



WILSON
COLLECTION

Notice sur un genre nouveau de la tribu des
Caligiens (genre **KROYERIA** van Beneden)

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Following the two last notices on new genera of crustacea, I have the honor to present the result of some observations on a third genus, equally new and no less remarkable than the preceding on account of its curious conformation. This will be followed by researches on two other genera of the same class of aquatic animals, already so rich in extraordinary forms.

All these crustacea came from fish taken by the fishermen of Ostend not far from our coast, and ought therefore to be registered in the forms of Belgium. We dedicate this new Caligid to a learned and modest naturalist of the north, M. Henrik Krøyer, who has published in his Journal the best work that science possesses on these animals. This work is all the more remarkable for its descriptive zoology and anatomical details. Therefore we designate this genus

KROYERIA van Beneden.

Characters. Cephalic shield wider than long, armed behind with two stout spines; thorax formed of 4 segments of the same width; 4 pairs of biramose legs of the same length; the first pair of mouth parts with pinchers, the third extraordinarily developed; abdomen long and narrow, scarcely wider than the thorax, made up of many segments in the male, all one piece in the female; a double caudal appendage armed with setiferous filaments like those on the legs; the eyes fused on the midline.

KROYERIA LINEATA n. sp.

Female 8 mm. long without the egg sacs, which are 7 mm. long; 0.50 mm. wide. The male is a little smaller than the female. Each segment of the thorax carries below, at the base of each leg, a long spine on the 3 posterior segments, a short one on the anterior segment. The color of the skin is a dirty yellow; the tissues are semitransparent so that the principal organs in the abdomen can be seen.

Kroyeria lineata lives between the gill filaments of **Galeus canis**; it is strongly attached to the

filaments by its claws, and it requires some effort to detach it. I have found as many as 20 on a single gill; they are found on the fish in the middle of the summer, in Oct. and Dec., and probably stay there the entire year. In the month of May some of the females are found with egg tubes, later they become more numerous. The males are relatively few in number; for a time I had but a single one in my possession.

Female. Body elongate as in Clavella; it is even less wide and more linear. The animal is never straight, but always a little curved to one side and ventrally. The whole body is a dirty yellow, sometimes a little darker and passing into a brown; a little paler in front. On looking at it under a magnifying glass one sees along the abdomen stripes of bright red invisible to the naked eye.

The body is divided into head, thorax, abdomen and tail, perfectly separated from one another. The cephalic carapace presents from below a very irregular form. Toward the center one sees a joint in the form of a V, and between the two branches in front the eyes united in one mass. This shield shows posteriorly two, deep sinuses, with a long, straight and stout spine in the base of each, directed toward the tail. On the sides in front as well as behind the shield is angular, a little larger anteriorly.

As in all these parasites the first thoracic segment is fused with the head. The antennae and the first and third pairs of mouth parts are longer than the carapace, and can be seen distinctly when the animal is lying on its ventral surface. The thorax has dorsally 3 segments in the form of a shield, about equally developed. Ventrally 4 thoracic segments can be seen, but the first is beneath the carapace. Each segment carries its own pair of biramous legs; at the base of each leg is a stout spine, except on the first segment, as shown in fig. 8.

The abdomen is extraordinarily elongated, but only a trifle wider than the thorax. It is all one piece and shows no segmentation. The intestine and ovaries can be seen through the body wall. The abdomen carries at its posterior extremity two very short appendages, biramous like the legs but without spines; it is difficult to distinguish their shape. This region ceases abruptly immediately behind these appendages (fig. 7).

The caudal region is proportionally very short

straight, linear, and terminated by a double appendage half as long as the tail and armed at the tip with plumose setae (fig. 2'). The egg tubes are straight and uniseriate, 14 to 15 eggs in each (fig. 1).

Male. Smaller than the female and living beside her on the gill filaments; it has the same shape, shows the same appendages, the same cephalic shield and the same thoracic appendages. But the abdomen is not as long and is straighter, and instead of being formed of one piece, the abdomen of the male shows distinct segments, well separated from one another and from the segments of the thorax. There are 4 segments diminishing in size from in front backwards, the last one being the narrowest.

The entire body of the male is a little more transparent, corresponding to the greater delicacy of the tissues. One can see plainly in the first abdominal segment the two testicles, elongate and rounded, of about the same size, placed the one a little below the other. It is also at the beginning of this segment that one sees in the male the end of the stomach and the beginning of the intestine, which has no convolutions. The two appendages which terminate the caudal region and which carry the spines are more elongate in the male than in the female.

The antennae are situated in front and a little below; they are sometimes couchant; each is made up of 4 or 5 joints, armed with stout and recurved spines (fig. 4, a). Immediately behind the antennae is a pair of mouth parts (second antennae) of peculiar shape; the last joint is formed into pinchers like the first pair of legs of crabs and shrimps (fig. 4, b). Another pair of appendages, smaller and more simple is situated behind the preceding. It is as it were on the base of the second maxillipeds; it is formed of 4 joints, of which the last is small and flattened and the penultimate joint is toothed (fig. 4, c).

The principal maxillipeds are formed of three joints at least, the penultimate one long and stout, the last one curved into a claw. They are very strong and in these parasites the chief organs of adherence. Then follow 4 pairs of legs of the ordinary shape, the terminal joints carrying plumose setae; these feet are all about the same size.

Another pair of appendages, smaller and more simple, is situated behind the preceding at the end of the abdomen. It is of excessive smallness and can

be seen only under a magnification of 300 diameters. The abdomen covers them and their form is very variable, or rather they present a very different aspect because it is necessary to exert strong pressure to see them. They are biramous, rudimentary and without setae. Below each segment which carries biramous feet are two stout spines, of which the first pair is the least developed; on the last joint there are two tubercles only.

The mouth tube shows, in the interior 2 solid movable pieces toothed on the inner margin, like the point of a pair of dissection forceps. We do not find any differences in the appendages of the sexes.

The embryos have the ordinary form and characters; on hatching the body is oval and carries 3 pairs of setiferous appendages of the same length and size. The embryos we studied were alive. This parasite belongs evidently to the Caligidae, and by the characters of the 4th pair of feet it is close to the genera *Trebius* and *Nogagus*.

The first genus (*Trebius*) is characterized by 3 distinct joints in the thorax, while there are 4 in *Nogagus*. In *Krøyeria* 4 can be seen on the ventral surface, but dorsally the first one is united with the head. Besides *Trebius* and *Nogagus* differ from *Krøyeria* in many important respects, as one can see from the description. The abdomen in *Krøyeria* is many times longer than the thorax and head, while it is very short in *Trebius* and *Nogagus*. The first pair of mouth parts is transformed into pinchers which do not exist in the others. The antennae are formed of 4 setiferous joints, while the other genera have only 2. In this character of the antennae alone our *Krøyeria* can be distinguished from all other Caligids. Finally the appearance of this genus is so different that on approaching it one is compelled to weigh the value of the characters possessed by the divers appendages. We shall place in the tribe of Caligidae made known by Milne Edwards 2 more genera, *Sciaenophilus* and *Krøyeria*, which raises the number of genera to six.

