

surface of the domes on either side, then a lateral horizontal growth takes place, till the cladal margin is exactly adapted to the curved sides of the adjacent dome. So, too, should a cladus bifurcate at a little distance from an opposing dome lying directly in its course, the angle of bifurcation becomes filled up by a horizontal growth till the margin of the dome is reached. And again, should three domes, occupying the angles between the protocladi of a spicule, lie near enough to the centre of the cladome, then these angles also become filled up, and the cladome assumes a plate-like form, with curvilinear notches, corresponding to the curved sides of the domes. Thus, with regard to the poral domes, the tendency of the cladi is to grow out into flat plates extending up to them. This tendency is disturbed by the interference of the spicules one with another. If a growing cladus encounters the rhabdome of a spicule belonging to the series next above it, it bifurcates, the deuterocladi passing on each side of the rhabdome, or it curves round it without bifurcating. If a cladus, after bifurcating to adapt its outer margin to the outlines of two domes which lie behind and on each side of the point of bifurcation, encounter the cladus of another spicule at right angles, the angle of bifurcation becomes filled up by lateral growth, and a triangular plate results, the distal base of which is accurately adapted to the side of the opposing cladus.

This freedom and adaptability on the part of the cladome is in striking contrast to the rigidity of the rhabdome of these spicules, to the rigidity of the cladi of the homologous ectosomal spicules of some other Lithistids, and of all Choristids, and, in a word, to the rigidity of all spicules, traversed throughout by a continuous axial rod. The submissiveness of the cladi of the spicule to the influence of the environment is therefore in all probability correlated with the suppression of the clad-axial fibres, which, as we have already seen, extend but an insignificant distance from their origin, while the axial fibre of the rhabdome extends from origin to end.

Genus 2. *Discodermia*, Bocage.

Tetracladidæ in which some of the ectosomal megascleres are discotriænes, and the microscleres are microxeas and microstrongyles; with differentiated oscular and poral surfaces; the pores are simple, singly distributed, the oscules are numerous and simple.

Discodermia discifurca, n. sp. (Pl. XXXII. figs. 1-11).

Sponge (Pl. XXXII. fig. 1).—Irregularly cup-shaped; two or more cups borne on a stout pedicel, which ends below in a flat, somewhat expanded, attached base. Walls of the cup thick, cavity shallow, margins rounded. Large oval openings on the exterior lead into winding tubular involutions of the external surface. Oscules confined to the inner surface of the cup; pores single, irregularly dispersed over the external surface.