

this mode of branching. In the left-hand polyp there are already two mouths, and the work of subdivision is consequently begun; while in those to the right, which have a single mouth, the subdivision has just been completed, and also the forking of the old branch. Thus spontaneous fission goes forward, and branches accordingly multiply. By this method some of the most magnificent clumps of coral zoöphytes found in tropical seas have been, and are being, developed each from a single germ. Many of them have the perfect hemispherical symmetry of the solid *Astræas*.

Sometimes, when a new mouth forms in an enlarging disk, there is not at once a separation of the two, but the disk continues to enlarge in one direction and another, and then another mouth opens, and so on until a string of mouths exists in one elongated disk; and finally, a separation occurs, but only to commence or carry forward another long series. In this way the corals with meandrine furrows are made, some kinds of which are popularly called "Brain coral," and pertain to the *Meandrina* family (figure on page 44). The same may take place in the ramose corals, and so make flat branches, each with a long sinuous line of polyp mouths at top. In all such species the tentacles stand in a line either side of the line of mouths.

By the simple methods here explained all of the various forms of Actinoid zoöphytes have been produced; and, equally so, those of the Alcyonoids described beyond. The tree, shrub, clusters of coral leaves, hemispheres, and coral network require for the explanation of their origin only the few principles which have been mentioned. The germ-polyp, growing upward and more or less outward, and budding as it grows, makes thus the rising stem—that of the *Madrepore* or *Dendrophyllia*, with its summit polyp (figures p. 29, 31), or that of the *Porites*, with its terminal budding clusters (p. 33); or the rising, massive dome of the *Astræa* and *Mæandrina* (pp. 37, 44), in case budding is symmetrical in all directions;—or, if growth in the germ-polyp is upward exclusively, it forms a rising stem bearing at top the single polyp that originated it,