

median and posterior infra-oesophageal ganglia (Pl. III. *Au.*; Pl. V. fig. 3, *Au.*). It is filled with a clear liquid and contains a great otolithic mass; the walls are of very great delicacy.

C. The *eye* is joined to the interior of the ocular chamber, in the first place by the sclerotic ligament (Pl. VI. fig. 13, *sc.lig.*), and in the second place by the fibres of the optic nerve traversing the perineural cartilage which bounds the posterior and superior sides of the orbit.

The great ocular sphere is thus completely separated from the ocular chamber in which it is enclosed, and which opens externally by the palpebral or "corneal" orifice (Pl. VI. fig. 13, *ap.*). It is really a pedunculated eye, enclosed in the sides of the head, as is the case in all the Dibranchiates. *Spirula* is therefore with regard to the eye a typical Cegopsid, contrary to the assertions of Gray<sup>1</sup> and Steenstrup.<sup>2</sup>

The palpebral opening is irregularly oval, angular inferiorly and in front; it measures one-tenth of an inch at its long diameter. The iris<sup>3</sup> has two concentric layers of deep brown pigment; the "pupillary" opening is relatively very small, and the centre of the great crystalline lens (rendered opaque by the action of the alcohol) entirely fills it.

### III. DIGESTIVE SYSTEM.

The mouth, situated in the middle of the oral disk, is surrounded by two lips, of which the exterior is the thickest (Pl. III., *l.e.*). The internal surface of the two lips is provided with compact longitudinal folds.

The *mandibles* have a horny aspect, a sharply-cutting margin, and a dark brown-black colour, as in the other Dibranchiates. From the middle of the floor of the buccal cavity, enclosed by the mandibles, arises a prominence almost entirely filling this cavity. A transverse dorsal depression divides this prominence into two masses, one anterior and the other posterior; the anterior one is soft and papillary, representing the tongue or so-called gustatory organ,<sup>4</sup> and the posterior one is the radula or odontophore. This last is divided by a rather deep longitudinal furrow into two lobes, the crests of which carry the lateral pointed and recurved teeth.<sup>5</sup>

The *salivary glands* consist of two pairs, as in the Cegopsids (for example, *Ommatostrephes*, Fig. L). The anterior glands are two little elongated glandular bodies, situated between the buccal mass and that part of the oesophagus which is found in front

<sup>1</sup> Gray, Catalogue of the Mollusca, p. 114.

<sup>2</sup> Steenstrup, *op. cit.*, p. 237.

<sup>3</sup> It is the fold formed before the true cornea, under the false external cornea.

<sup>4</sup> This "tongue" cannot be a sensorial organ, being in all the Cephalopods covered by a thick uninterrupted cuticle.

<sup>5</sup> Unfortunately, a satisfactory view of the radula cannot be given, the preparation having been spoiled in attempting to take out the lingual teeth; what was seen of it is represented, much magnified, in Pl. VI, fig. 7.