

others bear one or two lateral secondary pinnules, indicating a transition to the bipinnate type.

Two or three of the branches in the lower part of the specimen have been broken near the tip, the lost portion being represented by a new and more slender growth from the point of fracture.

The polyps and cœnenchyma are well preserved all over the specimen. Those polyps situated on the stem, particularly in the lower portion, appear to have undergone considerable degeneration and are altogether smaller and less prominent than those on the branchlets and pinnules. They are arranged somewhat irregularly, evidently not in a single longitudinal row, but apparently all are confined to the anterior and lateral surfaces.

The polyps on the pinnules and branchlets are all situated on the anterior surface, forming a regular longitudinal series. On one simple pinnule, 4 cm. in length, there are thirty polyps, all similar in size and equidistant, with the exception of two at the base which are rather smaller and more isolated. In other portions of the colony, particularly near the apex, the zooids are unequal in size, owing to the fact that by a process of budding new zooids are added at various points along a branchlet. In this respect there is an approach to the arrangement of zooids in *Leiopathes*, but the irregularity in size is never so well marked as in that genus, and the irregularity is here confined to more limited areas. In zooids preserved with the mouth open, the aperture has a distinct crenate outline and there is a partial eversion of the stomodæum, each fold of which is limited by two mesenteries. In such cases (Pl. XIII. fig. 4) the mouth has not the slit-like lumen corresponding to that of the middle portion of the stomodæum, but the aperture is wide and rounded, with a crenate margin. The zooids are irregular in shape, but in a typical case there is always a pronounced elongation in the transverse axis. The zooids on the thicker branches are usually smaller than the others, and have a rounded outline, and in certain cases young zooids have a similar contour, due possibly to the limited areas in which they are at first formed. With these exceptions the zooids invariably show an elongation in the direction of a branch, which causes the tentacles to be arranged in two rows of three each. There is no marked difference in size between the tentacles, all are (in spirit preparations) thick and subcylindrical, with a blunt apex. Lacaze Duthiers, who has studied living specimens, states that the tentacles are never elongate as in many other forms, *Parantipathes larix* for example. In expanded polyps the diameter across the tentacles never exceed $2\frac{1}{2}$ diameters of the pinnule on which they are situated. His figures of the polyps in this species (45, pl. i. figs. 3 and 4) represent the rounded type which I have observed on the stronger branches. The latter figure shows a number of polyps contracted, so that the tentacles are pressed down close over the mouth—a condition approaching that which occurs in those Actiniaria having a well-developed sphincter muscle. I have not observed such a contraction in specimens of this or of any other member of the Anti-