

surface agree so closely with Hyatt's *Carteriospongia radiata*, var. *dulsiana*, that I have but to refer the reader to the description above mentioned, and wish only to elucidate the anatomical and histological characters of the internal organisation of this interesting species. So far as these latter are concerned, some details have been already given (pp. 17, 18), and it now remains to expose them coherently. Through the pores, inconspicuous to the naked eye and scattered on both surfaces of the animal, the water reaches, as usual, more or less developed subdermal cavities; but these latter, instead of ramifying by forming smaller and more numerous canals (as is the case in *Aplysina* and to a certain degree also in *Euspongia* and other allied genera), in most cases communicate immediately with the flagellated chambers; the dendroid character of these ramifications is here quite lost. The flagellated chambers (all larger than those of true Spongidae, but still of hemispherical shape) having received the water by means of numerous pores in their walls, expel it, not by means of special canaliculi as is the case in the true Spongidae, but through a large opening like that in the flagellated chambers of Spongelidae. The water having left the flagellated chambers enters large exhalent lacunæ of variable outline, and many of these latter uniting together throw it out through the oscula—in the Challenger specimens all on the *internal* surface; in some funnel-shaped specimens in the British Museum, on the contrary, all on the *external* surface. It is an interesting fact that when the sponges are of a leaf-like form, the exhalent orifices are always more or less concentrated on one surface only. In *Ianthella* they are indeed to be found on both surfaces, but still their distribution is not equal—they are numerous on one surface, but very scanty on the other. The properties of the internal organisation are thus rather deviating from those of typical Spongidae; again, as to the histological structure of the form in question, it differs also from that of true Spongidae, its ground-mass being almost entirely devoid of granules in the neighbourhood of the flagellated chambers. To the conjectural systematic significance of these differences many pages have already been devoted; we have nevertheless come to the conclusion that at last, provisionally, the genus must be still grouped in the family Spongidae, owing to the presence of those enigmatic "Stränge" of cells which have been recently described by F. E. Schulze, and which, in spite of a remark of this naturalist as to their entire absence in some individuals of *Euspongia* or *Cacospongia*, I am yet inclined to regard as very characteristic of the whole family. In *all* the Spongidae I have had the opportunity of examining I found them, and if absent in one region of the body they are still to be found in other parts of it.

One of the specimens examined proved to be full of sperm-balls, one of which in a ripe state is represented on Pl. V. fig. 9. I was able to discern also the preceding stages of their development, but I abstain from their description here, since I shall return to the matter when describing the spermospores of *Verongia*.

*Colour*.—Pale dirty yellowish.

*Habitat*.—Off Wednesday Island, Cape York, September 8, 1874; shallow water.