

INSECTS OF SAMOA

PART VIII.

TERRESTRIAL ARTHROPODA OTHER THAN INSECTS

FASC. 1

ISOPODA TERRESTRIA

BY HAROLD G. JACKSON, D.Sc., Birkbeck College, University of London

(With 2 Plates)

1. INTRODUCTORY

UP to the present two genera (including four species) of Woodlice have been recorded from the Samoan Islands. The small collection described below, which has been put into my hands by the kindness of Dr. P. A. Buxton, enables me to add four new records and a new species. I have taken the opportunity to figure and redescribe two of the old species which were only briefly described, without figures, by Budde-Lund. The collection of the Bishop Museum, Honolulu, has been placed at my disposal in addition to the collection of Buxton and Hopkins, but, as it consists entirely of dried specimens, it is of little value except for the bare recording of well-known species.

The following Woodlice have been already recorded from the Samoan Islands, all by Budde-Lund (1885):

Paraphiloscia gracilis (B.L.).

Spherillo erinaceus B.L.

„ *montivagus* B.L.

„ *testudinalis* B.L.

Of these, *Paraphiloscia gracilis* (B.L.) and *Spherillo testudinalis* B.L. are represented in the present collection.

The undermentioned species are recorded for the first time:

Rhyscotus ortonedae B.L.

Alloniscus brevis B.L.

Ligia exotica Roux.

„ *perkinsi* (Dollfus).

Spherillo spicatus, sp. n.



2. DISTRIBUTION

The most remarkable feature of the Woodlice of the Pacific Islands is the great preponderance of members of Budde-Lund's sub-family SPHERILLONINAE. This sub-family was established (1904) on three characters, namely, the form of the bristles on the inner endite of the maxillula, the molariform lacinia mobilis of the mandible and the position of the eyes on the lateral margin of the head. Only the first of these characters stands examination.

Wahrberg (1922) has pointed out that the molariform type of mandible is also found in *Cubaris*, and that a *Spherillo* deprived of the inner endite of its maxillula is indistinguishable from a *Cubaris*. The eye character is so variable that it is valueless. No other common character can be found.

Budde-Lund, therefore, in reality founded this sub-family on a single character, being evidently impressed by the fact that the forms possessing it were restricted to a definite area.

A character which divorces genera so obviously related as *Spherillo* and *Cubaris*, and makes such strange bedfellows as *Paraphiloscia* and *Spherillo* can have no taxonomic value, but its relation to the distribution of these forms presents a fascinating problem. Very few forms with slender penicilli on the maxillula live within the area of the Pacific and Indian Oceans, and very few with stumpy penicilli outside it. Of the latter, I know only *Philoscia* (*Benthana*) *minima* (Dolf.), of Spain and Portugal, although others may exist. It seems therefore to be a character of the same order as melanism in the races of man established in hot climates, which may possibly be due to some environmental influence, but is not fundamental enough to separate otherwise closely related forms by the relatively wide gap of a sub-family. *Paraphiloscia*, for example, is obviously in every respect a typical "Philoscia" and should have no more than sub-generic rank, and *Spherillo* is a genus, as Wahrberg pointed out, which stands naturally by the side of *Cubaris* in the ARMADILLIDIINAE.

There seems therefore no justification for retaining the sub-family SPHERILLONINAE, and in any rational classification of the Terrestrial Isopods one must assume that this particular form of maxillula has arisen independently more than once.

The four species outside the "SPHERILLONINAE," which are recorded here, include *Ligia exotica* and *Alloniscus brevis*, which are already known to be widely distributed in the Pacific. A single *Rhyscotus* was found, which I was unable to distinguish in any respect from *R. ortoneda* of Ecuador. This distri-

bution is remarkable, but when one takes into account how little is known of this peculiar genus, and that the Crustacean fauna of the west coast of South America is closely linked with the Southern Pacific fauna, one hesitates to commit oneself to any definite statement about it.

The occurrence of *Ligia perkinsi* on Namua is much more remarkable. It is unnecessary to deal with the past history of this species, since I have done so in a recent paper (1927). Up to the discovery of this material (1 ♂ and 2 ♀) "on rocks on shore," it has been assumed that *L. perkinsi* is a terrestrial and mountain form peculiar to the Hawaiian Islands. Its claim to that distinction must be disallowed, although I have reason to believe that it will be found at high altitudes in Samoa as well as on the shore. Four explanations might be brought forward to account for this distribution. (1) *L. perkinsi* is a widely spread but uncommon form on the Pacific Islands, and is yet to be recorded from other localities; (2) it is a growth, non-breeding or other stage, of *L. exotica*; (3) it has arisen independently in the two localities; (4) it has been transported by human agency.

Of these possibilities the two last may be dismissed as improbable. It should be possible, by the examination of a large number of specimens of *L. exotica* of all sizes, to test the second. As a matter of fact no "*perkinsi*" stage was present among the abundant material examined by me, and the specimens of *L. perkinsi* that I have seen have every indication of maturity; the male also of *L. perkinsi* is larger than many males of *L. exotica*, which already possess the characteristic process on the propodus of the first leg. On the available evidence, therefore, I feel bound to conclude that *L. perkinsi* is a distinct species, and that the explanation of its occurrence here is the first one stated above.

3. DESCRIPTION OF MATERIAL

Family : ONISCIDAE.

Sub-family : ARMADILLIDIINAE.

1. *Spherillo testudinalis* B.L.

(Plate II, figs. 26-29.)

Synonymy in Budde-Lund (1908).

Spherillo testudinalis, Searle (1914).

Occurrence.—Apia, Upolu Island, v.1924, and "under stones," ii.1925. The

following records are from the Bishop Museum material. Tutuila, 900 ft. (Kellers) iv.1918 ; Tau, 20.ii.1926, and Ofu, 27.ii.1926, Manua (Judd).

Remarks.—Redescribed by Budde-Lund in 1908, and well figured. Searle adds nothing to this description, but confirms Budde-Lund's conjecture that *Cubaris pacifica*, Borradaile, is synonymous with this species. Since the characteristic notch on the first somite for the reception of the second somite when rolled up is not well shown or described, I figure it, with the mouth-parts. The brood pouch of the female is as described under *S. spicatus* below.

The species is very widely distributed in the Pacific and Indian Oceans.

2. *Spherillo spicatus*, sp. n.

(Plate I, figs. 1–21 ; Plate II, fig. 25.)

Male and female specimens examined.

Length, ♂ 8 mm., ♀ 10 mm. ; *breadth*, ♂ 4 mm., ♀ 5 mm.

Shape, oblong-oval. *Surface* smooth, produced into great spines.

Head.*—Eyes small, about 12 ocelli, convex, well within marginal line. Frontal line drawn vertically upwards at each side, to form pointed ear-like lateral lobes. Occiput provided with transverse row of four long spines. Occipital groove covered by carapace fold. Marginal line forms hind margin of head and runs beneath eye, where it becomes flattened out and merged with edge of frontal shield. Frontal line strongly raised into ridge much surpassing vertex. Profrons forms with postfrons wide shield. Frontal area slightly convex in centre, bounded laterally by thick margin, which probably represents antennary tubercle fused with frontal shield. Frontal lamina obscure in middle ; antennary socket well set out from face, and provided ventrally with rounded tubercle. Clypeus not protruded far from face ; lobes long, narrow and pointed. Labrum membranous. Gena deeply excavated under marginal line, so that eye projects laterally on shelf ; produced downwards beneath genal fossa, lower than mandible ; genal fossa and groove shallow.

Thorax.—I. Collar line double, turning forward at each side almost at right angles, so that two sides are nearly parallel, hind edge slightly convex ; posterior margin curved forwards, posterolateral angles rectangular, lateral margin thin

* The nomenclature employed is that proposed by the author in "The Morphology of the Isopod Head" (1926). Several points in this and the following descriptions are common to other genera of the same type, but as the application of the above paper to other Terrestrial Isopods is not yet published, they are given in full.

and turned up, posterolateral margin grooved; 7 spines (6 in posterior row, 1 anterior and median). The anterolateral edge of each succeeding somite is deeply cut away, so that III, IV and V terminate laterally in an acute point, VI and VII in an obtuse point. Eight spines in transverse row on each; lateral spines of each row on coxal plate and directed outwards. Pronotum about $\frac{1}{4}$ of dorsal surface; articulating area reaching to lateral margin of somite. Somite II has small internal anterior articulating process.

Abdomen.—I, completely covered by last thoracic; II, very narrow; epimera of III, IV and V drawn diagonally back, their inner edges in V are almost parallel, each has lateral spine and IV and V have a median spine; telson broader than long, coarctate, posterior border curved but more or less rectangular with sides, long median spine.

Appendages.—*Antennula* minute, segments subequal.

Antenna.—Moderately stout; proportions to body, ♂ $\frac{4.5}{8}$, ♀ $\frac{5}{10}$, fifth segment longer than flagellum, which is biarticulate, proximal segment $\frac{1}{4}$ distal, which has terminal bristle, no carinae, grooves nor spines.

Mandibles.—Right with small flat lacinia mobilis, three penicilli between it and setose plume; left with powerful molariform lacinia mobilis and three penicilli (1 free, 2 on setose pad) between it and setose plume.

Maxillula, *maxilla* and *maxillipede* typical of the genus.

Pleopoda.—General form shown in figures. 1st exopod absent in female, tracheae in 2nd and 3rd and rudimentary tracheae in 4th; in male, tracheae in 1st and 2nd.

Uropod.—Protopod broad, narrowing posteriorly, fold-like cover over base of exopod; exopod comparatively long, considerably surpassing protopod; endopod nearly as long as telson, carina on dorsal side, reaching about as far back as tip of exopod, tipped with two stout bristles.

Colour (in spirit).—Yellow mottled with violet-brown; on each side of mid-line heavier bands of pigment; abdomen and telson more heavily pigmented. Head and limbs lightly pigmented.

Occurrence.—Malololelei, Upolu, 2000 ft. 25.iv., and vi.1924; the species was common, on rocks on the ground and on tree-trunks, in rain forest.

Type in British Museum (Natural History).

Remarks.—The thoracic sterna in the pregnant mother are entirely membranous from the first to the fifth somites, and the integument in the pouch is prolonged into long, hollow, finger-like processes, which lie, like packing, between

the embryos. The sterna of the last two somites are easily separable in the mid-line. The spines are longer and more slender in the male than in the female.

The above species takes its place with the other spiny species of *Spherillo* previously described, but is clearly distinct from them. *S. erinaceus*, which has been recorded from Upolu, differs from it entirely in the arrangement of the spines, the telson, the colour and other smaller points.

3. *Spherillo erinaceus* B.L.

Distribution.—"Island Upolu" (Budde-Lund).

4. *Spherillo montivagus* B.L.

Distribution.—"Australia. Several specimens have been taken in some of the Australian Islands: Upolu; Samoa; Ninafoon, three specimens from the intestines of *Megapodius Pritchardi*: Ruk" (Budde-Lund, 1904).*

Neither of these species is represented in the present collections: both were recorded by Budde-Lund from the island of Upolu.

Sub-family: RHYSCOTINAE.

5. *Rhyscotus ortoneda* B.L.

One specimen was found at Apia, Upolu, 30.viii.1925. The species was described and figured by Budde-Lund in 1908. The type locality is Ecuador, but members of this genus are very small and easily elude observation, and the distribution will probably prove to be more extensive than is at present known. A species occurring in the Galapagos Islands has been described by Van Name (1924) under the name *R. laxus*, which I am unable to distinguish from this species by the description, and may easily prove to be synonymous with it.

Sub-family: ONISCINAE.

6. *Alloniscus brevis* B.L.

Budde-Lund, 1885, p. 226; 1908, p. 298.

(Plate II, figs. 30-37.)

Male and female specimens examined.

Length, ♂ 8 mm., ♀ 8 mm.; *breadth*, ♂ 4 mm., ♀ 4.5 mm.

* The island is doubtless Niuafoou, an outlier of Tonga; and the bird is *M. pritchardi*, Gray.—P. A. BUXTON.

Shape, oblong-oval. *Surface* smooth, but covered with prominent scales in transverse rows.

Head.—Eyes moderate, about 22 large ocelli. Lateral lobes form prominent tubercle in front of eyes. Median lobe indicated by bulbous triangular projection from frontal area. Occipital groove covered above by carapace fold. Marginal line forms hind margin of head, continuous beneath eyes, running forwards and downwards under antennal socket. Antennary tubercles indistinctly indicated. Frontal line indicated by slightly raised line, on which is a row of small tubercles. Profrons slightly bulbous medianly, coarsely tuberculated and pigmented. Supraantennal line linear between antennal sockets, fused with their upper border, joining marginal line on each side. Postfrons bulbous, with granular surface, free from pigment. Frontal lamina not distinctly demarcated from postfrons; antennary sockets not prominent and defined above by supraantennal line. Clypeus not very protuberant, lateral processes long but narrow, not attaining to gena. Gena extensive, not marked by fossa or groove.

Thorax.—First tergite, hind border curved forwards; first to third tergites not sinuate; VI and VII sinuate, posterolateral angles far drawn back but not sharply; coxal plates marked by deep grooves on II, III and IV in female only. Collar line single.

Abdomen.—Not abruptly contracted; III, IV and V postero-lateral angles well drawn back, inner edges of epimera parallel in V and nearly so in others, drawn back as far as, or only slightly less than, tip of telson. Telson nearly twice as wide as long, triangulate, sides nearly linear, obtusely acuminate, sulcate at tip.

Appendages.—*Antennula* minute, terminal bunches of bristles.

Antenna.—Setose, no spinous processes, moderately stout; flagellum equal in length to 5th segment, triarticulate, segments equal. Proportions to body, ♂ $\frac{3.5}{8}$, ♀ $\frac{3}{8}$.

Mandibles.—Right, toothed lacinia, two stout, very setose penicilli (1 free, 1 on setose pad); left, powerful toothed lacinia, three stout, very setose penicilli (1 free, 2 on setose pad).

Maxillula.—Outer endite 5+4, all simple: inner endite, 2 moderately short brushes, terminal long single bristle.

Maxilla.—Both endites very hairy.

Maxillipede.—Endopod short and stout, dense brushes of bristles at *a*, *b* and *c*; endite very setose; base densely covered with curved bristles.

Peraeopoda.—Meros and carpos richly supplied on inner side with large bristles on 1st to 6th legs in male. Less spiny in female.

Pleopoda.—Penes stout and short, with outward turned points; exopods large and membranous, with expanded lateral branchial portion sharply separated from rest; stout spines on margin in male.

Uropod.—Protopod massive, hardly longer than telson, well-marked inner portion bearing endopod; exopod conical and short, little longer than protopod; endopod short, reaching about one-third up exopod, with terminal bristles.

Colour.—On mid-line and over coxal plates a stripe of slaty grey; on each side of mid-line and on coxal plates, yellow mottling; under surface and appendages white with only very sparse pigment.

Distribution.—"Indes"; Comoro Island (Indian Ocean).

Occurrence.—Tutuila, Leone Road (Judd), 29.iii.1926; Upolu, Apia (Wilder) 1.ix.1925. (Both from Bishop Museum collection.)

Remarks.—This species is doubtfully separable from *A. oahuensis* B.L., which differs from it hardly at all except in breadth and tip of telson. If the species are identical, and of general distribution in these oceans, the above name, which dates from 1879, has priority and, in spite of its local application, must be preferred.

7. *Paraphiloscia gracilis* (B.L.).

Philoscia gracilis B.L. (1885), p. 220.

Pseudophiloscia gracilis B.L. (1904), p. 42; B.L. (1912), p. 372.

(Plate II, figs. 38–49.)

Male and female specimens examined.

Length, ♂ 6 mm., ♀ 8.5 mm.; *breadth*, ♂ 3 mm., ♀ 4 mm.

Shape.—Narrow elongate oval. *Surface*.—Very smooth and shining, scales very minute, with distinct bloom (spirit specimens).

Head.—Eyes moderate, 23–25 ocelli, laterally placed. Lateral lobes absent. Median lobe absent. Occipital groove hidden dorsally by carapace fold. Postorbital pits absent. Marginal line reaches posterodorsal margin of head, runs forward under eye and down to join supraantennal line. Antennary tubercle not developed. Frontal line absent, but front of head is bulged out where it is usually found, and seen from above its outline is evident. Profrons continuous with vertex. Supraantennal line low, slightly curved downwards between antennal sockets, fused with upper border of sockets, laterally becoming

free and joining marginal line. Postfrons very restricted by low supraantennal line. Frontal lamina not distinctly demarcated from postfrons in mid-line; antennary sockets not prominent and masked above by supraantennal line. Clypeus protuberant, distinctly marked off by groove from face, lateral processes nearly as wide as clypeus and very long, completely separating frontal lamina from upper margin of mandible. Gena extensive and not marked by fossa or groove, extending forwards laterally to meet lateral processes and form a sort of tubercle.

Thorax.—Hind borders of first four somites transverse, fifth and sixth very slightly curved, seventh slightly sinuate. Groove on lateral edge of each defines inner margin of pore field, in which cutaneous glands open. Collar line single.

Abdomen.—Very abruptly contracted, rather convex. Hind margin of each segment transverse and straight. Second only a little less wide than the others. Each segment provided with small, sharp, little drawn back, postero-lateral processes. Telson free laterally from last somite, broader than long, hind margin triangulate, more or less straight sides, point little drawn out but acute, slightly sulcate at tip.

Appendages.—*Antennula* moderate; third segment rather long and slender.

Antenna.—Long and slender, no spines and barely setose; flagellum equals fifth segment, triarticulate, proximal segment equals combined distal ones, which are short, second longer than third, which has long fine terminal bristle as long as second. Proportions to body, ♂ $\frac{4.5}{6}$, ♀ $\frac{5.5}{8.5}$.

Mandibles.—Right with strong incisor process, lacinia mobilis unchitinised but broad and strong, two penicilli between it and large branched setose plume; left with strong incisor process, lacinia mobilis chitinised and massive, three penicilli (2 on setose pad, 1 free) between it and large branched setose plume.

Maxillula.—Outer endite 4+5, all simple: inner endite without terminal spine; plumes short, broad and bushy.

Maxilla.—Narrow, constricted at base; inner endite moderately small and setose.

Maxillipede.—Endopod small and scarcely longer than endite, close bunches of many bristles at *a* and *b*, a few small bristles at *c*; endite densely setose at distal end.

Peraeopoda.—Propodus long and very slender, but otherwise without very distinctive characters.

Pleopoda.—♂, II, postero-medial border of exopod greatly drawn out, III

and IV less drawn out, V very acute ; endopod of II filiform, reaching as far as most posterior point of V in mature specimen : ♀, I, very deeply incised laterally, V with short but acute postero-medial angle.

Uropod.—Protopod not overlapped by telson, deeply grooved laterally ; exopod slender and conical, about twice as long as base ; endopod long and very compressed laterally, tip reaches about halfway up exopod, actual length $\frac{2}{3}$ exopod.

Colour (in spirit).—Violet-brown, speckled on a golden yellow ground ; mid-line almost free from pigment ; fifth trunk somite a nearly uniform dark brown, giving the whole animal a striking appearance ; dark brown stripes down each side of abdomen ; on each side of seventh trunk segment on posterior border, a triangular white patch. Under surface pale, lightly mottled with brown.

Distribution.—" Insula ' Upolu ' " (B.L.).

Occurrence.—Malololelei, Upolu, Samoa, 2000 ft., vi.1924. The following records are from the Bishop Museum material : Tutuila, 900 ft. (Kellers), iv.1918 ; Ofu, Manua (Judd), 27.ii.1926 ; Savaii, Safune (Bryan), 8.v.1924, Rain forest, 2000–4000 ft. ; Savaii, Salailua (Bryan), 23.v.1924.

Remarks.—The above description differs from that of Budde-Lund (1885, p. 220) as regards the form of the telson, which is there described as " apice obtusiore," while I describe it as acute. Budde-Lund's description was drawn up from a single specimen and is therefore open to doubt, since the tip of the telson easily becomes turned down so as to appear obtuse. The telsons of the allied species *P. lateralis*, *P. angustissima* and *P. brevicornis*, described by him as " late rotundatum," " post obtusior," and " post rotundate triangulum " respectively, are undoubtedly " acute," so that Budde-Lund's method of examination is open to suspicion. I am quite confident, therefore, that the specimens I describe from the type locality are Budde-Lund's *P. gracilis*.

Note on the Genus *Paraphiloscia* Stebbing, 1900.

In his revision of the sub-family Spherilloninae (1904) Budde-Lund created the genus *Pseudophiloscia* to contain his *Philoscia gracilis* and *Ph. fragilis*. In a posthumous paper edited by Stebbing (1912) he suggests that *Paraphiloscia stenosoma* Stebbing (1900) belongs to the same genus, an opinion in which Stebbing, in a footnote, concurs. Stebbing, however, also points out that the name of his own genus *Paraphiloscia* (1900) must take priority over Budde-Lund's *Pseudophiloscia* (1904), and in agreement with this I here employ Stebbing's name instead of Budde-Lund's. In 1908 Verhoeff founded a new genus, which he christened *Paraphiloscia*, for *Ph. pyrenaica* Doll., *Ph. squamuligera* Kölbel, and *Ph. apenninorum*, Verh. Verhoeff's name, however, is obviously a homonym of Stebbing's genus and must be abandoned.

Family : LIGIIDAE.

8. *Ligia exotica* Roux.

This Isopod is very widely distributed on the shores of warmer seas (and even occasionally inland), and it is only surprising that it has not previously been recorded from Samoa. The specimens referred to here are from the Bishop Museum collection : Tutuila, Leone Road (Judd), 29.ix.1926.

9. *Ligia perkinsi* (Dollfus).

(Plate I, figs. 22-24.)

The distribution of this form is dealt with at the outset of this paper. I figure here the mandibles and the outer endite of the maxillula, to illustrate the point alluded to by me in a previous paper (1927).

Distribution.—Hawaiian Islands, Kauai, 6000 ft., Oloa, 2000 ft.

Occurrence.—Namua Island, Samoa. On rocks on shore, xi.1924.

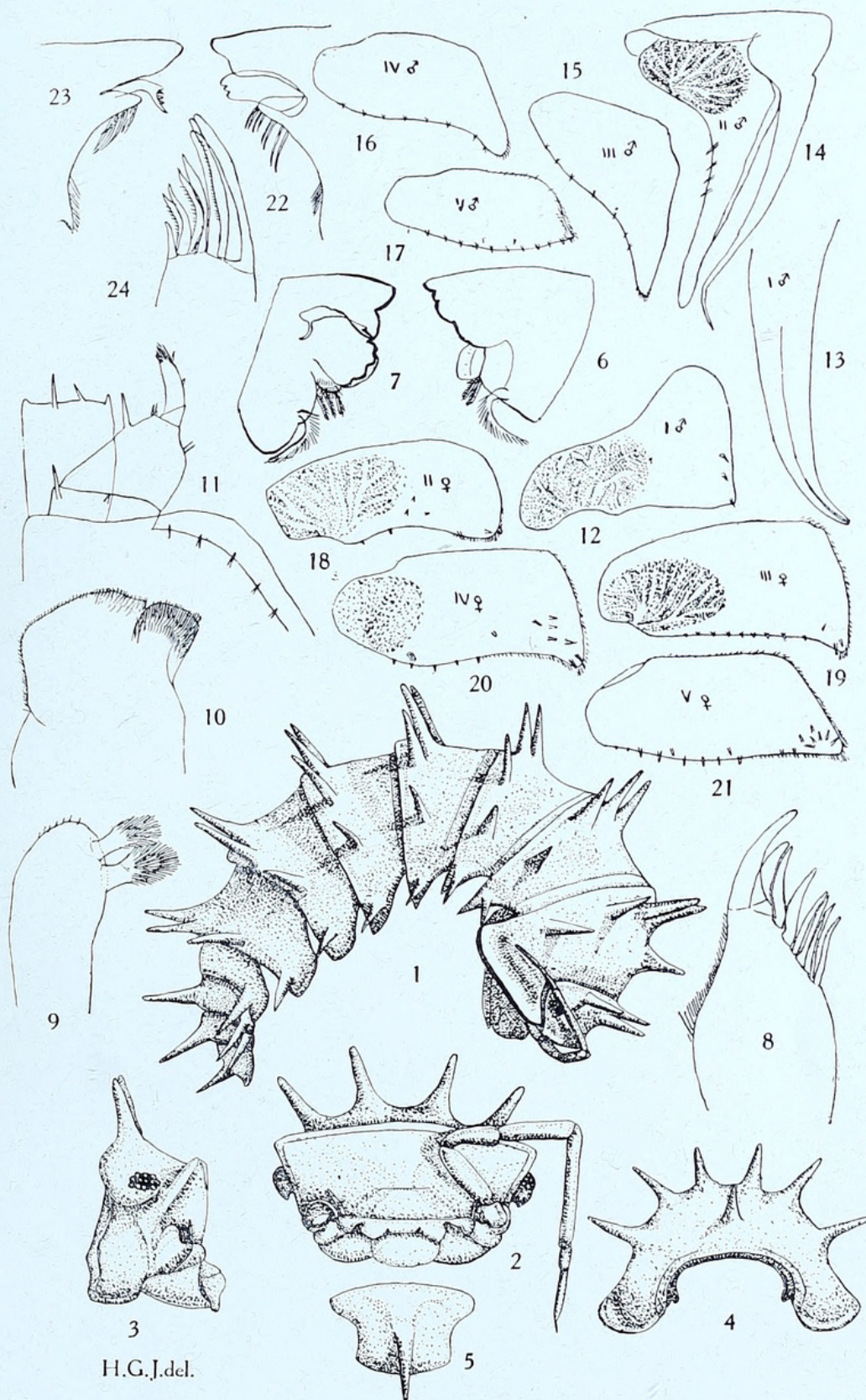
REFERENCES.

- BUDDE-LUND, G. . . . 1885. Crustacea Isopoda Terrestria. (Copenhagen.)
 „ . . . 1904. A revision of Crustacea Isop. Terr. 2. Spherilloninae.
 3. Armadillo. (Copenhagen.)
 „ . . . 1908. Isopoda von Madagaskar u. Ostafrika mit Diagnosen
 verwandter Arten. In: Voeltzkow, *Reise in Ostafrika in den*
Jahren 1903-1905, Bd. II. (Stuttgart), pp. 263-308, Taf. xii-
 xviii.
 „ . . . 1912. Terrestrial Isopoda . . . Southern Indo-Pacific Species :
Trans. Linn. Soc. Lond., ser. 2., Zool. XV., pp. 367-394, Pls.
 20-22.
 JACKSON, H. G. . . . 1926. The Morphology of the Isopod Head. *Proc. Zool. Soc.*
Lond., pp. 885-911, Pls. I-IV, and text-figs.
 „ . . . 1927. A new sub-genus of *Ligia*, with further observations on
 the genus : *Ann. and Mag. Nat. Hist.*, 9, XIX, pp. 129-136, 1 pl.
 SEARLE, H. RICHARDSON . . . 1914. Reports on the Scientific Results of the Expedition to the
 Tropical Pacific . . . on the . . . Albatross . . . 1899-1900
 and 1904-1905. Isopoda. *Bull. Mus. Comp. Zool. Harvard*,
 LVIII, No. 8, pp. 361-372. Text-figs.
 WAHRBERG, R. . . . 1922. Terrestre Isopoden aus Australien : *Arkiv. f. Zool.*,
 XV, No. 1 (Stockholm), pp. 1-298, and text-figs.
 VAN NAME, W. C. . . . 1924. Isopods from the Williams Galapagos Expedition : *Zoo-*
logica (New York), 5, pp. 181-210, 12 pls.

PLATE I.

Spherillo spicatus, sp. n., and *Ligia perkinsi*.

Fig. 1.	<i>Spherillo spicatus</i> .	Female seen from right side.
" 2.	" "	Head of male from front.
" 3.	" "	" " " right side.
" 4.	" "	1st somite, anterodorsal view of tergite.
" 5.	" "	Telson from above.
" 6.	" "	Right mandible.
" 7.	" "	Left "
" 8.	" "	Maxillula, outer endite.
" 9.	" "	" inner endite.
" 10.	" "	Maxilla.
" 11.	" "	Maxillipede.
" 12.	" "	1st pleopod, ♂, exopod.
" 13.	" "	" " " tip of endopod.
" 14.	" "	2nd " " exopod and endopod.
" 15.	" "	3rd " " exopod.
" 16.	" "	4th " " "
" 17.	" "	5th " " "
" 18.	" "	2nd pleopod, ♀, exopod.
" 19.	" "	3rd " " "
" 20.	" "	4th " " "
" 21.	" "	5th " " "
" 22.	<i>Ligia perkinsi</i> .	Left mandible.
" 23.	" "	Right "
" 24.	" "	Maxillula, outer endite.



H.G.J.del.

PART VIII.

PLATE I.

[To face p. 12.

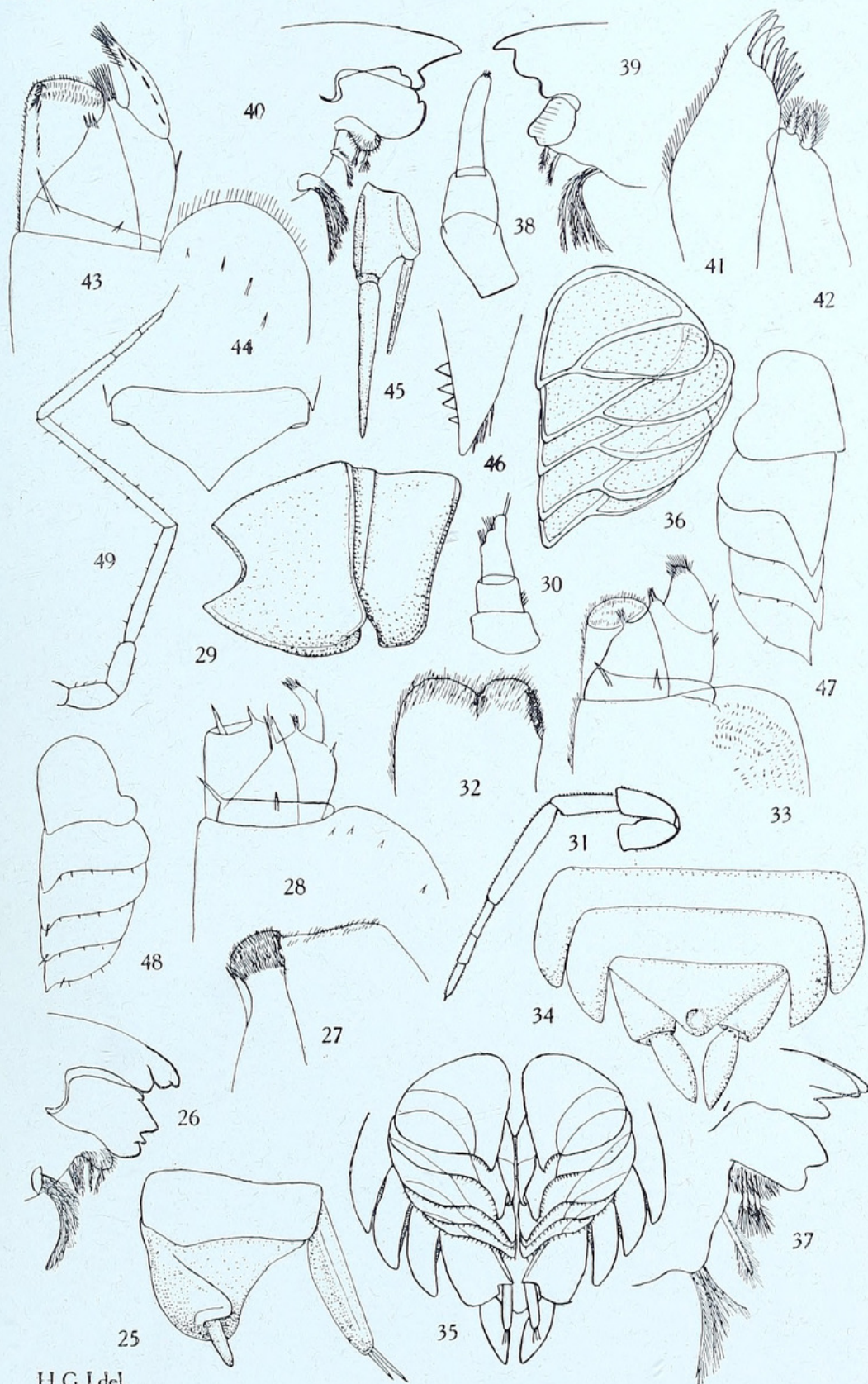
SPHERILLO SPICATUS (1-21): LIGIA PERKINSI (22-24).

PLATE II.

Spherillo spicatus and *S. testudinalis* ; *Alloniscus brevis* ; *Paraphiloscia gracilis*.

- Fig. 25. *Spherillo spicatus*. Left uropod from above.
 „ 26. *Spherillo testudinalis*. Left mandible.
 „ 27. „ „ Maxilla.
 „ 28. „ „ Maxillipede.
 „ 29. „ „ 1st and 2nd thoracic tergites from side.
 „ 30. *Alloniscus brevis*. Antennula.
 „ 31. „ „ Antenna.
 „ 32. „ „ Maxilla.
 „ 33. „ „ Maxillipede.
 „ 34. „ „ Posterior somites of abdomen and telson.
 „ 35. „ „ Pleopoda and uropoda of male from below.
 „ 36. „ „ Pleopoda of female from below.
 „ 37. „ „ Right mandible.
 „ 38. *Paraphiloscia gracilis*. Antennula.
 „ 39. „ „ Right mandible.
 „ 40. „ „ Left mandible.
 „ 41. „ „ Maxillula, outer endite.
 „ 42. „ „ „ inner endite.
 „ 43. „ „ Maxillipede.
 „ 44. „ „ Telson.
 „ 45. „ „ Left uropod from above.
 „ 46. „ „ 1st pleopod, ♂, tip of endopod.
 „ 47. „ „ Pleopoda, ♂, exopods from below.
 „ 48. „ „ Pleopoda, ♀, exopods from below.
 „ 49. „ „ Antenna.





H G. J. del.
PART VIII.

PLATE II.

[To face p. 12.]

SPHERILLO SPICATUS (25): S. TESTUDINALIS (26-29): ALLONISCUS
BREVIS (30-37): PARAPHILOSCIA GRACILIS (38-49).



Jackson, Harold Gordon. 1927. "Terrestrial Arthropoda other than insects: Isopoda Terrestria." *Insects of Samoa and other Samoan terrestrial arthropoda* Part VIII, 1–11.

View This Item Online: <https://www.biodiversitylibrary.org/item/138607>

Permalink: <https://www.biodiversitylibrary.org/partpdf/96682>

Holding Institution

Natural History Museum Library, London

Sponsored by

Natural History Museum Library, London

Copyright & Reuse

Copyright Status: In copyright. Digitized with the permission of the rights holder.

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.