

Lastly the sponge may be lipostomous, *i.e.*, without any visible oscular openings at all ; such appears to be the case, commonly at any rate, in the deep-sea genera, *Cladorhiza* and *Chondrocladia* (Pl. XX.).

General Remarks on the Canal System.

We may briefly sum up our more important conclusions with regard to the canal system of the Monaxonida as follows :—

(1) The arrangement of the pores varies almost indefinitely, being to a large extent dependent either directly or indirectly (through the dermal skeleton), upon the external conditions under which the species lives. They may be scattered all over the sponge or localised in more or less definite areas.

(2) The canal system in the Halichondrina, usually if not always, belongs to Vosmaer's third type,¹ that is to say, it is more or less lacunar, and the flagellated chambers open by wide mouths into wide exhalent lacunæ. In the Clavulina the canal system may belong either to the third or fourth² types ; in the latter case the flagellated chambers are provided with special "cameral canaliculi."

Thus our general conclusions with regard to the type of the canal system are quite in accordance with those of Vosmaer³ and Poléjaeff.⁴ It is true that two naturalists have attempted to establish the existence of a racemose type of canal system in Halichondrine sponges. Keller's attempt⁵ in the case of *Reniera semitubulosa* has been already severely criticised by Poléjaeff,⁶ who comes to the conclusion that "the observation of this naturalist on the structure of *Reniera semitubulosa*, executed under the influence of Professor Haeckel's statements on the non-existing racemose type of the canal system" is "unreliable"; a conclusion which we cannot but endorse. The second attempt does not appear to have attracted much attention, and certainly does not deserve to do so ; for, whatever may be the sponge which Saville Kent⁷ mentions under the name *Esperia* sp., we are confident that it never had a canal system of the quite impossible kind figured, in which the diameter of the flagellated chambers is about twice that of the pores, and there are (to judge from the figure) no exhalent canals whatever.

¹ *Vide* Bronn's Klass. u. Ordnung. d. Thierreichs, Porifera, p. 130.

² *Loc. cit.*

³ Bronn's Klass. u. Ordnung. d. Thierreichs, Porifera, p. 335.

⁴ Zool. Chall. Exp., part xxxi., Report on the Keratosa, p. 80.

⁵ *Zeitschr. f. wiss. Zool.*, Bd. xxx. p. 579, pl. xxxvii. fig. 1.

⁶ Zool. Chall. Exp., part xxxi., Report on the Keratosa, p. 79.

⁷ Manual of the Infusoria, vol. i. p. 169, pl. vii. fig. 2.