

Histoderma appendiculatum, Carter,¹ appears to resemble this genus more strongly than any other described sponge, having a similar form (though the tubes on the surface are very long), a similarly arranged skeleton, and stout sigmata; but as the chela is of a normal form, and the sponge possesses no tylote spicules, the resemblance may have no classificatory importance.

Sideroderma navicelligerum, Ridley, sp. (Pl. VIII. fig. 9; Pl. IX. figs. 5, 8, 9).

1885. *Orella navicelligera*, Ridley, Narr. Chall. Exp., vol. i. pt. 2, p. 571.

1886. *Sideroderma navicelligerum*, Ridley and Dendy, Ann. and Mag. Nat. Hist., ser. 5, vol. xviii. p. 348.

Sponge (Pl. VIII. fig. 9) hemispherical, adhering by its broad surface; consisting of a very hard, dense, external rind (whence the generic name), about 1 mm. in thickness, and of an underlying soft mass of tissues containing numerous microsclera and loose megasclera but no fibre. From the surface of the sponge arise a great number of papillæ, about 6 mm. in height, some with a (contracted) osculum at the extremity. Size of the specimen 44 mm. in diameter at the base by 31 mm. thick. *Colour* in spirit pale, dirty yellow. *Texture*, externally very hard and dense; internally soft, pulpy, amorphous (possibly a good deal decomposed). *Surface* smooth, except for the numerous papillæ. *Oscula* on the summits of papillæ.

Skeleton.—No horny fibre is present. The main part of the skeleton lies in the external rind. This consists of a very dense, felted mass of tylote spicules arranged with some degree of order in two main directions parallel to the surface. The spicules lie in layers, touching one another, the spicules of the same layer lying more or less in the same direction and at right angles to the spicules of the layer above or below. In a vertical section through the rind (Pl. IX. fig. 9) we sometimes see very plainly the alternating layers of longitudinally placed spicules, and of transverse sections of the spicules. Occasionally spicules are found more or less vertical to the surface. The spicules of the external rind are all dumb-bell-shaped (tylota), and this adds very much to their efficiency, for by the interlocking of the heads of such spicules one with another a far firmer structure is produced than if the spicules were simply oxæa or strongyla.

Spicules.—(a) *Megasclera*; tylota, each spicule consisting of a long, cylindrical shaft, with an oval head at each end (Pl. IX. fig. 5, a, b). Length 0.28 to 0.595 mm.; diameter of shaft in middle 0.0063 to 0.0126 mm. The shaft is thickest in the middle, and tapers slightly and gradually towards the knob at each end. These spicules also occur abundantly scattered about in the soft tissues beneath the rind, and it is from these that the measurements given above are taken. (b) *Microsclera*; these are exceedingly abundant in the deeper tissues (the isochelæ also occur in the rind); and vary

¹ *Ann. and Mag. Nat. Hist.*, ser. 4, vol. xiv. p. 220; pl. xiv. figs. 23-25; pl. xv. fig. 39.