

with the cavities of the pores. In Plate XIV. fig. 4, part of one of these canal-systems is shown, being there drawn from a decalcified specimen, and thus representing the soft tissues which in the recent state occupied corresponding calcareous canals. In Plate XIII. fig. 6, a secondary branch of one of the canals is seen to communicate with a pore cavity, C'. The course of the smaller vessels being tortuous, only short lengths of them are exposed in the remainder of this section. Similar secondary branches are seen in vertical section in Plate XIII. fig. 5, B, B.

Where a *Millepora* encrusts foreign bodies, the investing film of cœnosteum formed is usually extremely thin. At Bermuda, *Millepora alcicornis* is frequently found encrusting glass bottles thrown into the harbours. The film of cœnosteum can, in such specimens, easily be detached in flakes from the glass, and does not measure more than from 1-8th to 1-5th of a millimeter in thickness. In the same manner at Bermuda the dead fans of a *Gorgonia* are found entirely encrusted with a thin film of *Millepora*, so thin that the fenestrations of the horny meshwork of the *Gorgonia* are not obliterated. Such thin encrusting films, if obtained in the living condition, would, no doubt, be excellently adapted for the study of the soft parts of *Millepora*, since they are thin enough to transmit a considerable amount of light. When dead and dry they show extremely well the ramifications of the canal-systems and their connections with the pores. In such films the dactylopores and gastropores are fully developed, though necessarily very shallow; and it is evident that such a thin film of cœnosteum is all that is absolutely necessary for the existence of the *Millepora*, and, in fact, in all Milleporidæ it is such a thin film only which is actually living, covering the surface of the cœnosteum. In a *Millepora* forming tubercular or ramified masses a superposition of a series of such films takes place and constitutes the coral mass.

In the films encrusting bottles the under surface in contact with the glass is perfectly continuous and highly polished, and is exactly moulded on the surface of the glass, reproducing casts of the most minute splinterings or scratchings.

In homology with this continuous layer, layers more or less continuous occur in the more massive cœnosteum appearing in vertical sections as lines of calcareous matter running parallel to the surface of the cœnosteum and indicating successive stages of growth, and the tubercles of which the mass of the Tahitian *Millepora* is made up, when cut through vertically to the surface, show a series of such lines of growth following the contour of the surface. It is in connection with these layers that are developed the successive transverse laminæ or tabulæ which divide the cavities of the calicles into a series of chambers (Pl. XIII. fig. 5). As the cœnosteum is extended in growth at certain intervals, possibly after each period of generative activity, a tabula is formed, reducing the depth of the calicle and shutting off the living tissue from the abandoned dead structures below. The larger canals and their branches ramify in planes parallel to the surfaces of the cœnosteum, being confined within each successively added thin layer of the cœnosteum, and