

Note sur un nouveau genre de crustacé parasite
(PAGODINA). by P. J. van Beneden.
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We have made known successively many parasitic crustacea; to these new diverse generic types we add still another which we have observed on two of our plagiostomous fishes, and which we designate as

PAGODINA ROBUSTA van Beneden.

CHARACTERS. Body of the female of oval form made up of joints not separated one from the other, covering like a shield all the upper part. These joints or segments have the appearance of large scales. The head, thorax and abdomen are distinct as well as the caudal region. There is one pair of setiferous and many segmented antennae inserted on the ventral face of the cephalic segment; 3 pairs of mouth parts ending in claws, of which the last pair is long and very stout. The terminal joint of this last pair reaches the 2nd thoracic segment. There are 4 pairs of thoracic appendages, the 3 last ones just alike and biramose and setiferous. The abdomen ends in a pair of tiny appendages, and there are 3 segments in the caudal region. The entire skin is of a yellowish color and very solid especially in the upper part of the body.

This crustacean is found on the gills of **Carcharias glaucus** and **Galeus canis**. We have found only a single specimen on a dozen of the **Galeus**, while one **Carcharias** yielded 3 females and 2 males. Total length of the female 5 mm.

MALE. The male is much smaller than the female and the body is more elongate and straighter. It is made up like the female of many segments, which give this animal a resemblance to certain Isopods. The head is the largest segment, oval in form, somewhat arched dorsally, and not separated from the thorax. There are only 3 distinct thoracic segments, but the anterior one is atrophied and concealed beneath the cephalic segment; its presence is shown by the 4 pairs of feet. The 3 thoracic segments are the same size, large, long and covering the superior and lateral parts of the body. The abdominal segment is longer than the thoracic ones and resembles in shape the head.

The body then terminates in 4 narrow segments, constituting the tail. At the end are 2 appendages completely separated and each armed at the tip with 3 plumose setae. The appendages of the male are similar to those of the female with the exception of the antennae, which have a smaller number of joints in the female. The joints in the center are a little longer than wide, the last two are more elongated.

FEMALE. Body oval, very large towards the center and covered by a very thick tegumentary shield, especially in the upper part. The head is perfectly separated from the thorax and consists of an oval segment lightly arched dorsally. It resembles in form and relative size the head of *Gryllotalpa*. The thorax is formed superiorly of 3 segments, the fourth or anterior one concealed beneath the cephalic segment. These segments cover the superior part of the body like the cuirass of an armadillo, and are very large.

Beneath the body is much softer and only at the base of the biramose appendages do the segments present any consistence. These biramose appendages cover the inferior face of the body and seem to serve as much for protection as for locomotion. The abdominal segment is unique and a little smaller than the preceding one. Four segments terminate the body behind and constitute the caudal region. The 3 last are very small and close together, the last one carries 2 short appendages.

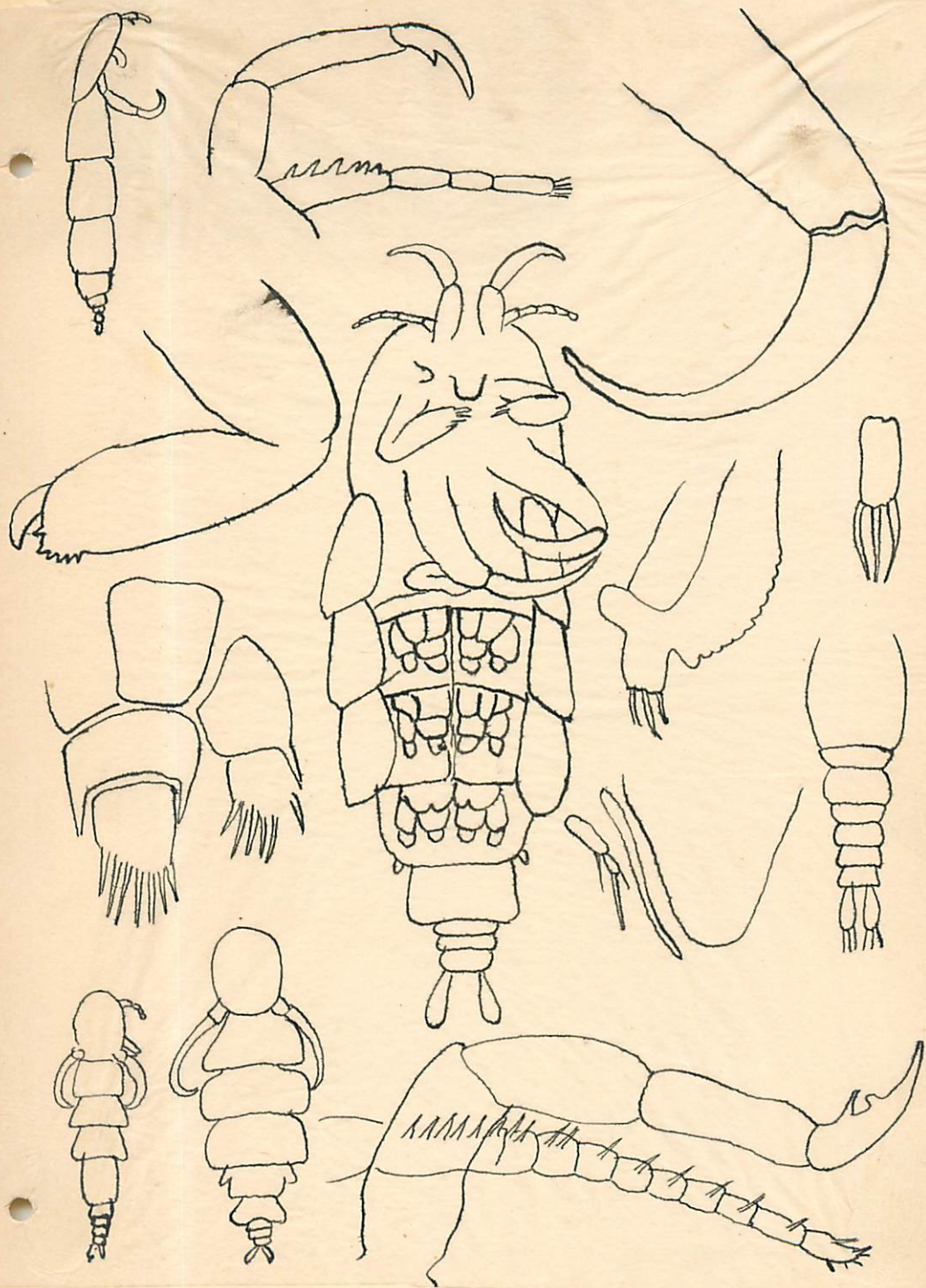
The antennae are well developed, formed of many joints not separated from one another, especially towards the middle. The basal joints are stouter than the others and the last joint is the longest. All the joints carry short setae resembling spines. There are 3 pairs of distinct mouth parts, the first situated at the base of the antennae a little in advance of the mouth. The basal joint is the stoutest the middle one is a little longer, while the terminal one is lightly curved and shows two teeth on its concave margin. The second pair of mouth parts is very stout; all the joints are short and stout; the terminal joint carries a claw at the end, at the base of which is a little knob covered with teeth, something like a cockscomb. The third pair is the principal pair; the two terminal pieces are very long, especially the last, which is in the shape of an enormous claw.

There are 4 pairs of legs, the anterior pair small and mostly covered by the large maxillipeds; they differ completely from the following pairs; they are composed of a large principal piece, with its external margin sharp and toothed like a saw, of a tubercle armed with 3 claws, and of another tubercle directed sidewise from the midline. The other three pairs are exactly alike; there is in front a sort of lamina which is followed by a large almost square piece which carries two digits, the inner one stouter than the outer. Each digit is formed of two joints, placed end to end; the last which is the smallest carries 6 claws, while the other carries 1 or 2 spines.

These appendages are easily seen on the ventral surface and move forward and backward in swimming. The abdominal appendages and those of the tail are formed of only a single joint; the latter are a little longer than the former.

The mouth is in the form of a funnel, the mandibles can be readily seen, the end terminating like the point of a pair of dissecting forceps. At the side are two pairs of appendages much smaller than the mandibles and terminating in flexible hairs, the palps. This *Pagodina* differs completely in its appearance from all other parasitic crustacea. The body is always regularly formed and resembles an ~~isopod more than one of the Siphonostoma and Ergasilus~~ Isopod more than one of the Siphonostoma. It is most closely related to *Dichelestium* and *Ergasilus*; it has 3 pairs of biramous feet, very distinct, the anterior pair not suited for swimming and differing entirely from the others in form. The large head, the mouth parts and the antennae differentiate the *Pagodinas* from all known genera. It should be placed between the *Ergasilidae* and *Dichelestiidae*.

Tom. XX, 1^{re} part. page 484



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