

The ectosome differs completely from the hypophare, greatly as it may resemble it in general appearance. It is, to begin with, of secondary origin, and in the next place the endoderm does not enter into its composition; it consists of mesoderm bounded on the inner and outer faces by ectoderm, at least so we suppose, but there is a difficulty involved in this view that will be discussed directly.

The incurrent canals which lie immediately beneath the ectosome are now known as "subdermal cavities."

The manner in which the ectosome arises is not yet known. In such a case as that just described, it might with great plausibility be regarded as due to a lamellar outgrowth from the outer ends of the lobes of the spongophare, in a direction generally parallel with the surface of the sponge; followed by partial concrescence of the lamellæ so produced, and the consequent formation of pores as *lacunæ relictæ*.

A part of the ectosome as shown in the diagram is probably furnished by the

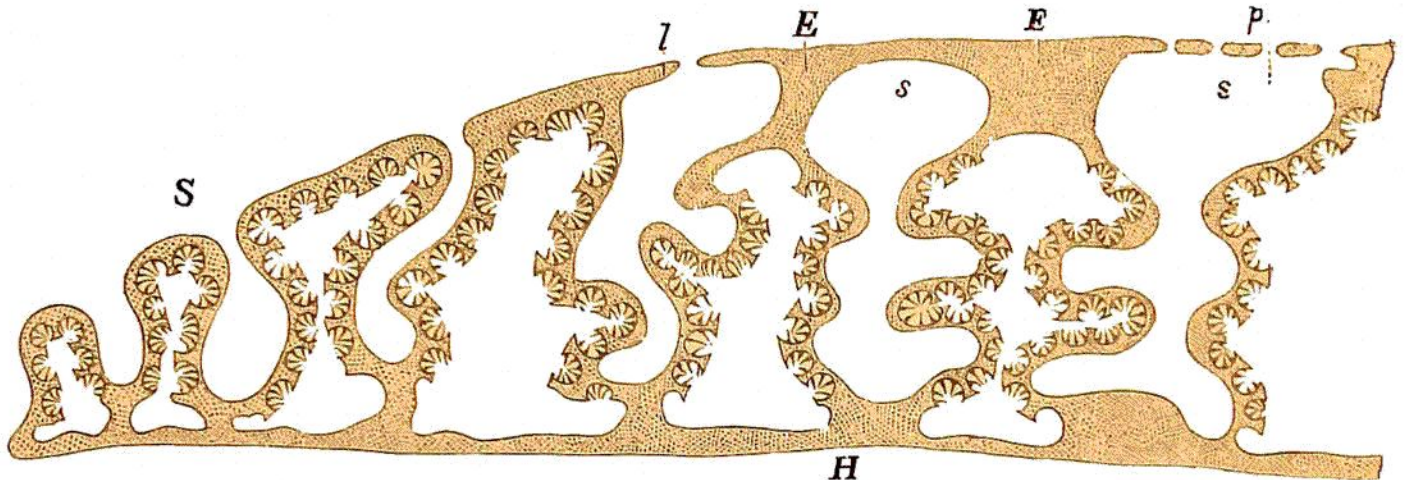


Fig. IV.—Diagram showing, hypothetically, the development of the ectosome. H, hypophare; S, spongophare; E, ectosome; s, s, incurrent sinuses; l, lamellar outgrowth of the spongophare; p, pores.

suppression of flagellated chambers in the outer ends of the spongophare lobes, the space which they would otherwise have occupied being filled up with mesoderm.

If this explanation could be accepted it would harmonise our views as to the morphological value of the epithelium lining the walls of the incurrent canal system, for evidently this would then correspond to the ectoderm; but at first sight it does not appear to be consistent with what little we know of the mode of formation of the ectosome. In *Spongilla* (Carter and Lieberkuhn), in *Esperia* (Carter), and in *Thenca* and *Stelletta*, the ectosome appears to arise by fission from the choanosome. It would appear that a thickening of the mesoderm takes place in the Rhagon or young sponge, and that in the middle of this cleavage occurs parallel to the outer surface, dividing the sponge at once into a choanosomal and ectosomal portion. This has already been noticed by Selenka¹ in the case of the external buds of *Tethya maza*, and has been compared by

¹ *Zeitschr. f. wiss. Zool.*, Bd. xxxiii. p. 474, pl. xxviii. fig. 12.