

These siliceous spicules which are united into a continuous network, or which form, in virtue of their large size and mutual apposition, a supporting framework for the entire sponge body, were termed by Carter "skeleton spicules,"—in opposition to the far smaller "flesh spicules" which are loosely embedded in the soft tissue. In the new genera *Rossella*, Carter, and *Crateromorpha*, Gray, Carter was able to distinguish several species.

In 1875 Marshall published his researches on the skeleton of several sponge forms, some imperfectly known, and others newly discovered, *e.g.*, the genera *Sclerothamnus*, Marshall, and *Periphragella*, Marshall. The affinities of the Hexactinellida were discussed by Marshall in a special work. To start with, he distinguished Synauloidæ and Asynauloidæ. In the former the entire lattice network is said to be penetrated by a continuous system of axial canals, while in the latter the canals of the spicules which fuse to form the network do not communicate. To the Synauloidæ Marshall referred only the genus *Sclerothamnus*. The Asynauloidæ he divided into (1) Monacidæ, with only one form of spicule; (2) Pleionacidæ with forks and rosettes, in addition to the six-rayed forms; and (3) Pollacidæ, with numerous distinct forms of spicules, a special dermal skeleton, and an inner covering for the gastral cavities. While Marshall placed in the division Monacidæ only the genus *Eurete*, he assigned to the Pleionacidæ the genera *Lanuginella*, Schmidt, *Asconema*, Kent, *Farrea*, Bowerbank, *Periphragella*, Marshall, *Aulodictyon*, Kent, *Fieldingia*, Kent, and *Aphrocallistes*, Gray; to the Pollacidæ, on the other hand, he ascribed the family of the Holteniadæ with *Holtenia*, Wyv. Thomson, *Crateromorpha*, Gray, *Rossella*, Carter, *Sympagella*, Schmidt, *Placodictyum*, Schmidt, the family of the Euplectellidæ with *Euplectella*, Owen, and *Habrodictyum*, W. Thomson, and the family of the Hyalonematidæ, with *Labaria*, Gray, *Pheronema*, Leidy, *Semperella*, Gray, and *Hyalonema*, Gray.

In 1877, Sollas¹ described with great thoroughness a new fossil Hexactinellid genus with two species. Both in the dermal layer, or "oscular plate" as he termed it, and in the thick body mass, Sollas noted a framework of siliceous strands intersecting at right angles. The usual axial canals were present, but the nodes were not penetrated by them, *i.e.*, they did not exhibit any octahedral or lantern-like form. To indicate the systematic position of this new genus, Sollas elaborated the following classification of the Vitreohexactinellids, according to the characters of the skeletal network:—

I. Sexradiate skeleton spicules, always rectangular. Stauronemata.

(a) Skeletal network, with simple nodes.

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| 1. One layer in thickness, | . | . | . | <i>Farrea</i> . |
| 2. Several layers thick, | . | . | . | <i>Stauronema</i> . |

(b) Skeletal network having the nodes complicated by the presence of an octahedral lantern about each node,

Ventriculitidæ, including *Myliusia grayi*.

¹ *Ann. and Mag. Nat. Hist.*, ser. 2, vol. xix. p. 1.