

*carteri*, n. sp., or in *Leucetta hæckeliana* (Pl. VIII. fig. 1), these quadriradiate spicules being present in the exhalent and absent in the inhalent canals, both the systems of the canals can be readily distinguished from one another, and I am inclined to see in this fact an anatomical confirmation of the conceptions of Prof. F. E. Schulze,<sup>1</sup> according to whom the pavement-cells of the inhalent canal system are of ectodermic, those of the exhalent of endodermic, origin.

I have now to make a summary of my conclusions; I formulate them as follows:—

The Leucones are nothing but modified Sycones with non-articulated tubar skeleton; their flagellated chambers are complete homologues of the radial tubes; their exhalent canals owe their origin to the invaginations of the inner cavity, and their inhalent canals are to be regarded as homologous with the intercanals of the Sycones.

There are no further complications of the canal system in the group Leucones which require particular explanation; and now—since I have completed its definition, including its development, and since some corrections concerning Hæckel's statements as to the canal system of the Sycones have been made, as there is nothing to be added to Prof. Hæckel's description of this system in the Ascones—I can return to the important question put some pages before, whether the properties of the canal system can be really used as characters for the definition of families. It is quite evident that this question must be answered in the affirmative. For it is the canal system which is, in Calcarea, the principal vital organ, and it is the type upon which the mutual disposition of the component parts of the second important organ, the skeleton, as well as the greater or smaller development of the connective tissue, depends. And there are in the Calcarea, beside the form and the quality of the spicules and the external form of the animals, both of which are very variable, no other characters of systematic value. Most of them—some Ascones (Keller,<sup>2</sup> Barrois<sup>3</sup>), and very probably *all* Sycones and Leucones—have the same kind of development, characterised by the well-known Amphiblastula; and although the species *Ascetta blanca*, *Ascetta primordialis*, *Ascetta clathrus*, and probably some other Ascones, have a larva of a different type, this difference, even in the eyes of a professional embryologist, is of no greater value than to prompt him to the following remark:—“Wenn dies (development of some species of *Ascandra* like that of *Sycandra* and *Leucandra*,) sich durch unmittelbare Beobachtung bestätigen sollte, so würde das nur zeigen, dass zwischen der Gattung *Leucandra* und *Sycandra* eine nähere Verwandtschaft als zwischen *Ascandra* und *Ascetta* besteht”;<sup>4</sup> not that *Leucandra*, *Sycandra*, and *Ascandra* ought to be put together in order to oppose them systematically to *Ascetta*; and even this opinion, the embryological facts being of a very precarious nature, can still

<sup>1</sup> Die Plakiniden, *Zeitschr. f. wiss. Zool.*, Bd. xxxiv. p. 437, 1880.

<sup>2</sup> Ueber d. Anat. u. Entwick. einiger Spongien, 1876, p. 32.

<sup>3</sup> Embryologie, &c., p. 35.

<sup>4</sup> Even if this (development, &c.) should be confirmed by direct observation, it would merely show that between the genera *Leucandra* and *Sycandra* there is a nearer relationship than between *Ascandra* and *Ascetta*. E. Metschnikoff, *Zeitschr. f. wiss. Zool.*, Bd. xxxii. p. 370, 1879.