Planulæ were not examined in the fresh condition, hence the ciliation of their surface, doubtless occurring, was not observed. In the most mature planula investigated, the endoderm consisted of pigmented cells, like those of the endoderm of the mature coral, but evidently in a condition of rapid increase, and of oil-globules of various sizes and fine granular matter. The endoderm mass did not show any trace of a central cavity, but appeared homogeneous and solid. The gonophore sacs seem to be permanent in *Cryptohelia pudica*, and the production of planulæ within them to be carried on as a continuous process.

Growth by Budding.—In ordinary growth of the coral by budding, every part of the coral surface would appear capable of producing complete cyclo-systems, for in one specimen procured a new cyclo-system has been abnormally produced as a bud from the upper surface of the lid of an older cyclo-system.

General Remarks on the Structure of the Stylasteridæ.

Summaries of the characteristics of the sub-order Hydrocorallinæ and its subdivisions will be given in the sequel under the heading "Classification." A few further special points in the structure of the family of the Stylasteridæ require to be noted here. The Hydroid affinities of the Stylasteridæ need no discussion; they are borne out by every item of structure.

As in almost all Hydroids, the sexes are on distinct stocks, and these stocks, like those of Sertularians, have a tendency to grow in a flabellate form with alternate gemmation. In having the numbers of the tentacles borne by the gastrozooids regular in number in each species, possibly in each genus, the Stylasteridæ differ from the Milleporidæ, in which the number is variable. The connection of an absence of the styles in the gastropores with a flask-shaped form of gastrozooid devoid of tentacles is remarkable. It occurs in apparently otherwise widely separated genera, *Astylus* and *Pliobothrus*. It is possible that the tentacles of the gastrozooids in all the genera would show traces at least of having knob-like or club-shaped ends were they examined in the fresh condition.

The gonophore sacs within the ampullæ, as containing several distinct gonophores, in several genera at least, seem entitled to the term "gonangia," according to Allman's terminology. It seems uncertain whether the central mass in *Astylus*, from which the sperm-developing lobules are budded off, is to be considered as a blastostyle or not; no definite spadices were observed within these lobules.

The radiate arrangement of the cœnosarcal canals around the sacs of the zooids, which is so remarkably developed in *Sporadopora* and *Allopora*, and traces of which appear in nearly all the genera, is very remarkable. It gives the soft structures of *Allopora*, at first sight, a still closer resemblance in arrangement to that occurring