be disputed. We come, therefore, in accordance with Prof. Hæckel, to the conclusion that to the properties of the canal system the greatest systematic value must be assigned. It is, however, not to be forgotten that in different cases this value is not equal.

The canal system of the Leucones is nothing but a simple modification of that of the Sycones, and a modification in the direction of a further development. Not so with the Ascones as compared with the Sycones. As I endeavoured to show when discussing the question of the affinities of the Calcarea amongst themselves, the canal systems of both these families are products of quite different modes of development, that of the Ascones presenting a modification in one direction, that of the Sycones in another; and if we now give expression to this phylogenetic difference, the division of the Class Calcarea into two Orders becomes necessary.

But it is high time to state the arguments which lead me to regard the Calcarea as a Class and not as a Sub-class or Order. Of course, the systematic position of the group Porifera in the animal kingdom is at present ambiguous. It is, however, clear that, if the group is to be regarded as an independent type, this type is not to be opposed to all the other types combined, as Balfour has proposed, and, on the other hand, if the sponges are to be united with Cœlenterata, this could take place only if they were erected into a separate sub-type within this type. As far as the well-known hypothesis of the late Prof. Balfour[1] is concerned, I refer the reader to a detailed critique in Mr. Marshall's[2] paper "On the ontogeny of *Reniera filigrana*." What I may have to add on my own part will not occupy more than a few words. Balfour sees in the Amphiblastula a colony of Infusoria, and founds his further conclusions on the fact that the cells in the larva which become invaginated are not coarse-grained and dark-coloured, but transparent monociliated cells of cylindrical form (E. Metschnikoff,[3] F. E. Schulze[4]). It is, however, questionable whether the Amphiblastula is really a larva of primary characters.

There are Calcarea whose development is marked out by a larva of quite different type (Parenchymula), and Metschnikoff's Vergleichend-embryologishe Studien[5] make it very probable—if not certain—that it is indeed Parenchymula that shows the most primitive features of a Metazoon; and as the Blastula of the Calcarea in question presents a vesicle whose cellular elements do not differ one from another, it is evident that the chief character of the Amphiblastula is of a secondary nature. Its further development, viz., the invagination of the clear cylindrical cells, is indeed very striking, but this phenomenon is also common to the development of some other animals (*Lumbricus*, Kowalevsky,[6] *Oxyuris*, Natanson[7]), and this latter circumstance renders its value for any phylogenetic speculations still more dubious.

[1] *Quart. Journ. Micr. Sci.*, vol. xix. p. 103, 1879.
[2] *Zeitschr. f. wiss. Zool.*, Bd. xxxvii. p. 240, 1882.
[3] *Ibid.*, Bd. xxiv. p. 1, 1874.
[4] *Ibid.*, Bd. xxxi. p. 262, 1878.
[5] *Ibid.*, Bd. xxxvi. p. 433, 1881; Bd. xxxvii. p. 286, 1882.
[6] *Mém. Acad. St. Petersb.*, sér. 7, t. xvi. Mém. 12, p. 22, 1871.
[7] *Trans. Fifth Meeting of Naturalists in Warsaw*, Sect. of Zool. and Comp. Anat. (Russ.).