. vol. 48, pt. 2, p. 511.  
 1914. „ „ Stebbing, Proc. Zool. Soc. Lond. 1914, p. 371.

The South African form is the same as that described by Dana as *Cratophium validum*, having the basal tooth on 6th joint of the 2nd gnathopod of ♂ distally emarginate on outside and apically acute (see Stebbing, Challeng. Rep. vol. 29, pl. 138). In the ♀ the projection just distal to the basal tooth, which bears 3 spines, of 6th joint of 2nd gnathopod is angular as in Sars' figure of *pusilla*, not rounded as in his figure of *falcata*.

Side-plate 2 longer than deep, anterior margin scarcely more than half the posterior margin of side-plate 1, posterior margin not as deep as anterior margin of side-plate 3, inferior margin in ♂ very slightly concave, in ♀ straight or very slightly convex.

There appears to be only one form present in South Africa corresponding to Sexton's "Form 2." "Form 1" with swollen antennae and broad hand and thumb has not yet been discovered.

*Length* : 4-6 mm.

*Colour* : Greyish, somewhat mottled dorsally, frequently a darker grey dorsal patch on pereon segments 5-7 and also sometimes on the pleon segments.

*Locality* : Buffel's Bay and St. James (False Bay). 29/9/13 and 15/2/14. (K.H.B.) ♂♂ and ovigerous ♀♀ ; Sea Point, near Cape Town. 26/2/14 and 13/4/14. (K.H.B.) ♂♂ and ovigerous ♀♀ ; Swakopmund. May, 1908. (J. Drury.) 1 ♀. (S.A.M. Nos. A2515, A2904, A2901, A2904, and A2952 respectively.)

*Geogr. Distribution* : Europe, Mediterranean (Montagu, Sars, Della Valle, Chevreux) ; Azores (Barrois) ; Rio Janeiro (Dana : *C. validum*) ; Pt. Jackson (Haswell : *P. australis*) ; South Georgia (Pfeffer : *P.*

*ingens*); 35° 4' S. 18° 37' E. and Kerguelen Is. (Stebbing: *P. fallacatus*); 42° 43' S., 82° 11' W. and Philippine Islands (Stebbing: *P. validus*) New Zealand and neighbouring islands (Thomson and Chilton); Ceylon and Zanzibar (Walker); South Orkneys (Chilton); Falkland Islands (Stebbing).

#### GEN. ISCHYROCERUS Kröyer.

1838. *Ischyrocerus* Kröyer, Danske Selsk. Afh. vol. 7, pp. 283, 287.  
 1894. " " G. O. Sars, Crust. Norw. vol. 1, p. 587.  
 1900. " " Chevreux, Rés. Camp. Monaco, vol. 16, p. 104.  
 1906. " " Stebbing, Das Tierreich, 21, pp. 657, 739.

#### ISCHYROCERUS ANGUIPES Kröyer.

1838. *Ischyrocerus anguipes* Kröyer, Danske Selsk. Afh. vol. 7, p. 283, pl. 3, figs 14a-m.  
 1894. " " + *minutus* G.O. Sars, l.c. pp. 588, 589, pl. 209, pl. 210, fig. 1.  
 1906. " " Stebbing, l.c. p. 658. (References and synonyms.)  
 1907. " " von der Brüggen, Ann. Mus. Zool. St. Petersb. vol. 11 [1906], p. 236.

Body slender in ♂ but rather stout in ♀, iridescent. Lateral lobes of head somewhat obtuse. Eye small, oval. Side-plates 1-4 increasing in depth in ♀, 1 narrowed below, 5 rather shallower, in ♂ 2-5 subequal in depth. Postero-lateral angle of 3rd pleon segment quadrate.

Telson broader than long, margins convex, apically rounded, with 2 submedian apical spines.

First antenna, 3rd joint longer than either 2nd or 1st, flagellum equal to 3rd joint plus half the 2nd, 5-jointed, accessory flagellum very small but distinct (in ♂ 1st antenna lost).

Second antenna a little longer than 1st, ultimate joint longer than penultimate, flagellum equal to or a little longer than ultimate joint, 6-jointed in ♂, 5 in ♀.

Mouth-parts as figured for *I. anguipes* Kröyer by Sars (l.c. pl. 209), but distal margin of upper lip a little more convex and 2nd joint of mandibular palp comparatively shorter and more angular on inner margin.

First gnathopod, 4th-6th joints rather slender, 5th elongate, nearly  $\frac{1}{3}$  length of 2nd, inferior margin with a rather long but not promi-

nently projecting lobe, 6th equal to 4th and 5th together, elongate-oval, palm distinguished from inferior margin only by 2 spines and by its minute denticulation, inferior margin with 3 spines and several setae, finger evenly curved, equal to palm; in ♀ shorter, 5th joint stouter, inferior margin of 6th with only 1 spine at junction with palm, otherwise as in ♂.

Second gnathopod, in ♂ elongate, 2nd joint curved, 3rd lobed on anterior margin, 4th not or scarcely apically produced as in *I. anguipes*, 5th with a narrow lobe projecting backwards below 4th, 6th elongate,  $3\frac{1}{2}$  times as long as broad, curved, inferior concave margin nearly parallel with upper convex margin and bearing long setae, a broad, truncate, apically bifid and denticulate tooth near the hinge, finger curved, not quite reaching base of 6th, inner margin near the hinge with 2 semicircular excavations to receive the bifid tooth on the palm; in the immature ♂ the hand is not so long, inferior margin straight, not convex, 2 teeth instead of one apically bifid near the hinge, finger not doubly excavate; in ♀ similar to 1st gnathopod and not larger.

First and second peraeopods as in *I. anguipes*.

Third to fifth peraeopods not slender, 2nd joint expanded, hind margin most convex in 5th peraeopod, postero-inferior angles rounded.

First and second uropods, outer ramus shorter than inner, rami shorter than peduncle in 1st uropod, inner ramus subequal to peduncle in 2nd uropod, apex of peduncle of 1st with acute spine.

Third uropod reaching very little beyond end of 2nd uropod, rami very small, equal to apical width of peduncle, inner ramus narrow, outer broad at base, distal half suddenly contracted, apex minutely hooked, 3 denticles on upper margin.

*Length*: 3 mm., ♂ a trifle over 3 mm.

*Colour*: ♂ usually whitish with a broad dorsal stripe of claret, ♀ usually greyish or claret, pleon sometimes lighter or with irregular patches of black, whole body, side-plates and appendages with minute circular black pigment specks, but the two types of coloration are not confined to the respective sexes.

*Locality*: Buffel's Bay (False Bay). 28/9/13 and 1/3/15. (K.H.B.) ♂♂ and ovigerous ♀♀; Sea Point, near Cape Town. 26/2/14. (K.H.B.) 1 ovigerous ♀. (S.A.M. Nos. A2533, A3290, and A2922.)

*Geogr. Distribution*: Widely distributed in the North Atlantic (incl. Arctic Ocean) and adjoining seas.

The chief differences between these specimens and the typical form lie in the shorter and more rounded telson, which is somewhat similar to that of *I. commensalis* Chevreux, and in the 2nd gnathopod of the male.

## ISCHYROCERUS CARINATUS n. sp.

(Plate XXVIII. Fig. 18.)

Body only faintly iridescent. Lateral lobes of the head obtuse, eyes small, oval. Peraeon in adult ♂ covered with rather long scattered setae, segment 1 longer than 2, segments 1, 2, 6 and 7 each with a high medio-dorsal keel extending on segments 1 and 2 the whole length, on segments 6 and 7 only on the posterior part (of the segment), its upper margin straight and the angles rounded; in young ♂♂ measuring 2.5 mm. the peraeon is non-setose (except on the side-plates) and without keels, those of 3 mm. are faintly setose, with a low keel on 1st peraeon segment only; the nonovigerous ♀ is non-setose and keelless. Side-plate 1 somewhat narrowed below, 4 largest, anterior lobe of 5 as deep as 4, all side-plates sparsely setose on inferior margin and with their outer surface covered with minute widely spaced granules each bearing one or two wavy setules. Pleon keelless, postero-inferior angle of 3rd segment rounded.

Telson broader than long, apically obtuse, side-margins very slightly concave, 2 submedian spines on upper margin near apex.

First antenna, 1st joint shortest, 2nd and 3rd subequal, flagellum a trifle longer than 3rd joint, 4-5-jointed, accessory flagellum 2-jointed, half as long as 1st flagellar joint, 2nd joint minute.

Second antenna, ultimate peduncular joint a trifle longer than penultimate, flagellum equal to ultimate joint, 5-jointed.

Mouth-parts as in *I. anguipes*, but 1st joint of mandibular palp shorter and 2nd more angular on inner margin.

First gnathopod in ♂, 2nd joint flask-shaped, very narrow at base, swelling rapidly, the anterior apex forming a rounded lobe, 4th longer than 3rd, its inferior margin straight or concave, 5th equal to 4th, 6th equal to 4th and 5th together, oval, interior margin setose and with 4-5 spines in middle, the palm undefined from hind margin except by its minute denticulation.

Second gnathopod in ♂, 2nd joint very long, remarkably slender proximally, strongly curved, the proximal  $\frac{1}{3}$  convex and serrate in front, the distal  $\frac{2}{3}$  concave in front, distal anterior lobe serrate and spinulose, 3rd with whole anterior margin produced as a rectangular lobe, highest proximally, the ends rounded, 4th triangular, distal apex rounded, with a small tuft of setae, 5th very short but as broad as base of 6th, anterior apex subacute, inferior margin straight, minutely denticulate, with a submarginal tuft of setae, 6th narrow-ovate, twice as long as broad, palm and hind margin confluent, convex, with a step-like constriction in middle, the distal half narrower than proximal,

distinct, nearly round. Side-plate 1 small, 2-5 much deeper, about as deep as their segments, rounded-quadrate below, 6 not nearly as deep as 5, all the side-plates sloping outwards and giving the animal a rather broad appearance.

Telson not quite as long as broad, semicircular, with a spinule on either side a little beyond the centre.

First antenna stout, 1st joint a little longer than broad, 2nd and 3rd subequal, lower margin with long setae, flagellum a trifle longer than 3rd peduncular joint, 4-jointed, 1st joint equal to all the rest together, accessory flagellum small but distinct, 1-jointed.

Second antenna stout and a little longer than 1st, ultimate joint longer than penultimate, flagellum a little longer than ultimate joint, 4-jointed, 1st joint equal to all the rest together.

Lower lip, inner lobes distinct, outer lobes entire, not divided, apically rounded, mandibular processes subacute.

Mandibles, cutting-edge 3 (?) dentate, secondary cutting-edge in left bidentate, spine-row (in left) with three spines, molar somewhat conical, but apically blunt, palp large and stout, 2nd joint ovate, setose on inner margin, 3rd shorter than 2nd, laminar, expanded distal end with long setae.

First maxilla, outer plate with 9 (?) spines, palp 2-jointed, 2nd joint long and very slightly widened distally.

Maxilliped, outer plate reaching a little beyond middle of 2nd joint of palp, 2nd joint oblong, 3rd oval, half length of 2nd, 4th nearly as long as 3rd, narrow, bluntly pointed, both inner and outer plates and all the palpal joints setose.

Upper lip, inner plate of 1st maxilla and 2nd maxilla not successfully dissected out.

First gnathopod in ♂, 2nd joint narrow at base, distally widening, anterior margin produced into a rounded apical lobe with a few setae, 3rd and 4th much narrower than 2nd, 5th shorter and slightly narrower than 6th which is oval, palm oblique, continuous with inferior margin but distinguished by 4-5 spines becoming smaller towards the hinge, finger matching palm, serrulate on inner apex, outer apex acutely produced over base of unguis, with a comb-like row of fine setules, unguis small; in ♀ similar.

Second gnathopod in ♂, 2nd joint long, narrow, curved forwards (similar to that of *Ischyrocerus carinatus*), whole of anterior margin serrulate, anterior apex not strongly lobed, 3rd slightly lobed, 5th very short but broad, inferior margin truncate, 6th large, elongate, oblong, palm plus inferior margin slightly concave, sparsely setose or with a fairly strong bifid tooth at the hinge, finger half as long as 6th joint,

curved, apically blunt, inner margin convex in the middle; in ♀ similar to 1st gnathopod.

First and second peraeopods stout, glandular, 2nd joint linear, slightly wider distally, anterior apex rounded quadrate, 5th a little shorter than 4th, but longer than 3rd, 6th longer than 4th, oblong, palm oblique with 3 short, stout spines, finger overlapping palm, curved, unguis not distinct from finger.

Third to fifth peraeopods stout, peraeopod 3 reverted, 4 and 5 subequal, 2nd joint expanded, oval, postero-inferior angle rounded, extending nearly to end of 3rd joint, hind margin entire, 4th longer than 5th, both joints a little expanded distally, 6th equal to 4th, oblong, palm oblique, defined by a stout spine, finger overlapping palm, curved, outer apex acutely produced over base of unguis, with a comb-like row of fine setules, unguis distinct and pointed.

First uropod, peduncle with an apical acute process, upper margin with 3 spinules, outer ramus shorter than inner, which is equal to peduncle, apices of rami with 1 spine and 2 spinules.

Second uropod, outer ramus subequal to peduncle but shorter than inner ramus, both rami with 2 marginal spines and 3 stout unequal apical spines.

Third uropod, rami short, subequal, inner ending in 1 spine, outer with a recurved hook, upper margin with 2 denticles.

*Length*: ♂ 4 mm., ♀ 3.25 mm.

*Colour*: In spirit, whitish, eyes brown.

*Locality*: Table Bay. 26/3/96. (Dr. J. D. F. Gilchrist.) 1 ♀ with embryos; Cape Town. 19/8/98. 2 ♂♂, 5 ovigerous ♀♀, 3 juv. from amongst the egg-clusters on *Palinurus lalandii*. (S.A.M. Nos. A2847 and A3392.)

## FAMILY COROPHIIDAE.

1849. *Corophidae* Dana, Amer. J. Sci. ser. 2, vol. 8, p. 139.  
 1888. *Corophiidae* Stebbing, Challeng. Rep. vol. 29, p. 1154.  
 1904. „ Coutière, Bull. Soc. philom. ser. 9, vol. 6, p. 166.  
 1906. „ Stebbing, Das Tierreich, 21, pp. 662, 739.  
 1910. „ id. Gen. Cat. S.A. Crust. p. 462.

## GEN. SIPHONOECETES Kröyer.

1845. *Siphonoecetes* Kröyer, Naturh. Tidsskr. ser. 2, vol. 1, pp. 481, 491.  
 1876. „ Boeck, Skand. Arkt. Amphip. vol. 2, p. 630.

1888. *Siphonocetes* Stebbing, Challeng. Rep. vol. 29, p. 212.  
 1893. „ Della Valle, F. u. Fl. Neapel. vol. 20, p. 357.  
 1894. „ G. O. Sars, Crust. Norw. vol. 1, p. 609.  
 1904. „ Walker in Herdman's Ceylon Pearl Fish. Suppl.  
 Rep. 17, p. 294.  
 1905. „ Rathbun, Pap. Boston Soc. vol. 7, p. 74.  
 1906. „ Stebbing, l.c. pp. 681, 740 (references, with variations in spelling).  
 1910. „ id. Sci. Res. "Thetis," pt. 12, p. 618.

## SIPHONOCETES ORIENTALIS Walker.

1904. *Siphonocetes orientalis* Walker, l.c. p. 294, pl. 7, fig. 49.  
 1906. „ „ Stebbing, l.c. p. 740.

The South African specimens agree with Walker's description except in the following slight details:

Eyes poorly developed, composed of 8 lenses, more or less separate and arranged in a circle.

First antenna extending beyond end of penultimate peduncular joint of 2nd antenna, peduncular joints becoming successively shorter, flagellum subequal to peduncle, 10-11-jointed. (Walker's specimens had 14 joints; Stebbing in 1910, l.c. p. 618, remarks on the large number of flagellar joints in this species, a number double that found in any other species.)

Second antenna as long as body, ultimate and penultimate peduncular joints subequal, the ultimate joint densely setose, flagellum scarcely more than half length of ultimate joint, composed of 1 long and 2 short joints, densely setose, with marginal and apical unguiform spines.

In addition it may be stated that the mouth-parts resemble those figured by Sars (l.c. pl. 218) for *S. colletti* Boeck, but the inner plate of the first maxilla is quite obsolete. Ramus of 3rd uropod as broad as long.

Tube constructed of fragments of shell.

Length: 6 mm.

Colour: In spirit, whitish.

Locality: Umhloti River mouth NW.  $\frac{1}{2}$  W., distant 15 miles (Natal). 100 fathoms. 4 ♂♂; Nanquas Peak N.  $\frac{2}{3}$  W., distant 21 miles (East end of Algoa Bay). 63 fathoms. 1 ♀ in tube; Beacon East of East London N.  $\frac{1}{4}$  E., distant 10 miles. 52 fathoms. 1 ♂; Amatikulu River mouth NW.  $\frac{1}{2}$  N., distant 9 miles (Natal). 26 fathoms. 1 ♂.

s.s. "Pieter Faure." 19/12/00, 23/9/01, 12/7/01 and 30/1/01. (S.A.M. Nos. A213, A212, A2781, and A3391 respectively.)

*Geogr. Distribution*: Ceylon (Walker).

GEN. CERAPUS Say.

1817. *Cerapus* Say. Journ. Ac. Nat. Sci. Philad. vol. 11, p. 49.  
 1888. " Stebbing, Challeng. Rep. vol. 29, p. 1157.  
 1906. " id, Das Tierreich, 21, pp. 665, 740.  
 1910. " id. Sci. Res. "Thetis," pt. 12, p. 616.

CERAPUS ABDITUS Templeton.

1836. *Cerapus abditus* Templeton, Tr. Entom. Soc. Lond. vol. 1, p. 188, pl. 20, figs. 5 a-k (♂).  
 1885. *Cyrtophium calamicola* Giles, Journ. Asiat. Soc. Bengal, vol. 54, p. 54, pl. 1 (♂).  
 1888. *Cerapus flindersi* Stebbing, l.c. p. 163, pl. 125 (♀).  
 1892. " " Chilton, Rec. Austr. Mus. vol. 2, no. 1, p. 1, pl. 1 (♂, ♀).  
 1904. " *calamicola* Walker in Herdman's Ceylon Pearl Fish. Suppl. Rep. 17, p. 293.  
 1906. " " + *flindersi* + *abditus* Stebbing, l.c. pp. 668, 669.  
 1910. " *abditus* id. l.c. p. 616, pl. 55A.

The above synonymy is taken from the last reference, where the discussion on it will be found.

A single ♀ may be thus briefly described:

Body of uniform width, narrowing only at the junction of 3rd and 4th pleon segments. Rostrum prominent, acute. Telson with 2 dorsal rows of upturned spinules. First antenna with a sharp projection on ventral surface, 3rd joint a good deal longer than 2nd, flagellum 6-jointed. Second antenna with 5th joint longer than 4th but not as long as the 6-jointed flagellum. Gnathopods and pereopods as figured for *flindersi* by Stebbing. Ramus of 3rd uropod extremely minute.

*Length*: (Rostrum to telson) 6 mm.

*Colour*: In spirit, white, eyes brown.

*Locality*: O'Neil Peak NW.  $\frac{1}{4}$  W., distant 9 miles (Zululand coast). 90 fathoms. 1 ♀, nonovigerous and without tube. s.s. "Pieter Faure." 28/2/01. (S.A.M. No. A3855.)

*Geogr. Distribution*: Mauritius? (Templeton); Bengal (Giles);

North Australia (Stebbing); Port Jackson (Chilton); Ceylon (Walker); New South Wales, 41-52 fathoms (Stebbing).

GEN. COROPHIUM Latr.

1806. *Corophium* Latreille, Gen. Crust. Ins. vol. 1, p. 58.  
 1813-14. *Corophrium* Leach, Edinb. Encycl. vol. 7, p. 432.  
 1830. *Corophia* M. Edwards, Ann. Sci. Nat. vol. 20, p. 384.  
 1851. *Audouinia* (nom. nud.) Costa in Hope. Cat. Crost. Ital. p. 24.  
 1888. *Corophium* Stebbing, Challeng. Rep. vol. 29, p. 1670.  
 1893.     "     Della Valle, F. u. Fl. Neapel. vol. 20, p. 362.  
 1894.     "     G. O. Sars, Crust. Norw. vol. 1, p. 612.  
 1904.     "     Stebbing, Spolia Zeyl. vol. 2, pt. 5, p. 25.  
 1906.     "     id. Das Tierreich, 21, pp. 685, 740.  
 1908.     "     Bradley, Univ. Cal. Publ. Zool. vol. 4, no. 4,  
                   p. 229. (Key to the species.)  
 1908.     "     Chevreux, Bull. Soc. Zool. Fr. vol. 33, p. 70.  
 1911.     "     Vanhoeffen, SB. Gesell. Naturf. Berl. 1911,  
                   p. 400.  
 1912.     "     Wundsch. Zool. Anz. vol. 39, p. 732.

This genus has a wide distribution, but hitherto has not been recorded from South Africa.

COROPHIUM ACHERUSICUM Costa.

1851. *Audouinia acherusica* Costa in Hope. Cat. Crost. Ital. (nom. nud.).  
 1857. *Corophium acherusicum* id. Mem. Acc. Ital. vol. 1, p. 232.  
 1866.     "     "     Heller, Denkschr. K. Ak. Wiss. Wien.  
                   vol. 26, p. 51, pl. 4, fig. 14.  
 1893.     "     "     Della Valle, F. u. Fl. Neapel. vol. 20,  
                   p. 364, pl. 1, fig. 11, pl. 8, figs. 17,  
                   18, 20-41.  
 1900.     "     "     Chevreux, Rés. Sci. Monaco, vol. 16,  
                   p. 109.  
 1906.     "     "     Stebbing, Das Tierreich, 21, pp. 692,  
                   740.

Anterior margin of head produced into a small triangular rostrum, scarcely extending beyond the level of the antero-lateral angles, which are subacute. Side-plate 1 apically acute, with 3 setae. Pleon segments 4-6 fused.

Telson subtriangular, apex slightly hollowed between 2 minute projections.

First antenna in both sexes, 1st joint with 2 recurved spines at base on inner surface, and 1 on apex, 2nd and 3rd more slender, flagellum equal to 2nd plus 3rd peduncular joints, 6-jointed.

Second antenna ♂ stout but not greatly enlarged or flattened, about as long as the peraeon plus head, 4th joint twice as long as broad or less, oval, inferior apex with 1 strong tooth and a smaller one above it, 5th scarcely as long as 4th and about half as wide, with in small specimens up to 2.5 mm. a well-marked tooth on lower margin about  $\frac{1}{3}$  from base or sometimes nearly in the middle, in other and larger specimens without a tooth and much more sparsely setose, flagellum 3-jointed, not as long as 5th peduncular joint; in ♀ about equal to head plus the first 4 peraeon segments, 3rd joint with 2 (or 3) recurved spines on inner margin, 4th half as long again as broad, with three spines on inner lower margin, 5th shorter than 4th with 1 (or 2) spines, flagellum shorter than 5th joint, 3-jointed.

First and 2nd gnathopods as figured by Della Valle for *C. acherusicum*.

The other peraeopods also similar to those of *C. acherusicum*, but 4th joint of peraeopods 1 and 2 not so broad as in Della Valle's figure; 5th joint of peraeopods 3 and 4 with an apically transverse row of 5 spines and a subapical one of 3 spines.

First and second uropods as figured for *C. acherusicum*, but 1st not so spinulose; third uropod with peduncle broader than long, ramus oval, equal in length to the breadth of the peduncle.

*Length*: ♂ up to 4 mm.; ♀ 3 mm.

*Colour*: Whitish with brown or blackish mottlings forming transverse bands on peraeon segments 1-6 and pleon segments 1-3, these bands usually interrupted dorso-medially, peraeon segment 7 without markings, head with a dark transverse band between the eyes, which are black, antennae and ventral surface of peraeon also speckled with darker.

*Locality*: Durban Bay. March and July, 1915. (H. W. Bell-Marley.) ♂♂ and ovigerous ♀♀. (S.A.M. Nos. A3377 and A3843.)

To this species also I am inclined to ascribe a single ♀ from Hout Bay, Cape Peninsula (11/2/14. K.H.B. S.A.M. No. A2865); but since the telson appears to be apically acute (cf. Chevreux's figure of *C. acutum*. 1908. l.c. p. 75.) I prefer to leave open the question of the identity of this specimen until more material, consisting of both ♂♂ and ♀♀, comes to hand.

*Geogr. Distribution*: Mediterranean (Costa, Della Valle); Cadiz, Azores, Senegal, 0–10 metres (Chevreux). Stebbing records it also from Cuba and Hong Kong.

### FAMILY PODOCERIDAE.

1849. *Dulichidae* Dana, Amer. J. Sci. ser. 2, vol. 8, pp. 135, 140.  
 1857. *Dyopedidae* Bate, Ann. Mag. Nat. Hist. ser. 2, vol. 19, p. 150.  
 1888. *Dulichidae* Stebbing, Challeng. Rep. vol. 29, p. 1182.  
 1906. *Podoceridae* id. Das Tierreich, 21, p. 694.  
 1910. „ id. Gen. Cat. S.A. Crust. p. 464.

#### GEN. LAETMATOPHILUS Bruzelius.

1859. *Laetmatophilus* Bruzelius. Svenska. Ak. Handl. n.s. vol. 6, p. 10.  
 1906. „ Stebbing, l.c. p. 695.

#### LAETMATOPHILUS PURUS Stebbing.

1888. *Laetmatophilus purus* Stebbing l.c. p. 1198, pl. 132.  
 1893. „ *tuberculatus* (part) Della Valle, F. u. Fl. Neapel. vol. 20, p. 317.  
 1894. „ *purus* G. O. Sars, Crust. Norw. vol. 1, p. 630.  
 1906. „ „ Stebbing, l.c. p. 696, figs. 120, 121.  
 1910. „ „ id. l.c. p. 464.

The Challenger specimen was a male. The female has no row of serrate spines leading to the palmar angle on 6th joint of the 1st gnathopod, the 2nd gnathopod similar to that of *L. tuberculatus* Bruz. as figured by Sars (l.c. pl. 226), the palm marked off from hind margin, which is about  $\frac{1}{2}$  its length, by an acute process, several very low rounded tubercles towards the hinge; in other respects no sexual difference except that the body is broader in the female.

*Length*: 6 mm.

*Colour*: In spirit, whitish, eyes reddish-brown.

*Locality*: Cape St. Francis NE., distant 29 miles. 75 fathoms. 1 ♀; North of Robben Island (Table Bay). ♂♂ and ♀♀ with ova and embryos; Paternoster Point SE.  $\frac{3}{4}$  E., distant 9 miles (off Saldanha Bay). 80 fathoms. ♂♂ and ovigerous ♀♀. s.s. "Pieter Faure." 19/2/02, 28/10/97, and 17/3/02. (S.A.M. Nos. A109, A110, and A111 respectively.)

LAETMATOPHILUS TRIDENS n. sp.

(Plate XXVIII. Fig. 22.)

♂. The single specimen is somewhat incomplete, but is well enough preserved to show the essential characters.

Peraeon segment 1 with 2 transverse ridges and a depression between them, segments 2-4 each with 1 very small medio-dorsal tubercle.

First antenna as in *L. purus*. Second antenna lost.

First gnathopod similar to that of *L. purus*, but 6th joint without the row of serrate spines leading to palmar angle, finger very thick, outer margin very convex, 10 closely-set spine-teeth at distal end of inner margin.

Second gnathopod, anterior margin of 2nd joint with 2 keels, one acute and the other subacute apically, 6th joint of the same shape as that of *L. purus*, but palm concave in basal half, distal half bearing 3 teeth, the first acutely triangular, the second obtusely cylindrical, the third largest, broad, denticulate, finger equal to palm, stout, nearly even in width throughout, palm well furnished with plumose setae.

Third to fifth pereopods, 2nd joint with hind margin spinose, not keeled or produced.

Uropods and telson as in *L. purus*.

*Length*: 5 mm.

*Colour*: In spirit, pale pinkish.

*Locality*: Seal Island SW.  $\frac{1}{2}$  S., distant  $\frac{3}{4}$  mile (False Bay). 11 fathoms. 1 ♂. s.s. "Pieter Faure." 12/11/02. (S.A.M. No. A2779.)

This species is unique in having 3 teeth on the palm of the 2nd gnathopod, all the other species of the genus having only 2.

LAETMATOPHILUS DURBANENSIS n. sp.

Very similar to *L. purus*. Peraeon transversely rugulose though not very distinctly; wider in ♀ than ♂, being nearly circular in the former.

First gnathopod quite distinct from that of *L. purus* in that the 6th joint is not at all widened, is narrower than 5th joint and shows no differentiation of hind margin and palm, the inferior margin bearing a few feebly plumose setae; the finger is quite smooth, but bears a short, stout spine on the inner apex at the base of the unguis. Similar in both sexes.

Second gnathopod ♂, 2nd joint with 2 keels on anterior margin, both apically acute, 4th apically subacute, 6th ovate but shorter and

broader than in *L. purus*, palm at base not very angular, straight, with a low denticulate process extending from hinge almost  $\frac{1}{2}$  along the palm, and a pointed tooth, furnished with plumose setae, anterior margin with 5 groups of spines, finger matching palm, nearly straight. In ♀ similar but smaller, 6th joint ovate, hind margin half length of palm and distinctly separated by a very small process and a spine, palm with a few simple setae only, finger matching palm, its inner margin faintly crenulate.

In other respects resembling *L. purus*.

*Length*: 3 mm.

*Colour*: Pale yellowish grey, a faint medio-dorsal grey stripe, eyes pale red.

*Locality*: Durban Bay. July, 1915. (H. W. Bell-Marley.) ♂ ♂ and ovigerous ♀ ♀. (S.A.M. No. A3841.)

This species was received too late for figuring, but I hope to give a figure of it on a future occasion.

#### GEN. PODOCERUS Leach.

- 1813/14. *Podocerus* Leach, Edinb. Encycl. vol. 7, p. 433.  
 1852. *Platophium* Dana, Amer. J. Sci. ser. 2, vol. 14, p. 309.  
 1853. *Podocerus* id. U.S. Expl. Exp. vol. 13, pt. 2, pp. 831, 837.  
 1885. *Deziocerella* Haswell, Proc. Linn. Soc. N.S.W. vol. 10, p. 107.  
 1888. *Podocerus* Stebbing, Challeng. Rep. vol. 29, p. 1184.  
 1893. „ (part) Della Valle, F. u. Fl. Neapel. vol. 20, p. 327.  
 1894. „ „ G. O. Sars, Crust. Norw. vol. 1, p. 629.  
 1899. „ Stebbing, Ann. Mag. Nat. Hist. ser. 7, vol. 3, p. 237.  
 1904. *Platophium* Walker in Herdman's Ceylon Pearl Fish. Suppl. Rep. 17, p. 295.  
 1906. *Podocerus* Stebbing, Das Tierreich, 21, pp. 700, 741.  
 1908. „ Chevreux, Mém. Soc. Zool. Fr. vol. 20, p. 521.  
 1910. „ Stebbing, Sci. Res. "Thetis," pt. 12, p. 622.

#### PODOCERUS CRISTATUS (G. M. Thomson).

1879. *Cyrtophium cristatum* G. M. Thomson, Ann. Mag. Nat. Hist. ser. 5, vol. 4, p. 331, pl. 16, figs. 9-15.  
 1880. „ *dentatum* Haswell, Proc. Linn. Soc. N.S.W. vol. 4, p. 342, pl. 22, fig. 5.  
 1881. „ *cristatum* G. M. Thomson, Tr. N. Zeal. Inst. vol. 13, p. 219, pl. 8, fig. 8.

1885. *Dexiocerella dentata* Haswell, l.c. p. 109, pl. 17, figs. 8-12.  
 1888. *Platophium cristatum* Stebbing, l.c. p. 500.  
 1893.     "     *orientale* (part) Della Valle, l.c. p. 332.  
 1899. *Podocerus cristatus* Stebbing, l.c. p. 239.  
 1906.     "     "     id. l.c. p. 706.  
 1910.     "     "     id. l.c. p. 651.

The single specimen does not seem distinguishable from Thomson's species, except in that the lobe on the palm of 2nd gnathopod near hinge is divided into two, the finger is only half the length of palm, and the fringe of setae along both sides of the palmar margin is so thick that the teeth are almost invisible.

Eyes prominent, forming the antero-lateral angles of head.

*Length*: 7 mm.

*Colour*: In spirit, pale pinkish.

*Locality*: Seal Island SW.  $\frac{1}{2}$  S., distant  $\frac{3}{4}$  mile (False Bay). 11 fathoms. 1 ♂. s.s. "Pieter Faure." 12/11/02. (S.A.M. No. A2780.)

*Geogr. Distribution*: New Zealand (Thomson); New South Wales (Haswell, Stebbing).

PODOCERUS PALINURI n. sp.

(Plate XXVIII. Fig. 23.)

Remarkably close to *P. hystrix* Stebbing, 1910. It will be enough to enumerate the distinguishing characters.

Head with a low rounded keel, without elevated process; eyes prominent, forming the antero-lateral angles.

Dorsal process on anterior half of peraeon segment 1 short and rounded, that on posterior half quite obsolete. Subdorsal processes present on peraeon segments 5-7 only, and these very feeble. Lower margins of segments without processes, only slightly thickened, chiefly on the posterior segments, rounded, overhanging the side-plates, all of which have the lower margins straight or slightly convex, not produced downwards, the 1st produced forwards acutely.

First antenna, flagellum 7-jointed.

First gnathopod not alike in the two sexes, in ♂ palm oblique and longer than hind margin, in ♀ transverse and shorter than hind margin.

Second gnathopod in ♂ similar to that of *P. hystrix*, but the finger is less strongly bent near the base, and the large, flat tooth near the hinge and small, conical one below it are more prominent; in ♀ palm

bears only a small, conical tooth near hinge, and a smaller conical one lower down as in ♂, defining angle with 2 spines.

Telson, ventral plate with 2 submedian spines, dorsal conical process bearing 3 large spines on each side of the median one.

Third uropod as in *P. hystrix*.

Length: 9 mm.

Colour: In spirit, pale yellowish, eyes brownish.

Locality: Table Bay. "Off a large *Palinurus*" (= *Jasus lalandii* (M. Edw.). June, 1897. 2 ♂♂, 1 ♀, 1 juv. (Dr. W. F. Purcell.) Seal Island SW.  $\frac{1}{2}$  S., distant  $\frac{3}{4}$  mile (False Bay). 11 fathoms. 1 ♂; Cape St. Blaize N. by E., distant 73 miles. 125 fathoms. 1 juv. ♀; off Knysna. 47 fathoms. 1 juv. ♂. s.s. "Pieter Faure." 12/11/02, 21/12/99 and 11/10/00. (S.A.M. Nos. A112, A113, A3811 and A3858.)

The above-mentioned characters are constant in the few specimens which are available, and would seem enough to separate this form from the closely allied New South Wales form *P. hystrix*.

#### PODOCERUS AFRICANUS n. sp.

(Plate XXVIII. Figs. 24, 25.)

As the South African specimens agree very closely with Dana's *brasiliensis*, it will be needful to mention only the points of difference.

The ultimate peduncular joint of 2nd antenna is a little shorter than the penultimate; 5th joint of 1st gnathopod as long as or a trifle longer than 6th joint in both sexes; 4th joint of 2nd gnathopod in ♂ strongly and acutely produced; 6th joint as in *P. variegatus* Leach, *i. e.* with 2 strong palmar teeth near the finger hinge; 1st and 2nd peraeopods with a lobe on anterior distal margin of 2nd joint; 3rd to 5th peraeopods with 2nd joint expanded and widest at base, as wide as long, distally narrowing; telson with only 2 spines on dorsal conical process (none on ventral plate).

Other characters as in *brasiliensis*: flagellum of both antennae 4-jointed; pleopods with 2 coupling spines.

Eyes about in the middle of the lateral margin. Antero-lateral angle of 1st peraeon segment quadrate, not produced.

Length: 5-6 mm.

Colour: Uniform pale claret.

Locality: Buffel's Bay (False Bay). 1/3/15. (K.H.B.) 6 ♂♂, 5 ♀♀ with ova and embryos, 4 juv. (S.A.M. No. A3820.)

This species combines the characters of the two species *variegatus* and *brasiliensis*. These two are closely allied and may eventually be united under Leach's name. The present specimens, however, seem to me to be quite distinct in the character of the 2nd joints of the peraeopods.

## PODOCERUS SYNAPTOCHIR (Walker).

1904. *Platophium synaptochir* Walker in Herdman's Ceylon Pearl  
Fish. Suppl. Rep. 17, p. 296, pl. 8,  
fig. 52.
1906. *Podocerus* „ Stebbing, Das Tierreich, 21, p. 741.
1909. „ „ Walker, Tr. Linn. Soc. Lond, vol. 12,  
pt. 4, p. 243.

These specimens agree exactly with Walker's description and figures except that the palm of the 2nd gnathopod in the male has two little denticles near the finger-hinge. These are not mentioned by Walker, but are easily overlooked owing to the denseness of the fringes of plumose setae. The finger of the 1st gnathopod in both sexes is serrate on the inner margin and the palm in the male is minutely crenulate.

Posterior margins of peraeon and pleon segments sparsely setose, in the ♂ the humps on the 7th peraeon and 1st-3rd pleon segments each bear a little median tuft of setae. Antero-lateral angles of peraeon segment 1, as well as those of the side-plate, acutely produced forwards.

Eyes on the antero-lateral angles of the head.

*Length*: ♂ 6mm., ♀ 3 mm.

*Colour*: Light brown, speckled with darker, often a dark spot on the 3rd and 4th side-plates and in the ♂ a medio-dorsal spot on 6th peraeon segment, ♀ frequently with a pale oval dorsal patch extending over 3rd-6th peraeon segments, a dark transverse band between the eyes, which are bright red, sometimes the whole head dark.

*Locality*: Durban Bay. March and July, 1915. (H. W. Bell-Marley.) ♂ ♂ and ovigerous ♀ ♀. (S.A.M. Nos. A3375 and A3842.)

*Geogr. Distribution*: Ceylon (Walker); Zanzibar and Suez (Walker).

## TRIBE CYAMIDEA.

## FAMILY CAPRELLIDAE.

1847. *Caprellidae* White, List Crust. Brit. Mus. p. 91.
1910. „ Stebbing, Gen. Cat. S.A. Crust. p. 464.
1912. „ Mayer in Michaelsen, Fauna Südwest Austral.  
vol. 4, pt. 1, p. 1.

## GEN. CAPRELLA Lamarck.

1801. *Caprella* Lamarck, Syst. Anim. sans Vertèbr. p. 165.  
 1888. „ Stebbing, Challeng. Rep. vol. 29, p. 1251 (references).  
 1890. „ Mayer, F. u. Fl. Neapel. vol. 17, p. 42.  
 1903. „ id. Die Caprelliden d. Siboga Exp. vol. 34, pp. 14, 72.  
 1910. „ Stebbing, l.c. p. 465.  
 1910. „ Kunkel, Tr. Conn. Ac. Sci. vol. 16, p. 106.

## CAPRELLA DANILEVSKII Czern.

1868. *Caprella danilevskii* Czerniavski, Mater. ad Zoogr. Pont. p. 92,  
 pl. 6, figs. 21-34.  
 1879. „ *inermis* Haswell, Proc. Linn. Soc. N.S.W. vol. 4, p. 348,  
 pl. 23, fig. 3f, g.  
 1882. „ *danilevskii* Mayer, F. u. Fl. Neapel, vol. 6, p. 54.  
 1882. „ *inermis* id. ibid. p. 71 text-figs. 26-29 (non Grube  
 1864).  
 1885. „ „ Haswell, Proc. Linn. Soc. N.S.W. vol. 9,  
 p. 1000.  
 1888. „ *danilevskii* Stebbing, l.c. p. 1264, pl. 145.  
 1890. „ „ Mayer, l.c. vol. 17, p. 58, pl. 5, fig. 44, pl. 7,  
 figs. 12, 13, 54.  
 1890. (?) „ *helleri* id. ibid. p. 58.  
 1903. „ *danilevskii* id. l.c. p. 99.  
 1910. „ „ Kunkel, l.c. p. 110.

The South African specimens do not differ from the published descriptions and figures of Mayer and Stebbing except in two minor points. The branchial lamellae are broader and more oval. The setae on the second antenna of ♂ are shorter and much sparser.

Mayer in describing *C. subinermis* n. sp. from Japan (l.c. 1890, p. 86) states, as one of the differences between the two species, that in *subinermis* the ungues of peraeopods 5-7 are denticulate, whereas in *danilevskii* they are smooth. Stebbing, however, represents them in the Challenger specimen of *danilevskii* as "minutely serrulate" in both descriptions and figure; and in the South African specimens they are very distinctly and regularly denticulate.

*Length*: ♂ 15 mm., ♀ 8 mm.

*Colour*: Uniform green, brownish or reddish according to the colour of the weed on which they are living.

*Locality*: Sea Point, near Cape Town. 29/11/13. (K.H.B.) ♂♂, ovigerous ♀♀ and young. (S.A.M. No. A2949).

*Geogr. Distribution*: Black Sea (Czerniavski); Mediterranean and Bay of Biscay (Mayer); Port Jackson (Haswell); Bermuda (Stebbing); Japan (Mayer); Rio de Janeiro (Mayer).

CAPELLEA EQUILIBRA Say.

1818. *Caprella equilibra* Say. Journ. Ac. Sci. Philad. vol. 1, p. 391.  
 1868. „ *megacephala* M. Edwards, Arch. du Mus. d'Hist. Nat. Paris, iv, p. 89, pl. 20, fig. 12.  
 1910. „ *equilibra* Stebbing, Gen. Cat. S.A. Crust. p. 466.

The distribution of this species in South Africa is extended by the discovery of specimens at the following localities:

Swakopmund, German S.W. Africa, May, 1908 (J. Drury); Table Bay, 26/2/14 (K.H.B.); Port Elizabeth, s.s. "Pieter Faure"; Durban, July, 1915 (H. W. Bell-Marley). (S.A.M. Nos. A2950, A2944, A2946 and A3853 respectively.)

The Swakopmund specimens reach a length of 15 mm. in ♂, 9 mm. in ovigerous ♀. The hand of the 2nd gnathopod in ♂ resembles that figured by Mayer (1903, *Siboga caprellidae*, pl. 7, fig. 67) belonging to a specimen from Sydney; the finger likewise is strongly curved.

The Durban specimens measure 13 mm. in ♂. The finger of the 2nd gnathopod in ♂ is not strongly curved.

I have not yet seen any specimens from the other localities in South Africa to equal the Durban or Swakopmund specimens in size.

*Colour*: The Durban specimens are pale whitish, with rather large brownish-orange spots on the posterior half of 2nd and the whole of 3rd-7th peraeon segments and the hand of the 2nd gnathopods, anterior half of 2nd and whole of 1st peraeon segments finely speckled with the same colour, eye brown, finger of 2nd gnathopod with two rings of orange.

*Geogr. Distribution*: Europe; Mediterranean; Bosphorus; South America; Sargasso Sea; Australia; Japan; Singapore; Madagascar.

CAPELLEA PENANTIS var. NATALENSIS Mayer.

1813. *Caprella penantis* Leach, Edinb. Encycl. vol. 7, p. 404.  
 1816. „ *acutifrons* Latreille, Nouv. Dict. d'Hist. Nat. vol. 5, p. 433.  
 1903. „ „ var. *natalensis* Mayer, *Siboga Exp.* vol. 34, p. 81, pl. 3, figs. 22, 23.  
 1910. „ *penantis* var. *natalensis* Stebbing, Gen. Cat. S.A. Crust. p. 465.

Mayer states that he had only a single ♂ of this form, but gives the number of joints in the flagellum of 1st antenna of female as 11 and figures a portion of a ♀. Probably in mentioning the specimen found at Cape Town Mayer intended writing "♀" instead of "♂." The present specimens are in agreement with his description.

*Length*: ♂ 10 mm.; ♀ 6 mm.

*Colour*: Light brown with the anterior margins of the peraeon segments and a band between the eyes darker, a few dark specks on peraeon segments 2-5, antennae, peraeopods and branchial lamellae whitish, the hand of the 2nd gnathopods in ♂ with a basal and an apical band of orange spots, eyes dark brown; the ♀ is somewhat greyer in colour, 2nd gnathopods whitish, marsupial lamellae on 3rd segment each with two red streaks.

*Locality*: Durban. July, 1915. 1 ♂, 1 ovigerous ♀. (H. W. Bell-Marley.) (S.A.M. No. A3854.)

#### GEN. CAPRELLINA Thomson.

1879. *Caprellina* Thomson, Tr. N.Z. Inst. vol. 11, p. 247.  
 1903. ,, Mayer, Die Caprelliden d. Siboga Exp. vol. 34, pp. 14, 15, 30.  
 1910. ,, Stebbing, Gen. Cat. S.A. Crust. p. 470.

#### CAPRELLINA SPINIGER n. sp.

(Pl. XXVIII. Fig. 35.)

Female.—Head plus 1st peraeon segment equal to 2nd peraeon segment, unarmed; 2nd segment with a pair of dorsal spiniform tubercles on the middle of the segment and another pair on posterior margin, one spine above insertion of 2nd gnathopod; 3rd segment with a large dorsal spiniform tubercle, apically bifid longitudinally and directed forwards; 4th segment with a similar but smaller tubercle; both segments with a blunt tubercle above the branchial lamella; remaining segments smooth.

First antenna about  $\frac{1}{3}$  length of body, 1st joint oval, half as long again as broad, 3rd joint longer than 1st, 2nd longer than 3rd, flagellum equal to 3rd joint, 4-jointed, its 1st joint equal to the other 3 together.

Second antenna reaching to end of 2nd joint of 1st antenna, ultimate peduncular joint a little longer than penultimate, flagellum 3-jointed.

Mandibles normal, palp 3-jointed, 3rd joint a little longer than 1st, 2nd a little longer than 3rd.

First maxilla, outer plate with 6 spines, 2nd joint of palp oval, much longer than 1st setose.

Maxilliped, inner plate with 2 apical spine-setæ, outer plate narrower than inner.

First and second gnathopods as in *C. longicollis* (Nicolet).

Branchial lamella on segments 2-4, oblong. First and second peraeopods absent.

Third peraeopod with 3 distinct joints, the basal joint without a suture in the middle and without the process found in the Cape specimens of *C. longicollis*.

Fourth and fifth peraeopods as in *C. longicollis*, with 4 proximal spines on 6th joint.

Pleon with 2 pairs of slender, apically acute, 1-jointed appendages, which are minutely and regularly spinulose on their upper margins.

*Length*: 8 mm.

*Colour*: Whitish, the anterior portions with minute purple specks, a purplish band at base of 6th joint of 5th peraeopod, eyes purplish-brown.

*Locality*: Buffel's Bay (False Bay). 1/3/15. (K.H.B). 1 ♀. (S.A.M. No. A3296.)

This constitutes the second species in this genus. It is unfortunate that the male has not been discovered.

#### GEN. PHTISICA Slabber.

1769. *Phtisica* Slabber, Natuurk. Verlust. pt. 10, p. 77.

1814. *Proto* Leach, Edinb. Encycl. vol. 7, p. 433.

1910. *Phtisica* Stebbing, Gen. Cat. S.A. Crust. p. 468.

#### PHTISICA MARINA Slabber.

1769. *Phtisica marina* Slabber, l.c. p. 77, pl. 10, figs. 1, 2.

1776. *Squilla ventricosa* O. F. Müller, Zool. Dan. Prodv. no. 2360, p. 360.

1903. *Proto* „ Mayer, Siboga Exp. vol. 34, p. 20, pl. 6, fig. 23.

1910. *Phtisica marina* Stebbing, l.c. p. 468.

Further localities in South Africa for this species are as follows:

Paternoster Point SE.  $\frac{3}{4}$  S., distant 9 miles (off Saldanha Bay).

80 fathoms. 2 ♂♂, 3 ♀♀; Robben Island, Table Bay. 1 juv. ♂; Umkomaas River mouth NW. by W.  $\frac{1}{2}$  W., distant 5 miles (Natal). 40 fathoms. 4 ♂♂; Walker Point NE. by N.  $\frac{1}{2}$  N., distant 7 miles (off Knysna). 47 fathoms. 1 ♀; s.s. "Pieter Faure." 17/3/02, 28/10/97, 31/12/00, and 11/10/00 respectively. Sea Point, Cape Town. 26/2/14. 2 ♂♂ (K.H.B.) (S.A.M. Nos. A87-A89, A3860, and A2951.)

GEN. ORTHOPROTELLA Mayer.

1903. *Orthoprotella* Mayer, Siboga Exp. vol. 34, p. 35.

ORTHOPROTELLA MAYERI n. sp.

1903. *Orthoprotella spec.* Mayer, l.c. p. 36, pl. 1, figs. 25, 26, pl. 6, figs. 43, 44, 46, pl. 9, fig. 15.

These specimens agree with the form described and figured by Mayer, but the largest is more than twice as large as any this author saw. Mayer regarded it as a variety of *O. australis* (Haswell), but with a certain hesitation. Seeing that a very good and apparently constant distinguishing feature is to be found in the 2nd gnathopod of the ♂, and that it inhabits regions as widely separated as Sydney, Singapore and South Africa, it seems to merit specific rank.

One of the specimens (that from Glendower Beacon) has a single median spine on the 2nd peraeon segment above the 2nd gnathopods, but the rest of the specimens are devoid of dorsal spines or tubercles. All have a lateral spine on the 2nd and 3rd segments. Segments 6 and 7 not fused.

First antenna with flagellum of 20-30 joints; basal joint of 2nd antenna distinctly, and rather slenderly, produced.

Second gnathopod as figured by Mayer, but the tubercle on the anterior margin of hand more prominent and the apical angle more produced and acute; in the largest specimen the shape of the hand is more oblong, the inferior margin is distinctly concave and subparallel with the anterior margin; the venom-tooth is quite proximal, and there is a little notch between it and the inferior margin; inferior margin sparingly setose; the two teeth near the hinge would be better described as follows: a single triangular tooth with a narrow parallel-sided slit cut in the apex and extending nearly to the basal line; finger moderately slender and curved, reaching to the venom-tooth, its inner margin finely and regularly crenulate.

Peraeopods 1 and 2 half the length of the branchial lamellae 1-jointed, narrow, apically setose.

Peraeopods 3-5 lost in all specimens.

Pleon with 1 pair of 2-jointed appendages.

*Length* : Up to 19 mm.

*Colour* : In spirit, dirty pinkish, eyes brown.

*Locality* : Glendower Beacon N.  $\frac{1}{2}$  W., distant 16 miles (near Port Alfred). 66 fathoms. 1 ♂ ; Walker Point NE. by N.  $\frac{1}{2}$  W., distant 7 miles (near Knysna). 47 fathoms. 5 ♂ ♂ (incl. the largest specimen). s.s. "Pieter Faure." 10/9/01 and 11/10/00. (S.A.M. Nos. A90 and A3859.)

*Geogr. Distribution* : Sydney and Singapore (Mayer).

I hope to give a figure of the hand of the adult ♂ on a future occasion, as the specimens came to light only after the plates had been executed.

## TRIBE PHRONIMIDEA.

### FAMILY HYPERIIDAE.

1852. *Hyperidae* Dana, Amer. J. Sci. and Arts, ser. 2, vol. 14, p. 314.  
 1904. *Hyperiidæ* Stebbing, Tr. Linn. Soc. Lond. 2nd ser. Zool. vol. 10, pt. 2, p. 33 (references).  
 1910.     "     id. Gen. Cat. S.A. Crust. p. 475.

### GEN. HYPERIA Latreille.

1823. *Hyperia* Latreille in Desmarest, Dict. Sci. Nat. vol. 28, p. 347.  
 1889.     "     Bovallius, K. Sv. Vet. Ak. Handl. vol. 22, no. 7, p. 129 (references).  
 1901.     "     Vosseler, Ergebn. Plankton Exp. Amphip. pt. 1, p. 56.

### HYPERIA GAUDICHAUDII M. Edw.

1840. *Hyperia gaudichaudii* M. Edwards, Hist. Nat. Crust. vol. 3, p. 77.  
 1849.     "     "     Nicolet in Gay's Hist. fis. y pol. de Chile. Zool. vol. 3.  
 1862. *Lestrigonus*     "     Bate, Cat. Amphip. Crust. Brit. Mus. p. 289, pl. 48, fig. 3.  
 1887. *Hyperia*     "     Bovallius, Bih. K. Sv. Vet. Ak. Handl. vol. 11, no. 16, p. 16.  
 1888.     "     "     Stebbing, Challenger Rep. vol. 29, p. 1394, pl. 169.  
 1889.     "     "     Bovallius, K. Sv. Vet. Ak. Handl. vol. 22, no. 7, p. 175, pl. 10, figs. 18-24.

1907. *Hyperia gaudichaudii* Walker, Nat. Antaret. Exp. vol. 3, p. 7.  
 1912. " " Chilton, Tr. Roy. Soc. Edinb. vol. 48, pt. 2,  
 p. 513.  
 1914. " " Stebbing, Proc. Zool. Soc. Lond. 1914,  
 pt. 2, p. 374.

The Cape specimens agree in all respects with the descriptions and figures of Stebbing and Bovallius.

*Length*: ♂ 14 mm., ♀ 15 mm.; *breadth*: ♂ 2.5 mm., ♀ 5 mm.; antennae of ♂ ca. 8 mm.

*Colour*: When alive transparent pinky-red, with greenish eyes, in spirit reddish.

*Locality*: In large Rhizostomid jelly-fishes washed up on the shores of the West coast of the Cape Peninsula and False Bay (Muizenberg, False Bay. January, 1912. (K.H.B.) ♂♂, ♀♀ and juv.). Angra Pequenas, G.S.W.A. (Dr. J. D. F. Gilchrist.) 4 ♀♀. (S.A.M. Nos. A238 and A2867.)

*Geogr. Distribution*: Chile (M. Edw. and Nicolet); Patagonia, 53° 37' S. 70° 56' W. 10-15 fathoms (Stebbing); McMurdo Sound, 5-10 fathoms (Walker); Falkland Islands, 46° 3' S. 56° 30' W. and 37° 41' N. 29° 25' W. (Chilton); Falkland Islands (Stebbing).

## FAMILY CYSTISOMATIDAE.

1875. *Cystosomatidae* v. Willemoes-Suhm. Tr. Linn. Soc. Lond. ser. 2,  
 vol. 1, pt. 1, p. 24.  
 1886. *Thaumatopsidae* Bovallius, Bih. K. Svenska Vet. Ak. Handl.  
 vol. 11, no. 9, p. 13.  
 1888. *Cystisomatidae* Stebbing, Challeng. Rep. vol. 29, p. 1317.  
 1902. *Thaumatopsidae* Woltereck, Zool. Anz. vol. 26, p. 447.

## GEN. CYSTISOMA Guérin-Ménev.

1842. *Cystisoma* Guérin-Méneville, Rev. Zool. July, 1842, p. 214.  
 1873. *Thaumops* v. Willemoes-Suhm. Proc. Roy. Soc. vol. 21, p. 206.  
 1888. *Cystisoma* Stebbing, l.c. p. 1318 (references).  
 1889. *Thaumatops* Bovallius, K. Svenska Vet. Ak. Handl. vol. 22, no. 7,  
 p. 40.  
 1906. " Tattersall, Fish. Irel. Sci. Invest. 1905, 4, p. 17.  
 1910. " Stebbing, Gen. Cat. S.A. Crust. p. 474.

The genus is widely distributed throughout the world. Stebbing included *C. spinosum* (Fabr.) in the General Catalogue of S.A. Crustacea

on the record of a specimen caught in 33° 23' S. 7° 40' E. Whether this be counted within the South African region, it is interesting to record a specimen from a locality quite near the South African coast, and moreover exhibiting features definite enough to characterise a new species.

CYSTISOMA AFRICANUM n. sp.

Head 30 mm. in length and about the same in breadth, depth indeterminable. Eyes contiguous, but diverging in the posterior quarter. Lower lateral margins with 18 teeth, on the under surface of head near the mouth-parts 6 teeth, of which the 1st (anterior) is the largest and stands somewhat in advance of the rest.

Pearaeon segments 1 and 2 apparently coalesced, the dorsal keel not markedly different from that of *C. spinosum*, but the denticulation on the lateral portions of the posterior margins very inconspicuous. Ventral surface very much as described by Stebbing for *C. spinosum* (1888, l.c. p. 1328), the "genital papilla," however, not so elongate as figured by him (plate 154). The rudimentary branchiae present and very similar in shape.

Both of the 1st antennae are broken, but apparently they would not exceed half the length of the head, there is a slight bend near the base, and the basal portion is stouter, but no suture is visible; present length 8 mm.

Epistome and upper lip similar to that of *C. spinosum*, but upper lip not or scarcely at all asymmetrically cleft.

Lower lip as in *C. spinosum*, but lobes more oblong, the apices roundly subtruncate.

Mandibles very similar to those figured for *C. spinosum*, but trunk with 3 strong teeth on anterior margin, cutting-edge with 10 teeth, secondary cutting-edge with 15 teeth.

First maxilla as figured for *C. spinosum*.

Second maxilla broad at base, a semicircular projection on inner margin with 4 small spinules, beyond this the inner margin narrows rapidly and runs nearly straight to apex, which bears fine acute teeth and small spinules on inner side.

Maxilliped, inner plate with long keel on inner surface, ending some distance before apex, the inner concave distal margin with 2 spinules on either side of middle, outer margin similarly armed, the spinules very small, outer plates with 14 teeth on right and 10 on left (excluding the apical one), all the teeth more or less of the same size, except the basal ones which are smaller.

First gnathopod measuring 9 mm., 1st joint equal to the other 4 together, anterior margin with 6 spines, postero-apical angle of 1st and 2nd joints ending in a spine, 4th and 5th joints as figured by Stebbing for *C. spinosum*.

Second gnathopod measuring 13 mm., 1st joint a little longer than the other 4 together, anterior margin with 6 spines, 4th and 5th joints as figured by Stebbing, but the marginal spines rather more numerous.

First peraeopod measuring 35 mm., 1st joint 16 mm., 10 spines on hind margin, the basal ones inconspicuous, none on the thickened anterior edge, 2nd with 2 teeth on posterior margin, 4th joint a little longer than 3rd, both with 10 spines on hind margin, the posterior ones on the 4th joint inconspicuous, anterior margin setose, the apical tuft the most conspicuous, 5th joint equal to 4th, almost without setae, 6th joint slightly curved, 1 mm. in length.

Second peraeopod incomplete, 1st joint 20 mm. long, ca. 12 spines (the basal ones inconspicuous) on posterior margin, none on thickened anterior edge, 2nd joint with 3 spines on posterior margin, 3rd joint 9 mm. long, with 14 spines on hind margin, 4th joint 11 mm. long, with ca. 20 spines on hind margin, a small one alternating with a larger on 3rd and 4th joints, 5th and 6th joints lost.

Third peraeopod ca. 82 mm. in length, 1st joint 25 mm. long, greatest width 5 mm., anterior apex strongly produced as a triangular projection as long as 2nd joint, anterior and posterior margins with small spines, 3rd joint 14 mm. in length, 4 mm. in width, 4th joint 20 mm. in length and 3 mm. in width, 5th joint 20 mm. in length, 6th joint straight, 1 mm. long.

Fourth peraeopod ca. 68 mm. in length, 1st joint 19 mm. long and 3 mm. wide, anterior and posterior margins with inconspicuous spines, 3rd joint 11 mm. long and 3 mm. wide, 4th joint 16 mm. long and 3 mm. wide, anterior margin of 3rd and 4th spinose, 5th joint 19 mm. long, 6th joint straight.

Fifth peraeopod 36 mm. in length, 1st joint 11 mm. long and 2 mm. wide, 3rd joint 6 mm. long, 4th joint 7 mm. long, anterior margin of 1st, 3rd and 4th spinose, 5th joint 10 mm. long, widening from 1.5 mm. at base to 2.5 at the point where palm meets inner margin, the former straight, the latter slightly concave, meeting at about an angle of 120°, almost completely filled with glands, 6th joint strongly curved, almost meeting middle of palm, finely setose.

Branchial lamellae at bases of 2nd, 3rd and 4th peraeopods, obovate, subequal in size.

Pleopods without special features.

First uropods measuring 20 mm. from base to apex of inner ramus which is fused with peduncle, width of peduncle 5 mm., both margins spinulose, length of inner ramus 5 mm., width at base 4 mm.

Second uropods measuring 15 mm., width 4 mm., inner ramus 4 mm. long and 3 mm. wide, outer ramus 5 mm. long and 1 mm. wide.

*Locality* : Buffalo River (East London) NW. by N., distant 21 miles. 490 fathoms. s.s. "Pieter Faure." 22/4/01. (S.A.M. No. A239.)

The particular features of this species are to be found in the head, the mandibles, third and fourth peraeopods, and the uropods.

It is probable that when more material of all the species has been collected, an exhaustive comparison will lead to alterations in the diagnoses of the species. The other species of the genus are *C. spinosum* (Fabr.) 1775, *C. longipes* (Bov.) 1886, and *C. loveni* (Bov.) 1886. Stebbing in 1888 instituted provisionally *C. parkinsoni* and *C. fabricii*. Bovallius (1889, l.c. p. 45) calls attention to the close agreement in the measurements of the Challenger specimen F (*C. parkinsoni*) and *C. longipes*; the length of the antennae is distinctive, for in all other species they are shorter than the head. The locality of Bovallius' specimen (West coast of Australia) is not far removed from that of Stebbings' specimen (North of Amboina). I feel inclined therefore to reckon Stebbings' specimen F (*parkinsoni*) as a *C. longipes*.

The Challenger specimen G might possibly be a *C. loveni*, but a comparison is difficult. In the key given by Bovallius (l.c. p. 58) the measurements are in fair agreement, but it must be noted that Bovallius gives the length of the antennae of specimen G as "11 mm." instead of 20 mm. (Stebbing:  $\frac{8}{10}$  inch). Leaving specimen G (*fabricii*) out of account, the species may be distinguished as follows :

Peduncle of uropods not twice the length of rami . . . . .	}	Antennae longer than head, 14-18 teeth on lower margin . . . . .	<i>C. longipes</i> (Bov.).
		Antennae shorter than head, 13 teeth on lower margin . . . . .	<i>C. spinosum</i> (Fabr.).
Peduncle at least twice the length of rami . . . . .	}	A row of 6 spines on either side of mouth-parts . . . . .	<i>C. africanum</i> n. sp.
		Only 2 spines on either side of mouth-parts . . . . .	<i>C. loveni</i> (Bov.).

Unfortunately I have been unable to consult Woltreck's paper on the "Valdivia" material (1902, Zool. Anz. xxvi. p. 447).

## FAMILY LANCEOLIDAE.

1887. *Lanceolidae* Bovallius, Bih. Sv. Vet. Ak. Handl. vol. 11, no. 16, p. 5.  
 1888. „ Stebbing, Challeng. Rep. vol. 29, p. 1301.  
 1904. „ id. Tr. Linn. Soc. Lond. ser. 2, vol. 10, pt. 2, p. 28.  
 1905. „ Woltereck, Zool. Anz. vol. 29, p. 413.  
 1909. „ id. Bull. Mus. Comp. Zool. Harv. vol. 52, no. 9, p. 156.  
 1907. „ id. ibid. vol. 31, p. 129.

## GEN. SCYPHOLANCEOLA Woltereck.

1905. *Scypholanceola* Woltereck, l.c. p. 415.  
 1909. „ id. l.c. p. 161.

## SCYPHOLANCEOLA VANHOEFFENI Woltereck.

1909. *Scypholanceola vanhoeffeni* Woltereck, l.c. p. 167, pl. 7, figs. 24a (♂), 24b (♀).

Body dorsally rounded, not keeled. Rostrum triangular, base broader than length, not as long as rest of head, the "ocular cups" and "eye band" as figured by Woltereck. 1st and 4th peraeon segments subequal and shorter than 2nd and 3rd, which are also subequal. Side-plates 1-5 anteriorly narrowing to a point, scarcely reaching the posterior margins of their segments, 6 and 7 not reaching the anterior margins of their segments, posterior portion somewhat produced, subacute. Pleura neither spinose nor setose, rounded below.

Telson not quite reaching to  $\frac{2}{3}$  length of peduncle of 3rd uropod, twice as long as its basal width.

First antenna as in *Lanceola aestiva* Stebbing 1888, but not serrate, reaching to end of 4th (penultimate) joint of 2nd antenna.

Second antenna, 2nd joint with prominent gland-cone as long as the joint, 3rd thrice 2nd, 4th twice 3rd, 5th lost on both sides.

Epistome as broad as long, upper lip broader than long, with very deep and fairly wide cleft, the lobes apically rounded.

Lower lip as in *Lanceola*.

Mandibles, anterior margin of trunk with a strong triangular projection or tooth, as figured for *L. aestiva*, 1st joint of palp a trifle broader than long, 2nd equal to length of trunk, 3rd  $\frac{2}{3}$  length of 2nd, both joints setose, much the same as in *L. aestiva*.

First maxilla as figured for *L. pacifica* Stebbing, but inner margin

of inner plate scarcely concave, outer plate very much broader, ovate, broadest before the middle, thence tapering to a rounded apex with 3-4 spinules, 6-7 spinules on inner distal margin and many smaller ones on outer margin.

Second maxilla, apices of lobes strongly setose with 9 strong spines on outer plate and 11 on inner, arranged irregularly.

Maxilliped as figured for *L. aestiva*, but the apices of the lobes of inner plate blunter.

First and second gnathopods as in *L. aestiva*.

First and second pereopods 18 mm. long, 2nd joint longest, 5 mm., 4th and 5th each 4 mm., 6th 4.5 mm.

Third pereopod 20 mm. long, 2nd joint 7 mm., 4th 5.5 mm., 5th 4 mm., 6th 3.5 mm.

Fourth pereopod, 22.5 mm. long, 2nd joint 6.5 mm., 4th 5 mm., 5th 4 mm., 6th 7 mm.

Fifth pereopod, 11 mm. long, 2nd joint 4 mm., 4th and 5th each 2 mm., 6th 3 mm.

The first gnathopod very feebly spinulose, the 2nd and all the pereopods neither spinulose nor setose.

Branchial lamella of 2nd gnathopod and 1st pereopod very small, 1 mm. long; that of remaining pereopods 4-5 mm. long, oval, non-setose.

Uropods all extending as far as one another, the peduncle 1st, 2nd and 3rd being respectively 5, 4 and 3 mm. long, the rami of all about the same length, narrow-lanceolate, inner ramus of 3rd the broadest.

*Length*: Ca. 27 mm. (from end of rostrum to end of telson).

*Colour*: In spirit, transparent white, the internal lining of the peraeon purplish-brown.

*Locality*: Cape Point NE. by E., distant 36 miles. 650 fathoms. 1 ♂. s.s. "Pieter Faure." 15/7/03. By tow-net on beam of trawl. (S.A.M. No. A2733.)

*Geogr. Distribution*: Antarctic Ocean. 10/3/03. "Gauss" Expedition; Indian Ocean, Sta. 239 (=4°-6° S., 48°-41° E.). "Valdivia" Expedition.

## FAMILY PHROSINIDÆ.

1888. *Phrosinidae* Stebbing, Challenger Rep. vol. 29, p. 1423 (references).

1910. „ id. Gen. Cat. S.A. Crust. p. 476.

## GEN. PHROSINA Risso.

1822. *Phrosina* Risso, J. de Phys. Chim. Hist. Nat. vol. 94, p. 244.  
 1889. „ Bovallius, K. Sv. Vet. Ak. Handl. vol. 22, no. 7,  
 p. 421.

## PHROSINA SEMILUNATA Risso.

1822. *Phrosina semilunata* Risso, l.c. p. 245.  
 1888. „ „ Stebbing, l.c. p. 1425, pl. 176 (references  
 and synonymy).  
 1889. „ „ Bovallius, l.c. p. 426, pl. 18, figs. 3-30  
 (references and synonymy).  
 1900. „ „ Chevreux, Res. Camp Sci. Monaco, fasc. 16,  
 p. 147.  
 1901. „ „ Vosseler, Ergebn. Plankton Exp. Amphip.  
 pt. 1, p. 89, pl. 8, figs. 18-20.  
 1904. „ „ Walker in Herdman's Ceylon Pearl Fish.  
 Suppl. Rep. 17, p. 230.  
 1909. „ „ Walker, Tr. Linn. Soc. Lond. vol. 13,  
 pt. 1, p. 52.  
 1910. „ „ Stebbing, l.c. p. 477.  
 1912. „ „ Pearse, Proc. U.S. Nat. Mus. vol. 43  
 [1913], p. 378.  
 1913. „ „ Stewart, Ann. Mag. Nat. Hist. ser. 8,  
 vol. 12, p. 257.

The single specimen taken by the s.s. "Pieter Faure" represents the form *P. nicetensis* as figured by Bate (1862, Cat. Amphip. Crust. Brit. Mus. p. 320, pl. 51, fig. 6), with one or two minor differences.

Third and fourth pleon segments with median tooth on posterior margin.

Pleura of 1st to 3rd segments with the postero-inferior angles acute.

First antenna, 1st joint as broad as long, 2nd joint 3 times length of 1st.

First peraeopod, 4th joint  $1\frac{1}{2}$  times as long as broad, inferior margin equal to palm, with strong spine at their junction, palm with 5 denticles, 5th and 6th joints together longer than palm.

Second peraeopod, 4th joint ovate, a long stout spine springing almost from base, the inferior (posterior) margin being very short, palm very oblique, with 6 denticles, the 2 nearest the hinge of finger smaller than the others, 5th and 6th joints together only a little longer than palm.

Third peraeopod, 1st joint not more than  $1\frac{1}{2}$  times as long as broad, 4th joint ovate, with 6 sharp teeth on anterior margin, the 2nd and 6th teeth smaller than the others.

Fourth peraeopod spiniform posterior apex of 3rd joint not extending quite half way along posterior margin of 4th, 4th joint with 4 teeth on palm, the 2nd and 4th teeth smaller than the other two.

Fifth peraeopod intermediate between that figured for *P. nicetensis* by Bate and that for *P. semilunata* by Stebbing (1888, l.c. pl. 176), posterior margin very convex basally, then narrowing rapidly to the truncate and slightly emarginate apex, anterior margin nearly straight.

*Length*: 18 mm. (to end of uropods), 3rd peraeopod 16 mm.

*Colour*: In spirit colourless, transparent, the muscles and ommatidia of the eyes brownish.

*Locality*: Buffalo River NW. by N., distant 21 miles (off East London). 490 fathoms. s.s. "Pieter Faure." 22/4/01. 1 ♀ with ova. (S.A.M. No. A104.)

*Geogr. Distribution*: Mediterranean (Risso and M. Edwards); Cape of Good Hope (Paris Museum); North and South Atlantic, 0-ca. 800 fathoms (Challenger and Plankton Exp.); Indian and Pacific Oceans (Bovallius); Indian Ocean, between Socotra and Ceylon (Walker); Azores (Chevreux); Gulf of Mexico (Pearse); near Cape of Good Hope (Stewart); Chagos Archipelago, 0-1200 fathoms (Walker).

## FAMILY PRONOIDAE.

1879. *Pronoidae* Claus, Zool. Inst. Univ. Wien. vol. 2, pp. 149, 168.  
 1910.     "     Stebbing, Gen. Cat. S.A. Crust. p. 479.

### GEN. PARAPRONOË Claus.

1879. *Parapronoë* Claus, Die Gatt. u. Art. d. Platysceliden, pp. 23, 29.  
 1886.     "     Gerstaecker in Bronn's Klass. u. Ordn. vol. 5, pt. 2,  
                   p. 485.  
 1887.     "     Bovallius, Bih. K. Sv. Vet. Ak. Handl. vol. 11,  
                   no. 16, p. 42.  
 1887.     "     Claus, Die Platysceliden, pp. 48, 53.  
 1888.     "     Stebbing, Challenger Rep. vol. 29, p. 1521.

## PARAPRONOË CLAUSI Stebbing.

1888. *Parapronoë clausi* Stebbing, l.c. p. 1526, pl. 190.

A few small differences are observable between the Australian and South African specimens :

First gnathopod, 5th joint not longer than 4th, more as in *P. crustulum* Claus (see figure by Stebbing, l.c. pl. 193A).

Second gnathopod, the inner margin of the process of 4th joint even more convex than in Stebbing's figure and more strongly dentate, the inner margin of the 5th joint on the contrary less convex.

Telson in the female comparatively broader, about  $1\frac{1}{2}$  times as long as basal breadth, apex reaching the apex of the inner ramus of 3rd uropod. In the smaller (? ♂) specimen the telson like the typical form.

The mouth parts were not examined since they seemed firmly united into a solid mass, perhaps due in some manner to the method of conservation.

*Length* : ♀ 25 mm., (?) ♂ 17 mm., embryos from brood-pouch 1 mm.

*Colour* : In spirit, yellowish-brown, without spots of any colour.

*Locality* : East London NW.  $\frac{1}{2}$  N., distant 20 miles. 400 fathoms. s.s. "Pieter Faure." 17/4/01. 1 ♀ and 1 (?) ♂. (S.A.M. No. A108.)

*Geogr. Distribution* : South of Australia,  $39^{\circ} 45'S.$ ,  $140^{\circ} 40'E.$  (Stebbing) ; South Pacific (Stebbing). Surface.

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## EXPLANATION OF PLATES.

## PLATE XXVI.

FIG.

1. *Trischizostoma paucispinosum* n. sp. 1st gnathopod, with palm further enlarged.
2. *Paravalettia chelata* n. g. et sp. 1st gnathopod, with hand further enlarged.
3. " " " " 2nd gnathopod.
4. *Cyphocaris faurei* n. sp. 4th and 5th side-plates with 2nd joints of 3rd and 4th pereopods.
5. *Stegocephaloides attingens* n. sp. 5th pereopod.
6. *Ampelisca miops* n. sp. 5th pereopod.
7. " *natalensis* n. sp. 5th pereopod.
8. *Triodos insignis* n. g. et sp. Lateral view of 4th and 5th pleon segments with telson and 3rd uropod.
9. " " " " Telson.
10. " " " " 5th pereopod.
11. *Gitanopsis pusilla* n. sp. Telson and 3rd uropod.
12. " " " " 2nd gnathopod, with portion of palm further enlarged.
13. *Peltocoxa australis* n. sp. 2nd gnathopod, with portions of palm and inner margin of finger further enlarged.
14. *Leucothoe dolichoceras* n. sp. 2nd gnathopod ♂, with lower portion of palm further enlarged.
15. *Stenothoe dolichopous* n. sp. 4th side-plate of right side.
16. " " " " 1st gnathopod.
17. " " " " 2nd gnathopod.
18. *Plioplateia triquetra* n. g. et sp. Lateral view of ♀, with antennae but without appendages of peraeon and pleon.
19. " " " " 1st maxilla, with one spine further enlarged.
20. " " " " Maxilliped, with portion of 4th joint of palp further enlarged.
21. " " " " 1st pleopod.
22. " " " " 3rd pleopod.
23. " " " " 3rd uropod.
24. " " " " 6th and 7th joints of 1st gnathopod.

## FIG.

25. *Temnophlias capensis* n. g. et sp. Dorsal view of ♂, with pleon flexed, and without appendages of peraeon and pleon.
26. " " " Lateral view of 2nd pleon segment of ♂.
27. " " " Maxilliped, with apex of inner plate further enlarged.
28. " " " 1st and 2nd maxillae, with apex of 2nd and one spine from 1st further enlarged.
29. " " " 2nd peraeopod ♂.
30. " " " Telson.
31. " " " 3rd uropod ♀.
32. " " " 2nd uropod ♀.
33. " " " 1st uropod ♂, with portion of inner margin of ramus further enlarged.
- 34, 35. " " " 2nd uropod ♂, viewed from above and from the outside respectively.

## PLATE XXVII.

## FIG.

1. *Bathymedon palpalis* n. sp. Telson.
2. " " " Mandibular palp.
3. " " " 1st gnathopod.
4. *Halicreion* (?) *ovalitelson* n. sp. Telson.
5. *Epimeria semiarmata* n. sp. 4th and 5th side-plates of right side.
6. " *longispinosa* n. sp. 4th and 5th side-plates of right side; a portion of the surface sculpturing has been drawn in and portion of this further enlarged.
7. *Cleonardopsis carinata* n. g. et sp. 2nd and 3rd pleon segments.
8. " " " 5th and 6th side-plates of right side.
9. " " " Telson.
10. *Rhachotropis paeneglaber* n. sp. 2nd-4th pleon segments.
11. *Maera hamigera* (Haswell). 6th and 7th joints of 2nd gnathopod of immature specimen.
12. " " " 6th and 7th joints of 2nd gnathopod of immature adult specimen.
13. *Elasmopus boeckii* (Haswell). Telson.
14. " " " 6th and 7th joints of 2nd gnathopod.
15. *Elasmopus levis* n. sp. 6th and 7th joints of 2nd gnathopod.
16. *Eriopisa capensis* n. sp. Mandibular palp.
17. " " " Telson.
18. " " " 5th, 6th, and 7th joints of 2nd gnathopod.
19. " " " 3rd uropod.
20. *Gammarus capensis* n. s.p. Telson.
21. " " " Gland-cone on 2nd antenna.
22. " " var. *a.* Telson.
23. " *nigroculus* n. sp. Telson.
24. " *crassicornis* n. sp. Telson.
25. " " " 2nd antenna ♂.

## FIG.

26. *Gammarus auricularius* n. sp. 2nd, 3rd, and 4th joints of second antenna ♂.  
 27. " " " 4th-7th joints of 1st pereopod ♂.  
 28. " " " Telson.  
 29. *Talorchestia quadrispinosa* n. sp. 6th and 7th joints of 2nd gnathopod ♂.  
 30. " " " 2nd joint of 4th pereopod ♂.  
 31. " " " 2nd joint of 5th pereopod ♂.  
 32. " " " abnormal 2nd gnathopod of ♂ (4th-7th joints).  
 33. " *australis* n. sp. 4th-7th joints of 1st gnathopod ♂.  
 34. " " " 4th-7th joints of 2nd gnathopod ♂.  
 35. " *ancheidos* n. sp. 4th-7th joints of 1st gnathopod ♂.  
 36. " " " 4th-7th joints of 2nd gnathopod ♂.  
 37. *Hyale saldanha* Chilton. 5th pereopod.  
 38. *Chiltonia capensis* n. sp. 4th joint of palp of maxilliped.  
 39. " " " 1st gnathopod.  
 40. " " " Telson and 3rd uropods.

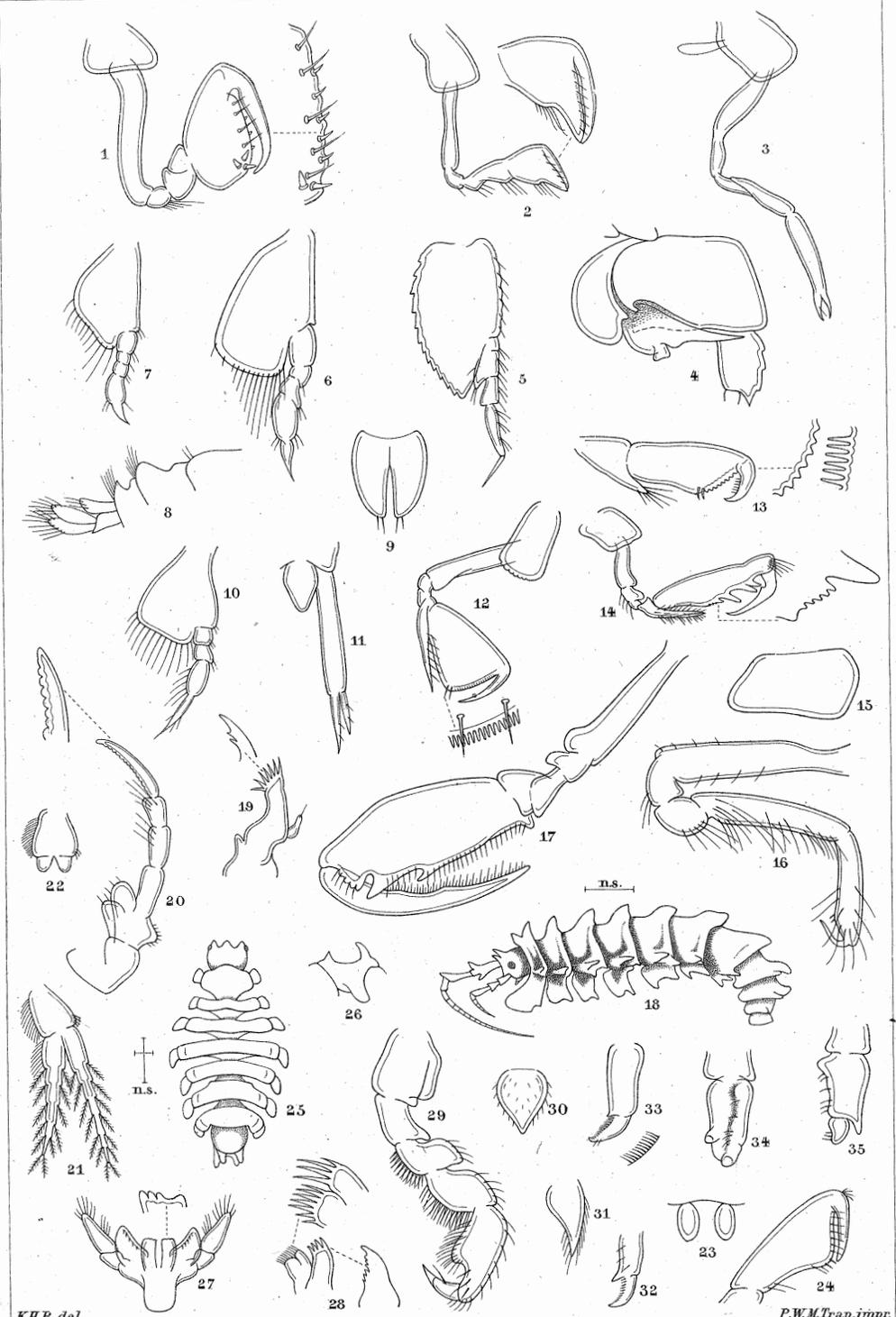
## PLATE XXVIII.

## FIG.

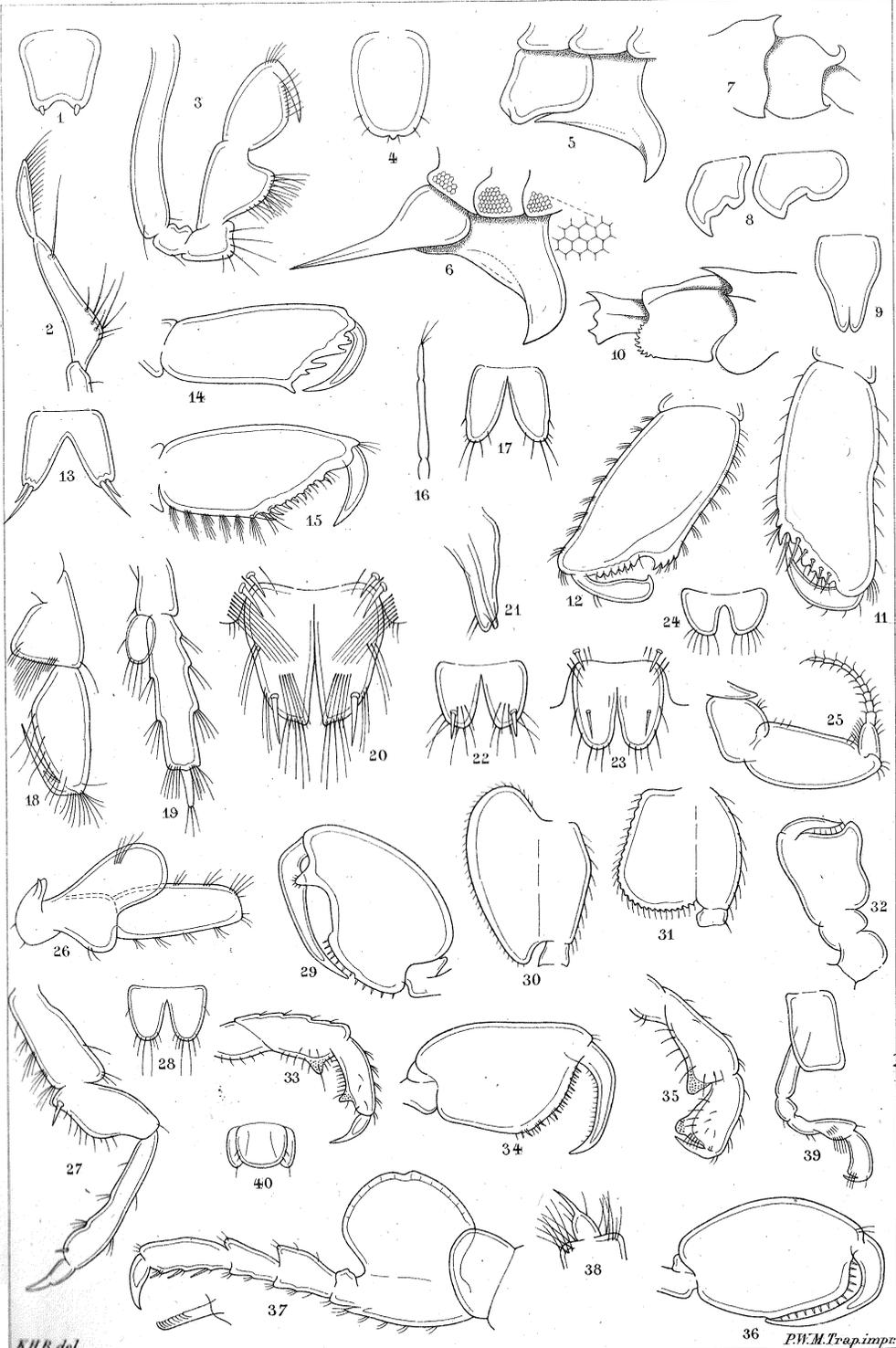
1. *Parorchestia dassenensis* n. sp. 4th-7th joints of 1st gnathopod ♂.  
 2. " " " 4th to 7th joints of 2nd gnathopod ♂.  
 3. *Hyale diastoma* n. sp. 4th-7th joints of 2nd gnathopod ♀.  
 4. " *inyacka* n. sp. 5th pereopod, with 7th and end of 6th joint further enlarged.  
 5. *Lembos hypacanthus* n. sp. 6th and 7th joints of 1st gnathopod ♂, with defining angle of palm further enlarged.  
 6. " " " 2nd joint of 2nd gnathopod ♂.  
 7. *Lemboides acanthiger* n. sp. 6th and 7th joints of 1st gnathopod ♂.  
 8. " " " 6th and 7th joints of 2nd gnathopod ♂.  
 9. " *crenatipalma* n. sp. 1st gnathopod ♂, with palm and finger further enlarged.  
 10. " " " 2nd gnathopod ♂, with palm and finger further enlarged.  
 11. *Eurystheus afer* (Stebbing). 6th and 7th joints of 2nd gnathopod ♂.  
 12. " *imminens* n. sp. 6th and 7th joints of 2nd gnathopod ♂, with middle tooth of palm further enlarged.  
 13. " *semidentatus* n. sp. 6th and 7th joints of 2nd gnathopod ♂.  
 14. " " " Palm and finger of 2nd gnathopod ♀.  
 15. *Macropisthopous stebbingi* n. g. et sp. 5th-7th joints of 1st gnathopod, with 7th and apex of 6th joint further enlarged.  
 16. " " " 5th pereopod ♂, with portion of surface sculpturing further enlarged.  
 17. " " " Telson and 3rd uropod.

## FIG.

18. *Ischyrocerus carinatus* n. sp. 1st and 2nd peraeon segments, side-plates and gnathopods, with palmar tooth of 2nd gnathopod further enlarged.
19. *Isaeopsis tenax* n. g. et sp. 6th and 7th joints of 1st peraeopod.
20. " " " 5th peraeopod, with finger further enlarged.
21. " " " Telson and 3rd uropods, with outer ramus further enlarged.
22. *Laetmatophilus tridens* n. sp. 2nd gnathopod ♂.
23. *Podocerus palinuri* n. sp. Head and 1st and 2nd peraeon segments.
24. " *africanus* n. sp. 2nd joint of 1st peraeopod.
25. " " " 2nd joint of 5th peraeopod.
26. *Photis longicaudata* (B. & W.) 6th and 7th joints of 2nd gnathopod of ♂, view of inner surface.
27. *Stomacontion capense* n. sp. 1st side-plate.
28. " " " 1st antenna.
29. *Stegocephaloides australis* n. sp. 5th peraeopod.
30. *Ampelisca palmata* n. sp. 6th and 7th joints of 1st gnathopod, with palm further magnified, the setae omitted.
31. " " " 5th peraeopod.
32. *Melita fresnelii* (Audouin). 1st-6th segments of pleon, the median tooth shown in segments 1-4.
33. *Elasmopus pecteniscus* (Bate). Lower hind margin of 2nd joint of 4th peraeopod.
34. *Ampithoe brevipes* (Dana). 6th and 7th joints of 2nd gnathopod, with seta from palm further enlarged.
35. *Caprellina spiniger* n. sp. Head and peraeon segments 1-4 of ♀, with dorsal tubercles of segments 3 and 4 seen from behind.



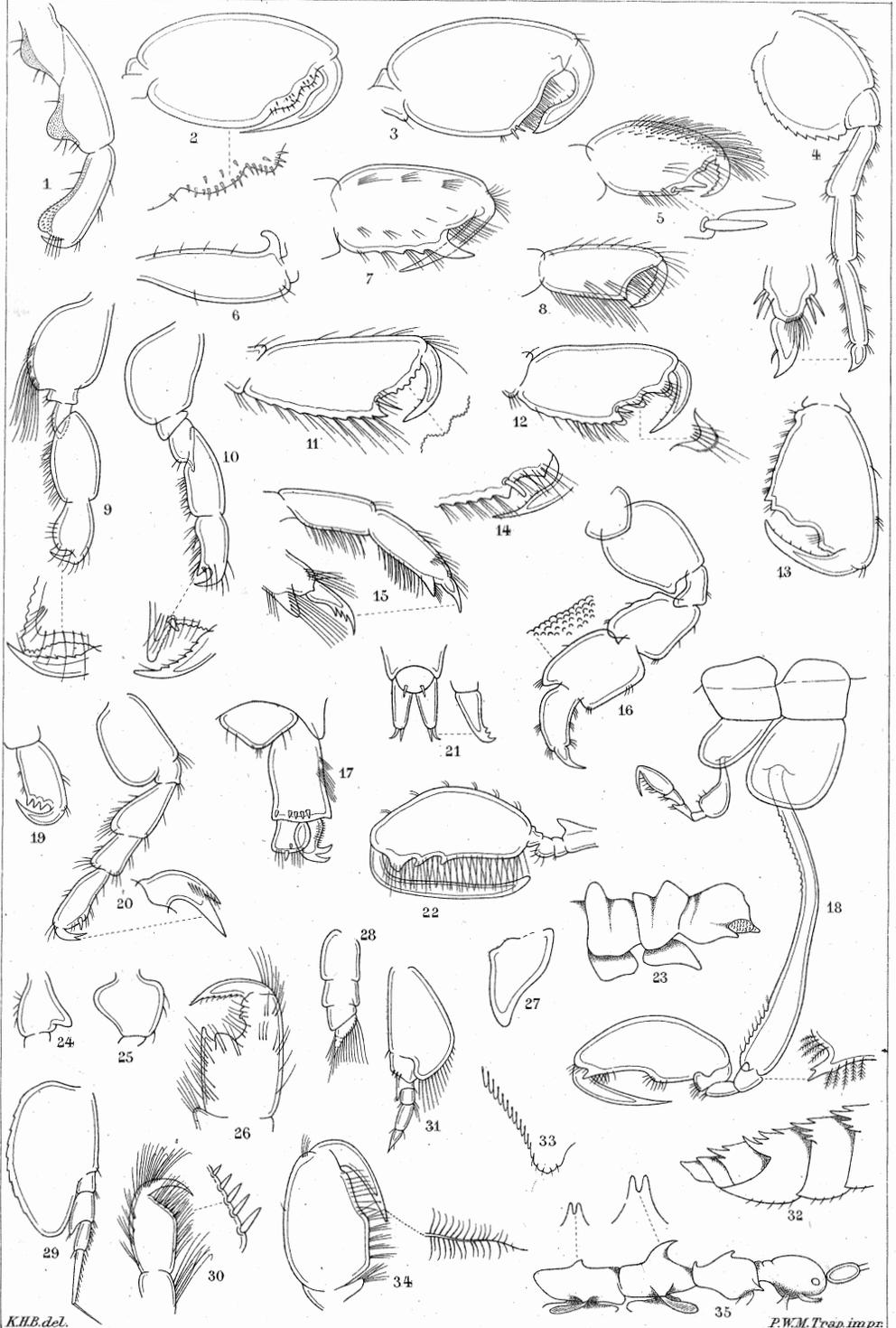
SOUTH AFRICAN AMPHIPODA.



KHB del.

P.W.M. Trapimpc

SOUTH AFRICAN AMPHIPODA.



K.H.B. del.

P.W.M. Trap. imp. pr.

SOUTH AFRICAN AMPHIPODA.