

sided affinities that the above mentioned subdivision of them could not be expressed graphically in a satisfactory manner.

“The second chapter of the Report is devoted to the characters of the Keratosa generally regarded as of generic importance, and it renders obvious that, firstly, these characters are really of more subordinate consequence than those discussed before, and that, secondly, most of the genera hitherto distinguished are created on the basis of thoroughly relative and often very ambiguous characters.

“The third chapter is that dealing with the description of the Challenger forms, and though not interrupted by any considerations of a more general character, it neglects no opportunity to point out that the classifier, following the principles used at the present time, is on the whole ‘to be compared with a man wandering in the dark.’

“The ‘concluding remarks’ summarize the general results of the Memoir, and after having discussed the systematic position of the Keratosa with respect to other groups of Porifera, Dr. Poléjaeff asserts that the Keratosa form probably in this type or subtype nothing more than a single family, and that accordingly they are to be subdivided into genera directly. In order to have no heterogeneous genera among them, he proposes to enlarge the definition of the genus, and for the instances when some undoubtedly good species are constant to a *relative* character to unite them into a subgenus. According to this the family in question would consist of the genera *Darwinella*, *Simplicella* (including the subgenera *Aplysilla* and *Dendrilla*), *Ianthella*, *Spongia* (including the subgenera *Coscinoderma*, *Euspongia*, *Hippospongia* (?), *Cacospongia*, and *Stelospongos*), *Phyllospongos* (including the subgenera *Phyllospongia* and *Carteriospongia*), and *Velaria* (including the subgenera *Aplysina*, *Verongia*, and *Luffaria*). He believes, however, that it would have been premature to follow up in his Report the arrangement just mentioned. Sure as he is that this arrangement is in the main natural in every direction, he confesses that by its adoption only the simplest part of the problem would have been cleared up, its most important part consisting in the task of proving actually which of the subgenera just mentioned are really to be regarded as subgenera (*i.e.*, groups which, although connected by numerous intermediate stages with their systematic neighbours, still present in their organisation a new principle fit for a further development) and not as species and even varieties. This latter question is, according to him, to be decided (perhaps exclusively) by the methods of comparative physiology. Many passages are devoted to the definition of the idea of the genus. In his report on the Challenger Calcareo Dr. Poléjaeff regarded the generic character to be a ‘character of sufficient constancy, and together with this, allowing numerous modifications either in the direction of a further development, or in the direction of different variations.’ His experience whilst examining the Challenger Keratosa leads him to the suggestion that at least in the instances where but one character—and not a series of them as is the case with the Calcareo—decides