TERRESTRIAL ISOPODS

BY

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Distribué le 31 décembre 1931

Vol. III, fasc. 9

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1. INTRODUCTORY

This Collection contained only seven species of Terrestrial Isopods, but of these four were new and have been briefly described in a previous communication (1930). The descriptions of the new species are enlarged upon below. The richness of the fauna of the Malay Archipelago is emphasised by the proportion of new species, as a large number have already been described by Budde-Lund, Verhoeff, Dollfus and other authors. The following is a list of the species, all of which are recorded for the first time from the localities given, except *Ligia exotica*, which seems to be found in all warm seas, and *Ligia hawaiensis*, which occurs in New Guinea.

1. *Ligia exotica* Roux. S. Manoembai (Aroe Isles).
2. *Ligia hawaiensis* Dana. Tartaroe (Pisang Isles).
3. *Paraphiloscia angustissima* B. L. Halmaheira.
4. *Spherillo pomarius* Jack. Lomira (N. G.)
5. *Nesodillo papuae* Jack. Angi-Gita (N. G.)
6. *Nesodillo silvestris* Jack. Siwi (N. G.)
7. *Nesodillo enoensis* Jack. Enoe (Aroe Isles).

2. DESCRIPTION OF MATERIAL

Family LIGIIDAE.

1. Ligia exotica Roux.

Very widely distributed on the shores of warmer seas. The single specimen, a female, occurred in S. Manoembai (Aroe Isles).

2. Ligia hawaiensis Dana.

See Jackson (1922) for distribution.

A single female specimen. The antennae and uropods are absent, but the general form and mouth parts agree with the author's previous account. The interocular distance is restricted. The endite of the maxillipede is furnished with eight spear shaped bristles in a row on the distal edge and two similar bristles a little lower on the face. Two very setose penicilli are found near the inner border. The whole endite is profusely setose. It has been pointed out by Panning (1924) that the degree of separation of the segments of the endoped is a bad character and in this specimen the apodomes of one endoped are distinctly, and in the other indistinctly, shewn. The outer endite of the maxillula has three ctenate teeth; the three plumes of the inner endite decrease rapidly in length distally and increase in hairiness, and the distal termination of this ramus has a thick brush of setae.

Occurrence : Tartaroega (Pisang Isles).

Family ONISCIDAE.

Sub-Family ONISCINAE.

3. Paraphiloscia angustissima (B. L.).

Pseudophiloscia angustissima B. L. (1912).

A single female specimen, which agrees with the type in all respects but the flagellum of the antenna. The flagellum of this specimen is shorter in relation to the fifth segment than in the type, and the segments are nearly subsequal, whereas those of the type have the relation $1 > 2 > 3$. The author has previously had occasion to point out (1927) that Budde-Lund's description of the

telson of this and other species of *Paraphiloscia* is not borne out by his types in the British Museum. This specimen is quite in accord with the type, but not with Budde-Lund's description, which should read : Telson 1 ½ times as broad as long, apex triangulate, sub-acute, sides nearly straight.

The antenna must be looked upon as a variation of insufficient importance to justify the separation of this species from those already described.

Occurrence : Halmaheira « forêt Edowangi, tamisage d'humus ».

Sub-Family **ARMADILLIDIINAE.**

4. Spherillo pomarius Jack.

5. Nesodillo papuae Jack.

6. Nesodillo silvestris Jack.

7. Nesodillo enoensis Jack.

Diagnoses with four figures in Jackson (1930). Plates I and II.

Under the scheme put forward by Verhoeff (1926) these four species fall into two genera on the structure of the inner articulating lappets of the tergites of the first somites. The difficulty of classifying such nearly related forms as those covered by the supergenus *Spherillo* is emphasised by these specimens, as it is quite evident that their mutual relationships are not represented by this generic grouping.

Nesodillo enoensis stands apart from the other three (which are closely related) by virtue of its antennula, antenna, left mandible, the form of the pleopoda and the uropod, but on its small articulating lappets must be placed with *Nesodillo silvestris* and *Nesodillo papuae*.

The points of comparison between the four species and the characters additional to those given in my previous note (1930) are given below.

Antennula (Pl. I, fig. 1; Pl. II, fig. 1, 5 and 12). — In each slender and minute; the distal segment conical; numerous sensory setae on inner side in *Spherillo pomarius*, a single group on inner side in *Nesodillo papuae* and probably in *Nesodillo silvestris*, single group on outer side in *Nesodillo enoensis*, and whole appendage more slender than in others.

Antenna (Pl. I, fig. 2 and 18; Pl. II. fig. 13). — Slender and long, with short flagellum less than fifth segment of peduncle in *Spherillo pomarius* and *Nesodillo silvestris;* relatively stout and short in *Nesodillo enoensis* with flagellum as long as fifth segment of peduncle; antennal socket in *Spherillo pomarius* drawn out on inner side to form triangular process partially covering antennula. The appendage was missing in *Nesodillo papuae*.

Mandible (Pl. I, fig. 3 and 4; Pl. II, fig. 14) — Wahrberg (1922) in his valuable work on Australian wood lice finds two types of mandible in *Spherillo;* the one, right with formula P. 1+1, left P. 1+2; the other, right P. several + 1, left P. several + 2. Neither group can contain these four new species, as in each case the right mandible has a diastema without penicilli between the plume and the setose pad, giving the formula P. 0+2. The left in each case bears numerous setae (in *Nesodillo enoensis* at least 9).

Maxillula (Pl. I, fig. 5 and 6). — Similar and without important characters in the four species.

Maxilla (Pl. I, fig. 7). — With a well marked and very setose inner endite typical of the genus in each case.

Maxillipede (Pl. I, fig. 8). — Similar in the four species. Endite with sharp triangular tooth on inner side of distal border and three large spines on face; terminal segment of endopod slender and furnished with terminal brush of setae.

Clypeus (Pl. I, fig. 9; Pl. II, fig. 1, 5 and 12). — The distinctive character of the lateral processes should be noticed.

Pleopoda-*Spherillo pomarius* (Pl. I, fig. 12-17) and *Nesodillo enoensis* (Pl. II, fig. 17-21) are represented in this collection by males. The two contrast sharply. The exopods of the pleopods of *Spherillo pomarius* are uniformly more drawn out at the posterior median angle, so that the hind border is longer and more steeply sloped than in *Nesodillo enoensis*.

Nesodillo papuae (Pl. II, fig. 8-11), *Nesodillo silvestris* (Pl. II, fig. 4) and *Nesodillo enoensis* (Pl. II, fig. 22-25) are represented by females. The two former are very similar and only *Nesodillo papuae* is figured in full. In both the posterior median angle of the pleopods is more drawn back in the latter, in which it is almost rectangular.

Uropods. — These have already been figured (1930). It will be noted that the exopod is minute in *Nesodillo enoensis*, but well developed in the other forms.

Colour. — *Spherillo pomarius*. Greyish-brown. Broad stripe down middle of back, lighter in midline, remainder mottled on white ground with slight stripe over coxal plate.

Nesodillo papuae. Cream ground with very light brown mottling.

Nesodillo silvestris. Greyish-brown. Wide stripe in middle of each tergite, broken stripe over coxal plate, elsewhere mottled on cream ground.

Nesodillo enoensis. Slate brown on cream ground. Heavy patches on each side of midline of tergites, smaller ones between this and margin, posterior edge of each tergite lined with brown, coxal plates predominately brown, head mottled.

Types. — The types are deposited in the Musée royal d'Histoire naturelle de Belgique, Bruxelles, n° I. G. : 9223.

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EXPLANATION OF PLATE I

Spherillo pomarius:

Fig. 1. — Antennula.

Fig. 2. — Antenna.

Fig. 3. — Right Mandible.

Fig. 4. — Left Mandible.

Fig. 5. — Maxillula, outer endite.

Fig. 6. — Maxillula, inner endite.

Fig. 7. — Maxilla.

Fig. 8. — Maxillipede.

Fig. 9. — Clypeus and antennary sockets.

Fig. 10. — Articulating lappets on inner side of Tergites I and II, right side, seen from within.

Fig. 11. — Articulating lappets on inner side of Tergites I and II, right side, seen from below.

Fig. 12. — 1st Pleopod, ♂, exopod.

Fig. 13. — 1st Pleopod, ♂, endopods.

Fig. 14. — 2nd Pleopod, ♂, exopod.

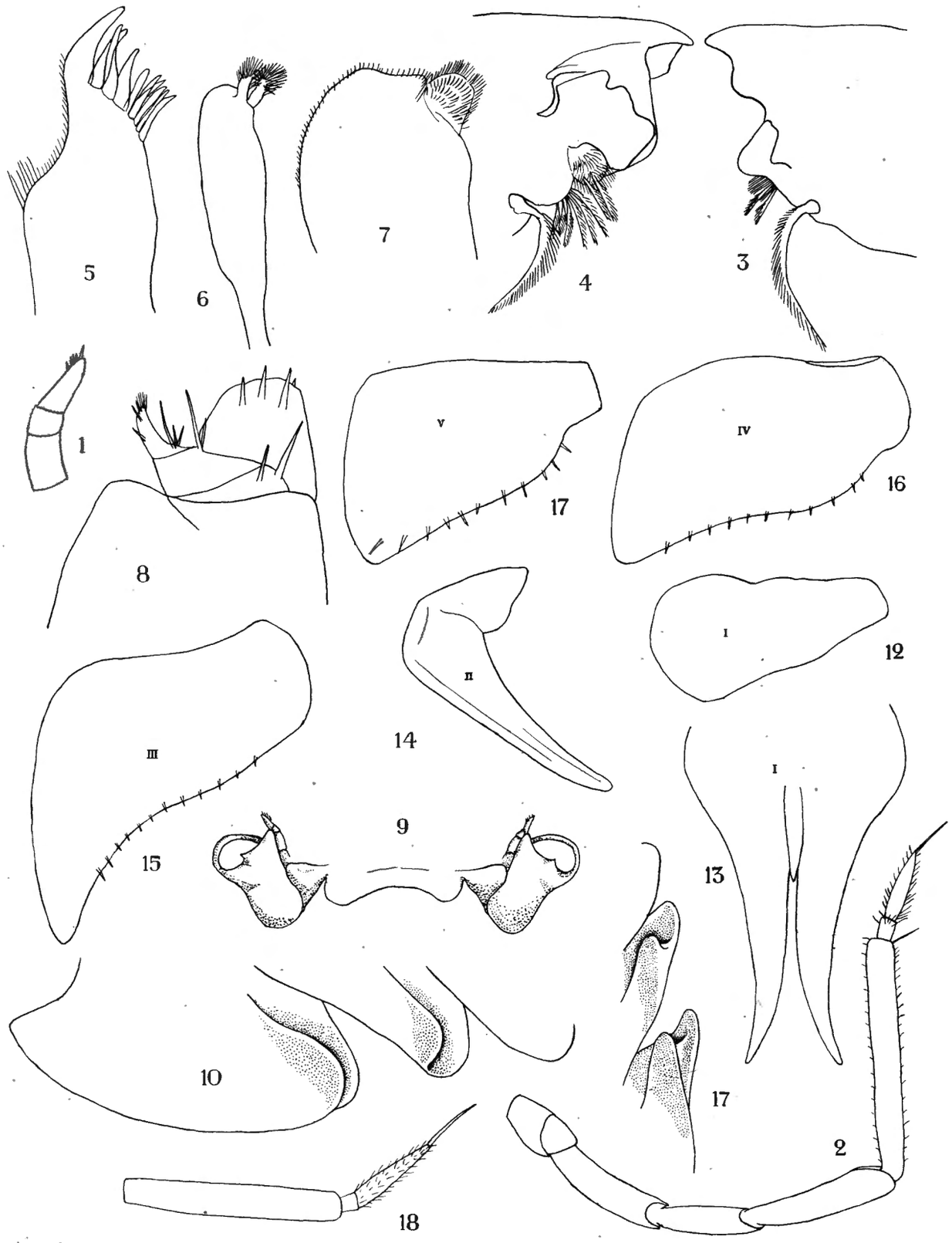
Fig. 15. — 3rd Pleopod, ♂, exopod.

Fig. 16. — 4th Pleopod, ♂, exopod.

Fig. 17. — 5th Pleopod, ♂, exopod.

Nesodillo silvestris:

Fig. 18. — Antenna; Flagellum and 5th segment.



H. GORDON JACKSON. — Terrestrial Isopods.

EXPLANATION OF PLATE II

Nesodillo silvestris :

Fig. 1. — Clypeus, antennary sockets and antennula.

Fig. 2. — Articulating lappets on inner side of Tergites I, II and III, left side, seen from within.

Fig. 3. — Articulating lappets on inner side of Tergites I, II and III, left side, seen from below.

Fig. 4. — 5th Pleopod, ♀, exopod.

Nesodillo papuae :

Fig. 5. — Clypeus, antennary sockets and antennulae.

Fig. 6. — Articulating lappets on inner side of Tergites I and II, right side, seen from within.

Fig. 7. — Articulating lappets on inner side of Tergites I and II, right side, seen from below.

Fig. 8. — 2nd Pleopod, ♀, exopod.

Fig. 9. — 3rd Pleopod, ♀, exopod.

Fig. 10. — 4th Pleopod, ♀, exopod.

Fig. 11. — 5th Pleopod, ♀, exopod.

Nesodillo enoensis :

Fig. 12. — Clypeus, antennary sockets and antennulae.

Fig. 13. — Antenna.

Fig. 14. — Left Mandible.

Fig. 15. — Articulating lappets on inner side of Tergites I and II, right side, seen from within.

Fig. 16. — Articulating lappets on inner side of Tergites I and II, right side, seen from below.

Fig. 17. — 1st Pleopod, ♂, endopod.

Fig. 18. — 2nd Pleopod, ♂, exopod.

Fig. 19. — 3rd Pleopod, ♂, exopod.

Fig. 20. — 4th Pleopod, ♂, exopod.

Fig. 21. — 5th Pleopod, ♂, exopod.

Fig. 22. — 2nd Pleopod, ♀, exopod.

Fig. 23. — 3rd Pleopod, ♀, exopod.

Fig. 24. — 4th Pleopod, ♀, exopod.

Fig. 25. — 5th Pleopod, ♀, exopod.

H. GORDON JACKSON. — Terrestrial Isopods.