

DESCRIPTIONS OF PLATES XI. & XII.

[The figures are all drawn on the scale of one-third of the natural size.]

PLATE XI.

Fig. 1. *Mastodon (Tetralophodon) longirostris*, Kaup, from Eppelsheim : plan-view of the penultimate true molar from the left side of the upper jaw. *a*, anterior talon ; *t*, posterior talon ; *b*, *c*, *d*, *e*, the four principal ridges which compose the crowns of the "intermediate molars" in the Tetralophodons. An irregular longitudinal cleft along the middle divides the crown into an inner and outer division.

Fig. 2. The same tooth, seen in profile.

[From a cast in the Society's Collection.]

Fig. 3. *Mastodon (Trilophodon) angustidens*, from the Dep. Gers, in the Subpyrenees : plan-view of the penultimate true molar from the left side of the upper jaw, showing the worn disks of the three principal ridges which compose the crowns of the "intermediate molars" in the Trilophodons. *a*, anterior talon ; *t*, posterior talon ; *b*, *c*, *d*, the three ridges. The longitudinal cleft is partially worn out.

Fig. 4. The same tooth, seen in profile.

[From a specimen in the Collection of M. Lartet, For. Mem. G. S., Seissan, Gers.]

PLATE XII.

[The letters to the figures refer to the same parts as in fig. 1, Pl. XI.]

Fig. 1. *Mastodon (Tetralophodon) Arvernensis*, from Ramsey, near Harwich : plan-view of the germ of the penultimate true molar from the right side of the upper jaw.

Fig. 2. The same tooth, seen in profile. A large flanking mammilla is seen to occupy the middle of each valley.

[This specimen is in the Collection of the Rev. J. R. Marsden, Great Oakley, Essex.]

Fig. 3. *Mastodon (Tetralophodon) Arvernensis*, from Suffolk : plan-view of the germ of the last true molar from the left side of the lower jaw.

b, *c*, *d*, *e*, *f*, the five ridges composing the crown, the mammillæ of which are disposed alternately.

Fig. 4. The same tooth, seen in profile.

[Figs. 3 & 4 are drawn from a cast in the Society's Museum ; the "bour-relet" being partly restored from a Crag molar of similar age, also in the Society's Collection.]

APRIL 22, 1857.

Thomas Alfred Yarrow, Esq., C.E., Gresham House, Old Broad Street, was elected a Fellow.

The following communications were read :—

1. *Description of a NEW FOSSIL CRUSTACEAN (Tropifer lævis, C. Gould) from the LIAS BONE-BED.* By CHARLES GOULD, Esq., B.A.

[Communicated by J. W. Salter, Esq., F.G.S.]

CRUSTACEAN remains from this Bone-bed, and indeed from the Lias itself, are so rare, that I feel no apology is necessary for introducing

to the notice of the Society this small Decapod, which has been kindly lent to the Geological Survey by E. Higgins, Esq., of Birkenhead.

TROPIFER LÆVIS.

Carapace.—The carapace in this specimen (fig. 1, *b*, & fig. 3) is somewhat flattened and subrectangular, and has the posterior angles slightly produced; the length is rather more than 3 lines, and the width, which is pretty constant throughout, $2\frac{3}{4}$ lines; it has three longitudinal ridges, one median and the others nearly parallel to it, but rather sinuous, and about equidistant between it and the lateral margin of the carapace, which is slightly thickened and crenulated, as are also the ridges.

Figs. 1, 2, & 3.—*Tropifer lævis*, from the Lias Bone-bed at Aust Passage.

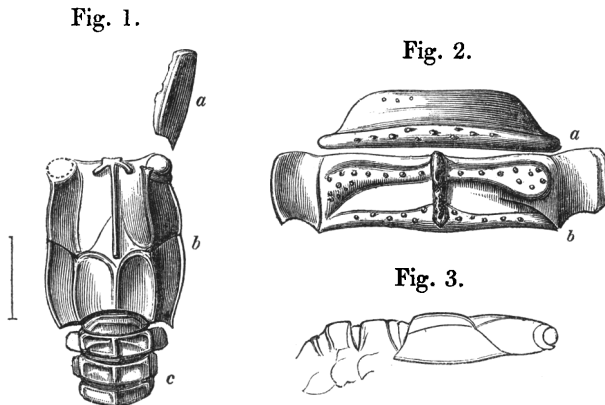


Fig. 1. Enlarged view of the specimen; the natural length is shown by the line at the side. *a*. Fragment probably of one of the limbs; *b*. Carapace; *c*. Four abdominal segments.

Fig. 2. Two of the abdominal segments; magnified:—*a*, the first; *b*, the second segment.

Fig. 3. Side-view of the specimen, in outline, magnified.

The cervical furrow is distinct, cutting the median ridge at a little more than one-third from the posterior end; its general direction is outwards and forwards to the edge of the carapace, which it meets at about two-fifths from its anterior end; each half is divided into two portions by the lateral and longitudinal ridges: the outer portion is straight and the inner curved, with the convexity forwards, and from its most advanced point, an indistinct line runs forwards and inwards to the central ridge, giving rise to a deltoidal figure, in which the acute angle is anterior.

The front edge of the carapace is imperfect, but enough remains to show that it is truncate and emarginate beneath the lateral ridges, and rather outside of them, for the reception of the large eyes. One

of the eyes is preserved, and appears to be spherical, and about half a line in diameter.

There is no appearance to indicate any prolongation of the front edge into a rostrum; nor are there any portions of the antennæ remaining. The posterior edge of the carapace is also emarginate (to receive the first segment of the abdomen); the ridges end abruptly upon it, without being produced into any spines or prolongations.

With the exception of an oblong tumidity on either side of the anterior end of the median ridge, there are no punctations, tuberculations, or sculpturings.

Abdominal segments.—Of the abdomen, which is rather depressed, four segments only are visible, measuring in all two lines in length; but the probability is, that the remainder are concealed in the matrix. In all those present, the articular facet is smooth, but the posterior portion of the first segment is elevated, and covered with small tuberculations, and in the succeeding segments it has a median ridge and lateral prominences corresponding to those upon the carapace (fig. 2).

In the second segment, the epimera are smooth and unornamented, and bent down at right angles to the tergum, which presents a peculiar ornamentation. In each half of the tergum there are two transverse, triangular elevations; the base of the larger and anterior one corresponding with the lateral ridge, the apex being connate with the central ridge; while in the posterior triangle, the base constitutes the hinder portion of the median ridge and the apex of the outer ridge; each of these elevations is tuberculated, and the spaces between them are smooth. The remaining segments present slight modifications, but are essentially similar (fig. 1, c).

The carapace is not overlapped by the first segment.

Limbs.—The few portions of limbs remaining are fragmentary. They are subtrigonal and several times longer than broad.

Locality.—The specimen under notice was found in a coprolitic mass from the Lias bone-bed at Aust Passage.

Affinities.—Although the carapace, in consequence of its flatness and the production of its posterior angles, presents a facies not very dissimilar from that of some Stomapods, such as certain species of the genus *Eriethys*, the general characters of the specimen are those of a Decapod; for it differs from the Stomapods in possessing a deep cervical furrow, extending right across the carapace, and dividing it into a cephalic and a scapular portion. This character does not occur, so far as I am aware, in any of the Stomapods; nor on comparing it with the recent species of this group, can I find any of these with the abdomen similarly ornamented.

Turning next to the four great divisions of the *Macrura*, I think that we may at once exclude that of the *Thalassinida*, containing such genera as *Callinidea* and *Thalassinus*, in which the slender and compressed abdomen, the slight integument, &c. are characters directly opposed to those of our specimen.

In three families of the division termed by M. Milne-Edwards "les Salicoques," viz. the *Crangonida*, the *Alpheida*, and the *Pulamonida*, there is no distinct cervical groove, while in the fourth, the

Peneidæ, although certain forms, as *Stenopus*, possess one, the other characters are quite dissimilar; moreover, the flattened scale above the antennæ, characteristic of all these families, appears to be wanting in our specimen, for I am inclined to consider the long subtrigonal fragment lying in front of the eye (and which possibly might be regarded as such) as a portion of one of the limbs, which has been displaced.

Neither among "les Crustacés Cuirassés" can it be referred to either of the genera *Galathea*, *Eryon*, or *Palinurus*: its general characters distinguish it from the first; the material difference in the width of the carapace, from the second; and the general form of the body, together with the absence of spines on the carapace, and more especially of the two prominent horns extending over the eyes and base of the antennæ, from the last.

The flatness of the carapace, and the remoteness of the eyes, are points of agreement with the genus *Scyllarus*; but on the other hand, in this specimen at least, there are no traces of the large expanded antennæ, which are so conspicuous in the latter. With regard to the last division, that of the *Astacidæ*, we need only select for comparison the genus *Nephrops*, which has a similar cervical furrow, a median ridge, running the whole length of the carapace, and two parallel lateral ones on the hinder half. In addition to this, the abdominal segments have very similar sculpturings. The position of the eye, however, in *Nephrops*, the convexity of the carapace, and its being overlapped by the first abdominal segment, are important differences.

In conclusion, I would remark that, although the characters are sufficiently well defined to render the genus and species identifiable by the description and figure given, and although in some respects there are indications of an affinity with *Nephrops* and *Scyllarus*, I do not think the evidence sufficient to justify me in assigning it to any existing genus of the *Macrura*.

I therefore propose to constitute it the type of a new genus, with the appellation of *Tropifer**, with the following, for the present necessarily incomplete, characters:—

Carapace flattened, keeled, slightly longer than broad, truncate in front, and having the posterior angles slightly produced; *eyes* large, remote; *abdomen* somewhat flattened, sculptured.

The specific name *lævis* is in allusion to the smoothness of the carapace.

2. *Description of a NEW CRUSTACEAN (Pygocephalus Cooperi, Huxley) from the COAL-MEASURES.* By Prof. HUXLEY, F.R.S., F.G.S.

[PLATE XIII.]

THE following account of a very remarkable new Crustacean has been drawn up from the examination of three specimens, two of

* From *τρόπις*, *keel*, and *φέρω*, *I bear*.