Subkingdom PARAZOA.

Heterocytal organisms in which the endoderm, in whole or in part, consists of choanocytes.

Phylum SPONGIÆ.

Parazoa possessing a paragastric cavity, which communicates with the surrounding medium by means of pores.

Subdivision of the Phylum into Classes.

The subdivision of the phylum which commends itself as the most natural is into two classes, the one containing the Sponges that are provided with calcareous spicules and the other those that are not. This broad distinction was first made by Gray,[1] who named the two groups Porifera calcarea and Porifera silicea; Vosmaer[2] was the first to recognise the justness of this arrangement, but rightly objecting that the term "Silicea" is misleading, and recognising the difficulty of finding any positive character by which the class could be known, proposed to substitute for it "Non-calcarea"; Poléjaeff,[3] in his luminous Report on the Challenger Calcarea, recognises the independence of the Calcarea as a class opposed to all other Sponges, but does not attempt to find a name for the latter. I have proposed[4] to name the non-calcareous Sponges Plethospongia, a term which is not open to the objection of disjointedness, but which does not express any definite meaning. The difficulty of finding a term which shall, in an epigram of a single word, designate the group, arises from the fact that, while the Plethospongia are an eminently natural class, yet the characters by which they are united together are not common to all the members, but change from family to family, so that their union is a linked one, and while the families at opposite ends of the chain appear to differ *toto cœlo*, they are united together by a continuous series of intermediate forms. It is possible that this difficulty arises from the fact that in the consideration of the Plethospongia the skeletal structures have been too exclusively regarded, and our knowledge of the soft parts is not yet extensive enough to enable us, with anything like confidence, to make use of their characters in classification; yet there is one distinction which obtains at least very generally, if not universally, between the calcareous and non-

[1] Gray, *Proc. Zool. Soc. Lond.*, p. 502, 1887.

[2] Vosmaer, Report on the Sponges dredged by the "Willem Barents" in 1878 and 1879, *Nied. Arch. f. Zool.*, Suppl.-Bd. i., 1882.

[3] Poléjaeff, Report on the Calcarea, Zool. Chall. Exp., 1883, part xxiv. p. 22.

[4] Sollas, *Sci. Proc. Roy. Dubl. Soc.*, vol. v., N.S., p. 112, 1886; an abstract of this note appeared in 1885, *Ann. and Mag. Nat. Hist.*, ser. 5, vol. xvi. p. 395.