

influence of preservation in alcohol. I think that the colouring substance, by which the spongioblasts (if not all the cells of *Ianthella*) are coloured in the living state, is soluble in spirit, and might thus when dissolved have coloured the true horny substance also; for, while I found most of the fibres of a violet colour, and containing violet cells, I found also fibres whose cellular elements were of a deeper colour than usual, and that of the horny laminæ considerably paler.

*The Soft Parts.*—As to the anatomy of its soft parts, the species differs but little from *Aplysilla*, *Dendrilla*, and *Halisarca dujardini*. Both the surfaces of the sponge when examined with the naked eye show a great number of groups of openings, as represented on Pl. II. fig. 1, under a low magnifying power. These are the oscula, each being usually represented by four or five apertures. The parts of the membrane between them, when seen under the microscope, show themselves as usual to be provided with numerous minute pores. The water entering through these *pori dermales* reaches the cavities under the covering membrane, and passes from these latter by means of *pori camerales* into the flagellated chambers, in order to be expelled through a large mouth into exhalent canals, finishing with the oscula above mentioned. Thus each osculum, with its pores and its subdermal or inhalent cavities, flagellated chambers, and exhalent cavities, presents an independent whole, which may be compared with a state in a federal republic. The inhalent and exhalent canals are of very irregular outline; they may be very large and short, very narrow and long, &c.

The form of the flagellated chambers is also very variable. Its mathematical mean shape is expressed by the two flagellated chambers on Pl. II. fig. 5. But though such regular pouch-shaped flagellated chambers may be found without difficulty, the outlines of most others are quite irregular (comp. Pl. II. fig. 4). Sometimes they are cylindrical and elongated, sometimes irregularly roundish, often provided with secondary ramifications; their size is inconstant.

Now so far as the histological structure of the present species is concerned, it is constant to the general type prevailing among the Keratosa, presenting, however, a few new peculiarities. The ectodermic pavement-epithelium could be discerned only on the surfaces of the inhalent canal system. My endeavours to make it out on the external surfaces were unsuccessful, owing probably both to the state of preservation and to the fact that the external surfaces above mentioned are covered by a thin cuticle such as Schulze<sup>1</sup> has described in *Cacospongia cavernosa*. No distinction can be detected between the ectodermic and endodermic pavement-cells. In all cases they are flat, irregularly polygonal, with a comparatively small nucleus, and showing the protoplasmic granules only around the nucleus. As to other representatives of the endoderm, viz., flagellated cells, they seem to agree as regards their form with those of *Aplysilla*,<sup>2</sup> but it must be noticed that the flagellated cells are very sensitive to every method of preservation,

<sup>1</sup> *Zeitschr. f. wiss. Zool.*, Bd. xxxii. p. 654.

<sup>2</sup> *Ibid.*, Bd. xxx., pl. xxiii. fig. 26.