in other cases), and which thence made their way into the choanosome and so to the exterior.

The cortex (Pl. XL. fig. 3) measures about 0·79 mm. in thickness, the ectochrotal layer containing the sand-grains is about 0·4 to 0·45 mm. thick, the sand-grains are angular or subangular and irregular in shape, varying considerably in size from about 0·16 to 0·4 mm. in length. The pencils of radiating cortical oxeas (No. 2) pass between adjacent sand-grains, several pencils surrounding each individual grain as though keeping it in place. The layer of sterrasters is sharply defined from the preceding, and measures about 0·24 mm. in thickness. The usual fibrous layer, about 0·0475 mm. thick, completes the cortex on the inner side. The somal megascleres have the usual arrangement in radiating sheaves, but they are frequently crossed by small scattered oxeas, similar to those of the cortex. The pores (Pl. XL. fig. 4) present the usual characters, and vary from about 0·025 to 0·05 mm. in diameter, a large oval pore often measuring 0·067 by 0·028 mm. The canal system is more open than in *Cydonium eosaster*, the mesodermal sarcenchyma not having encroached so far upon the lumen of the canal, hence the aphodi are usually short, and indeed occasionally absent, the chambers then becoming eurypylous. The chambers are small, about 0·02 mm. in diameter on an average.

Cydonium eosaster, n. sp. (Pl. XX. fig. 22 ; Pl. XXI. figs. 15–29).

Sponge (Pl. XXI. fig. 15).—Spherical, free, oscules not distinguishable from the pores which occur in sieves overlying the chones ; surface smooth, even, with a few small, rounded, solid warts or tubercles ; cortex thin, the minute spherasters which underlie the outer epithelium are succeeded by a layer of larger spherasters of different form (Pl. XXI. fig. 23) ; the rest of the cortex is formed by the sterrastral layer.

Spicules.—I. Megascleres. 1. *Somal oxea* (Pl. XXI. fig. 16), fusiform, usually sharply pointed ; 2·856 by 0·032 mm.

2. *Cortical oxea*, 0·25 to 0·3 by 0·0035 mm.

3. *Dichotriæne* (Pl. XXI. fig. 17), rhabdome conical, much attenuated proximally to a very sharp point, or rounded off near the end ; protocladi projecting outwards and only slightly forwards, deuterocladi directed outwards and slightly backwards. Rhabdome 3·57 by 0·047 mm., protocladi about 0·11, deuterocladi about 0·21 mm. long.

4. *Protriæne* (Pl. XXI. fig. 20), rhabdome slender, tapering towards the cladome ; cladi directed forwards and only slightly outwards. Rhabdome 5·0 by 0·026 mm. when widest, 0·019 below the cladal origin ; cladi 0·19 mm. long, chord 0·19 mm.

5. *Anatriæne* (Pl. XXI. figs. 18, 19), rhabdome long, slender, conical, attenuated proximally, either very sharply pointed, or strongylate ; cladi extending chiefly outwards, very slightly backwards. Rhabdome 8·21 by 0·029 mm., cladi 0·095 mm. long, chord 0·19 mm., sagitta 0·048 mm.