

*The 'Challenger' Amphipoda.* By the Rev.

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THE following preliminary descriptions are published "by permission." The work of arranging, describing, and figuring the whole group is likely to take some time. In the meanwhile it may be of interest to students of this branch of natural history to have a brief account of some of the more striking forms that have been discovered. The details now given are intended to afford some notion of the external appearance of the specimens, and to distinguish them from their congeners previously known. There are naturally many points of interest which do not come within the limited scope of this intention. These are reserved for publication in the completed work. In the nomenclature here used the classification of A. Boeck has been followed.

Family Gammaridæ.

Subfamily *ÆDICERINÆ*.

*Acanthostepheia ornata*, n. sp.

The rostrum is produced beyond the first joint of the upper

antennæ, and is almost entirely occupied by the elongate eyes, which are only separated by a linear ridge. All the segments of the pereion and pleon are carinate. In the pereion the hinder margin of each segment is adorned all round with teeth alternating in size, the central one of the carina being the largest. This fringe has an appearance like the projecting edges of the septa in many corals. The number of the teeth varies from nine to seventeen. The seventh segment has a second row in advance of the hinder margin; the other segments have also some lateral tubercles in this position. The first pleon-segment has the fringe of teeth on the hinder margin, but very small; in front of this row it has a large median tooth, flanked by two small teeth or tubercles on each side, set divergently. The next segment has a long central ridge, with the flanking tubercles, but no teeth on the hinder margin. The third segment, dorsally much longer, has the central ridge, but no other ornament; so also the fourth; the fifth and sixth are very small. The epimera and lower borders of the first three pleon-segments are fringed with hairs. In the upper antennæ the fourth joint of the peduncle is longer than the fifth. The last three epimera are not acuminate, in disagreement with the description of the genus given by A. Boeck.

*Ædiceropsis rostrata*, n. sp.

This species agrees closely with *Ædiceropsis brevicornis*, Lilljeborg, in the antennæ, the epimera, shape of gnathopods, relative lengths of pereopoda, general shape of telson, and to a large extent also in the mouth-organs. Contrary, however, to the generic character of *Ædiceropsis*, it has a large rostrum, apparently carrying the eyes. It would, notwithstanding this, in my opinion be better to re-unite *Ædiceropsis* with *Ædiceros* on account of this connecting-link than to separate the present species generically from *Ædiceropsis brevicornis*.

In the mandibles the second joint of the palpi is shorter than the third. In the maxillæ of the second pair the outer plate is very little narrower than the inner.

The almost quadrangular telson has a very minute distal emargination.

Subfamily *EPIMERINÆ*.

*Epimeria conspicua*, n. sp.

A median carina runs along the back from the first pereion-segment to the fourth segment of the pleon. On the first two pereion-segments it is obtuse and little pronounced, but

gradually attains its greatest development in the great laminar backward-directed processes on the first three segments of the pleon. The subdorsal carinæ are formed by single tubercles on either side of the pereion-segments, while on the first three pleon-segments the main tubercle is attended by a group of smaller ones. The lower hinder angles of the pereion-segments are rounded, produced backwards, and are a little prominent, thus forming a sort of lateral carinæ, which are continued by pointed tubercles on the first three pleon-segments. These last-mentioned segments also have their lower hinder angles produced into sharp points. The second pleon-segment has also a produced point at the basal end of the lower margin. The last two joints of the peduncle of the lower antennæ are unequal in length. The pereiopoda have small spines. In other respects the creature resembles the larger and more northern species, *Epimeria loricata*, G. O. Sars, so far as that is described, and may possibly be only a variety of it.

*Acanthozone tricarinata*, n. sp.

Head almost concealed; antennæ with some of the peduncle-joints variously dentate. A large triple carina the whole length of the pereion, formed by long outstanding processes. On the first segment the central process is double, one branch extending forwards. The segments have also the hinder margin transversely carinate. The first two epimera are simple, acuminate below; the five that follow have large processes above similar to those on the segments. The third and fourth epimera curve backwards below to a sharp point; the fifth and sixth are rounded at this part, but have an angle below on the front margin.

The central carina is continued with processes of various sizes along the pleon, the lateral carinæ being also more or less represented.

The last three pereiopoda have the first joint with its hinder margin carinate, not produced into an angle above, as in *Acanthozone cuspidata*, Lepechin, but produced downwards in a rounded lobe over the second joint; the third and fourth joints have the lower hinder angle much and sharply produced downwards.

Subfamily GAMMARINÆ.

*Amathillopsis australis*, n. sp.

A median carina runs from the head to the telson. Only the last three segments of the pereion and the first three of the pleon have the carina produced into a spine. Of the epimeral

plates the third and fourth are the longest; and these are both acute. The third articulus of the mandible-palp is considerably longer than the second. The telson is slightly emarginate, broader at base than distally, nearly equal in length to the peduncles of the last uropods. In many points it is nearly allied to *Amathillopsis spinigera*, Heller, and *A. affinis*, Miers.

### Family Leucothoidæ.

#### Subfamily STEGOCEPHALINÆ.

##### *Andania gigantea*, n. sp.

Two specimens of this creature have been examined. One is  $1\frac{1}{2}$  inch in length by  $\frac{1}{2}$  in depth, the other  $2\frac{1}{2}$  inches in length by  $1\frac{1}{2}$  in depth. These dimensions contrast strangely with the small forms of the other species of this genus.

The first segment of the pereion is as long as the next two united. The fourth epimerum is a little broader than deep, of much less size relatively to its segment than the same part in *Andania abyssi*. The first joint of the flagellum in the upper antennæ is much longer than the peduncle, a little longer than the remaining articuli of the flagellum, and likewise a little longer than the secondary flagellum.

The third pleon-segment has a dorsal lobe projecting backwards; the fifth pleon-segment, on the contrary, has the corresponding portion of its margin much excavated. The sixth segment is slightly emarginate to receive the minute telson. The telson has, contrary to the generic character, a small distal slit.

The gnathopods and pereiopods are very small compared with the size of the animal.

#### Subfamily IPHIMEDINÆ.

##### *Iphimedia pulchridentata*, n. sp.

Head with depressed rostrum and bidentate sides; eyes round, a little prominent. In the upper antennæ the first articulus has a tooth near the base, and three distally; the second articulus has a long distal tooth projecting beyond the simple third articulus. In the upper antennæ the last four joints of the peduncle are distally toothed. Of the pereion-segments the first five have the hinder angle sharply toothed, the sixth and seventh have the posterior margin divided into six large processes, the seventh has a marked transverse dorsal depression. In the pleon the first two segments have eight marginal processes, four on either side of the central dorsal

elevation. The third segment has a similar dorsal tooth with three processes on either side; the fourth has only the dorsal process; the fifth is simple; the sixth is produced into sharp angles behind the insertion of the telson.

The first three epimera are bidentate below, the last three are posteriorly bidentate, the fourth widely excavated below, with the hinder tooth much above the anterior one. The third joint is produced in all the pereopoda, in the last three the fourth joint also, in each of which the first joint is a flattened plate with the lower and hinder margin conspicuously cut into variously sized teeth, six in each of the first two, seven in the last. The peduncles of the last uropods are short and broad; acutely produced behind. The telson is concave above, rather deeply emarginate, ending in two sharp points.

*Iphimedia pacifica*, n. sp.

Head with depressed rostrum and bidentate sides. In the upper antennæ the second and third articuli, in the lower the third articulus, are denticulate. The last segment of the pereion and first two of the pleon dorsally bidentate. All the segments of the pereion have the lower margin produced acutely backwards, the seventh segment conspicuously. This is the case also with the last three epimera, the first three and the last pleon-segments. The first three pleon-segments have likewise a medio-lateral tooth, that on the third being bent upwards and serrulate below. The last three pereopoda have the first joint with a serrate margin, dilatedly rounded above, the lower hinder angle produced into a tooth.

The telson is square in general form, emarginate, with a distal tooth at each side.

Family Caprellidæ, Dana.

*Dodecas elongata*, n. g. et sp.

*Gen. char.*—The mandibles having an elongate triarticulate palp. Six pairs of feet attached to the pereion, the fourth segment having none. Branchial vesicles at the base of the second gnathopods, the first pereiopods, and attached to the footless fourth pereion-segment, the rudimentary pleon having two pairs of biarticulate appendages.

*Spec. char.*—Body smooth; eyes prominent; first two segments of pereion very long and slender in the male, much shorter and somewhat thicker in the female. The wrist or fourth joint of the second gnathopods very long in the male, short in the female. The first pereiopods exceedingly slender; the third pereiopods also slight, only four-jointed.