

doubt that the animals received their existence, and lived and died in the ocean, and that, at least at the time of their death it was full of calcareous carbonate either in solution or in mechanical suspension, or both.* When they died, they of course subsided to the bottom, and were surrounded, as they lay, by the concreting calcareous matter. Multitudes of them were present, at the same time and place, in all the confusion of accidental position, and therefore were enveloped, just as we find them, in every imaginable posture; the interstices were filled by the calcareous deposit, and this being more or less chemically dissolved, produced a firm sub-crystalline mass, a section of which shews us the animals sawn through, and admitting of a polish, like the rest of the rock.

If we could suppose that our common clams and oysters, that lie in the mud of our harbors and inlets, were to become solidified into one mass, along with the matter which envelopes them, the case would not be dissimilar; only they would be enveloped in earthy, instead of crystalline matter, and the rock formed from it would be referred to the most recent secondary, or to the tertiary, unless its texture were afterwards altered by igneous or other agencies.

It is easily understood, also, how a new stratum, either of the same or of different constitution, may be deposited upon a previous one; and with it, the bodies of the animals that lived and died in the fluid; and these might be the same animals with those of a previous stratum, or of a different species or genus, it being understood that, in the case of marine animals, each successive stratum was, in its turn, the bottom of the then ocean, and also the upper or last consolidated layer of the crust of the earth, as it then was at that place.†

As we have no direct historical evidence to the facts, it is impossible to say, precisely, what circumstances would determine the waters to deposit, different things at different times, for instance at one period, a stratum of limestone, with madrepores and encrinites, and at another, one of breccia or sandstone, with bivalve or univalve shells.

With respect to marine and aquatic animals, the waters appear to have been, at different periods, adapted to the support of different races, and thus their remains became successively solidified; not imply-

* The eruption of a vast calcareous sediment, by submarine igneous agency, which some have supposed in the case of chalk, is hardly admissible here, as the transition limestones does not corresponds with the usual appearance of mechanical deposits.

† A similar course of reasoning, will apply to fresh water deposits.