

3. *Thouarella köllikeri*, n. sp. (Pl. XXI. fig. 5).

A main stem, from which branches come off in different directions; these again bear lateral twigs on which the polyps are placed. The polyps are larger than in the preceding species, and the calyx scales of the last row are pointed and lancet-shaped. In the best-preserved specimen the main stem has a length of 150 mm., with at its base a thickness of 2 mm. Here also the transverse section is oval, and there is a spiral twisting.

The axis is in the lower part calcareous, brittle, and becomes softer and flexible towards the apex. From the stem, branches arise at different heights; these, as in the preceding species, come off in three directions. They are, however, differently developed; on one side they remain short, on the two other sides, at angles of about 60° to the first, they develop into long branches, which attain the strength of the main stem. At the same time they bend themselves away from the main stem, especially in one direction. Owing to this condition the colony attains a more bilateral structure; designating the side of the stem on which the short branches arise as dorsal, and the opposite side as ventral, then one can distinguish dorsal and ventro-lateral or side branches. The dorsal branches are always simple, 10 to 25 mm. long, flexible at the end, and directly bear the polyps. The lateral branches, on the contrary, attain a strength which, especially in the lower part of the colony, equals that of the main stem, and reach a length of 80 to 100 mm. They themselves ramify in a similar manner to the main stem, giving off dorsal and lateral twigs, which are generally soft and flexible. The lateral twigs may finally again bear lateral twigs, while here the dorsal ones are wanting; the dorsal ones are also wanting at the ends of the larger branches.

The polyps are placed on all the finer twigs, as in the foregoing species, arising in three directions at different heights, so that they surround the stem in short spirals. Their form is pear-shaped. There are eight transverse rows of scales present. These have a convex upper edge; the surface is provided with longitudinal ribs, diverging above, of which a middle one is the most developed; in the last row the middle rib is very strongly developed and projects at the end as a point, above the edge of the scale, which is higher than it is broad.

As in the preceding species five dorsal and lateral longitudinal rows of scales may be distinguished, and two ventral ones, which are thin, transparent and ribless. The opercular scales are strongly concave, the dorsal ones pointed, with serrated edges, the ventral ones small, scale-like, covered by the broad lateral ones.

Scales of the calyx.—The scales of the uppermost row are higher than they are broad, in the middle line there arises from the nucleus a greatly serrated keel, prolonged into a spine which projects beyond the edge of the scale, the lateral edges are finely toothed. Height to breadth, 0.62 to 0.54 mm.; the succeeding scales exhibit a strongly convex upper edge, which in the upper rows is still frequently drawn out in the middle into a