

Soft structures of *Millepora*.

Structure of the Zooids.—The pores of *Millepora* are occupied by two kinds of zooids. In each system of calicles the central larger one is occupied by a short and broad gastrozoid provided with a mouth, whilst the surrounding smaller calicles lodge longer and more slender dactylozooids which have no trace of mouth. A system of expanded zooids is shown (Pl. XIV. fig. 1), one of the dactylozooids being omitted in the drawing in order to show the central gastrozoid more clearly.

Gastrozooids.—The gastrozooids are much shorter and broader than the dactylozooids. They were not directly measured but were estimated to be about .5 mm. in height. They are cylindrical in form, with a short conical hypostome, and four, five, or six tentacles arranged equidistantly in one whorl just below the hypostome. The tentacles consist of a short, stout, cylindrical stem, with a spheroidal knob-like tip composed almost entirely of nematocysts. At the summit of the hypostome is the mouth, which in the living expanded animal has a conspicuous glistening white appearance—no doubt because light is strongly reflected by the large gastric cells which surround the aperture.

The mouth-area is circular in outline (in *Millepora alcicornis* quadrangular sometimes), Pl. XIV. fig. 2, G Z. The circular area is occupied by a series of large, elongate, transparent gastric cells, which are disposed in a radiating manner around the centre of the area. The actual mouth-orifice takes the form either of a threefold or cruciform slit between the gastric cells. The gastric cells (Pl. XIV. fig. 7) are elongate, irregularly cylindrical in form, and transparent and bladder-like in appearance, and without any trace of a nucleus. They line the internal cavity of the gastrozoid for at least one-third of its length, but to what extent exactly was not ascertained. They are figured by Professor Agassiz in a figure of a gastrozoid of *Millepora alcicornis* (*l.c.* Pl. XVI. fig. 6). They appear to be closely similar to the piriform cells described by Allman, and figured by him as occurring in *Gemmaria implexa*.¹ They are here termed gastric, because the fact that they occur only in the gastrozooids seems to render it probable that they exercise a digestive function.

Dactylozooids.—The dactylozooids are long and slender in comparison with the gastrozoid. They differ very much in length, as will be seen from the figure; the longest of them measure about 1½ mm. in length. They are cylindrical in form, tapering towards the upper extremity. They have no trace of a mouth, nor of any of the gastric cells of the gastrozooids in their body-cavity. They bear tentacles at irregular intervals from near the bases to the summits of their bodies. The tentacles are very variable in number; some zooids have only five tentacles, whilst all numbers from five to twenty (and possibly, in exceptional cases, a slightly greater number) occur in others. From twelve to fifteen is the most usual number. The tentacles consist of a cylindrical stem, longer and more

¹ Allman, *Gymnoblasic and Tubularian Hydroids*, pl. viii. fig. 5.