

less gradually to a point at the distal than at the proximal end, which frequently becomes filiform; 2.326 mm. in length by 0.0237 mm. in diameter.

2. *Trichodal oxea*; immeasurably thin fusiform oxea, 0.395 mm. long, which, lying side by side with overlapping ends, give rise to spicular fibres (Pl. I. fig. 27).

3. *Protriæne* (Pl. I. figs. 21, 23-25). Rhabdome scarcely perceptibly less in diameter immediately below the cladome than near the actinal centre, thence tapering very gradually to a filiform termination. Cladi usually of unequal length, one, measuring 0.197 by 0.005 mm., longer than the other two, which are generally equal in size, viz., 0.0513 by 0.0039 mm.; the cladi are also sometimes reduced in number, one or even both of the shorter disappearing, the longer cladus alone remaining then measures 0.21 by 0.0054 mm.

II. Microsclere. 4. *Sigmataspire* (Pl. I. fig. 22). This is of the typical form, but is somewhat larger than usual, attaining a length of from 0.0237 to 0.0276 mm.

*Anatriænes* are absent.

*Colour*.—Dark ashen-grey.

*Habitat*.—Station 78, Azores, July 10, 1873; lat. 37° 26' N., long. 25° 13' W.; depth, 1000 fathoms; bottom, volcanic mud.

*Remarks*.—Of this species, one of the simplest forms of *Tetilla*, two specimens were obtained; they are approximately of the same size, about 20 to 22 mm. long by 10 mm. wide. One bears a remarkable resemblance to a shoe or slipper, hence the name. The single oscule, 4.7 mm. wide, occupies a position corresponding to the opening of the shoe; its margin is produced into a short tube, supported by spicules, including numerous protriænes, which lie within its walls parallel to its length; internally it leads into a cloacal chamber, and into this the excurrent canals open freely by unstricted apertures. In the other more fusiform specimen, the oscule is more nearly terminal in position, but otherwise similar. The opposite end of the sponge, corresponding to the toe of the shoe, is produced into numerous short papillæ, from which protriænes, but no anatriænes, project for a short distance outwards. These no doubt are reduced anchoring filaments. The sponge appears to have rested on one side, corresponding to the sole of the shoe, and if so the anchoring filaments would be without anchoring function, which might account for their reduction.

The spicules diverge spirally from an excentric node in short fibres which project obliquely beyond the surface of the sponge, rendering it hispid; the longer cladi of the protriænes usually have a common direction over limited areas.

The spicular fibres are of two kinds, those formed of large oxeas and protriænes, and those which consist solely of trichodal oxeas: at the oscular margins, the spicular fibres enter the wall of the oscular tube and assume a close palisade arrangement.

The exterior of the sponge (Pl. I. fig. 27) is covered by a dermis (ectoderm and