Evidence to the same effect would accumulate upon us to a vast amount, in examining the Old Red Sandstone, a remarkable deposit, several thousand feet in thickness, found in some parts of Great Britain, more abundantly in Ireland, and either in resemblance or in equivalence in many foreign regions. Next we come to the Mountain Limestone, consisting almost entirely of the shells and coralline productions of sea animals, often a thousand and more feet in thickness. In this and other Limestone the imbedding part is not, as in other strata, a sediment from mere watery mixture, but the deposit from solution of Carbonate of Lime in water. This formation is frequently more or less interposed among the beds of coal, composed of compressed vegetable matter, underlaid and overlaid with shales and sandstones in every variety; often effecting a thickness of three thousand feet. The New Red Sandstone, comprising many most interesting varieties of strata, each involving great changes of condition in the modes of formation, advances us about another thousand feet.

Other changes, implying probably some alteration in the disposition and consequently the action of the fiery gulf below,* marked the next great system, or series of rocks, to which, by a convenient extension of meaning, the term Oolitic has been given. Its general thickness can be little less than half a mile. It is filled with the most convincing proofs of deposition from sea-water, both shallow and deep, the mingled waters of river-mouths, and perhaps even fresh water of rivers and lakes; affording indications that the depositions, in many varieties, both contemporaneous and successive, were carried on through a very long period.

We arrive, in ascending, at the great masses of chalk, and its accompaniments of peculiar clays and sands; to the thickness of a thousand feet or more. Though the lines of stratification are not here so visible as in the underlying formations, the evidence of deposition from watery mixture, and of very interesting effects from molecular and chemical attractions, is so clear as to be irresistible. In our country, and in some others, the Chalk formation, like the Old

* "We have recently seen two of our first philosophers (Babbage and Herschel) maintaining that, a central heat being granted, the *necessary* result of the increment of fresh matter in one part and its abstraction in another (as is now taking place), must produce such variations in the conducting media, that the result would be the gradual elevation of some parts of the earth's surface, and the depression of others." Murchison, 1. 576. The statements referred to are letters of Sir John Herschel to Mr. Lyell, in the Proceedings of the Geological Society, May 17, 1837, and Jan. 31, 1838; and the Ninth Bridgewater Treatise, pp. 225—247.