

and incapable of practical application in many cases. While in the Lyssacina the cementing of the spicules occurs at a relatively very late stage, and generally only after the Sponge has attained its final form and size, the continuous framework of the Dictyonina is formed at once in every newly developed portion, and constitutes from the very beginning an important factor.

The spicules of the Lyssacina are, during the entire period of growth, easily separable from one another; but when they become united by the cement into a rigid framework, the growth of the sponge ceases. In the Dictyonina, on the other hand, on account of the early development of the rigid framework, growth can only continue through increase on the surface or at the ends, but there is as little definite limit to this superficial growth as to the general growth of those Lyssacina in which the spicules are never firmly united.

It seems to me worthy of notice that, in certain divisions of the Lyssacina, as, *e.g.*, in the great family of the Hyalonematidæ, and in the subfamily of the Holascinae, a firm union of the spicules never occurs. It is certainly no accidental fact that it is in these very divisions that the largest species occur, such as *Poliopogon gigas*, *Poliopogon amadou*, *Pheronema giganteum*, *Malacosaccus vastus*.

#### POSITION AND ARRANGEMENT OF THE SPICULES.

The position and arrangement of the spicules now remain to be considered. A definite grouping and naming of the spicules is of obvious advantage for description even in those cases where no sharp distinctions exist between the various categories. I would, therefore, endeavour to complete the classification and nomenclature already adopted by Marshall.

#### *Prostalia.*

The more or less prominent spicules which occur over the outer surface of the Sponge I call *prostalia*. They occur only in Lyssacina, and may, from their position, be more intimately defined and differentiated as *basalia*, *pleuralia*, and *marginalia*.

*Basalia*.—The *basalia* are prominent spicules at the lower end of the Sponge, grouped together like bunches of long hairs, and forming the root-tuft which serves for anchoring the animal in the mud. This is one of the characteristic family peculiarities of the Hyalonematidæ, but it also occurs in many Euplectellidæ and some Rossellidæ.

When the knowledge of the Hexactinellida was still limited to a few forms, such as *Euplectella aspergillum*, *Hyalonema sieboldii*, and some Dictyonina, it was proposed to utilise the presence or absence of a root-tuft as a leading principle of classification, and to erect a special group of "Lophospongiæ." In this, the importance of what is merely an adaption to the nature of the ground, was over estimated. We now know, in fact,