

1884. BLANC, HENRI.

Contribution à l'histoire naturelle des Asellotes hétéropodes. Observations faites sur la *Tanais Oerstedii*, Krøyer. Avec les Planches X, XI et XII. Recueil zoologique Suisse (Dr Hermann Fol). Tome premier. No. 2. Sorti de presse le 28 février 1884. Genève-Bale. pp. 189–258.

Dr. Blanc agrees with Lilljeborg in referring the two species *Tanais rhynchites* and *Tanais balticus* of Fr. Müller, as respectively male and female forms, to the older *Tanais oerstedii*, Krøyer. The description which he proceeds to give bears on the disputed question, whether the Tanaidæ should be reckoned among the Amphipoda. In *Tanais oerstedii*, he says, the heart extends along the back from the last thoracic ring to the hinder rim of the cephalothorax. In this species, as in *Tanais savignii*, it possesses only two pairs of ostioles (venous orifices), whereas for *Tanais dubius?* Müller reckons three pairs, and Delage only one pair for *Tanais vittatus*. The ostioles are situated in the second and third free segments of the pereon. Besides these, the heart has five arteries, the cephalic artery and two abdominal arteries described by Delage, and in addition two thoracic arteries as large as the cephalic, arising, opposite one another, from the ventral part of the heart, below the two ostioles in the second free thoracic segment, and running a ventral course to the first thoracic feet.

In conclusion Professor Blanc says, "the characters which bring the Tanaidæ near to the Isopods are more numerous [than those which connect them with the Amphipoda and other groups]. The general form of the body is that of the Isopods. The body is flattened, the sixth and seventh segments of the pleon are, as in the Isopods, soldered together and form a caudal lamella, while in the Amphipods these two segments are distinct. The number of ganglia in the ventral chain of *Tanais Oerstedii* is the same as in certain Isopods, as *Cymothoa*, *Ligidium*; in the Amphipods the number is less considerable, the abdominal ganglia being reduced to four or three. The five pairs of abdominal feet, as in *Anceus*, are all alike; since they play a part in the act of respiration, they are not the biramous feet of Amphipods. In the latter group, the urinary secretion is situated in the antennary glands and the glandular appendages of the rectum [of the midgut, according to P. Mayer]; these glands are wanting in the Tanaidæ as in the Isopods, in which the urinary secretion is situated in the fatty body. Lastly, the absence of the seventh pair of feet in the embryos of the Tanaidæ and the Isopoda is an important character which distinguishes these Crustacea from the Amphipoda, of which the embryos are born with the same number of appendages as they have when adult."

One point in this argument loses some of its force from the fact that the sixth and seventh abdominal segments are occasionally soldered among the Amphipoda, in the tribe Hyperina. The absence of lateral arteries was considered by Delage to show a nearer connection of the Tanaidæ with the Amphipoda (*Gammarina*) than with the Isopoda, but this point of resemblance can no longer be relied on since Professor Blanc's discovery of the lateral arteries in *Tanais oerstedii*, nor yet on the other hand can the presence of these arteries be relied on as any special link between the Tanaidæ and Isopoda, since Claus finds lateral arteries in many genera of the Amphipoda (*Hyperina*).

Gerstaecker, 1886, is by no means convinced by Professor Blanc's arguments, and, as will be seen, retains his conviction that the Tanaidæ ought to be classed among the Amphipoda.