

unchanged character. The broadening of the flattened ridges continues till each conule with its ridges becomes a wide polygonal plate, with denticulated or crenate margins, and the interconular spaces are reduced to narrow crevices between them. The extension of the conule in this fashion may proceed till the lobes of the marginal crenations fuse with those of adjacent conular plates, reducing the intervening crevices to a linear series of minute canals. With the final extension of the conule the scar-like appearance of the surface vanishes.

These changes in the characters of the conules are related partly to the gemmation of the sponge, partly to the position of the oscule. Near the oscule, and I may add near the base of the sponge, the conules are usually of the plate-like form, possibly because in these regions there is a minimum of instreaming water, owing to fewer flagellated chambers occurring in their vicinity. Large pore-sieves are not required in these positions, and the conules enlarge for support and protection. The connection with gemmation is as follows:—The buds are first protruded at the ends of the conules, upon which they are at first sessile, but subsequently extended on the end of a stalk; they then drop off and leave a flat scar behind, from the middle of which is sometimes produced a short spicular style. The extension of the scar over the radiating ridges of the conule may be due to the base of the stalk being carried away by the bud, and such is, I think, the case in many instances; in others it would appear due to the appearance of fresh buds from the sides of the conule after the first have been formed and liberated. Several buds, mostly measuring about 1.5 by 0.9 mm. in length and breadth, are still adherent to many of the conules near the base of the sponge. Some of these were examined in serial sections, but in none was a trace of a flagellated chamber found. They are solid throughout, and present no other structure than is to be found in the outer layer of the cortex. In form they are generally oval, but produced at the distal end into tent-like projections, into which the strongyloxeas of the interior project. Beneath an investing epithelial layer follows a single layer of cells, each containing a chiaster like that of the adult sponge; this is succeeded by a tissue composed in varying proportions of oval granule-cells and fusiform fibrillated cells. Near the exterior the granule-cells predominate, almost to the exclusion of the fibrillated cells; in the interior the fibrillated cells, the granule-cells there occurring only sparingly scattered through the fibrous tissue. The granule-cells are about 0.012 to 0.0158 mm. in breadth by 0.0198 mm. in length; they consist of spherical, deeply staining, homogeneous granules, about 0.0025 mm. in diameter. Spherasters are absent, and the strongyloxeas present no evidence of a triæne derivation.

The specimen from Samboangan is free, with a rounded base, 31 to 28 mm. in diameter by 31 mm. in height; the summit is raised into a rounded conical eminence, formed of closely apposed lozenge-shaped conular plates, which conceal the oscule (Pl. XLIV. figs. 1, 3). The texture is much firmer than that of the preceding specimen.