

specimens which came into my hands consisted simply of the broken-off excurrent tube—the same part of the sponge that served for Mr. Ridley's description of the species. On similar fragments of an allied species (from the description I can hardly suppose it to be the same) Marshall's account of *Agilardiella radiata* was based. After making both longitudinal and transverse sections through the tube, I searched diligently in the prepared slices for flagellated chambers, and though at first surprised at not finding any in a specimen with evidently well-preserved tissues, I finally concluded that the tube was not the whole sponge, and that the part containing the choanosome was missing. Under this impression the figure of one of the cloacal tubes (Pl. XVIII. fig. 2) was represented upside down, the conical disc having been regarded as a part of the cortex torn away from the sponge-body, while as we now know it really forms the free distal termination of the excurrent tube. All doubts as to the existence of a sponge-body were subsequently set at rest by a fragmentary specimen which I long afterwards received, and which is represented on Pl. XVIII. fig. 3. Finally, when this Report was well-nigh concluded, a collection of almost perfect specimens came into my hands, showing not only the excurrent tube, but an incurrent conduit as well, a totally new and unexpected feature, and possibly unique amongst the sponges as a group. Unfortunately no specimen I have yet seen is complete from the beginning of the incurrent to the end of the excurrent tube; in all, the excurrent tubes are broken off some distance apparently from the end; on the other hand, numerous fragments of excurrent canals occur terminated by the conical disc, so that in fact all parts of the sponge are known, and thus we are enabled to construct the restoration shown in Pl. XLI. fig. 2.

A median longitudinal section of the sponge passing through both excurrent and incurrent tubes reveals the following structure (Pl. XLI. fig. 3):—In the sponge-body a central yellowish-grey opaque choanosome, surrounded by a translucent bluish-grey ectosome or cortex. In the centre of the choanosome is a dense white spicular nucleus from which spicular sheaves radiate towards the cortex and to both tubes; at the base of the incurrent conduit they stop short, but those proceeding to the excurrent tube are continued into it, passing up its centre and along its sides to constitute the cloacal skeleton. The cortex is produced at each pole to form the outer wall of each tube. The excurrent canals of the excurrent tube can be traced into the choanosome of the sponge, where they ramify in the usual manner; the single canal of the incurrent tube is subdivided where it reaches the cortex into four large branches, which enter the cortex; these are visible not only in sections, both longitudinal and transverse, but they can be traced like blue veins beneath the skin in whole specimens (Pl. XLI. fig. 2); after proceeding some short distance they each bifurcate, and the diverging canals so produced again bifurcate, and finally subdivide into branches too small to be traced by a simple lens. Subsidiary canals are also given off above and below the main bifurcations.

An examination of the superficial layer of the cortex failed to reveal the presence of