

## Family I. PNEUMONODERMATIDÆ.

The three genera which make up this family resemble each other very closely in their general internal organisation, since their principal zoological differential characters are external, taken from the buccal acetabuliferous appendages and the gills.<sup>1</sup> I think, therefore, that the best course will be to examine these three genera simultaneously rather than separately, in order to avoid numerous repetitions; I shall mention in each case, however, the points in which I have observed differences between *Dexiobranchæa*, *Spongiobranchæa*, and *Pneumonoderma*.

*The Head* in the Pneumonodermatidæ is somewhat elongated. It presents anteriorly the buccal opening, dorso-ventral in direction, and the two anterior or labial tentacles, situated on either side of it and dorsally rather than ventrally. These tentacles are more or less elongated; those of *Spongiobranchæa* are more elongated than in others. They are not the seat of a special sense but of general sensibility; their distal extremity encloses elongated nervous cells.

On the dorsal surface of the cephalic region, near the middle of its length, is a pair of posterior or nuchal tentacles, which are quite symmetrical but only slightly prominent. Each of them receives two cerebral nerves, each of which is swollen at its distal extremity within the tentacle, an arrangement which perhaps led Souleyet to believe that they are bifid.<sup>2</sup>

These tentacles are difficult to discover when retracted in preserved specimens, but are readily found from within owing to the presence of the nerves. We shall shortly see that these are the optic and olfactory nerves, and their distal enlargements are the rudimentary eye and the olfactory ganglion or rhinophore.

*The Foot* is similarly shaped in all three genera, as has been already described in the systematic portion of this Report. The plicated tubercle at the base of the posterior lobe is glandular in function. All the ventral surface of the foot is ciliated.

The visceral envelope, continuous with that of the head, has several kinds of sparse unicellular glands scattered all over it. The most considerable are aggregated in the middle line on the dorsal surface, where they form a depression known as the dorsal patch. A transverse section through this (Pl. IV. fig. 7) shows the presence of two kinds of glands—(1) the peripheral or lateral glands (*b*), which are very large cells; (2) the median glands (*c*), small in size and whose secretion is of a bright colour.

*The Digestive Tract.*—The anterior portion from the mouth, as far as the buccal mass, constitutes an evaginable proboscis of the acrembolic type. This has been figured in three genera in the systematic part of this Report; it is least developed in *Dexiobranchæa*.

On the anterior part of the retracted proboscis (posterior part when it is evaginated) are

<sup>1</sup> Compare the systematic Report on the Gymnosomata, Zool. Chall. Exp., part lviii. pp. 11–32.

<sup>2</sup> Voyage de la Bonite, Zoologie, t. ii. p. 256.