

in diameter; the rhabdome 6.5 by 0.0158 mm., is nearly cylindrical for a considerable distance below the cladome, and ends in a filiform termination.

II. Microscleres. 8. *Sigmaspire of the choanosome*. This is of the usual form; 0.012 to 0.016 mm. long.

9. *Toxospire of the cortex* (Pl. IV. figs 11, 12). This is a sigmaspire modified by continued growth in a spiral direction; it has the form of a widely open helix of nearly two turns with a variable spiral angle. Its length is from 0.03 to 0.04 mm.

*Colour*.—Dark grey.

*Habitat*.—Station 208, off Manila, January 17, 1875; lat. 11° 37' N., long. 123° 31' E.; depth, 18 fathoms; bottom, blue mud.

*Remarks*.—Four specimens of this sponge were trawled; all more or less hemispherical or dome-shaped with a flat base. The largest measures 42 mm. by 38 mm. along its horizontal diameters, and 32 mm. in height.

The oscules (Pl. IV. fig. 2) are borne on the summits of more or less conical eminences on the upper surface of the sponge; the smallest specimen bears two, the largest six, having an average diameter of somewhat under 2 mm. They lead into a large cloacal chamber, the wall of which is perforated by numerous small round or oval apertures, giving it a cribriform appearance. Trichodal protriænes lie in bundles in the wall of the chamber and project obliquely forwards, surrounding the pores with their cladomes.

*Skeleton*.—The long spicules (1, 3, 4, 5, 7) are collected into radiating fibres, the triænes appearing at the distal ends. From the terminal sheaf of the fibre the protriænes with widely diverging cladi (4, 5) project their cladi into the cortex (Pl. IV. fig. 18), thus contributing essentially to its support. The cladomes of many of the anatriænes, indeed almost all, are also embedded in the cortex. The highly porrectate protriænes (3) project beyond the surface as hispidating spicules. The numerous smaller oxæas (2) lie irregularly scattered through the cortex, crossing one another in directions oblique to the general surface, but more nearly parallel than perpendicular to it. Around the oscule the spicular fibres project in a kind of fringe; these fringing spicules are chiefly protriænes. The sigmaspires are scattered generally through the choanosome, but are most abundant in the walls of the canals and cloacal chambers.

The toxospires of the cortex are most abundant beneath the external epithelium, where they form a dense layer. Outside the sponge, covering the epithelium, is a quantity of granular debris, in which numerous deciduous toxospires occur. The crowding of the toxospires towards the exterior, and the presence of deciduous examples beyond it, point to an outward movement and final extrication of these spicules.

*Ectosome*.—Beneath the external epithelium the cortex consists of a layer of collenchyma, very difficult to analyse, partly on account of its complexity, partly by reason of the slight but numerous variations which it exhibits in different regions. The