

ZOOLOGICAL RESULTS

BASED ON MATERIAL FROM

NEW BRITAIN, NEW GUINEA, LOYALTY
ISLANDS AND ELSEWHERE,

COLLECTED

DURING THE YEARS 1895, 1896 AND 1897,

BY

ARTHUR WILLEY, D.Sc. LOND., HON. M.A. CANTAB.

LECTURER ON BIOLOGY IN GUY'S HOSPITAL, LONDON.

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ON THE STOMATOPODA AND MACRURA BROUGHT BY
DR WILLEY FROM THE SOUTH SEAS.

BY L. A. BORRADAILE, M.A.,
Lecturer at Selwyn College, Cambridge.

WITH PLATES XXXVI.—XXXIX.

DR WILLEY'S collection of Stomatopoda and Macrura contains in all 82 species, of which 20, rather less than a quarter, appear to be new to science. Notes on some of these, short lists of references to others, and brief diagnoses of the new species in the families Squillidae and Pontoniidae will be found in papers published by the Author in the *Proceedings of the Zoological Society*¹ and in the *Annals and Magazine of Natural History*².

The specimens were collected in New Britain, the eastern archipelago of British New Guinea, New Caledonia and the Loyalty Islands, and the New Hebrides.

In New Britain the following forms were obtained:—

1. *Protosquilla cerebralis* Brooks [Pigeon Island].
2. *Gonodactylus chiragra* (Fabr.) [Talili Bay, Ralun].
var. *anancyrus* nov. [Talili Bay].
3. *Odontodactylus scyllarus* (Linn.).
4. *Pseudosquilla ciliata* (Fabr.) [Blanche Bay].
5. *Lysiosquilla biminiensis* Bigelow, var. *pacificus* nov. [Blanche Bay].
6. *Penaeus fissurus* Bate [Talili Bay].
7. *Penaeus canaliculatus* (Oliv.).
8. *Stenopus hispidus* (Oliv.) [Blanche Bay].
9. *Atya moluccensis* de Haan [near Cape Gazelle].
10. *Periclimenes parvus* Borradaile [Blanche Bay].
11. *Periclimenes tenuipes* Borradaile [Ralun].
12. *Pontonia ascidicola* Borradaile [Blanche Bay].
13. *Palaemon lar* Fabr. [near Cape Gazelle].
14. *Palaemon weberi* de Man [near Schultze Point].
15. *Palaemonopsis willeyi* sp. n. [Ralun].

¹ P. Z. S., 1898, pp. 32, 457, and 1001.

² Ann. Mag. N. H. (7) II. p. 377 (1898).

16. *Pandalus (Parapandalus) serratifrons* sp. n. [Blanche Bay].
17. *Pandalus (Parapandalus) tenuipes* sp. n. [Blanche Bay].
18. *Pandalus (Parapandalus) longirostris* sp. n. [Blanche Bay].
19. *Heterocarpus ensifer* A. M.-Edw. [Blanche Bay].
20. *Synalpheus biunguiculatus* Stimps. [Blanche Bay].
21. *Alpheus obesomanus* Dana [Blanche Bay].
22. *Alpheus laevis* Randall [Blanche Bay].
23. *Panulirus demani* nom. nov. [Blanche Bay].
24. *Callianassa novae-britanniae* sp. n.
25. *Eiconaxius taliliensis* sp. n. [Talili Bay].
26. *Galathea elegans* Adams and White.
27. *Galathea grandirostris* Stimps. [Talili Bay].
28. *Munida scabra* Henderson [Talili Bay].
var. *longimanus* nov. [Talili Bay].
29. *Munida japonica* Stimps. [Talili Bay].
30. *Munida semoni* Ortm. [Talili Bay].
31. *Pagurus deformis* H. M.-Edw. [Pigeon Isl.].
32. *Pagurus asper* de Haan [Blanche Bay].
33. *Pagurus gemmatus* H. M.-Edw.
34. *Coenobita compressus* H. M.-Edw. [Palakuvur].
35. *Remipes admirabilis* Thallw. [Blanche Bay].
36. *Remipes ovalis* A. M.-Edw.
37. *Remipes celaeno* de Man [Blanche Bay].
38. *Albunea microps* Miers [Blanche Bay].

In New Guinea:—

1. *Periclimenes parasiticus* Borradaile [Milne Bay].
2. *Anchistus miersi* (de Man) [D'Entrecasteaux Group].
3. *Anchistus biunguiculatus* Borradaile [D'Entrecasteaux Group].
4. *Conchodytes meleagrinae* Peters [Conflict Group. Engineer Group].
5. *Pandalus (Parapandalus) tenuipes* sp. n. [D'Entrecasteaux Group].
6. *Saron marmoratus* (Oliv.) [Lousiades].
7. *Alpheus aglaopheniae* sp. n. [Engineer Group].
8. *Callianidea typa* H. M.-Edw. [Sariba].
9. *Petrolisthes hastatus* Stimps. [Sariba].
10. *Petrolisthes lamarcki* (Leach) [Sariba].
var. *fimbriatus* Borradaile [Sariba].
11. *Pagurus deformis* H. M.-Edw. [Conflict Group].
12. *Pagurus setifer* H. M.-Edw. [Conflict Group].
13. *Pagurus euopsis* Dana [Conflict Group].

In New Caledonia and the Loyalty Islands:—

1. *Protosquilla cerebralis* Brooks [Lifu].
2. *Protosquilla trispinosa* Dana [Lifu].

3. *Gonodactylus chiragra* (Fabr.) [Lifu].
var. *smithi* Pocock [Lifu].
var. *anancyrus* nov. [Lifu].
4. *Squilla multituberculata* Borradaile [Lifu].
5. *Pseudosquilla ciliata* (Fabr.) [Uvea].
6. *Periclimenes spinigerus* (Ortm.) [Lifu].
7. *Periclimenes lifuensis* Borradaile [Lifu].
8. *Coralliocaris inaequalis* Ortm. [Lifu].
9. *Leander pacificus* Stimps. [Isle of Pines].
10. *Rhynchocinetes typus* H. M.-Edw. [Lifu].
11. *Parhippolyte uveae* sp. n. [Uvea].
12. *Alpheinus tridens* sp. n. [Lifu].
13. *Synalpheus demani* nom. nov. [Lifu].
14. *Synalpheus neomeris* (de Man) [Lifu].
15. *Alpheus laevis* Randall [Lifu].
16. *Alpheus gracilidigitus* Miers, var. [Isle of Pines].
17. *Alpheus diadema* Dana [Lifu].
18. *Alpheus obesomanus* Dana [Lifu].
19. *Alpheus frontalis* Say [Lifu].
20. *Panulirus bispinosus* sp. n. [Lifu].
21. *Panulirus penicillatus* (Oliv.) [Lifu].
22. *Paribacus antarcticus* (Rumph) [Lifu].
23. *Scyllarus sieboldi* de Haan [Lifu].
24. *Galathea australiensis* Stimps. [Lifu].
25. *Galathea affinis* Ortm. [Lifu].
26. *Galathea spinimanus* sp. n. [Lifu].
27. *Porcellana sollasi* Whitelegge [Lifu].
28. *Petrolisthes bispinosus* sp. n. [Lifu].
29. *Petrolisthes lamarcki*, var. *fimbriatus* Borradaile [Lifu].
30. *Pachycheles sculptus* (H. M.-Edw.) [Lifu].
var. *tuberculatus* nov. [Lifu].
31. *Pachycheles lifuensis* sp. n. [Lifu].
32. *Pagurus asper* de Haan [Lifu].
33. *Pagurus deformis* H. M.-Edw. [Lifu].
34. *Pagurus setifer* H. M.-Edw. [Lifu].
35. *Pagurus gemmatus* H. M.-Edw. [Lifu].
36. *Pagurus punctulatus* Oliv. [Lifu].
37. *Pagurus strigatus* (Herbst) [Lifu].
38. *Coenobita clypeatus* (Herbst) [Lifu].
39. *Coenobita perlatus* H. M.-Edw. [Lifu].
40. *Coenobita spinosus* H. M.-Edw. [Lifu].
41. *Coenobita compressus* H. M.-Edw. [Lifu].
42. *Coenobita rugosus* H. M.-Edw. [Lifu].
43. *Birgus latro* (Linn.) [Lifu].

44. *Remipes testudinarius* Latr. [Lifu].
45. *Remipes pacificus* Dana [Isle of Pines, Lifu].
46. *Remipes celaeno* de Man [Isle of Pines].

In the New Hebrides:—

Coenobita compressus H. M.-Edw.

The macruran fauna of the various localities, so far as it is revealed by the above lists, will be seen to be essentially similar throughout. Further, with one exception (*Lysiosquilla biminiensis*), all the known species are already recorded from the Indo-pacific region.

It is interesting to notice that in several instances species on our roll are also represented in the West Indies, either by forms so far as is known identical with those from the Pacific, or by slightly different species or varieties.

The following is a list of such forms:—

<i>Indopacific form.</i>	<i>West Indian representative.</i>
1. <i>Gonodactylus chiragra</i> (Fabr.)	<i>G. oerstedii</i> Hansen ¹ .
2. <i>Pseudosquilla ciliata</i> (Fabr.)	<i>P. ciliata</i> , var. <i>occidentalis</i> nom. nov. ² .
3. <i>Lysiosquilla biminiensis</i> , var. <i>pacificus</i> nov.	<i>L. biminiensis</i> Bigelow.
4. <i>Stenopus hispidus</i> (Oliv.)	<i>S. hispidus</i> .
5. <i>Heterocarpus ensifer</i> A. M.-Edw.	<i>H. ensifer</i> .
6. <i>Panulirus penicillatus</i> (Oliv.)	<i>P. guttatus</i> (Fabr.) ³ .
7. <i>Petrolisthes lamarcki</i> (Leach)	<i>P. lamarcki</i> , var. <i>asiaticus</i> (Leach) ⁴ .

The following species in Dr Willey's collection occur also in sub-tropical Australia:—

1. *Protosquilla trispinosa* (Dana) [Swan River⁵]
2. *Gonodactylus chiragra* (Fabr.) [Swan River⁵].
3. *Penaeus canaliculatus* (Oliv.) [Port Jackson^{5, 6}].
4. *Alpheus laevis* Randall [Port Jackson⁵].
5. *Galathea australiensis* Stimps. [Port Jackson^{5, 6}].
6. *Pagurus deformis* H. M.-Edw. [Port Jackson⁶].
7. *Coenobita rugosus* H. M.-Edw. [Sydney⁵].
8. ? *Coenobita spinosus* H. M.-Edw. [Sydney⁵].

The following in New Zealand⁷:—

1. *Protosquilla trispinosa* (Dana).
2. *Palaemon lar* Fabr.
3. *Rhynchocinetes typus* H. M.-Edw.

¹ See below, under *G. chiragra*.

² See below, under *P. ciliata*.

³ Ortmann, Zool. Jahrb. vi. Syst. p. 29.

⁴ See P. Z. S., 1898, pp. 464—467. Var. *asiaticus* is also Indopacific.

⁵ Haswell, Cat. Austral. Crust., Sydney 1882.

⁶ Whitelegge, J. R. Soc. N.S.W. xxiii. pp. 224, 232.

⁷ Miers, Cat. N.Z. Crust. pp. 77, 87, 90.

Turning now to a systematic survey of the material, we may notice at the outset the relative extent to which the various groups of Macrura and Stomatopoda are represented.

There are seven species of Stomatopoda, belonging to six out of the nine genera of that order. Of these species one, a *Squilla*, is new. In the Macrura, the Penaeidea are represented by two species of *Penaeus*, the Stenopidea by one species of *Stenopus*, the Caridea by 32 species from 17 genera, the Loricata by 5 species from 3 genera, the Thalassinidea by three species from as many genera, and the Anomala by 32 species from 9 genera. The 19 new species in this suborder are distributed as follows: in the Caridea there are 13, in the Thalassinidea 2, in the Loricata one, and in the Anomala three.

Of the 38 genera in the whole collection, the most numerous represented is *Alpheus*, with six species; *Periclimenes*, on the other hand, has both absolutely and relatively¹ the largest number of new species (four out of five).

Conspicuous by their absence are the Astacidea and the Crangoninae.

SUB-CLASS. THORACOSTRACA.

ORDER. STOMATOPODA.

FAMILY. SQUILLIDAE.

GENUS. *Protosquilla*, Brooks, 1886.

1. *Protosquilla cerebralis* Brooks, 1886.

Protosquilla cerebralis Brooks, 'Challenger' Stomatopoda, p. 72, Pl. XIV. Figs. 2 and 3, XVI. Figs. 2 and 3 (1886); Borradaile, P. Z. S. 1898, Pl. V. Fig. 6a.

Brooks's specimens of *P. cerebralis* were all females. Fortunately, however, Dr Willey's collection contains a male specimen, so that it has been possible [P. Z. S. *loc. cit.*] to figure for this species the peculiar structure on the endopodite of the first abdominal appendage of male Stomatopoda.

The outer leaf of the last joint of this organ is smaller than the inner, on which it is borne as a lobe, and from which it is not sundered by a suture. The fixed limb of the pincers is hook-shaped, while the movable limb is bent sharply and of a shape something like that of a boomerang. The first joint is produced on the outside at the free end.

Two ♀ from Sandal Bay, Lifu, Loyalty Islands. One ♂ from Pigeon Island, New Britain.

¹ With the exception, of course, of the new genera *Palaemonopsis*, *Parhippolyte*, and *Alpheinus*, each founded for a single new species.

2. *Protosquilla trispinosa* (Dana), 1852.

Gonodactylus trispinosus, White, List Crust. Brit. Mus. p. 75 (1847) nom. nud.; Dana, Zool. U. S. Expl. Expd., Crust. I. p. 623 (1852); Miers, Cat. N. Zeal. Crust., p. 90; Ann. Mag. N. H. (5) v. p. 121, Pl. III. Fig. 10 (1880); Haswell, Cat. Austral. Crust., p. 211 (1882).

Protosquilla trispinosa Brooks, Challenger Stomatopoda, p. 71 (1886); Borradaile, P. Z. S., 1898, p. 34, Pl. V. Figs. 1, 1a (1898).

The following is an amended diagnosis of this species:—

“A *Protosquilla* with the lateral spines of the rostrum nearly as long as the median; carapace with angles nearly rectangular, anterior more acute than posterior; fifth and eighth thoracic segments with the lateral margin subacute, sixth and seventh with the same somewhat square; first abdominal segment with one, second to fourth with two lateral sulci; fifth longitudinally corrugated; sixth with six tubercles bearing fine spinules, and clearly marked off from the telson; the latter with a median and two lateral large tubercles covered with fine spinules, the median anterior to the two laterals, and with the posterior border divided by deep narrow fissures into six lobes; submedian, intermediate and lateral spines of the telson small and sunk in notches, several submedian spinules; outer spine of basal prolongation of uropod (6th abdominal limb) larger than inner, not armed with a tooth on its inner margin.”

Length about 40 mm.

For figures see P. Z. S. 1898, Pl. V. Figs. 1, 1a.

1 ♀ from Lifu, Loyalty Islands.

GENUS. *Gonodactylus* Latr., 1825.3. *Gonodactylus chiragra* (Fabr.), 1793.

Squilla chiragra, Fabricius, Ent. Syst. III., 1, p. 513 (1793).

Gonodactylus chiragra Latreille, Encycl. Meth., x. p. 473 (1825); Miers, Ann. Mag. N. H. (5) v. p. 118 (1880); Haswell, Cat. Austral. Crust. p. 210 (1882); de Man, Zool. Jahrb. x. Syst. p. 694, Pl. XXXVIII. Fig. 77 (1898); Borradaile, P. Z. S. 1898, p. 34, Pls. V. Fig. 4, and VI. Fig. 8.

Gonodactylus smithii Pocock, Ann. Mag. N. H. (6) XI. p. 475, Pl. XX. B, Fig. 1 (1893).

De Man (*loc. cit.*) selects as the type of this species the form with the middle keel of the telson anchor-shaped. He further separates from it a variety which he names *acutirostris* and characterises as follows:—

1. Middle keel of telson not anchor-shaped.
2. Keels of submedian spines of telson converge from behind forwards.
3. Outer angles of rostrum acute.

There are in the present collection four specimens of a variety intermediate between the type and var. *acutirostris*. In these specimens the telson has not the anchor-

shaped middle keel; but neither are the outer angles of the rostrum sharp, and the keels of the submedian telson-spines do not converge forwards. Should a name for this variety be thought necessary, it is here proposed to call it var. *anancyrus*.

To these three varieties may be added that distinguished by Pocock in 1893 (*loc. cit.*) under the name of *G. smithii*, and characterised as follows¹:—

1. The keels of the sixth abdominal segment and telson are more compressed than in the type.

2. The keels of the sixth abdominal segment are produced, without constriction into long spines.

3. The upper edge of the middle keel of the telson is almost straight, and is produced backwards into a spine.

4. The 'flukes' of the anchor on the telson are represented by two narrow ridges running forwards from the hind end of the middle keel.

5. On each side of the first five abdominal tergites is a small, sharply-defined, dark spot.

Lastly, the *Gonodactylus oerstedii* of Hansen² may be considered in connection with the above forms, since it differs from them no more than they from one another, and rests its claim to specific rank mainly on its geographical distribution. It is characterised by the presence of a small swollen ridge on the inside of the keel of the intermediate spine of the telson, and in other respects resembles the type variety of *G. chiragra*. It is at present known only from the West Indies and east coast of America.

The distinguishing marks of the above forms may be set forth in key form as follows:—

1. Without a swollen ridge on the inside of the keel of the intermediate telson-spine. Distribution Indopacific.

2. Keels of sixth abdom. segment and telson rounded, not produced without constriction into spines. Middle keel of telson without a spine.

3. Middle keel of telson anchor-shaped.

VARIETY A. (type).

3'. Middle keel of telson not anchor-shaped.

4. Outer angles of rostrum not acute. Keels of submedian telson-spines not converging forwards.

VARIETY B. (*anancyrus*).

4'. Outer angles of rostrum acutely pointed. Keels of submedian telson-spines converging forwards.

VARIETY C. (*acutirostris*).

¹ P. Z. S., 1893, p. 34, where it is claimed that this form is but a variety of *G. chiragra*.

² Plankton-exped., Isop. Cum. u. Stom., p. 65. See also P. Z. S. *loc. cit.*, Pl. V., Fig. 3.

2'. Keels of sixth abdom. segment and telson compressed. Keels of sixth abdom. segment produced without constriction into long spines. Middle keel of telson ending in a spine.

VARIETY D. (*smithi*).

1'. With a swollen ridge on the inside of the keel of the intermediate telson-spine. Distribution Atlantic.

VARIETY (?) E. (*G. oerstedii* Hansen).

The specimens in the present collection include:—

i. Var. A. (type). 1 ♂ and 1 ♀ from the Isle of Pines, New Caledonia; 2 ♂ and 3 ♀ from Lifu, Loyalty Islands; 1 ♀ from Talili Bay, New Britain; 1 ♀ from Ralun, New Britain.

ii. Var. B. (*anancyrus*). 1 ♂ from Talili Bay; 2 ♀ from Lifu; 1 ♂ loc.?

iii. Var. D. (*smithi*). 2 ♂ and 2 ♀ from Lifu.

GENUS. *Odontodactylus* Bigelow, 1895.

4. *Odontodactylus scyllarus* (Linn.), 1758.

For references see P. Z. S. 1898, p. 36.

1 ♀ from New Britain.

GENUS. *Pseudosquilla* Dana, 1852.

5. *Pseudosquilla ciliata* (Fabr.), 1793.

Squilla ciliata, Fabricius, Ent. Syst. III, 1, p. 512 (1793).

Pseudosquilla ciliata, Miers, Ann. Mag. N. H. (5) V. p. 108 (1880); Brooks, 'Challenger' Stomatopoda, p. 53, Pl. XV. Fig. 10 (1886); Borradaile, P. Z. S. 1898, p. 36.

The present specimens agree with that of Brooks from Honolulu and that brought by Mr Gardiner from Funafuti (P. Z. S. *loc. cit.*) in the following points in which they differ from Brooks's West Indian specimens.

1. The fourth abdominal segment has no spine at the hinder angle.

2. The inner spine of the basal prolongation of the uropod is longer than the outer.

Should these differences prove to be characteristic of the forms from the two regions the name of var. *occidentalis* would be a suitable one to apply to that from the West Indies.

1 ♀ from Uvea, Loyalty Islands. 1 ♂ from Blanche Bay, New Britain.

GENUS. *Lysiosquilla* Dana, 1852.6. *Lysiosquilla biminiensis* Bigelow, 1893, var. *pacificus* nov.

Lysiosquilla biminiensis Bigelow, Joh. Hop. Univ. Circ. cvl., p. 102 (1893); Proc. U. S. Nat. Mus. xvii. p. 504, Figs. 4—7 (1895).

A single male specimen from New Britain seems to belong to a variety of this species. The resemblance to Bigelow's figures and description is complete save in the following small points:—

1. The movable submedian spines of the telson are stouter than in Bigelow's figure, while the innermost pair of submedian spinules are minute.

2. The outer spine on the basal prolongation of the uropod is slightly longer than it is figured for the type.

3. The antennal scales are somewhat smaller.

4. In addition to the markings shown by Bigelow there is a narrow band of deep black (in spirit) on the hinder edge of each segment from the sixth thoracic to the fifth abdominal inclusive.

These differences do not seem sufficient to justify the separation of the form in question from the West Indian species, and it is accordingly proposed to call it var. *pacificus*, emphasizing thereby its interesting distribution. *L. biminiensis* is the only species in the collection already known and not recorded from the Indopacific region, and forms one of the list already given to illustrate the coincidences between the Macruran and Stomatopodan fauna of the West Indies and that of the South Sea Islands visited by Dr Willey.

GENUS. *Squilla* Fabr., 1793.7. *Squilla multituberculata* Borradaile, 1898.

Squilla multituberculata, Borradaile, P. Z. S. 1898 p. 38, Pl. vi. Fig. 7, 7a—7c.

The short diagnosis accompanying the figures of this species in the above-mentioned paper may be here amplified with certain further details.

The *rostrum* is sub-rectangular, somewhat narrower behind than before, without carinae, and with the antero-lateral angles produced, bent downwards, and acute.

The *eyes* are elongate and flattened from above downwards, and their cornea consists of two roughly hemispherical portions set side by side on the end of the stalk.

The *carapace* is small, narrower before than behind, with rounded angles and the hinder border somewhat concave. The sides of the fifth thoracic segment are sharp, those of the sixth to eighth subtruncate.

The *antennae* have long stalks, and the last joint of the scale of the second pair is small.

In the *great claw* the last joint is stout, bearing on the inside four teeth (including the terminal tooth), and on the outside three short teeth at the base.

The *tail fin*. The sixth abdominal segment bears eight roughly longitudinal ridges and a few scattered knobs. It has two small blunt processes on the hinder edge, and

is sharply marked off from the telson. The latter is rather strongly convex, and is covered with small blunt spines. Along the middle line runs a raised ridge, grooved above. The marginal spines are small, and can hardly be seen from above. The submedians have a movable tip. There are four or five submedian spinules and five or six lateral. The uropod has a large basal joint, with the outer of the two spines on its prolongation obsolescent. The two joints of the exopodite are subequal, the first bearing eight spines on the outside. The endopodite is shorter than the exopodite. The latter equals the telson.

In the male the basal joint of the endopodite of the *first abdominal appendage* is broad and armed with long stout hairs. The inner leaf of the end-joint is somewhat narrow. The outer leaf is narrow, and is shorter than the inner, behind which it is hidden¹. The limbs of the pincers are long and narrow.

1 ♂ and 2 ♀, from Sandal Bay, Lifu, Loyalty Islands.

ORDER. DECAPODA.

SUB-ORDER. MACRURA.

TRIBE. PENAEIDEA.

FAMILY. PENAEIDAE.

GENUS. *Penaeus* Fabr., 1798.

8. *Penaeus fissurus* Bate, 1888.

Penaeus fissurus Bate, "Challenger," Macrura, p. 263, Pl. XXXVI., Fig. 1.

1 ♀ from Talili Bay, New Britain.

9. *Penaeus canaliculatus* (Oliv.), 1811.

Palaemon canaliculatus, Olivier, Encycl. Meth. VIII. p. 660 (1811).

Penaeus canaliculatus, H. M.-Edwards, H. N. Crust. II. p. 414 (1837); Bate "Challenger," Macrura, p. 243, Pl. XXXII. Figs. 1, 2 (1888).

1 ♂ from New Britain.

TRIBE. STENOPIDEA.

FAMILY. STENOPIDAE.

GENUS. *Stenopus* Latr., 1825.

10. *Stenopus hispidus* (Oliv.), 1811.

Palaemon hispidus, Olivier, Encycl. Meth. VIII. p. 666, Pl. XIX., Fig. 2 (1811).

Stenopus hispidus, Latreille, Desmarest's "Consid. s. l. Crust.," p. 227 (1825); Adams, Voy. 'Samarang,' p. 61 (1850); Herrick, Mem. Nat. Ac. Sci. v. 4, p. 348, Pls. V., XIII.

¹ Thus it is not shown in the figure given in the P. Z. S. *loc. cit.* The lobe underlying the movable limb of the pincers in this figure was drawn in error and does not exist.

The specimens agree with Herrick's description of the West Indian examples completely, even in the points in which the latter differ from Adams's figures.

2 ♂ and 1 ♀ from Blanche Bay, New Britain.

TRIBE. CARIDEA.

FAMILY. ATYIDAE.

GENUS. *Atya* Leach, 1817.

11. *Atya moluccensis* de Haan, 1849.

Atya moluccensis, de Haan, Faun. Japon., Crust., p. 186 (1849); Miers, Ann. Mag. N. H. (5) v. p. 382, Pl. XV., Figs. 3, 4 (1880); de Man, in Max Weber's "Zool. Ergebnisse," II. p. 357, Pl. XX., Fig. 20 (1892).

1 ♂ and 1 ♀ taken in a stream near Cape Gazelle, New Britain.

FAMILY. PONTONIIDAE.

Further particulars are now added to the preliminary diagnoses of certain species in this family already published by the author in the "Annals and Magazine of Natural History," 1898.

GENUS. *Periclimenes* Costa, 1844.

Periclimenes, Costa, Ann. Ac. Aspir. Nat. Nap. II. (1844); Faun. Regn. Nap. II. 1 (1846); Borradaile, Ann. Mag. N. H. (7) II. p. 380 (1898).

Pelias, Roux, Mem. s. l. Salicoques, p. 25 (1831) nom. praeoc.

Anchistia, Dana, U. S. Expl. Expd. Crust. I. p. 577 (1852).

Dennisia, Norman, Ann. Mag. N. H. (3) VIII. p. 278 (1861).

The species described as *Pelias migratorius* by Heller in 1862 was afterwards placed by the same author in his new genus *Palaemonetes*, and recognised as identical with *P. varians* (Leach). It is therefore erroneously placed in the genus *Periclimenes* in the revision of that genus by the present writer (Ann. Mag. loc. cit.).

12. *Periclimenes spinigerus* (Ortm.), 1890.

Anchistia spinigera, Ortmann, Zool. Jahrb. v. Syst., 3, p. 511, Pl. XXXVI., Figs. 23, 23 a (1890).

Periclimenes spinigerus, Borradaile, Ann. Mag. N. H. (7) II. p. 383 (1898).

1 ♀ from Lifu, Loyalty Islands.

13. *Periclimenes lifuensis* Borradaile, 1898, Figs. 1a—1c¹.

Periclimenes lifuensis, Borradaile, Ann. Mag. N. H. (7) II. p. 384 (1898).

Carapace. The rostrum is straight, outreaches the antennal scale, and bears six teeth above but none below. The supraorbital and antennal spines are present, but not the hepatic. There is also a spine on the mid-dorsal line behind the rostrum. The pterygostomial angle is acute.

¹ This reference (and all similarly placed references) relates to the figures on Plates XXXVI.—XXXIX., the numbers of which run consecutively.

Antennae. The stalk of the first antenna is shorter than the scale of the second, and consists of a very broad first joint, projecting forwards and outwards in a sharp point at the distal end, and two short, subequal following joints. The inner flagellum is broken short on either side in the present specimen, and the thicker part of the outer outreaches the scale of the second antenna, though not the fringe of hairs on that structure. The stalk of the second antenna about equals that of the first in length.

The *third maxilliped* reaches the end of the stalk of the second antenna.

Legs (Pereiopoda). The first pair of legs has the beginning of its wrist-joint (*carpopodite*) even with the end of the second joint of the antennular stalk, and outreaches the scale of the second antenna by the hand (*propodite*) and the last two-thirds of the wrist. The fingers about equal the palm in length. The second pair are subequal. Their meropodite about reaches the end of the rostrum, the wrist is short and armed above with a spine, and the fingers are about two-thirds as long as the palm, hairy, and curved towards one another at the tip, thus enclosing a space. The remaining legs are short and stout, and their last joint is curved and arises among a tuft of long hairs.

Tail-fin. The uropods are longer than the telson, and their exopodite and endopodite are subequal.

Length of the single specimen 11 mm.

From the above characters it would seem to be necessary to place this species in the neighbourhood of *P. gracilis* (Dana) 1852, from which, however, it is sundered by the presence of a supraorbital spine, to mention only one point of difference.

Lifu, Loyalty Islands.

14. *Periclimenes tenuipes* Borradaile, 1898, Figs. 2a—2f.

Periclimenes tenuipes, Borradaile, Ann. Mag. N. H. (7) II. p. 384 (1898).

Carapace. The rostrum is long, slender, curved upwards, armed above with ten teeth (of which the first two stand on the carapace) and below with seven, and outreaches the antennal scale, but not the outer antennular flagellum. Hepatic and antennal spines are present, and the pterygostomial angle is rounded.

All the appendages are unusually slender and elongated.

Antennae. The stalk of the first antenna is shorter than the scale of the second. Both its flagella are long, the outer being bifid at the tip. The stalk of the second antenna does not reach the end of the first joint of that of the first. Its scale is longer than the antennular stalk, shorter than the rostrum, and narrow.

Mouth-limbs. These are shown in Figs. 2c—f. The third maxilliped nearly reaches the end of the first joint of the antennular stalk.

Legs. The first pair is wanting in the single specimen. The end of the meropodite of the second is even with the rostrum, and is armed beneath with a spine. The wrist is longer than the meropodite and slightly longer than the palm. It grows broader towards its outer end, where it is armed above with a spine. The movable finger bears three teeth on its inner edge. In the last three legs the propodite is armed with spines.

Tail-fin. The exopodite of the uropod is longer than the endopodite, and both are considerably longer than the telson. The latter structure is armed at its free end

with the usual six spines found in this position in the present family. These are, namely, two submedian, two intermediates longer than the submedian, and two laterals shorter than the submedian.

The single specimen measures 11 mm. in length, and was found on the reef at Ralun, New Britain.

The following two species are both of small size and have a certain immature appearance. They are here described and named provisionally.

15. *Periclimenes parvus* Borradaile, 1898, Figs. 3a—3c.

Periclimenes parvus, Borradaile, Ann. Mag. N. H. (7) II. p. 384 (1898).

Carapace. Rostrum slightly longer than antennular stalk, bent downwards at first, but tending to straighten towards the tip, above with a deep crest bearing six teeth, below with one tooth. Antennal and hepatic spines are present, and the pterygostomial angle is subrectangular.

Antennae. The stalk of the first antenna is shorter than the scale of the second. The stalk of the second antenna does not reach the end of the first joint of the antennular stalk; the scale is outreached by the antennular flagella.

The *eyes* are large.

The *third maxilliped* is shown in Fig. 3c; it is rather small, barely reaching the end of the peduncle of the second antenna.

The legs. The first pair of legs are short, not outreaching the antennal scale, and fairly stout. The second pair are short, simple in form, without spines, and outreach the antennal scale by about the latter half of the meropodite. The longest joint is the hand. The remaining legs are slender, and have nearly straight, biunguiculate dactyles.

The tail-fin. The exopodite of the uropod is longer than the endopodite, and both are longer than the telson. The latter bears at its hind end two very strong spines and four weaker ones.

Two specimens, 8.5 mm. long, were taken at Rakaiya, Blanche Bay, New Britain.

16. *Periclimenes parasiticus* Borradaile, 1898, Figs. 4a—4b.

Periclimenes parasiticus, Borradaile, Ann. Mag. N. H. (7) II. p. 384 (1898).

Carapace. The rostrum is straight, with a large convex dorsal crest of seven teeth, but unarmed below. It just outreaches the first joint of the antennular stalk. Antennal spines are present, but not supraorbital.

The *eyes* are large.

Antennae. The stalk of the first antenna is shorter than the scale of the second. The stalk of the second is not so long as the basal joint of the first. The scale of the second antenna is broad and reaches the end of the thicker antennular flagellum.

The *third maxilliped* barely reaches the pterygostomial angle of the carapace.

Legs. First pair short, strong, and with unusually stout hands. Second pair small with short wrist, and without spines on any of the joints.

The sixth abdominal segment is considerably elongated.

Tail-fin. The exopodite of the uropod is longer than the endopodite. This, in turn, is longer than the telson.

Length of largest specimen 7 mm.

Four specimens of this species were found living among the spines on the back of a black starfish of the genus *Linckia*.

GENUS. *Anchistus*, Borradaile, 1898.

17. *Anchistus miersi* (de Man), 1888.

Harpilius Miersi, de Man, Journ. Linn. Soc., Zool. xxii. p. 274, Pl. XXII. Figs. 6—10 (1888).

Anchistus miersi, Borradaile, Ann. Mag. N. H. (7) II. p. 387 (1898).

2 ♀ and 1 ♂, found in the mantle-chamber of a *Tridacna squamosa* at Dobu, D'Entrecasteaux Group, British New Guinea.

18. *Anchistus biunguiculatus* Borradaile, 1898, Figs. 5a—5c.

Anchistus biunguiculatus, Borradaile, Ann. Mag. N. H. (7), II. p. 387 (1898).

Carapace. The rostrum reaches the end of the first joint of the antennular stalk, is strongly curved downwards, and bears no teeth. The antennal spine alone is present, and the pterygostomial angle is rounded.

Antennae. The stalk of the first antenna does not quite reach the end of the scale of the second. The flagella are subequal and of moderate length only. The stalk of the second antenna is as long as the basal joint of the first, and the scale is broad.

Mouth-limbs. These have not been examined in the single specimen. The third maxilliped reaches half way up the last joint of the second antennal stalk.

Legs. The first pair of legs outreach the antennal scale by the last half of the wrist and the hand. The second pair are equal, symmetrical, and without spines on any of their joints. The hand is long and rather narrow. The wrist is half the length of the palm. The fingers are unequal, the movable one being considerably longer than the immovable and hooked at the end. The immovable finger is more than half as long as the palm.

Tail-fin. The exopodite of the uropod is slightly longer than the endopodite. The latter is somewhat longer than the telson, which is triangular, with a rounded apex bearing the usual six spines.

Length 50 mm.

One ♀ from a *Tridacna*, in Tubetube, Engineer Group, British New Guinea.

GENUS. *Coralliocaris* Stimpson, 1860.

19. *Coralliocaris inaequalis*, Ortmann, 1890.

Coralliocaris inaequalis, Ortmann, Zool. Jahrb. v. syst. 3, p. 510, Pl. XXXVI. Figs. 21, 21d—i (1890).

3 specimens from Sandal Bay, Lifu, Loyalty Islands.

GENUS. *Pontonia* Latr. 1829.20. *Pontonia ascidicola* Borradaile, 1898, Figs. 6a—6b.

Pontonia ascidicola, Borradaile, Ann. Mag. N. H. (7) II. p. 389 (1898).

Carapace. Rostrum short, reaching only half way up the first joint of the antennular stalk. The free end is strongly curved downwards and lacks an inferior keel. The antennal spine alone is present and the pterygostomial angle is rounded.

Antennae. The stalks of the two pairs of antennae and the scale of the second are subequal. The scale is broad and of but moderate length.

Mouth-limbs. These have not been dissected out. The third maxilliped ends opposite the second joint of the antennular stalk (Fig. 6b).

Legs. The first pair of legs are rather unusually strong. Their meropodite reaches the end of the first joint of the antennular stalk. The wrist is a little shorter than the meropodite and the hand a little shorter than the wrist. The fingers are as long as the palm. The second pair are unequal. In the larger, the hand is of great size, the fingers half the length of the palm, the wrist short and stout, the meropodite longer than the wrist, the movable finger bearing one tooth and the immovable finger two. In the smaller leg of the second pair, the hand is still the longest joint, the movable finger is narrow and crosses its fellow at the tip, and both are provided with teeth as in the longer hand. In the female both legs of the second pair are relatively shorter than in the male. The dactyles of the remaining legs are short, fairly stout, and provided with several spines underneath.

The abdominal pleurae are greatly developed in the female.

Tail-fin. The two rami of the uropod are subequal in the male. In the female the endopodite is the longer. In each case the telson is as long as the exopodite, and bears the usual six spines at the free end.

The length is 13 mm.

1 ♂ and 1 ♀ from Blanche Bay, New Britain.

GENUS. *Conchodytes* Peters, 1851.21. *Conchodytes meleagrinae* Peters, 1851.

For references see P. Z. S. 1898, p. 1007.

3 ♀, from Sandal Bay, Lifu, Loyalty Islands, and from Engineer Group and Conflict Group, British New Guinea, respectively.

FAMILY. PALAEMONIDAE.

GENUS. *Palaemon* Fabr., 1798.22. *Palaemon lar* Fabr., 1798.

For references see P. Z. S. 1898, p. 1008.

4 ♂ of various ages, taken near Cape Gazelle, New Britain.

23. *Palaemon weberi* de Man, 1892.

Palaemon weberi, de Man, in Max Weber's "Zool. Ergebnisse," II. p. 421, Pl. XXV. Fig. 23 (1892).

One young male (55 mm.), agreeing closely with de Man's description of a similar specimen from the East Indies, was taken in a stream near Schultze Point, New Britain. In both chelae, however, the fingers are shorter than the palm, while the whole body is smooth, neither carapace nor telson being "körnig rauh."

GENUS. *Leander* Desmarest, 1840.24. *Leander pacificus* Stimpson, 1860.

Leander pacificus, Stimpson, Proc. Ac. N. Sci. Philad. 1860, p. 40.

The fifth pair of legs in the single specimen seem somewhat longer than is indicated by Stimpson's description.

Locality, Isle of Pines.

GENUS. *Palaemonopsis* nov.

There is in the collection a solitary Palaemonid for which it seems to be necessary to found a new genus. The specimen in question differs from the members of the genus *Palaemon* in the absence of a mandibular palp. From *Palaemonetes* it differs in having on each side of the carapace one antennal spine only, and, directly behind the eye, at a short distance from the edge of the carapace, a large, blunt, roughly triangular process. About half of the thicker branch of the outer flagellum of the first antenna is fused with the thinner branch, but the two branches are quite distinctly formed down to their bases, so that the genus must be placed in the present family rather than in the *Pontoniidae*. The slenderness of the third maxilliped points to the same conclusion.

25. *Palaemonopsis willeyi* sp. n., Pl. XXXVI.—XXXVII., Figs. 7a—7e.

Diagnosis:—"A *Palaemonopsis* with the rostrum straight, bearing six equal teeth above and four teeth below, outreaching the antennular stalk but not the antennal scale; carapace bearing a single antennal spine on each side, and a large triangular process behind the eye; pterygostomial angle subrectangular; first antenna with last two joints of the stalk together shorter than first joint, and subequal; flagella unequal, the outer larger and with its two branches fused for about half the length of the thicker branch; second antenna with the stalk equal to the first two joints of the antennular stalk, the scale longer than the rostrum, narrowing to the free end, which is truncated and bears a triangular tooth, projecting beyond it, on the outside; third maxilliped small and slender; first pair of legs reaching the end of the antennal scale, with wrist and meropodite subequal and longer than the hand; second pair large, strong, longer by the hand than the antennal scale, with short, stout wrist, and meropodite a little longer than the palm, the fingers longer than the palm, crossing at the tip and serrate, none of the joints with spines; remaining legs fairly stout, with small, straight, slender

dactyles, third longer than fourth or fifth; sixth abdominal tergite with a broad triangular median backward projection, flanked on each side by a spine; endopodite of the uropod very slightly longer than the telson, exopodite slightly larger than endopodite; telson elongate, narrowing gently towards the free end, which is truncate, bearing on each side a short, strong spine, and in the middle a tuft of hairs, dorsal surface with four pairs of movable spines."

Length 30 mm.

1 specimen from Ralun, New Britain.

FAMILY. PANDALIDAE.

GENUS. *Pandalus* Leach, 1814.

Into this genus Ortmann has reunited the genera *Plesionika*, *Nothocaris*, and *Pandalopsis* of Bate. Three species of *Pandalidae* from New Britain have certain characters in common which appear to justify the foundation for them of a new subgenus equivalent to the above-mentioned groups of species.

SUBGENUS. *Parapandalus* nov.

Characters:—

1. Carapace without lateral carinae.
2. Rostrum long, slender, armed above and below with movable spines.
3. First antenna with long flagella and pointed stylocerite.
4. Hinder lobe of scaphognathite truncated.
5. Third maxilliped with an exopodite.
6. First leg subchelate¹ owing to a small projection of the propodite at the base of the finger.
7. Second pair of legs equal, with 25—30 joints in the wrist.
8. Eye with large cornea, well-marked ocellus, and two-jointed stalk.
9. Gill formula as in *Pandalus* (sens. str.), save that in two of the species epipodites are wanting behind the third maxilliped.

26. *Pandalus* (*Parapandalus*) *serratifrons* sp. n., Figs. 8a—8d.

Diagnosis:—"A *Pandalus* with the rostrum long, outreaching the antennal scale, armed above and below with numerous small, similar, movable spines, of which the

¹ The word subchelate hardly describes the structures in question satisfactorily. The impression is not that of a practicable grasping organ. Reference to fig. 8d will make this clear. For some interesting remarks on the subject of this limb in *Pandalus* see Calman, Ann. Mag. N. H. (7) III. p. 27 (1899).

first four or five are on the carapace; carapace with antennal spine, acute pterygostomial angle, and a small dorsal carina on the anterior third of its length; eyes fairly large, with ocellus distinct, but not completely separated from main cornea; all the appendages long and slender; first antenna with relatively short stalk, first joint longer than second and third together, third longer than second, both flagella long, outer broad and flattened at the base and bearing in this region a fringe; stylocerite as long as first joint and ending in a sharp point; second antenna with the stalk short, equal to the first joint of the antennular stalk; scale elongate, narrowing to the free end, where it is truncated, with firm outer edge ending in a spine which starts before the end of the scale and projects beyond it; third maxilliped longer by its last two joints than the antennal scale; epipodites wanting behind the third maxilliped; legs of the first pair longer by their last two joints than the third maxilliped; legs of the second pair equal, exceeding the antennal scale by the hand and the last two or three joints of the wrist, the wrist about 25-jointed, with the last joint nearly equal to three of the preceding joints, growing broader towards the hand; hand arising in a tuft of hairs and with long hairs on the fingers; remaining legs long and slender, with movable spines on the meropodite and the dactyle small; uropod with exopodite larger than endopodite, endopodite longer than telson; telson long, very narrow, with four spines at the end, and four pairs of spines on the dorsal surface."

Length of largest specimen 85 mm.

This species forms part of the food of the *Nautilus*.

7 ♂, trawled at depths of 50—100 fathoms in Blanche Bay, New Britain.

27. *Pandalus (Parapandalus) tenuipes* sp. n., Fig. 9.

Diagnosis:—"A *Pandalus* with the rostrum long, outreaching the antennal scale, bent slightly upwards, armed above and below with numerous small, similar, movable spines, of which the first four or five are on the carapace; carapace with antennal and small pterygostomial spine and a slight dorsal carina on the first half of its length; eyes fairly large and ocellus distinct, but not completely separated from the cornea; all the appendages very long and slender; first antenna with rather short stalk, the first joint longer than the second and third together, the third longer than the second, both flagella long, the outer broad and flattened at the base, where it bears a fringe; stylocerite acute; second antenna with the stalk short, and the scale longer than the antennular stalk, with firm outer edge ending in a spine which arises before the end of the scale and just projects beyond it; third maxilliped considerably longer than the antennal scale, with fairly stout meropodite, and the rest of the limb very weak and slender; no epipodite behind the third maxilliped; first pair of legs considerably longer than the rostrum; second pair of legs longer than the antennal scale by the last half of its wrist; the latter about 30-jointed, with the last joint equal to two or three of the preceding joints; last three legs with the meropodite fairly strong and armed with spines, and the distal part of the limb very long and weak; exopodite of uropod longer than endopodite and armed with a spine on the outside near the free end; endopodite

longer than telson; telson armed with four pairs of spines above, and with two pairs at the free end."

2 ♀ from Blanche Bay, New Britain. 2 ♂ from the D'Entrecasteaux Group, British New Guinea.

28. *Pandalus (Parapandalus) longirostris* sp. n., Figs. 10a—10h.

Diagnosis:—"A *Pandalus* with the rostrum long, outreaching the antennal scale, bent upwards and armed above and below with movable spines, those at the base above being longer and farther apart than those towards the free end, and the first three or four being placed on the carapace; carapace with antennal spine, a spine at the pterygostomial angle, and a keel on the anterior half of its dorsal surface; eyes fairly large, with ocellus distinct but not completely sundered from the main cornea; appendages moderately stout; first antenna with the basal joint of the stalk longer than the second and third together, third rather longer than second, second covered with hairs, stylocerite longer than basal joint and ending in a spine, both flagella long, outer broad and flat at base, in which region it bears a fringe of hairs; second antenna with short stalk and long scale, whose external tooth barely projects at the end; third maxilliped slightly longer than the antennal scale; epipodite wanting from the last leg only; first pair of legs very little longer than third maxillipeds; second pair of legs equal, with about 25 joints in the wrist; uropod longer than the telson, which is narrow, elongated, and armed at the end with one median and four movable lateral spines, and bears four pairs of spines on the dorsal surface."

Length 130 mm.

4 ♀ from New Britain, 2 with eggs.

GENUS. *Heterocarpus* A. M.-Edw., 1881.

29. *Heterocarpus ensifer* A. M.-Edw., 1881.

Heterocarpus ensifer, A. M.-Edw., Ann. Sci. Nat. (6) XI. 4 p. 8 (1881); Bate, "Challenger" Macrura, p. 638 pl. CXII. fig. 4 (1888).

In the present specimen the spines on the rostrum vary from 12 to 16 above, and from 7 to 10 below.

The first leg is simple. In *H. gibbosus* Bate it is chelate (Calman, *loc. cit.*)

3 ♀ and 2 ♂ from Blanche Bay, New Britain. 4 young specimens from the same locality in 100 fathoms of water.

FAMILY. HIPPOLYTIDAE.

GENUS. *Saron* Thallw., 1891.

30. *Saron marmoratus* (Oliv.). 1811.

See P. Z. S. 1898, p. 1009 (1899).

1 ♀ from Nivani, Louisiades, British New Guinea.

FAMILY. LATREUTIDAE.

GENUS. *Parhippolyte* nov.

The absence of a cutting edge (*psalistoma*) from the mandible of the species on which this new genus is founded obliges me to place it in Ortmann's new family, Latreutidae. [Bronn's "Thierreich," Crust. II. p. 1130 (1898).] It is, however, so closely allied to *Merhippolyte* Bate that it might almost equally well be placed like the latter group as a subgenus of *Spirontocaris* Bate (non *Hippolyte* Leach, restrict.). In any case, the difference between the Latreutidae and Hippolytidae will not, I think, be ultimately found to be of more than subfamily value.

Characters of *Parhippolyte* n. gen.

1. Rostrum moderate, dentate.
2. Supraorbital spine wanting, antennal and postorbital spines present.
3. Flagella of first antenna long.
4. Mandible without cutting edge, with three-jointed palp.
5. Third maxilliped with exopodite.
6. Second wrist multiarticulate (about 30 joints).
7. Branchial formula as in *Merhippolyte* but no pleurobranch on third maxilliped.
8. Sixth abdominal segment with the hinder angle provided with a small spine, but not articulated.

31. *Parhippolyte uveae* n. sp., Figs. 11a—11g.

Diagnosis:—"A *Parhippolyte* with the rostrum, bearing three or four teeth above and five below; with antennal and postorbital spines present, the pterygostomial angle of the carapace rounded and the anterior two-thirds dorsally carinated; the antennular stalk half the length of the antennal scale, its first joint almost equal to the second and third together, the stylocerite equal to the first joint, broad, acute, the flagella subequal; the scale of the second antenna long, broad at the base, narrowing rapidly, with the spine barely projecting beyond the free end, flagellum about equal to the antennular flagella; third maxilliped outreaching the antennal scale by the last two-thirds of its last joint, which is obliquely truncated at the end; first leg not reaching the end of the antennal scale, hand equal to wrist, fingers shorter than palm, not dentate, with a small black claw at the tip; second leg outreaching by the wrist the antennal scale, wrist about 30-jointed, first and last joints subequal, about twice the length of any of the others; remaining legs long, the last slightly the longest, owing to increased length of the propodite, meropodite with spines underneath; endopodite of uropod as long as telson, exopodite longer; telson ending in a median spine and bearing at the end four lateral spines and on the dorsal surface four pairs of spines."

Length 110 mm.

Ten specimens, ? all female. Three with eggs. From Uvea, Loyalty Islands.

FAMILY. RHYNCHOCINETIDAE.

GENUS. *Rhynchocinetes* H. M.-Edw., 1837.32. *Rhynchocinetes typus* H. M.-Edw., 1837.*Rhynchocinetes typus*, H. Milne-Edwards, Ann. Sci. Nat. 2 VII. p. 165, pl. iv. C. (1837).

The single specimen, which is from Lifu, Loyalty Islands, has on the rostrum only four spines above and only twelve below.

FAMILY. ALPHEIDAE.

GENUS. *Alpheinus* nov.

The recent work of Coutière [Bull. Mus. Paris, II. p. 380 (1896)] on this family necessitates the establishment of a new genus as well as of a new species for two specimens of an Alpheid from Lifu.

Characters of *Alpheinus* n. gen.

1. Eyes completely covered above but not enclosed in front.
2. Rostrum and ocular spines present.
3. Eyestalks short, without spines above. Cornea lateral.
4. Outer flagellum of first antenna slightly bifid at tip.
5. Pleurobranch to each leg. Arthrobranch to third maxilliped. No epipodites.
6. First pair of legs unequal. Left like the large leg of *Alpheus*, but with movable finger as in *Betaeus*. Right small, simple.
7. Angle of sixth abdominal segment not articulated.

33. *Alpheinus tridens* n. sp., Figs. 12a—12g.

Diagnosis:—“An *Alpheinus* with the rostrum of moderate length, shorter than the first joint of the antennular stalk, triangular with a sharp apex, depressed at base, compressed at apex, not dentate, with a dorsal keel starting between the eyes; ocular spines resembling rostrum but shorter; carapace without other spines than the ocular and with produced but not acute pterygostomial angle; first antenna with the stalk longer than the antennal scale, first joint longer than second and third together, second longer than third, first two joints projecting on the outside at the distal end and bearing on the projection a few strong plumose hairs; stylocerite sharp, almost equal to the first joint; second antenna with the scale shorter and the stalk longer than the stalk of the first antenna, scale with strong outer border and freely projecting spine, basipodite with stout spine on the outer side; third maxilliped very hairy, reaching the end of the antennal scale; larger leg of the first pair outreaching the antennal scale by the last two-thirds of the palm, hand longer than carapace, fingers shorter than palm, a spine on the palm at the base of the movable finger, and a tooth

on the biting edge of the same finger, wrist very short with a spine on the outer and another on the inner side, meropodite shorter than the palm, with a spine on the outer side at the distal end; smaller leg of the first pair longer than the antennal scale, simple, hairy, with hand long and wrist short, and fingers shorter than the palm; second leg outreaching the antennal scale by the last four joints of the wrist, wrist 5-jointed, $1 = 2 + 3 + 4 + 5$, $5 = 3 + 4$, 2, 3, 4 subequal; remaining legs rather stout, propodite longer than carpopodite, shorter than meropodite, carpopodite with one tooth above at the distal end, dactyle stout, biunguiculate, numerous spines underneath the propodite; telson and uropods short and broad; endopodite and exopodite of uropod subequal, somewhat longer than telson, exopod with first joint projecting considerably outside the second and bearing on the projection a slender spine; telson with the free end subtruncate, with a low rounded lobe in the middle, two short spines on each side and a long fringe, and with two pairs of movable spines on the dorsal surface."

Length 20 mm.

2 specimens from Sandal Bay, Lifu, Loyalty Islands.

GENUS. *Synalpheus* Bate, 1888.

Synalpheus, Bate, Challenger, Macrura, p. 572 (1888); Coutière, Notes, Leyd. Mus. XIX. p. 206 (1897).

34. *Synalpheus biunguiculatus* (Stimps.), 1860.

? *Alpheus biunguiculatus*, Stimpson, Proc. Ac. N. Sci. Philad. 1860, p. 31.

Alpheus minor, var. *biunguiculatus*, de Man, J. Linn. Soc. Zool., XXII. p. 273 (1888).

Alpheus sp., de Man, Zool. Jahrb. IX. Syst. p. 738, Fig. 62 (1897).

? *Alpheus tricuspидatus*, Heller, Sitz. Ak. Wiss. Wien, XLIV. p. 267 (1861).

1 ♀ from the Reef, Ralun, New Britain.

Var. C, nov. One male, and a small specimen with a Bopyrid in the gill chamber, taken in the mantle cavity of an ascidian at Baravon, New Britain, differ from de Man's type in having the ocular spines as long as the rostrum and rather broad and triangular. De Man has named two varieties A and B respectively. I propose to call the present form var. C.

35. *Synalpheus demani* nom. nov.

Alpheus triunguiculatus, de Man, Arch. Naturg., LIII. 1, p. 508, Pl. XXII. Fig. 2 (1887).

According to Coutière the name *triunguiculatus* was given by Paulson in 1875 to a species which must be included in the genus *Synalpheus*. It is very unlikely that this species is identical with that to which de Man gave the same name in 1887, describing it as new. A new name is, therefore, probably wanted, and the most appropriate course is obviously to call the species after its first describer.

2 ♀ from Lifu, Loyalty Islands.

36. *Synalpheus neomeris* (de Man), 1897.

Alpheus neomeris, de Man, Zool. Jahrb. ix. Syst., p. 734 (1897).

One specimen, from Sandal Bay, Lifu, Loyalty Islands.

GENUS. *Alpheus* Fabr., 1778.

37. *Alpheus obesomanus* Dana, 1852.

Alpheus obesomanus Dana, U.S. Expl. Exped. Crust. i. p. 574, Pl. XXXIV. Fig. 7 (1852).

Two specimens from Lifu, Loyalty Islands. One from Blanche Bay, New Britain.

38. *Alpheus gracilidigitus* Miers, 1884, var.

Alpheus gracilidigitus Miers, "Alert" Report, p. 287 (1884); de Man, Max Weber's Zool. Ergebnisse, p. 406, Pl. XXV. Fig. 32 (1892).

The specimens differ from the type in that:—

1. The lower border of the merus of the first leg is not serrate.
2. The movable finger of the small chela wants the tooth on the inner side.

One ♂ and one ♀ from the Isle of Pines, New Caledonia.

39. *Alpheus laevis* Randall, 1839.

For references see P. Z. S. 1898, p. 1013.

2 ♀ from Blanche Bay, New Britain. 1 ♀ from Sandal Bay, Lifu.

40. ? *Alpheus diadema* Dana, 1852.

? *Alpheus diadema* Dana, U.S. Expl. Exped. Crust. i. p. 555, Pl. XXXV. Fig. 7 a—e (1852).

Dana describes the first joint of the wrist of the second pair of legs as being "much longer than the second," but figures it as of almost the same length. In the present specimen it is very slightly shorter. The hands of the first pair, which were wanting, from Dana's specimen, are figured from that in the present collection (Pl. XXXIX., Fig. 17).

1 ♀ from Sandal Bay, Lifu, Loyalty Islands.

41. *Alpheus frontalis* Say, 1832.

For references see P. Z. S., 1898, p. 1013.

2 ♂ and 1 ♀ from Lifu, Loyalty Islands.

42. *Alpheus aglaopheniae* n. sp., Figs. 13a—13f.

A single, dismembered specimen of an *Alpheus* found living among the branches of a hydroid polyp of the genus *Aglaophenia*, represents, I think, a new species. It is diagnosed as follows:

"An *Alpheus* with the rostrum arising from the anterior border of the carapace, reaching the end of the first joint of the antennal stalk, and continued backwards as a short keel on the carapace; eye-hoods acute in front; second and third joints of the

antennular stalk subequal, first joint somewhat longer than either, stylocerite equal to the first joint; stalk of second antenna longer than that of the first, scale bearing a strong spine, equal to the antennular stalk, long fringed; third maxilliped large, covered with long hairs, projecting beyond the antennular stalk; larger leg of the first pair with the lower border notched but the upper only very faintly so, fingers less than half the length of the palm, wrist short, somewhat excavated, meropodite broad, with large distal spine and distal end excavated, hand hairy; smaller leg of the first pair with hand elongate, bearing a spine above the movable finger, hairy, fingers equal to the palm, wrist short, with a spine on the outside, meropodite of the same form as in the larger hand, but with the spine smaller and the distal end excavate; second pair of legs with the first joint of the wrist the longest, 2 and 5 equal, 3 and 4 short, hand about equal to first wrist-joint; remaining legs without a spine on the meropodite, the propodite armed with spines, the dactyle biunguiculate, one-third the length of the propodite; the exopodite of the uropod larger than the endopodite, the latter larger than the telson, which is hairy above."

Length 11.5 mm.

One ♀ from the Engineer Group, British New Guinea.

TRIBE. LORICATA.

FAMILY. PALINURIDAE.

GENUS. *Panulirus* White, 1847.

43. *Panulirus demani* nom. nov.

Panulirus polyphagus, Ortmann, in Semon's "Forschungsreisen in Austral.," v. 1, p. 19 (1894).

Panulirus sp., de Man, Zool. Jahrb. IX. Syst. p. 507 (1898).

There is no evidence for the view that this is a young form of *P. polyphagus*, and it is therefore well that it should receive at least a provisional name. It is here proposed to call the species *Panulirus demani* after the author who first recognised its distinctness.

One ♂, from Blanche Bay, New Britain.

44. *Panulirus bispinosus* sp. n.

A small specimen in the collection seems to deserve a name and a short diagnosis as a probably new species. It bears a considerable resemblance to *P. femoristriga* v. Martens, 1872, of which it may possibly be a young example, but the abdominal furrows are interrupted in the middle line, and the antennal tergite is quite smooth, save for two spines towards the anterior edge. *P. femoristriga* probably also occurs in the Loyalty Islands, since Dr Willey took, but did not preserve, a large Palinurid which from his description would seem to belong to that species.

Diagnosis:—"A *Panulirus* with the stalk of the first antenna somewhat shorter than that of the second, the first joint longer than the second or third, the third some-

what longer than the second; the carapace and the stalk of the second antenna covered with spines of various sizes with their points directed forwards, somewhat sparsely mingled with hairs; the antennal segment bearing two spines only and no spinules; the third maxilliped with an exopodite bearing a flagellum which reaches half way up the mero-podite; the legs hairy, the second pair the longest; the abdominal furrows interrupted in the middle line of the body."

Length 25 mm.

One ♂ from Sandal Bay, Lifu, Loyalty Islands.

45. *Panulirus penicillatus* (Oliv.) 1811.

For references see P. Z. S., 1898, p. 1015.

One ♂ from Natikitiwan, Lifu, Loyalty Islands.

FAMILY. SCYLLARIDAE.

GENUS. *Scyllarus* Fabr., 1793.

46. *Scyllarus sieboldi* de Haan, 1850.

Scyllarus sieboldi, de Haan, Faun. Japon. Crust., p. 152, Pl. XXXVI. Fig. 2 (1850).

1 ♂, 1 ♀ from Lifu, Loyalty Islands.

GENUS. *Paribacus* Dana, 1852.

47. *Paribacus antarcticus* (Rumph).

For references see P. Z. S., 1898, p. 1015.

5 ♂, 2 ♀, from Natikitiwan, Lifu, Loyalty Islands.

TRIBE. THALASSINIDEA.

FAMILY. CALLIANASSIDAE.

GENUS. *Callianassa* Leach, 1814.

48. *Callianassa novae-britanniae* sp. n., Figs. 14a—14d.

Diagnosis:—"A *Callianassa* with the rostrum short, triangular, not half the length of the eyestalks; the latter compressed, not quite equal to the first joint of the antennular stalk, with lateral cornea; carapace with a triangular projection between the eye and the base of the second antenna, and the pterygostomial region projecting forwards below the antenna, a well-marked median ridge and cervical furrow, and the hinder border excavate; first antenna having the second joint of the stalk the longest and the whole stalk shorter than that of the second antenna; last joint of third maxilliped broad and with a long fringe of hairs, other joints all fairly broad; first pair of legs unequal, wrist as broad as hand, fingers shorter than palm, moveable fingers longer than

immovable, meropodite armed with spines; telson short, broader than long, with straight hinder edge; uropod longer than telson, with the raised portion of the exopodite not projecting laterally beyond the rest of the structure.

Length 37 mm.

1 ♂, from New Britain.

GENUS. *Callianidea* H. M.-Edw., 1837.

49. *Callianidea typa*, H. M.-Edw., 1837.

Callianidea typa, H. M.-Edw.. H. N. Crust. II. p. 320, Pl. XXV. *bis*, Figs. 8—14 (1837).

1 ♂ from Sariba, British New Guinea.

FAMILY. AXIIDAE.

GENUS. *Eiconaxius* Bate, 1888.

50. *Eiconaxius taliliensis* sp. n., Figs. 15a—15c.

Diagnosis:—“An *Eiconaxius* with the rostrum equal to the first joint of the antennular stalk, ending in two spines, with the sides bent up to form a gutter, and crowned on each side by spines intermingled with thick tufts of hairs; on the carapace this gutter is continued backwards for a short distance, and on each side an interrupted hairy groove runs back from the base of the rostrum along the sides of the flattened dorsal area to the cervical furrow, just before meeting which the grooves curve somewhat outwards. The anterior part of the flat area of the carapace is protected at the side by a raised ridge, which is continuous in front with the side ridges of the rostrum. Antennal tooth present, and pterygostomial angle produced but rounded; cervical furrow deep, and at the side running obliquely into a shallower depression, which continues it to the anterior edge of the carapace; outside the cervical groove a small crest of teeth on each side of the body; eye-stalks shorter than rostrum, cornea terminal; first joint of antennal stalk equal to second and third together, latter subequal; stalk of second antenna longer than that of first, scale narrow, strong, with five teeth beneath, spine on basal joint with four teeth outside and two longer teeth inside; third maxilliped longer by its last three joints than the antennal scale, meropodite with four spines on the inner edge, carpopodite with five, propodite and last joint nearly equal, latter elongate-oval; first pair of legs subequal, left stouter than right but otherwise similar, ischiopodite with a row of teeth below, meropodite with five or six rather large teeth above and a crest of small teeth below, immovable finger with one tooth, hand slightly broader than wrist, which bears a single tooth below; second pair of legs with a crest of teeth under the meropodite; second, third and fourth legs with a ventral process at the outer end of the ischiopodite; propodite of legs 3 and 4 with a thick fringe of hairs below; all the limbs hairy-tufted; abdomen longer than cephalothorax; telson with two transverse ridges, behind the second ridge two pairs of small tubercles, along the hinder and lateral borders a row of small, indistinct tubercles, hinder border straight and with

a fringe of hairs, uropods not longer than telson, with longitudinal ridges on the dorsal surface of, and toothed on the outer edge of both rami."

Length of male 57 mm., of female 55 mm.

1 ♂, 1 ♀ from Talili Bay, New Britain.

TRIBE. ANOMALA.

SUBTRIBE. GALATHEINEA.

FAMILY. GALATHEIDAE.

GENUS. *Galathea* Fabr., 1798.

51. *Galathea elegans* Adams and White, 1848.

Galathea elegans, Adams and White, Crust., "Samarang," p. 1, Pl. XII. Fig. 7 (1848).

1 ♀, with eggs, from New Britain.

52. *Galathea grandirostris* Stimps., 1858.

Galathea grandirostris, Stimpson, Proc. Ac. N. Sci. Philad., 1858, p. 90; Henderson, "Challenger" Anomura, p. 119, Pl. XII. Fig. 3 (1888).

2 ♂ and 2 ♀, from New Britain.

53. *Galathea australiensis*, Stimps., 1858.

Galathea australiensis, Stimpson, Proc. Ac. N. Sci. Philad., 1858, p. 89; Henderson, "Challenger" Anomura, p. 118, Pl. XII. Fig. 5 (1888).

1 ♂ from Lifu, Loyalty Islands.

54. *Galathea affinis* Ortm., 1892.

Galathea affinis, Ortmann, Zool. Jahrb. VI. Syst., p. 252, Pl. XI. Fig. 9 (1892).

2 ♂ from Lifu, Loyalty Islands.

55. *Galathea spinimanus* sp. n., Figs. 16a—16b.

Diagnosis:—"A *Galathea* with the rostrum broad, with one small and three large spines on each side and a terminal spine; carapace without gastric spines, with six spines at the side and one at the pterygostomial angle, scored with transverse pilose ridges, but without demarcation of the gastric region; third maxilliped with the meropodite as long as the ischiopodite, but narrower, and not bearing a spine on the outside, on the inside of the meropodite two moderately large and two small teeth, dactyle broad and ending in a tuft of hairs; first pair of legs longer than the thorax, covered with spines and hairs, fingers about equal to the palm, a small tooth on the inside of each finger; second, third and fourth legs covered with spines and hairs, dactyle not far short of the propodite in length, with no spines above, but a row of small spines below."

Length 9.5 mm. (♂).

1 ♂ 2 ♀ from Lifu, Loyalty Islands.

W. IV.

GENUS. *Munida* Leach, 1820.56. *Munida scabra* Hend., 1885.

Munida scabra, Henderson, Ann. Mag. N. H. (5) XVI. p. 409 (1885); "Challenger" Anomura, p. 134, Pl. XV., Fig. 1 (1888).

3 ♀ from Talili Bay, New Britain.

Var. *longipes* nov.

A male and two females, taken with the above typical specimens, differ from them in the greater length and slenderness of the legs of the first pair¹. It is proposed to call this variety *longipes*.

57. *Munida japonica* Stimps., 1858.

Munida japonica, Stimpson, Proc. Ac. N. Sci. Philad., 1858, p. 252; Ortmann, Zool. Jahrb. VI. Syst. 2, p. 254, Pl. XI. Fig. 11 (1892).

2 ♀ from Talili Bay, New Britain.

58. *Munida semoni* Ortm., 1894.

Munida semoni, Ortmann, Semon's "Forschungsreisen in Austral.," v. 1, p. 24, Pl. I. Fig. 4 (1894).

2 ♂ and 3 ♀ from Talili Bay, New Britain.

FAMILY. PORCELLANIDAE.

GENUS. *Petrolisthes* Stimps., 1858.59. *Petrolisthes hastatus* Stimpson, 1858.

Petrolisthes hastatus, Stimpson, Proc. Ac. N. Sci. Philad., 1858, p. 241; Ortmann, Zool. Jahrb. VI. Syst. 2, p. 260 (1892).

23 ♂ and 14 ♀ from Sariba, British New Guinea.

60. *Petrolisthes lamarcki* (Leach), 1820.

See P. Z. S., 1898, p. 464.

Type. 1 ♂ and 1 ♀ from Sariba, British New Guinea.

Var. *fimbriatus* Borradaile, 1898. 1 ♂ and 1 ♀ from Sandal Bay, Lifu, Loyalty Islands; 1 ♀ from Sariba, British New Guinea.

61. *Petrolisthes bispinosus* sp. n.

Diagnosis:—"A *Petrolisthes* with the front indistinctly trilobed, the middle lobe prominent, each lobe concave above; carapace covered with straight, continuous, pilose ridges and bearing on each side two epibranchial spines, but without spines on its hinder edge; chelipeds marked out into scales by pilose ridges, their meropodite with a blunt lobe on the inner edge, the wrist with the inner edge 5-lobed, the two proximal

¹ Taking in each case the average length of the carapace in the specimens before us as unity, the length of the first pair of legs is in *M. scabra* 3.5 and in var. *longipes* 5.2. The specimens of *longipes* are slightly smaller than those of the type.

lobes each ending in a minute spine, the rest finely serrate, the outer edge with a crest of sharp, curved teeth, the hand broad, with serrated edges, the fingers slightly hooked at the tip, equal, with serrated edges; the second to fourth pairs of legs with spines on the upper edge of the meropodite, dactyles with several small spines underneath; none of the legs hairy, save for a very few scattered hairs."

Length of carapace 4 mm.

This species belongs to the *galanthinus*-group of Ortmann [Zool. Jahrb. x. Syst., p. 276 (1897)].

1 ♂ from Sandal Bay, Lifu, Loyalty Islands.

GENUS. *Pachycheles* Stimps., 1858.

62. *Pachycheles sculptus* (H. M.-Edw.), 1837.

Porcellana sculpta, H. M.-Edwards, H. N. Crust. II. p. 253 (1837); Dana, U.S. Expl. Exped. Crust. I. p. 412, Pl. XXVI. Fig. 2 (1852); de Man, J. Linn. Soc. Zool. XXII. p. 218 (1888).

Porcellana pisum, H. M.-Edwards, H. N. Crust. II. p. 254 (1837); Heller, "Novara" Crust. p. 73 (1868).

Porcellana pulchella, Haswell, Proc. Linn. Soc. N.S.W. XI. p. 758 (1882); Cat. Austral. Crust. p. 148 (1882).

Porcellana (Pisosoma) sculpta, de Man, Arch. Naturg. LIII. p. 413 (1888).

Pachycheles pulchellus, Miers, "Alert" Report, p. 273, Pl. XXX. Fig. A (1884); Henderson, "Challenger" Anomura, p. 114 (1888); Ortmann, Semon's "Forschungsreisen in Austral." v. 1, p. 30 (1894).

Pisosoma sculptum, Ortmann, Zool. Jahrb. VI. Syst. p. 265 (1892); de Man, Zool. Jahrb. IX. Syst. p. 378 (1896).

Pisosoma pisum, de Man, Zool. Jahrb. IX. Syst. p. 380 (1896).

Pachycheles sculptus, Ortmann, Semon's "Forschungsreisen in Austral." v. 1, p. 29 (1894).

The occurrence in Dr Willey's collection of a form intermediate between the *Porcellana sculpta* and *P. pisum* of Milne-Edwards, leads to the conclusion that these latter are not specifically distinct, and must rank with the new form as varieties of one species. The following table sets forth the distinguishing characteristics of these varieties.

1. Chelipeds subequal, similar, tuberculated.

A. var. *sculptus* H. M.-Edw., 1837.

1'. Chelipeds unequal, dissimilar, one at least not tuberculated.

2. The left cheliped is the larger. Right cheliped tuberculated.

B. var. *tuberculatus* nov.

2'. The right cheliped is the larger. Neither cheliped tuberculated.

C. var. *pisum* H. M.-Edw., 1837.

The collection contains the following specimens:—

var. *sculptus*. 1 ♀ from Lifu, Loyalty Islands.

var. *tuberculatus*. 2 ♂ from Lifu, Loyalty Islands.

63. *Pachycheles lifuensis* sp. n.

Diagnosis:—“A *Pachycheles* with the front almost straight, slightly convex in the middle, depressed; carapace granular at the sides and with linear ridges on the branchiostegites; chelipeds unequal, the left the larger, the wrist and hand uniformly pubescent and granular, the wrist with three rather blunt lobes on the inner edge, but without teeth overhanging its articulation with the hand; second to fourth pairs of legs not so stout as in *barbatus*, the last three joints pubescent, the propodite armed with spines above, the dactyle with spines below.”

Length of carapace 3.5 mm., breadth 4 mm.

This species is closely allied to *P. barbatus*, but is, I think, distinct.

1 ♂ and 1 ♀ from Lifu, Loyalty Islands.

SUBTRIBE. PAGURINEA.

FAMILY. PAGURIDAE.

GENUS. *Pagurus* Fabr., 1793.

64. *Pagurus deformis*, H. M.-Edw., 1836.

For references, etc., see P. Z. S., 1898, p. 460.

The male specimen of this species shows, as usual, the genital openings of the female.

From Lifu, Loyalty Islands. 1 ♀ in a *Dolium* shell, 1 ♀ in a *Turbo* shell bearing sea anemones, 1 ♂.

From the Conflict Group, British New Guinea. 1 ♀, berried, in a *Turbo* shell, bearing a sea anemone.

From New Britain; 2 ♀ in shells of *Dolium* and *Natica*.

65. *Pagurus gemmatus* H. M.-Edw., 1846.

Pagurus gemmatus, H. M.-Edwards, Ann. Sci. Nat. (3), x. p. 60 (1846).

The male of this species does not show the female openings found in the male of the allied *P. deformis*.

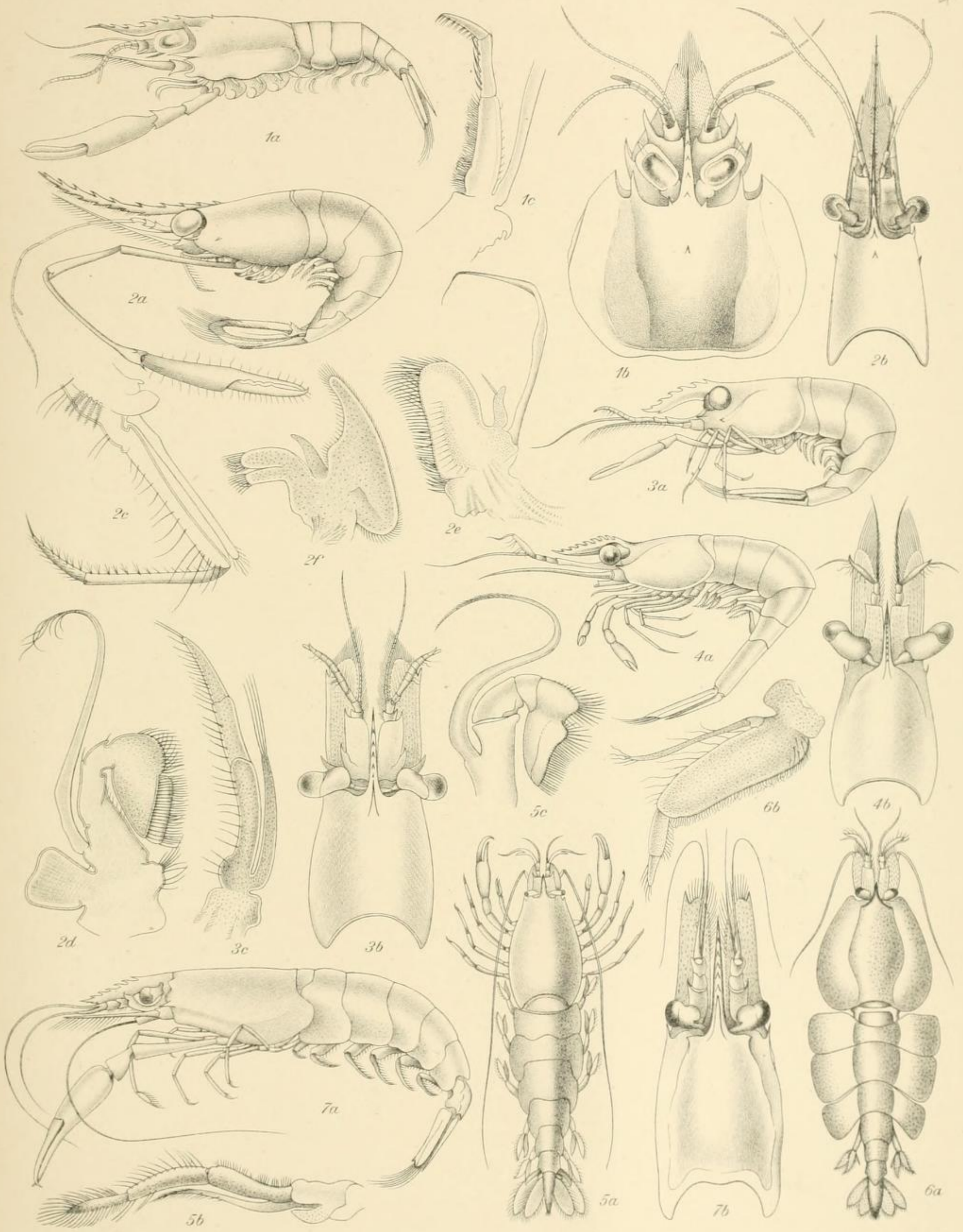
1 ♂ from New Britain, 1 ♂ from Sandal Bay, Lifu, Loyalty Islands; the latter in a *Dolium* shell bearing sea-anemones.

66. *Pagurus asper* de Haan, 1849.

Pagurus asper, de Haan, Faun. Japon. Crust., p. 208, Pl. XLIX. Fig. 4 (1849); Ortmann, Semon's "Forschungsreisen in Austral." v. 1, p. 31 (1894).

1 ♂ and 1 ♀ from Lifu, Loyalty Islands in *Turbo* shells.

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E. Wilson Cambridge

BORRADAILE, CRUSTACEA - MACRURA.

67. *Pagurus setifer* H. M.-Edw., 1836.

For references see P. Z. S., 1898, p. 460.

2 ♂ from Lifu, Loyalty Islands. 2 ♀ from the Conflict Group, British New Guinea.

68. *Pagurus euopsis* Dana, 1852.

For references see P. Z. S., 1898, p. 461.

1 ♂ from the Conflict Group, British New Guinea.

69. *Pagurus punctulatus* Olivier, 1811.

For references see P. Z. S., 1898, p. 461.

2 ♂ and 1 ♀ from Lifu, Loyalty Islands.

70. *Pagurus strigatus* (Herbst), 1796.

Cancer strigatus, Herbst, Naturg. Krabben, II. 4, p. 25, Pl. LXI. Fig. 3 (1796).

Pagurus strigatus, Hilgendorf, Monatsber. Ak. Wiss., Berlin, 1878, p. 820, Pl. II.

Fig. 8.

1 ♂ from Sandal Bay, Lifu, Loyalty Islands.

FAMILY. COENOBITIDAE.

GENUS. *Coenobita* Latr., 1826.

70. *Coenobita compressus* H. M.-Edw., 1837.

Coenobita compressa, H. M.-Edw., H. N. Crust. II. p. 241 (1837).

Coenobita compressus, Ortmann, Zool. Jahrb. VI. Syst., p. 318 (1892).

From Lifu, Loyalty Islands, 1 ♂ and 2 ♀, the latter in shells of *Nannia* and *Papuina*. From New Britain, 1 ♂ in a *Triton* shell. From Sandwich Island, New Hebrides, one berried ♀.

71. *Coenobita rugosus* H. M.-Edw., 1837.

For references see P. Z. S., 1898, p. 460.

1 ♂ and 12 ♀ from the Loyalty Islands.

72. *Coenobita perlatus* H. M.-Edw., 1837.

For references see P. Z. S., 1898, p. 459.

6 ♂ and 5 ♀ from Lifu, Loyalty Islands.

73. *Coenobita clypeatus* (Herbst), 1796.

For references see P. Z. S., 1898, p. 459.

2 ♂ and 4 ♀ from Lifu, Loyalty Islands.

74. *Coenobita spinosus* H. M.-Edw., 1837.

For references see P. Z. S., 1898, p. 459.

1 ♂ in a nutshell of *Calophyllum*, and 9 ♀ from Lifu, Loyalty Islands.

GENUS. *Birgus* Leach, 1815.75. *Birgus latro* (Linn.), 1766.

For references see P. Z. S., 1898, p. 458.

2 ♂ and 8 ♀ from Lifu, Loyalty Islands.

SUBTRIBE. HIPPINEA.

FAMILY. HIPPIDAE.

GENUS. *Remipes* Latr., 1806.76. *Remipes testudinarius* Latr., 1806.*Remipes testudinarius*, Latreille, Gen. Crust. Jus. I. p. 45 (1806); de Man, Zool. Jahrb. IX. Syst., p. 463 (1896).

1 ♂ and 2 ♀ from Sandal Bay, Lifu, Loyalty Islands.

77. *Remipes pacificus* Dana, 1852.

For references, etc., see P. Z. S., 1898, p. 467.

1 ♂, 14 ♀, from Sandal Bay, Lifu, Loyalty Islands. 7 small ♂ from the Isle of Pines, New Caledonia.

78. *Remipes celaeno* de Man, 1896.*Remipes celaeno*, de Man, Zool. Jahrb. IX. Syst., p. 483 (1896).

2 ♂ and 45 ♀ from Blanche Bay, New Britain. 1 ♀ from the Isle of Pines.

79. *Remipes ovalis* A. M.-Edw.*Remipes ovalis*, A. M.-Edw., Millard's "Notes sur Réunion," Ann. F., p. 12, Pl. XVII. Fig. 5 (1863); de Man, Zool. Jahrb. IX. Syst., p. 471 (1896).

3 ♀ from New Britain.

80. *Remipes admirabilis* Thallw., 1891.*Remipes admirabilis*, Thallwitz, Abh. Mus. Dresden, p. 36 (1891); de Man, Zool. Jahrb. IX. Syst., p. 466, Fig. 51 (1896).

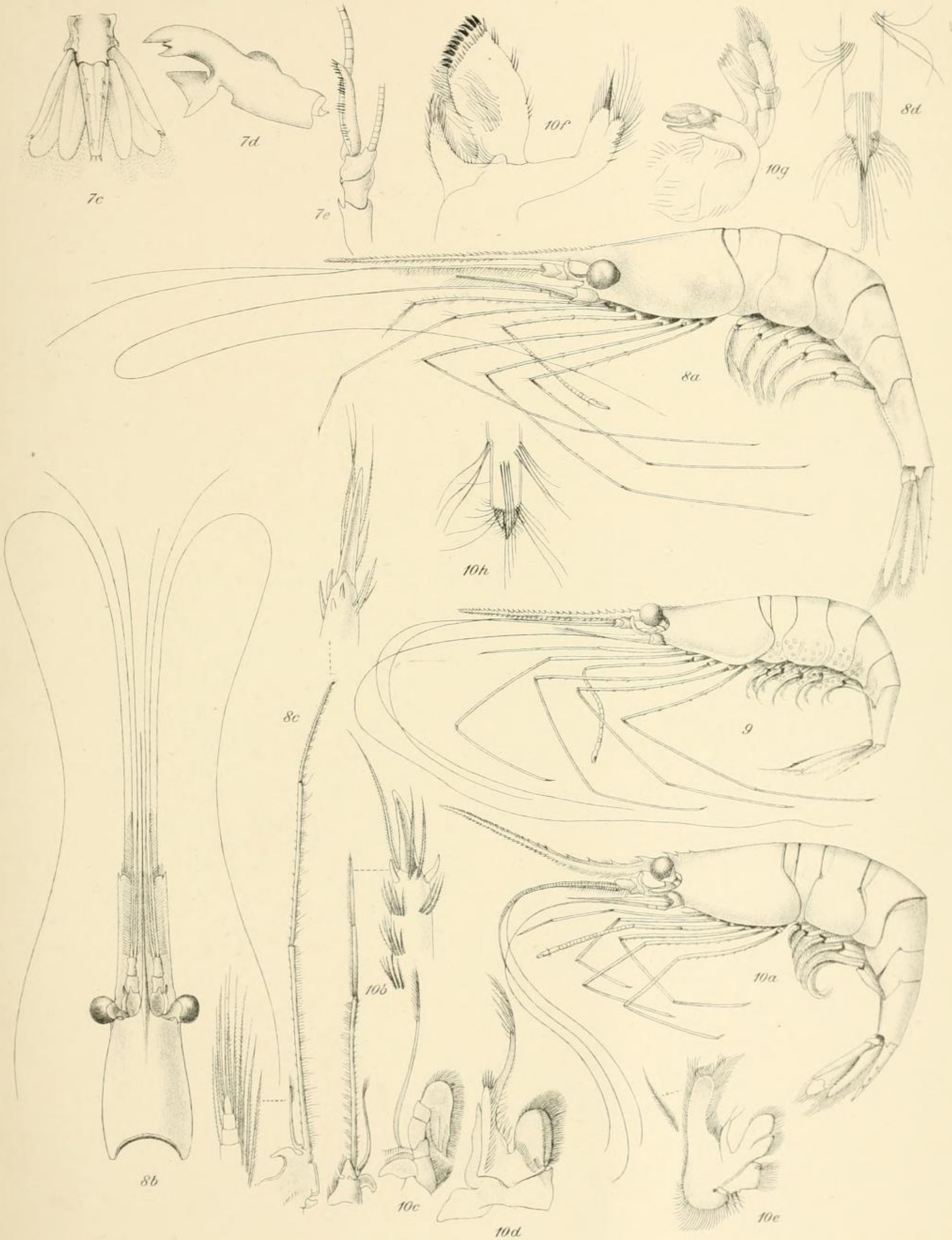
5 ♂ from Blanche Bay, New Britain.

FAMILY. ALBUNEIDAE.

GENUS. *Albunea* Fabr., 1798.81. *Albunea microps* Miers, 1877.*Albunea microps*, Miers, J. Linn. Soc. Zool. XIV. p. 328, Pl. V. Figs. 12, 13 (1877).

2 ♂ from Blanche Bay, New Britain.

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EXPLANATION OF PLATES XXXVI.—XXXIX.

(Borradaile, Crustacea).

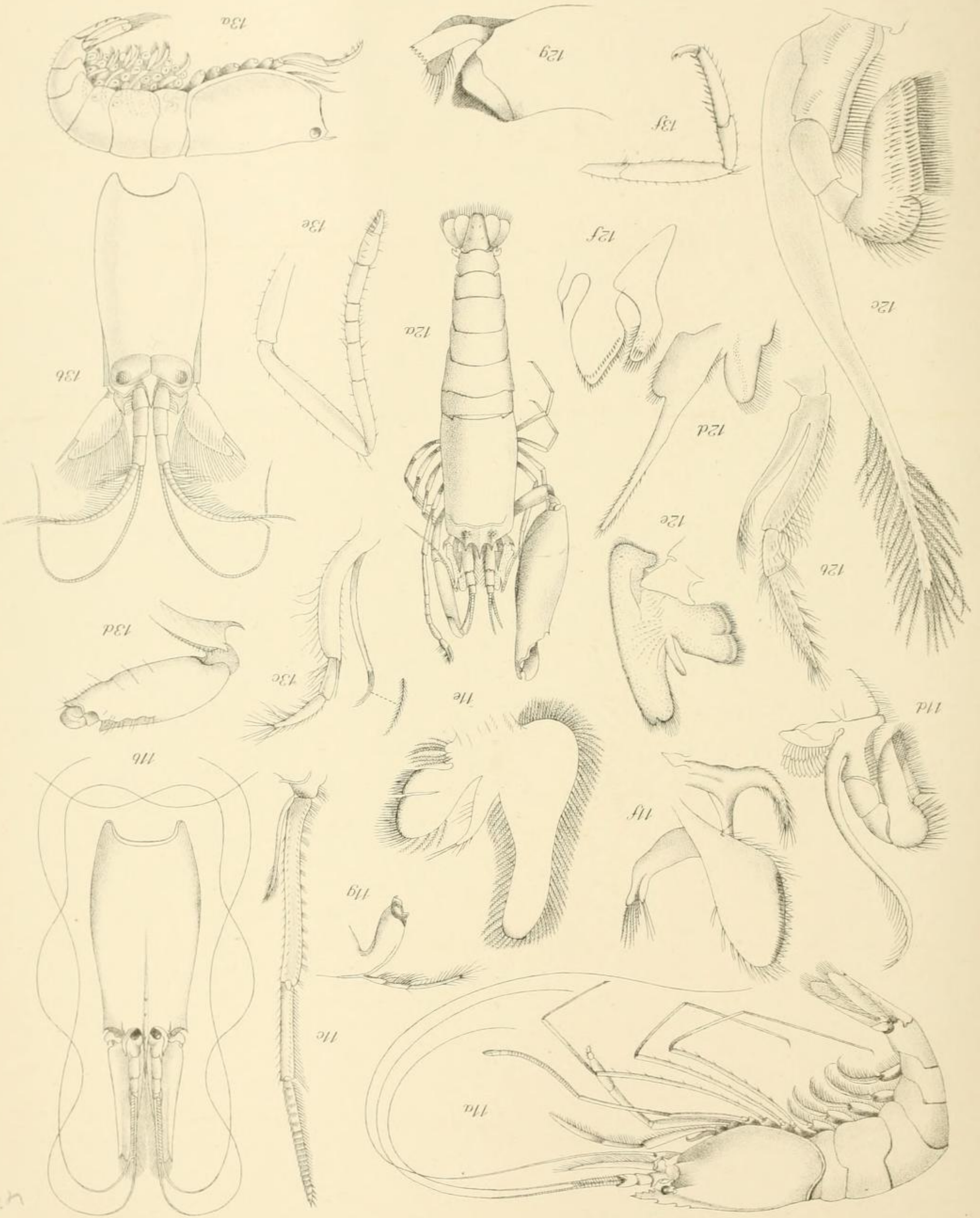
- FIG. 1. *Periclimenes lifuensis* Borradaile.
 „ 1 a. Side view $\times 6$.
 „ 1 b. Head and carapace from above. More highly magnified.
 „ 1 c. 3rd maxilliped. Magnified. The tip of the exopodite is broken off.
- FIG. 2. *Periclimenes tenuipes* Borradaile.
 „ 2 a. Side view $\times 4$.
 „ 2 b. Head and carapace from above. More highly magnified.
 „ 2 c. 3rd maxilliped. Magnified.
 „ 2 d. 2nd „ „
 „ 2 e. 1st „ „
 „ 2 f. 2nd maxilla. „
- FIG. 3. *Periclimenes parvus* Borradaile.
 „ 3 a. Side view $\times 9$.
 „ 3 b. Head and carapace from above. More highly magnified.
 „ 3 c. 3rd maxilliped. Magnified.
- FIG. 4. *Periclimenes parasiticus* sp. n.
 „ 4 a. Side view $\times 10$.
 „ 4 b. Head and carapace from above.
- FIG. 5. *Anchistus biunguiculatus* sp. n.
 „ 5 a. Dorsal view $\times 1\frac{1}{3}$.
 „ 5 b. 3rd maxilliped. Magnified.
 „ 5 c. 2nd maxilliped. „
- FIG. 6. *Pontonia ascidicola* sp. n. ♀.
 „ 6 a. Dorsal view $\times 5$.
 „ 6 b. 1st maxilliped. More highly magnified.
- FIG. 7. *Palaemonopsis willeyi* sp. n.
 „ 7 a. Side view $\times 3$.
 „ 7 b. Head and carapace from above.
 „ 7 c. Tail fin from above (Plate XXXVII.).
 „ 7 d. Mandible. Magnified. The projection on the fore edge in the figure is not part of a palp but is the base of the molar process.
 „ 7 e. First antenna.
- FIG. 8. *Pandalus serratifrons* sp. n.
 „ 8 a. Side view $\times 2$.
 „ 8 b. Head and carapace from above $\times 2$.
 „ 8 c. 3rd maxilliped $\times 3$.
 „ 8 d. End of first leg. Magnified.
- FIG. 9. *Pandalus tenuipes* sp. n.
 Side view, nat. size. The drawing does not adequately represent the thread-like appearance of the carpopodite and propodite of the legs, nor the fact that they are slightly swollen at the outer ends. These limbs are in the above respects unlike those of *P. serratifrons*.

- FIG. 10. *Pandalus longirostris* sp. n.
 „ 10 a. Side view, nat. size.
 „ 10 b. 3rd maxilliped $\times 2$.
 „ 10 c. 2nd „ „
 „ 10 d. 1st „ „
 „ 10 e. 2nd maxilla.
 „ 10 f. 1st maxilla.
 „ 10 g. Left mandible.
 „ 10 h. End of 1st leg. Magnified.
- FIG. 11. *Parhippolyte uveae* sp. n.
 „ 11 a. Side view, nat. size.
 „ 11 b. Head and carapace from above $\times 1\frac{1}{3}$.
 „ 11 c. 3rd maxilliped $\times 3$.
 „ 11 d. 2nd „ „
 „ 11 e. 2nd maxilla.
 „ 11 f. 1st „ „
 „ 11 g. Mandible.
- FIG. 12. *Alpheinus tridens* sp. n.
 „ 12 a. Dorsal view $\times 3$.
 „ 12 b. 3rd maxilliped. Magnified.
 „ 12 c. 2nd „ „ „
 „ 12 d. 1st „ „ „
 „ 12 e. 2nd maxilla. Magnified.
 „ 12 f. 1st „ „ „
 „ 12 g. Mandible. „ „
- FIG. 13. *Alpheus aglaopheniae* sp. n.
 „ 13 a. Side view $\times 6$.
 „ 13 b. Head and carapace from above $\times 10$.
 „ 13 c. 3rd maxilliped.
 „ 13 d. Larger leg of first pair.
 „ 13 e. Leg of second pair.
 „ 13 f. „ third „
- FIG. 14. *Callianassa novae-britanniae* sp. n.
 „ 14 a. Anterior part of body from above $\times 3$.
 „ 14 b. Tail fin from above $\times 2$.
 „ 14 c. 3rd maxilliped $\times 3$.
 „ 14 d. Larger leg of first pair $\times 2$.
- FIG. 15. *Eiconaxius tabiliensis* sp. n.
 „ 15 a. Side view $\times 2$.
 „ 15 b. Head and thorax from above $\times 4$.
 „ 15 c. Tail fin from above $\times 2$.
- FIG. 16. *Galathea spinimanus* sp. n. Dorsal view of body $\times 6$.
- FIG. 17. *Alpheus diadema* Dana.
 „ 17 a. Larger leg of first pair $\times 7$.
 „ 17 b. Smaller „ „ „ $\times 9$.

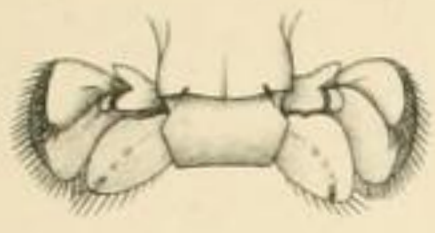
BORRADAILE, CRUSTACEA - MACRURA

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F.O.P.C. del.



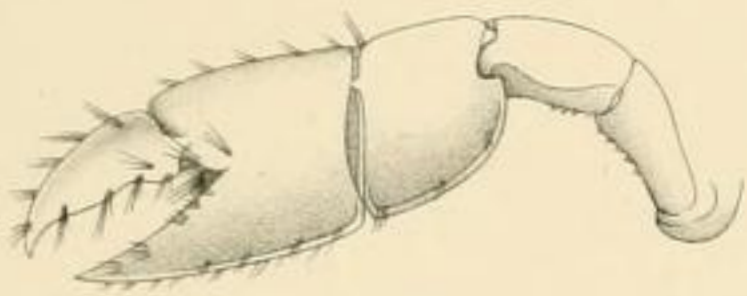
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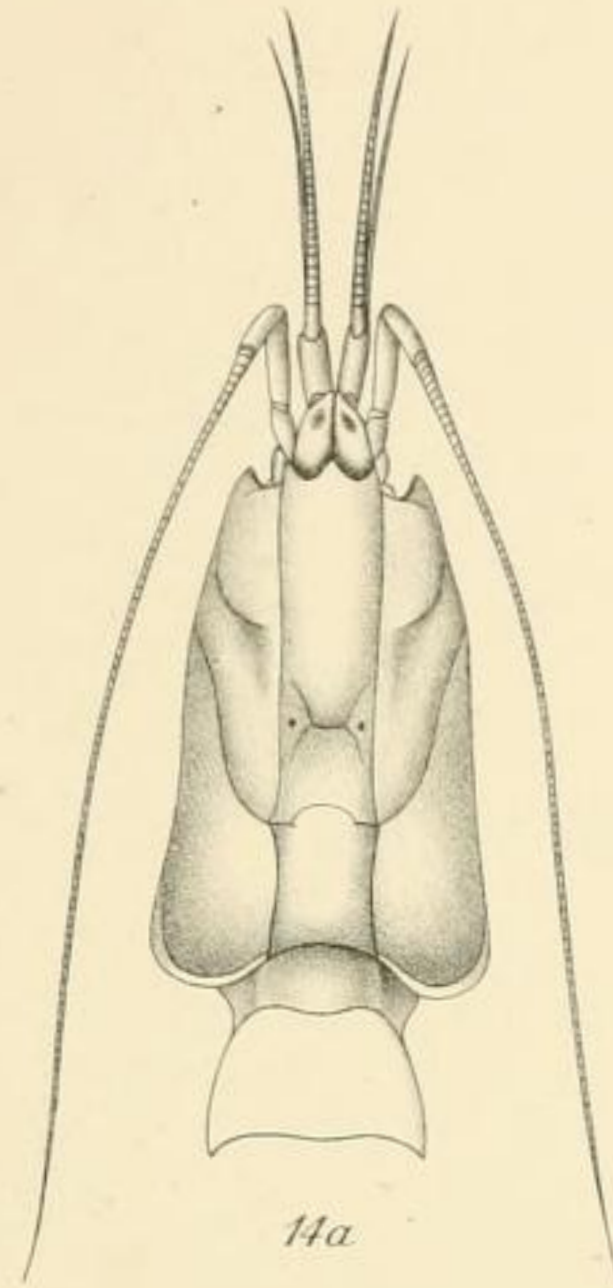
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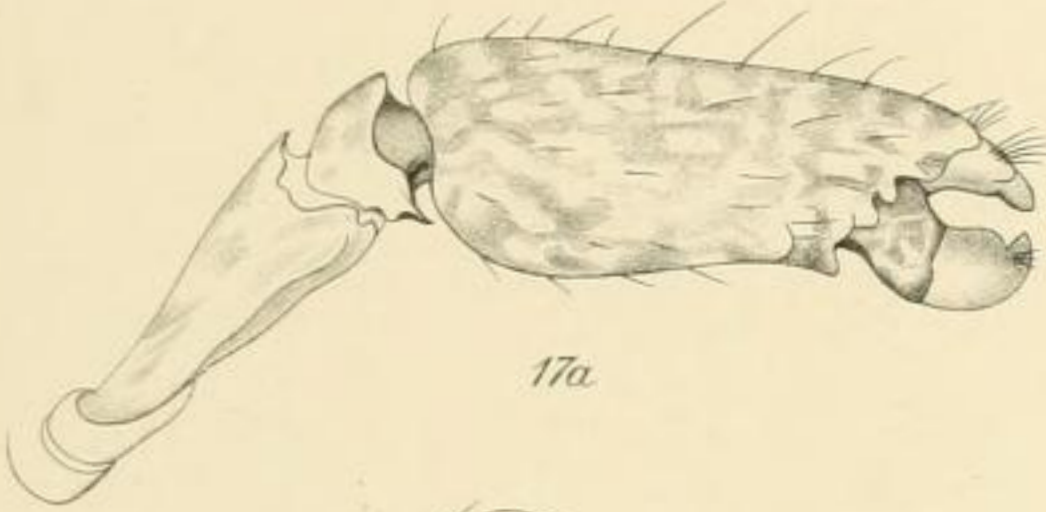
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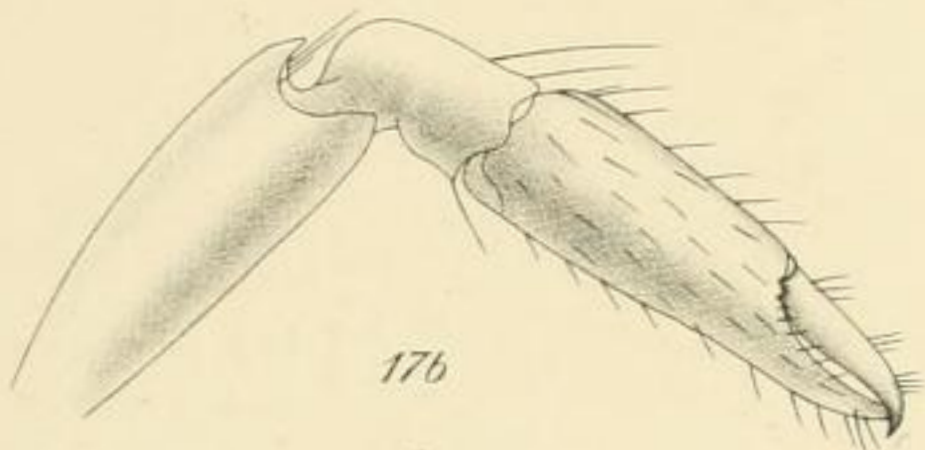
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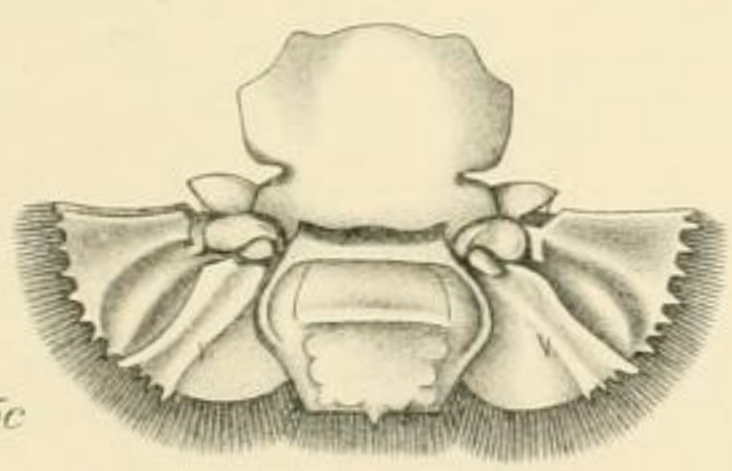
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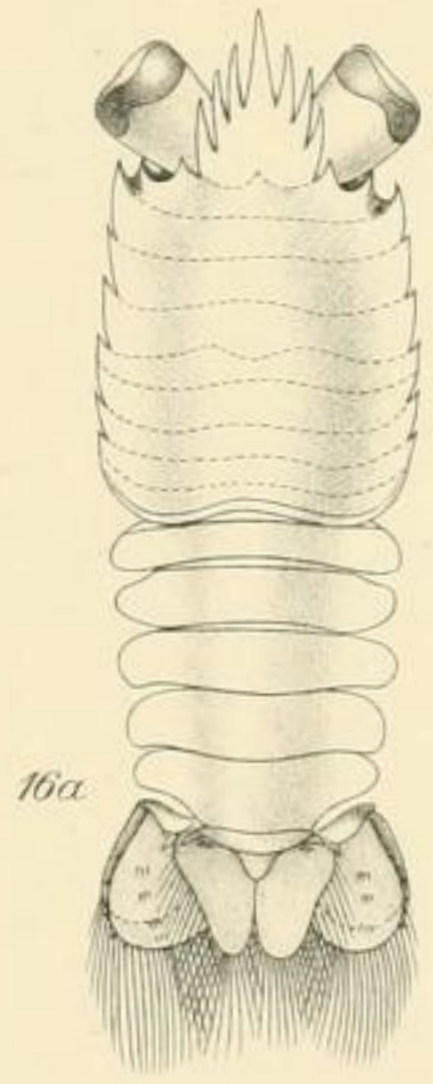
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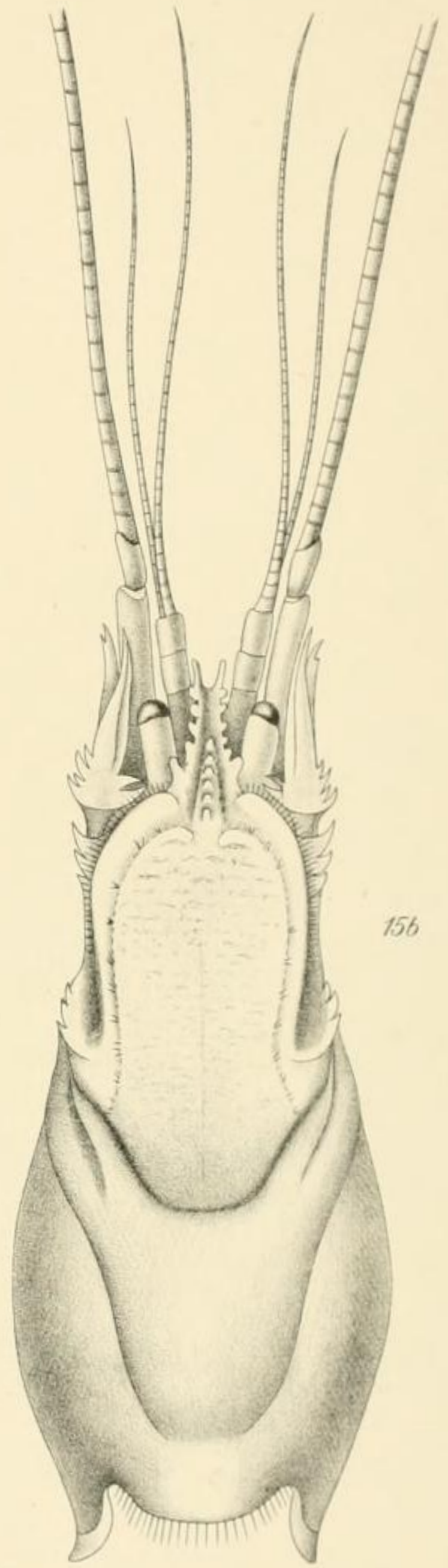
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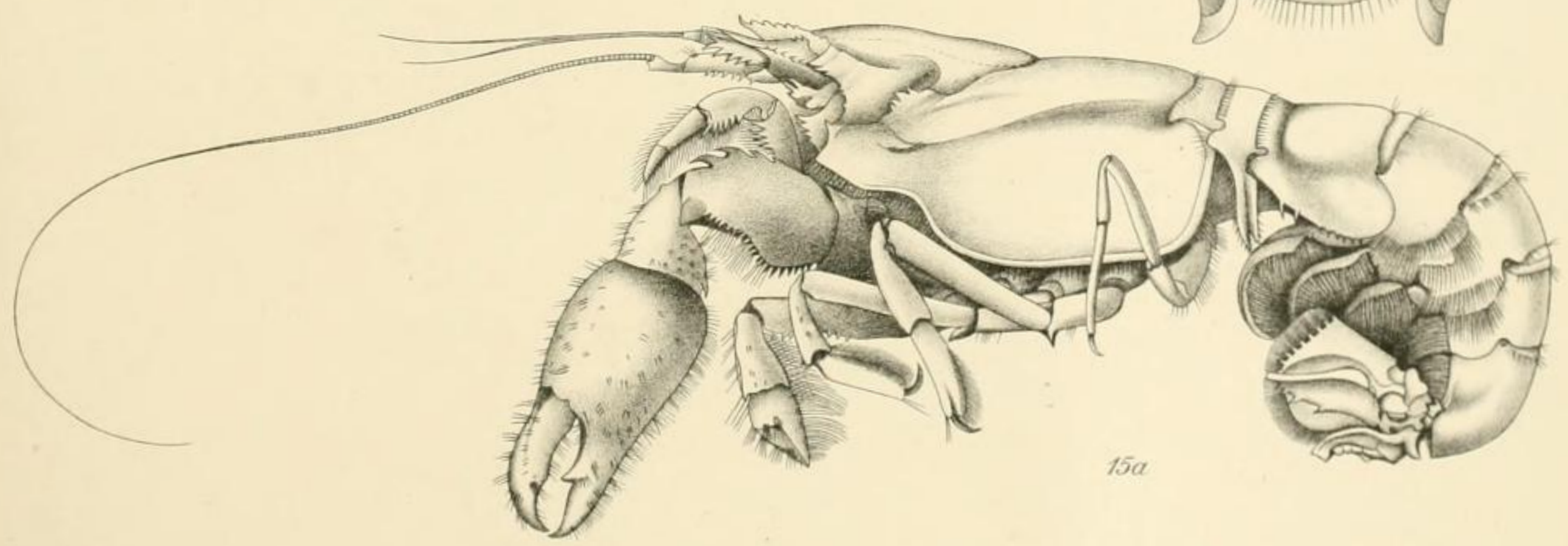
15c



16a



15b



15a

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