

formed, in the course of twenty-four hours, a fine pellicle, resembling a spider's web, which is extended across the vacant space, and constitutes the first stratum of the new shell. This web, in a few days, is found to have increased in thickness, by the addition of other layers to its inner surface; and this process goes on until, in about ten or twelve days, the new portion of shell has acquired nearly the same thickness as that which it has replaced. Its situation, however, is not exactly the same, for it is beneath the level of the adjacent parts of the shell. The fractured edges of the latter remain unaltered, and have evidently no share in the formation of the new shell, of which the materials have been supplied exclusively by the mantle. This Reaumur proved by introducing through the aperture a piece of leather underneath the broken edges, all round their circumference, so as to lie between the old shell and the mantle: the result was that no shell was formed on the outside of the leather; while, on the other hand, its inner side was lined with shell.

The calcareous matter which exudes from the mantle in this process is at first fluid and glutinous; but it soon hardens, and consolidates into the dense substance of the shell. The particles of carbonate of lime are either agglutinated together by a liquid animal cement, which unites them into a dense and hard substance, resembling porcelain; or they are deposited in a bed of membranous texture, having already the properties of a solid and elastic plate. This explains the laminated structure possessed by many shells of this class, such as that of the oyster, of which the layers are easily separable, being merely agglutinated together like the component leaves of a sheet of pasteboard.

It has long been the prevailing opinion among naturalists that no portion of a shell which has been once deposited, and has become consolidated, is capable of afterwards undergoing any alteration by the powers of the animal that formed it. Very conclusive evidence has, in my opinion, been adduced against the truth of this theory, by Mr. Gray.* From a variety of facts, it appears certain that on some occasions

* Philos. Transactions for 1833, p. 796, &c seq.