negative, and on grounds of exactly the same nature as those forbidding the subdivision of the Keratosa into Ceratina and Psammonemata, Carter, or Aplysinæ and Sponginæ, Hyatt. There is a striking difference between the canal system of *Aplysilla* and *Aplysina*. The flagellated chambers of the representatives of the genera *Aplysina* and *Verongia* (Pl. X. fig. 7) are small, pear-shaped, or rather hemispherical, each provided with one (?)[1] inhalent and one exhalent narrow canaliculus; and again, the surrounding ground-mass is so very rich in granules that the outlines of the cellular elements in the neighbourhood of the flagellated chambers are scarcely distinguishable. On the other hand, the flagellated chambers of an *Aplysilla* or *Ianthella* (Pl. II. figs. 4 and 5) are large and either of regularly elongated form (pouch-shaped) or of quite irregular outline; no special cameral canaliculi are to be discerned; the flagellated chambers receive the water from the subdermal cavities by means of numerous pores in their walls, and expel it by means of a large exhalent aperture; the surrounding ground-mass is clear and transparent. There are, however, amongst the horny sponges forms uniting these two extreme differences in every direction. As to the size of the flagellated chambers, in *Aplysina* or *Verongia* it is 0·02 mm. on an average, in *Euspongia* or *Cacospongia* 0·026 mm., in *Phyllospongia* 0·037 mm., in *Carteriospongia* 0·05 mm., in *Spongelia* 0·08 mm.; finally, in *Aplysilla* or *Ianthella* the flagellated chambers are still larger, reaching occasionally 0·15 mm. in length by 0·05 mm. and more in width; and it must be noticed—and this is very important—that in some Spongelidæ (comp. Pl. III. fig. 6) the flagellated chambers are again very small, their dimensions not exceeding those of the flagellated chambers of a typical *Euspongia*. Further, as to their form, we have a thoroughly similar series of connecting links. In the Aplysinidæ they are either pear-shaped or rather hemispherical, in the Spongidæ typically hemispherical, in the Spongellidæ more or less roundish, in the Darwinellidæ elongated. The same is also the case with respect to the presence or absence of special cameral canaliculi. While in Aplysinidæ each flagellated chamber possesses but one exhalent, and probably also but one inhalent, canaliculus, these canaliculi being comparatively long and narrow, in the Spongidæ they are short and broad, the inhalent system of each flagellated chamber being besides represented not by one but by three, four, or five canals, which sometimes are so very short that in many cases they can scarcely be properly regarded as special differentiations of the corresponding subdermal cavities. I refer the reader in this connection to the drawing of F. E. Schulze[2] and to my own drawing on Pl. V. fig. 3, and wish to add that in many, indeed exceptional but still numerous, instances I found in true Spongidæ the flagellated chambers devoid of any special *exhalent* canals, but just as is the case with the genus *Carteriospongia*

[1] This question F. E. Schulze (*Zeitschr. f. wiss. Zool.*, Bd. xxx. p. 398) leaves undecided. I also was unable to come to a decisive result with respect to *Aplysina* and *Verongia* owing to the inconvenience of these forms for certain manipulations, but so far in this respect as analogous forms like *Corticium*, *Chondrosia*, and *Chondrilla* are concerned, there can be no doubt that each flagellated chamber possesses but one inhalent canaliculus.

[2] *Zeitschr. f. wiss. Zool.*, Bd. xxxii. pl. xxxvi. figs. 11, 12.