

scope, a transverse cut of the polypidom in its natural state, we distinguish in it an analogous conformation, the external wall of the cells being not composed of layers, but rather of cylinders or irregular prisms placed perpendicularly to its surface.

“ As to the operculum, which serves to shut the entrance of the tegumental cell of the Eschara, when the animal is wholly concealed in it, it is but a labial fold of that which we may call the skin of the polype, and of which the projecting margin has acquired a horny consistence, whilst that portion continuous with the general envelope, preserves sufficient softness to remain flexible, and to obey the action of the muscles whose tendons are inserted in its thickness.

“ The changes which we have indicated above in the external formation of the cells of the Eschares are not the only ones effected by the progress of age in the stony integuments of these zoophytes. The form of their opening is modified considerably, as may be seen by the figures which accompany this memoir: the sinus or emargination situated under the operculum disappears by degrees, and their interior cavity becomes filled up so as not to occupy more than about the quarter of their original diameter. This thickening changes even a little the general appearance of the polypidom; for as it is more considerable in the cells situated farthest from the extremities of the branches, it results that these, at first almost flat, become more and more cylindrical. Lastly, it is not without surprise that we have seen these same cells when they are arrived at extreme old age, lose altogether the opening from which the polype extended its tentacula. In fact, the margins of this opening swelling more and more outwardly come at last to touch and to close, so that no trace of its existence is left: but the cell, now a shut cavity, still exists towards the axis of the polypidom.

“ Thus, then, the last external mark of the individual existence of these collected polypes, disappears before that life is extinct in the interior, and the most remarkable character of the polypidom is lost without hope of recovery.

“ Reflecting on the fact we have just noticed, we are naturally led to ask how the nourishment necessary for the support of the secretions on which the progress of consolidation depends, can continue when the cell containing the digestive apparatus of the animal is shut up in this manner. Is it from its neighbours that it receives its nutritive matters, or can it continue to absorb them directly from without through these stony integuments? The nature of this solid shell seems at first sight to oppose great obstacles to this imbibition, particularly to that which would take place by the free surface of the polypidom, but an experiment which is, so to speak, the counterpart of that which has been already detailed, shows that it is otherwise.

“ On boiling a fragment of the solid polypidom of an Eschara in a solution of caustic potash, I have extracted the major part of the substances which compose the organized part of its tissue, and I have then seen that the appearance of the polypidom is considerably changed. The external parietes of the cells had become of an almost spongy texture, and its surface, instead of being simply granular, presented a great number of very distinct pores, which were before concealed by the soft parts with which they were filled.

“ We may understand, then, that the organized tissue of the old polypes finding itself without covering in different points of the external surface of the cells,