

The Gorgonioid Polyps develop first a flat, horizontal, horny layer, as a basis, and this bears exactly the same relation to the Polyps as does the young, spineless, horny layer to the hydroids in a colony of Hydractinia; and when the horny stem begins to rise, in the form of a spine, it is still as essentially below the soft mass of the Polyps as is the fenestrated spine below the uniform layer of Hydractinia. The stolonial portion, in penetrating the lateral apertures of the spines, and filling up their interior with its chymiferous network, does not render the horny layer, in this manner of growth, any the less a foot secretion. Something like this happens with *Gorgonia flabellum*, and other fenestrated forms of that genus of Haleyonoids.

SECTION II.

REPRODUCTION OF HYDRACTINIA POLYCLINA.

There are, essentially, three modes of reproduction in Hydractinia, namely, the budding of the hydroid form from the common basis, the budding of the medusoid from the hydroid form, and the development from eggs.

The Hydroid.—As far as we have observed, the young hydroid always buds from the outskirts of the colony. The inner wall (Pl. XVI. *Fig. 5^b, b*) rises perpendicularly from the common basis, in the form of a hernia (*b¹*), and is covered by an outer wall (*a¹*) which is continuous with the uniform layer (*a*). In this state it does not differ from the young hydroid of *Coryne mirabilis* (Pl. XX. *Fig. 3*), as far as the relation of its walls to each other are concerned. The only difference between the further development of this Hydroid and that of *Coryne mirabilis* is, that here the tentacles arise all in the same plane, forming a single row; otherwise, in their mode of origin from the two walls of the body, there is a perfect similarity. The manner in which the network of chymiferous tubes is formed is very simple; horizontal herniæ (*Fig. 5^a, f*) are produced, in the direction of the growth of the uniform layer (*c*), which in time coalesce with each other, and, obliterating their walls where they come in contact, form a continuous channel of communication.

The Medusoid.—The structure and mode of development of the medusoid of Hydractinia is so nearly identical in all the essential features, with those of *Parypha crocea* and *Thamnocnidia tenella* and *spectabilis*, that it would be superfluous to repeat the details which are given in another chapter, in regard to the latter genera. It will be sufficient to point out in what respect the medusoid of Hydractinia differs from that of these other genera, and refer to the description of