drawing together of its margins. The tentacles may be in these cases completely invaginated, as is seen in *Corallium* and *Heliopora*. Finally, the calyx may be feebly developed, and the whole polyp may withdraw itself into the cœnenchyma which completely surrounds the lower portion of the alimentary cavity. When this happens over the entire colony the surface thereof appears smooth and as if covered with small pores.

A further differentiation of the individual polyps is seen in those cases where the colony consists of heteromorphic polyps, each with different functions. A certain amount of dimorphism is involved in the presence of connecting stolons, so that the tendency to polymorphism cannot be said to be absent even in the simplest forms. Some stolons end blindly and serve simply for the attachment of the colony. Somewhat similar vegetative individuals are represented by the axial polyps of the Pennatulacea and the Holaxonia. Besides the tentacle-bearing individuals or autozooids of Moseley, bud-like individuals may be present without tentacles and with a reduced number of mesenteric folds. These, the siphonozooids of Moseley, are found in very different families—in *Sarcophytum* and *Lobophytum* among the Alcyonidæ, in *Heliopora* among the Helioporidæ, in *Corallium* among the Scleraxonia, in *Dasygorgia* among the Holaxonia, and among the Pennatulacea.

If we attempt to establish a natural arrangement on the lines above indicated, we may first accept the three orders recognised by previous investigators, namely Alcyonacea,[1] Pennatulacea, Gorgonacea. We may further subdivide the Gorgonacea, or fixed Alcyonaria with colonial axial skeleton, into the two sections Scleraxonia and Holaxonia. The Alcyonacea may form the starting point for the two other suborders.

ALCYONARIA, Milne-Edwards.

Polyps and polyp-colonies; the individual autozooids possess eight pinnate tentacles, and as many uncalcified mesenteric folds

Order I. ALCYONACEA, Verrill.

Alcyonacea, Verrill, Proc. Essex Inst., vol. iv. p. 148.
Alcyonidæ, Milne-Edwards, 1857, Dana, 1859, Kölliker, 1865.

Polyps single or in colonies, when the latter, united by endodermic nutritive canals without axial skeletons.

[1] In the Description of Genera and Species the orders are arranged thus—Gorgonacea, Pennatulacea, Alcyonacea.