

*Melitodes dichotoma* (Pallas) (Pl. XL. figs. 4, 5).

*Isis dichotoma*, Pallas, Elench. Zooph., p. 229.

„ „ Esper, Die Pflanzenthiere, p. 43 ; Fortsetzung., p. 6, Tab. vi., xi. figs. 4, 5.

„ „ Lamarck, Mém. Mus. Hist. Nat., t. i. p. 415.

*Mopsea dichotoma*, Kölliker, Icones Histiologicæ, p. 142.

*Non Mopsella dichotoma*, Gray, Cat. Lithophytes, p. 10 ; Proc. Zool. Soc. Lond., 1857, p. 284.

*Nec Mopsea dichotoma*, Milne-Edwards (*pars*) Hist. Nat. des Coralliaires, p. 197.

The colony is attached ; it is more or less fan-shaped in form though sometimes it branches irregularly, assuming a bush-like shape. It is from 130 to 190 mm. in height, but varies much in width and depth. The basal attachment is broad, reptant, sometimes stoloniferous, and bearing polyps, from which apparently new vertical colonies arise.

The branches show a tendency to originate in the one plane, but in some cases the branches arise in an irregular manner ; the branches shortly after their origin divide into twos, and this with a certain regularity. The anastomosis varies very much ; in some specimens there is no anastomosis between the branches of a colony, but a feeble anastomosis between the branches of a neighbouring colony. In others there is an irregular anastomosis between some few of the branches, and this in even different planes, but no true mesh system is formed, and the extremities of the branches are free for a considerable distance below their terminal points. The main axis and branches, when clothed with the polyps and cœnenchyma, are cylindrical, and show no distinction between the nodes and internodes. The axis has an average basal diameter of 4 mm., diminishing to one of 1·5 to 1 mm. for the twigs.

When deprived of cœnenchyma, the internodes are found to vary in length, being from 4 to 6 mm. in the basal portion of the colony, and from 6 to 8 mm. in the terminal portions. The nodes are not prominent, being in fresh specimens of the same diameter as the internodes, *i.e.*, about 2 mm. towards the base and 0·5 mm. beneath the terminal internodes.

The polyps are crowded irregularly on the front and sides of the branches ; while on the back of the colony, except at the extreme tips, they are absent, and here the cœnenchyma is striately marked. The polyps are lodged in well-developed verrucæ, which measure about 1·25 mm. in diameter, and 1 mm. in height. The polyps are retractile within the verrucæ.

The cœnenchyma is thick and dense, it has a layer of large, half-sided, spiny spindles, the spines on the one side largely developed, and short four-rayed spicules. Other spicules of the cœnenchyma present the forms of warty spindles (Stachelkeule of Kölliker), or feebly developed blattkeule, four-rayed stellate forms (Vierling of Kölliker), spiny one-sided spindles, bent spindles, and of warty double spindles. These spicules also cover the verrucæ. The polyp spindles are straight and bent spiny spindles.

The spicules, which are of a light red colour, measure :—the half-sided spiny spindles