

are in *Heliopora*, and to have been most variable in number, but often twelve, as also in *Heliopora*. Milne-Edwards describes from ten to twelve septa in *Favosites gothlandica*. In *Michelinia favosa* thirty to forty subequal septal striæ are to be made out at the upper margin of the wall of the calicle. It seems not unlikely that the septa in the Favositidæ were pseudo-septa as in *Heliopora*, and that these coralla were formed by Alcyonarians, the perforations in the walls having transmitted transverse canals of soft tissue like those of *Heliopora* and *Sarcophyton*, and the coralla being free of tubular cœnenchym, because none of the polyps were aborted as in *Heliopora*. Some Favositidæ seem to have formed a compound colony, consisting of autozooids and siphonozooids, for example, *Favosites forbesi*, in which a few large cells are seen set amongst numerous surrounding small ones. *Heliolites* seems to a certain extent to form a transition stage between a condition such as that in *Favosites forbesi* and the condition in *Heliopora*; for in *Heliolites*, the more ancient form, the cœnenchymal tubes are regularly hexagonal, and apparently much more nearly equal in breadth to the calicles than in *Heliopora*. In the growing points of *Heliopora* the hard parts are made up of a series of open often hexagonal tubes, and resemble *Favosites* in their surface aspect. In *Heliopora* the transverse canals pass over notches in the summits of the walls of the cœnenchymal tubes and calicles, in order to place these cavities in communication with one another. In *Favosites* the calcareous tissue surrounded the transverse canals, and the perforations in the walls of the calicles were thus produced.

If *Favosites* was an Alcyonarian, *Chætetes* was of course also of that group. The genus *Alveolites* amongst the Favositidæ is peculiar for the possession of three tooth-like prominences as the only representatives of septa. One tooth, well developed, is situate inside the calicle; on that side of each calicle which lies externally in the colony, and opposed to this on the tip of the calicle next the interior of the colony, are a pair of rudimentary teeth. This arrangement reminds us at once of the distinction of dorsal and ventral mesenterial interspaces in Alcyonarians, and the direction of all the "Dorsalfächer" in *Sarcophyton* and *Heliopora* towards the central axis of the colony. In *Alveolites* the two teeth seem to correspond to the "Dorsalfach," and the single one to the "Ventralfach," the two teeth having occupied the space devoid of retractor muscles. Kölliker describes a series of teeth as existing at the margin of the calicle in *Renilla*, which follow a constant law in their relation to the septa. When only one tooth is present it is opposite the "Dorsalfach;" when three, one is opposite the "Dorsalfach," and the two others opposite the lateral "Ventralfach." In *Alveolites* the one tooth is ventral instead of dorsal.

*Alliance of Syringopora with Tubipora.*—In *Syringopora* the septa seem to be very much of the same nature as in *Heliopora*; and in *Heliopora*, as already described, the tabulæ are not merely transverse floors, but the bottoms of cups of hard tissue fitted inside the older tubes and calicles. In *Syringopora* this condition of the tabulæ is much