straight, curved, or sinuous, more or less cylindrical epirabd, varying from 0·2 to 0·5 mm. in length, and from 0·05 to 0·09 mm. in breadth; produced laterally and terminally into a variable number of simple or bifurcate cladi, terminating in lobate or saddle-shaped expansions, which clasp the epirabd of adjacent desmas (Pl. XXXIII. fig. 8*f*). The crepis (Pl. XXXIII. figs. 8, *d*, *d'*) is a cylindrical strongyle, about 0·065 by 0·001 mm. in length and breadth, traversed by an axial rod about 0·04 mm. long. The successive coatings of opal deposited on this can be traced by successive alternating layers of clear and granuliferous opal, the outermost layer being always clear (Pl. XXXIII. fig. 8*e*).

The history of the desma thus recorded exactly corresponds with that obtained by piecing in a series desmas in successive stages of development.

In the young adult desma the cladi terminate in slender finger-like processes; these, applying themselves to the shaft of a neighbouring desma, grow over it in expanded lobate ends, thus producing the clasped zygosis already described.

The total length of the adult desma varies from about 0·5 to 0·8 mm.; the length of the epirabd seldom exceeds 0·18 mm.

2. *Dichotriæne* (Pl. XXXIII. fig. 3). This precisely resembles the corresponding spicule of the Choristida; the rhabdome is conical, straight or curved, much tapered proximally, but usually ending in a rounded-off point; the protocladi extend outwards and forwards, the deuterocladi outwards, terminating in rounded points. An axial rod extends throughout both rhabdome and cladome. Rhabdome 0·96 by 0·04 mm., protocladi 0·064 mm., deuterocladi 0·16 mm. long. The cladome lies beneath the outer epithelium, the rhabdome descends perpendicularly into the interior (Pl. XXXIII. fig. 9).

3. *Oxea* (Pl. XXXIII. fig. 4), slender cylindrical, curved or somewhat sinuous, tapering to a sharp end with rounded-off point, usually thicker towards the distal end, 1·35 by 0·008 mm. This spicule is chiefly confined to the ectosome, which it traverses radiately, projecting beyond the surface, which it thus renders hispid; but a few straggling examples are also to be met with in the choanosome.

II. Microscleres. 4. *Microxea* (Pl. XXXIII. fig. 5), fusiform, surface often minutely roughened, frequently centrotylote, sharply pointed, about 0·18 to 0·213 by 0·005 mm. This spicule corresponds to the microxea of *Pœcillastra*.

5. *Spiraster* (Pl. XXXIII. fig. 6), a somewhat cylindrical spire, with a helical twist of four to six revolutions; produced into spines at right angles to the surface, one at every quarter or half revolution, and into two or three spines at the end; spines sometimes suppressed over a great part of the spire; length of the spines variable, sometimes as much as 0·005 mm. A single amphiaster was observed amongst the spirasters, evidently resulting from modification. Total length about 0·024 to 0·03 mm.

Colour.—Light grey externally, within light brown.

Habitat.—Station 173, off Matuku, Fiji Islands, July 24, 1874; lat. 19° 9′ 35″ S., long. 179° 41′ 50″ E.; depth, 315 fathoms; bottom, coral mud. Dredged.