ochraceous, not piceous; membrane reaching the base of the fifth abdominal segment; intermediate and posterior femora longer than the hemelytra, but shorter than the tibiæ; pronotum about half the length of abdomen; abdominal appendages mutilated.

Long., excl. abdom. append., 35 mm.

Hab. Natal: Durban (Brit. Mus.).

Ranatra sordidula.

Ranatra sordidula, Dohrn, Stett. ent. Zeit. xxi. p. 409 (1860).
Ranatra unicolor, Scott, Ann. & Mag. Nat. Hist. (4) xiv. p. 452 (1874).

Synonymic Note.

Philia jactator.

Philia jactator, Stål, Œfv. Vet.-Ak. Förh. 1854, p. 231.
Philia fenestrata, Bredd. Abh. Ges. Halle, xxiv. p. 35 (1901).

Mr. Kirkaldy showed me a cotype of Breddin's species.

XI.—*A new Family of Crustacea Isopoda.*

By George M. Thomson, F.L.S.

[Plate I.]

In the 'Mission de l'Ile Campbell,' published in 1885, the late Dr. Filhol briefly described (p. 492) an Isopod obtained at Stewart Island as *Idotea Stewarti*, and figured it at pl. liii. figs. 8 and 9. The following is a translation of the very brief description:—

"Inner antennæ very short, 4-jointed; terminal joint elongated, slightly enlarged in the middle. Its apex reaches the end of the second joint of the outer antennæ. The latter are 5-jointed; their lower margin is furnished with numerous harsh hairs. The three first pairs of feet increase in size posteriorly; their third, fourth, and fifth joints are furnished with numerous hairs on their lower margins; the claws are long, slender, recurved, and acute. The last segment is elongated and rounded at its apex."

Among some Crustacea received from my friend Dr. Chilton, from Mr. H. Drew of Wanganui, were two dried specimens of this species.

In 1900, during trawling-operations on the east coast of

this island (the south island of New Zealand), two more specimens of this species were taken in about 40 fathoms.

A superficial examination satisfied me that the species was not an *Idotea* at all, while a closer inspection showed that, while belonging to the tribe Valvifera, it did not come under any of the existing families—Idotheidæ, Arcturidæ, or Chætiliidæ—differing from them in the possession of a 3-jointed palp on the mandibles. I have therefore to institute not only a new genus, but a new family. At the suggestion of my friend the Rev. T. R. R. Stebbing I have named it *Hologgnathus* (ὅλος and γνάθος).

Tribe Valvifera.

Family **Hologgnathidæ.**

Resembles Idotheidæ in general appearance, but the mandibles bear a 3-jointed palp.

Genus Hologgnathus, nov.

Body elongated, depressed; coxal plates well defined, except in first segment of mesosome. Cephalon distinctly divided into two parts by a transverse fissure; posterior portion short. Abdomen 5-jointed, four small joints preceding the large terminal one. Eyes distinct, lateral. Superior antennæ 4-jointed; inferior antennæ pediform, flagellum 1-jointed. Mandibles strong, with the cutting-edge produced into an acute lobe, molar tubercle well developed; palp 3-jointed. Maxillæ normal. Maxillipeds with a 5-jointed palp. Legs stout, somewhat uniform in structure; claw strong, hook-like, and unequally bidentate at the apex. Anterior pairs of pleopoda with smooth broad lamellæ; two posterior pairs with setose branches. Uropoda lamellar, valve-like; outer part cut off by a transverse suture and bearing a second setose plate on the inner face. Incubatory pouch normal.

Hologgnathus Stewarti, Filhol. (Pl. I.)

1885. *Idotea Stewarti*, Filhol, Mission de l'Ile Campbell, p. 492, pl. liii. figs. 8 & 9.

The body is elongated, that of the male being 40 mm. long and 11 mm. broad, of nearly even width throughout, convexly rounded above.

The cephalon has the front margin nearly transverse, very slightly hollowed in the middle, and slightly produced at the

infero-anterior angle; from below its front margin on the median line there projects a small process which is separated by a fissure from the acute ridge of the upper lip. On its posterior margin the median line of the cephalon is received into a deep indentation of the first segment of mesosome, and it is distinctly divided into two articulations by a transverse fissure.

The mesosome is nearly two thirds the length of the whole body; the first segment has no separate coxal plate; the plates of the second to the fourth segments are short; on the fifth to the seventh they are well developed and acutely produced backwards.

The first segment of the mesosome is broad and is slightly produced forwards at the sides; on the median line it is hollowed to receive the cephalon, and on its dorsal surface it bears a transverse suture like an imperfect articulation; its posterior margin is nearly transverse. The second, third, and fourth segments are narrow, subequal in width, and transverse; the fifth, sixth, and seventh are slightly broader.

The metasome shows five distinct joints, the first four being very narrow, while the last is produced into a large terminal piece, which is evenly rounded behind.

The eyes are placed obliquely near the antero-lateral margin of the cephalon; they are nearly linear in form and contain several hundred facets.

The inner antennæ are small and have a peduncle of three joints, of which the basal is much the stoutest; the flagellum is 1-jointed and is nearly as long as the peduncle, and is directed upwards.

The outer antennæ are 23 mm. in length and pediform. They are 5-jointed, and bear a short 1-jointed flagellum, which ends in a tuft of hairs.

The mandibles have a strong bidentate cutting-edge, bearing a second much shorter lobe on the inner side; the spine-row is short and carries 5 or 6 short curved spines; the molar tubercle is thick and strong; in front of the palp the basal portion is produced into a rounded tooth.

The palp of the maxillipeds is 5-jointed, the terminal joint being lamellate and rounded at the end.

The legs are strong and are furnished along the lower sides of the merus, ischium, and carpus with thick tufts of hairs. The first three pairs are directed forwards and are thickly fringed on the lower margins of their joints with these harsh hairs; the dactyla are long, slender, and curved, and end in the usual brown spines, which are furnished with a short spine at their base. The fourth pair of legs are quite short,

the last five joints being much contracted and furnished on their inferior outer margins with rows of short pectinate spines. The fifth to seventh pairs are directed backwards and increase in length posteriorly; they have strongly curved dactyla.

The uropoda are large, lamellar, and valve-like, folding over and almost completely covering the abdominal cavity; the posterior third is cut off by a transverse suture, forming a separate plate, which on its inner side bears a smaller fringed plate; these two branches thus complete the valvular flaps.

On opening out the uropods five pairs of pleopoda, each with two well-developed oblong plates all closely folded over one another, are displayed. The plates of the first two pairs are thickly fringed with fine setæ on the margins; those of the last three pairs are simply branchial.

Hab. As already noted, this species has been obtained at Stewart Island (no special locality or depth given), at Timaru in 40 fathoms, and (presumably) at or near Wanganui in the North Island.

EXPLANATION OF PLATE I.

Hologna thus Stewarti, Filhol.

Fig. 1. Animal, dorsal view, nat. size.
Fig. 2. Ditto, lateral view, nat. size.
Fig. 3. Inner antenna.
Fig. 4. Outer antenna.
Fig. 5. Upper lip.
Fig. 6. Lower lip.
Fig. 7. Left mandible.
Fig. 8. Right mandible, from inside.
Fig. 9. Ditto, from outside.
Fig. 10. First maxilla.
Fig. 11. Second maxilla.
Fig. 12. Maxillipeds.
Fig. 13. Uropod.

XII.—*Origin and Fate of the Body-cavities and the Nephridia of the* Actinotrocha.

By R. P. Cowles, Ph.D., Adam T. Bruce Fellow in Zoology, Johns Hopkins University, Baltimore, Md.*

Since 1846, when J. Müller discovered *Actinotrocha branchiata*, many investigators have turned their attention to the anatomy and development of *Phoronis*; but it is only within

* From the 'Johns Hopkins University Circular,' April 1904, pp. 28–37.

S. 7. Vol. XIV Pl. I

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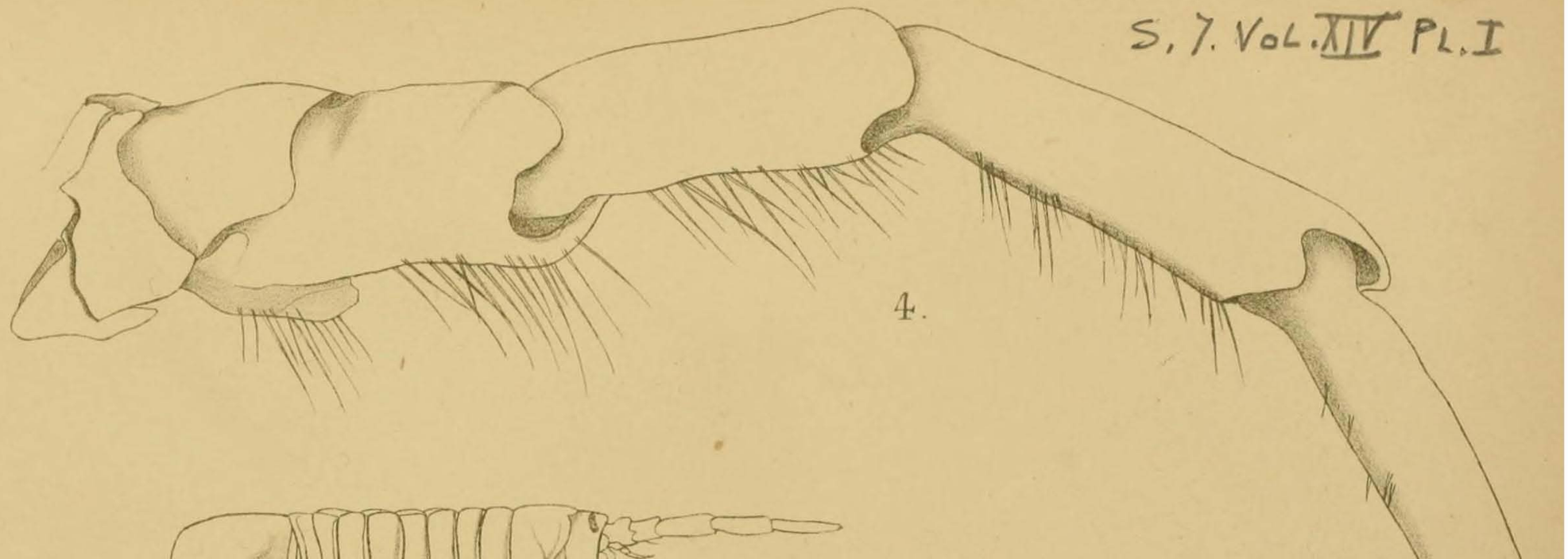

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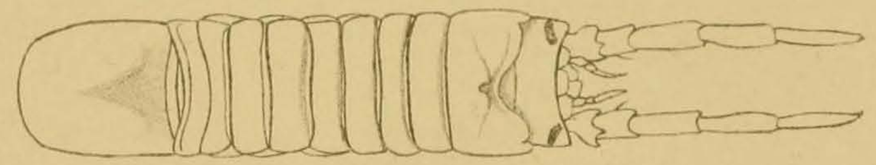

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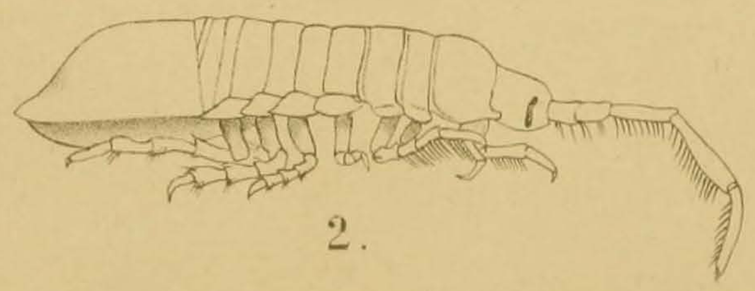

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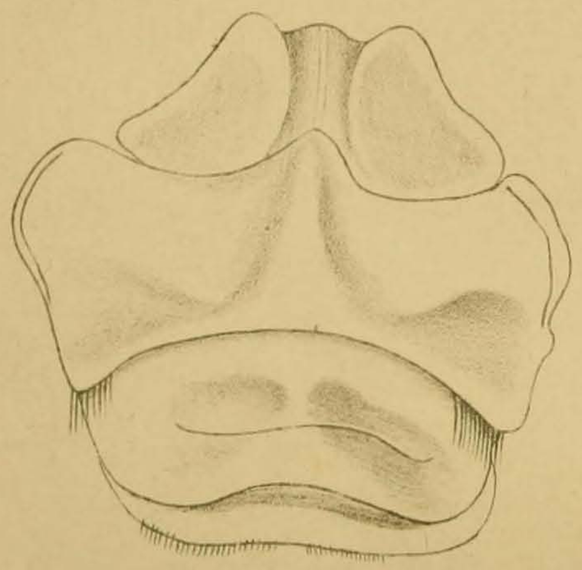

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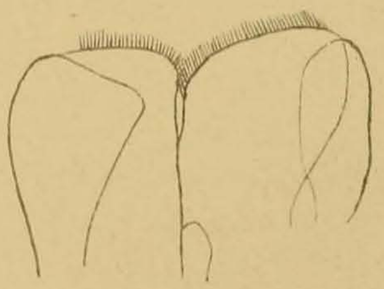

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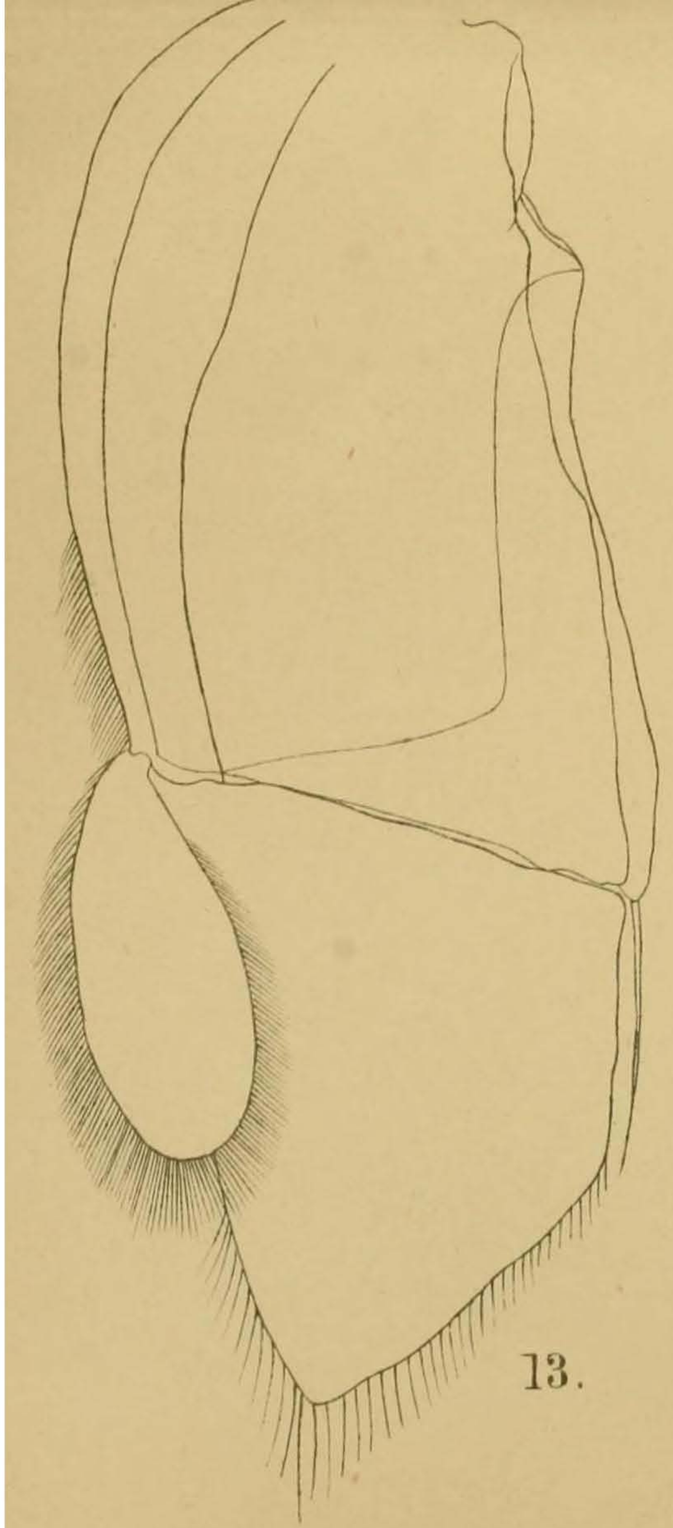

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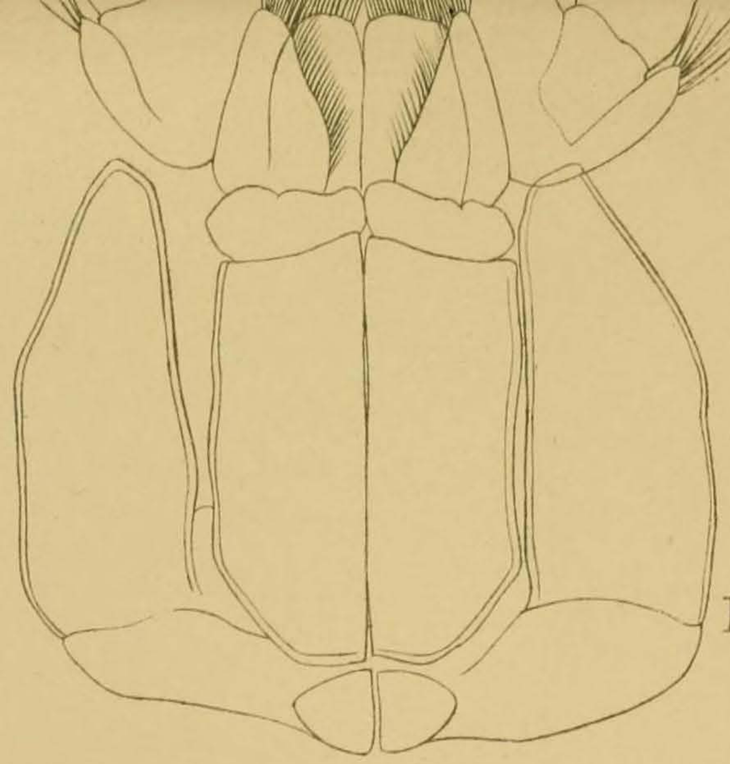

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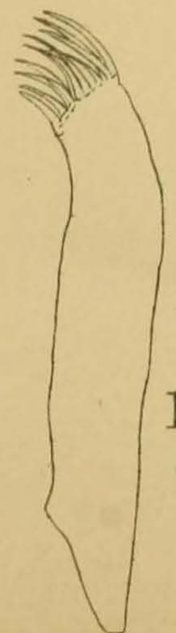

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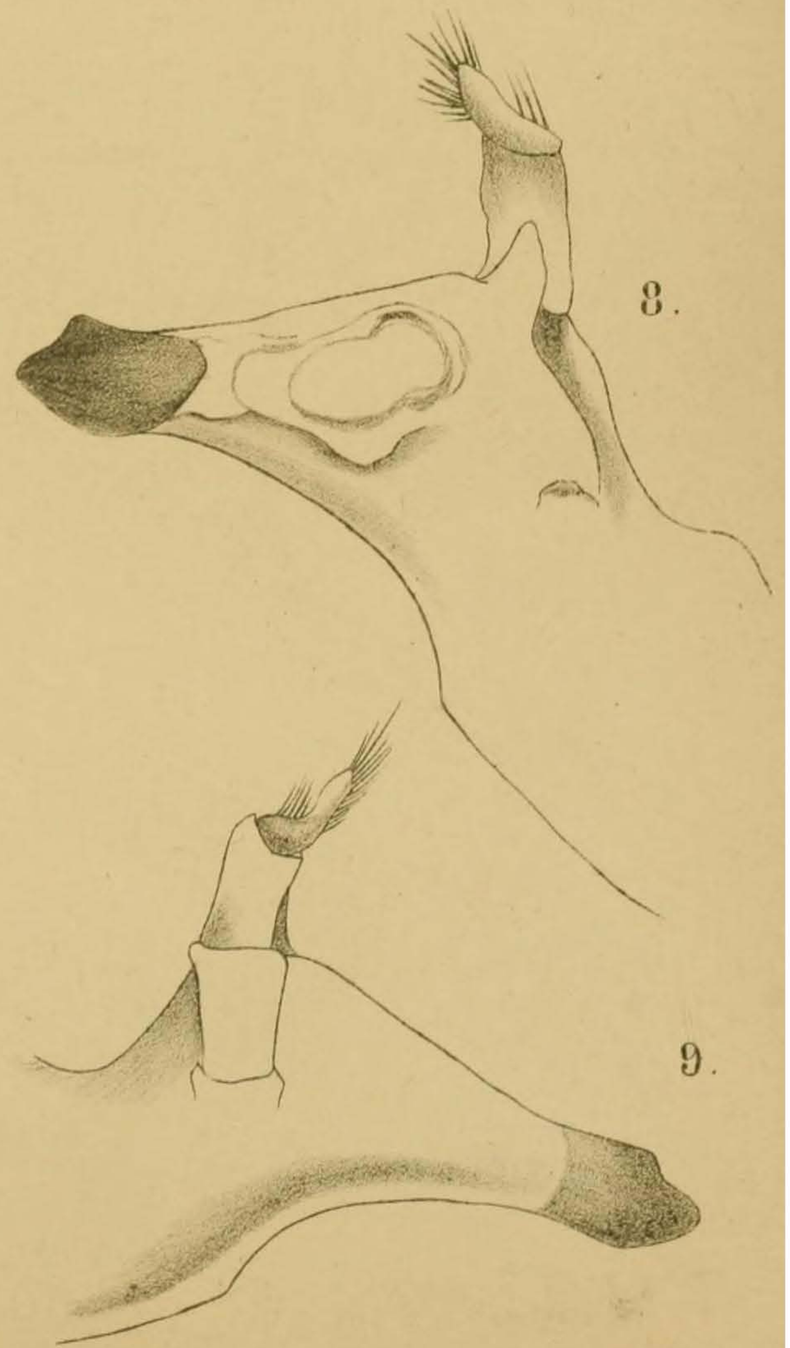

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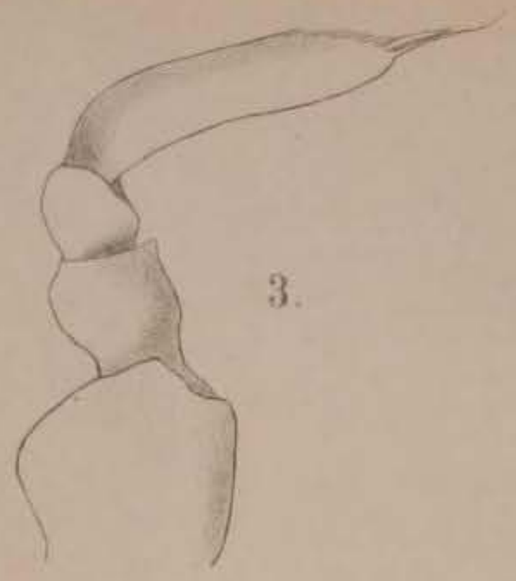

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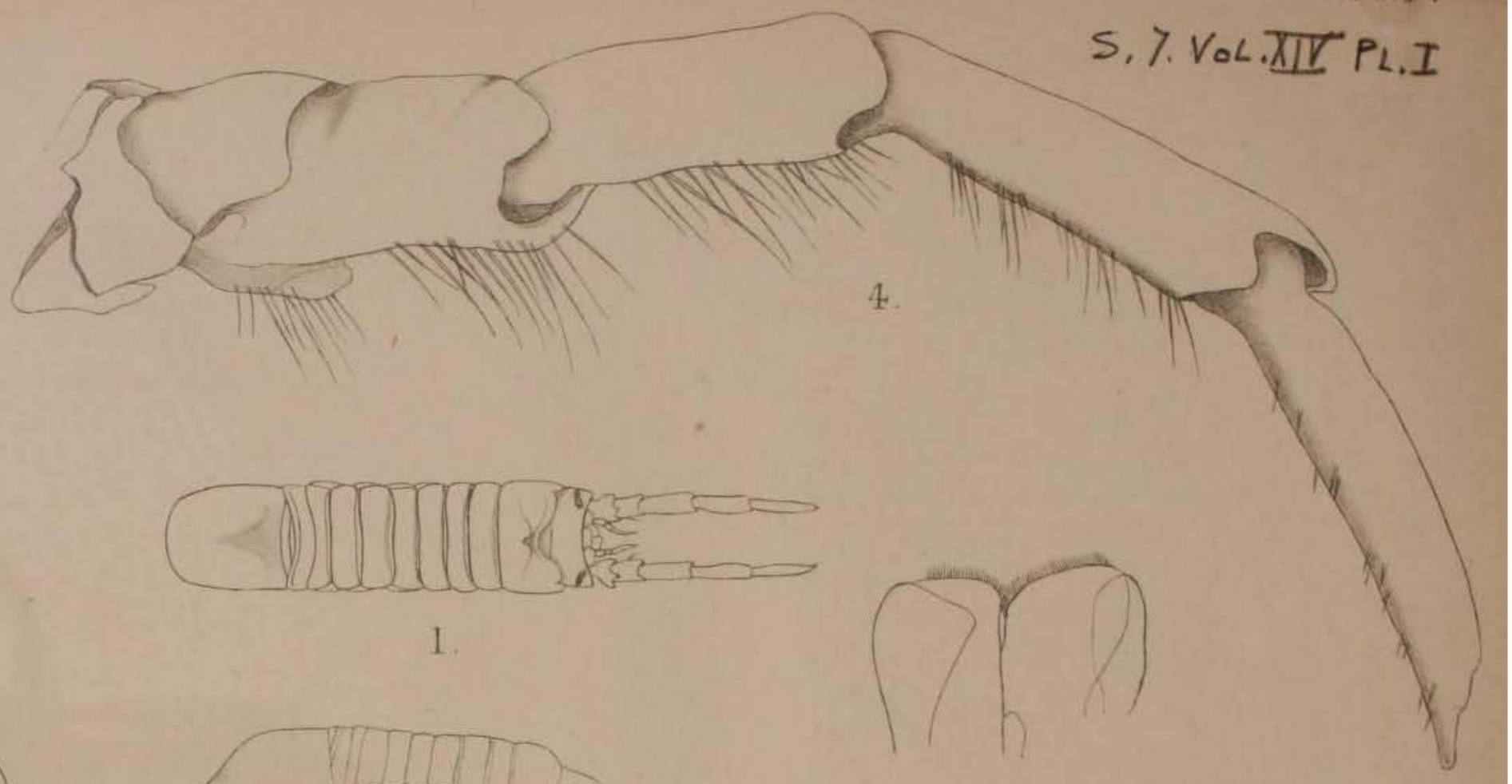

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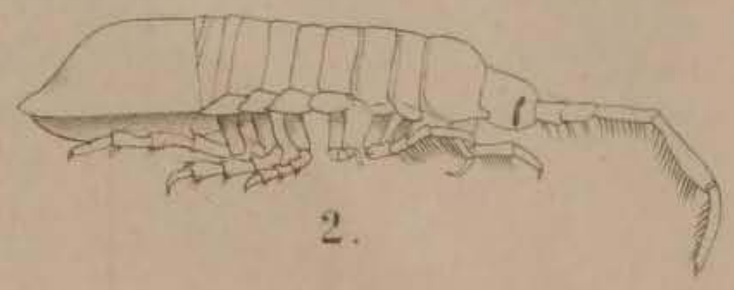

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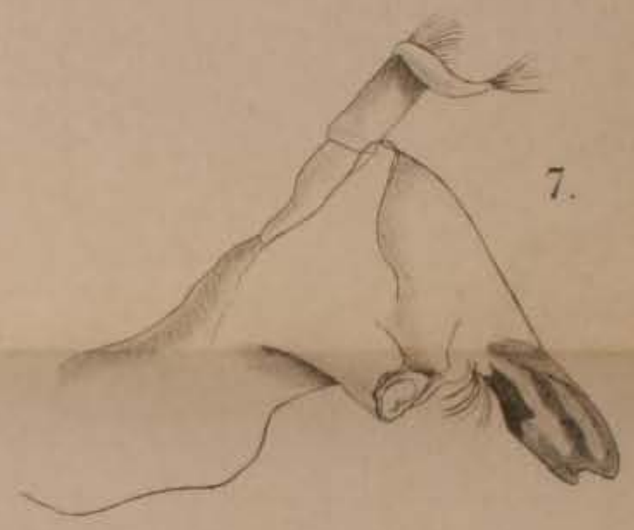

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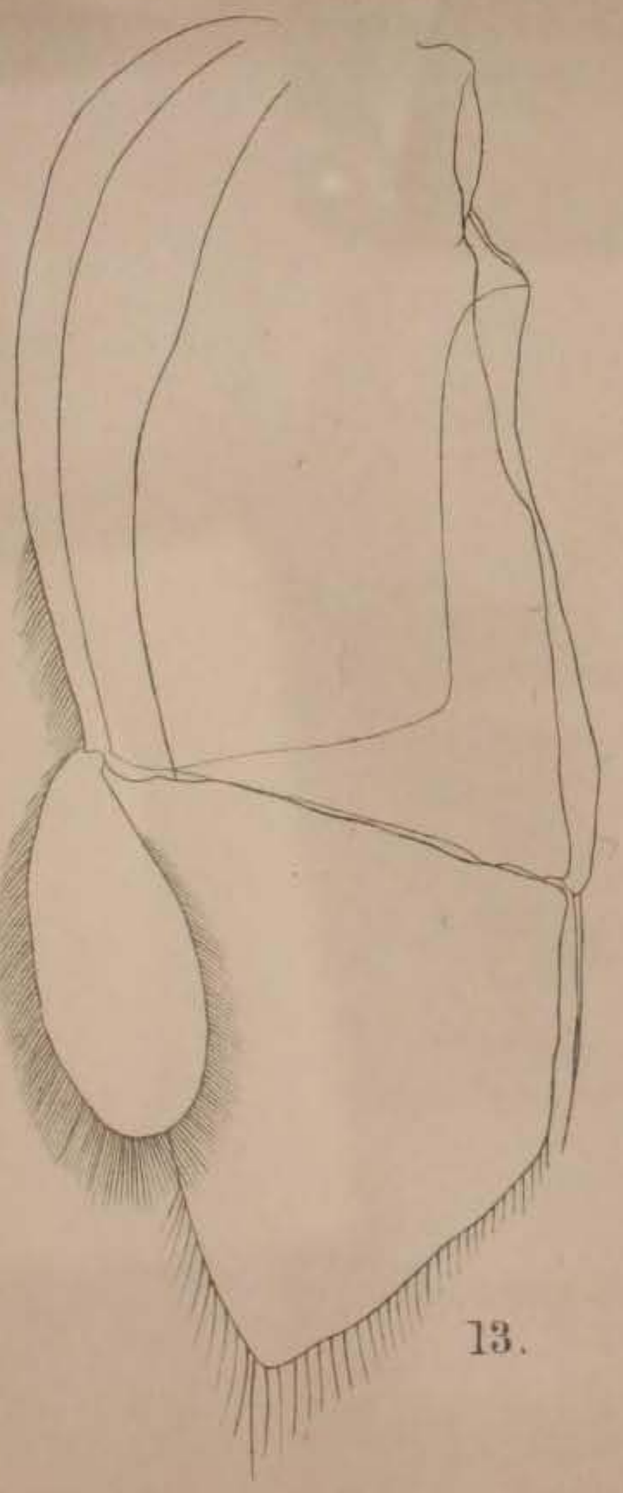

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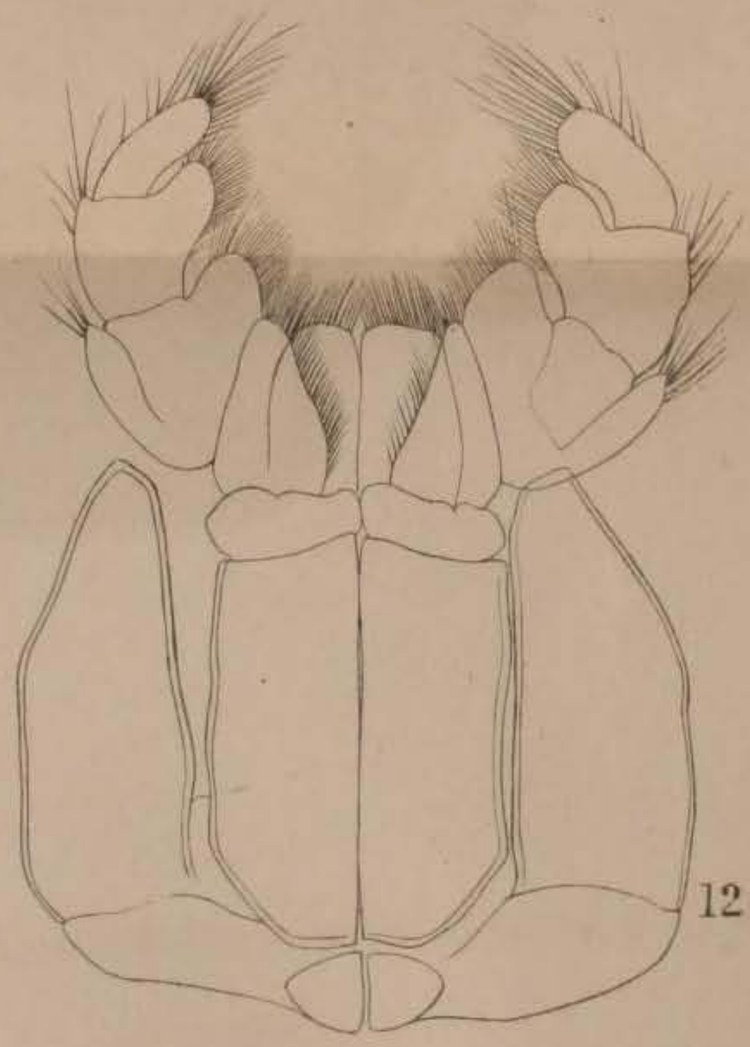

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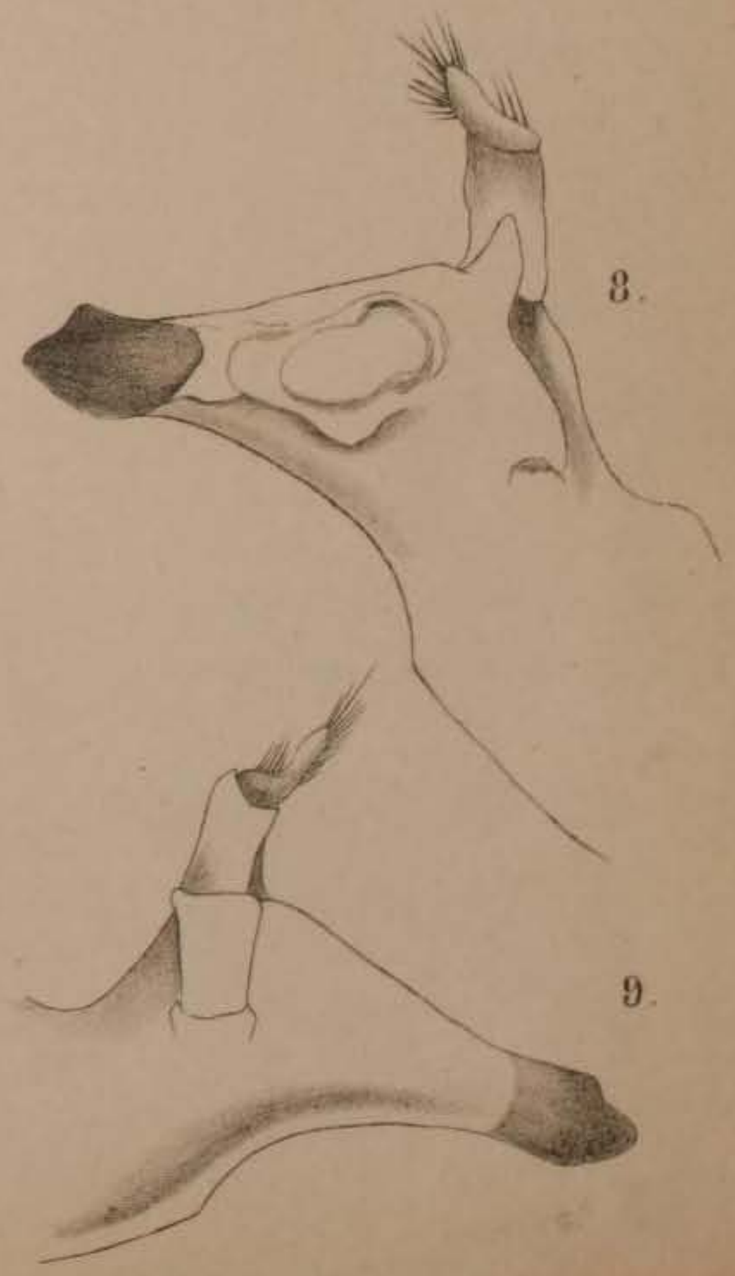

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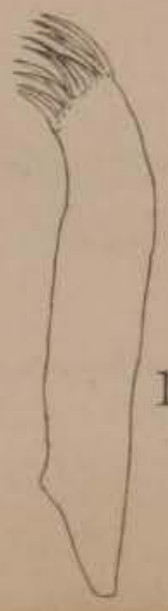

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