

Abstract of Memoir

RECORDING WORK DONE AT THE PLYMOUTH LABORATORY.

The Development of *Alcyonium Digitatum*, with some notes on the Early Colony Formation. By Annie Matthews, M.Sc.

Quart. Journ. Micr. Sci., Vol. 62, Part 1, New Series, 1916.

THE above paper is a record of the successful rearing of *Alcyonium* larvæ in tanks at the Plymouth Laboratory.

Ripe male and female specimens collected near the Eddystone during the breeding seasons of 1912-13 and 1913-14 spawned in the tank water, and fertilised eggs were collected from which eventually young colonies were obtained.

Segmentation gave rise in various ways to a morula, followed by the pre-planula and planula stages. The pear-shaped free-swimming planula eventually settled by the broad anterior end, and the mouth arose at the narrow posterior end subsequent to a general flattening of the settled planula along the long axis.

The characteristic eight mesenteries grew out into the coelenteron on the second day of fixation, followed by the appearance of spicules and eight hollow circumoral tentacles which alternated in position with the mesenteries. Free entrance of food was permitted on the fourth day, after the degeneration of the base of the cesophageal invagination. On the fifth and sixth day of fixation respectively the ventral and dorsal mesenteric filaments were formed, the two being of homogeneous origin, i.e. consisting of endodermic and ectodermic portions developed in different degrees.

At the end of the third week the first bud grew as an outgrowth from the basal stolon formed by the solitary polyp.

Very young fixed stages were fed with fine plankton, but colonies of two or three individuals or more were successfully fed on larvæ and single adults from *Leptoclinum* and *Botryllus* colonies. The early buds are arranged in circles round the parent, but in colonies of thirty-two individuals budding took place irregularly.

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