

between the pseudosepta, and were taken by Pourtalès and others for septa of a second order.

The cyclo-systems have been described as circular in outline of summit, because this may be regarded as their normal condition; but very many of them are distorted in various ways. One edge of the summit of the system is frequently elevated above the other, and this elevation is on the side of the same face of the flabellum in all the calices; whilst the dactylopores, on the opposite margin of the system, are frequently more or less aborted. This condition forms a step towards that occurring in *Cryptohelia*, where all the cyclo-systems have their mouths turned towards one face of the flabellum. The cyclo-systems in the present species are also frequently elongated in a direction in the plane of the flabellum, and in the case of those systems which are placed at the sides of the main branches parallel with the line of extension of these branches.

Besides being permeated completely by fine canals, the cœnenchym of the pore systems is excavated by numerous rather large lacunar cavities, especially near the base of the style and place of origin of an ampulla (Pl. II. fig. 3).

The ampullæ appear, on both faces of the branchlets, as conspicuous rounded prominences, set in groups, and often fused together into large papillated masses. They do not occur on the flabellar faces of the main stem or branches. They present internally a nearly spherical cavity, which communicates freely by openings with the canal systems of the cœnenchym (Pl. II. fig. 3).

Soft structures of *Stylaster densicaulis* (Pl. VII.).

Cœnosarc.—The outer surface of the coral generally, and of the cylindrical cyclo-systems, is invested by a continuous surface layer of cœnosarc (Pl. VII.). This layer dips down to line the dactylopores, and form the small tubulate sacs of the contained zooids, and also is reflected into the wide cavity of the gastropore, the inner lining of which is the greatly expanded sac of the gastrozoid, which zooid, deeply seated at the bottom of the sac, occupies a very small area of its space (Pl. VII. A). Beneath the surface layer the cœnosarc meshwork forms a fine reticulation of smaller canals, and a similar fine reticulation lies immediately beneath the lining membrane of the gastropore (Pl. VII.). In the walls of the cyclo-systems, between these two finer reticulations, a series of larger canals form an intermediately placed network, in which the branches have a general direction parallel to the axis of the gastropore, and form a direct communication between the basis of the dactylozooids and the large canals which spring from the bases of the gastrozooids. Offsets of this reticulation pass up into the canals in the interior of the pseudosepta. The three reticulations described are intimately connected together by abundant anastomoses. In Plate VII. B B, the interior of a zooid cyclo-system is represented with the sac of the gastropore and superficial lining network removed, in