Contributions to a Knowledge of the Terrestrial Isopoda of Natal.

Part III.

By

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With Plates XXVII–XXXII.

Contents.

Introduction.

Thanks to the untiring labours of Drs. E. Warren and C. Akerman, I am able in the present contribution to add a further series of new Terrestrial Isopoda to the fauna of Natal and the adjacent country.

It is evident from the work that has already been carried out that Natal, indeed the whole of South Africa, possesses a rich Isopodean fauna, and of the specimens collected there yet remain a number of new forms, but the material at present in my hands is insufficient for description.

In the present paper figures of all the new species are given, including those described in Part I (**3**), and I have to thank Miss Grace Edwards and Miss E. R. Burnett for the care they have expended upon these.

The new forms include a species of Ligia *Fabr.*, one belonging to the genus Alloniscus *Dana*, four new species of Cubaris *Brandt*, and one of the new genus Anchicubaris. In addition to these I am able to record the occurrence of Philoscia muscorum (*Scopoli*) and Porcellionides pruinosus (*Brandt*), and some further localities for Philoscia warreni *Cllge.* and P. dilectum *Cllge.*

I. Description of Genera and Species.

Ligia *Fabricius.*

Comparatively little has been written upon the members of this interesting genus. Structurally they are easily distinguished by well-defined characters and many of the species are exceedingly common and have a wide distribution.

Hitherto the genus has not been recorded from Natal, although it has long been known from Cape Colony. Brandt (**1**) in 1833 described very briefly the Ligia glabrata and L. dilatata, and Budde-Lund (**2**) in 1885 described in the briefest possible manner the L. gracilipes.

So far as I am aware none of these have been adequately described or figured.

For the specimens of L. dilatata I am indebted to the kindness of Mr. Keppel H. Barnard, of the South African Museum; the rest of the material has been obtained by Dr. Conrad Akerman.

Brandt's descriptions are very short, and as his work is not readily accessible I repeat them here:

α. Corpore oblongo.

Ligia glabrata *n. sp.* Antennarum articuli apicales margine superiore ciliati. Appendicum caudalium articulus basalis tetragono-oblongus, haud impressus.
Patria: Caput bonæ spei.

β. Corpore ovato.

Ligia dilatata *n. sp.* Appendicum caudalium articulus basalis mediocris, tetragono-oblongus.
Patria: Caput bonæ spei.

Krauss (4) gives the size of L. glabrata as 11 lines in length and 5·5 in breadth.

In 1885 Budde-Lund re-described both species, but his material seems to have been poor. He further very briefly described a new species under the name of Ligia gracilipes, from a few specimens in the Simon Museum, obtained at Laudana.

The question naturally arises, "Are these three referable to one species or are they distinct from one another?" The material I have examined helps us to answer partly this question.

There is no doubt as to Brandt's L. dilatata. His L. glabrata, I am inclined to think, is only an immature form of the former, whilst Budde-Lund's gracilipes is insufficiently described to pronounce an opinion on. The only two statements of any value which this author gives are that the flagellum of the antenna contains 22 joints and that the animal is from 7–9 mm. long. Possibly gracilipes is only a young form of some species. In comparing it with specimens

of L. natalensis of 7–9 mm. in length I note that this latter species has only 12–15 joints in the flagellum.

In young L. oceanica (*Linn.*) of from 7–9 mm. in length both the antennæ and uropoda are proportionally shorter than in the adult and there are always fewer joints in the flagellum of the antennæ.

The original description of gracilipes is as follows:

"Speciei præcedenti affinis, forma et habitu simillima.

"Antennæ exteriores gracillimæ, corpus longitudine quarta parti superantes. Flagellum 22-articulatum; articuli longiores.

"Pedes caudales anales perlongi, corpore paulo longiores.

"Long. 7–9 mm.

"Patria: Africa meridionalis; e 'Laudana' exampla pauca in Museo Simon asservantur."

1. Ligia natalensis *n. sp.* Pl. XXVIII, figs. 9–18.

Body (fig. 9) elongated, more than twice as long as it is broad, moderately convex and slightly granulated; metasome abruptly contracted. Cephalon (figs. 10, 11) semi-oval from above with posterior transverse groove; epistome with three prominent transverse ridges, the ventral one with two small upwardly directed spines. Eyes large and convex. Antennulæ (fig. 12) small, first two joints subequal, third joint nodiform. Antennæ (fig. 13) slender and elongated, first three joints small, 4th and 5th elongated, flagellum consisting of 21 joints and short terminal style. First maxilla (fig. 14) small, outer lobe with six stout, elongated, pointed spines and four inner ones varyingly denticulate, inner lobe with three elongated, setose, terminal spines, and prominent setaceous knob. Segments of the mesosome sub-equal, 1st to 3rd with pleural plates truncate terminally, 4th somewhat similar, but with posterior angles pointed, terminal portion of 5th to 7th curved backward and terminating in sharp point. Appendages (figs. 15 and 16) comparatively small and fragile, gradually enlarging from before backwards. Uropoda (fig. 17) elongated and slightly curved

inwards, basal joint wider proximally than distally, endopodite slightly curved and usually shorter than the exopodite and with much longer terminal style; both one and a-half times longer than the basal joint, setaceous. Telson (fig. 18) fairly long, anterior margin prominent and rounded laterally, posterior margin spinous.

Length 16–17 mm.

Colour (in alcohol) silver-grey, with darker greyish markings.

Habitat.—Umhlali, May, 1916. Winkle Spruit Beach, South Coast, Dec. 1916 (C. Akerman).

Type.—In the Natal Museum.

2. Ligia dilatata *Brandt*. Pl. XXVIII, figs. 19–27.

Ligia dilatata *Brandt*, Bull. Soc. Imp. Nat. Moscou, 1833, vol. vi.
? Ligia glabrata *Brandt*, ibid., p. 172.
Lygia dilatata *Krauss*, Südafrik. Crust., 1843, p. 62.
Ligia dilatata *White*, List Crust. Brit. Mus., 1847, p. 98; Budde-Lund, Crust. Isop. Terr., 1885, p. 262.
? Ligia gracilipes *Budde-Lund*, ibid., p. 270.
Ligia dilatata *Stebbing*, Ann. South Afr. Mus., 1910, vi, p. 437.

Body (fig. 19) oval or oblong oval, slightly convex dorsally and finely granulated; metasome not abruptly contracted. Cephalon (fig. 20) semi-oval from above, with posterior transverse groove; epistome with three transverse ridges. Eyes large and convex. Antennulæ (fig. 21) small, 3-jointed, terminal joint rudimentary. Antennæ (fig. 22) robust and elongated; flagellum with 15 joints. First maxilla (fig. 23), outer lobe with five stout, pointed spines and five inner ones varyingly denticulate; inner lobe with three setose terminal spines, the first of which has a prominent knob. Mesosome with the pleural plates greatly expanded; the 1st partly flanks the cephalon, 2nd to 4th truncate terminally, 5th to 7th with their posterior angles directed backward. Pleural plates of metasome also expanded. First mesosomatic appendage (fig. 24) with all the joints deeply

grooved and the carpopodite globose. Uropoda (fig. 26) comparatively small, basal joint slightly curved towards the inside, endopodite straight and rather longer and wider than the straight exopodite, both with terminal styles. Telson (fig. 27) rather short, anterior margin prominent and rounded.

Length 31 mm.

Colour (in alcohol) light brownish-grey, with darker greyish markings.

Habitat.—Cape Peninsula (K. H. Barnard).

Alloniscus *Dana*.

This genus was founded by Dana in 1854. Some two dozen species have been described as belonging to this genus, but it is doubtful whether they are all correctly assigned. It has a wide distribution, having been recorded from North and South America, South Africa, Madagascar, India, Siam, and numerous Pacific islands.

3. Alloniscus marinus *n. sp.* Pl. XXIX, figs. 28–38.

Body (fig. 28) oblong oval, strongly convex, finely tuberculated. Cephalon (figs. 29 and 30) convex above, with well-defined frontal margin, which is produced in the median line, cephalic lobes absent, epistome slightly concave with well-marked transverse ridge above the antennal sockets. Eyes oval, fairly large. Antennulæ (fig. 31) short and stout, 3-jointed, terminal joint with lateral setæ and two enlarged setæ at the distal extremity. Antennæ (figs. 32 and 33) of medium length, joints 1–3 small, 4th joint longer and stouter, 5th joint elongated and narrow; flagellum 3-jointed, proximal joint the longest, remainder almost subequal, terminal style short. First maxilla (fig. 34) with outer lobe terminating in nine stout, bluntly ending spines, strong setæ on the outer side; inner lobe wide, with two short setose spines, the inner one being slightly lower in position than the outer one.

Maxillipeds (fig. 35) with wide lobes, outer lobe with few setæ on the end of the 3rd joint and two setose papillæ on the 2nd joint, 1st joint narrow with two large spines; inner lobe with setaceous pad terminally and circle of fine setæ below. The segments of the mesosome are almost subequal excepting the 1st, the pleural plates of which are expanded and flank the cephalon; the remainder are flattened, with the terminal margin truncate, 4–7 with the posterior angle slightly produced backward. The metasome is comparatively small, the two first and part of the 3rd segment being covered by the last mesosomatic segment. Uropoda (figs. 36 and 37) with stout basipodite, thinner on the inner margin, exopodite short and conical, endopodite slightly shorter and more slender, both setaceous and with fine terminal styles. Telson (fig. 38) triangular, apex rounded.

Length 12 mm.

Colour (in alcohol) yellow with brownish mottling, forming a broken median longitudinal line. Posteriorly on each segment of the mesosome and above the pleural plate is an almost circular black spot.

Habitat.—Winkle Spruit Beach, S. Coast, Natal, Dec. 1916 (C. Akerman). Salisbury Island, shore, in sand, uncommon, Aug. 7th, 1916 (Bell-Marley).

Type.—In the Natal Museum.

This is a handsome and conspicuous species, and according to Dr. Akerman common in the sand at the junction of vegetation and the beach.

The lateral, brownish-black eye-like spots are faintly discernible on the tiny white young taken from the brood-pouch of the female.

Philoscia *Latreille*.

4. Philoscia warreni *Cllge*. Pl. XXVII, fig. 7.

Philoscia warreni *Cllge*., Ann. Natal. Mus., 1917, vol. iii, p. 578.

This interesting species seems to be widely distributed. The following are additional records:

Krantzkop, Natal, Jan. 1915 (E. Warren). Isipingo, Natal, Sept. 1915 (C. Akerman). Pietermaritzburg, Jan. 1916 (C. Akerman). Newlands, Cape Town, Jan. 1916 (E. Warren). Sarnia, nr. Durban, 1916 (Mrs. Warren). Buffalo River, East London, Cape Province, Jan. 1916 (E. Warren). Thornybush, Durban Road, eight miles from Pietermaritzburg, April, 1916 (C. Akerman). Knoll Bush, Hilton Road, April, 1916 (C. Akerman), May, 1916 (E. Warren). Otto's Bluff, nr. Pietermaritzburg, June, 1916 (C. Akerman). Durban, Aug. 1916 (C. Akerman). Bayne's Drift, Nov. 1916 (C. Akerman). Mt. Fongosi, Zululand, Jan. 1917 (W. E. Jones). Ntimbankulu, Mid-Illovo, Oct. 1917 (H. C. Burnup). Umhlali, Natal (C. Akerman).

5. Philoscia dilectum *Cllge*. Pl. XXVII, fig. 8.

Philoscia dilectum *Cllge*., Ann. Natal Mus., 1917, vol. iii, p. 579.

The following are additional records for this species :

Krantzkop, Natal, Jan. 1915 (E. Warren). Sweetwaters Bush, Pietermaritzburg, Aug. 1915 (E. Warren). Isipingo, Natal, Sept. 1915 (C. Akerman). Pietermaritzburg, Jan. 1916 (C. Akerman). Thornybush, Pietermaritzburg, Feb. 1916 (C. Akerman). Sarnia, nr. Durban, 1916 (Mrs. Warren). Buffalo River, East London, Cape Province, Jan. 1916 (E. Warren). Otto's Bluff, nr. Pietermaritzburg, June, 1916 (C. Akerman). Durban, Aug. 1916 (C. Akerman). Bayne's Drift, Nov. 1916 (C. Akerman). Botanical Garden (wild portion), Pietermaritzburg, Dec. 1916 (E. Warren). Mt. Fongosi, Zululand, Jan. 1917 (W. E. Jones). Ntimbankulu, Mid-Illovo, Oct. 1917 (H. C. Burnup). Umhlali, Natal (C. Akerman).

6. Philoscia muscorum (*Scopoli*).

Oniscus muscorum, *Scopoli*, Entomol. Carnio., 1763, p. 415.

Habitat.—Knoll Bush, Hilton Road, Aug., 1916 (C. Akerman). Ntimbankulu, Mid-Illovo, Oct. 1917 (H. C. Burnup).

A single specimen from the former locality and two from the latter.

PORCELLIONIDES *Miers* = METAPONORTHUS *Budde-Lund.*

7. Porcellionides pruinosus (*Brandt*). Pl. XXIX, figs. 39–47.

Porcellio pruinosus *Brandt*, Bull. Soc. Nat. Moscow, 1833, vi, p. 181.

Although there are many slight differences in these specimens from the typical P. pruinosus, they are not, in my opinion, sufficient to separate them as a distinct species; it is possible, however, that further material may show greater differences. The structural features shown on Pl. XXIX are of specimens collected by Dr. Akerman at Pietermaritzburg, Feb., 1916.

Habitat.—Museum Garden, Pietermaritzburg, Sept. 1915 (E. Warren). Pietermaritzburg, Feb. 1916 (C. Akerman). Durban, Aug. 1916 (C. Akerman).

These specimens differ from British examples of this species in the following characters:

The frontal margin of the cephalon is obtusely pointed in the median line (fig. 39) and not nearly straight as in the typical form. In the antennæ the two joints of the flagellum are almost equal in length, the proximal one being only a little larger than the distal one (fig. 41). The outer lobe of the 1st maxilla (fig. 42) has the six inner spines sharply denticulated, or perhaps it would be more correct to describe them as having bifid terminations. The inner lobe distally is truncate. The second maxilla is comparatively wider and more robust and the same remark applies to the maxillipede (fig. 44). The appendages of the metasome are also slightly more robust. The telson is somewhat elongated, extending beyond the basal plates of the uropoda, and there are minor differences in the various parts of these latter appendages (Figs. 46 and 47).

Cubaris *Brandt.*

8. Cubaris truncatus *n. sp.* Pl. XXX, figs. 48–56.

Body (fig. 48) oblong-oval, convex, surface finely granulose. Cephalon (figs. 49, 50) small, flanked by the pleural plates of the 1st mesosomatic segment, anterior margin raised, cephalic lobes absent; epistome slightly convex. Eyes fairly large, situated dorso-laterally. Antennæ (fig. 51) short; flagellum 2-jointed, distal joint rather more than twice the length of the proximal one, terminal style small and conical. First maxillæ (fig. 52), outer lobe terminating in four stout curved spines and six smaller pointed ones; inner lobe slightly grooved on its inner side with two setose spines. Maxillipedes (fig. 53): the terminal joint of the outer lobe is multispinous; there are two spines on the middle joint, and two on the inner side of the basal joint; the inner lobe has a tooth-like spine and a single plain spine. The segments of the mesosome have the pleural plates well developed; those of segments 2–4 are rounded terminally and those of 6 and 7 truncate; posterior angles not produced. Uropoda (fig. 55) not extending beyond the telson, basal plate short, wide, and thick, slightly raised and convex on the posterior outer margins, posterior margin truncate, antero-dorsal surface expanded and thickened; exopodite short, not extending to the posterior margin of the basal plate; endopodite longer and broader, slightly keeled, setaceous. Telson (fig. 56) not extending beyond the uropoda, width greater than the length, lateral margins very slightly curved, expanded anteriorly and slightly keeled, posterior margin truncate.

Length 12·5 mm.

Colour (in alcohol) yellowish-brown with darker brown mid-dorsally and laterally, flecked with yellow.

Habitat.—Pt. Alfred, Cape Province (J. Hewitt).

Type.—In the Albany Museum.

9. Cubaris akermani *n. sp.* Pl. XXX, figs. 57–66.

Body (fig. 57) oblong-oval, convex, surface very finely granulose. Cephalon (figs. 58 and 59) small, flanked by the pleural plates of the 1st mesosomatic segment; anterior margin raised, cephalic lobes absent; epistome dorsally sloping, slightly concave laterally and raised in the median line. Eyes large, situated dorso-laterally. Antennæ (fig. 60) short and slender, setaceous and grooved on the outer side of each peduncular joint; flagellum 2-jointed, distal joint three times as long as the proximal one, elongated terminal style. First maxillæ (fig. 61), outer lobe terminating in five stout curved spines and six smaller ones; inner lobe slightly grooved on the inner side and bluntly pointed terminally, with two setose spines. Maxillipedes (fig. 62), the terminal joint of the outer lobe is multispinous, and there are seven spines on the middle joint; the inner lobe is broad and has four spines, one arising from a central papilla-like portion. The segments of the mesosome have the pleural plates of 2–4 rounded terminally, 5–7 truncate, posterior angles not produced. The coxopodite on the inner margin of the underside of the 1st segment is well-developed (fig. 63) and there is a definite groove on both segments 1 and 2. Uropoda (figs. 64 and 65) not extending beyond the telson, basal plate short and wide, slightly raised and convex on the posterior and outer margins, posterior margin wide and truncate, antero-dorsal surface expanded; exopodite short with terminal style, not extending to the posterior margin of the basal plate; endopodite much longer and widest at its proximal end, setaceous. Telson (fig. 66) not extending beyond the uropoda, width greater than the length, lateral margins curved, expanded anteriorly, with single median raised notch on anterior margin, posterior margin very faintly curved.

Length 23 mm.

Colour (in alcohol) almost black dorsally with very faint greyish flecks laterally.

Habitat.—Sweetwaters Bush, Pietermaritzburg, July, 1916 (E. Warren). Mt. Fongosi, Zululand, Feb. 1917 (W. E. Jones).

Type.—In the Natal Museum.

Externally this species bears a superficial resemblance to C. burnupi, *Cllge.*, but it is larger and rather more convex anteriorly.

10. Cubaris barnardi *n. sp.* Pl. XXXI, figs. 67–76.

Body (fig. 67) oblong-oval, moderately convex, surface very finely granulose, excepting for a series of lateral patches, each with four raised flecks on each side of the median line. Cephalon (figs. 68, 69) small, covered with minute spines, flanked by the pleural plates of the 1st mesosomatic segment, anterior margin raised; epistome with upper portion spinous below and laterally smooth and almost flat. Eyes fairly large and raised from the cephalon, situated dorso-laterally. Antennulæ (fig. 70) short, 3-jointed, with few lateral setæ on the distal joint. Antennæ (fig. 71) with the 4th and 5th joints elongated; flagellum 2-jointed, the proximal joint being the smaller. First maxilla (fig. 72) small, outer lobe with four stout curved spines and six smaller ones, setose on the outer margin and slightly expanded at the distal end; inner lobe with three setose spines. The segments of the mesosome have the pleural plates well developed; 1st segment with the posterior angle slightly notched (fig. 73); terminal margin of remainder truncate, all with slightly raised median ridge and directed backwardly. The pleural plates of the metasome somewhat elongated. Uropoda (fig. 75) small, not extending beyond the telson, basal plate short and narrow, considerably raised and convex, posterior margin pointed, antero-dorsal surface expanded; exopodite extending almost to the posterior margin of the basal plate, endopodite longer and more robust, both setaceous. Telson (fig. 76) extending very slightly beyond the uropoda, length greater than the width, lateral margins almost straight, expanded anteriorly, posterior margin very faintly curved.

Length 20·5 mm.

Colour (in alcohol) dark grey with lighter grey mottling in the median and lateral areas.

Habitat.—Sarnia nr. Durban, Oct. 1916 (E. Warren). Winkle Spruit Beach, S. Coast, Dec. 1916 (C. Akerman). Mt. Fongosi, Zululand, Jan. 1917 (W. E. Jones).

Type.—In the Natal Museum.

11. Cubaris griseus *n. sp.* Pl. XXXI, figs. 77–85.

Body (fig. 77) oblong-oval, strongly convex and finely rugose. Cephalon (figs. 78, 79) small and flanked by the pleural plates of the 1st mesosomatic segment, slightly raised in the mid-dorsal line and faintly marked with light-coloured, irregularly shaped rugosities; anterior margin raised and turned slightly backward; epistome smooth and convex. Eyes prominent, situated dorso-laterally. Antennulæ small 3-jointed. Antennæ (fig. 80) with the 5th joint elongated; flagellum 2-jointed, the proximal joint less than one-third the length of the distal joint, terminal style short (fig. 81). First maxillæ (fig. 82) small, outer lobe with four short curved spines and six smaller and more slender ones, setose on the outer margin; inner lobe fairly wide with two small setose spines arising from the inner distal margin. Segments of the mesosome strongly convex, the 1st with expanded pleural plates, with margins slightly reflected upwards and outwards, anterior angle acutely pointed, posterior angle less so, pleural plates of 2nd to 4th segments slightly excavate, remainder truncate, posterior angles only very slightly produced. Notch and groove on the under side of the inner margin of segments 1 and 2 well-developed (fig. 83). Uropoda (fig. 84) robust, not extending beyond the telson, basal plate thick, strongly raised and convex dorso-laterally, posterior margin truncate, antero-dorsal surface folded, expanded slightly below the point of articulation of the endopodite, setaceous; exopodite short and stout, not extending to the posterior margin of the basal

plate, setaceous, endopodite long and stoutly built, somewhat flattened and setaceous. Telson (fig. 85) with posterior margin wider than the length, almost truncate, lateral margins slightly curved inward, expanded anteriorly, with raised triangular area in the centre.

Length 8 mm.

Colour (in alcohol) a pearly-grey, with very faint lighter-coloured flecks.

Habitat.—Knoll Bush, Hilton Road, Aug. 31st, 1916 (C. Akerman).

Type.—In the Natal Museum.

Anchicubaris *gen. nov.*

Body oblong-oval, strongly convex, with thickened lateral ridges on the pleural plates, which latter are strongly curved backwardly and outwardly, terminally truncate, dorsally produced upwardly and outwardly. Cephalon with greatly produced and flattened epistome. Antennulæ absent. Telson extending slightly beyond the uropoda. Remaining characters as in Cubaris.

I have thought it advisable to separate the specimens from Mt. Fongosi, etc., from the genus Cubaris on account of the form of the pleural plates of the mesosome and the greatly produced anterior margin of the cephalon.

12. Anchicubaris fongosiensis *n. sp.* Pl. XXXII, figs. 86–96.

Body (fig. 86) oblong-oval, strongly convex, dorsal surface with prominent tubercles. Cephalon (figs. 87, 88) small and tuberculated, with two anterior eminences; the anterior margin is greatly produced as a flattened plate, flanked by the pleural plates of the first mesosomatic segment, epistome large and almost flat. Eyes small, situated dorso-laterally. Antennulæ absent. Antennæ (fig. 89) short and robust, setaceous, 2nd and 5th joints slightly grooved on their outer

side; flagellum 2-jointed, the distal joint being two and a-half times the length of the proximal one; style elongated with few terminal setæ (fig. 90). First maxillæ (fig. 91) with outer lobe terminating in four stout curved spines and six smaller pointed ones, inner lobe with two short setose spines on the inner margin. The segments of the mesosome (fig. 93) are strongly convex; pleural plates thickened with lateral ridges, strongly curved backwardly and outwardly, terminally truncate, dorsally produced upwardly and outwardly. Each segment has two transverse rows of large tubercles, excepting the 1st, which has four rows. Last three segments of the metasome with broad pleural plates, dorsum of last segment with only two tubercles, remainder with four. Thoracic appendages comparatively small. Uropod (figs. 94, 95) not extending beyond the telson, basal plate thick, strongly raised and convex, posterior margin truncate, antero-dorsal surface broad and convex, dorsally and ventrally with small triangular spines; exopodite short, endopodite longer and more massive, setaceous. Telson (fig. 96) wider than long, extending slightly beyond the uropoda, lateral margins curved inwards, with two prominent tubercles anteriorly, terminal margin truncate or nearly so.

Length 9·5 mm.

Colour (in alchol) faint yellow with brownish mottling or wholly creamy-white.

Habitat.—Mt. Fongosi, Zululand, July, 1917 (W. E. Jones), Sarnia, nr. Durban, Oct. 1916 (E. Warren), Winkle Spruit Beach, S. Coast, Dec. 1916 (C. Akerman).

Type.—In the Natal Museum.

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3. Collinge, Walter E.—"Contributions to a Knowledge of the Terrestrial Isopoda of Natal," Part I, 'Ann. Natal Mus.,' 1917, vol. iii, pls. 567–585, pp. xl–xlii.

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EXPLANATION OF PLATES XXVII–XXXII,

Illustrating Dr. Walter E. Collinge's paper, "Contributions to a Knowledge of the Terrestrial Isopoda of Natal," Part III.

PLATE XXVII.

Fig. 1.—× 6. Cubaris warreni *Cllge.*
Fig. 2.—× 8. ,, reticulatus *Cllge.*
Fig. 3.—× 3. ,, burnupi *Cllge.*
Fig. 4.—× 6·7. ,, natalensis *Cllge.*
Fig. 5.—× 6. ,, longicauda *Cllge.*
Fig. 6.—× 5. ,, trilobata *Cllge.*
Fig. 7.—× 6. Philoscia warreni *Cllge.*
Fig. 8.—× 7. ,, dilectum *Cllge.*

PLATE XXVIII.

1. Ligia natalensis *n. sp.*

Fig. 9.—× 6. Dorsal view.
Fig. 10.—× 10. Dorsal view of the cephalon.
Fig. 11.—× 10. Anterior view of the cephalon.
Fig. 12.—× 70. Left antennule, ventral view.
Fig. 13.—× 10. Right antenna, dorsal view.
Fig. 14.—× 215. Terminal portion of the inner and outer lobes of the 1st maxilla, ventral view.
Fig. 15.—× 18. Second mesosomatic appendage.
Fig. 16.—× 18. Seventh mesosomatic appendage.
Fig. 17.—× 12. Dorsal view of the left uropod.
Fig. 18.—× 8. Dorsal view of the telson.

Ligia dilatata *Brandt*.

FIG. 19.—× 3. Dorsal view.

FIG. 20.—× 5·5. Anterior view of the cephalon.

FIG. 21.—Right antennule, ventral view.

FIG. 22.—× 5. Left antenna, dorsal view.

FIG. 23.—Terminal portion of the inner and outer lobes of the right 1st maxilla, ventral view.

FIG. 24.—× 9. Second mesosomatic appendage.

FIG. 25.—× 9. Seventh mesosomatic appendage.

FIG. 26.—× 6. Dorsal view of the right uropod.

FIG. 27.—× 4. Dorsal view of the telson.

PLATE XXIX.

Alloniscus marinus *n. sp.*

FIG. 28.—× 5. Dorsal view.

FIG. 29.—× 8·5. Dorsal view of the cephalon.

FIG. 30.—× 8. Anterior view of the cephalon.

FIG. 31.—× 70. Left antennule, ventral view.

FIG. 32.—× 24. Right antenna, dorsal view.

FIG. 33.—× 220. Terminal style of antenna.

FIG. 34.—× 150. Terminal portion of the inner and outer lobes of the right 1st maxilla, ventral view.

FIG. 35.—× 82. Terminal portion of the left maxillipede.

FIG. 36.—× 21. Dorsal view of the right uropod.

FIG. 37.—× 21. Ventral view of the right uropod.

FIG. 38.—Dorsal view of the telson and last metasomatic segment.

Porcellionides pruinosus (*Br.*).

FIG. 39.—Dorsal view of the cephalon.

FIG. 40.—Anterior view of the cephalon.

FIG. 41.—Left antenna, dorsal view.

FIG. 42.—Terminal portion of the inner and outer lobes of the right 1st maxilla, ventral view.

FIG. 43.—Second maxilla of right side, ventral view.

FIG. 44.—Terminal portion of the right maxillipede.

FIG. 45.—Second mesosomatic appendage.

FIG. 46.—Dorsal view of the right uropod.

FIG. 47.—Dorsal view of the telson and last metasomatic segment.

PLATE XXX.

Cubaris truncatus *n. sp.*

FIG. 48.—× 5. Dorsal view.

FIG. 49.—× 8. Dorsal view of the cephalon.

FIG. 50.—× 8. Anterior view of the cephalon.

FIG. 51.—× 30. Left antenna, dorsal view.

FIG. 52.—× 90. Terminal portion of the inner and outer lobes of the right 1st maxilla, ventral view.

FIG. 53.—× 70. Terminal portion of the right maxillipede.

FIG. 54.—× 8. Underside of the lateral margin of the 1st and 2nd mesosomatic segments.

FIG. 55.—× 28. Dorsal view of the right uropod.

FIG. 56.—× 10. Dorsal view of the telson, uropoda, and last metasomatic segment.

Cubaris akermani *n. sp.*

FIG. 57.—× 3. Dorsal view.

FIG. 58.—× 4. Dorsal view of the cephalon.

FIG. 59.—× 4. Anterior view of the cephalon.

FIG. 60.—× 15. Left antenna, dorsal view.

FIG. 61.—× 112. Terminal portion of the inner and outer lobes of the right 1st maxilla, ventral view.

FIG. 62.—× 70. Terminal portion of the right maxillipede.

FIG. 63.—× 6. Underside of the lateral margin of the 1st and 2nd mesosomatic segments.

FIG. 64.—× 18. Dorsal view of the right uropod.

FIG. 65.—× 18. Ventral view of the right uropod.

FIG. 66.—× 7. Dorsal view of the telson, uropoda, and last metasomatic segment.

PLATE XXXI.

Cubaris barnardi *n. sp.*

FIG. 67.—× 14. Dorsal view.

FIG. 68.—× 19. Dorsal view of the cephalon.

FIG. 69.—× 19. Anterior view of the cephalon.

FIG. 70.—× 150. Left antennule, ventral view.

FIG. 71.—× 30. Left antenna, dorsal view.

FIG. 72.—× 75. Terminal portion of the inner and outer lobes of the left 1st maxilla, ventral view.

FIG. 73.—× 16. Lateral view of pleural plate of 1st mesosomatic segment.

FIG. 74.—× 16. Underside of the lateral margin of the 1st and 2nd mesosomatic segments.

FIG. 75.—× 50. Dorsal view of the right uropod.

FIG. 76.—× 20. Dorsal view of the telson, uropoda, and last metasomatic segment.

Cubaris griseus *n. sp.*

FIG. 77.—× 8. Dorsal view.

FIG. 78.—× 12·5. Dorsal view of the cephalon.

FIG. 79.—× 12·5. Anterior view of the cephalon.

FIG. 80.—× 28. Right antenna, dorsal view.

FIG. 81.—× 320. Terminal style of antenna.

FIG. 82.—× 115. Terminal portion of the inner and outer lobe of the left 1st maxilla, ventral view.

FIG. 83.—× 28. Underside of the lateral margin of the 1st and 2nd mesosomatic segments.

FIG. 84.—× 50. Dorsal view of the right uropod.

FIG. 85.—× 15. Dorsal view of the telson and last metasomatic segment.

PLATE XXXII.

Anchicubaris fongosiensis *gen. et sp. nov.*

FIG. 86.—× 9. Dorsal view.

FIG. 87.—× 15. Dorsal view of the cephalon.

FIG. 88.—× 15. Anterior view of the cephalon.

FIG. 89.—× 7·5. Left antenna, dorsal view.

FIG. 90.—× 320. Terminal style of antenna.

FIG. 91.—× 215. Terminal portion of the inner and outer lobes of the left 1st maxilla, ventral view.

FIG. 92.—× 50. Underside of the lateral margin of the 1st and 2nd mesosomatic segments.

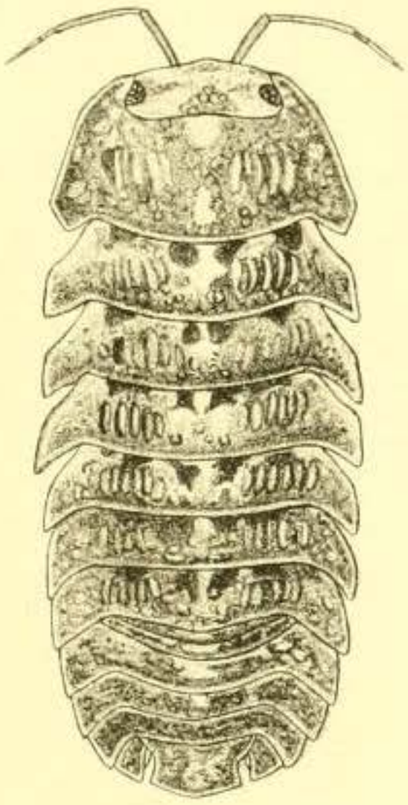
FIG. 93.—Lateral view of the mesosomatic segments showing the peculiar pleural plates.

FIG. 94.—× 50. Dorsal view of the left uropod.

FIG. 95.—× 50. Ventral view of the left uropod.

FIG. 96.—× 15. Dorsal view of the telson and last metasomatic segment.

The author desires to thank the Carnegie Trust for the Universities of Scotland for a grant to defray artists' charges.



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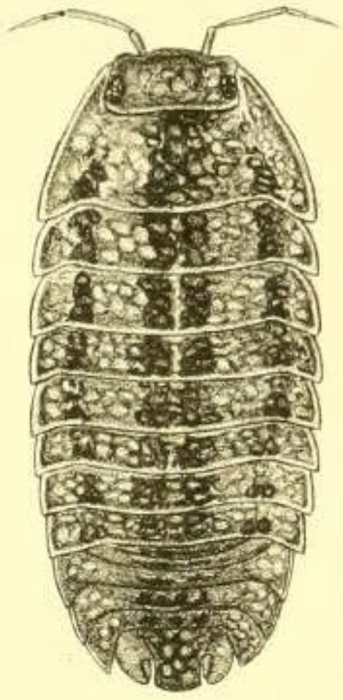

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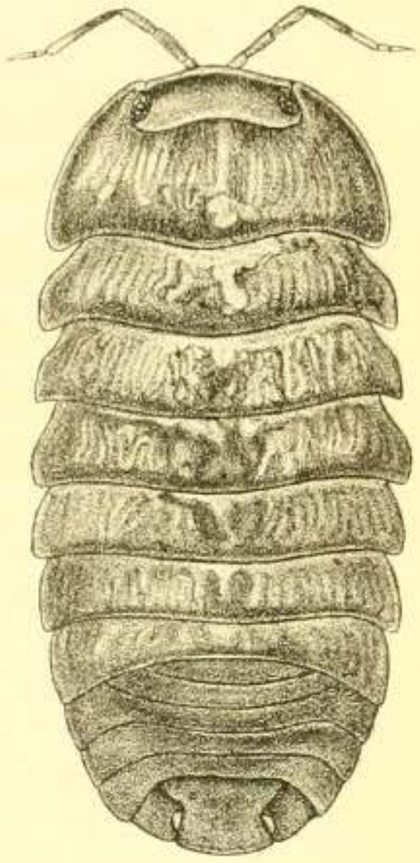

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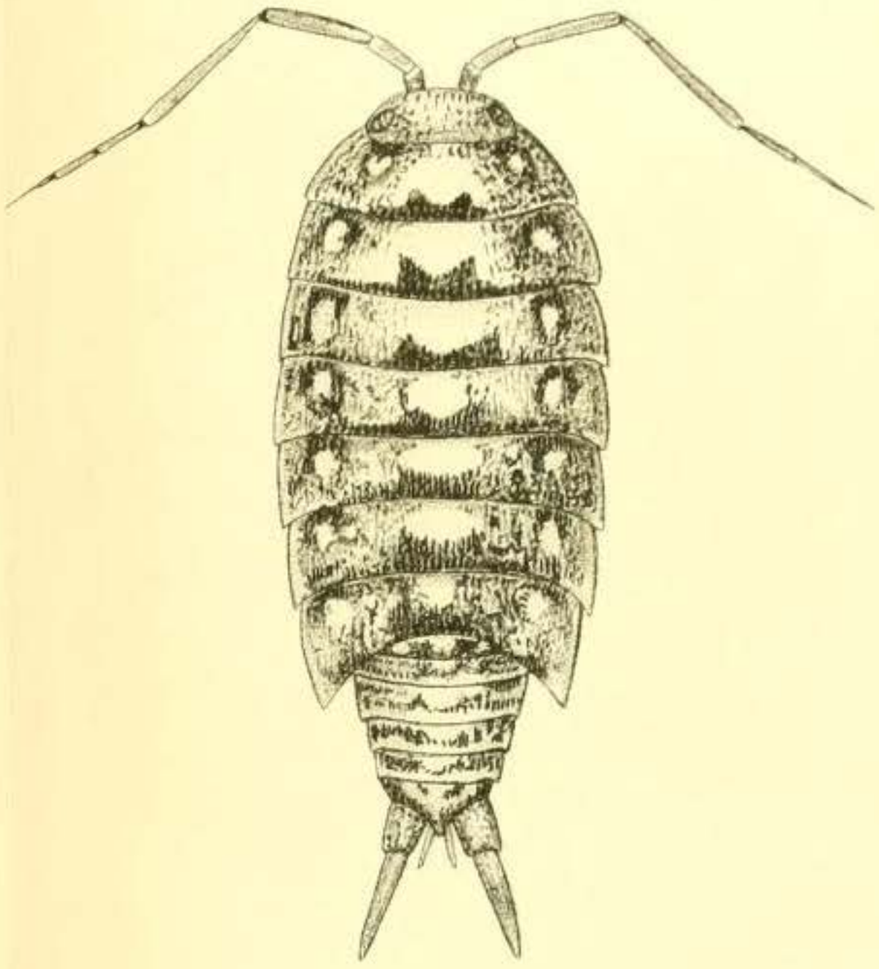
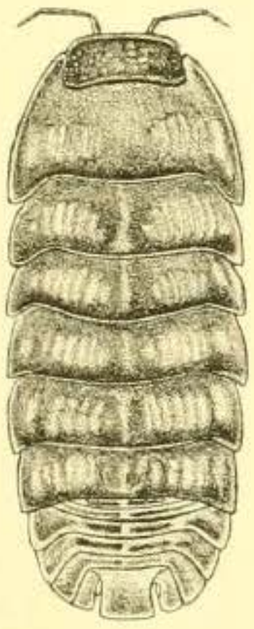


7 x 6.



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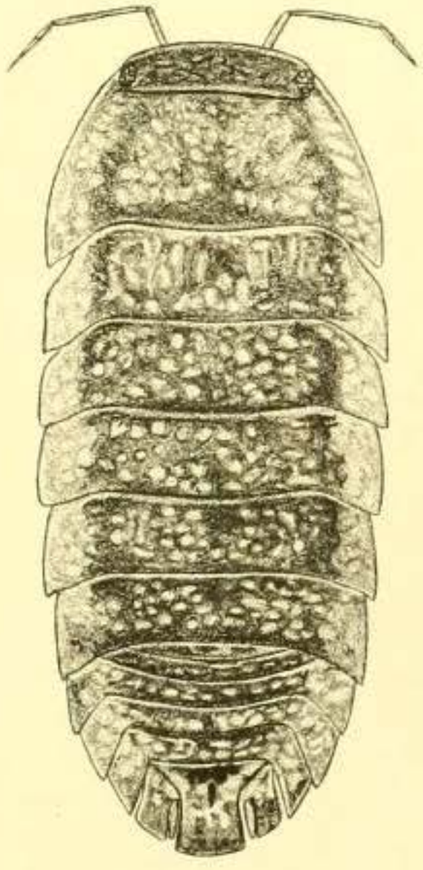
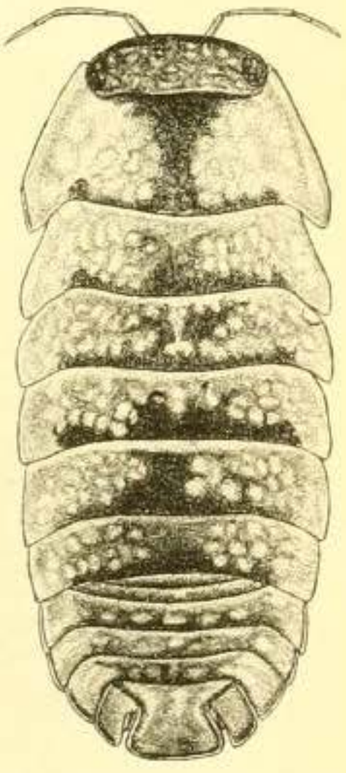


5 x 6.



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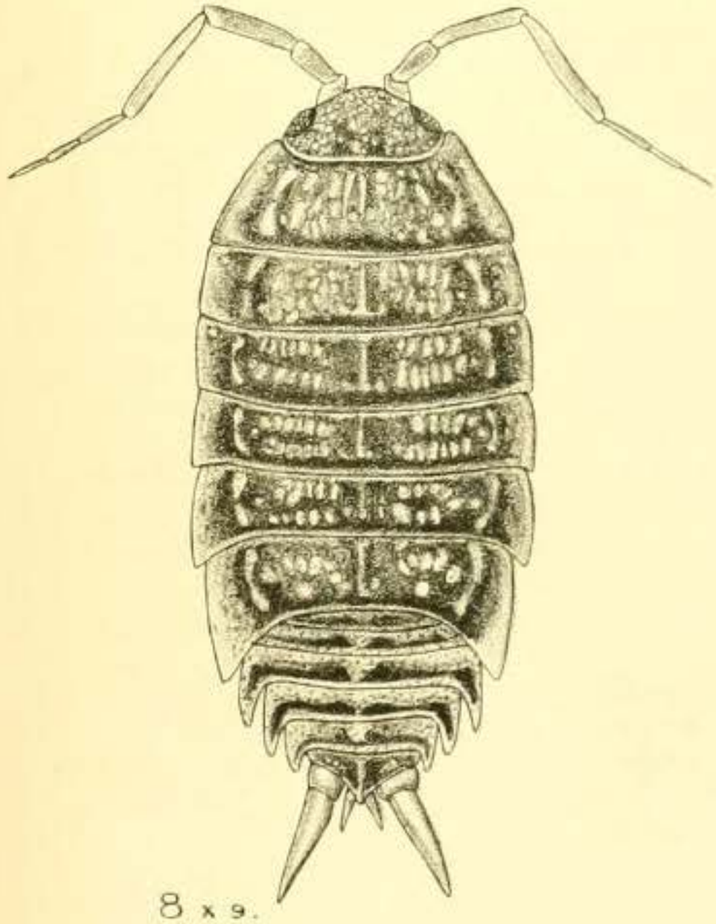
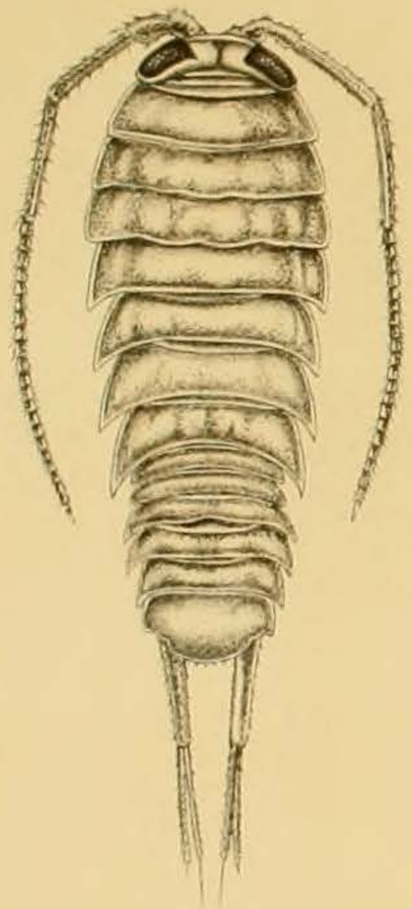


8 x 9.

G.E. del. ad nat.

Huth, London.

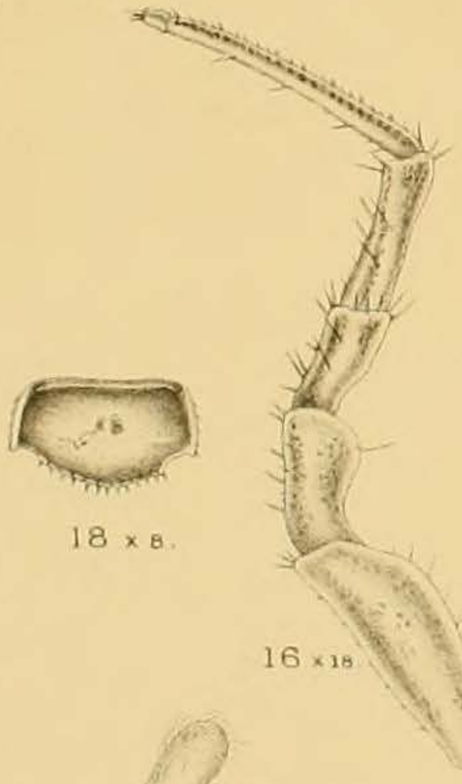
CUBARIS WARRENI Cllge. fig. 1, C. RETICULATUS Cllge. fig. 2, C. BURNUPI Cllge. fig. 3, C. NATALENSIS Cllge. fig. 4, C. LONGICAUDA Cllge. fig. 5, C. TRILOBATA Cllge. fig. 6, PHILOSCIA WARRENI Cllge. fig. 7, P. DILECTUM Cllge. fig. 8.



9 x 6.

10 x 10.

11 x 10.

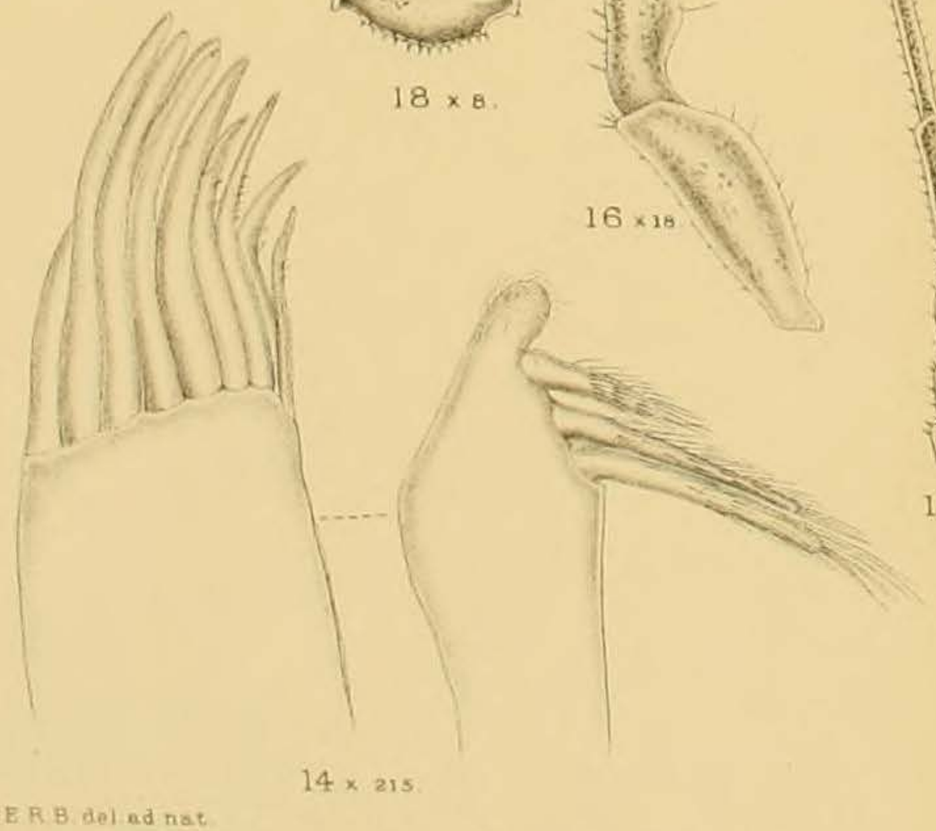


16 x 18.

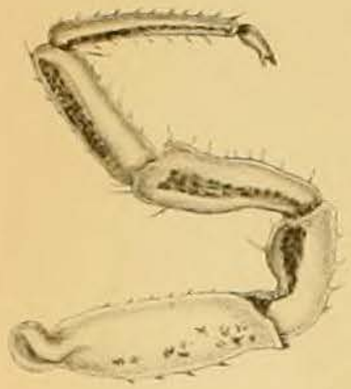
18 x 8.

12 x 70.

13 x 10.



14 x 215.



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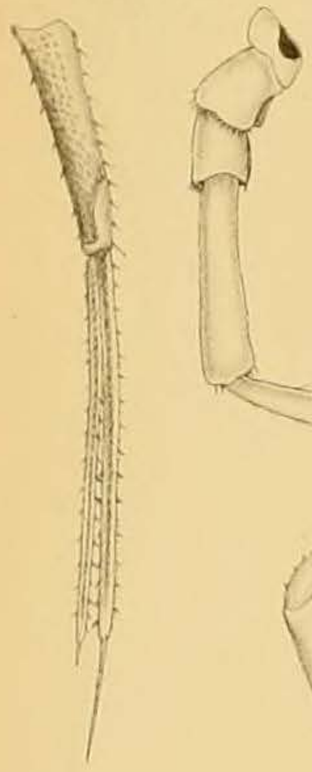

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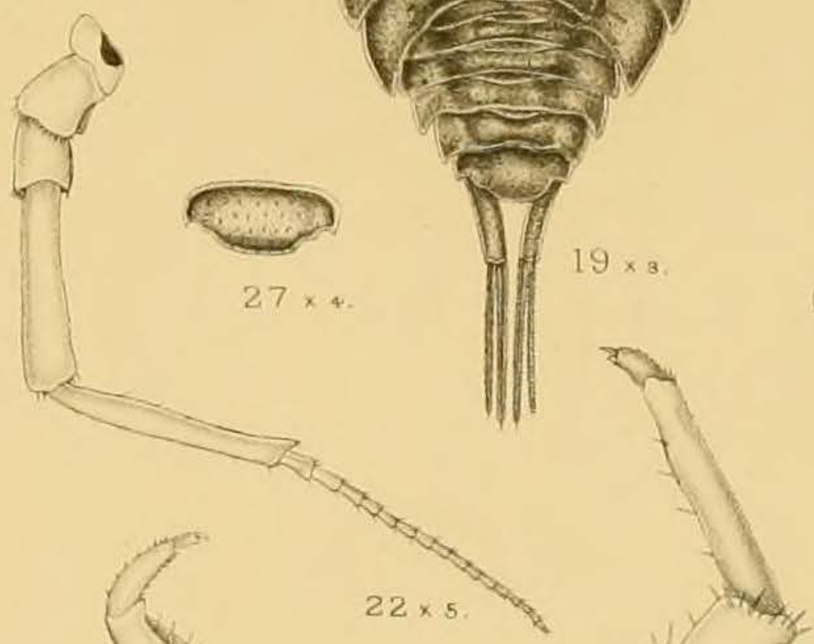
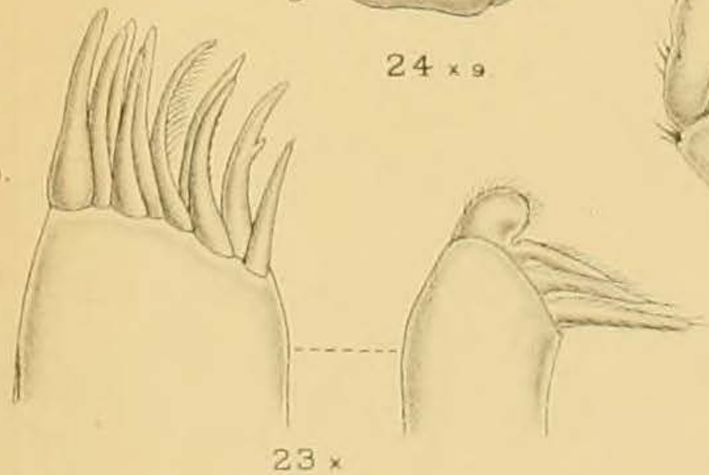


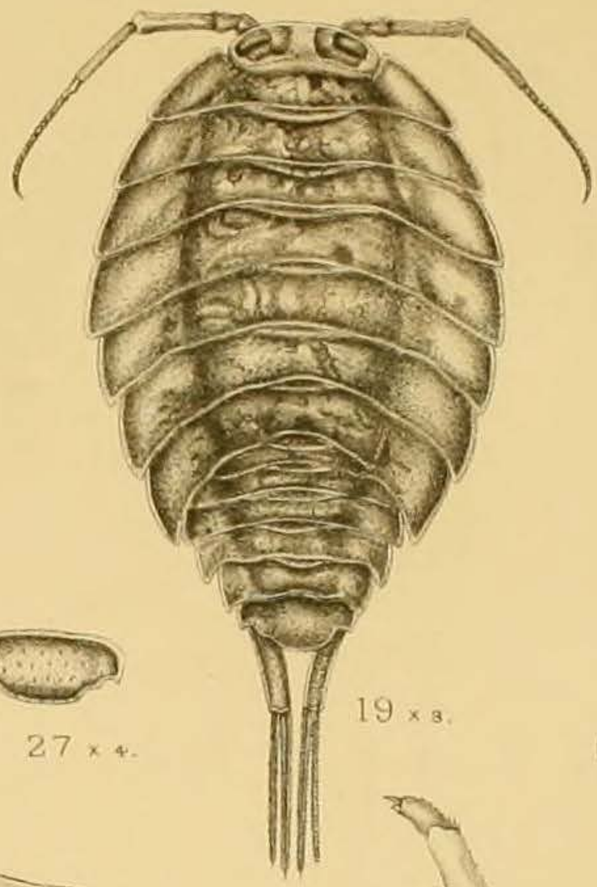
22 x 5.

24 x 9.



23 x

27 x 4.



19 x 3.

21 x

20 x 55.

26 x 6.

E.R.B. del. ad nat.

LIGIA NATALENSIS sp. n. figs 9–18.

LIGIA DILATATA Brandt figs 19–27.

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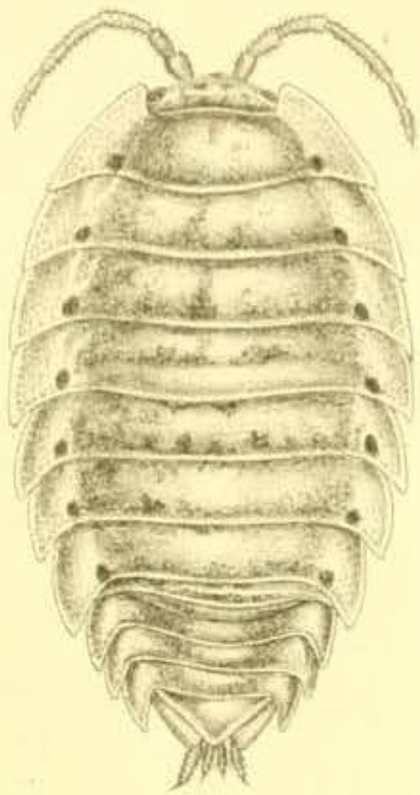
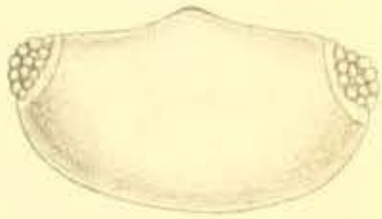


28 x 5.

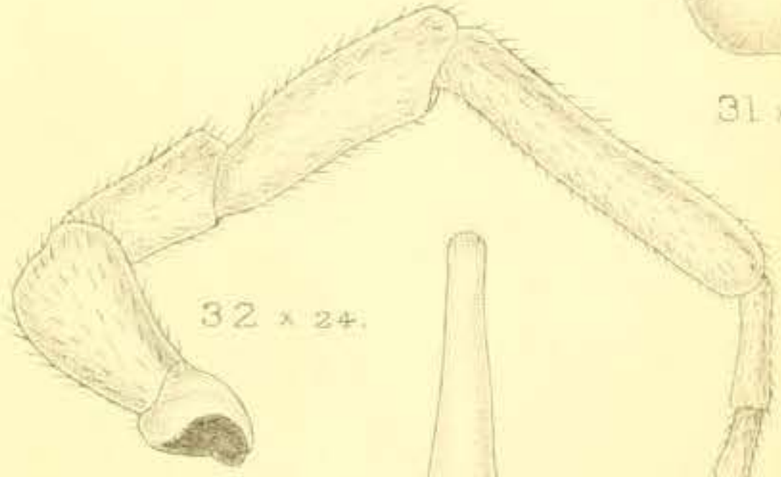
30 x 8.



29 x 8.5.

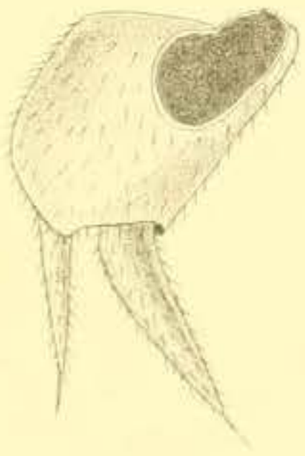
38

31 x 70.

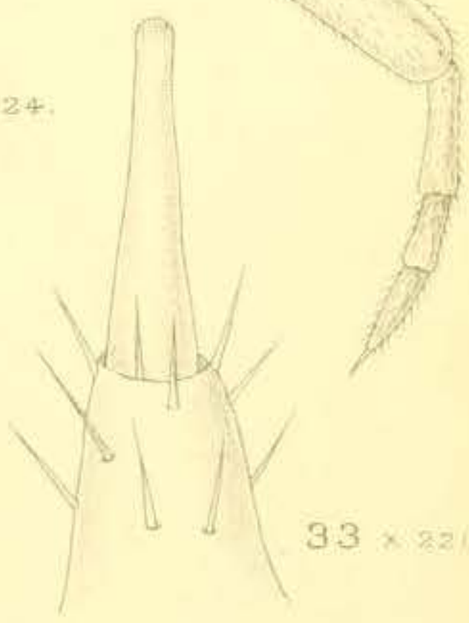


32 x 24.

37 x 21.



36 x 21.



33 x 221.

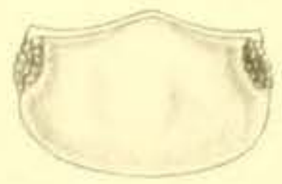
34 x 150.

35 x 82.

H.G.K. del. ad nat.

ALLONISCUS MARINUS sp.n. figs 28–38.

40



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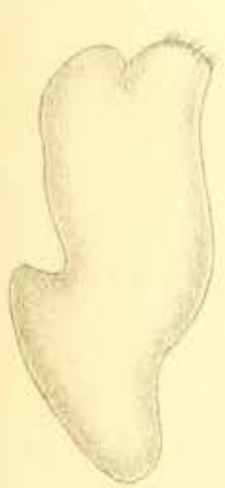
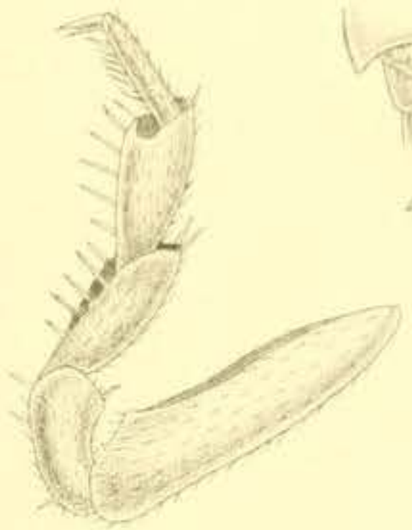




47

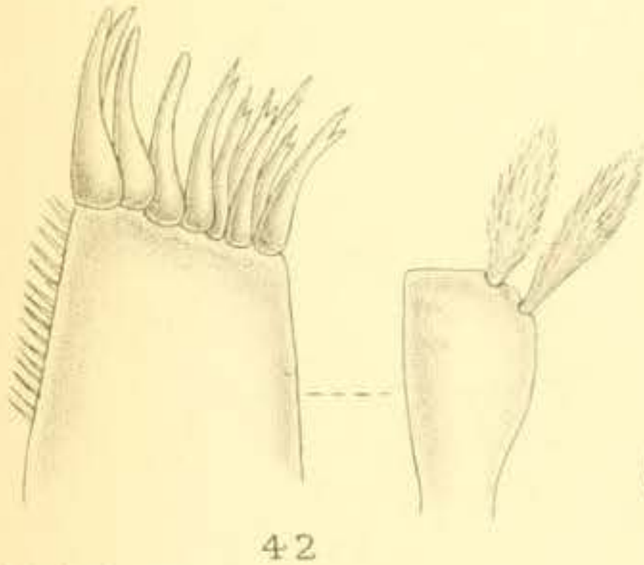
43

45

44

46

41

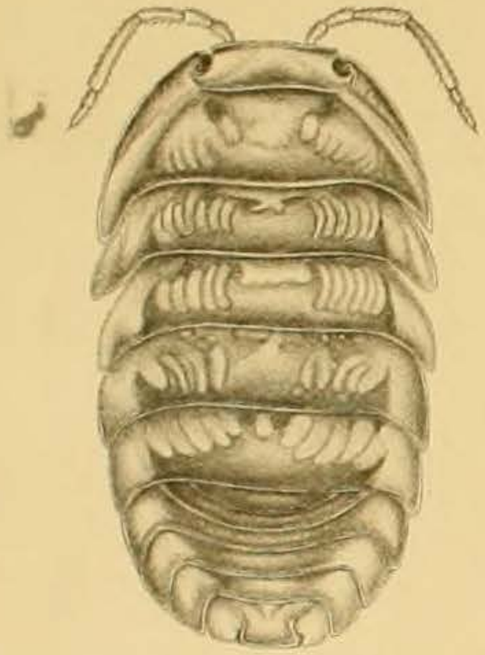


42

Æ.J.J. del. ad nat.

Huth, London

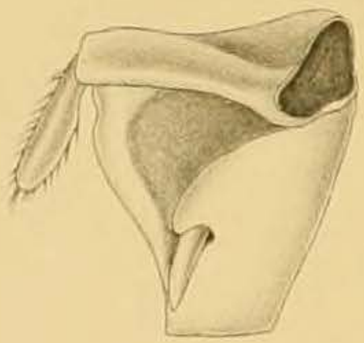
PORCELLIONIDES PRUINOSUS (Br.), figs 39–47.



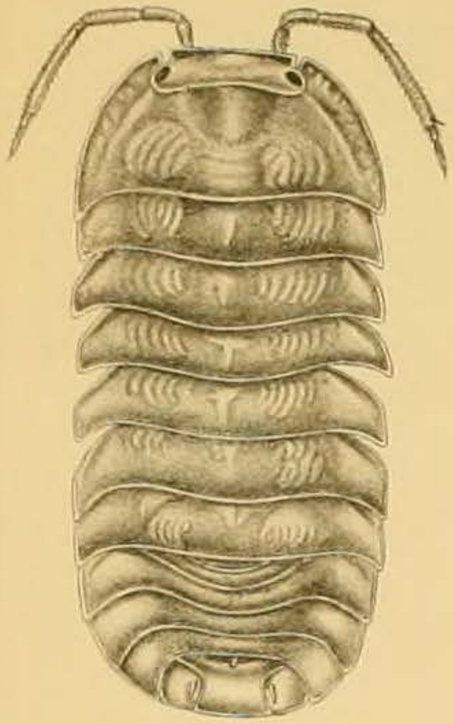
48 x 5.

49 x 8.

50 x 8.

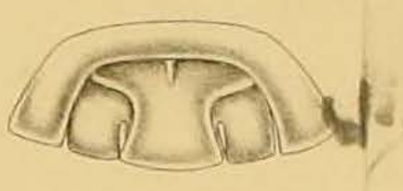


55 x 28.



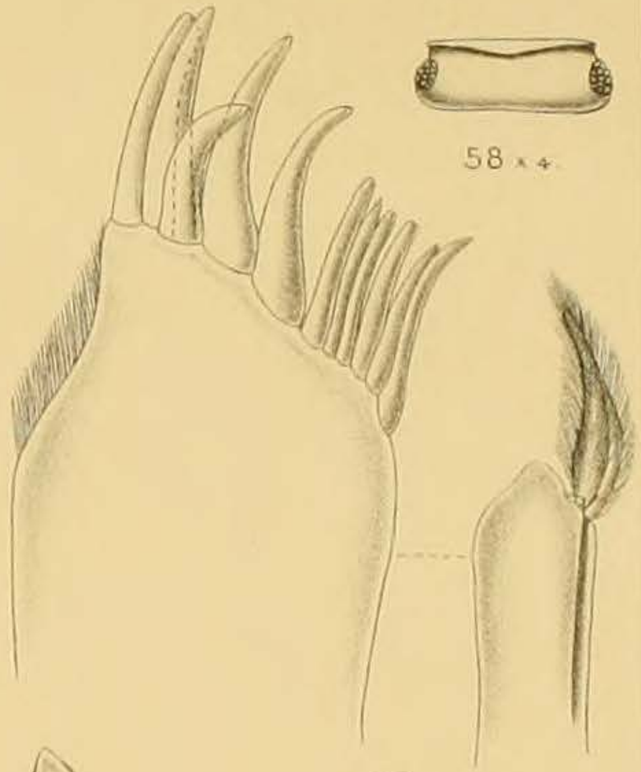
57 x 3.

59 x 4.



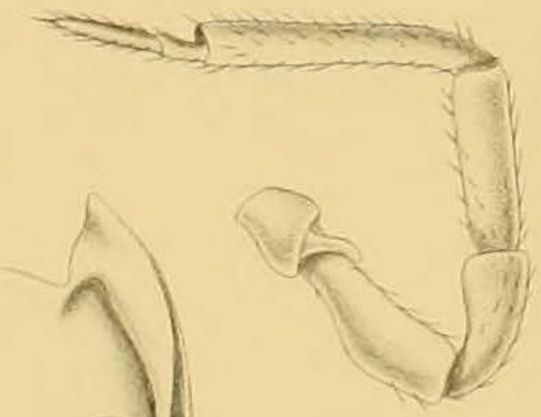
66 x 7.

58 x 4.



61 x 112.

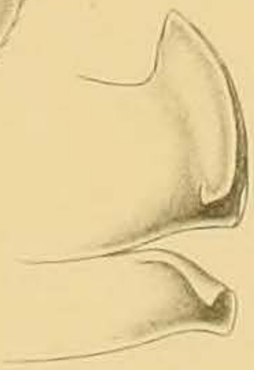
56 x 10.



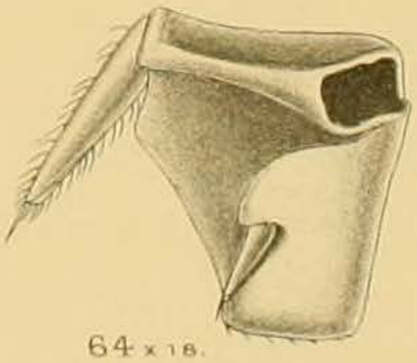
51 x 30.

60 x 15.

54 x 8.



63 x 8.



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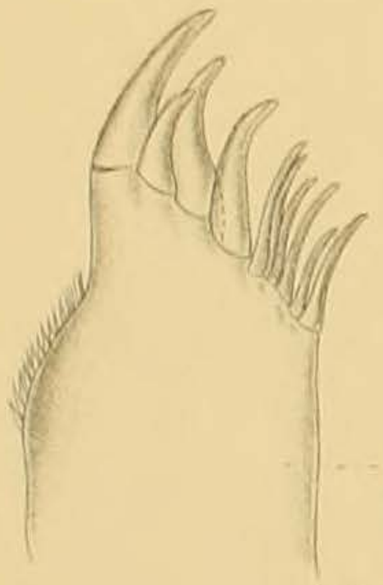
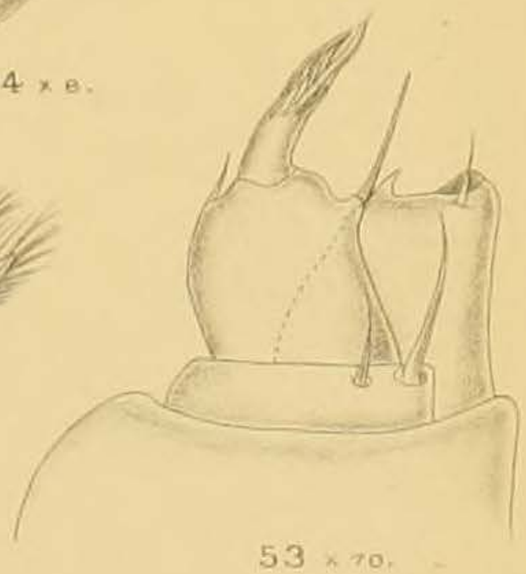
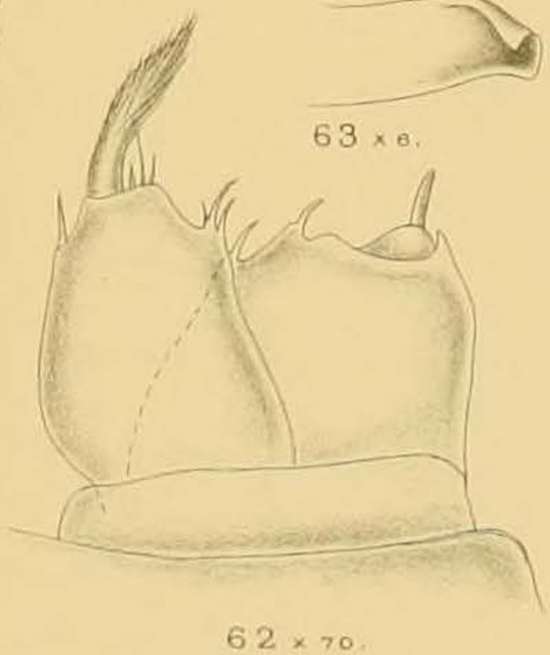


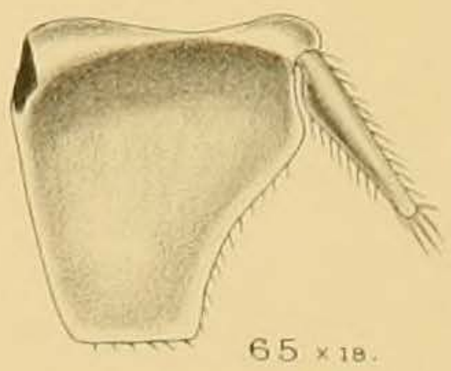
52 x 90.



53 x 70.



62 x 70.



65 x 18.

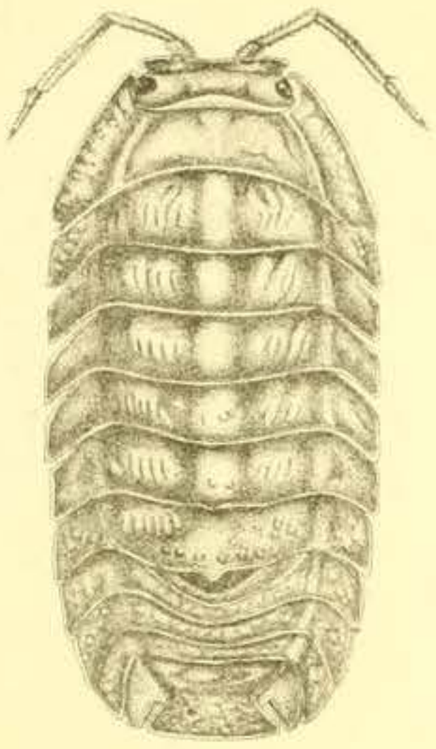
H.G.K. del. ad nat.

CUBARIS TRUNCATUS sp. n. figs 48–56.

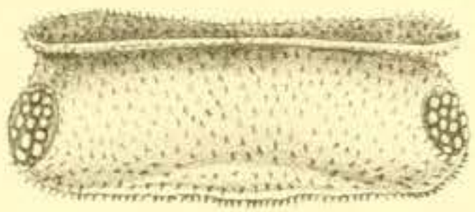
Æ. J.J. del. ad nat.

Huth, London

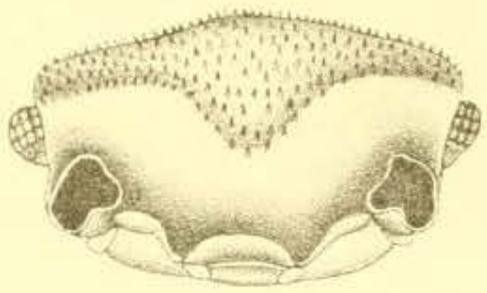
CUBARIS AKERMANI sp. n. figs 57–66.



67 x 14.

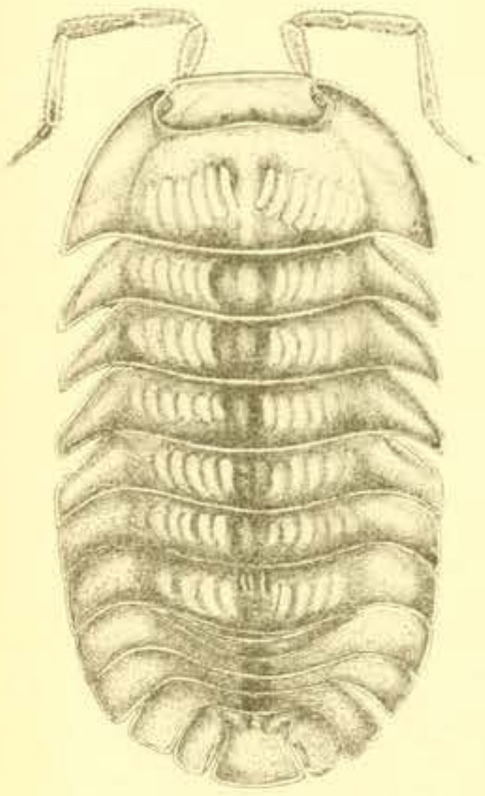


68 x 18.



69 x 18.

70 x 150.

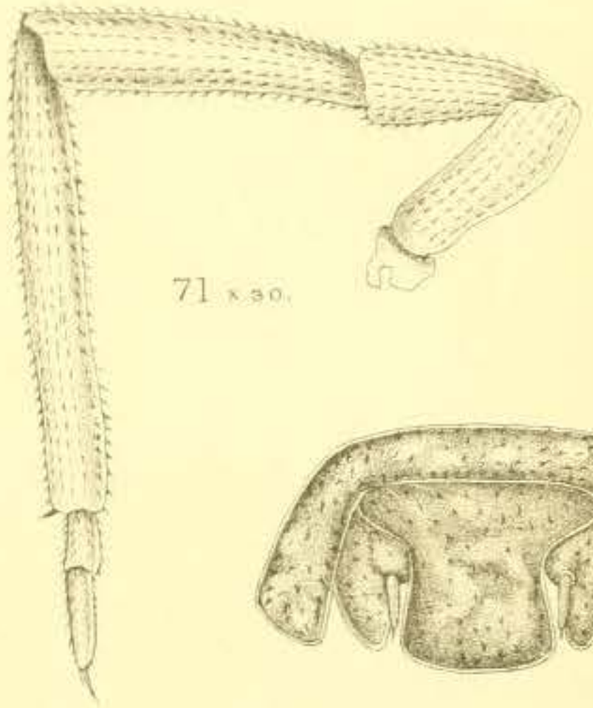


77 x 6.

78 x 12·5.

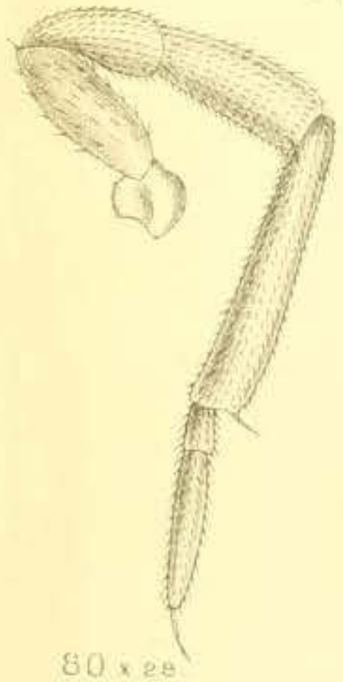
79 x 12·5.

73 x 16.



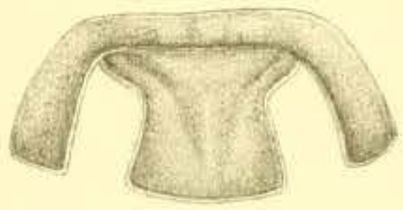
71 x 30.

76 x 20.

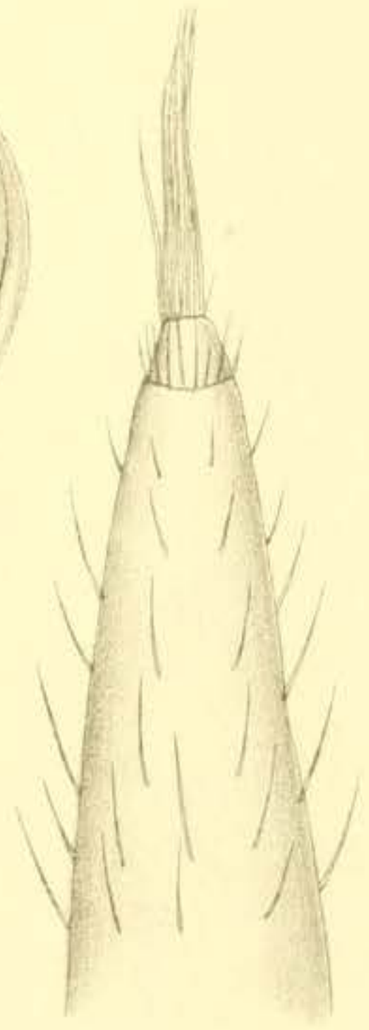


80 x 28.

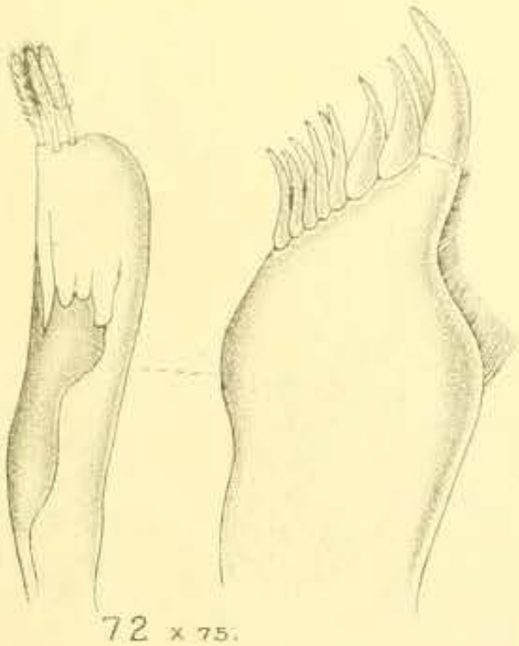
83 x 28.



85 x 15.

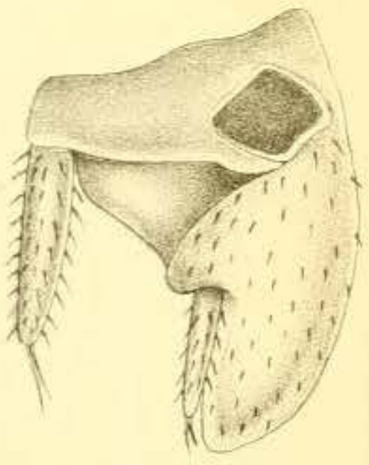


81 x 320.

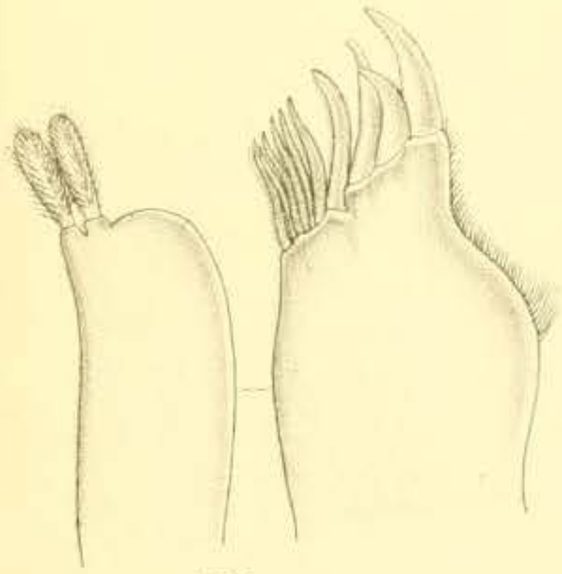


72 x 75.

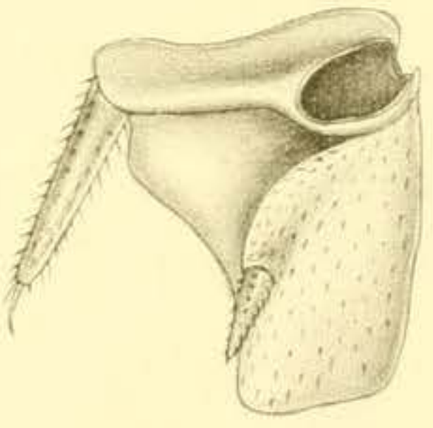
74 x 16.



75 x 50.



82 x 115.



84 x 50.

E.R.B. del. ad nat.

CUBARIS BARNARDI sp.n. figs 67–76.

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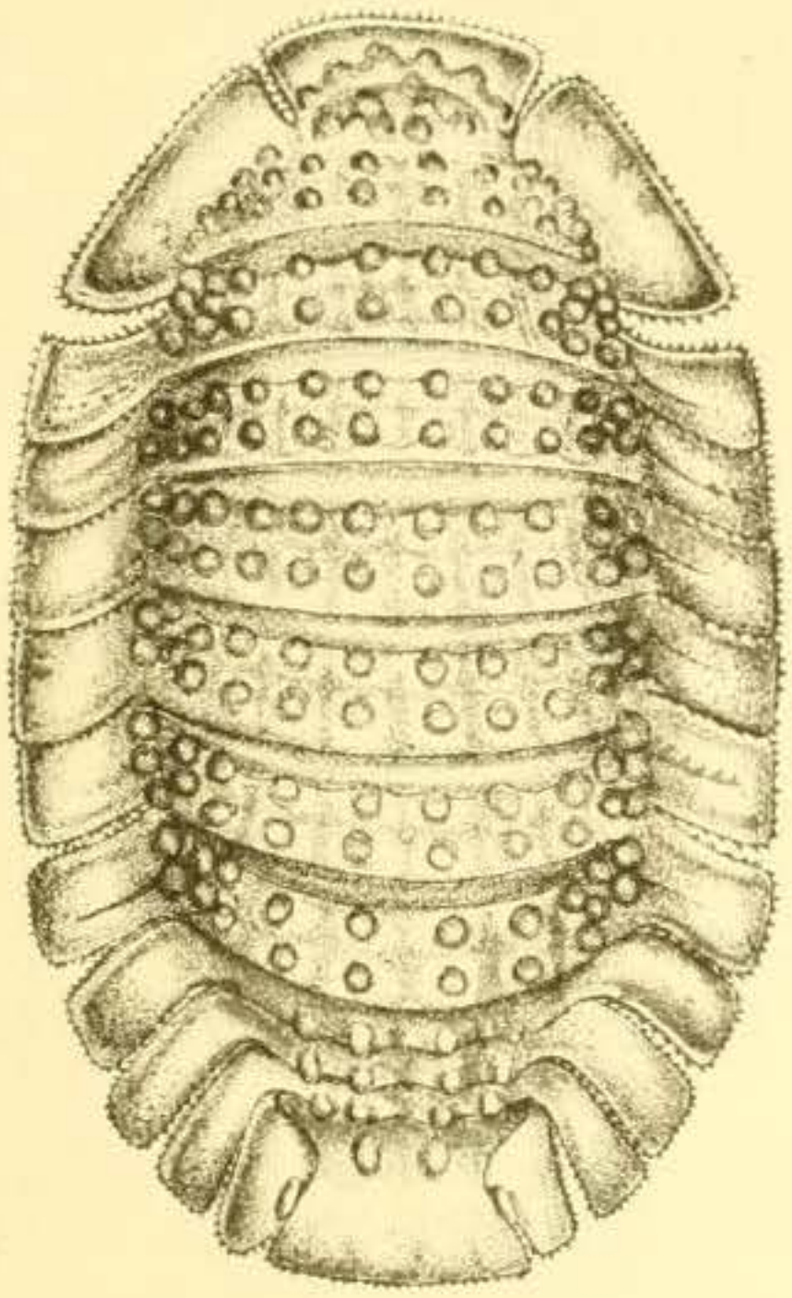
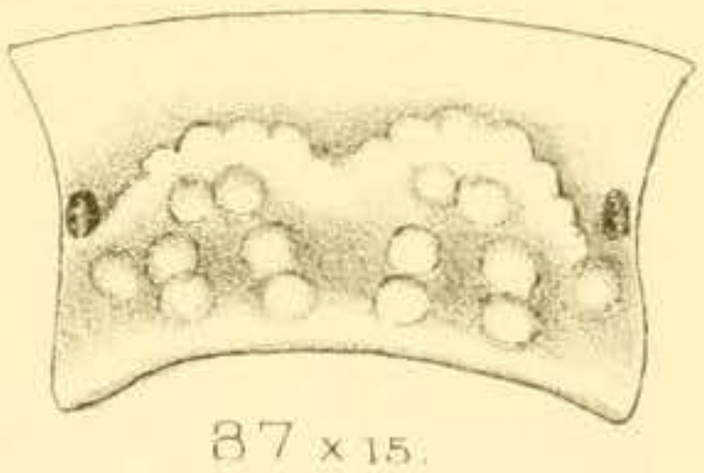
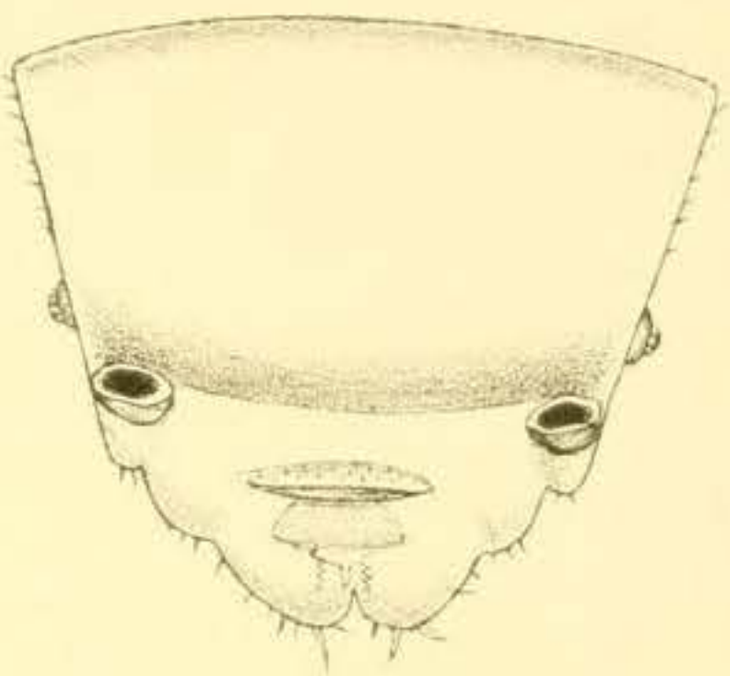
CUBARIS GRISEUS sp.n. figs 77–85.



86 x 9.



87 x 15.



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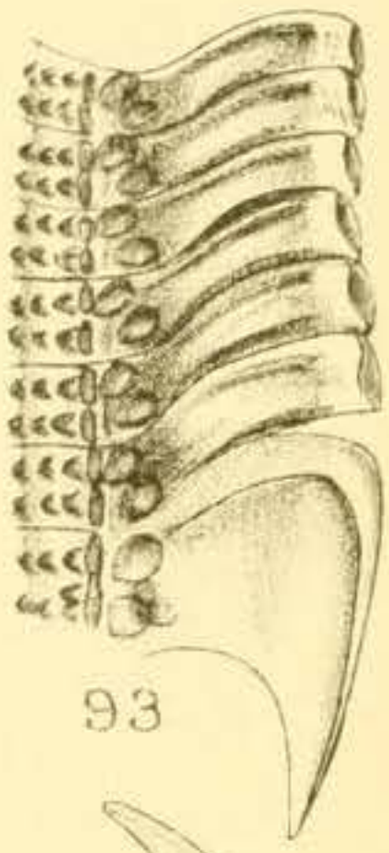
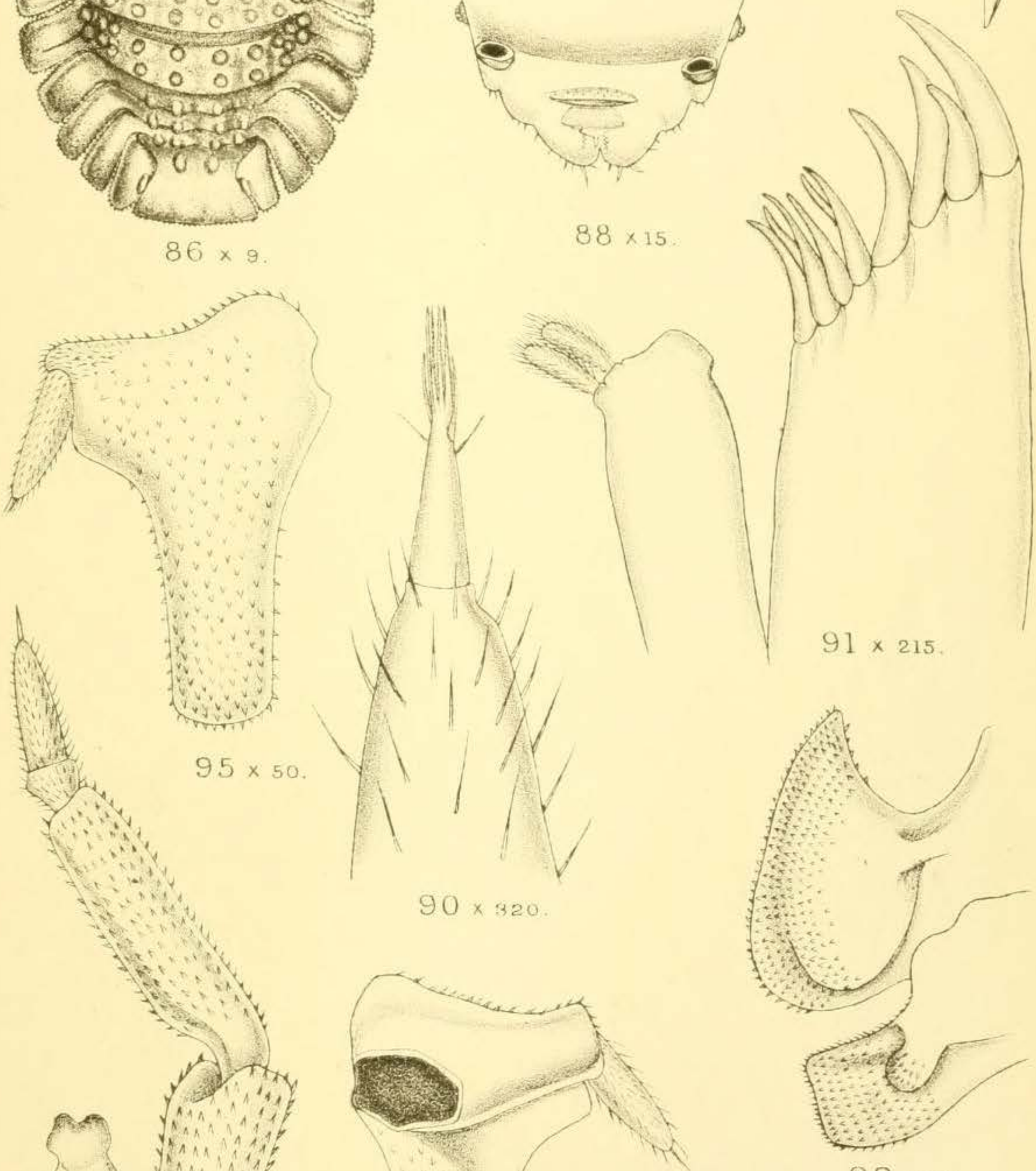


93



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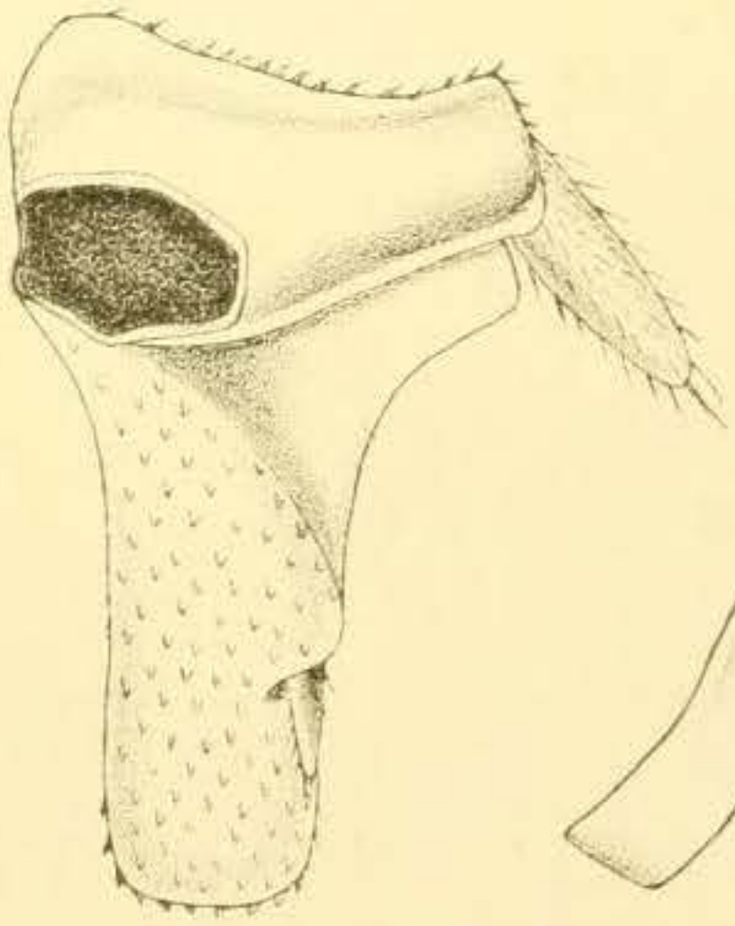
95 x 50.

90 x 320.

92 x 50.

89 x 7·5.



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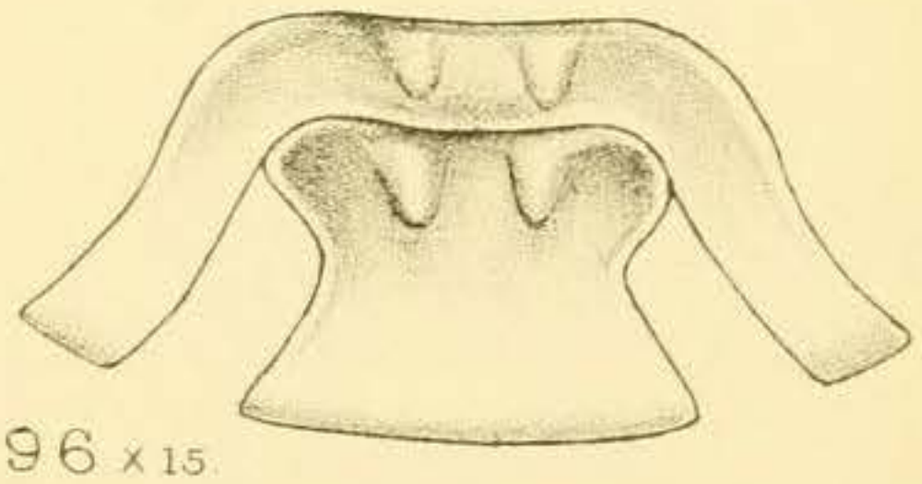

96 x 15.

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