AMPHIPODA

BY

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The present paper is a report on the Amphipoda collected in the Dutch East-Indies by H. R. H. Prince Leopold of Belgium, and Prof. Dr V. Van Straelen, Director of the Royal Museum of Natural History of Bruxelles.

The collection is a small one, containing six species from shallow water; two of them could not be indentified with certainty, but one is to be considered the type of a new species.

LIST OF THE SPECIES

Familia LYSIANASSIDAE.

Genus WALDECKIA Chevreux.

Waldeckia Stebbing, 1910, p. 570 (lit. and syn.).

1. — Waldeckia enoei nov. spec.

Fig. 1-3.

Occurrence. — Poeloe Enoe (Aroe Archipelago), 24-III-1929. 1 ♀ with marsupium, abt. 15 mm.

Description. — The integument is not particularly hard. The general shape agrees with that of *W. chevreuxi* and *W. obesa* (on literature see later on, p. 7), except that the epimeral part of metasome segment 1 is rather narrow, somewhat forwards bent and with the inferior hind corner rounded, that of metasome segment 2 quadrangular with a little tooth (which is in accordance with *W. obesa*, Walker, 1907 (in the text, not in the figure) and Schellenberg, 1926), and that of metasome segment 3 rounded quadrangular, — urosome segment 1 totally disagrees in shape, in that there is no dorsal carina on the hind part, and urosome segment 2 is not especially short.

The lateral lobes of the head are rounded as in *W. chevreuxi*, not acute as in *W. obesa*. The eyes are large, reniform, black, but not nearly meeting at the top of the head.

Antenna 1 : like that of the other species, except as to the number of joints : flagellum has 17 joints, accessory flagellum 8 joints. Antenna 2 : flagellum probably short, apex lost, only 9 joints of flagellum still kept (Walker's drawing (1907) is no doubt correct , his description incorrect).

Upper lip with epistome (unfortunately lost during the dissection) is like that of Chevreux, 1906, fig. 10A, but does not agree with Chevreux's desciption, as there is no large sinus between the lip and the epistomal plate

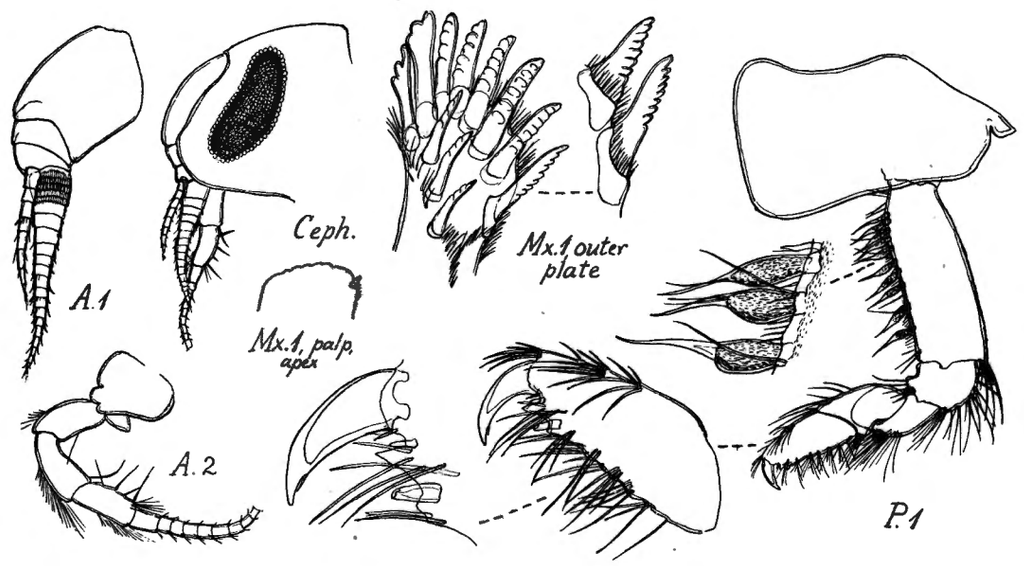

Fig 1. — *Waldeckia enoei* nov. spec.

Head (Ceph.), antenna 1-2 (A. 1-2), maxilla 1 (outer plate and apex of palp), pereiopod 1 (P. 1).

(Chevreux's figure represents the upper part of the head with the ocular lobe; the upper part of the epistomal plate is off the letter A). Lower lip is like Chevreux, 1906, fig. 10B. Mandible is like Chevreux 1906, fig. 9D (but in the texte the palp is incorrectly described as being shorter than the trunk). Maxilla 1 is like that of Chevreux, 1906, fig. 10C-D (text, p. 17), except that the outer plate has 11 (not 9) crenulate spines, and one of these is very broad. Inner plate has 2 setœ (not 4-5, as recorded by Walker, 1907). There is a little spine on the outer apical corner of the palp (as in *W. chevreuxi*, Stebbing, 1910, p. 573, pl. 47B, fig. mx. 1). Maxilla 2 is like Chevreux, 1906, fig. 10E. Maxillipeds are like those of Chevreux, 1906, fig. 9E, but 4. joint of the palp is half as long as 3. joint (in *W. obesa* not half as long).

Pereiopod 1 : 1. joint (the side plate) is distally broadened, with the corners rounded and with the lower fore corner somewhat protruding. 2. joint is as long as 1. joint, with the margins almost parallel; on the fore margin there is a row of about 10 bottle-shaped setae, intermixed with very small setae. 3. joint is a little shorter than 4. and 5. joints (Chevreux, 1906 : as long as 5. joint) 6. joint (metacarpus) is as long as 4. and 5. joints combined, apically narro-

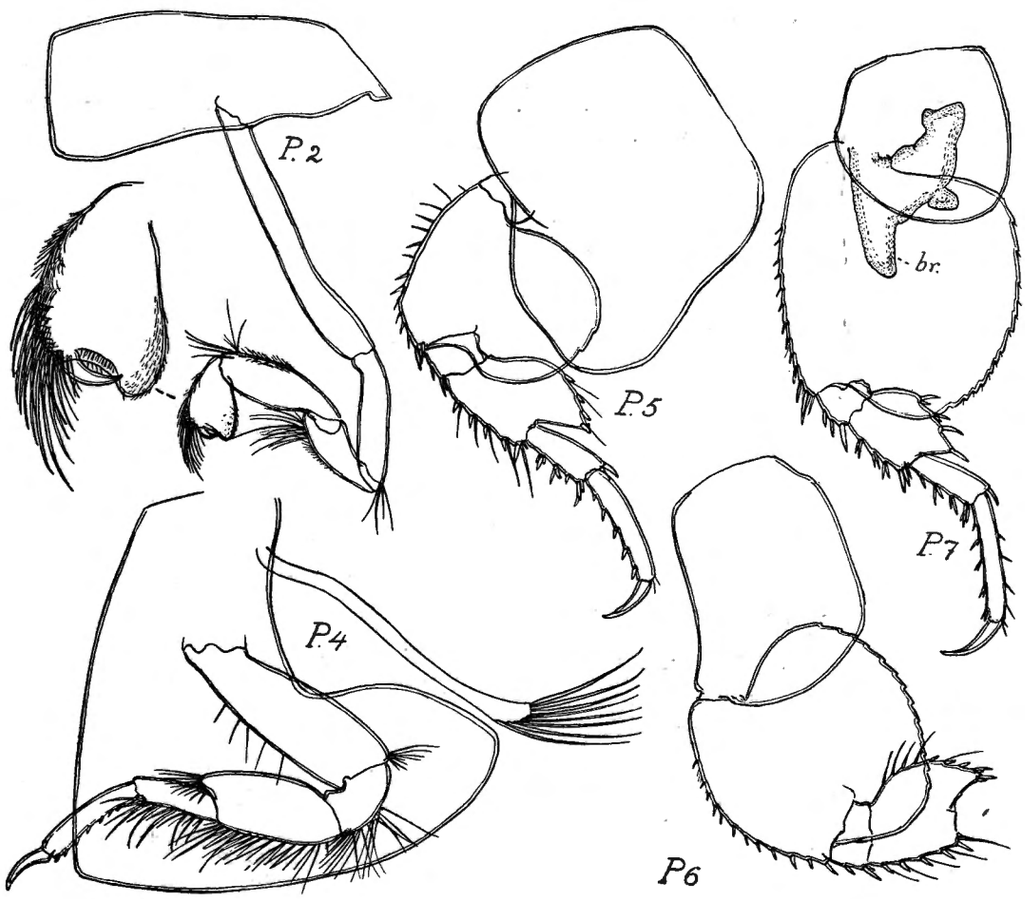

Fig. 2. — *Waldeckia enoei* nov. spec.
Pereiopods 2-7 (P. 2-7). *br.* = branchia.

wer; there are tufts of spines and setae on both margins. There is a short, oblique palm, with a heavy tooth on the middle, a strong, blunt spine on the corner, and several long spines. Chevreux 1906 (*W. obesa;* fig. 9F) says : 6. joint « se termine sans présenter de bord palmaire distinct »; Walker 1907 (*W. obesa*) says : « the hand is simple, not sub-chelate », but he gives a figure not very different from mine, with a distinct short palm which (according to the figure)

seems to have a tooth on the middle; Stebbing 1910 (*W. chevreuxi*, pl. 47B, gn. 1) says : « sixth joint without palm ». The finger is heavy, curved, and larger than the palm.

Pereiopod 2 has nearly the same shape as in *W. obesa* (Chevreux, 1906, fig. 9G; Walker, 1907, pl. 2), but the joints are some what longer and narrower, and 6. joint has (like *W. chevreuxi*, Stebbing, 1910, p. 573, fig.) the palm concave and the lower hind corner obtusely produced; the hinder portion of the 6. joints has only short spines (as in *W. chevreuxi*), no long spines or setae as in *W. obesa*.

Pereiopod 3 has the sideplate like that of pereiopod 2; the leg is like that of pereiopod 4. Pereiopod 4 has the side plate like that of *W. obesa* (that of

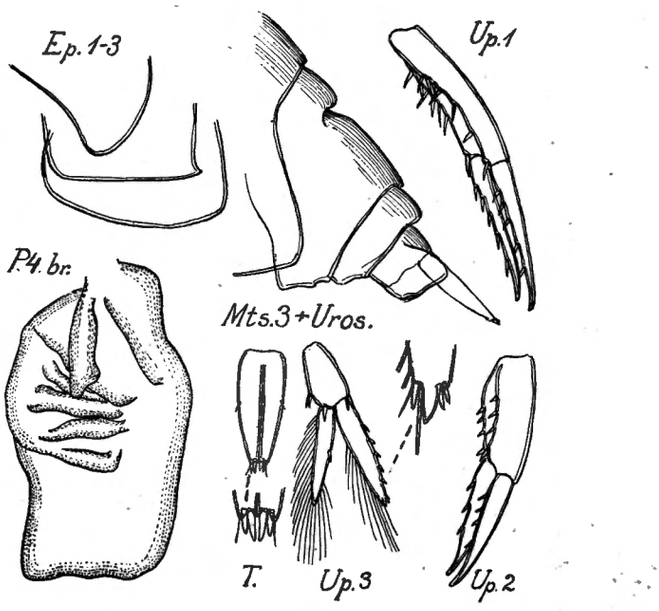

Fig. 3. — *Waldeckia enoei* nov. spec.
Branchia of pereiopod 4 (P. 4, *br.*), epimeral parts of metasome segments 1-3 (Ep. 1-3), metasome segment 3 and urosome (Mts. 3+Uros.), uropods 1-3 (Up. 1-3) and telson (T).

W. chevreuxi is neither described nor drawn), except that the upper margin of the hind lobe is not straight, but concave; thus the hind lobe gets a rather symmetrical shape. The limb of pereiopod 4 agrees with that of *W. obesa* (Chevreux, 1906, fig. 10F (per. 3); Walker, 1907, fig.); that of *W. chevreuxi* not described or figured), except that it is upon the whole somewhat broader, especially in 2. and 4. joints, and 6. joint is 1 1/4 times as long as 5. joint (not « aussi long que le carpe », Chevreux).

Pereiopod 5 has the sideplate very large, with a large rounded hind lobe, 2. joint is (like that of *W. chevreuxi;* Stebbing, 1910, fig.) almost circular

in circumference, with a few denticles on the hind margin, but is not fixed to the sideplate by a narrow neck (as in *W. obesa*, Chevreux, 1906, fig. 9H, Walker, 1907, fig.). The rest of the limb is as in the two other species, except thas 4. joint is still broader.

Pereiopod has the sideplate long and deep. 2. joint almost circular, with denticles on the hind margin. 3. and 4. joints are like those of pereiopod 5., the rest of the limb is lost.

Pereiopod 7 has the sideplate rather short, almost circular. 2. joint is not very different from that of pereiopod 6, but larger; the other joints nearly of the same shape as those in pereiopods 2-5; apically they have a few long setae.

6 pairs of branchiae are present, on pereiopods 2-7. Those of pereiopods 2-6 have nearly the same shape (see fig. 3, br. 4), with a short and narrow accessory lobe and several transversal folds in the proximal half; that of pereiopod 7 (see fig. of per. 7) is much smaller, irregularly lobate.

Uropod 1 has the outer ramus as long as the penduncle, inner ramus a trifle shorter. The rami are acute, and both rami and peduncle are spinose. Uropod 2 has a shape similar to that of uropod 1, but is shorter and heavier. Uropod 3 is still shorter than uropod 2. Outer ramus is lanceolate, about twice as long as the peduncle, with spines on the outer margin and setae on the inner margin. There is no apical joint in the inner ramus. The inner ramus has a shape similar to outer ramus, but has only a single spine, and setae also on the apical part of the outer margin.

The telson is long, narrow, cleft almost to the base. Each lobe has one dorsal spine, and apically a denticle, two heavy spines and a fine seta.

AFFINITIES AND REMARKS ON POSSIBLY NEARLY RELATED SPECIES. — 3 species were hitherto described as belonging to the genus *Waldeckia*, viz., *W. obesa* Chevreux, *W. chevreuxi* Stebbing, and *W. zschaui* (Pfeffer); but the last-named species is probably not a true *Waldeckia*.

Waldeckia obesa CHEVREUX.

Charcotia obesa CHEVREUX, Bull. Soc. Zool. France, vol. 30, 1905, p. 163, fig., and *Waldeckia obesa*, IDEM, 1906, p. 15, fig. (2 spec. [1 ♀ ovig. 17 mm. described], Graham Land, 2 loc., in the stomach of Pygoscelis antartica, and 110 m.).

Waldeckia obesa WALKER, 1907, p. 10, fig. (several spec., ♂, ♀ 18 mm.; ♂ drawn, ♀ described and drawn; Victoria Land [S. of New Zealand], 5 loc., depth?).

Waldeckia zschaui CHILTON, 1912, p. 471 (189) (fide Schellenberg 1926, p. 253) (many specimens, up to 16 mm.; Coats Land 74° 1′ S., 22° W., 161 fath.).

Waldeckia obesa CHEVREUX, 1913, p. 91 (several spec. : ♂, ♀, 3,5-18 mm., not described; Antarctic S. of S. America, 2 loc., 92-200 m.).

Waldeckia obesa SCHELLENBERG, 1926, p. 253, fig. (numerous spec. : ♂, ♀, jun.; length up to 25 mm. ♂ and ♀ described. Kaiser Wilhem-Land, several times, 385 m., once in the surface).

Waldeckia chevreuxi Stebbing.

Waldeckia chevreuxi Stebbing, 1910, p. 572, pl. 47 B (♀ ad., 7,5 mm., off Wata Mooli [near Sydney?], 54-59 fath., type-locality).

Waldeckia chevreuxi Chilton, 1921 *b*, p. 40, fig. (Many spec., ♂, ♀, up to 8 mm., S. Australia : Saunders Bank, Kangaroo Isl., 28 fath.; Bass Strait, Eastern Slope; Tasmania : Schouten Isl., 5 fath.; entrance to Oyster Bay ,and Bay of Fires, 10 fath.).

Waldeckia chevreuxi Idem, 1922, p. 4 (1 ♀ N.-W. Australia, 45 miles W.-S.-W. of Cape Jaubert).

Waldeckia (?) zschaui (Pfeffer).

Anonyx zschaui Pfeffer, 1887 (1888), p. 87 (13), pl. 2, fig. 1, by Chilton, 1912, p. 189 (471) incorrectly identified with *Waldeckia obesa* Chevreux (see Schellenberg, 1926, p. 255), is probably not a true *Waldeckia* (the hindlobe of side plate 4 is not long as in the other species). An antarctic species.

W. obesa and *W. chevreuxi* are closely allied; the most important differences are the following.

	W. obesa.	*W. chevreuxi.*
Head, lateral lobes.	Acute.	Rounded.
Pereiop. 2, 6. joint.	Palm not concave; lower corner not protunding, provided with rather long setae.	Palm slightly concave; lower corner protunding, provided with very short hairs or spinules.
Pereiop. 5, 2. joint.	Proximally narrowed, with a « neck ».	Proximally not narrowed, rather regularly rounded.
Apical joint of inner ramus of uropod 3.	Present.	Not present.
Length of body.	(♂, ♀) up to 25 mm.	(♀ with marsupium) 7.5 mm.

The specimen belonging to the present material and described above cannot be specifically identic with *W. obesa;* it is closer allied to *W. chevreuxi,* as most of the characters of this species (listed above) are in full agreement with the present specimen, the size excepted. Nevertheless it is impossible to decide the identity with certainty, as the existing descriptions of *W. chevreuxi* is too brief. If the dorsal parties of 3. metasome segment and of 1. urosome segment of *W. chevreuxi* are in agreement with *W. obesa* (and Stebbing says « general shape agreeing with *W. obesa* » —), the specific identity is excluded. For these reasons the specimen is probably to be taken as type of a new species. The specifie name is chosen in allusion to the locality, Poeloe Enoe.

The 2 hitherto described certain species of *Waldeckia* have been compared

with *Ephippiphora kroeyeri* White, *Lysianassa nitens* Haswell, and *L. australiensis* Haswell (by Stebbing, 1910, p. 571, and by Chilton, 1921*b*, p. 37); possibly they all should be taken together to one genus.

Lysianassa nitens was established by Haswell 1880 (p. 255, pl. 8 fig. 5) and later on described by Haswell (1882, p. 232, pl. 4 fig. 1, and 1885, p. 98 pl. 12 fig. 1-2; I have not had access to this last-named paper). Haswell's descriptions are so brief and his figures so schematic that it is impossible to decide with certainty the position of the species within the fam. *Lysianassidae*.

Lysianassa australiensis was established by Haswell 1880 (p. 323, pl. 18 fig. 3, and redescribed 1882, p. 232 and 1885, p. 99, pl. 12 figs. 3-4). This species is possibly a *Waldeckia* (pereiopod 1, sideplate of pereiopod 4), but pereiopod 2 is not in agreement with the other species of the genus.

Ephippiphora kroeyeri White 1847. For literature see Chilton 1921*b*, p. 35, but some additions and corrections are to be made. White's original description of 1847 was reprinted by White 1848, p. 227; this is not recorded by Chilton. G. M. Thomson, 1878, p. 237, cites a figure in the Zoology of Erebus and Terror (White, 1875), pl. V; but this must be due to an error; pl. V of the Crustacea does not exist. Chilton 1921*b* has described and figured a specimen which he considers as identic with *E. kroeyeri* White. It is closely allied to *W. enoei*, as it agrees in several characters : general appearance, including 4. side plate and urosome segment 1, pereiopod 2 and telson; but it differs as to epistomal plate, maxillipeds (palp has according to the figure only 3 joints), pereiopod 1, and uropod 3 (outer ramus has distinct apical joint).

Familia GAMMARIDAE.

Genus PARELASMOPUS Stebbing.

Parelasmopus Stebbing, 1888, p. 1029, and 1906, p. 417.

2. — **Parelasmopus suluensis** (Dana).

Parelasmopus	*suluensis*	Stebbing, 1888, p. 1029, pl. 100.
—	—	Idem, 1906, p. 417 (lit. and syn.)
—	—	Walker, 1904, p. 278, pl. 6, fig. 38.
—	—	Chevreux, 1907 (1908), p. 478.
—	—	Stebbing, 1922, p. 7.
—	—	Chilton, 1922, p. 7, fig., lit.
—	—	Spandl, 1924, p. 52, fig.
? —	*setiger*	Chevreux, 1901, pp. 412-418, fig.

Occurrence. — Sorong-Dom, 2-III-1929, 1 ♂ ad. 9 mm. ?Mansfield Eiland, 1-III-1929, 2 abt. 5-7 mm.

Remarks. — The genus *Parelasmopus* differs from *Elasmopus* essentially in having 2. joint of mandibular palp much shorter than either the first or third (in *Elasmopus* third joint is longer than second). Possibly the genus is not valid, as the mandibular palp varies in different species of *Elasmopus* (Walker, 1904, p. 275).

Two species have been established, viz., *P. suluensis* (Dana), and *P. setiger* Chevreux; they are very closely allied and probably identic (f. i. pereiopod 2 in ♂ almost totally alike, cf. Chilton, 1922, fig. 3*b* (*P. suluensis*) and Chevreux, 1901, fig. 32, p. 412 (*P. setiger*).

The two specimens from Mansfield Eiland are ♀ with marsupialplates, 5-7 mm. in length; pereiopods 1-2 are almost quite alike. That the specimens belong to the genus *Parelasmopus* is realised by the shape of the mandibular palp. But it is impossible to determine them with certainty as to species; the eyes are small as in *P. setiger*, but the pereiopods 5-7 have not the long setae characteristic of this species, and there are no dorsal setae. There are only 3 pairs of dorsal teeth (on metasome segment 1-2 and urosome segment 1, none on mesosome segment 7).

The specimen from Sorong-Dom is ♂ ad., 9 mm. It agrees fairly well with Chilton's drawing (1922, fig. 3). The eyes are small as in *P. setiger*, and like in this species the telson has 5 pairs of setae (*P. suluensis* : 2 pairs), but accessory flagellum of antenna 1 has only 2 joints (like *P. sul.; P. setiger* : 3), and the pereiopods 5-7 are not very setose.

Distribution. — « Es ist wohl sicher anzunehmen, dass diese Art in allen warmen und gemässigten Meeren angetroffen werden wird » (Spandl, 1924, p. 334).

The special localities are as follows. The type-locality (Dana, 1852) was the Sooloo Sea « from a small Island off the harbour of Soung, among sea weed floating off the shore ». — W. Africa : Port Alexander (Angola), 75 m., 1 spec. (Stebbing, 1922, p. 7). — Red Sea : Kosseir, rather frequent (Spandl, 1924, p. 52); exact locality not noted, mud, Crust. and shells, several spec. (Walker, 1909, p. 334). — British E. Africa : Wasin, 14-20 m., 14 spec. (♀ 10 mm.) (Walker, 1909, p. 334). — Seychelles : Port Victoria, Mahé, on the coral reef (type-loc. of *P. setiger;* Chevreux, 1901). — Maldives : 3 loc., 10-40 m., several spec. (♀ 7 mm.) (Walker, 1905, p. 929).— Ceylon: Cheval Paar, Gulf of Manaar, ♂, ♀ (♀ 13 mm.) (Walker, 1904, p. 278). — N. W. Australia : 45 miles W. S. W. of Cape Jaubert, 48 ft. and 72 ft. (Chilton, 1922, p. 7). — Torres Strait : between Cape York and the Arrou Islands, 10°30′ S., 142°18′ E., 16 m., coral mud (Stebbing, 1888, p. 1031). — Australian Islands : S. of New Mecklenburg, Praslin Reef, ♂ (Walker, 1909, p. 334); Gambier and Tuamotu Archipels (abt. 21°-23½° S., 135° E.), 7 loc., 5-25 m., several times on pearl oysters (Chevreux, 1907 [1908], p. 478).

Genus ELASMOPUS Costa.

Elasmopus Stebbing, 1906, p. 441, 732.

3. — **Elasmopus subcarinatus** (Haswell).

Elasmopus subcarinatus Stebbing, 1906, p. 441 (lit. and syn.).
— — Chilton, 1914 (1915), pp. 321-326, fig. (with lit. etc.).
— — Tattersall, 1922, p. 9.

Occurrence. — Mansfield Eiland, 1-III-1929. 1 ♂ ad. 5 mm. (pereiopod 2 like Chilton, 1914 [1915] « type 1 », fig. 4), 1 ♀ ovig. 6 mm.

Distribution. — Widely distributed in the tropic and temperate parts of the Indo-Pacific Oceans. The localities are as follows.

Port Jackson (near Sydney), type-locality (Haswell, 1879, p. 335). — S. Africa : between Bird Island and the mainland, 18-29 m., 1 small ♂ (Stebbing, 1910*a*, p. 457). — Cargados (N. E. of Mauritius), 40 m., 13 spec. (♂ 5 mm.) (Walker, 1909, p. 335). — Ceylon: « abundant and occurs all round Ceylon » (♂ 7.5 mm.) (Walker, 1904, p. 275). — W. of Australia : Wallaby Group, Abrolhos Isl., 1♂6 mm. (Tattersall, 1922, p. 9). — E. of Australia : off Manning River (N. of Sydney), off Port Hackink (near Sydney), off Wollongong (S. of Sydney) abt. 100 m., off Wata Mooli (near Sydney?) abt. 100 m. (Stebbing, 1910, p. 602); Port Stephens (N. of Sydney) (Haswell, 1882, p. 260); Sydney Harbour (Chilton, 1914 [1915], p. 326); Botany Bay (near Sydney) and Port Jackson (near Sydney) « very common at low water among algae, etc. » (Haswell, 1882, p. 260; Stebbing, 1888, p. 1024, and 1910, p. 602). — S. of Australia: Melbourne, 60 m., sand (Stebbing, 1888, p. 1024); St. Vincent Gulf, S. Australia (Chilton, 1914 [1915], p. 326). — Tasmania: Tasmanian coast, 1 ♀, and Eastern Slope, Bass Strait, 4 ♂, 1 ♀ (Chilton, 1921*b*, p. 76. — New Zealand: « At moderate dephts in all suitable localities from the Three Kings to Stewart Island » (Chilton, 1914 [1915], p. 326); Off New Zealand 40°28′ S., 177°43′ E., abt. 2,000 m. (Stebbing, 1888, p. 1024).

Familia **TALITRIDAE.**

Genus ORCHESTIA Leach.

Orchestia Stebbing, 1906, p. 530.

4. — **Orchestia chiliensis** M.-Edw.

Orchestia selkirki Stebbing, 1888, p. 603, pl. 1-2 (fide Chilton 1921*a*, p. 83).
— *chiliensis* Idem, 1906, p. 537 (lit. and syn.).
— — Chilton, 1921*a* p. 82, fig. (lit. and syn.).

Occurrence. — Poeloe Karang (Aroe Archipelago), **22-III-1929**, 1 ♂.

Distribution. — Chile, several loc.; Juan Fernandez, several times to 500 metres above sea level (see Chilton, **1921***a*). — New Zealand : « it is the commonest of the shore hoppers and is usually found under stones, etc. about high water mark, though under favourable circumstances it may sometimes extend a little distance from the sea » (Chilton, **1921***a*).

Genus HYALE Rathke.

Hyale Stebbing, 1906, p. 559.

5. — **Hyale** sp. **(H. crassicornis** [Haswell] **?).**

? Hyale crassicornis (Haswell), Stebbing, 1906, p. 568.

Occurrence. — Poeloe Weh (Sumatra), **12-XII-1928**, 1 ♀ abt. 5 mm.

Remarks. — The specimen belongs to the genus *Hyale :* uropod **3** has only **1** ramus, not **2** rami (as in *Parhyale*). I was unable to determine it as to species, but possibly it is *H. crassicornis*, an Australian species.

Familia **AORIDAE.**

Genus et species indeterm.

Occurrence. — Sorong-Dom, **2-III-1929**, 1 ♀ ovig., abt. **10** mm.

Remarks. — I was unable to determine this specimen as to genus and species.

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