

4. *Primnoisis ambigua*, n. sp. (Pl. IX. fig. 9).

The colony is upright, bushy, expanded above, the branches spreading out prevalently in one plane.

The main stem is upright, bent towards several sides in its course. From its base upwards it gives off branches at acute angles, some of which have the stoutness of the main stem and others are weaker. During their much twisted upward course the branches ramify more and more abundantly, and send their fine terminal branches right to the top of the colony.

The twigs, which arise from the branches at moderate intervals from one another, are long and slender and give off fine lateral twigs, which but rarely again bear twigs of the fourth order. The branches arise from the stem and the twigs from the branches, mainly on four sides, but two branches, arising opposite to one another, are always more strongly developed and ramify more in one plane, so that the colony acquires a somewhat bilateral appearance. The terminal twigs arise from one or two sides.

The height of the colony reaches 140 mm. The thickness of the main stem near the base is 3 mm. The length of the fine terminal branches is up to 11 mm., mostly 10 mm.

The coenenchyma is only preserved in the terminal twigs and some of the larger branches. On the latter it is thin and transparent, on the thin twigs thick, and thickly covered with polyps, which stand around the twig in spirals, each composed of four polyps.

Towards the base of the twigs the polyps are more scattered and on the thick branches only sparsely strewn, at wide intervals from one another. Their form is club-shaped. On the twigs they are directed obliquely upwards. Their length reaches 0.8 to 1 mm.

The axis exhibits proportionally short, calcareous joints, which are cylindrical and longitudinally fluted. The jointing can be followed even into the finest branches, the points of which are always formed of a short, calcareous joint. In the stem the calcareous joints have a length of 2.5 to 4 mm.; the horny joints of 0.5 to 1 mm. The branches arise from the calcareous joints, but not so regularly as in the foregoing species. Many calcareous joints in the stem and branches give off no twigs. Very often only one branch arises from a joint, then two, seldom three. The branches and twigs commence usually with a horny joint. If the branch arises near the upper end of the calcareous joint, then the horny base of the branch comes into contact with the horny joint of the stem, hence many branches and twigs thus apparently arise from the horny joints of the stem.

In the twigs the calcareous joints are longer than in the stem or in the thicker branches, and measure from 4 to 5 mm.

The spicules of the coenenchyma are less differentiated from those of the