

The Rhabdocrepid Desma.

Those megascleres of the Lithistida that form the characteristic skeletal network differ in some important respects from the megascleres of other sponges, and are here distinguished as "desmas"¹ (δέσμα, ατος, το, a bond). They are formed usually by the deposition of successive layers of silica upon an ordinary spicule, the axial rod of which early suffers an arrest of development (Pl. XXXIII. fig. 8; Pl. XXXIV. fig. 1; Pl. XXXV. figs. 5-10, 35-42). The layers which are deposited after the arrested growth of the fundamental spicule, or, as it may be termed, the "crepis" (κρηπίς, ιδος, ἡ, a kind of man's boot, or generally a foundation), are at first concentric with it, but subsequently grow out into irregular branches, cladi, and tubercles which are altogether independent of it. The crepis may be either a monaxon (Fig. X., *p-r*), or a tetraxon; the former, which alone is the immediate subject for consideration, is most usually if not always a small strongyle (microstrongyle). That part of the adult desma which is formed by the deposition of concentric layers immediately around the crepis may be termed the "epirabd." The fully grown forms of a rhabdocrepid desma are described under the species in which they occur, and we need not further allude to them here except to point out the fact that in many cases examples of rhabdocrepid desmas will frequently be encountered which, notwithstanding their difference in origin, are not to be distinguished from normal forms of tetracrepid desmas, and thus it may be and undoubtedly is in some cases difficult to say, in the absence of a visible crepis, whether a desma is rhabdocrepid or tetracrepid, but this difficulty is not a matter of any consequence in the examination of recent species, since, if the crepis is not visible in one desma it will be in another; it is only in the fossil sponges that any real difficulty can occur, and here it may generally be met by the fact that while some rhabdocrepid desmas are remarkably like tetracrepid ones, the converse on the other hand is not generally true, and thus if all the desmas of a fossil sponge are tetracrepid in general appearance, we may assign it to the tetracrepid group of Lithistids with great probability, even when neither the crepis is visible nor its cast; on the other hand, if only a few of the desmas are tetracrepid in appearance and the rest rhabdocrepid, we may refer the sponge to the rhabdocrepid division, undisturbed by the few exceptional forms which appear to point to a different conclusion.

Group II. CLASSIFICATION OF THE TETRAXONS.

1. *Tetractine*.—When all four actines of a tetraxon are present it is of course a tetractine, but as the full designation of this required to distinguish it from a tetractinose

¹ Of course the plural form should be "desmata," but in this and all similar cases (dragma, sigma) I have ventured to form the plural according to the common English rule.