

ation of the fleshy central part of the stem,) are enclosed in vesicles of the same texture as the polypidom itself, and neither proceed from, nor have any immediate connection with, the proper body of the polype, being evolutions from the pith or fleshy axis which connects the polypes together, and binds the various heads into one whole.—Such is a brief summary of the facts ascertained on this head, but it behoves me to mention that it is, to a certain extent, at variance with the opinions of Professor Grant. He maintains from his numerous observations on a great variety of zoophytes, that the gemmules by which these animals propagate are highly organized portions of the gelatinous substance of the parent, formed “in almost every known zoophyte,” and not merely in the Hydrazoa, as we have limited it, “by the common connecting substance of the animal, and not by the polypi, which appear to be only the mouths or organs of digestion. In Plumulariæ, Sertulariæ, Campanulariæ, horny Cellariæ, Antennulariæ, the ova are formed in vesicles which originate from the centre of the stem. In Flustræ, calcareous Cellariæ, and some others, the ova are formed in the cells, but *exterior to the bodies of the polypi*, which disappear before the ova arrive at maturity. In the Lobulariæ, Gorgoniæ, Spongiæ, Clione, &c. the ova are formed and matured in the *common fleshy substance* of the body before they advance to be discharged through the polypi, or the fecal orifices.”*

The gemmules exhibit considerable variety in colour,—they are milk-white, yellow, red, pink or green, but sometimes the colour is not fully developed until near maturity. In all the ascidian polypes they are globular or have a tendency to that form, and appear to preserve it until after their discharge from the body; but in the Hydroida this is not the case, for although spherical in their earlier stages, “their shape alters on approaching maturity; it elongates, becomes elliptical, next prismatic, and at length each corpusculum issues as a perfect animal from the orifice of the vesicle,” and exhibits in figure and in motion much resemblance to the little leech-like Planariæ. (Fig. 6.†)

* Edin. Journ. of Science, No. 14.

† The figures represent the gemmules of Plumularia pluma. For the drawing I am indebted to my friend Dr Coldstream of Leith.