

group, under the name *Streptastrosa*; they also are still more generally characterised by an aster of some form, whether spiraster, or euaster, or spheraster (*Calthropella*).

The Stellettidæ are a compact and natural family, the megascleres are usually radiately arranged, and an ectosomal triæne, which may be an orthotriæne, plagiotriæne, or dichotriæne, is invariably present, the mesoderm of the choanosome is without exception sarcenchymatous, and the chamber-system aphodal; these characters alone suffice to define it from the *Sigmatophora* and the *Streptastrosa*; the family is therefore one of particular value in an inquiry into the value of the microsclere in classification. We notice then in the first place that a euaster is present in every species of the family, and while in many genera an additional microsclere is present, this is never a sigmaspire, nor a spiraster, but either a second form of euaster, or a diactinose aster (microrabd) or a sanidaster, (*i.e.*, a chiaster with a rhabdal axis instead of a centrum), or an irregular amphiaser, which is similar to a sanidaster, but of uncertain origin.

The sanidaster and irregular amphiaser are the only microscleres in the family which are not contrastose, and the amphiaser is the only elongated aster occurring in other groups, but even it presents differences which distinguish it from the amphiaser of the *Streptastrosa*, and more nearly resembles a sanidaster. The microscleres of the Stellettidæ thus adhere with marked persistency to the euastral type, yet not so closely as to render them infallible guides, for were a *Thenia* with amphiasers and euasters to acquire a sarcenchymatous mesoderm and aphodal chamber-system, one would feel bound to include it in the Stellettidæ. The nearest approach to such a complement of spicules as that suggested occurs in *Thenia delicata*, which possesses amphiasers and plesiasters.

The Stellettidæ, so far as we know at present, are the only family of the demus Euastrosa, but there are certain Monaxonid Sponges which may eventually have to be included; these have been placed in a family Epipolasidæ, as an Appendix to the Euastrosa; the character of the mesoderm and of the chamber-system is not known in those genera of the family which in their spiculation make the nearest approach to the Stellettidæ, *e.g.*, *Asteropus* (*Stellettinopsis*, Carter), which possesses oxyasters and sanidasters; in the only example (*Amphius huxleyi*), in which the chamber-system is known it agrees with that of the Stellettidæ, but this species possesses only one form of microsclere and that an amphiaser. The Epipolasidæ are not only without triænes, but the oxeads do not strictly adhere to a radial arrangement. There is another genus of the family which departs still further from the Stellettid type (*Coppatias*), and which I think should most probably be included with the Monaxonida, but as I have not had spirit specimens of these Sponges to examine I leave the question open.

The next family is the Geodiidæ, a very homogeneous group, characterised by the presence of the sterraster, but the constancy with which this spicule is present is of no service in the present inquiry, for were it absent the Sponge would become a Stellettid,