in size or form. Such appears to be the case in *Halichondria panicea*, *Myxilla nobilis*, &c., and in many cases it is extremely difficult to say where the subdermal cavities end and the inhalent canals or lacunæ proper begin.

In *Phakellia* and in *Esperiopsis challengeri* (both of which, it will be remembered, are flabellate sponges with the pores on one surface and the oscula on the other), we find a somewhat peculiar condition. The pores lead directly into large, irregularly conical chambers (*vide* Pl. XLIX. fig. 3), which often extend almost through the entire thickness of the sponge, and from these great chambers, which we may regard as the subdermal cavities in that they are in direct communication with the exterior, the system of small inhalent lacunæ takes its origin. These large, vertically elongated subdermal cavities interdigitate with similar exhalent chambers opening on to the opposite surface (*vide* Pl. XLIX. fig. 3).

In those cases where, owing to special circumstances, the pores are confined to special areas, we find, of course, that the subdermal cavities undergo a corresponding modification. Thus in *Esperella murrayi* the subdermal cavities are narrow, horizontally elongated, branching channels (Pl. XLVIII. figs. 2, 2*a*) underlying the pore-areas, and in this case they are sufficiently distinctly marked off from the true inhalent canals, which lead out of them by narrow openings (Pl. XLVIII. figs. 2, 2*a*).

In the Clavulina (especially the Suberitidæ) we find a good deal more regularity in the form and arrangement of the subdermal cavities, a fact which is undoubtedly due to the presence of a distinct cortex, and to the radiate arrangement of the dermal skeleton. The vertical disposition of the spicules in the cortex prevents extension of the subdermal cavities in a horizontal direction, and they consequently become vertically elongated, and we have here an important distinction between the Suberitidæ and the Halichondrina. The pores usually lead in the first instance each into a narrow, slit-like canal, between radiating bundles of spicules (Pl. L. figs. 1, 3*a*); these canals then expand, several of them often uniting together, and give rise to a wide space which is the chief part of the subdermal cavity (Pl. L. figs. 2, 3*a*, *s.c.*). Sometimes, as in *Latrunculia apicalis* (Pl. LI. fig. 1) and *Stylocordyla stipitata*, var. *globosa* (Pl. L. fig. 1), this cavity cannot be sharply distinguished from the remainder of the inhalent canal system. At other times, however, it is definitely bounded, its vertical limit coinciding with that of the cortex. Of this latter condition it will suffice to give two examples, viz., *Suberites caminatus* and *Tentorium semisuberites*.

In *Suberites caminatus* the condition of affairs is very simple; each pore leads into a separate, elongated subdermal cavity, which, at first very narrow, gradually increases in diameter, and then, as it reaches the commencement of the choanosome, contracts again more suddenly, being thus somewhat flask-shaped; occasionally two of these flask-shaped subdermal cavities appear to run into one another.

In *Tentorium semisuberites* the arrangement is a much more complex one. The subdermal cavities are each divided into three parts corresponding to the three divisions