

me, the typical union of the dictyonalia is wholly absent, although no one has any doubt that *Aphrocallistes*, in the general structure of its skeleton, and especially in the structure and disposition of its isolated spicules, belongs to the Dictyonina, and is to be referred to the neighbourhood of Euretidae and Coscinoporidae. As an instance of the second case, where a skeleton which is macroscopically like many dictyonal frameworks contains only isolated examples of two hexradiate spicules uniting in the typical fashion, I may refer to *Euryplegma auriculare*.

In regard to this form I have indeed hesitated for a long time whether I should refer it to the Lyssacina or to the Dictyonina. At first, in my memoir Ueber den Bau und das System der Hexactinelliden,¹ I regarded it as a Dictyonine, but have finally preferred to place it among the Lyssacina, and beside the Rossellidae, which, both in regard to the structure of the loose needles and the absence of uncinates, it resembles more closely than it could any Dictyonine form. In its other characters it is, however, Dictyonine-like, though the absence of uncinates and scopulae give it a peculiar appearance and must always make its position exceptional.

It was a fact of much interest to me that my respected colleague Professor Zittel unhesitatingly referred a macerated skeleton of *Euryplegma*, which I asked him to examine in the Berlin Zoological Institute, to the Dictyonal type, while allowing that various microscopical sections of the same skeleton completely resembled the Lyssacina in the spicular union of the framework.

There are, indeed, other distinctive characters between Lyssacina and Dictyonina than the mode of union of the spicules, but these also establish, not a fundamental separation, but only a difference of degree. Previous investigators have noted the readily verified fact that in all emphatically Lyssacine types, which form a connected skeletal framework, there occurs, besides the simple soldering of the spicule branches, another very frequent mode of union by means of short connecting bridges, the so-called synaptacula, which bind together more or less approximated rays of adjacent spicules, which are not, however, in actual contact. By the development of numerous synaptacula at approximately uniform intervals, there arises a scalariform structure, which is regarded by some as characteristic of the Lyssacina with connected framework, and as contrasting them with the Dictyonina. But while it is indisputable that such scalariform structures occur with great frequency, indeed quite regularly in the framework of Lyssacina, it is incorrect to assume that they are absent from all Dictyonina. I have observed them, though not frequently, yet quite typically developed in indisputable Dictyonina, such as *Fieldingia lagettoides*, S. Kent, which in its uncinates and scopulae is certainly one of the Dictyonine series.

Another fact, to which I first called attention, is the early union of the dictyonalia simultaneously with the development of the associated portion of the body, which is, so

¹ *Abhandl. Königl. Preuss. Akad.*, 1886.