

Un Nouveau Genre

de

Crustacé lernéen,

Enterocola fulgens.

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COLLECTION
WILSON

The crustacea are a remarkable group: some decapod Brachyura claim the hospitality of mussels, oysters or jambouneaux, and, under the name of Pinnotheres, live in harmony in the same dwelling, giving these blind mollusks, say the ancients, the benefit of their numerous eyes and pedicles.

Other decapods, the Pagurians or Hermit Crabs, without demanding the hospitality of a living animal, establish themselves in the abandoned shell of a dead Buccinus or Turbo, and install themselves like the true and legitimate proprietor.

Many Isopods, disdaining the monotonous life of a crustaceau, crawling with difficulty on their 7 pairs of legs, choose a fast swimming fish, stick themselves solidly on its skin, and without demanding of it anything but transportation traverse in their journey the Atlantic or the North Sea, and voyage with celerity and without fatigue from the equator to the pole.

The Cirripeds, a true crustaceaus, especially the barnacles, establish themselves in differently on stones, piles, mussels or crabs, while the barnacles fasten to the keel of ships, and cover all the sub-

merged portion - Cirripeds are also found on sharks, dolphins and whales, and on the carapace of the turtles and frequently protect their transporters. (138)

Finally the Siphonostoma demand not only a passage but sustenance as well, feeding on the blood of their victim, but with knavish cruelty keeping it alive in their own interests. These are called crustaceans, lerneans, and inhabit the gill cavity of fish.

I have the honor to present a new genus of this group today, but instead of living on a fish it occupies the first compartment of a compound tunicate, which it fills entirely, lying in wait for its food and passing its life in taking solid and gaseous nourishment and reproducing its kind. Since this lernean has no further use for its appendages than to fasten its body in place: since it lives in obscurity: since its role consists in producing out of danger, the eggs which are to perpetuate its species - we shall not be surprised that it differs notably from its congeners, and that it is difficult to determine its affinities.

While this was being written, we received that number of Troschel's Archives which contains Leuckart's

"Carcinology" (1859. p. 252). He found in the branchial and cloacal cavities of *Phallusia mamillaris*, amongst other parasites, an extremely curious lernean, already known to Costa, at least the genus, and which Leuckart calls *Notopterophorus veranyi* - (1839).

Krohn had observed the same lernean at Naples in different species of *Phallusia*, but did not mention it in his writings. This *Notopterophorus* is much like our species but differs in the prolongation of the wings which are carried on each thorax segt. and which give it its name.

On dredging, at some distance from our coasts, the rocky bottom of the ocean, the dredge usually comes up filled with huge oysters, spatangoids, and enormous corals, in the midst of which one finds rounded bodies of a yellowish-green color, the size of a russet apple, and resembling dried figs.

These are tunicates of the genus *Aplicium*, 2 species being common on our shores, *A. ficus* and *A. ficoides* (van Beneden).

Each consists of a tubular stem situated at the base of the colony, which gives rise to the successive

generations which constitute the "mollusk".

We described this fruit of the sea sometime ago but it was only by chance that we discovered the creatures which it harbors. On cutting a very thin section of the colony and examining it under the microscope, we saw a small sac filled with eggs, of a beautiful amar-
 inthine red, which we supposed belonged to the Aplidium. On separating some of the eggs with a needle we were (140) surprised to find a crustacean instead of a mollusk larva. We cut a 2nd., 3rd., and 4th section and all was explained: the egg-sacs were fastened to an elongated body, which on isolation proved to be a lernean. We have, then, a parasitic crustacean in the respiratory cavity of Aplidium, and as many as 20 specimens were taken from a single colony.

20 years ago I found the drawing of a crustacean in a portfolio, labelled "Troveé sur un Aplidium". But as the egg-tubes were lacking, its true nature, crustacean or Acarid, remained unknown. This problem is solved today. This lernean is new to science: by reason of the cavity it inhabits and the color of its eggs we have called it *Enterocola fulgens*.

Enterocola fulgens, Van Beneden

Body of ♀ elongated as in certain acarids: very regular and almost the same diameter thru its whole length. Head distinct and with a patch of red pigment in the center of the forehead: mouth-parts folded during repose so that no trace of them can be seen in dorsal view. Thorax of 4 segts, each carrying a pair of very short and bifurcate appendages. Abdomen small, unsegmented, and terminating posteriorly in 2 short lobules without teeth or setae. Egg-tubes as large as the body and covered at their base by a protective appendage.

Male unknown - In the branchial cavity of *Ap-
lidium*.

Head perfectly distinct from the thorax: form triangular and lightly curved beneath: toward the anterior border, on the mid-line, is a spot of red eye-pigment. But neither on the side nor behind can one see any particular organ either to anchor the parasite, or to give warning in case of danger. One would say that it has no connection with the external world; that it is condemned always to the immobility of the patron it inhabits: and finally that it has no other part to play in the

economy of nature, than the propagation of the species. The head carries, however, some appendages, but they are reduced to such a degree of simplicity, and are so primitive in their structure that, in order to recognize them, one must have had much experience elsewhere.

On the side of the frontal segment is a foliaceous appendage, large at the base, pointed at the tip made up of 2 scarcely distinct joints - the antennae. It has neither filaments, setae nor spines, and is lodged in a lateral excavation of the frontal segment. The second appendages are lodged at the base of the first pair and seem to be part of one and the same organ - We find in fact the most complete resemblance between these appendages united and the 4th thoracic feet. This second pair is 1-jointed, large, and carrying at the distal end 2 or 3 short membranous plates. These are the 1st maxillae. Second pair situated a little below and inside of the first, but so rudimentary as scarcely to be distinguished. It is not easy to recognize the mouth-parts because of the small size of the crustacean and still more because of the lack of transparency of the carapace.

3rd appendages correspond evidently with those we have described elsewhere as the 3rd. pair of "pieds-machoires", and are much larger than any of the others. The 2 appendages, approaching each other make a pair of pinchers. They are 2-jointed, the basal one strongly curved while the terminal one has two teeth at the end. There is a rudimentary palp in front of them.

We see no organs of prehension (adhesion) to anchor the parasite - At a pinch this last pair might render some service to *Enterocola*. Thorax 4-jointed: joints just alike, each carrying a pair of legs more simple even than the mouth-parts - From the thorax and from the lack of development of the appendages, *Enterocola* resembles the Tardigrades.

The four pairs of legs are alike in the no. of joints, and their size - short, biramose, the exopod terminating in a hook like the antennae; the endopod rounded, elongated and ending in 2 hooks membranous. Each pair of thorax appendages is exactly like the first 2 pairs of cephalic appendages, and the antennae, interpreted in this manner, would be the first pair of "pieds-

machoires" -

There is also on either side, covering the base of the egg-tubes and protecting the eggs as they emerge into the tubes, a membranous plate. This is found in many lerneans, but this is the only genus in which it can be seen in its role of a protective organ. Each egg-tube is as large as the entire body and carries 3 or 4 rows of eggs, 12 in a row. Eggs remarkable chiefly for their beautiful amarinthine color. This color is that the vitellus: it also appears in the ovaries which are situated in the thorax. Without the egg-tubes one would take the female for a young animal which had not shed its vitellus. This is one of the reasons why we have been so long in doubt as to the real nature of the animal, whose colored portrait was kept so long a time.

Affinities.

The diversity of form is so great among the Lerneans and their physiognomy is so grotesque that it is by no means rare to see natural affinities of genera fail upon a more careful examination. The present genus offers more difficulty. It is apparently a form which has been stopped during development, and yet the fully de-

veloped eggs in the females abdomen show that this is not the case.

Moreover in the general table of the Lerneans the classification is chiefly arranged with reference to the first embryonal stages, the larvae and the embryos, and we cannot tell with what genera Enterocola ought to correspond in its earlier stages.

If we remember how much still remains to be discovered with regard to the Lerneans of our shores, we shall not have the courage to form a general statement, but will restrain ourselves to noting the strong affinities which this new genus presents with Endactylina from the gills of Squatinus "ange" and Spinax acanthias:

Both these genera have very regular bodies like an isopod or even an acarid, showing a cephalic segt. of triangular form, armed in front with a pair of antennae and 3 pairs of mouth-parts - Both have a thorax composed of 4 similar segts, carrying soft appendages, scarcely articulate, bifid, and variously terminated. Both have a short "abdomen" with short egg-tubes (really the gen. segt), while the true abdomen terminates in 1-jointed anal laminae, without setae.

As we have decided to place *Endactylina* in the *Dichelestiidae*, *Enterocola* must go there also.

As we have decided to place *Endocorynia* in the

Cheloniidae, *Enterocela* must go there also.