

horny laminæ, and Flemming,<sup>1</sup> like Carter,<sup>2</sup> emphatically denies their occurrence in the core of the fibres. My own endeavours to discern them there have been equally unsuccessful, and this not only with regard to *Ianthella*, but also with regard to *Verongia*, *Aplysina*, *Darwinella*, and *Aplysilla*, in which connection I should lay stress on the fact that the specimens of *Aplysilla sulphurea*, kindly placed at my disposal by Prof. F. E. Schulze, have been examined both in the living state as well as preserved by the methods recommended by Dr. v. Lendenfeld. In no single case have I been able to discern in the central canal of the horny fibres anything that might be regarded as spongoklasts.

Again, Dr. Vosmaer states the same with respect to his *Velinea gracilis*.<sup>3</sup> And far from supposing that Dr. v. Lendenfeld has described what he did not see, I feel convinced that he has misinterpreted what he did see. It may be said that what does not occur in *Ianthella* or *Aplysilla* may be characteristic of *Dendrilla*. Such a possibility indeed is not excluded, but it is extremely improbable. For, firstly, *Dendrilla* seems to be so closely allied to *Aplysilla* that both these genera will probably in time be united into one; and secondly, because with an instrument like the microscope one sees very often precisely what one desires to see, and that Dr. v. Lendenfeld has been desirous to find out his spongoklasts is beyond any doubt, the spongoklasts having been for him a logical necessity. He refers in his above-mentioned memoir to the statements of F. E. Schulze as to the fact that, though on the whole the old larger skeletal fibres of *Aplysina aërophoba* must be called thick-walled, the young ones of small diameter on the contrary thin-walled, still the diameter of the central pith-substance in larger fibres is comparatively greater than that of the small ones. He tells us further that the same can also be said with respect to the Aplysillidæ which he had for examination, and he deduces from this the conclusion that hand in hand with the growth of the fibre its pith-substance increases also.<sup>4</sup> If all this be so, indeed, without the theory of spongoklasts, the phenomenon would be quite inconceivable. I must, however, deny the reliability of the statements in question. The fibres of the representatives of the genera *Ianthella*,<sup>5</sup> *Verongia*, and *Luffaria* have been submitted by me to the most careful examination, and I must state that in all the above specimens I found very often fibres of the same size but with different diameters of the central canal; and since I find also that this is the case not only as regards the fully developed fibres but also those in embryonic condition, I believe that the phenomenon we are speaking of is easily explained without any reference to spongoklasts, if we assume that the pith-substance is a product of the *polygonal* spongo blasts, and the laminar horny substance the product of those of elongated shape, and that the differences in diameter of the central canals are dependent upon their having been deposited broad or narrow. The second

<sup>1</sup> *Loc. cit.*, p. 4.

<sup>3</sup> *Loc. cit.*, p. 441.

*Loc. cit.*, p. 115.

<sup>4</sup> *Loc. cit.*, p. 290-293.

<sup>5</sup> I should call attention to the fibres constituting the skeleton of the stem of this sponge; some of them are far thicker than the primary fibres of its leaf-like part, but, nevertheless, with the diameter of the central canal not only considerably smaller than that of the primary fibres just mentioned, but occasionally not larger than that of a *Spongelia*.