one another by overlapping, some on the contrary join by a true articulation, the edge of one being received between thickened outgrowths from the upper and under surfaces of its opponent (Pl. XXXII. fig. 19).

Though the rhabdome usually preserves its spicular character, yet there are instances in which it shares the fate of the cladi, either growing out into an expanded plate, and then exchanging the usual position normal to the surface for one of parallelism with it; or assuming other irregular forms and positions, as in fig. 18, where it has become bent up into the same plane as the disc, and curved and thickened to form what appears to be a small poral tube.

It is then by the adaptation of the cladomes to one another, and to the pores, that their sinuous outlines may be explained, and not on the assumption that they are passing into true desmas of the interior skeleton. Yet it is to be especially observed that the discotriænes differ from true spicules in much the same way as the desmas of the interior; at least this is true of the cladome, but not usually of the rhabdome. The axial rods of the cladi of the triæne spicule from which they arise cease to direct the formation of the cladome after a very early stage, just as the axial rods of the desma cease to influence the growth of the epactines; the cladomes then exhibit subsequently just the same power of adaptability as the desma, even to articulating together in a somewhat similar fashion.

Discodermia ornata, n. sp. (Pl. XXXI. figs. 1–6).

Sponge (Pl. XXXI. fig. 1).—Vase-shaped, with a short stout pedicel, expanding to an attached incrusting base; margins of the cup thin, rounded. The outer surface of the skeleton presents the open circular mouths of incurrent canals, irregularly dispersed, and shallow tubular grooves, which wander from the mouth of one incurrent canal to that of another, forming a superficial network; these grooves are the exposed subdermal cavities. The inner surface presents the mouths of the excurrent canals irregularly dispersed, they are largest and most closely clustered together at the base, where the vertical canals of the stalk open.

Spicules.—I. Megascleres. 1. *Desma* (Pl. XXXI. figs. 6, 6*a*–6*c*), usually of very regular tetrad form, with simple, or once or twice branched, cylindrical epactines, smooth, or covered with tubercles, which may be simply conical with rounded ends, or cylindrical with a flat summit and rounded edges, or cylindrical and dividing at the top into two or more smaller rounded or hemispherical tubercles. The ends of the cladi expand into tubercles, which adapt themselves to the ends or sides of neighbouring branches. The average length of the simple epactine is from 0·13 to 0·26 mm., of the epactine of cladose forms from 0·13 to 0·2 mm., the average diameter varies from 0·05 to 0·7 mm. The length of the axial rod differs within comparatively narrow limits from 0·052 to 0·071 mm.