

0.1–0.8; 0.1–0.6; 0.12–0.1 mm. The warty spindles 0.26–0.12; 0.22–0.1; 0.12–0.1 mm. The bent spinose spicules 0.3–0.1; 0.28–0.06; 0.2–0.1; 0.26–0.1; 0.18–0.1 mm. The double stars 0.1–0.1; 0.08–0.04; 0.01–0.06 mm. The four-rayed forms 0.18–0.16; 0.14–0.1 mm. The simple spindles 0.34–0.8; 0.36–0.2 mm. The irregular branching spicules are about 0.3 mm. in length, with a width varying from 0.1–0.15 mm. The small polyp spicules 0.12–0.4; 0.06–0.02 mm.

Colour.—What we take to be the type form is of a bright brick-red. The internodes when bare are of a bright pink, while the nodes are of a brown colour.

In the same collection, in several cases growing side by side, and in one instance anastomosing with the form above described, there occur a yellow-coloured variety and one with a slightly pink hue. Nothing in the external form or structure, except that in the yellow variety the anastomoses are more frequent and the polyps perhaps more crowded, would call for special observation, but the spicules differ somewhat in form. In Var. A. the Stachelkeule almost assume the form of Blattkeule, the spiny spindles are often quite blunt at both ends, and the half-sided spiny spindles are large, often with quasi folia at the tips. In Var. B. the Stachelkeule are well developed, and there are present, chiefly in the inner layer of the cœnenchyma, a large number of the irregularly branching spindles.

*Habitat.*—Torres Strait.

*Melitodes rugosa*, n. sp. (Pl. XL. fig. 6).

The colony is branched, about 80 mm. in height and 60 mm. in the widest stretch of the branches; the branches are not all in the one plane and there is no apparent anastomosis. The base is attached to a small "frond" of a *Plustra* by a disc-like plate, which is bifid, embracing the edge of the frond between the two folds; it is 3 mm. in its widest diameter. The main axis at a height of 17 mm. branches, the first branch proceeding from an internode. The first internode is 25 mm., the second is 11 mm. in length. The stem at its base is 1.25 mm. in diameter. The internodes are long, sometimes irregular in form, wavy in outline, and of a pink colour when stript. The nodes are triangular in shape, 2.5 mm. at base and the same in height.

The polyps are scattered irregularly over the stem and its branches. They are retractile, within verrucæ, but these are not prominent, though sufficiently so to give an undulating appearance to the branches; they are about 1 mm. in diameter at their bases.

The cœnenchyma is somewhat dense and the spiny spindles projecting in part from its surface gives this a roughened rugose appearance. Some of the Stachelkeule approach in form very nearly to Blattkeule.

The colour in spirit is a greyish-white with a few specks of yellow, owing to the