proper understanding of the various forms which they assume. For further details the reader is referred to the works cited below.[1]

The spicules of the Monaxonida may be very conveniently divided into two classes. Those of the first class constitute (with or without the aid of horn-like cementing substance, or spongin) the true skeleton of the sponge. They commonly occur associated together in tracts or in definite fibres, and are usually, when full grown, much larger than those of the second class; consequently the name *megasclera* is applied to them.

The spicules of the second class occur, as a rule, irregularly scattered through the soft tissues without taking part in the formation of the true, continuous skeleton. Their function is in most cases very doubtful. Owing to their minute size they are termed *microsclera*.

Megasclera.

In the Monaxonida the megasclera are (with few exceptions), as the name of the group implies, uniaxial; that is to say, the imaginary axis of the spicule, which finds its nearest visible representative in the axial thread, remains unbranched, although it may be more or less curved, or even bent at rather a sharp angle. Such a spicule may either grow in two directions from its point of origin, or in one direction only. In the former case two equivalent and usually similar rays arise more or less diametrically opposite to one another, and the spicule is consequently said to be *diactinal*, the point of origin remaining at or near the centre of the spicule. In the latter case one ray only is formed, and the point of origin, commonly represented by a bulbous enlargement of the axial thread, remains at the end of the spicule, which may or may not be swollen; in this case the spicule is said to be *monactinal*. Although it is impossible in many cases to demonstrate with certainty the manner in which the growth of a spicule takes place, yet the division into monactinal and diactinal is a very convenient one for all practical purposes. The diactinal appears to be the simpler type, from which the monactinal is derived by abortion of one of the rays.

A. *Diactinal megasclera.*

Here we may distinguish four fundamental types, which, however, run into one another by imperceptible gradations, but for which it is convenient to have distinct names for purposes of description.

1. *Oxea* (woodcut, Fig. I., 1); these are straight or curved spicules, more or less fusiform, and gradually pointed at each end.

[1] *Cf.* Bowerbank, Mon. Brit. Spong., vol. i. p. 6, &c.; Carter, *Ann. and Mag. Nat. Hist.*, ser. 2, vol. xx, p. 23, pl. i.; and ser. 4, vol. xiv. p. 100, pl. x.; Vosmaer, Bronn's Klassen u. Ordnungen d. Thierreichs, Porifera, pp. 187, 436, &c.