

concerns the sponges with homogeneous skeletal fibres, and it has been stated that this character is of a very conditional nature, since the tendency in question is common to sponges of entirely different internal organisation. The properties of this latter, as well as those of the more detailed structure of the skeletal fibres, constitute the two other relative characters, and we have seen that, apart from the point that they are relative, they are also antagonistic to one another in a certain sense of the word. Such is the case with respect to the two characters to which, in the Keratosa, the highest systematic value has been repeatedly ascribed. The fact of their being relative does not permit us to make use of them in order to divide the group in question into two subdivisions, while this is demanded by their mutual antagonism. And yet these characters are undoubtedly the most important, the only characters according to which any main subdivisions may be realised, for they concern the structure of both the constituent parts of the organism of a horny sponge, and as to other systematic characters of the Keratosa, we shall soon see that they are unfit even for good generic distinctions.

What kind of arrangement can be adopted under such conditions? Dr. Vosmaer, as if in order to reconcile the contradictions in question, proposes¹ a subdivision of the group directly into families, characterising them by the properties both of the skeleton and of the soft parts. His arrangement will be adopted in the descriptive part of this paper, as no better arrangement seems at present possible; it is, however, an artificial one. By our systems we have to express the phylogenetic affinities of the corresponding animals, and the arrangement of Dr. Vosmaer does not express them. He subdivides the Keratosa into five families directly. How is this to be understood from a phylogenetic point of view? Are these five families divergent branches from the same spot of the general genealogical tree as represented by the diagram A? or do they form together the figure represented by the

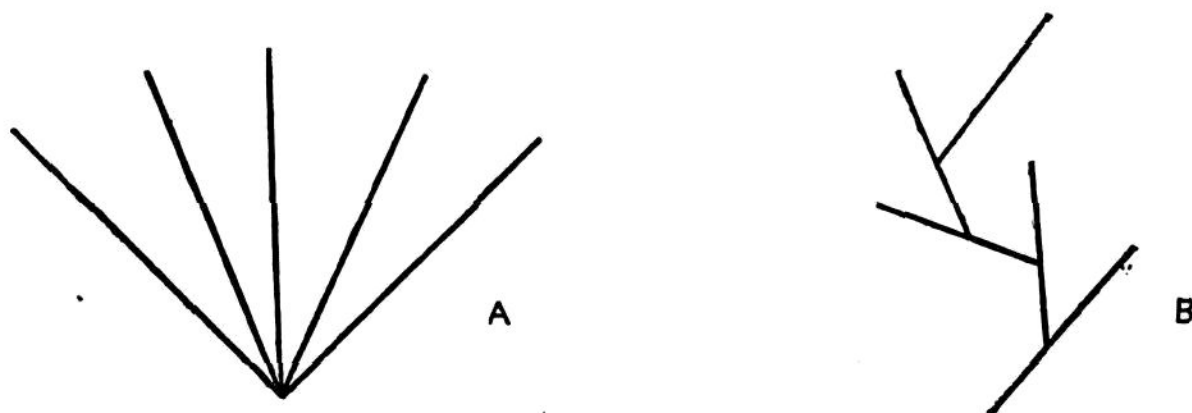


diagram B? There are no answers to these questions, and this is not the fault of Dr. Vosmaer, whose arrangement is at any rate the best of all others, for it pays attention to the characters both of the soft parts and of the skeleton; the matter itself is of a very

¹ On *Velinea gracilis*, p. 444.