

(Pl. V. fig. 8), communicating with the subjacent exhalent cavities by means of a large exhalent opening. Finally, as to the question whether the ground-mass surrounding the flagellated chambers is full of granules or devoid of them; the more or less clear manifestation of this character appears to be in such a high degree dependent on other properties of the canal system that it may be said beforehand that we shall have in this respect a series of intermediate stages between *Spongelia* and *Aplysina* similar to that noticed with regard to the form and size of the flagellated chambers. As is well known, it has been stated by F. E. Schulze that (except in *Oscarella* (*Halisarca*) *lobularis*, which is, however, not a typical representative of the sponges with the canal system after Dr. Vosmaer's¹ 4th type) the ground-mass around the flagellated chambers has been found to be granular whenever the canal system shows a high degree of development in the direction of enlarging the surface washed by the water. But Schulze has also stated that, whenever the development of the canal system has reached its highest point (*Aplysina*, *Chondrosia*, *Corticium*), the ground-mass is literally over-loaded with granules; that further, whenever the canal system possesses a transition character (Spongidæ and particularly Plakinidæ), the granules are by no means so numerous; and, finally, that in the representatives of the genera *Spongelia* and *Aplysilla* the granules are not to be found at all. For my own part, I have been fortunate enough to investigate some forms which are, in this respect, a connecting link between the genera *Euspongia* and *Spongelia*. In *Phyllospongia*—whose flagellated chambers are, as before stated, approximately one and a half times as large as those of *Euspongia* or *Cacospongia*—I could observe the presence of the granules in question only with the help of the system No. 7 of R. Winkel;² in *Carteriospongia*—and in this form the flagellated chambers, although of the same shape as those of *Euspongia*, are comparatively much larger and at least in *most* cases devoid of special inhalent and exhalent canaliculi—the granules proved to be extremely few in number, and their presence could have been placed beyond doubt only by the system No. 10 of Winkel.² To sum up, we have, with regard to the structure of the canal system, a series of transitions quite analogous to those concerning the skeletal fibres, whether homogeneous or heterogeneous. Accordingly, the final conclusions must be also analogous one to another.

I may now summarise the foregoing observations. There have been discussed five systematic characters, and we came to the conclusion that two of them are absolute characters, the remaining three being only relative. We came also to the result that one of the first-mentioned, namely, the presence of filaments, is capable of no systematic application, and again, that so far as the second absolute character—I mean the presence of true cells in the walls of the skeletal fibres—is concerned, its systematic value cannot, in the present state of our knowledge, be defined.

Of the three relative characters, one, the tendency to take in foreign bodies, only

¹ Ueber *Leucandra aspera*, *Tijdschr. d. Ned. Dierk. Vereen.*, Bd. v. p. 163.

² The objective No. 7 magnifies 275–700 diameters, No. 10, 500–1000 diameters, according to the eye-piece employed.