

diminishes slowly towards the apex. The axis is, till near the apex, hard, brittle, of a horny yellow colour, on the surface with a golden glitter, iridescent, towards the apex it becomes quite soft and flexible. The transverse section is elongatedly oval. If one follows the longer axis of the transverse section along the course of the stem, one sees that as it proceeds further up the stem it undergoes a twisting, which at a fourth from the apex reaches 360° , so that the stem appears to be twisted in a long spiral, and thence commences a second spiral twist up to the apex. The stem is clothed with a very thin cœnenchyma, which contains a single layer of flat calcareous spicules.

The twigs come off apparently from all sides of the stem, at very blunt, almost right angles, and follow very close upon one another, so that the distance between two twigs reaches only 1.5 to 2 mm.; they are most thickly placed at the end of the stem. On a closer examination one sees that the twigs surround the stem in short spirals, so that the points of origin of four twigs always form an ascending spiral, thence it results that the twigs arise mainly from three sides of the stem. But since the stem itself is spirally twisted this condition is difficult to follow. The length of the twigs reaches 50 mm., their thickness at the base is only 0.5 mm.; their axis has, like that of the stem, an oval transverse section, is brittle at the commencement, but soon becomes soft and flexible. The twigs are generally simple, they sometimes fork, near their base, into two equivalent lateral twigs.

The polyp calyces are relatively large, 2 mm. long, and of pear-shaped form. The summit expanded and the base constricted. They arise on the twigs at varying intervals, but never in whorls or oppositely, they are most thickly placed on the ends of the twigs, the apices of which are generally occupied by a polyp. Usually the polyps are placed on the twigs, like those on the stem, in short spirals of always three to four calyces. The calyx scales are large, symmetrical, the upper edge convex, finely toothed, in the second uppermost row the middlemost tooth is somewhat lengthened, in the highest the scales are nearly lancet-shaped. There are seven rows of calyx scales one above the other, which are arranged in five dorsal and lateral rows. The ventral scales are smaller, more polygonal, in two to five longitudinal rows, of these the edge of the lower one always projects beyond the base of the next above. The opercular scales are eight in number, lancet-shaped, concave towards the outside; the ventral ones are a little smaller than the dorsal ones, but always more deeply placed.

New twigs and polyps arise on the end of the stem, so that here the growth is terminal. Under the apex of the stem, whose end is without cœnenchyma, one first of all finds several polyps, of which some are very much elongated, a thin horny axis projects into their base spindle-like, and small polyp buds arise. In other parts the formation of a small branch has already taken place, the terminal polyp is placed on a horny axis, on a long peduncle on which new polyps arise.

Calyx spicules.—Broader than long, slightly toothed on the edges, without prominent