

pointed or not, straight or curved; varying in different specimens from 3·14 by 0·095 to 4 by 0·104 mm.

2. *Protriæne* (Pl. XV. fig. 6), rhabdome massive, conical, roundly pointed; cladi conical, stout. Rhabdome 2·86 by 0·1 mm., cladi 0·2 mm. long, chord 0·318 mm.

3. *Dichotriæne* (Pl. XV. figs. 4, 5), rhabdome massive, conical, much attenuated proximally, sharply pointed or rounded off near the point; protocladi diverging outwards and forwards; deuterocladi horizontal, conical, and obtusely pointed or rounded off. Rhabdome 3·02 by 0·095 to 3·72 by 0·163 mm., protocladi 0·1114 mm., deuterocladi 0·1114 to 0·175 mm. in length, chord from 0·7 to 0·79 mm.

4. *Anatriæne* (Pl. XV. figs. 7–9), rhabdome slender, conical, excessively sharply pointed or rounded off near the end; cladi extending outwards more than backwards; cladome rounded or slightly flattened in front. Rhabdome 2·0 to 2·1 by 0·023 mm., cladi 0·0158 mm. long, sagitta 0·0118 mm., chord 0·0276 mm.

II. Microscleres. 5. *Anthaster* (Pl. XV. fig. 10), actines bacillary with rounded ends, minutely spined, usually four to seven in number, but varieties in which they are more or fewer are present; a single actine of a tetrad form 0·013 by 0·00395 mm.

6. *Chiaster* (Pl. XV. fig. 11), no perceptible centrum, actines fine, hair-like, variable in number, tylote; a single actine 0·008 mm. long.

*Colour*.—In two specimens a purplish-grey, in a third yellowish-white.

*Habitat*.—Port Jackson, June 3, 1874; depth, 30 to 35 fathoms.

*Remarks*.—Two specimens of this sponge and part of a third are present in the collection. Of these, one measures 57 mm. in maximum height by 47 mm. in diameter, its basal attached surface is an irregular triangle about 22 mm. across; the second is 48 mm. in height, much enlarging from the base upwards, so that while the base measures about 25 by 18 mm., the somewhat oblong upper surface measures as much as 62 by 41 mm. The fragment is the lower part of the sponge bearing the surface of attachment, and since this measures about 22 mm. in diameter it indicates for the entire sponge a size similar to that of the other two. The small simple oscules of the upper surface measure about 1 mm. in diameter, sometimes more, sometimes less; the pores are large and do not, so far as one can judge under a strong simple lens, occur more than four or five together in a single sieve. The chones are simply the ectosomal ends of the canals, which undergo scarcely any modification on passing out of the choanosome, if any.

The ectosome (Pl. XV. fig. 12) is about 0·8 mm. in thickness, the outer 0·04 to 0·12 mm. consists of collenchyma crowded with fusiform cells running parallel to the epithelial surface, the rest of the ectosome is composed of collenchyma with well-developed collencytes. The collenchyma is in addition crowded with oval cells, 0·02 mm. in diameter, made up of deeply stained oval bodies about 0·004 mm. in diameter (Pl. XV. fig. 13). These