

bomba, and some other species. Beginning with the gastric surface, we find here numerous large canals, which ramify tolerably regularly, like the branches of a tree, towards the dermal surface. The branches, broad at their beginning, become smaller and more numerous in their course towards the dermal surface, and pass at last into the finest small canals, opening by pores on the dermal surface. The canals are, either throughout their whole extent or for the greater part of it, covered with flagellated endodermal cells. Only the outermost ends of the finest canal-branches (near the dermal pores), and the innermost ends of the largest canal-trunks (near the gastric cavity), remain free from the flagellated epithelium. The anastomoses of the branches are either wanting altogether or few in number."¹ The diagram illustrating this description refers to *Leucandra bomba* (*loc. cit.*, Bd. iii., pl. xl. fig. 9). I was not able to obtain this sponge. I hoped to find it in the Godeffroy Collection in Hamburg, which was kindly sent to me by the administration of the museum; but this expectation was not realised. I found, however, amongst the Challenger Calcispongix three specimens of *Leucetta primigenia*, of a form even more instructive with respect to the question of the existence of the dendroid canal system than *Leucandra bomba*. "*Leucetta primigenia*," says Hæckel,² "as the conjectural radical form of the Leucones, is so closely allied in the properties of its skeleton to the general radical form of all the Calcarea, *i.e.*, *Ascetta primordialis*, that it can be derived immediately from this latter. The wall of *Ascetta primordialis* requires only to grow thicker, its variable dermal pores require only to become constant canals, and to ramify in the wall, in order to realise the transformation of *Ascetta primordialis* into *Leucetta primigenia*." We shall soon see that Leucones have had quite a different course of development; at any rate, with regard to the canal system of *Leucetta primigenia*, Prof. Hæckel's statements do not correspond with the reality. A close examination of the three specimens above mentioned showed that their canal system possesses just the same character, and, with the exception of some trifling differences, the same peculiarities as that of *Spongelia*, *Aplysilla*, &c. Its detailed description will be given later; at present we have only to notice that a dendroid modification of the canal system does not exist at all.

"The retiform ('netzförmig') modification of the canal system takes origin from the dendroid in the following manner: the anastomoses of the ramifying canals grow more numerous and occur not only between the finer branches, but also between the larger ones. When this structure has obtained its highest development, the wall-parenchyma of a Leucon seems to be pierced by a dense net of canals, like a gland rich in blood-vessels. This modification is not rare it is to be found, for instance, in *Leucetta trigona*, *Leucaltis crustacea*, *Leucandra cataphracta*, and *Leucandra stilifera*." In these words Hæckel describes his "retiform" type, illustrating it by a diagram referring to *Leucandra stilifera*; but I am forced to deny its existence, as also that of the

¹ Kalkschwämme, Bd. i. p. 228.

² *Loc cit.*, Bd. ii. p. 122.