

came to his later systematic ideas really in consequence of the discovery just mentioned, the medal has a reverse. For, having adopted the principle of classification according to the spicules, Prof. Hæckel fell into the same error which characterises the system adopted in the Prodrusus. The difference between a colony of Calcarea, in which, according to their spicular characters, one individual belongs to one genus, the other to another, and a genus such as *Thecometra* or *Sycometra* of the Prodrusus, is of quantitative not qualitative nature. The existence of such colonies is indeed very instructive, but it proves nothing but the great variability of the spicules, nothing but the utter impossibility of giving to the presence or absence of quadriradiate or acerate spicules the significance of a generic character.

The interesting experiments of Schmankeiwitsch are certainly still present in the memory of every zoologist. They aroused great attention, and there was considerable doubt as to their reliability. But they merely amounted to a demonstration of the transition of one *species* into another, under the influence of *different* conditions. Now, in *Ascaltis darwini*, *Ascandra lieberkühni*, and in *Ascandra variabilis*, we have, according to Hæckel, to deal with colonial forms, which, under the *same* conditions, consist partly of the representatives of one *genus*, partly of another. As I said before, there is in the Monograph no trace of an argument to prove the naturalness of its twenty-one genera. I have only to add that, had such an attempt been made, and had the argument been lucid and logical, yet in view of such examples every impartial investigator would look on it with distrust, and consider the argument to be sophistical. Prof. Hæckel calls his system "natural," but no system paying attention to but one character and not to the whole organisation can claim that designation. And so far as concerns its twenty-one genera, the system proposed by Prof. Hæckel, however ingenious, is yet not less artificial than that of the animal kingdom established by Linné. I do not consider it necessary to dwell longer on this question, but formulate my conclusion thus:—

The spicules of Calcarea being very variable in every direction, could not serve as a basis for the distinction of genera, even if there were in the calcareous sponges no other characters fit for very distinct systematic definitions.

I pass on to the other characters. One of them—the arrangement of the canal system—is used by Prof. Hæckel as a family character.

The great difference between an Ascon, a Sycon, and a Leucon had been already recognised in some measure by the earlier spongiologists (Bowerbank, Lieberkühn, O. Schmidt), although the meaning of the difference was, so to speak, rather dimly felt, not appreciated at its full value. It is the great merit of Prof. Hæckel that he laid stress upon these differences, the more so because, as we shall see, his knowledge of the internal organisation of Calcarea was far from perfect. With respect to the Ascones, I have nothing further to say, Prof. Hæckel's erroneous opinion upon their histological structure, as well