

alternation of generations.<sup>1</sup> Though the free corals were so extremely numerous, I found only one mass bearing nurse-stocks. It consisted, as in Stutchbury's specimen, of a portion of a very large dead *Fungia*, to which numerous nurse-stocks in various stages of growth were attached all over. Some of them had only just developed from the attached larva, and had as yet thrown off no buds. A small cup-like coral is formed, and as it grows the mouth of the cup widens and assumes somewhat the form of the adult disk-shaped free coral, but is still distinctly cup-shaped. A line of separation is formed in the stem, and the bud falls off; a fresh bud then starts from the centre of the scar left by it on the stock, and the process is repeated. The fresh bud in its growth does not spread its attachment over the whole surface of the old scar, the margins of which persist only as a dead zone around its base. The line of separation of the successive buds does not correspond with that of the first, but is a short distance beyond it, hence the nurse stem which has thrown off several buds is transversely jointed in appearance. Some of the stems showed thus three rings (see fig. 273). Stutchbury imagined that

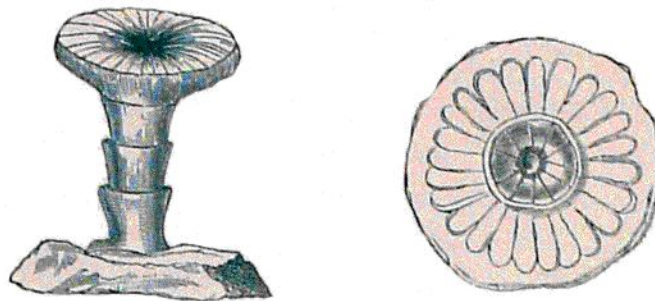


FIG. 273.—Diagram representing a Nurse-Stock of the Mushroom Coral (*Fungia*), and enlarged view of the scar left on the end of the stock when a young coral has become detached; a new one has just commenced to grow in the centre.

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 like Semper's specimen. A young coral bud just ripe,  $1\frac{1}{8}$ th inches 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 disk-shaped and develop eggs, whence 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 of these were small, and still showed the scar of attachment which disappears in the process of subsequent growth.

“A species of *Millepora* (*Millepora nodosa*, Esper) is a very common coral upon the Tahitian reefs. It forms irregular nodular masses usually of small size, and often encrusts

<sup>1</sup> Semper, Ueber Generationswechsel bei Steinkorallen, *Zeitschr. f. wiss. Zool.*, Bd. xxii. p. 271, 1872.