out those lowest portions of these strata, which have been called primary, is a fact consistent

and mica slate in a less degree, the same action of which the maximum intensity produced granite.

"The dislocations and deranged position of the strata he attributes to the breaking in of vast vaults, which the vesicular and cavernous structure assumed by masses, during their refrigeration from a state of fusion must necessarily have occasioned in the crust, thus cooling down and consolidated. He assigns the weight of the materials and the eruption of elastic vapours as the concurrent causes of these disruptions; to which we should perhaps add, that the oscillations of the surface of the still fluid nucleus may, independently of any such cavities, have readily shattered into fragments the refrigerated portion of the crust; especially, as at this early period, it must have been necessarily very thin, and resembling chiefly the scoriæ floating on a surface of lava just beginning to cool. He justly adds, that these disruptions of the crust must, from the disturbances communicated to the incumbent waters, have been necessarily attended with diluvial action on the largest scale. When these waters had subsequently, in the intervals of quiescence between these convulsions, deposited the materials first acquired by their force of attrition, these sediments formed, by their consolidation, various stony and earthy strata. Thus, he observes, we may recognize a double origin of the rocky masses, the one by refrigeration from igneous fusion, (which, as we have seen, he considered principally to be assignable to the primary and fundamental rocks,) the other by concretion from aqueous solution. We have here distinctly stated the great basis of every scientific classification of rock formations. By the repetition of similar causes (i. e. disruption of the crust and consequent inundations) frequent alternations of new strata were produced, until at length these causes having been reduced to a condition of quiescent equilibrium, a more permanent state of things emerged. Have we not here clearly indicated the data on which, what may be termed the chronological investigation of the series of geological phenomena, must ever proceed?"