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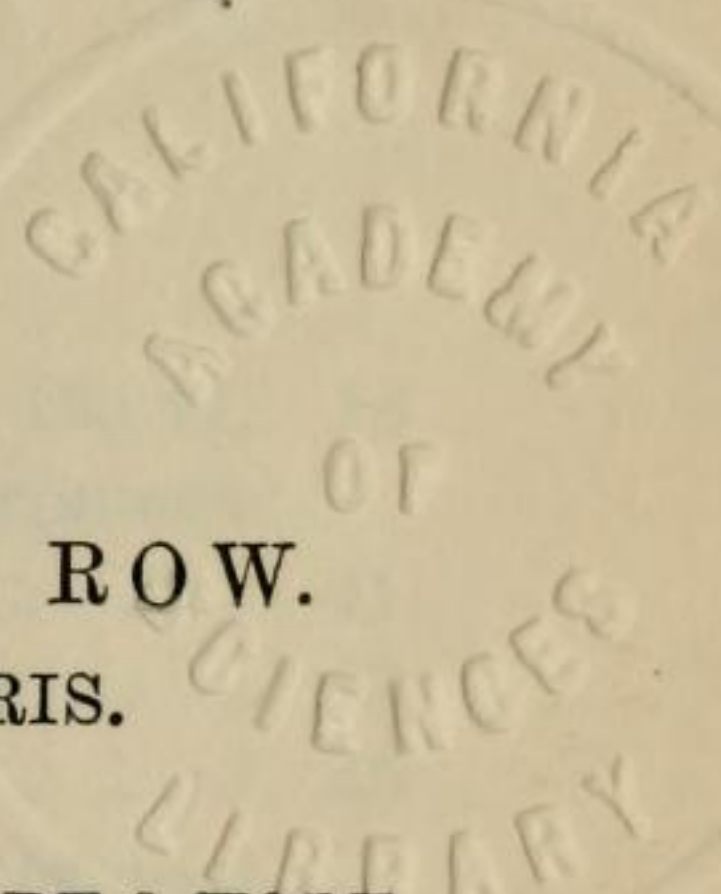
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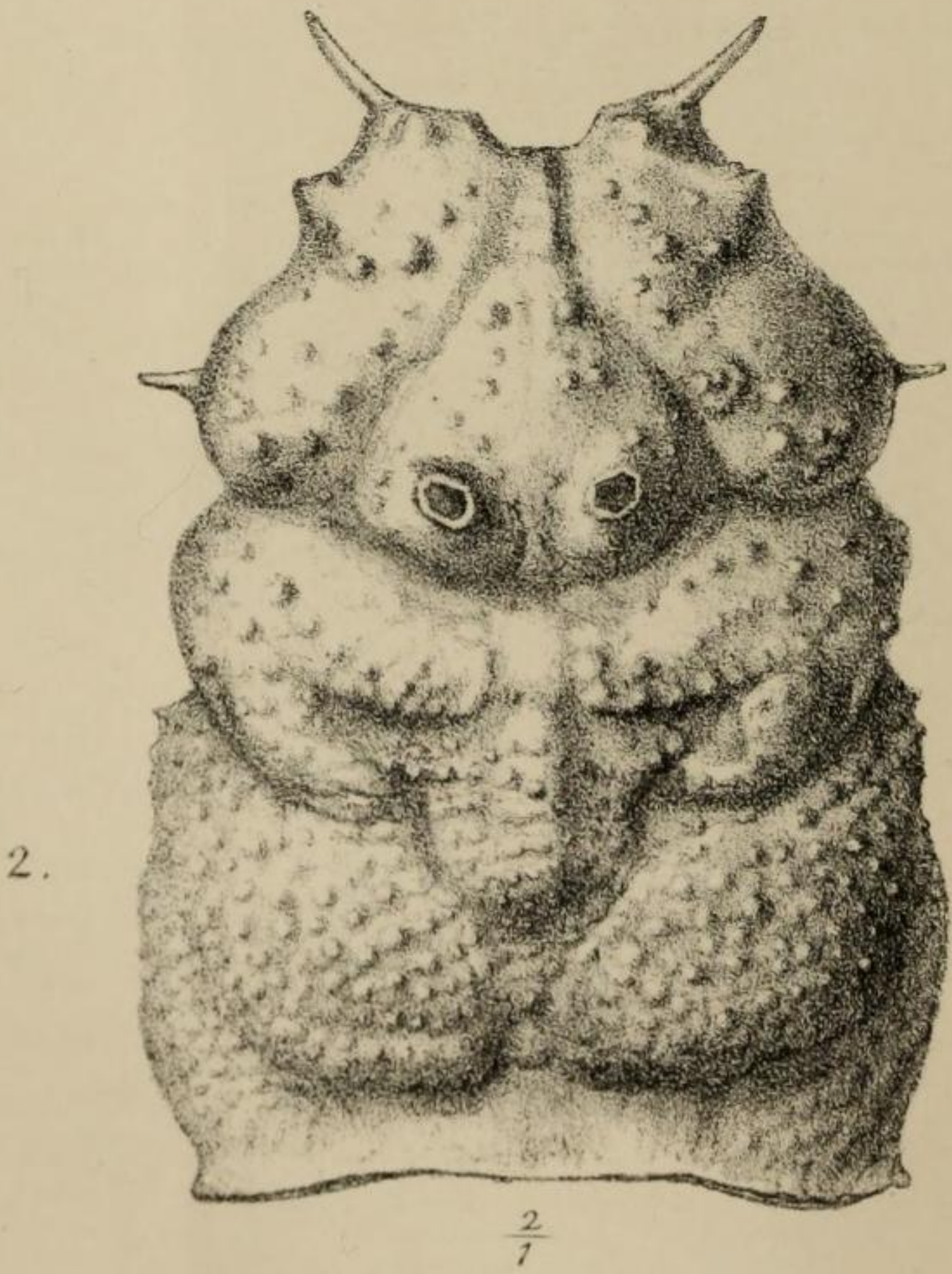
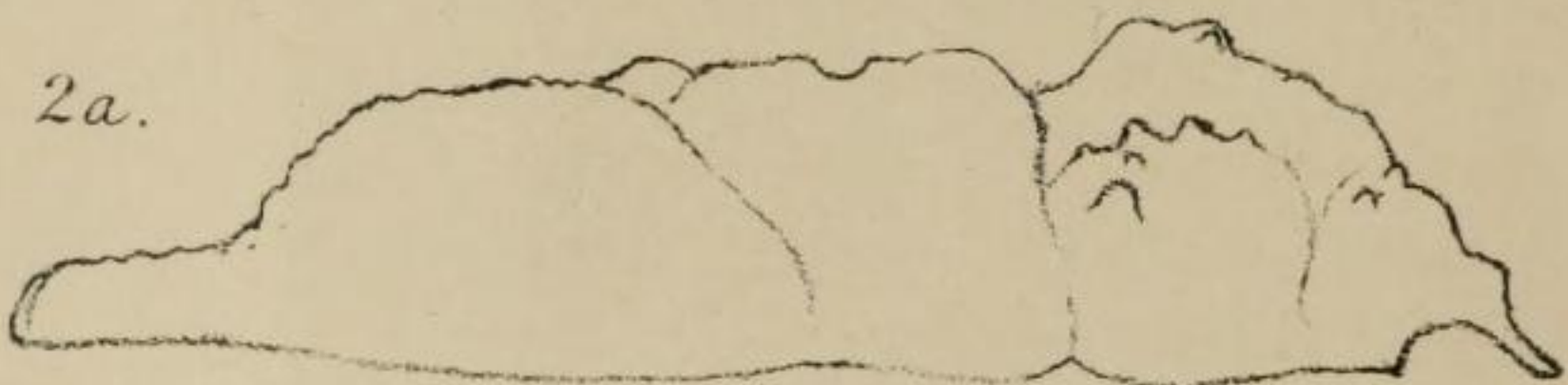
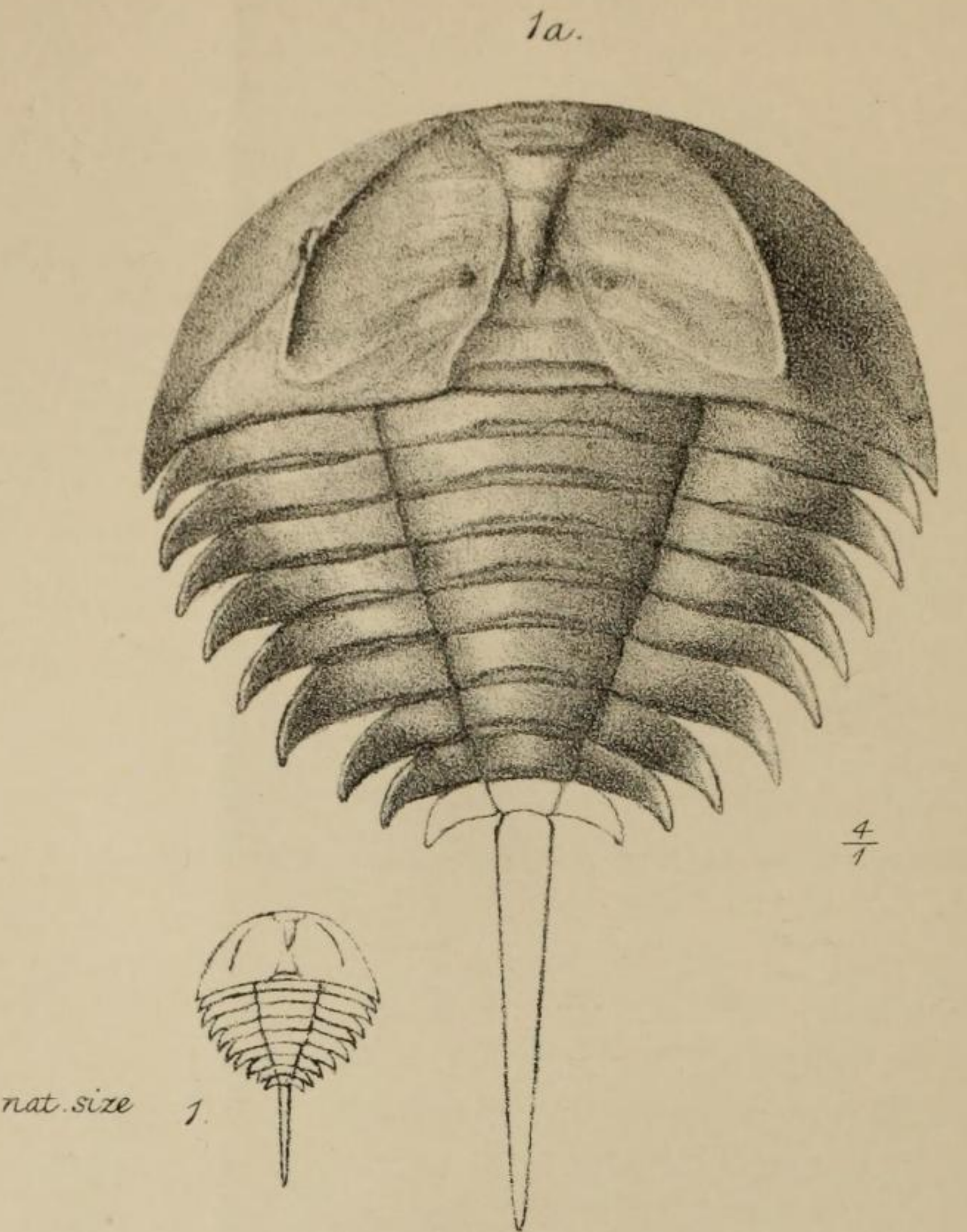
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A. T. Hollick del. & lith.

W. West imp.

Fig 1. New Limuloid Crustacean from the U. Silurian.
Fig 2. *Prosopon mammillatum*, H. W. Stonesfield.

Not being able to refer the Lanarkshire specimen to any previously described genus of *Xiphosura*, I propose to name it *Neolimulus falcatus*.¹

I shall not now venture to discuss the affinities of the *Xiphosura* with the *Trilobita*, a point on which I am deeply interested; first, on account of want of information as to their appendages, and secondly, because I believe that a better knowledge of the *larval stages* of the recent *Limulus* is essential to a true explanation of these earliest representatives of the group in past time. Dr. Anton Dohrn of Jena, and Prof. O. C. Marsh of Yale College, Ct., and several other able naturalists have promised me their aid in this interesting inquiry, which, to be carried out in a proper manner, necessitates a temporary residence on the N.E. Coast of North America or the coast of China or Japan, where living King-crabs abound.

EXPLANATION OF PLATE I., Fig. 1, 1a.

Fig. 1. *Neolimulus falcatus*, H. Woodw. Natural size (the tail-spine and last segment restored) from the Uppermost Silurian shales of Lesmahagow, Lanarkshire.

Fig. 1a. The same magnified four times.

The original specimen is now in the British Museum.

II.—ON A NEW BRACHYUROUS CRUSTACEAN (*PROSOPOON MAMMILLATUM*), FROM THE GREAT OOLITE, STONESFIELD.

By HENRY WOODWARD, F.G.S., F.Z.S.

[PLATE I., Fig. 2.]

AMONG the new Oolitic Crustacea to which I drew attention at the meeting of the British Association, Dundee, was a species of *Prosopon* from the Stonesfield Slate.

This genus was proposed by H. von Meyer, in 1835, for certain minute forms of crustacea from the Upper White Jura of Oerlinger Thal, and other localities in Germany, from whence he has described twenty-nine species, and in addition to these, one from the Lower Oolite, three from the Coral Rag, and one from the Neocomian (see *Palæontographica*, for December, 1860, vol. vii., p. 183, pl. xxiii.)

In it, however, are included forms belonging to a very distinct family which cannot be placed with the *Corystidæ*. A similar form to these, from our own Greensand, has been figured and described by Professor Bell in his Monograph on the Fossil Malacostracous Crustacea (Palæontographical Society, 1862, Part ii., p. 9, pl. ii.), and is correctly referred by him to the *Pinnotheridæ*, under the generic name of *Plagiophthalmus*.

I would suggest that into this genus of Bell's should be removed, all those species at present included under the genus *Prosopon*, which have "an evenly egg-shaped carapace with the front slightly produced and bent downwards. the surface nearly smooth, and marked by two shallow transverse furrows nearly parallel to each other, the orbits very small, elongate-oval, and placed obliquely within the margin, appearing as if pierced in the substance of the carapace" (Bell, *op. cit.* p. 9).

¹ *νέος*, young, in allusion to its size, and also its early appearance in time (and *limulus*); and *falcatus* from the sickle-like form of the body-segments.

Plagiophthalmus, Bell, would thus probably include within it the following species of H. von Meyer's genus *Prosopon*, namely:—

P. hebes, *P. simplex*, *P. rostratum*, *P. spinosum*, *P. elongatum*, *P. depressum*, *P. obtusum*, *P. Stotzingense*, *P. tuberosum*, *P. sublaeve*, *P. laeve*, *P. punctatum*. The following are doubtful: *P. insigne*, *P. æquilatum*, *P. marginatum*, *P. grande*, *P. excisum*, *P. lingulatum*.

For the remainder, the generic name *Prosopon* should be retained, namely: *P. aculeatum*, *P. ornatum*, *P. paradoxum*, *P. torosum*, *P. Heydeni*, and *P. æquum*.

Having only seen actual specimens of a few of these forms I do not wish, at present, to do more than indicate those species, which, I think, will need revision. They all occur merely as detached carapaces, without appendages, and the under-side of the fossil usually adheres firmly to the matrix and is therefore seldom seen.

The crab now to be described (Plate I. Fig. 2), although larger than the Wurtemberg specimens, is no doubt referable to the genus *Prosopon* in its restricted sense.

It was first noticed by Professor Morris, F.G.S., who obtained an imperfect carapace many years since; it was next observed by Mr. Samuel Stutterd, of Banbury, who found a portion of another specimen, which he kindly brought to me for examination. Lastly, for the very perfect carapace, now figured, I am indebted to George Griffith, Esq., M.A., the Assistant-General Secretary of the British Association, who procured it at Stonesfield, from whence the two other examples, above referred to, were also obtained.

The specimen measures fourteen lines in length, and eleven and a half lines in breadth.

The front of the carapace is four lines in breadth, and is marked by a semi-circular depression in the centre, and by two laterally diverging horns—similar to those which ornament the front of the carapace in many of the Triangular crabs.¹ Immediately behind these horns are placed the orbits which are bounded on their exterior angles by short blunt spines. Here the carapace measures six lines across; the hepatic region then swells out into a tumid prominence, ornamented by a single spine, the breadth of the carapace being increased to nine and a half lines. Posterior to the hepatic region the cervical or nuchal furrow crosses the carapace, forming a deep indentation between the gastric and cardiac regions. A second transverse furrow, three lines behind the cervical furrow, indents the carapace and unites with the cardiac furrow on either side.

The regions of the carapace are all well-marked and very tumid: the gastric region is the most prominent, and is marked by two mammillæ (which have suggested the trivial name). When viewed in profile (see Pl. I. Fig. 2 a) these mammillæ are elevated three and a half lines above the level of the slab on which the carapace rests. The posterior border of the carapace is nine lines in breadth, and but slightly curved. The branchial and cardiac regions of the carapace are covered with minute rounded tubercles. The gastric and hepatic regions are also tuberculated; but the tubercles are fewer and of larger size.

In a paper, communicated to the Geological Society, May 23rd, 1866 (which was published in the Quarterly Journal, vol. xxii. p. 493, pl. xxiv. fig. 1), "On the oldest known British crab (*Palæinachus longipes*) from the Forest Marble of Malmesbury, Wiltshire," I pointed out the synthetic characters which these early forms of Crustacea present. In *Prosopon mammillatum* we have another example of this blending of characters in the outset of the *Brachyura* in Oolitic times.

¹ The *Macropodiadæ* of Milne-Edwards.

Every systematic naturalist feels it incumbent on him to refer the form he is describing to its proper position in the family and class to which it belongs, but the palæontologist knows well how difficult it is, from a portion only of an animal structure—whether vertebrate or invertebrate—to predicate with certainty its true affinities. In the present case the genus *Prosopon* has been referred to the *Corystidæ*, a group which nearly approaches to the *Anomoura* of Milne-Edwards. Even upon the imperfect knowledge which the present form gives us, we are led to perceive its affinities with the *Anomoura*, and probably when we are in possession of fuller information, we shall be able to refer it with confidence to the *Homoladæ*, a true Anomourous family. In the meantime we must ask our readers to be contented with this brief description, in the hope that more perfect materials may shortly be discovered.

EXPLANATION OF PLATE I., Fig. 2.

Fig. 2. *Prosopon mammillatum*, H. Woodw. Great Oolite, Stonesfield, twice the natural size.

Fig. 2a. Side view of same.

From the cabinet of G. Griffith, Esq., M.A., Harrow.

III.—ON THE “LINGULA FLAGS,” OR “FESTINIÖG GROUP” OF THE DOLGELLY DISTRICT. PART III.

By THOMAS BELT, F.G.S.

[PLATE II.]

HAVING described in some detail, the rocks of the Maentwrog, Festiniog, and Dolgelly groups, and given a list of the fossils found in each,¹ I shall now make some general remarks upon the fauna. In Part I. I have mentioned that out of all the numerous Trilobites from the Lower Cambrian² rocks, only two genera, *Agnostus* and *Conocoryphe*, have been found in higher strata. Strictly speaking, this is only true of *Agnostus*, which passes unchanged in type from the Menevian to the Caradoc strata. On the contrary, the species of *Conocoryphe* from the Lower Cambrian rocks are of essentially different type from those that have been placed in that genus from higher beds. The latter have, I believe, been referred to the genus *Conocoryphe* rather from superficial resemblances than from true affinity.

The possession of faceted or unfaceted pleuræ has been considered of sufficient importance to separate closely allied species into distinct families, and McCoy, in his Classification of the *Trilobita*, has even founded his two main divisions upon that feature. The faceting of the pleuræ may be of generic, but it is not of higher value. The absence of facets to the pleuræ of *Paradoxides* and *Olenus* does not prove, as some palæontologists have supposed, that they were incapable of rolling up. Trilobites with flat pleuræ required no facets to facilitate that operation. It is only when the pleuræ, are bent down near the middle that the facets are of use in allowing the ends of the pleuræ to pack in underneath each other.

It is through exaggerating the importance of this feature that some

¹ See GEOLOGICAL MAGAZINE, 1867, Vol. IV., pp. 493 and 536.

² The Lower Cambrian period, according to the classification adopted in this paper is only part of the “Primordial Zone” of Barrande, as that illustrious palæontologist has included in it *Olenus* and *Peltura*, which in reality belong to a second fauna.