

THE GENUS CETOCHILUS BELONGING TO THE  
ORDER COPEPODA AND THE FAMILY  
PONTIA OF M. EDWARDS.

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*From the Edinburgh New Philosophical Journal for October 1843.*

*Cetochilus septentrionalis*, the species now to be described, is about a line and a half, or two lines long, of a bright red or scarlet colour, and slightly translucent. The body is divided into two great parts, the capito-thoracic, and the abdominal. The superior antennæ are almost obsolete, and are composed of two articulations, the last of which is about four times as long as the first, and is lanceolate. The inferior, or external antennæ, are very long and slender, being longer considerably than the body of the animal. Each of them is composed of twenty-four articulations; the first of these is the largest; the twenty-second and twenty-third are each armed with a very long setum, which is pointed upwards and inwards.

The eyes are two in number, but very minute. The foot-jaws are ten in number. The first (Plate VI. Fig. 12.) consists of two branches arising from a common peduncle; one of these consists of a single articulation only, which is considerably bent, flattened, and which tapers to a point; it is armed with long simple setæ on its superior edge; the other part of this foot-jaw is biarticulate, the first joint being the longest; it is armed with a long single spine at its extremity; the second articulation is about half as long as the first, and its extremity is armed with a number of very long setæ.

The second pair of foot-jaws are connected with the mandibles, and are also composed of two parts arising from one common peduncle, and composed of the same number of articulations as the last, but smaller.

The third pair of foot-jaws are very curious, and if they were free of the setæ would present very much the appearance of a human hand with the index and little fingers concealed.

The fourth pair of foot-jaws are composed of one flattened scale-like joint, with a great number of long setæ arising from its inner edge.

The fifth pair of foot-jaws are composed of four joints, the last of which is very long, and armed on its inner edge with long spines.

The ambulatory legs are ten in number, and are bipartite. They arise from the last five thoracic segments of the body. The peduncular portion of the leg consists of two segments. The external portion of the leg is composed of four articulations, the last of which is long, claw-like, and serrated on its inner edge. The internal edge of the third articulation is armed with a great number of very long spines; the internal portion of the leg is composed of four very short segments; it is as long as the two first segments of the external portion.

The abdominal portion of the body is much smaller than the thoracic,

not being nearly so thick, and is generally in an erect position; it consists of six segments, and the last has the extremity armed with two styles, which are each composed of a single plate, the extremity being armed with five very long spines.

The organs of the mouth in this animal, from its small size, I have been unable to make out.

The alimentary canal consists of a simple straight tube. The breathing is carried on doubtless by means of the spines and setæ, which are so numerous on the foot-jaws.

This species is distinguished from *C. australis* by the two long spines which arise from the twenty-second and twenty-third segments of the external antennæ; the extremities of these antennæ in *M. Vauzeme's* species having only one spine, or, according to that author, bifid. The foot-jaws also differ in the two species, but especially so in the third pair; these organs in *C. septentrionalis* presenting very much the appearance of a human hand with the index and little finger flexed, as it were, on the palm, whereas those of *C. australis* consist of three branches arising from each side of a stem.

#### SECT. IV.—ON A NEW GENUS AND SPECIES OF CRUSTACEAN.

The animal which is now to be described, is met with occasionally among the *Maidre*. It is solitary in its habits, a single specimen being only seen now and then, owing, however, to its brilliant metallic colours, is easily observed as it shoots along the surface of the water.

The structure of this animal is such as to require the formation of a new generic situation in the family Pontia of *M. Edwards*. The decision of this question was difficult, owing to the apparently contradictory characters in the structure of the animal. I at one time placed it in *M. Edwards's* restricted genus *Monoculus*, from the structure of the antennæ and eyes. After a minute examination, however, of several specimens, I was enabled to analyze the structure of the animal more correctly. It forms the, or one of the, connecting links between the two families, namely, Pontia and *Monoculus*. It is connected more nearly to Pontia by means of the structure of the body, the foot-jaws, the ambulatory legs, the abdomen, and the eyes; to *Monoculus* by means of the antennæ and the eye.

Upon looking cursorily at the organs of vision, the observer would suppose that the animal was really *Monoculus*. This arises from the circumstance of the eyes being situated at the superior extremity of a tubular organ, which is apparently for the purpose of assisting the sight. The eyes are situated on the dorsal aspect of the body, near to the anterior extremity of the body, and almost between the origin of the antennæ.

#### GENUS IRENEUS.\* (MIHL.)

A large tubular organ arises from the lower or abdominal surface of the body, in the superior extremity of which the organs of vision are situated; the right antennæ very much swollen a little behind the middle. Foot-jaws ten in number.

\* St Ireneus to whom the church of Kilrenny or Irenie in Fife was dedicated.

## IRENÆUS SPLENDIDUS MIHI.

Description. The whole animal gives forth a kind of luminous appearance, which is apparently caused by the splendid metallic colours with which it is adorned. The prevailing colours are sappharine and emerald. The whole length is from about three to four lines; and the body, like those of other animals of the same family, is divided into two great parts, the cephalo-thoracic, and the caudal or abdominal. The head is as large as all the thoracic segments conjoined; the thoracic segments are six in number, and the abdominal are five. The head of this animal is large and rounded superiorly and anteriorly; it projects downwards and forwards in the form of a rostrum. One pair of antennæ arise from the anterior part of the head; they are hardly so long as the thorax, and are very curious.

The right differs from the left in being very much swollen about the middle; it may be divided into three parts; the first or proximal is considerably dilated, and is of an oval shape as far as the sixth articulation, where it becomes much smaller, the four following being only about one-third of the size; the middle division of this antennæ is also very much swollen, but is pyriform, the largest part being proximal, and the contracted distal; this division is six-jointed, and the last joint, which is largest, is deeply serrated on its inner edge. A large muscular or glandular body runs from the base of this division to the proximal extremity of the first articulation of the last division of the antennæ. This last division is composed of three articulations; the first of these is the thickest, and has a deep notch on its inner edge, near to the basal extremity; this articulation is also armed on the same edge, but anterior to the notch, with a number of spines. This curious mechanism seems to be adapted to prehension, but whether it is used for this purpose or not is uncertain. The notch appears to be a kind of hinge or joint, and the spines or serrations on each side of it meet one another, so as apparently to make the hold more firm.

The left antennæ is very different in its appearance from the right; it is composed of twenty-one articulations, is slightly swollen at its base, but gradually tapers to its extremity.

The tubular portion of the eyes is situated immediately behind the rostrum; it is very large, rounded, and bulges at its extremity; it is apparently sessile, is always directed downwards, and the colour is a beautiful dark brown, with a shade of purple. A circular space at the extremity is colourless, and sparkles brilliantly.

The foot-jaws, ten in number, are very similar to those of the *Cetochilus*. The first is double both branches, arising from one common pedicle, composed of two joints; the external division is largest, and the extremity of the second is armed with two rounded scales, the edges of which are armed with a row of long fringed spines; the internal division is composed of two joints, which are much more slender than those of the external, the extremity of the last being also armed with a series of long and fringed spines or setæ. The second pair of foot-jaws are composed

of a peduncle, consisting of two joints, two quadrate scales arising from the extremity of the distal; long spines which are fringed on either side arise from the extremities of each of these. The third pair of foot-jaws are very similar in their appearance to those of *Cetochilus*. Each of them consists of a large flattened scale-looking body, having a number of projections from its extremity and from either side; each of these projections are armed with long and thickly fringed setæ. The fourth foot-jaw consists also of one piece only which is convex on its outer edge, and concave on its inner, which is armed with very long fringed setæ.

The fifth is small and composed of two divisions, the internal of which consists of one joint only; the external is six-jointed; each of these are armed with spines on the inner edge.

The true ambulatory legs are ten in number, there being five pairs. These legs are all similar in their structure to one another. They consist of two divisions, arising from a common pedicle, which consists of two segments. The external division is composed of four segments, the last of which is ovoid, and is serrated on each side, from each of which serrations there arises a strong spine of moderate length, those from the external edge being shortest; the internal division consists of two segments which are also spined; all of these have more of the characters of spines than setæ, and are totally free of any fringe.

The abdomen is five-jointed, the last segment bearing two oblong quadrate scales, from the extremities of each of which arise five long and very thickly fringed setæ.

## PLATE IV.\*

- Fig. 1. One of the third pair of foot-jaws of *Irenæus splendidus*.  
 ... 2. Tabular portion of eye of same.  
 ... 3. Left antennæ.  
 ... 4. Right antennæ.  
 ... 5. Fourth pair of foot-jaws.  
 ... 6. Fifth pair of foot-jaws.  
 ... 7. Second pair of foot-jaws.  
 ... 8. Caudal segment.  
 ... 9. External organs of generation of male.

## PLATE VI.

- Fig. 1. Side view of *Cetochilus septentrionalis*.  
 ... 2. Dorsal view of same.  
 ... 3. First or anterior pair of antennæ.  
 ... 4. Second do.  
 ... 5. Second pair of foot-jaws.  
 ... 6. First do.  
 ... 7. Third do.  
 ... 8. Tail or caudal segment.  
 ... 9. Fourth pair of foot-jaws.  
 ... 10. Fifth pair of do.  
 ... 11. Second pair of ambulatory legs.  
 ... 12. One of the first pair of foot-jaws of *Irenæus splendidus*.  
 ... 13. *Irenæus splendidus*.  
 ... 14. Natural size do.  
 ... 15. Dorsal view do.  
 ... 16. One of the second pair of foot-jaws.

\* Description of Plate IV. continued from p. 104.

Fig. 1.

