

B12 Medusa Formation in a Marine Colonial
Hydrozoa Cladonema uchidai.
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Asexual form of this species consists of polyps and stolon. Polyps produce a medusa bud at the middle site of polyps. This hydromedusa differentiation appears as a small knob of several interstitial cells which increase gradually in number. Just under the ectoderm, the entodermal cells which become small with some condensation of cytoplasmic material gather also. The knob grows as a protrusion and transforms into cup shape, the wider part, distal from the polyp, forms 9 tentacle buds.

The developmental process up to the time of liberation from polyp was carefully divided into 12 stages according to the external and internal morphology. Using 5 μ thick-serial sections of each stages, the cell numbers and the mitotic indices were examined. The former showed an exponential increase during the course of development. The latter, however, gave the high value (2-3%) only at the stages where morphogenetic event such as maked growth of some part and the formation of radial canals. Differentiation of definite types of cells could be recognized microscopically at the stage of bell-nucleus formation. Nematogenesis showed highest percentage of occurrence at the stage of tentacle-bud appearance. Details of these quantitative histological results were given topographically in this report. It can be said that the new structures have always high mitotic activity prior to its appearance.