All other specimens of *Cryptohelia* available for the examination of the soft structures proved to be female only. The ampullæ in *Cryptohelia* are occupied by thin walled sacs. Those in connection with newly-formed cyclo-systems at the tips of the branches of the cœnosteum are small, and contain only a few gonophores in early stages (Pl. IX. G); but those attached to older systems are often of enormous relative dimensions, and appear as long reniform bodies (Pl. IX. G), which are almost as large as the masses of the cyclo-systems themselves in volume, and contain gonophores in all stages from the very earliest upwards, and one or two mature planulæ.

The early stages in the development of the ovum of *Cryptohelia* were examined in the fresh condition of the soft parts, without decalcification or use of spirit, the ampullæ being broken open and the gonophores removed from the freshly-dredged coral.

The earliest stage in the formation of a female gonophore observed is the massing together of a small quantity of the endoderm cells of one of the canals of the cœnosarc which enter the gonophore sac (Pl. XI. fig. 3). In the next stage observed, a cup-shaped spadix of endoderm cells is fully formed, the cup being attached to the cœnosarcal canals by a pedicle. In the hollow of the cup rests a fully-formed ovum, with a well-defined germinal vesicle and spot, its main mass being composed of fine rounded particles. Only a single ovum is developed in relation with each spadix. A thin reflection of the ectodermal investment of the spadix covers the ovum within its cup (Pl. XI. fig. 4, E).

The ova must be in some manner impregnated within the gonophore sac. As development proceeds the ovum increases in size, and the germinal vesicle and spot disappear, and the ovum appears entirely composed of thickly-set oily globules. At the same time the margin of the cup of the spadix, which increases in dimensions in accordance with the ovum, becomes divided into a series of small rounded lobes, about twelve in number, which embrace the lower part of the ovum. The cells composing the spadix and its lobes being coloured dark chocolate, the contained colourless ovum contrasts strongly with its support in appearance in the fresh condition of the structures.

The ovum, as it enlarges, becomes gradually drawn out into an ovoid form (Pl. IX. G). On further development the margin of the growing spadix becomes fringe-like in appearance, the lobes composing it lengthening and becoming forked at their extremities (Pl. IX. S P). The ovum in this stage is much dilated, and drawn out into an elongate ovoid form. Its contents are nearly transparent and highly refractive, but dotted all through their mass with sparsely-scattered oil-globules of various sizes (Pl. IX. O V). The reflection of the ectoderm at this stage still covers the ovum within its cup. A space is enclosed all round the gonophore by this ectodermal membrane, between the margin of the spadix and the ovum. This is filled by a perfectly transparent fluid.