

enclosing a spherical, darkly stained translucent nucleolus 0.004 mm. in diameter, which is connected with the walls of the nucleus by radiating processes. These cells have somewhat the appearance of the large elements of nervous ganglia, so much so that a distinguished zoologist on seeing them for the first time exclaimed, "Cells from the spinal cord!" It is scarcely probable, however, that they are nervous in function; they are "too good to be true," *i.e.*, we should expect such large and striking cells to exist in evident connection or association with nervous tracts, and to occur more usually in other and similar sponges. They appear to me to resemble the large amœboid cells which I previously described in *Thenea wallichii* (*loc. cit.*, p. 448, pl. xvii. fig. 48), but in a different state of extension. Of probable hypotheses as to their nature there are three open to us: they may be parasites, or immature ova, or amœboid wandering cells. If parasites, they can only be Protozoa, and we should expect to find other stages of their life-history represented, but we do not; the same is true if we regard them as ova, they are so large that we should expect to find some examples in that stage in which they present a regular oval outline, but we do not; if they are wandering cells, they are much larger than those cells are usually; and they do not appear to wander, since they lie in distinct cavities, and their pseudopodial extensions are thread-like towards their extremities and not lobose, as is usually the case in wandering cells. The possibility of their being nervous elements must by no means be disregarded.

The flagellated chambers (Pl. IX. fig. 29) are usually spherical in form, and about 0.04 mm. in diameter; they occur in areas frequently bounded on all sides, in thin slices of the sponge, by collenchyme, but the ultimate branches of the canals in direct communication with them are without any special collenchymatous investment, and the chambers are truly eurypylous.

*Skeleton.*—As in all species of *Pacillastra*, the spicules are not united together in fibrous tracts, though they sometimes lie parallel to one another in groups. The large oxeas tend to run more or less transversely and longitudinally through the sponge, the longitudinal spicules diverging obliquely outwards as they proceed upwards. Some lie tangentially beneath the skin, others are directed at right angles to it, their distal ends either lying below the epithelium, which often rises tent-like over the points, as much as 0.15 to 0.25 mm. beyond the general surface, or they perforate it and protrude as hispidating spicules.

The calthrops lie within the choanosome, irregularly disposed, though there is a tendency for their actines to lie tangentially to the surface of the adjacent canals. The orthotriænes are disposed with their cladi tangential to the surface, the rhabdomes radiating from it at right angles.

The spirasters are most abundant immediately beneath the external epithelium, but are not confined to it. The metasters are generally distributed through the sponge, but are rare beneath the outer epithelium.