

itself to the natural position with the tentacula upwards, and is then rooted permanently by a prominence, which is the incipient stalk, originating from the under part of the head. Gradual elongation of the stalk, afterwards continues to raise the head, and the formation of the zoophyte is perfected."\*—So the worm-like embryo of the vesiculiferous Hydroida, a few days after its exclusion from the vesicle, becomes stationary and contracts into a circular or spherical spot which always retains its original colour. It is transparent and soft, but in a short time some opaque fleshy spots are visible within it, and are separated by a thin homogeneous transparent substance, which is to form the future polypidom. "As yet it is exceedingly minute, soft, and gelatinous; but in the progress of its growth, the soft, thin, homogeneous substance of the exterior becomes more dense, embracing the first formed parts of the fleshy substance, indeed all parts, and the whole jelly, with its thin covering, and continues to advance and to radiate. Then we observe a stem beginning to rise from the centre of these radii of roots, which are, in fact, the first formed parts that the little round gemmule shoots out. So that the gemmule is become, not a polypus but a root. It begins then to rise from the centre of the roots, and at length to divide; so it will at length form on its branches a cell, at the bottom of which cell will gradually be developed a polypus."† In the *Flustra* and other ascidian zoophytes the process is very similar, but in these, instead of the rootlets and little embryo stalk, a cell is the part first formed, in which a polype quickly and almost coetaneously develops itself; and this original cell and polypus is as large, as perfect, as fit for every purpose to which it is destined as any of those which are in rapid succession evolved from its sides and apex, for age adds only to the number of individuals in the polypidom, and nothing to their perfection.

\* Dalzell in Edin. New Phil. Journ. xvii. 412.

† Grant, in the *Lancet*, 1834, Vol. i. p. 229.

#### ADDITIONAL NOTES.

##### 1. *Raspail's Description of the Structure of Polyppes.*

"I have pointed out that the polypus is nothing but the continuation of its case, which becomes bony or cartilaginous in the lower part, in proportion as the upper part is developed. Consequently its tube, or rather its involucrem,