

which exceptionally they may be present, and if several such cases be found, and in all of them the microsclere belongs to the same group of forms, we may make use of it for further investigation of the affinities of the family; thus the Axinellidæ are usually without microscleres, but in every instance in which they possess them these spicules are some form of aster, hence, *ceteris paribus*, their affinities are with the Spintharophora rather than the Meniscophora; the *Suberites* are defined by Ridley and Dendy as being without microscleres, but Carter has described as a *Suberites* (*Suberites stellifera*)<sup>1</sup> a sponge in which euasters occur, and in the very characteristic *Suberites virgultosa* (Bowerbank), centrotylote microstrongyles are present and these are derived either from a spiraster or a euaster; if from the former I suppose it might be remarked that the species should be included in the Spirastrellidæ; if so, that only supports the argument for assigning the *Suberites* to the Spintharophora, for it admits the close relationship of the *Suberites* to a family distinguished from it by the possession of spirasters.

The difficulty of determining whether a Spintharophorous sponge not possessing microscleres should be assigned to a family distinguished by spirasters, or to one distinguished by euasters, renders the subdivision of the Spintharophora into groups of higher value than families extremely difficult.

The first subdivision may be naturally made into those genera in which spicules of two widely different orders as regards size are present, and those in which the spicules are all of the same order; the latter may be termed Homosclera, the former Heterosclera; the Homosclera are as at present known represented by a single family—the Astropeplidæ, with a single genus and species, but it is possible that the species of the genus *Coppatias*, none of which I have seen, may eventually be found to belong here. The Heterosclera may be divided into two demi, the first the Centrospinthara, in which the asters are euasters, and the second the Spiraspinthara, in which the asters are some form of spiraster. The Centrospinthara will include the two already existing families, Axinellidæ and Tethyidæ, and a third new one, the Dorypleridæ. The Spiraspinthara will include the two existing families, Suberitidæ and Spirastrellidæ, and a third new one, the Scolopidæ, which appears to be intermediate between the other two.

I have already shown in the Introduction to the Tetractinellida the reasons which preclude the acceptance of Vosmaer's two orders, Silicispongiæ and Cornucaspongiæ, or the Chondrospongiæ and Cornucaspongiæ of von Lendenfeld, and I have now to explain why I do not see my way to accepting the two suborders of Vosmaer, the Halichondrina and Clavulina, although these have been adopted by Ridley and Dendy. The Clavulina being that which includes aster-bearing sponges is the only division with which we are immediately concerned. It is defined by my colleagues as follows:—

<sup>1</sup> Carter, *Ann. and Mag. Nat. Hist.*, ser. 5, vol. x. p. 124, fig. 2, 1882.