

intervals of 1.5 to 2 mm., and always so that the origin of the fourth twig comes into line with the first, whereby a not very regular spiral is formed. Every twig gives off again lateral twigs, according to the same law, usually two or three, which form long rods, only in quite large specimens do the twigs develop to a considerable length, and again give off tripartite lateral twigs. In one case the main stem has died off and a branch has developed to the strength of the main stem with analogous ramification.

The length of the twigs reaches 50 to 150 mm., that of the simple lateral twigs 20 to 30 mm. The axis of the twigs is at the base hard and horny, calcareous, in the finer ramifications thin, horny and flexible. The polyps are placed on the thinner twigs, just as on the end of the stem, in short spirals of threes. They are cup-shaped with wide calyx opening,

The spicules form on the polyps three irregular dorso-lateral longitudinal rows, in four to five transverse rows. Those of the ultimate and penultimate rows bear long spines coming out from the upper edge, which are half as long as the calyx, and project far beyond its opening, and form a course of six or eight spines around it. The ventral scales are small, thin, little plates, standing in two irregular rows. The operculum is formed of eight fine, strongly bent, lancet-shaped scales, which on closure of the calyx leave longish gaps between them.

Several examples are attacked by a Chætopod, an *Aphrodite*, probably belonging to the group of *Hermadion*, Grube, which lives close to the stem between the points of origin of the twigs. Probably in consequence of the irritation thus caused, all the twigs on the attacked side are inverted.

*Habitat*.—Station 145A, off Prince Edward Island; depth, 310 fathoms; bottom, volcanic sand.

#### *Var. b. brevispinosa.*

The main stem is simple, the twigs, which come off from it according to the same law as in the preceding variety, are sparsely branched, at the most into three branches; many remain simple.

The polyps are placed on the twigs at wide intervals and their arrangement in spirals is less evident. The polyps are larger, club-shaped, 2.5 to 3 mm. long. The calyx scales form here also five longitudinal rows; those of the last two rows have, however, only short, flat spines, which in individual calyces are reduced merely to short thorny processes. The latter are elongated in the two upper rows and form a crown around the calyx mouth of eight flat spines, sometimes notched at the end.

*Habitat*.—Station 145A, off Prince Edward Island; depth, 310 fathoms; bottom, volcanic sand.