

until we are able to examine them microscopically, after an elaborate and troublesome course of preparation, that the real interest of the sponge, namely, the minute anatomy and histology of the soft parts, shows itself. It is probable that one of the chief causes which have prevented the group from being hitherto almost entirely ignored is the singular beauty of the spicules as "objects for the microscope"; now, however, many observers have taken up the subject from a more scientific point of view, and we may hope for a rapid advance in this department of science.

Only within quite recent times have the Monaxonida begun to have a history of their own apart from the history of sponges at large, and as the latter is a subject which has already been more or less fully treated of by previous authors, such as Schmidt,<sup>1</sup> Vosmaer,<sup>2</sup> and von Lendenfeld,<sup>3</sup> we shall here mention only those facts which bear more directly upon our group.

To Zittel is due the credit of having first separated the Monaxonida from the Hexactinellida and Tetractinellida, as a distinct group of siliceous sponges, under the name Monactinellidæ. This he did in 1878, in his paper Zur Stammgeschichte der Spongien;<sup>4</sup> where he proposes the following classification of the sponges:—

Classe: *Spongiæ* oder *Porifera*.

1. Ordnung: *Myxospongiæ*. Hæck. (Carnosa Cart.).
2. Ordnung: *Ceraospongiæ*. Bronn { (Ceratina Cart.).  
(Psammonemata Cart.).
3. Ordnung: *Monactinellidæ*. Zitt. Kieselspongien mit einaxigen Nadeln. (Raphidonemata, Echinonemata und Holoraphidota z. Th. Carter).
4. Ordnung: *Tetractinellidæ*. Marshall. Kieselspongien mit ankerförmigen Nadeln oder mit den Nadeln des pyramidalen typus (Holoraphidota z. Th. Carter).
5. Ordnung: *Lithistidæ*. O. Schmidt (Holoraphidota z. Th. Carter).
6. Ordnung: *Hexactinellidæ*. O. Schmidt (Carter).
7. Ordnung: *Calcispongiæ*. Blv. (Calcarea Cart.).

In 1883<sup>5</sup> the name Monactinellidæ was altered by Sollas to Monaxonidæ, as the former implied a wrong idea, viz., that the chief spicules of the group are "monactinal," that is to say, consisting of only a single ray, while they are just as often "diactinal" or composed of two rays diametrically opposite to one another. Both these forms of spicule are, however, "monaxonid," that is to say they have each only one axis, which, in the case of the diactinal forms passes through both the rays. Hence the slight alteration in name appears to be justified. It has been further emended by subsequent writers to "Monaxonida," as "idæ" is the accepted termination for the name of a family.

<sup>1</sup> Spong. Adriat. Meeres, p. 1.

<sup>2</sup> Article Porifera, in Bronn's Klassen und Ordnungen des Thierreichs.

<sup>3</sup> Proc. Linn. Soc. N.S.W., vol. ix. pt. i., p. 122.

<sup>4</sup> Festgabe der philosophischen Facultät zum 50 jährigen Doctorjubiläum des Professor von Siebold, München.

<sup>5</sup> Cassell's Natural History, 1883, vol. vi. p. 326.