

*jeffreysi* the gills are free and the pallial cavity almost undivided, in *Lyonsiella papyracea* the gills are united to the mantle and to each other, and are disposed as in *Lysonia* (Pl. II. fig. 9), except that the anal chamber is larger, ventrally as well as anteriorly.

But my astonishment was still greater when, on studying two specimens of the typical species *Lyonsiella abyssicola*, Sars (which were sent to the Challenger Office by Professor G. O. Sars), I ascertained that the smaller of the two specimens (about 2 mm. in length) exhibited the arrangement observed in *Lyonsiella jeffreysi*, and that the larger (about 4 mm. in length) was similar in this respect to *Lyonsiella papyracea* (compare Pl. II. figs. 8, 10, and Pl. III. figs. 1, 2).

From the very succinct description given by Sars, and from his figure (*loc. cit.*, Pl. III. fig. 42), one cannot make out whether the gills are free, as in *Lyonsiella jeffreysi*, or united to form a partition, as in *Lyonsiella papyracea*. As, except in the arrangement of the pallial "chambers," the structure of the two specimens of *Lyonsiella abyssicola* which I have studied is exactly similar, I shall here complete Sars' account by giving two figures (Pl. II. fig. 10, and Pl. III. fig. 2), and a short description of the larger specimen.

The mantle is formed as in the preceding species. The pallial commissure separating the pedal and branchial apertures is very delicate. As in *Lysonia*, there is a small, very short retractor muscle of the siphons at each side.

The fold surrounding the mouth is so disposed that one can observe a more marked separation between "lips" and "palps." In fact, it forms four lateral lobes corresponding to palps (Pl. III. fig. 2, *b* and *c*); an anterior pair, more developed, and a posterior pair (*c*), extending on each side of the foot (*d*).

The gill (*e* and *e'*) arises between the two lobes on each side. It extends from the anterior adductor to the division between the two posterior apertures (branchial, *g*, and anal, *p*). The two gills are situated almost in the same longitudinal plane (see Pl. II. fig. 10, *e*). Their outer plate (Pl. III. fig. 2, *e'*) is less developed than the inner one.

The two gills are joined together behind the foot. They are united to the mantle on each side and posteriorly, at the separation of the two siphons, by the membrane (*h*). Thus an "anal" chamber (Pl. II. fig. 10, *o*) is formed, dorsal to the partition made by the gills and the membrane (*h*).

As I have not been able to examine a larger number of specimens of the genus *Lyonsiella*, I can only suppose, from the four individuals studied, that the arrangement observed in the large specimen (described and figured) of *Lyonsiella abyssicola* does not exist in the young stage; and that certain species of the genus (*Lyonsiella jeffreysi*) always preserve the arrangement of the young stage, while others have two entirely separated pallial chambers in the adult stage.