

"The line of separation of the second bud does not correspond with that of the first, but is beyond it a short distance. Hence the nurse-stem which has thrown off several buds is transversely jointed in appearance. Some of the stems in the specimens I found showed thus three rings. Stutchbury imagined that each mother stock threw off only one bud and then died; Semper showed that this was not the case, he speaks of three or four generations only being produced by each stock. Apparently the number produced is very limited. None of the stocks in my specimens were branched. A young Coral bud just ripe,  $1\frac{1}{4}$ th of an inch in diameter, dropped off one of the stocks as I lifted the specimen from the water. Beneath it, on the scar, another very small young *Fungia* had begun to bud out before its predecessor was quite free. The somewhat cup-shaped buds, when set free, become, by the direction in which future growth takes place, flat and disc-shaped and develop eggs, from which spring free-swimming larvæ, which start fresh stocks.

"The mass of nurse-stocks which I found was surrounded on the reef by a group of fully-formed *Fungias* of all sizes; I counted twenty in all. Some six of these were small and still showed the scar of attachment which disappears in the process of subsequent growth."

An essential part of the definition of *Fungia* is, that in the adult state the animals are simple forms; and normally this is the case. It very frequently happens, however, that specimens are found in which two or even three distinct mouths are present in the same specimen, and examples of this are found in the collection; but a careful examination shows that this arises from interrupted growth or injury, and must be looked upon as accidental and not normal to the genus.

Professor Duncan has very thoroughly investigated the structure of the hard parts of *Fungia* and other allied genera, with especial reference to the structure and nature of the synapticulæ, which were considered by Milne-Edwards and Haime to be structures analogous to extremely developed granules.

These synapticulæ, he concludes, "are not hypertrophied granulations, from which they differ in shape, position, and structure."<sup>1</sup> Professor Duncan considers that they are independent structures, which by their fusion with one another and with the septa give rise to the basal wall. Thus, "it appears that synapticulæ are formed either prior to or simultaneously with the septum, for they and it contribute to the basal wall before the septum has increased much in height;"<sup>2</sup> "they (*i.e.*, synapticulæ) increase beyond the normal dimensions towards the base, and unite in a homogeneous mass composing the basal wall;"<sup>3</sup> "the section indicates that the wall is composed of more or less horizontal or curved synapticulæ, thicker than others, above."<sup>4</sup>

While it seems proved that these synapticulæ are not hypertrophied granules, but structures independent of the granules, it seems to me that, instead of being independent structures which give rise to a basal wall, it is likely, if not more probable, that they are modified or specialised portions of the wall itself, which thus gives rise to synapticulæ

<sup>1</sup> *Journ. Linn. Soc. Lond.* (Zool.), vol. xvii. p. 147.

<sup>2</sup> *Ibid.*, p. 145.

<sup>3</sup> *Ibid.*, p. 147.

<sup>4</sup> *Ibid.*, p. 144.