

The Halichondrina are divided by us into four families, the Homorrhaphidæ, the Heterorrhaphidæ, the Desmacidonidæ, and the Axinellidæ. To these von Lendenfeld adds a fifth family, the Spongillidæ,¹ but with the fresh-water sponges we have in this place nothing to do, and we cannot afford the time and space to discuss their systematic position.

The Homorrhaphidæ are, obviously, a fairly satisfactory group. All have a reticulate skeleton, all have diactinal megasclera, and all are without microsclera of any kind. The group includes two subfamilies, the Renierinæ and the Chalininæ, each of which has long been recognised, but hitherto these two subfamilies have been far too widely separated, and that merely on the ground that in the Chalininæ there is a greater development of spongin than in the Renierinæ. Nearly all Renierine sponges have more or less spongin in the skeleton, and, as a matter of fact, it is impossible to say where the Renierinæ end and the Chalininæ begin. The Chalininæ appear to be derived from Renierinæ (probably polyphyletically, *i.e.*, from several distinct genera), which, living in warm seas, have developed a horny skeleton more or less at the expense of the spicular element. The Chalininæ proper, as we have already noted, are simulated by genera belonging to quite distinct groups, which, living under similar conditions, have suffered a similar change in their skeletons. We have thus in the family Heterorrhaphidæ the two genera *Toxochalina* and *Gelliodes*, each with a distinct, well developed horny skeleton exactly similar to that of true Chalininæ, and also with diactinal megasclera, but each betraying its true position by the presence of microsclera. By some authors (*e.g.*, von Lendenfeld) the former genus is included amongst the Chalininæ, but we cannot agree to such an arrangement.² The mere possession of a horny skeleton is not sufficient guide to the systematic position of a sponge, and this fact cannot be too strongly enforced. The Chalininæ are very poorly represented in the Challenger collection, and this is accounted for by the fact that they are essentially shallow-water forms, and are rarely if ever met with in deep-sea dredgings. Moreover, their range is rather a restricted one. On the other hand, in the large collection of sponges obtained in Australian seas by Dr. R. von Lendenfeld, and now lodged in the British Museum, the species of Chalininæ are extremely plentiful and varied. Dr. von Lendenfeld's descriptions of these sponges are now in course of publication, and we hope that when they appear much will have been done towards putting the group on a more satisfactory footing with regard to classification.

about 0.44 by 0.011 mm. The chelæ, on the other hand, are characteristically those of the genus *Myxilla*. Many, or most of them, it is true, possess four teeth, but this condition is known to occur in at least one species of the latter genus (*Myxilla mariana*, nobis; *cf.* p. 138, footnote). There are a fair number of them in the preparation, and they are all, or nearly all, equal ended and not, as stated by Schmidt, generally unequal ended. In short, Schmidt's figures and description of these spicules are misleading in the extreme; there can scarcely be a doubt that they are present as foreign spicules, and such an occurrence is not at all uncommon.

¹ *Proc. Zool. Soc. Lond.*, December 21, 1886, p. 584.

² Mr. Carter carries this line of argument a step further, and actually includes a species of *Homæodictya*, characterised by its remarkable chelate microsclera, in the genus *Chalina*, presumably because of the amount of spongin present in the skeleton (*Ann. and Mag. Nat. Hist.*, ser. 5, vol. x. p. 111).