

B 13 Frustule formation in the polyp of fresh water hydroid, *Craspedacusta sowerbii*.
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Fresh water hydroid is known to produce frustule which is planula-like larva and appears within body wall of polyp and bud off from the parent polyp. Frustulation process, however, has not been much studied. This report deals with some detailed observation of the process both in histology and external morphology. Site of the frustula formation shows that ectodermal cells elongate in height and shorten in width and that endodermal cells gather under the above rearranging ectodermal cells. These endodermal cells become to be slender with some condensation of the granular material. This early frustulation stage will be followed by gradual bulging and a slit formation which begins at the upper margin of a bulge. A bulge grows as sausage-shaped with the progress of a slit toward lateral and lower sides.

Newly separated frustules (ca. 0.4-0.7mm) move on substrate (submerged leave, stick, stone etc.) for some days and adhere to it, then become polyps within a few days. The polyps can be reared by giving *Artemia* larvae in laboratory. More than 20 day-reared new polyps (ca. 1.5mm in length) will get a capacity to form frustule. Frustulation will take at the two definite sites in a polyp: they are opposite site each other at middle lateral side of body wall. The first frustule appears at one site then next one at the opposite site to the first one. Such alternative order in appearance, however, is not always kept in the polyps of colony consisting of plural polyps, although no. of frustules per polyp is not much different in each colony. This means that no. and site of frustule formation may be taken place under some regulation between members in a colony.