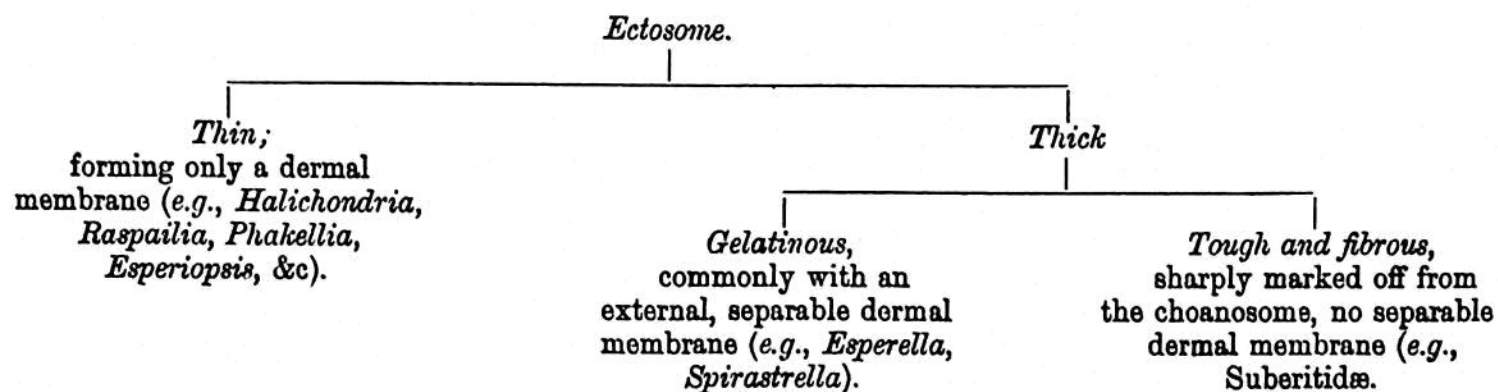


placed, outwardly-projecting discastra (Pl. LI. fig. 1*b, d*). Beneath this comes a much thicker layer of very peculiar, vesicular tissue. This is composed of closely packed, perfectly transparent, globular cells (Pl. LI. fig. 1*b, v.c.*) about 0·018 mm. in diameter, and each with a small, round nucleus excentrically placed. (It is interesting to observe that these cells are identical in form and size with those described and figured by Poléjaeff in the cortex of his *Cacospongia vesiculifera*.¹ We are, however, rather surprised that Poléjaeff should speak of the cells in question as "thoroughly identical with the vesicular cells of many Desmacidonidæ—undescribed indeed hitherto, but undoubtedly very well known to every spongiologist who has had to deal with the representatives of the family just mentioned." So far as our experience goes we know of no such vesicular tissue in the Desmacidonidæ.) In the outer portion of the cortex, embedded in the layer of vesicular tissue, there occur also numerous, deeply staining, nucleated, granular cells (Pl. LI. fig. 1*b, g.c.*) of irregular shape, of about the same size as or a little smaller than the vesicular cells. These are, for the most part, arranged in not very regular groups (Pl. LI. fig. 1, *g.c.*). It appears very possible that, like the somewhat similar cells in *Stylocordyla*, they have a glandular function. This layer of vesicular tissue with its embedded groups of glandular (?) cells gradually gives place below to a gelatinous looking tissue (in which the vesicular cells are still abundant), which, as it approaches the choanosome, becomes more or less strongly but irregularly fibrous. The lower two-thirds (roughly speaking) of the cortex are strengthened and supported by abundant spicules, as already mentioned.

In the genus *Phelloderma*, nobis, which forms a great exception to the rule that the Halichondrina are never corticate, the ectosome is about 0·25 mm. thick, and the fibrous tissue is concentrated in a zone of varying thickness in its lower part; unfortunately the histological condition of the single specimen at our disposal is not sufficiently good to allow of a more detailed description.

To sum up our observations on this head, we may briefly tabulate the chief different modifications of the ectosome in the Monaxonida as follows:—



¹ Zool. Chall. Exp., part xxxi., Report on the Keratosa, p. 59.