

the extremity of a slight conical papilla in *Spirula peronii* (Pl. III. an.), whilst it is completely sessile in *Spirula reticulata* (Fig. R, viii). This anal opening has no filiform appendages, such as are found in other Dibranchiate Cephalopods. The intestine presents internally a longitudinal furrow bounded by two very distinct folds, as in all Cephalopods examined in this respect (Fig. O, i).<sup>1</sup>

The little *ink bag* is situated ventrally (Pl. III., ik.) in the bend formed by the intestine (Fig. R, iii); it opens into the intestine quite close to the anus.

#### IV. CIRCULATORY SYSTEM.

The heart is situated in the visceropericardial cavity towards the ventral aspect, in front of the spire of the shell and under the intestine and the kidneys (Pl. VI. fig. 8).

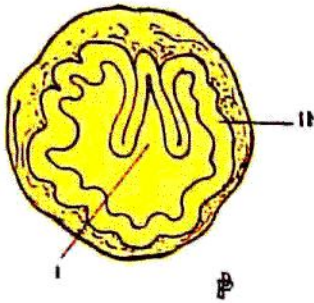


FIG. O.—Transverse section of the intestine of *Sepia*;  $\times 18$ . i, longitudinal furrow; ii, intestinal epithelium.

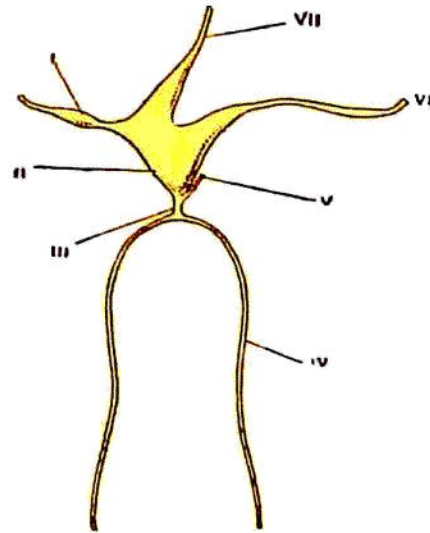


FIG. P.—Heart of *Spirula reticulata*, ventral view;  $\times 4$ . i, right auricle; ii, ventricle; iii, posterior aorta; iv, posterior pallial artery; v, recurrent (genital) artery; vi, left branchio-cardiac vessel (auricle); vii, anterior aorta.

It is (especially in the individual of *Spirula reticulata* examined) very flat dorso-ventrally and asymmetric (Fig. P); the ventricle is almost entirely placed at the right of the median line, while at the left is found only one prominence towards the branchio-cardiac vessel or auricle.

<sup>1</sup> *Ommatostrephes*, *Sepiola*, *Sepia*, *Octopus*, *Nautilus*. A similar furrow has been met with in other Molluscs, as in certain Rhipidoglossids (example, *Trochus*). But in the initial portions of the intestine of Molluscs there is a corresponding longitudinal cushion (typhlosolis): e.g., in all the Lamellibranchs examined from this point of view (*Anodonta*, *Anomia*, *Donax*, *Ostrea*), and the Gastropods, including the Pteropods (*Paludina*, *Helix*, *Auricula*, *Tritonia*, *Æolis*, *Actæon*, *Limacina*, *Olio*), and *Chiton* among the Amphineura. In all these animals, the intestine being much rolled up, it is difficult to determine the morphological position of this typhlosolis, but in the Cephalopods, where the intestine is only turned back and not twisted, we can see that the furrowed typhlosolis occupies the dorsal side, as is the case also for the organ of the same name known in the Oligochætæ. It is then probable that the dorsal ciliated furrow of the intestine of Neomeniidæ also corresponds to it.