

# TRANSACTIONS

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XI.—On a Small Collection of Terrestrial Isopoda from Spain, with Descriptions of Four New Species. By Walter E. Collinge, M.Sc., F.L.S., etc., Research Fellow of the University of St Andrews. Communicated by Professor M'INTOSH. (With Two Plates.)

(MS. received August 2, 1915. Read December 6, 1915. Issued separately December 28, 1915.)

I am indebted to the kindness of Dr LEONARD DONCASTER, F.R.S., for the opportunity to examine the present collection of Terrestrial Isopoda from the Cambridge University Museum of Zoology.

The Terrestrial Isopoda of Spain have received considerable attention in the past at the hands of L. KOCH,\* BUDDE-LUND,† O. DE BUEN,‡ and DOLLFUS,§ and present many features of great interest, one of the most striking of which is perhaps the large size of the various species, particularly in the genera *Porcellio*, Latreille, and *Armadillidium*, Brandt, and to these I am now able to add the genus *Cubaris*, Brandt.

As DOLLFUS (*op. cit.*) has already remarked, the fauna of the Pyrenees, so far as the Isopoda are concerned, is characterised by a group of species quite distinct from the Mediterranean coast fauna, and one which well deserves further investigation.

The present collection contains seven species, of which four are new, two of them coming from the Pyrenees. The list is as follows:—

1. *Porcellio batesoni*, n. sp. S. Spain.
2. „ *explanatus*, n. sp. La Massane, Pyrenees.
3. „ *rathkei*, Brandt. E. Pyrenees.
4. „ sp. La Massane, Pyrenees.
5. „ sp. Madeira.
6. *Armadillidium nitidulus*, n. sp. Madeira.
7. *Cubaris invenustus*, n. sp. La Massane, Pyrenees, and S. Spain.

1. *Porcellio batesoni*, n. sp. (Pl. I, figs. 1–6.)

Body large, oblong-oval, covered with irregular coarse tubercles, dorsal face convex. Cephalon (fig. 1) with large lateral lobes, terminally truncate, median lobe small and slightly indented in the median line, epistoma convex. Eyes moderate in size, situated dorso-laterally. Antennæ (fig. 2) covered with minute setæ, joints

\* *Die Thieren Andalusiens*, 1856, pp. 418–423.

† *Crust. Isop. Terr.*, 1885, pp. 1–319.

‡ *Ann. de la Soc. Esp. Hist. Nat.*, 1887.

§ *Ibid.*, 1892, t. xxi, pp. 161–190, 13 text-figs.

1-3 short, 4th with groove on the outer side, the 5th being the longest; flagellum two-jointed, with terminal style. Oral appendages typical. The segments of the mesosome are convex dorsally and roughly tuberculate, with moderately developed pleural plates, the first of which partly surrounds the cephalon; posterior angles acutely produced backwards. Thoracic appendages long, otherwise typical. Uropoda (figs. 3-5) extending considerably beyond the telson, basal plate grooved on the outer side; exopodite long, lanceolate, and slightly curved upwards, setaceous; endopodite short, slightly longer than the basal plate and telson, terminating in four stout spines and a long style, setaceous. Telson (fig. 3) with broad anterior portion, terminating posteriorly in a long, blunt point, slightly grooved dorsally.

Length 17 mm.

Colour (in alcohol) blackish with a tinge of olive-green.

*Habitat*.—S. Spain. Easter 1894 (W. BATESON).

*Type*.—In the Cambridge University Museum of Zoology.

This interesting species finds its nearest ally in *P. nicklesi*, Dollfus, from which, however, it is separated by the form of the lateral lobes of the cephalon, the antennæ, the uropoda, and the telson. In the form of the cephalon it bears, at first sight, a superficial resemblance to *P. magnificus*, Dollfus, but is very distinct from that species when examined in detail.

I have much pleasure in associating with this fine species the name of Professor W. BATESON, F.R.S., to whom the University is indebted for the specimens.

## 2. *Porcellio explanatus*, n. sp. (Pl. I, figs. 7-11.)

Body large, broadly oval, sparsely tuberculate, dorsal face somewhat flattened. Cephalon (fig. 7) with well-developed lateral lobes, deflected downwards; median lobe a narrow ridge between the two lateral lobes; epistoma convex. Eyes moderate in size, situated dorso-laterally. Antennulæ short and stout. Antennæ (fig. 8) covered with minute setæ, joints 1-3 short, 3rd joint with tooth-like process on the outer side, 4th joint with groove on the outer side, the 5th being the longest; flagellum two-jointed, with terminal style. The segments of the mesosome are somewhat flattened, sparsely tuberculate, with moderately developed pleural plates, the first of which partly surrounds the cephalon, the posterior angles slightly produced backwards. Uropoda (figs. 9-11) extending beyond the telson, setaceous, basal plate almost cubical and deeply grooved on the outer side; exopodite broad, lanceolate, biconvex, with slightly raised median ridge; endopodite short, slightly longer than the basal plate and telson, and produced into a ridge on the ventral side, terminally there is a short style. Telson (fig. 9) anteriorly more triangular than in *P. batesoni*, terminating posteriorly in a long acute point, with slight dorsal groove.

Length 20 × 10 mm.

Colour (in alcohol): body blackish grey, head pale green with three dark, irregular, triangular patches. The middle portions of both mesosomatic and metasomatic segments are occasionally marked with light-green patches.

*Habitat*.—La Massane, E. Pyrenees. June 22nd, 1891 (D. SHARP).

*Type*.—In the Cambridge University Museum of Zoology.

In certain features this species is allied to *P. expansus*, Dollfus, but differs from that species in the smaller size, the shape of the cephalon and its lateral and median lobes, the antennæ, and the uropoda.

### 3. *Porcellio rathkei*, Brandt.

*Habitat*.—E. Pyrenees. June 1891 (D.S.). Two examples.

### 4. *Porcellio* sp.

This is probably a new species; unfortunately, there is only a single imperfect specimen.

*Habitat*.—La Massane, E. Pyrenees. June 22nd, 1891 (D.S.).

### 5. *Porcellio* sp.

*Habitat*.—Madeira, 1892 (J. W. CLARK). Two imperfect specimens.

### 6. *Armadillidium nitidulus*, n. sp. (Pl. I, figs. 12–15; Pl. II, figs. 16–19.)

Body oblong, strongly convex. Cephalon (figs. 12 and 13) large, broadly quadrangular, marginate, lateral lobes rounded, deeply concave below, epistoma vertical, with triangular shield from the frontal margin. Eyes distinct, dorso-lateral. Antennulæ (fig. 14) small, three-jointed, terminal joint with pointed end and seven strong lateral spines. Antennæ (fig. 15) short, joints 2–4 flattened on their outer sides, 5th joint slightly grooved; flagellum two-jointed. First maxillæ (fig. 16): the outer lobe terminates in four stout curved spines and five more slender ones, with numerous setæ distally on the outer side; inner lobe terminally rounded, thin, with two setose spines. Second maxillæ terminate in an inner dense tuft of setæ and a blade-like outer lobe. The segments of the mesosome are strongly convex and shiny, pleural plates 1–5 distinct, the 1st only overlaps the segment behind, posterior margin not incised, those of 6 and 7 lamellar-like and truncate terminally. Outer palp of the maxillipedes terminates in spinous process with a multispinous termination. Metasome comparatively small. Uropoda (figs. 18 and 19) short, not extending beyond the telson, basal plate stout, somewhat triangular, with broadly expanded anterior surface; exopodite spatulate, endopodite rudder-shaped, flattened ventrally and slightly raised on the dorsal surface. Telson (fig. 17) rather long, triangular, terminating in a truncate base.

Length 16.5 mm.

Colour (in alcohol) dark shiny olive-green, with the posterior margins of all the segments lighter.

*Habitat*.—Madeira, 1892 (J. W. CLARK).

*Type*.—In the Cambridge University Museum of Zoology.

Some dozen or more species of this genus have been described from Spain, but I have been unable to identify any of them with the present species. In the elongated telson and the form of the uropoda, cephalon, antennulæ, and antennæ it differs from any of them. Its nearest ally is probably *A. vulgare* (Latreille); it is, however, more elongated than that species, and differs from it in the characters above mentioned, as also in the structure of the mouth parts.

7. *Cubaris invenustus*, n. sp. (Pl. II, figs. 20–28.)

Body oblong-oval, strongly convex, smooth. Cephalon (figs. 20, 21) flattened, marginate anteriorly, lateral lobes small, median lobe absent; epistome almost vertical, with slightly raised triangular shield. Eyes situated dorso-laterally. Antennulæ (fig. 22) short and stout, three-jointed, with number of stout setæ on the lateral portion of the 3rd joint, terminal portion rounded and with short, blunt spine. Antennæ (fig. 23) short, sparsely covered with fine setæ, 2nd to 5th joints grooved on the inner side; flagellum two-jointed, the distal joint being a little over twice as long as the proximal one. Segments of the mesosome with the pleural plates excavate anteriorly, not produced backwardly, 6th and 7th segments terminally truncate, lateral portions of 1st and 2nd segments notched and grooved on their lower inner margins for reception of succeeding segments (fig. 24). Maxillipedes (fig. 25), the outer palp terminates in a multispinous process on the outer side, with a long spine below it and two smaller ones within; the inner palp has two blunt, tooth-like spines and a much smaller one on the internal border. Thoracic appendages typical. Uropoda (figs. 26 and 27) not extending beyond the telson, basal plate thick and robust, with raised dorsal face, posterior margin almost straight; exopodite very small, situated on the lower inner border of the basal plate, endopodite large, setaceous. Telson (fig. 28), posterior margin straight, and as broad as length of segment, expanded anteriorly with triangular convexity, and slight concavity in the median line.

Length 16.5 mm.

Colour (in alcohol) light green with dark brown transverse stripe on the posterior of each mesosomatic segment.

*Habitat*.—La Massane, E. Pyrenees, June 20th, 1891 (D. SHARP); also S. Spain, May 3rd, 1894 (W. BATESON).

*Type*.—In the Cambridge University Museum of Zoology.

## EXPLANATION OF PLATES.

## PLATE I.

*Porcellio batesoni*, n. sp.

- Fig. 1. Dorsal view of the cephalon and 1st mesosomatic segment.  
 Fig. 2. Left antenna.  
 Fig. 3. Last metasomatic segment, telson, and uropoda.  
 Fig. 4. Right uropod seen from above.  
 Fig. 5. Portion of same seen from below.  
 Fig. 6. Terminal portion of endopodite of right uropod, showing terminal style and large setæ.

*Porcellio explanatus*, n. sp.

- Fig. 7. Dorsal view of the cephalon and 1st mesosomatic segment.  
 Fig. 8. Left antenna.  
 Fig. 9. Last metasomatic segment, telson, and uropoda.  
 Fig. 10. Right uropod seen from above.  
 Fig. 11. Portion of same seen from below.

*Armadillidium nitidulus*, n. sp.

- Fig. 12. Dorsal view of the cephalon and 1st mesosomatic segment.  
 Fig. 13. Anterior view of the cephalon.  
 Fig. 14. Right antennule.  
 Fig. 15. Left antenna.

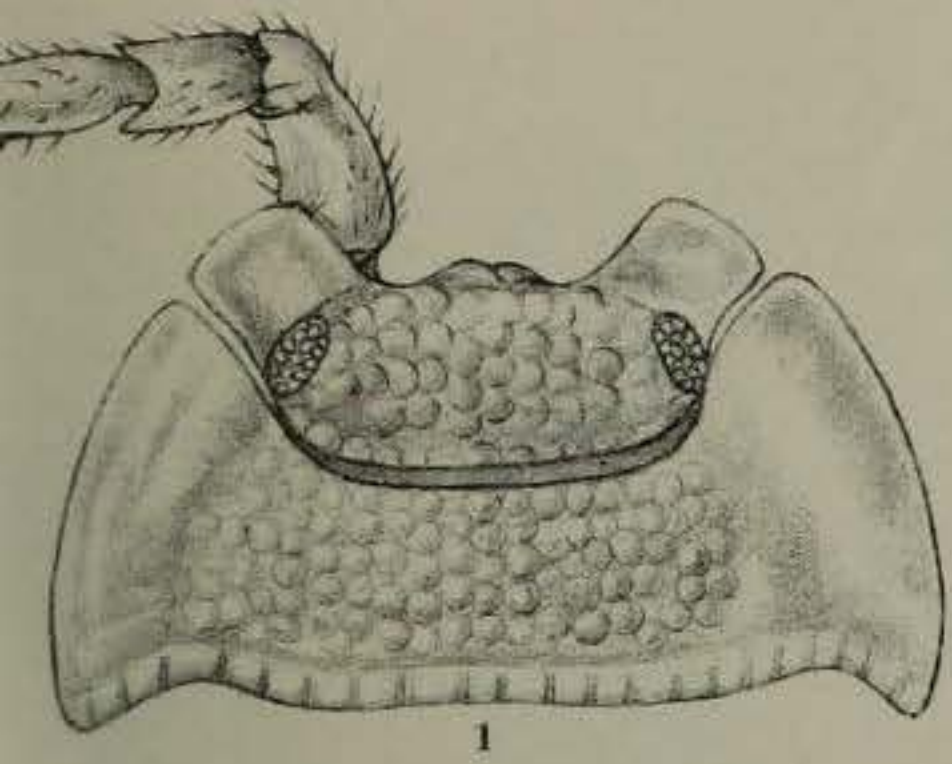
## PLATE II.

- Fig. 16. Terminal portions of the 1st maxilla, inner and outer lobes.  
 Fig. 17. Last metasomatic segment, telson, and uropoda.  
 Fig. 18. Right uropod seen from above.  
 Fig. 19. The same seen from below.

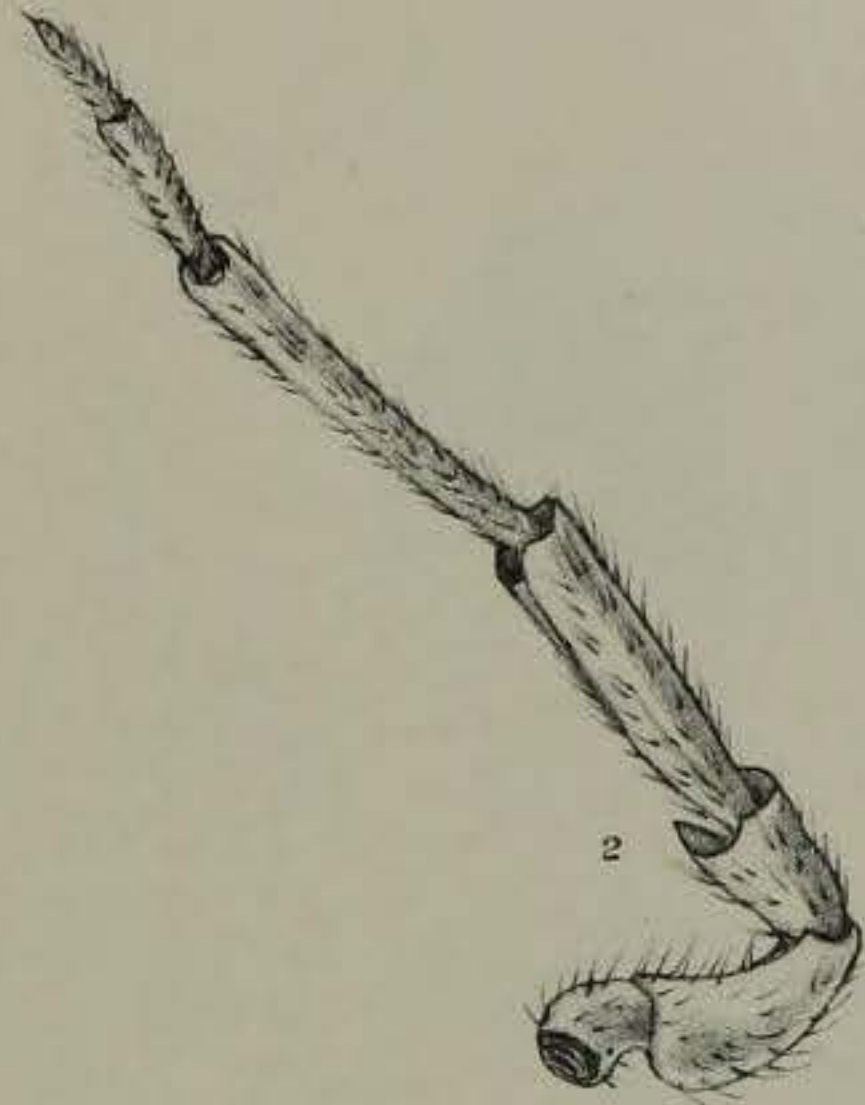
*Cubaris invenustus*, n. sp.

- Fig. 20. Dorsal view of the cephalon and 1st mesosomatic segment.  
 Fig. 21. Anterior view of the cephalon.  
 Fig. 22. Left antennule.  
 Fig. 23. Left antenna.  
 Fig. 24. Lateral portion of the 1st and 2nd mesosomatic segments, showing notches and grooves on the under side.  
 Fig. 25. Terminal portion of the maxillipede.  
 Fig. 26. Right uropod seen from above.  
 Fig. 27. The same seen from below.  
 Fig. 28. Last metasomatic segment, telson, and uropoda.

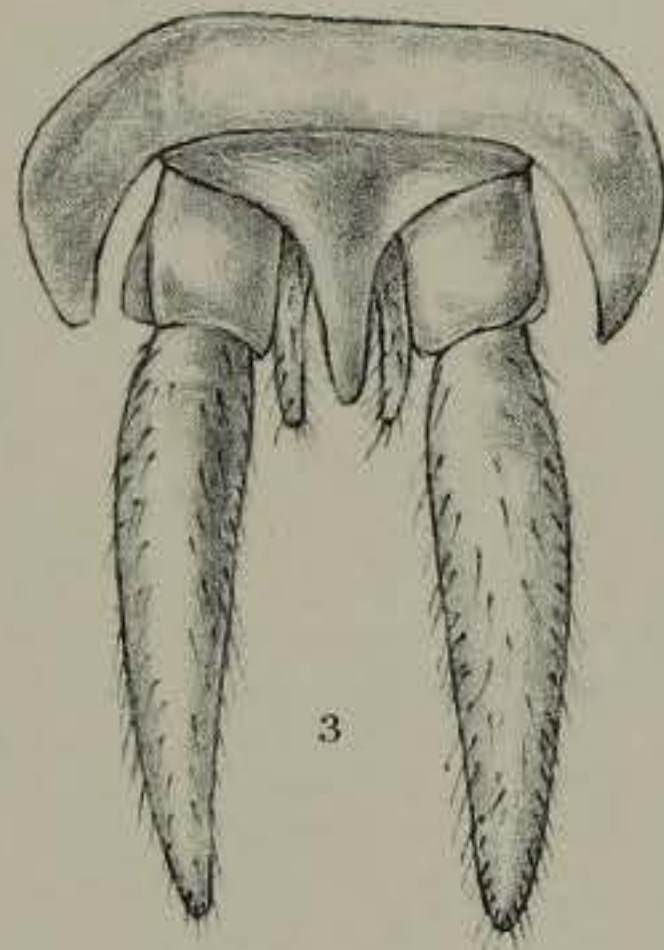
W. E. COLLINGE: NEW TERRESTRIAL ISOPODA FROM SPAIN.—PL. I.



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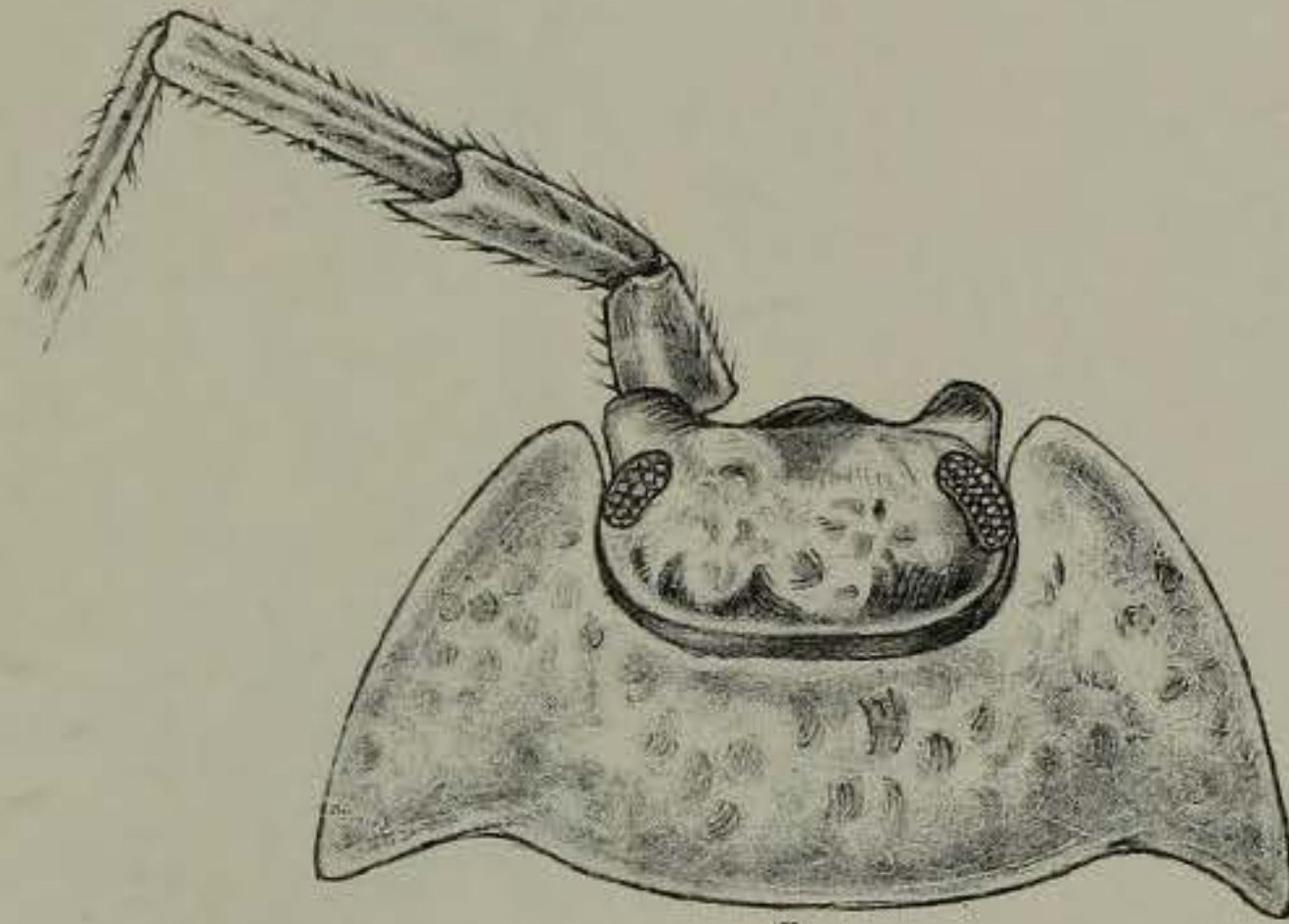
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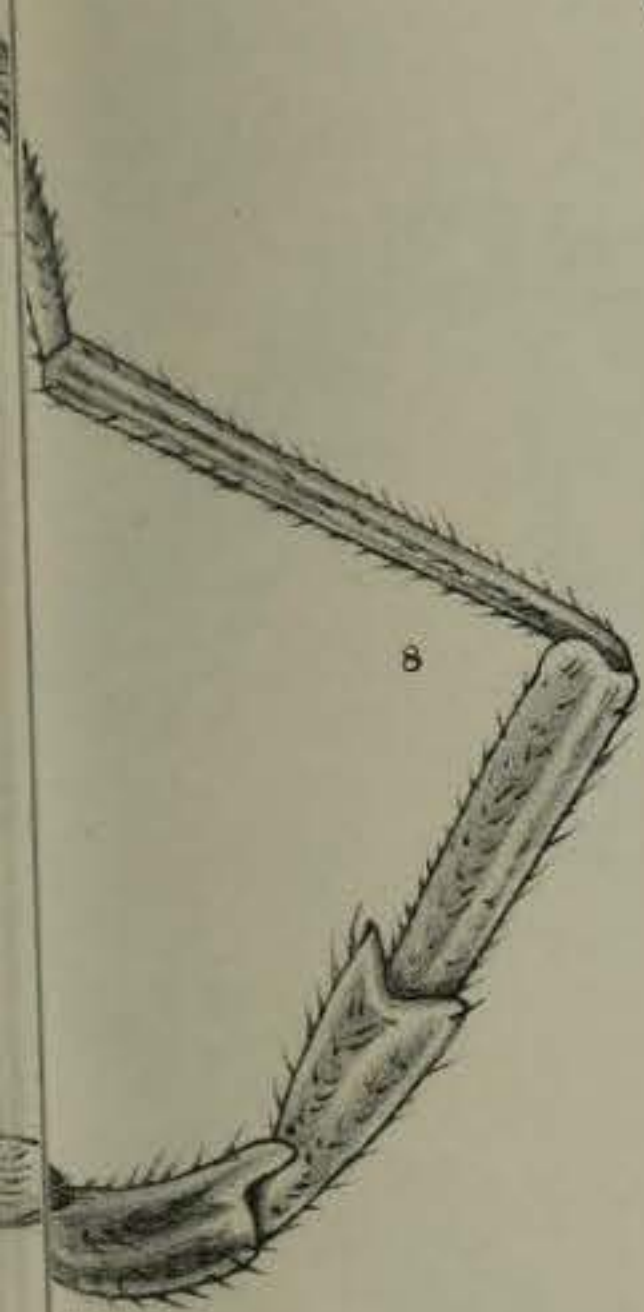
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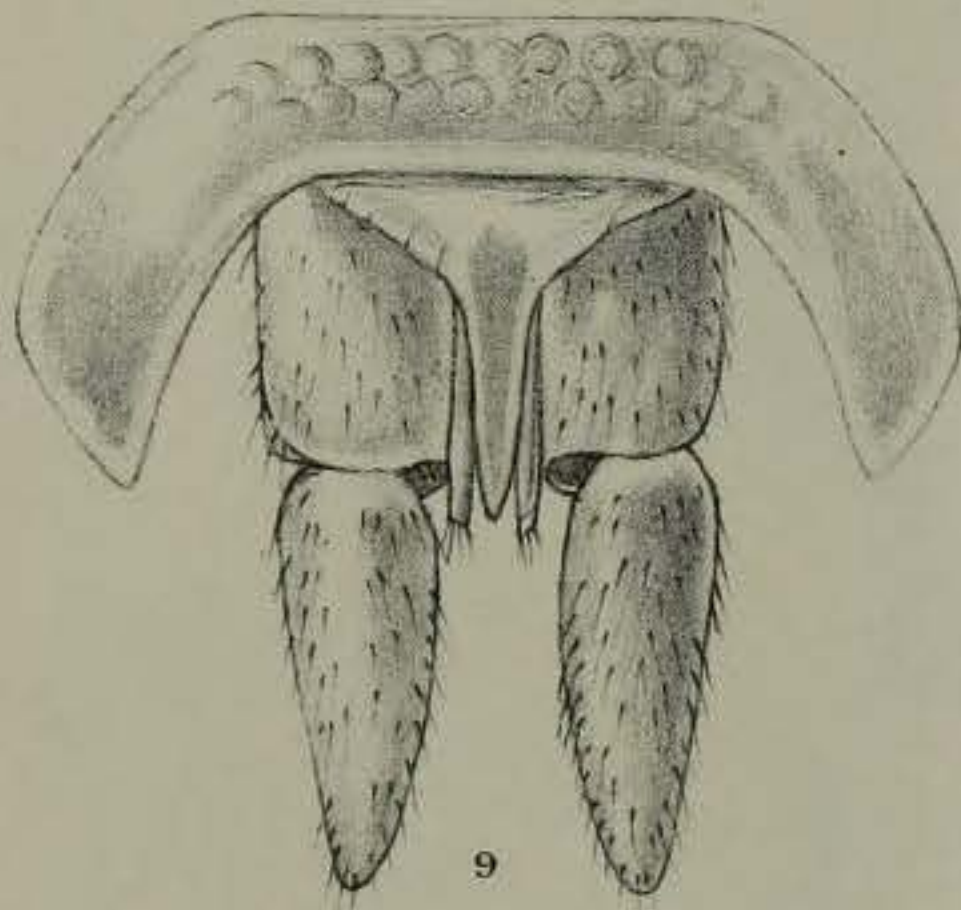
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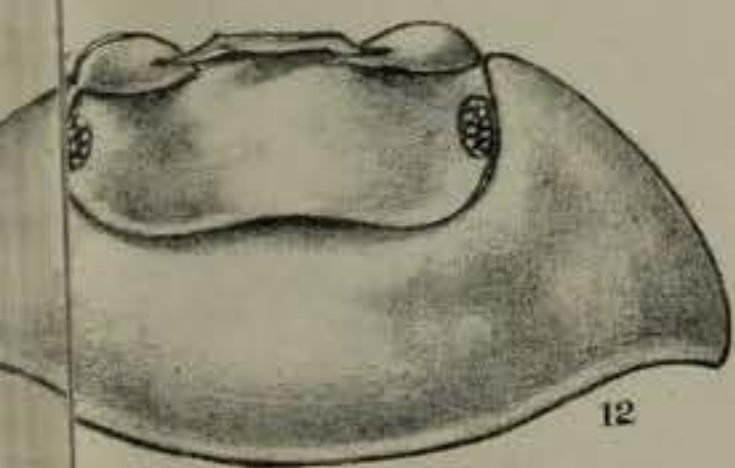
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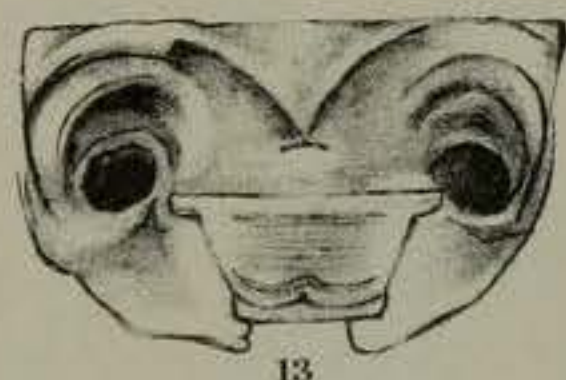
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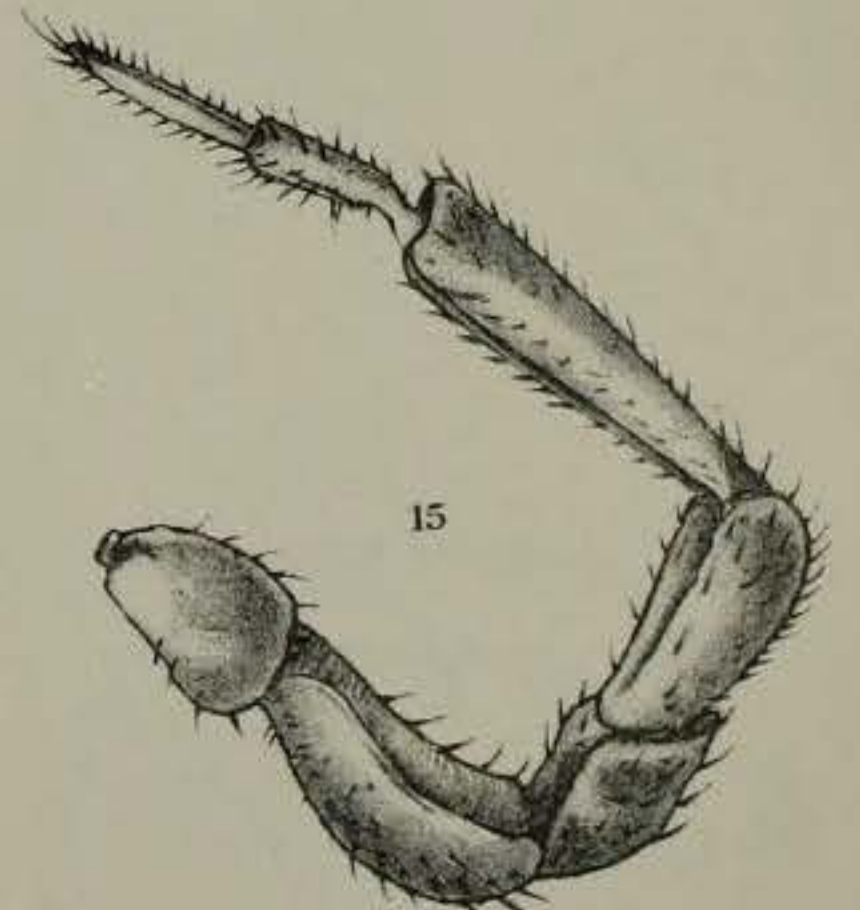
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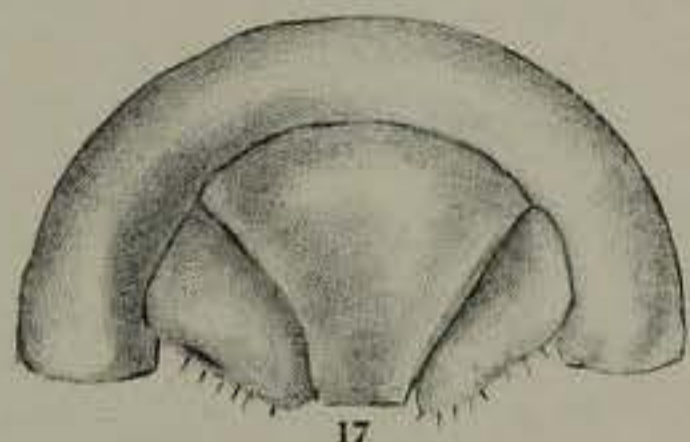


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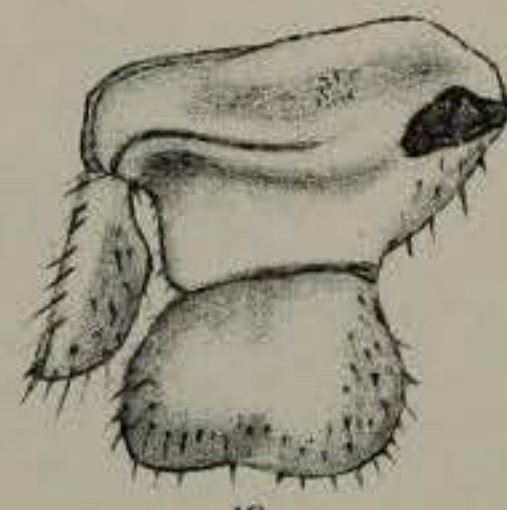
W. E. COLLINGE: NEW TERRESTRIAL ISOPODA FROM SPAIN.—PL. II.



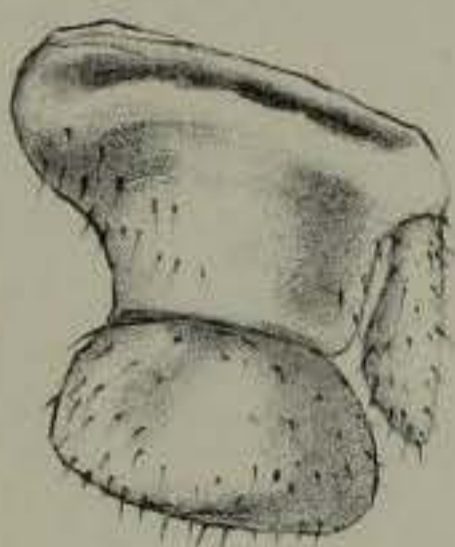
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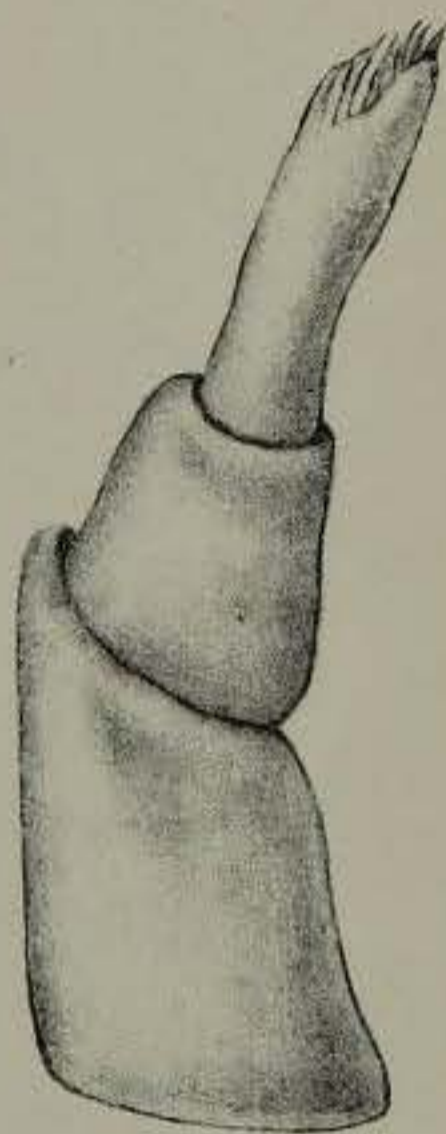
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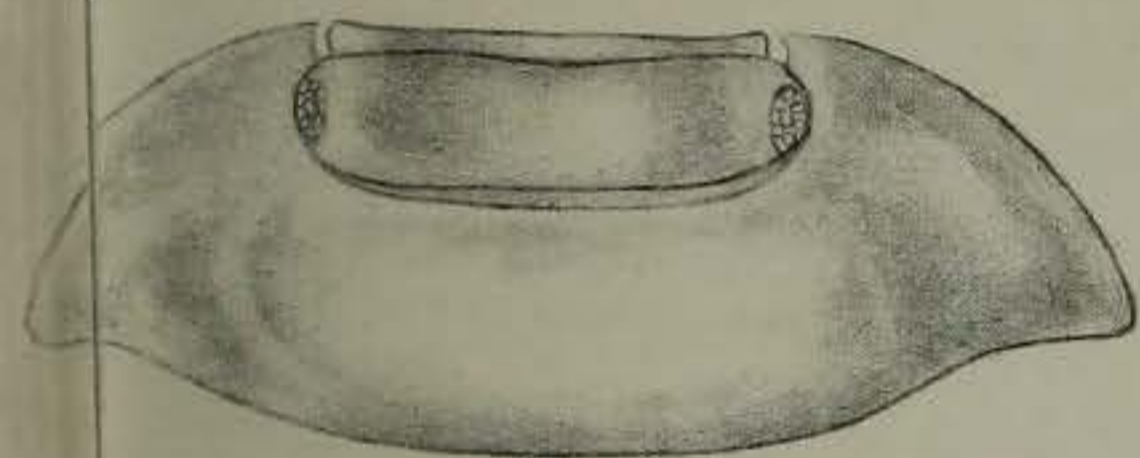
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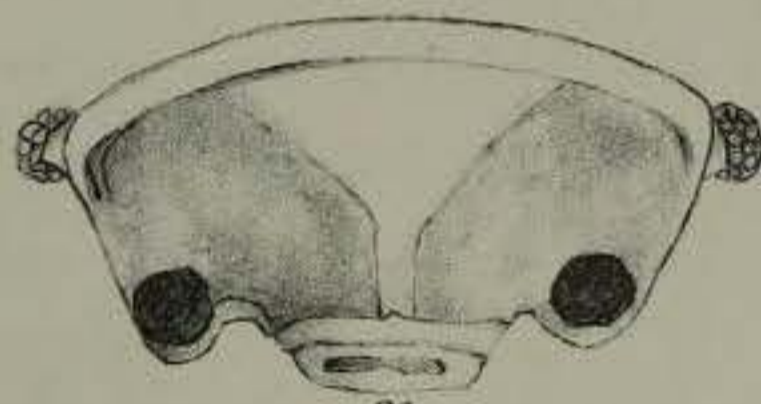
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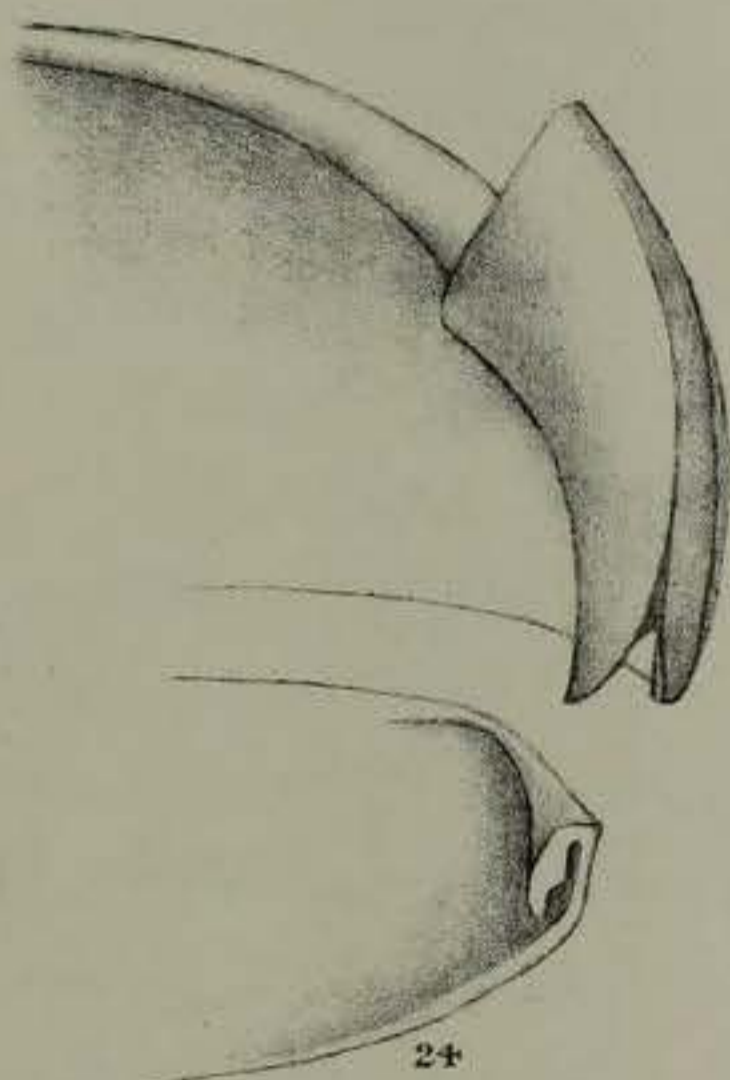
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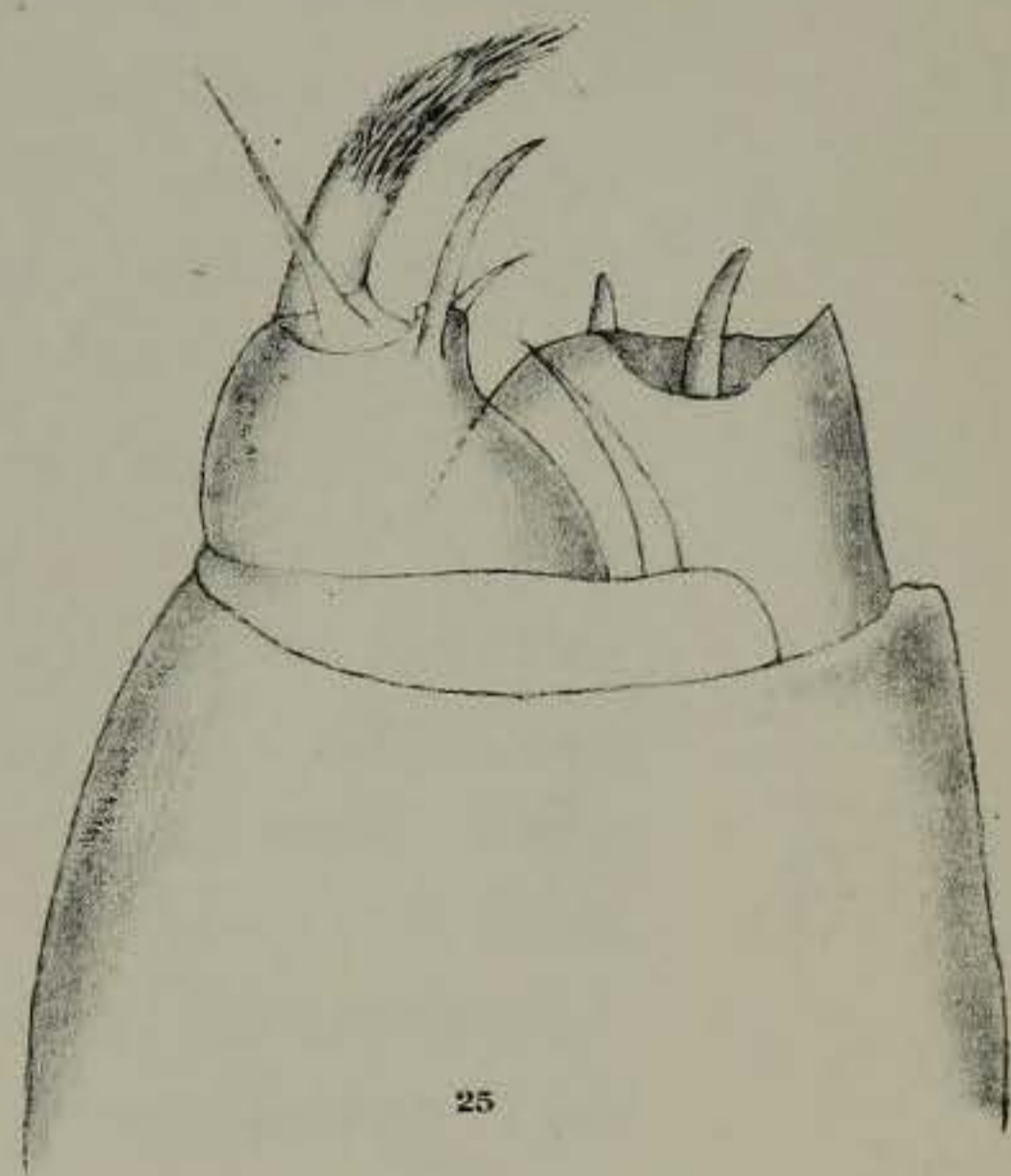
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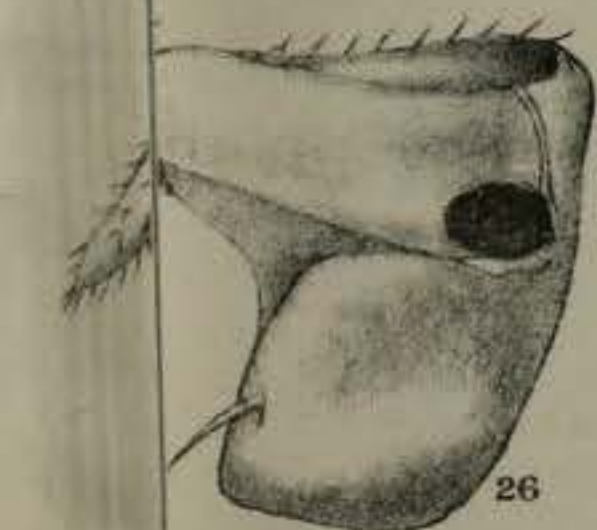
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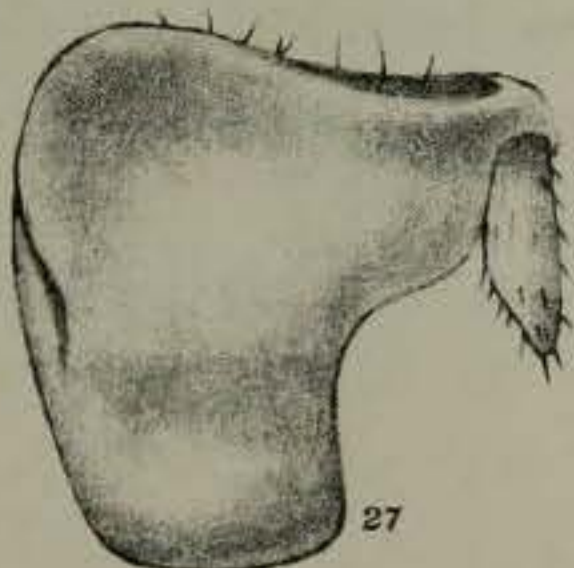
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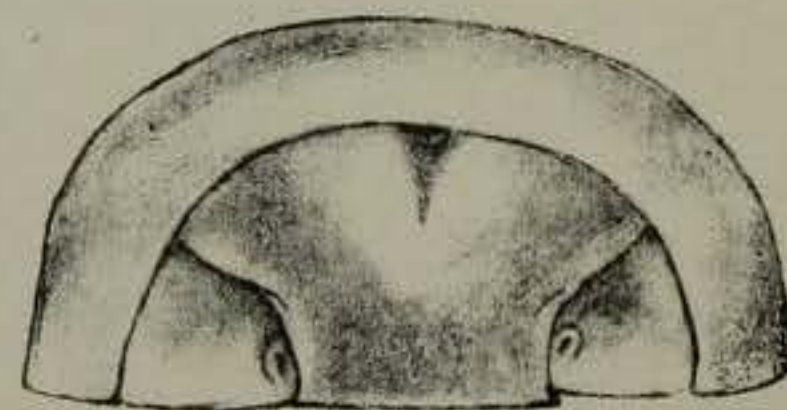
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