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XXXVII. TERRESTRIAL ISOPODA.

By WALTER E. COLLINGE, *M.Sc.*, *F.L.S.*, *F.E.S.*

(Plates xxxi-xxxiii.)

The small collection of Terrestrial Isopoda collected by the Abor Expedition in the foot-hills of the Eastern Himalayas and by Mr. F. H. Gravely in Tenasserim have been placed in my hands for identification and description. Unfortunately the number of individual specimens is with one exception small and most of them are imperfect, so that their identification has not always been easy.

The *Philoscia* spp. 1 and 2 are in all probability new. I have previously seen an imperfect specimen of No. 1 from Saharanpur, U. P. Budde-Lund in 1894 (*Ann. Mus. Civ. Stor. Nat. Genova*, s. 2, vol. xiv, p. 612) described a species, *Philoscia coeca*, without figures, from the Farm Caves, Moulmein. The fragmentary condition of all the examples is, however, such that I do not feel justified in describing them from this material. The cosmopolitan species *Porcellionides pruinosus* (Brandt) occurs in four of the localities collected in. An interesting addition to cave fauna is the new genus *Burmoniscus*. Most of the specimens of *Cubaris* are immature, one from Sadyia, N. E. Assam, No. 8083/10, and another from the Dawna Hills, No. 8078/10, are undoubtedly new and these are here described and figured.

Porcellionides pruinosus (Brandt).

This species has previously been recorded by Stebbing¹ from Kurseong, 5,000 feet, E. Himalayas, 15-vii-07. In the present collection the localities are as follows:—

- Rotung Abor Country, 1,300 feet. Under stones. 25-xii-11.
No. 8080/10. Two specimens.
Kobo, 400 feet. In rotten wood. 30-xi-08. No. 8081/10.
Two specimens.
Kobo, 400 feet. In rotten wood. 30-xi-08. No. 8086/10.
One imperfect specimen
Sadyia, N. E. Assam. Under logs. 25-xi-11. No. 8083/10.
Two specimens.

Philoscia, sp. 1.

An interesting form, but unfortunately all the specimens are imperfect. Specimens were obtained from the following localities:—

¹ *Rec. Ind. Mus.*, 1911, p. 189.

- Sadyia, N. E. Assam. Under logs. 25-xi-11. No. 8083/10.
Two specimens.
- Sadyia, N. E. Assam. 28-xi-11. No. 8087/10. Seven im-
perfect specimens.
- Kobo, Abor Country, 400 feet. In rotten wood. 30-xi-08.
No. 8086/10. Three imperfect specimens.
- Near Parong, 3,300 feet. 27-i-12. No. 8088/10.

Philoscia, sp. 2.

One imperfect specimen from Sadyia, N. E. Assam. 28-xi-11.
No. 8087/10.

Burmoniscus, n. gen.

Burmoniscus moulmein, n. sp.

(Pl. xxxi, figs. 1-8.)

Body (fig. 1) oblong oval, dorsal face strongly convex, perfectly smooth and shining. Cephalon small, flanked laterally by the lateral plates of the 1st segment of the mesosome. Eyes absent. Antennulae (?). Antennae (fig. 2) slender and elongated with 3-jointed flagellum. Mandibles (fig. 3) small, beneath the teeth is a single palp terminating in setose bristles. 1st maxillae (fig. 4): outer lobe terminates in eight spines, the four innermost of which are bifurcated; the inner lobe terminates in a number of fine spines. 2nd maxillae (fig. 5) thin and flexible, on the outer side it is produced into a tooth-like plate and a smaller tooth on the inner side, between which is a palp terminating in setose bristles. The segments of the mesosome are strongly convex, the lateral plates of 1-4 overlap one another slightly, whilst those of 5-7 are produced backwardly, especially the 7th. Maxillipedes (fig. 6) poorly developed. Thoracic appendages (fig. 7) elongated, with simple and plumose spines on the protopodite. Metasome narrow, lateral plates small and slightly incurved. Uropoda (fig. 8): basal plate flattened, extending beyond the telson, exopodite long and pointed, endopodite similar in shape, but smaller. Telson triangular, with peculiar lateral bosses. Colour deep brown. Length 9 mm.

Habitat.—Farm caves near Moulmein, in depths of large cave. No. 8079/10. (F. H. Gravely).

Type.—In the collection of the Indian Museum

Unlike any other cave-inhabiting species I know of, this species has a very distinct colour. Packard¹ in his account of the cave fauna of North America states, "As regards change of colour, we do not call an exception to the general law, that all cave-animals are either colourless or nearly white, or, as in the case of Arachnida and insects, much paler than their out-of-door relatives."

¹ Packard, Nat. Acad. Sci., 1887, vol. 4, pp. 3-156, pp. i-xxvii.

In the form of the uropoda, *Burmoniscus* somewhat approaches that present in *Brackenridgia cavernarum*, Ulrich¹, from Ezell's Cave and Beaver Cave, near San Marcos, Texas.

[This species, which is the one referred to in the recent paper on the cave-fauna² of Burma and Malaya by Dr. Annandale and myself, was found among wood that appeared to have been washed by a flood into one of the deepest recesses of the large Farm Cave.—*F. H. G.*]

Cubaris caeruleus, n. sp.

(Pl. xxxii, figs. 1-10.)

Body (fig. 1) oblong oval, dorsal face convex, slightly rugose, first segment almost twice the length of any other. Cephalon small (figs. 2 and 3), lateral lobes not well-developed, median lobe faintly indicated, epistoma with triangular-shaped depression immediately below median lobe. Eyes prominent. Antennulae longer than usual and 3-jointed. Antennae (fig. 4) slender, with the last peduncular segment long, 2-jointed flagellum, the distal joint being the longer. Mandibles (fig. 5) small, variable in three examples examined. 1st maxillae (fig. 6): the outer lobe terminates in four stout, curved spines and six more slender and almost straight ones, with numerous setae distally on the outer side, inner lobe terminally rounded, thin and with two setose spines. 2nd maxillae (fig. 7) terminating in an outer, blade-like lobe and an inner one with a dense mass of fine setae. The segments of the mesosome are fairly convex and well separated from one another laterally, with the posterior angles of the lateral plates somewhat pointed. Maxillipedes (fig. 8) well-developed, the outer lobe terminates in a large curved spine with a series of minute spinous processes, there are two small spines at the base of this on the inner side and a large one more internally, the inner lobe has a slightly flattened surface with three small marginal spines. Thoracic appendages (fig. 9) comparatively short, setaceous and fringed on the inner side with numerous strong spines, the distal extremity terminating in a prominent incurved claw. Uropoda (fig. 10): basal plate stout and not extending beyond telson; exopodite articulating in a groove on the dorsal side, endopodite large and triangular in section, fringed with numerous setae and terminating distally as three hair-like setae. It articulates on the inner side of the extreme inner dorsal border. Telson (fig. 1) compressed laterally, strongly convex, posterior margin rounded. Length 12.2 mm. Colour (in alcohol) deep blue with irregular whitish patches.

Habitat.—Thingannyinaung to Sukli, Dawna Hills, 900-2,100 ft., Tenasserim, 23-27-xi-11. No. 8078/10. (*F. H. Gravely*.)

Type.—In the collection of the Indian Museum.

¹ Ulrich, Trans. Amer. Micros. Soc., 1902, vol. 23, pp. 90-93, figs. 1-9.

² Journ. As. Soc. Bengal (N.S.), IX, pt. 10, 1913.

[In life this species is slate-grey with bright lemon-yellow markings. It is common on exposed banks and on the leaves of bushes, where its colours render it a conspicuous and striking object.—*F. H. G.*]

Cubaris robusta, n. sp.

(Pl. xxxiii, figs. 1-9.)

Body (fig. 1) oblong oval, convex, with lateral margins of the segments slightly revolute, mesosomatic segments marked mid-dorsally with a broken white line and laterally with raised longitudinal tubercles. Cephalon (figs. 2 and 3) small with deep epistoma and small triangular lateral lobes, median lobe absent; the dorsal surface exhibits a slight median depression whilst posteriorly it is slightly raised. Eyes (figs. 2 and 3) prominent, sub-dorsal. Antennulae 3-jointed. Antennae (fig. 4) short, setaceous, flagellum 2-jointed, the distal joint two-and-a-half times longer than the proximal one. Mandibles variable. 1st maxillae (fig. 5): the outer lobe terminates in four stout, incurved spines and five more slender ones; numerous long hair-like setae on the outer margin. 2nd maxillae (fig. 6) small, terminating in a thin blade-like outer lobe with numerous setae, inner lobe tooth-like with dense mass of long setae. The segments of the mesosome are convex, the 1st strongly so; lateral plates of anterior segments well separated and slightly revolute. Maxillipedes (fig. 7): outer palp terminates in a strong spinous process with a multispinous termination, there are two smaller spines on the inner border and a fourth basally; the inner palp has a single spine and a small tooth-like process on the inner border. Thoracic appendages (fig. 8) elongated, with numerous strong spines mostly on the inner border. Uropoda (fig. 9) somewhat robust, with triangular basal plate not extending beyond the telson; exopodite small and articulating in a groove on the inner dorsal margin, endopodite a little larger, articulating with the under side of the extreme inner border, and not extending beyond the basal plate. Telson strongly convex, contracted laterally, posterior margin almost straight. Length 8.5 mm. Colour (in alcohol) horny brown.

Habitat.—Sadyia, N.E. Assam. Under logs. 25-xi-11. No. 8083/10. (*S. W. Kemp*.)

Type.—In the collection of the Indian Museum.

This interesting species finds its nearest ally in *Cubaris fragilis*, Cllge.,¹ a species I have recently described from the Andamans. It differs, however, from that species in the much stouter and stronger build of the first mesosomatic segment, the lateral plates of which, ventrally, are much thickened, dorsally the mid-dorsal portion of the segment anteriorly has a raised triangular area. In the form of the telson and uropoda there are also important differences and the antennae are rather shorter. The

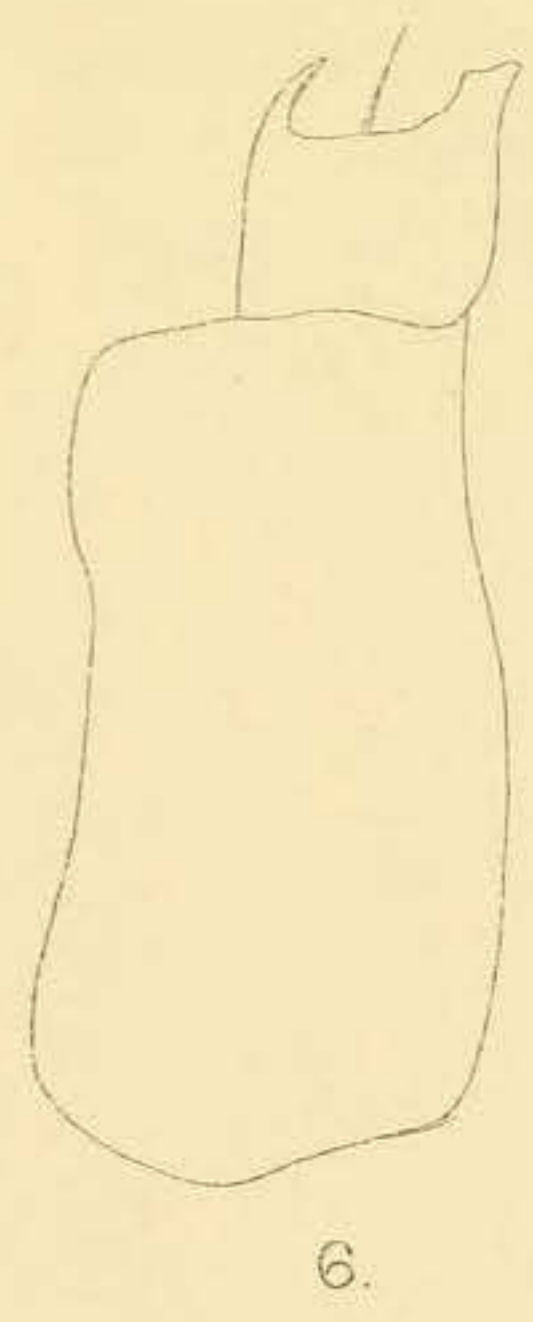
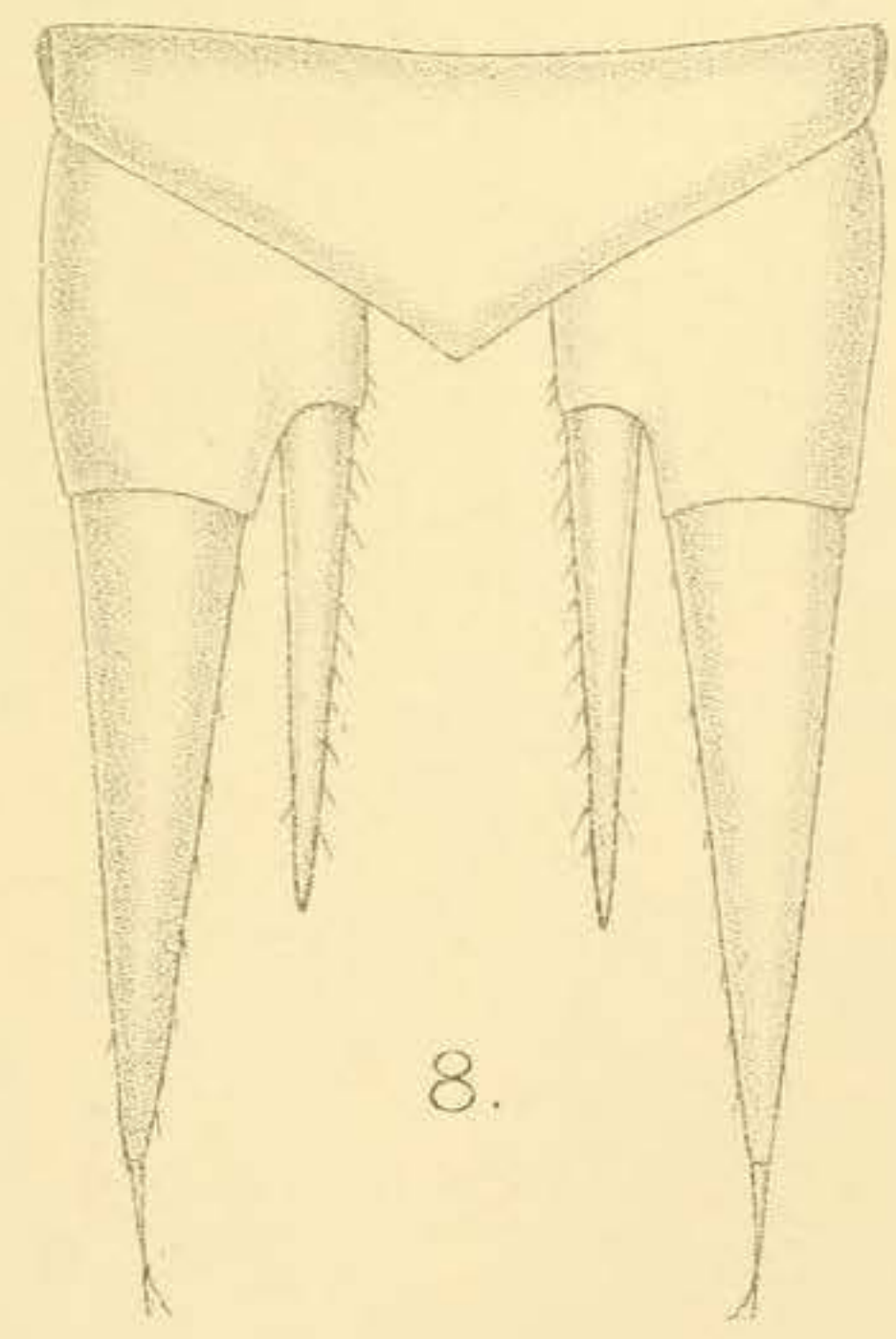
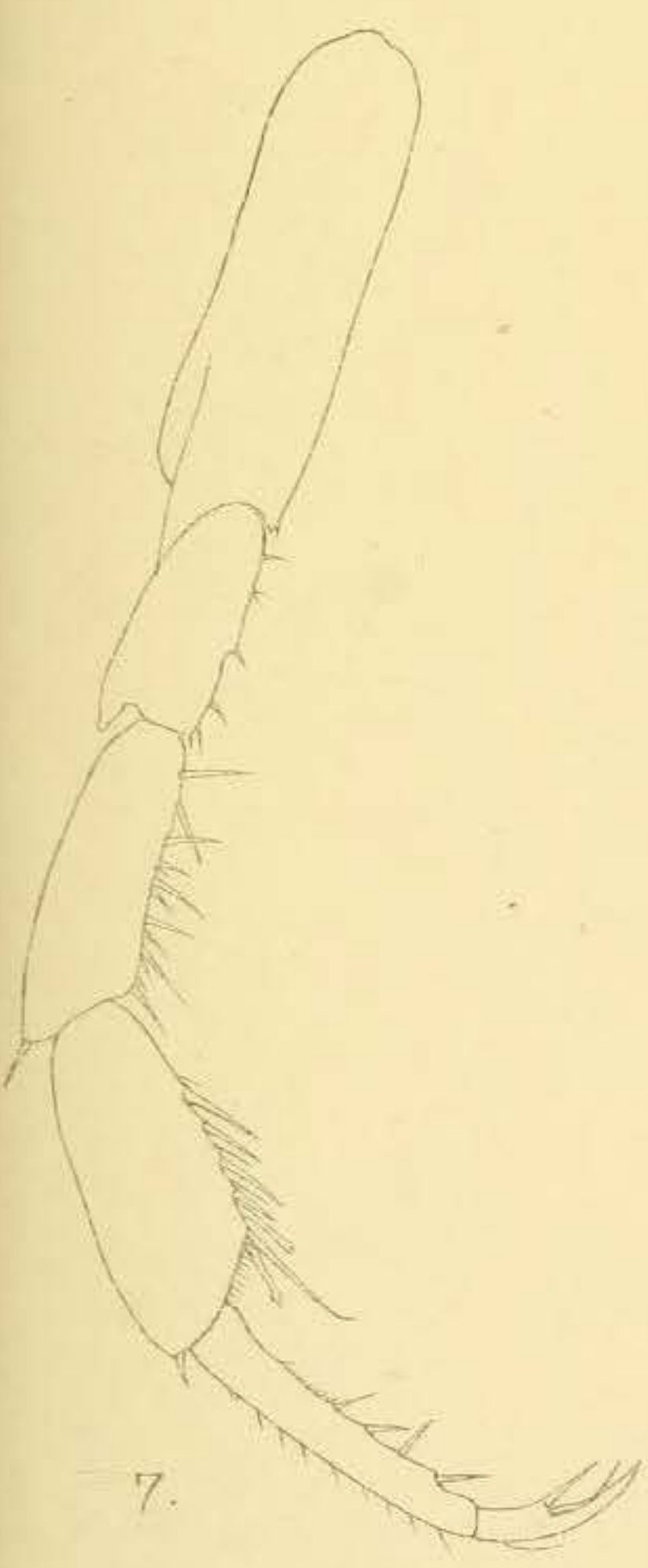
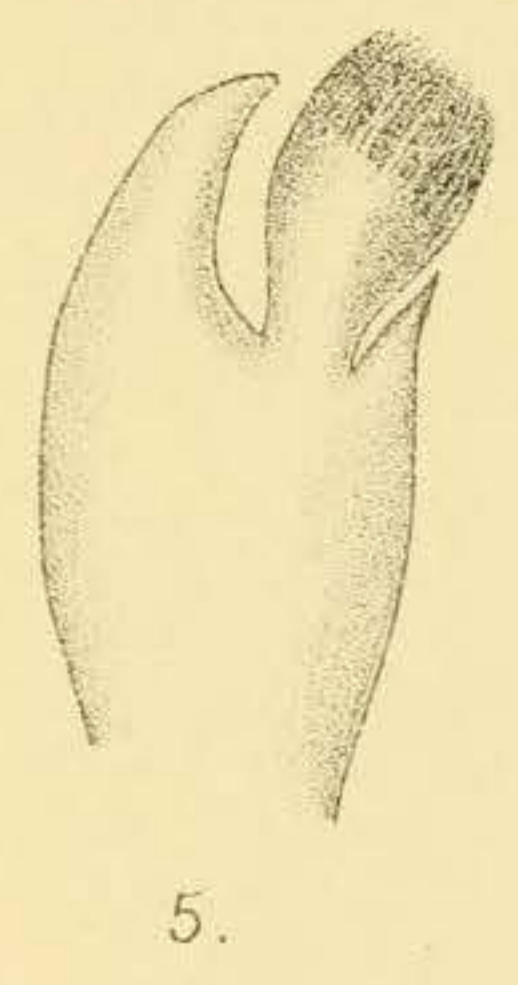
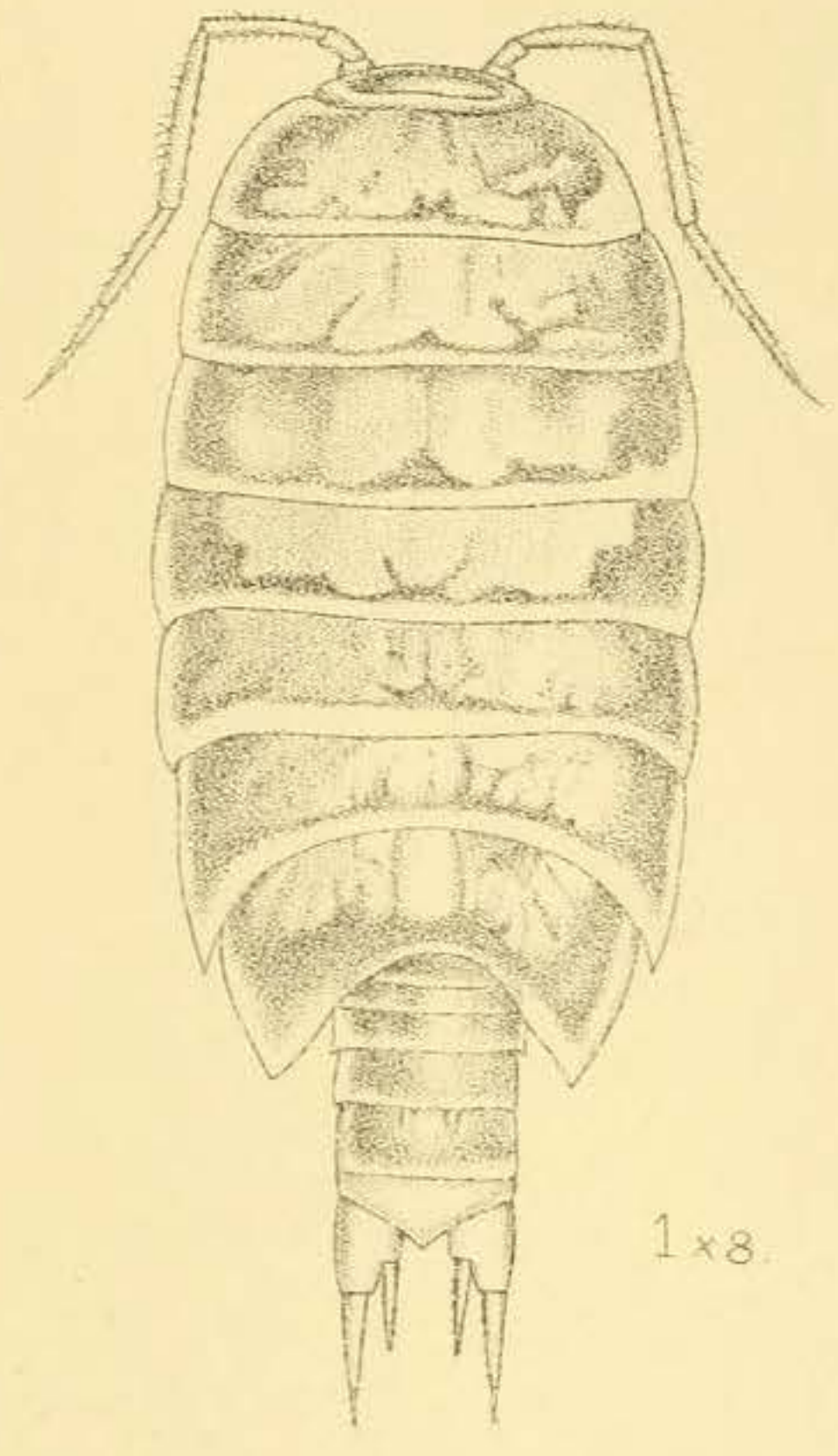
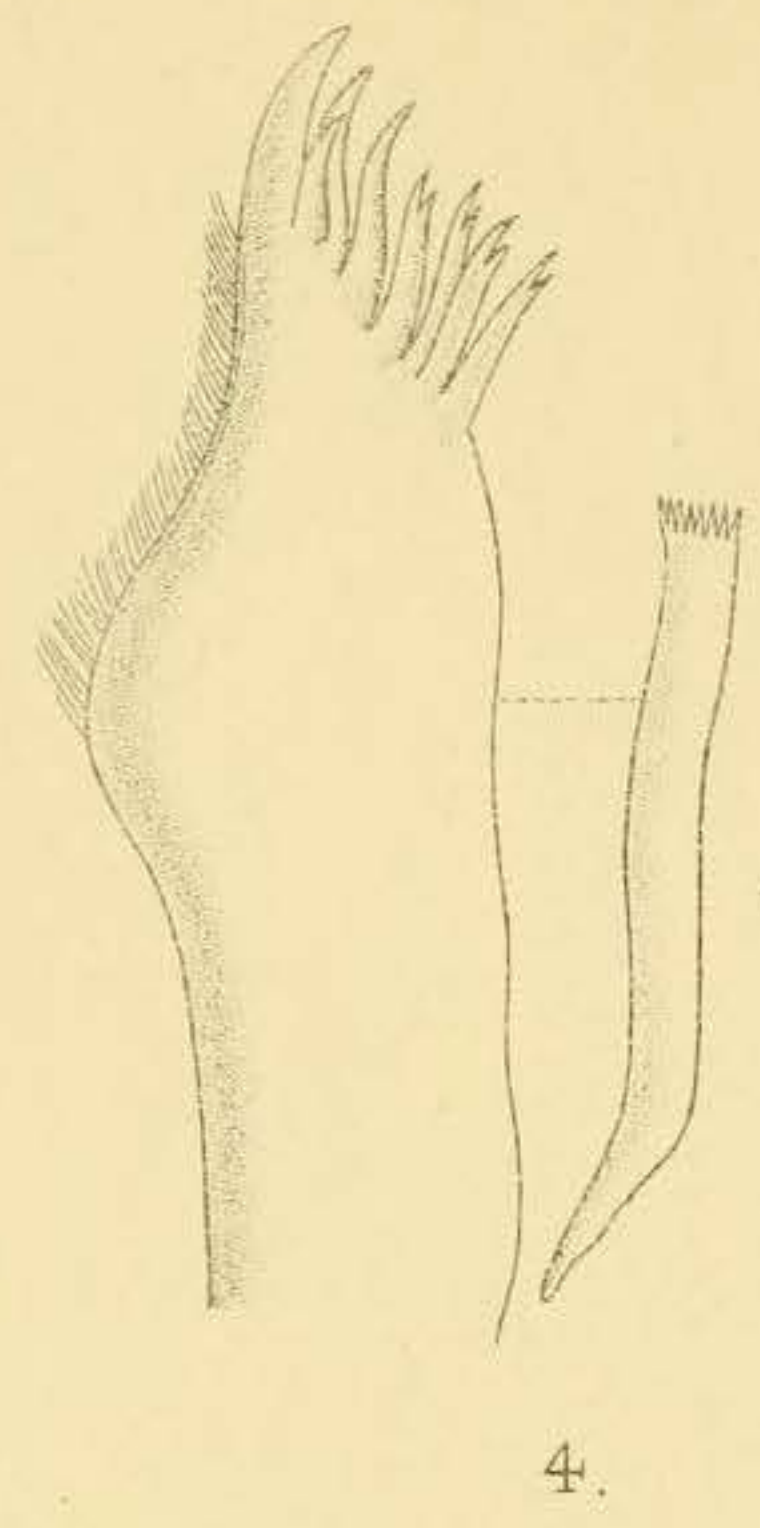
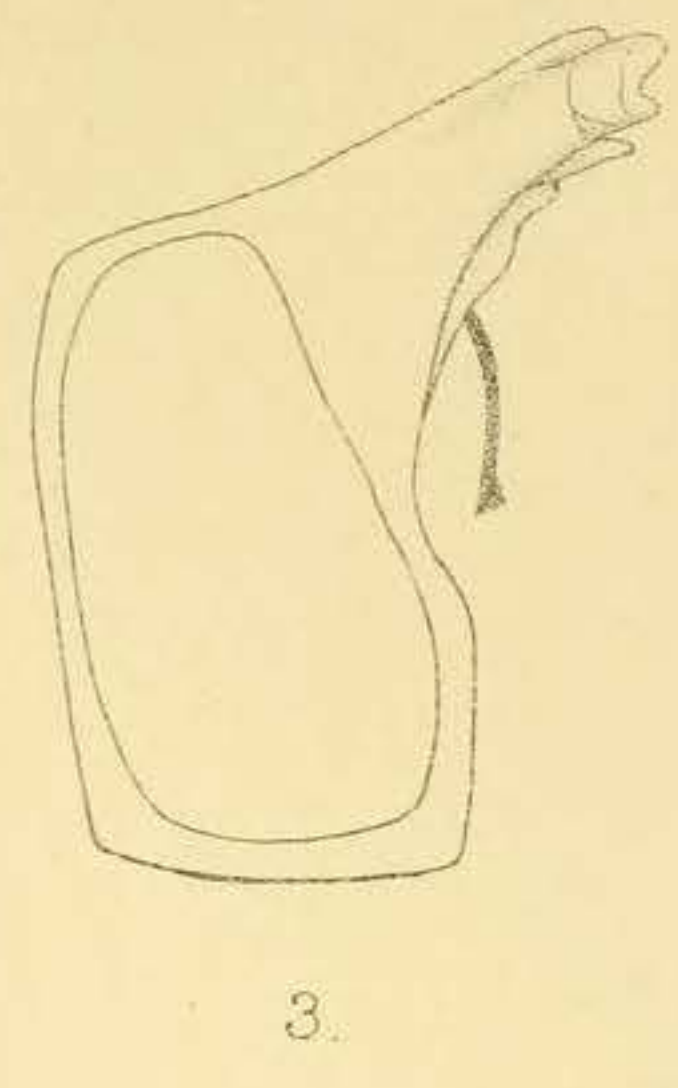
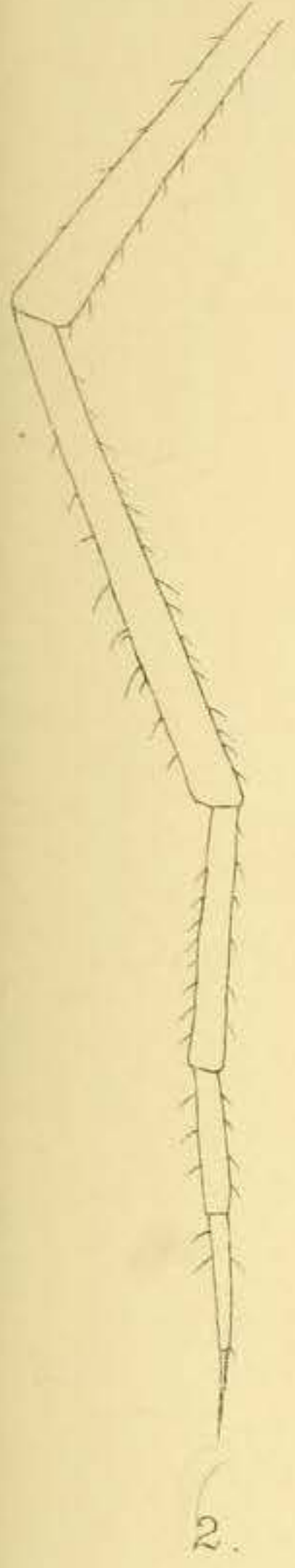
¹ Rec. Ind. Mus., 1914, vol. x, p. 209, pl. xxv.

mouth parts were found to be exceedingly variable, thus four different variations were noted in the mandibles and in one specimen the outer lobe of the 1st maxilla had four stout spines and nine more slender ones, instead of five.

EXPLANATION OF PLATE XXXI.

Burmoniscus moulmeinus, gen. et sp. nov.

- FIG. 1.—Dorsal view. × 8.
,, 2.—Antenna.
,, 3.—Mandible.
,, 4.—First maxilla, inner and outer lobes.
,, 5.—Second maxilla.
,, 6.—Maxillipede.
,, 7.—Second thoracic appendage.
,, 8.—Telson and uropoda.



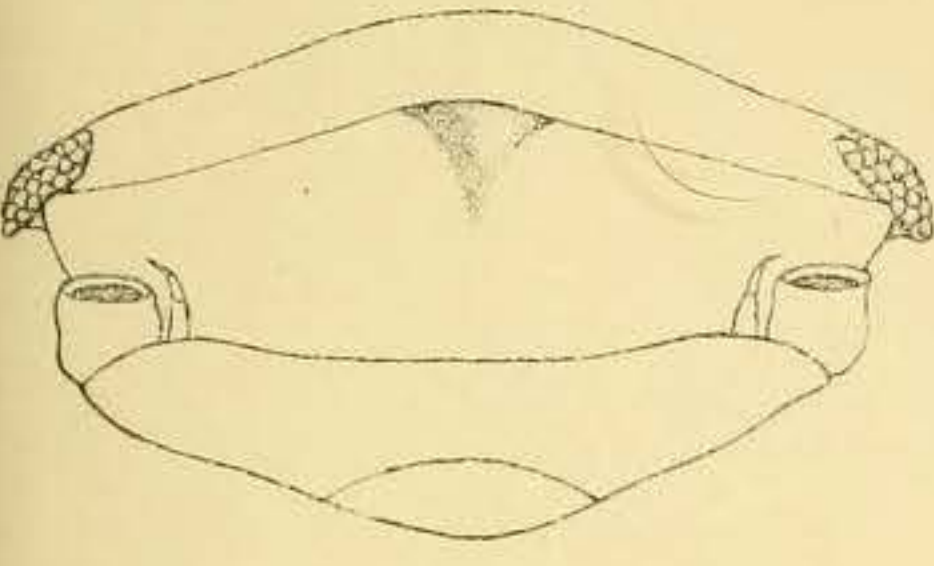
A. Chowdhary, lith.

BURMONISCUS MOULMEINUS, gen. et sp. nov.

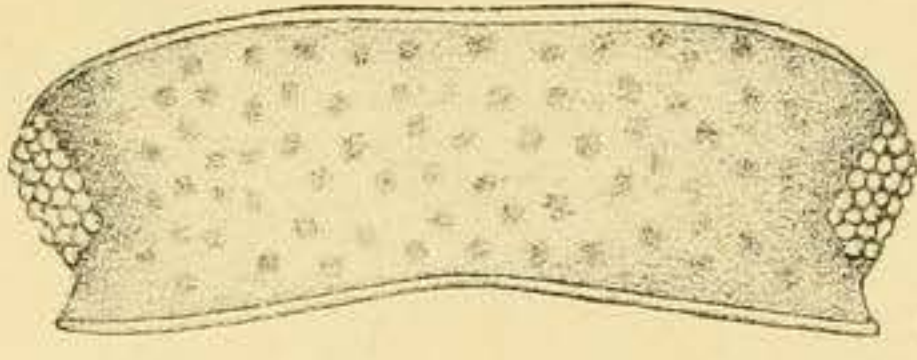
EXPLANATION OF PLATE XXXII.

Cubaris caeruleus, n. sp.

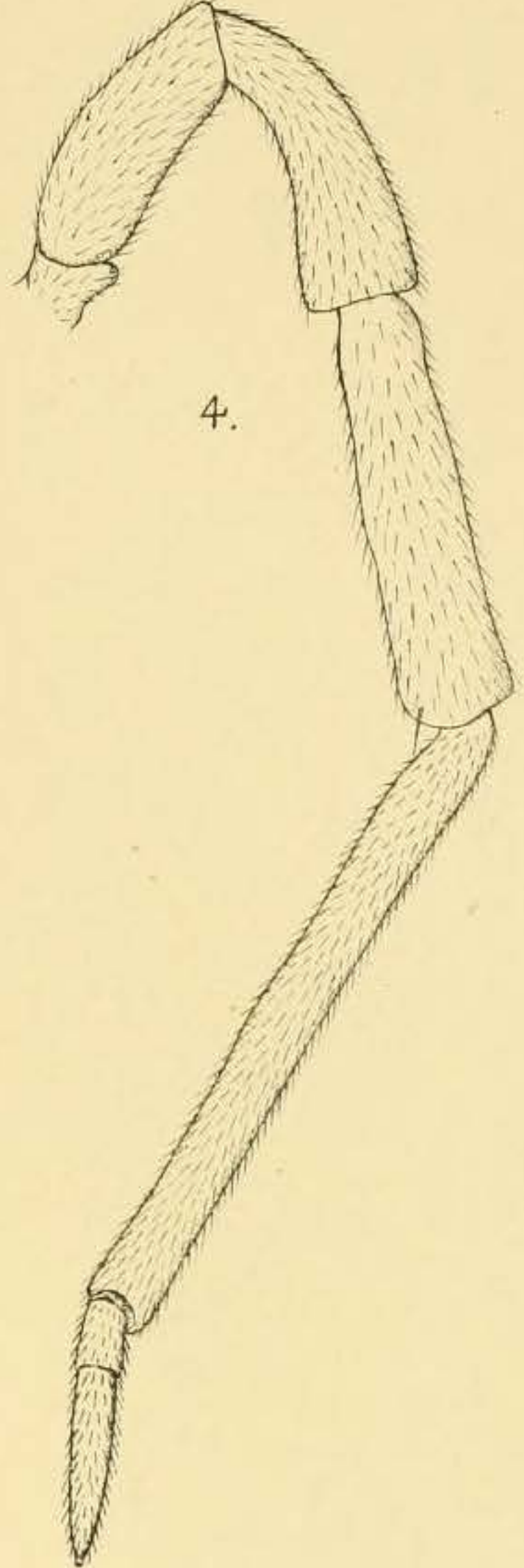
- FIG. 1 — Dorsal view. × 5.
,, 2. — Dorsal view of the cephalon.
,, 3. — Anterior view of the cephalon.
,, 4. Antenna.
,, 5. — Mandible. 5a. Outer side.
,, 6 — First maxilla, inner and outer lobes.
,, 7. — Second maxilla.
,, 8. — Maxillipede.
,, 9. — Second thoracic appendage.
,, 10. — Right uropod.



3.



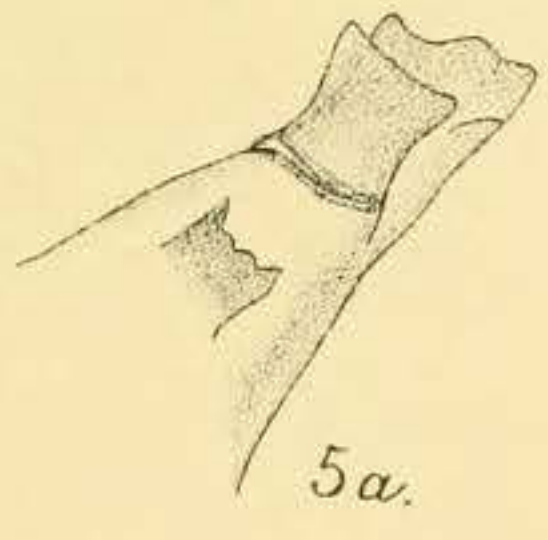
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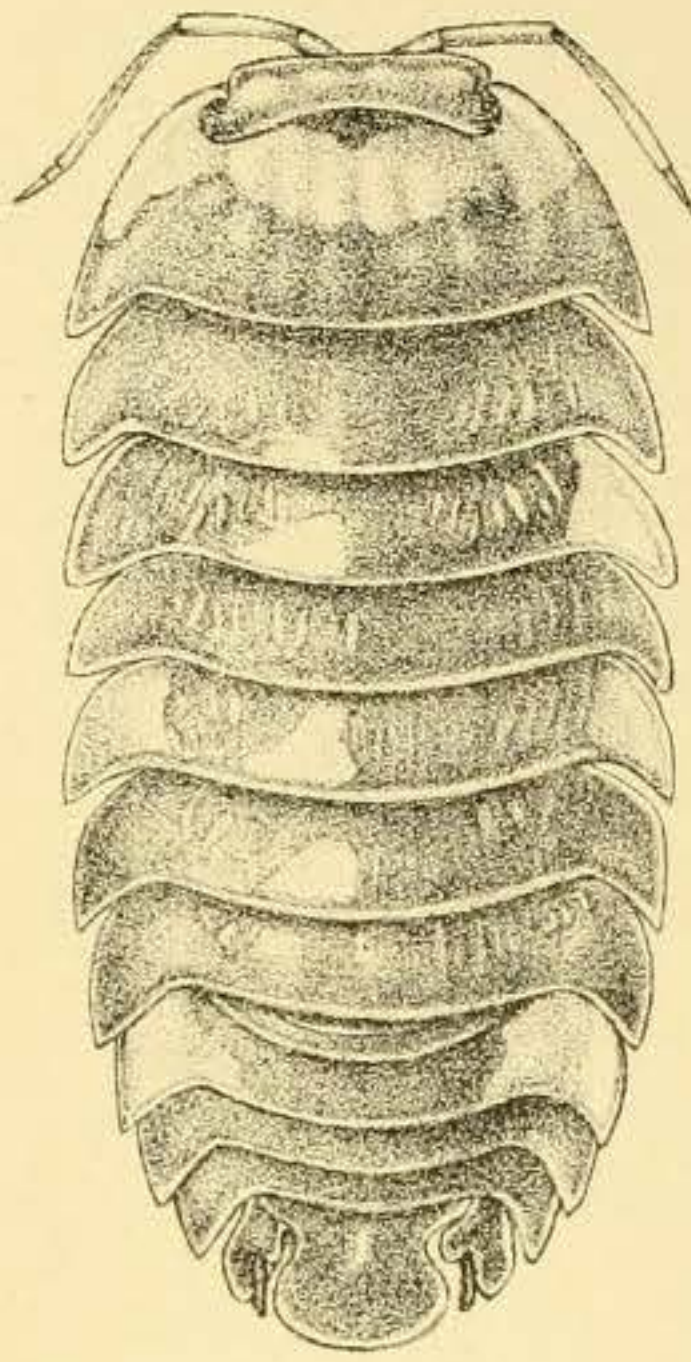
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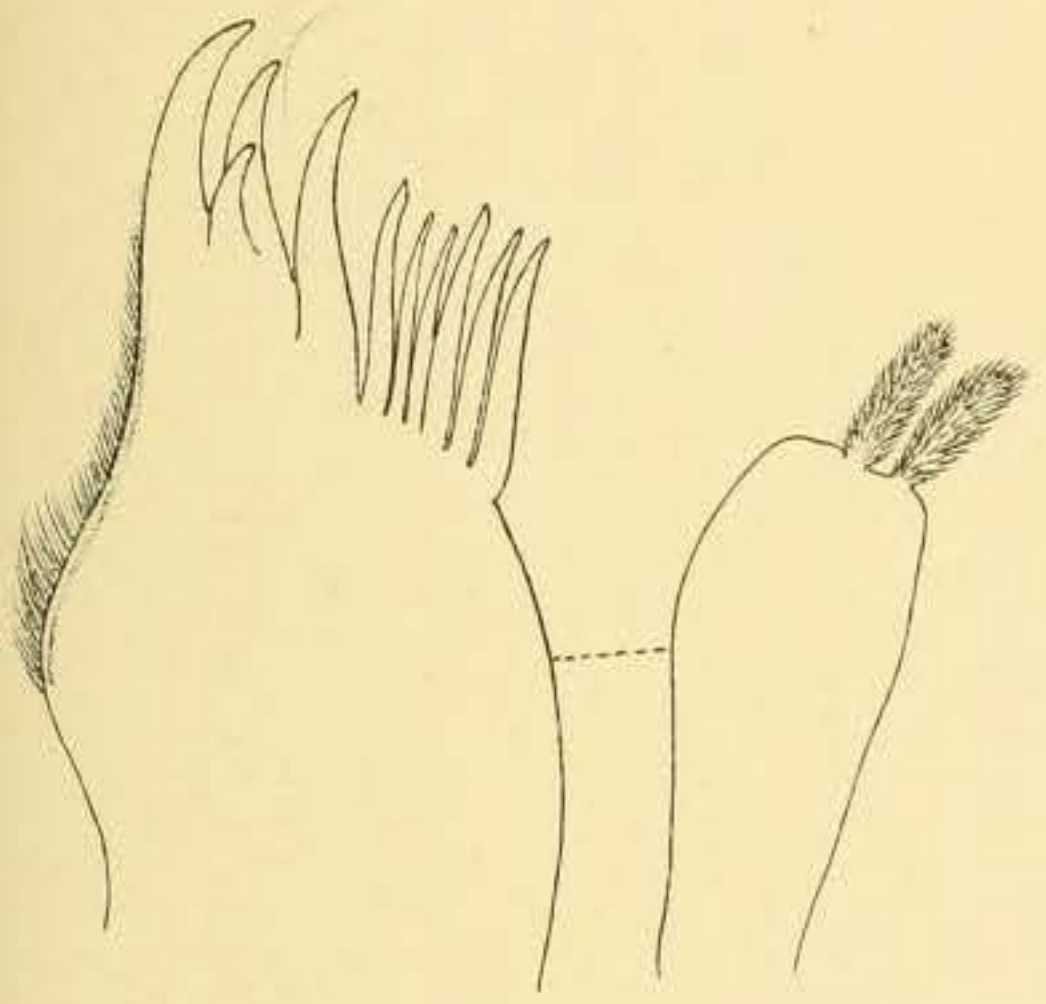
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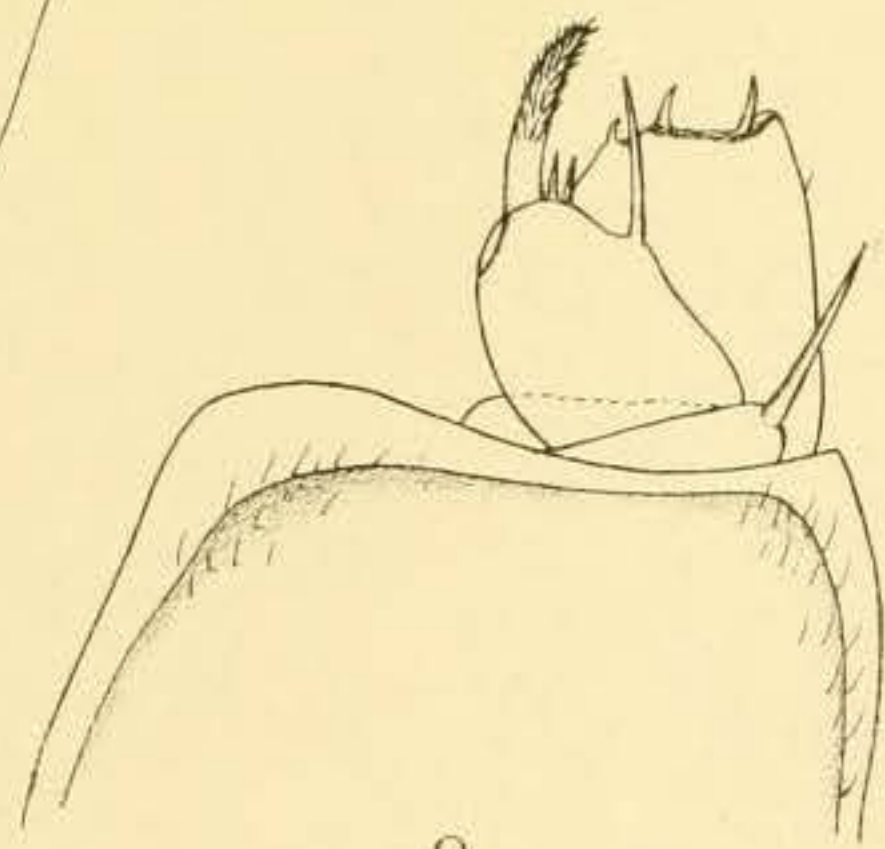
5a.



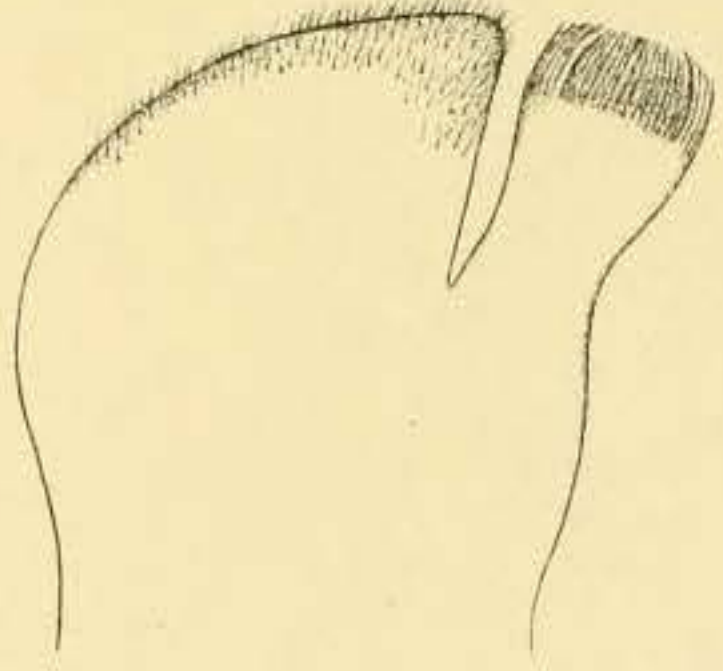
1x5.



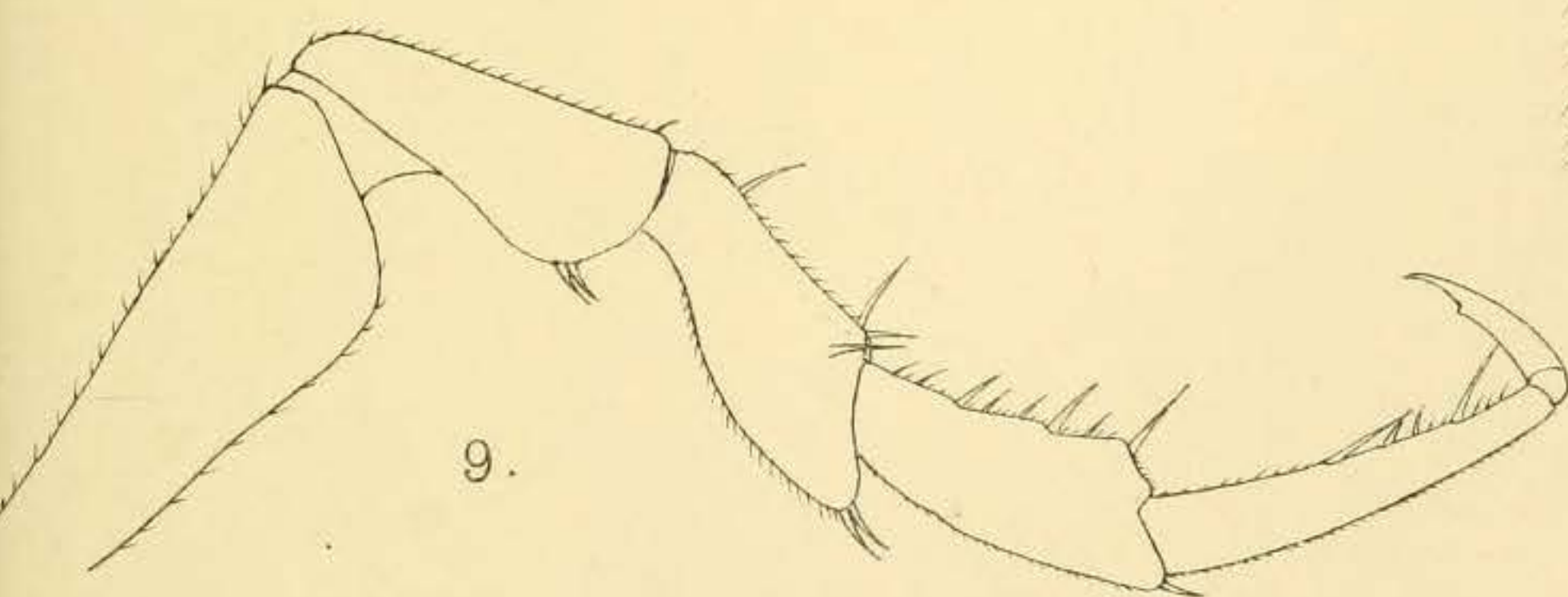
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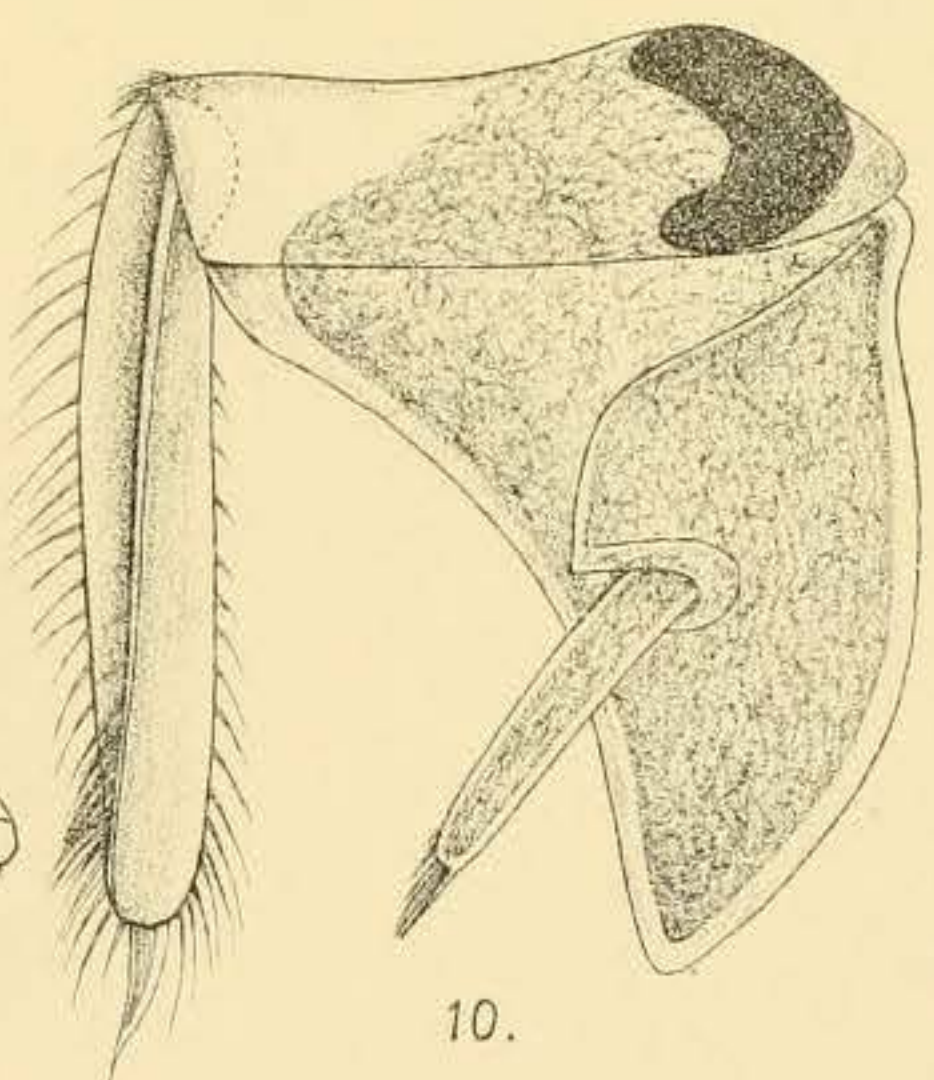
8.



7.



9.



10.

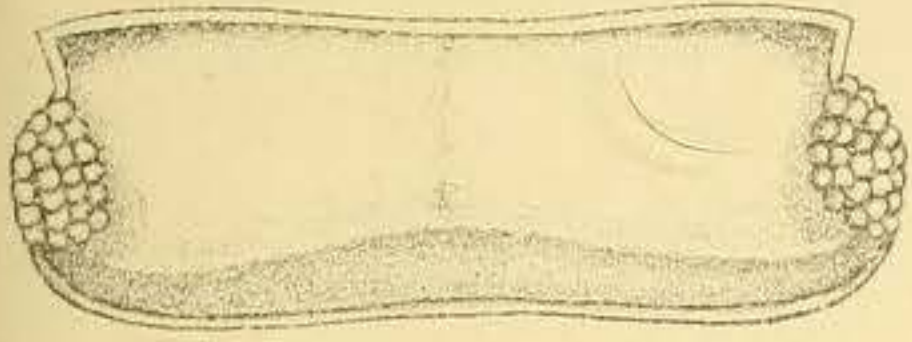
A. Chowdhary, lith.

CUBARIS CAERULEUS, n. sp.

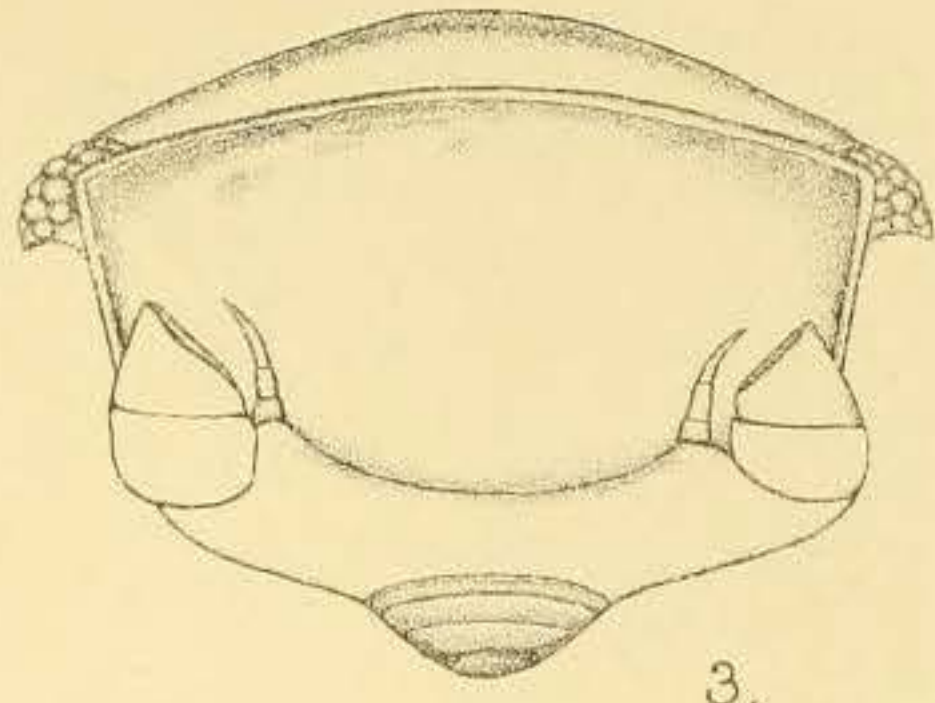
EXPLANATION OF PLATE XXXIII.

Cubaris robusta, n. sp.

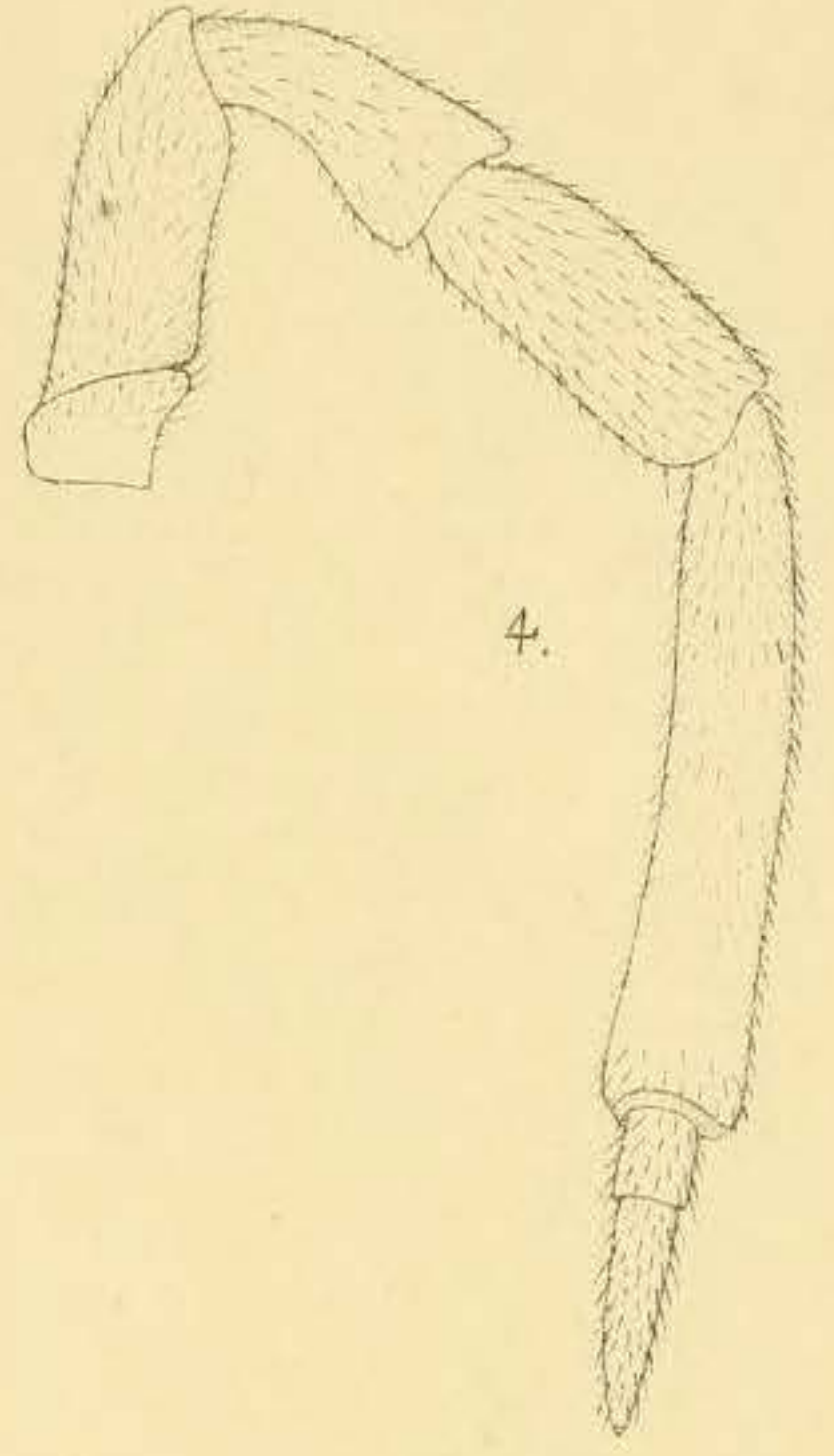
- FIG. 1.—Dorsal view. × 6.
,, 2.—Dorsal view of the cephalon.
,, 3.—Anterior view of the cephalon.
,, 4.—Antenna.
,, 5.—First maxilla, inner lobe.
,, 6.—Second maxilla.
,, 7.—Maxillipede.
,, 8.—Third thoracic appendage.
,, 9.—Right uropod.



2.



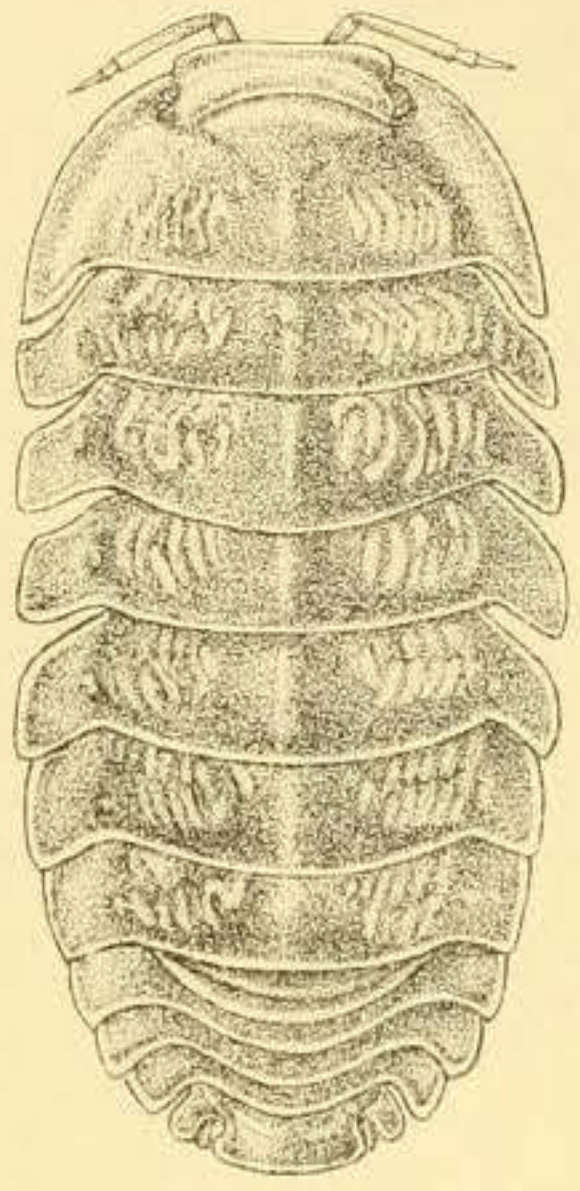
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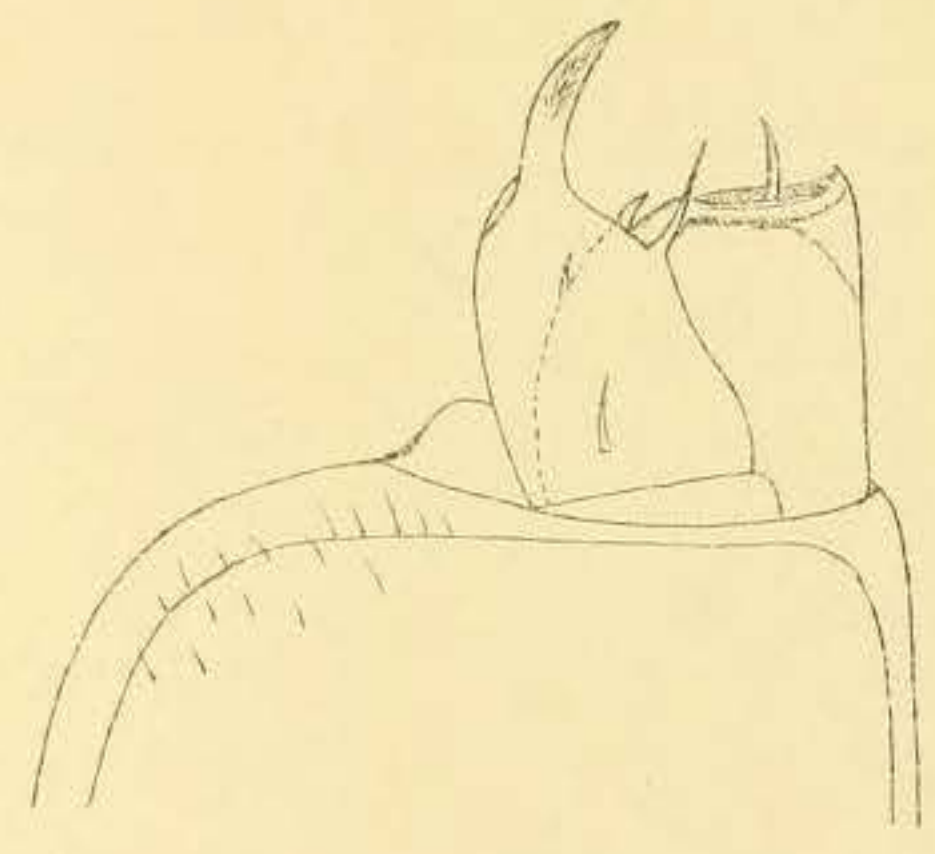
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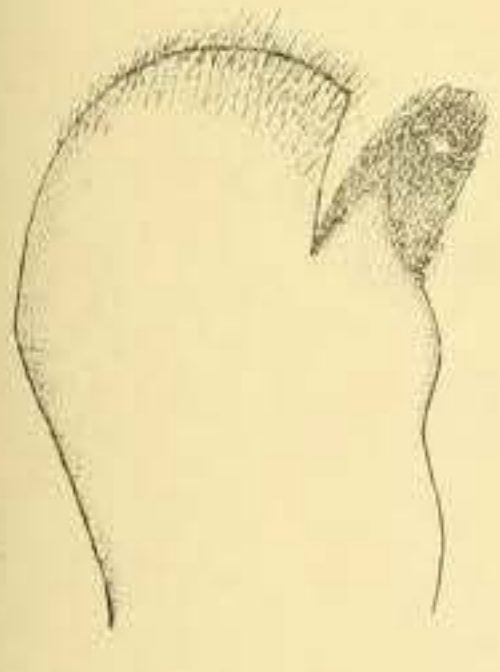
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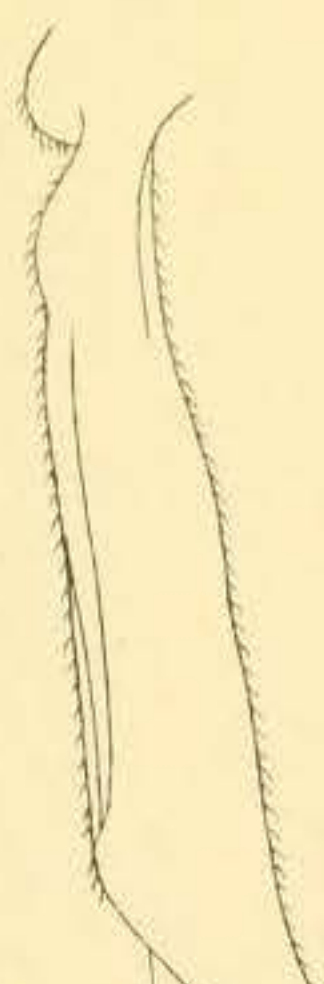
1x6.



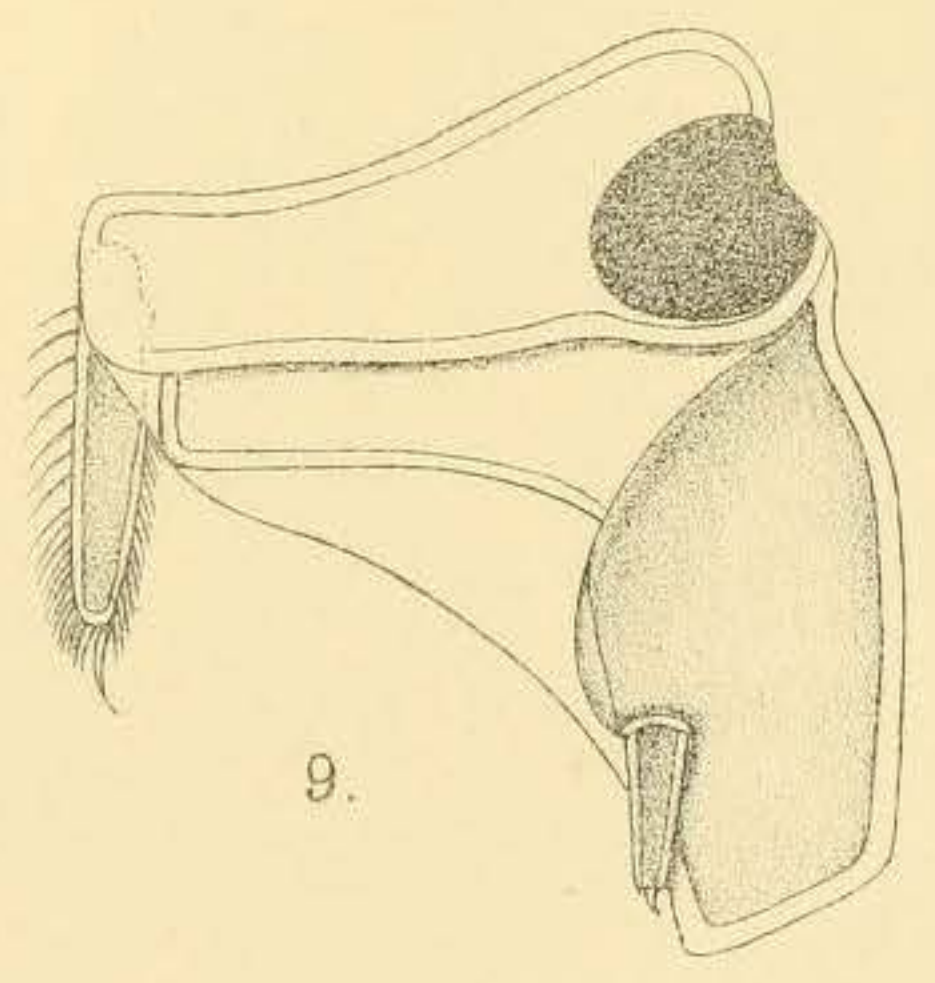
7.



6.



8.



9.

CUBARIS ROBUSTA, n.sp.

A. Chowdhary, lith.

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