

covered by waters which did not then nourish living bodies; it was not only after the appearance of vitality that important changes took place in the nature of the deposited matter; the masses formed before have changed, as well as those subsequently produced; they have even undergone violent changes in their situation, and a portion of these changes took place when these masses alone were existing, and were not covered by layers of shells. The proof is evident in the overthrows, in the dislocations, the rents, which we perceive in the layers, as well as in the posterior layers of earth, which are even more numerous and more strongly marked.

But these primitive masses have experienced other revolutions, subsequently to the formation of these secondary layers of earth, and have perhaps occasioned, or at least shared, some of those changes which these layers themselves have undergone. There are indeed considerable portions of these primitive layers exposed, although in situations even lower than those of secondary layers; if they had not been exposed by subsequent convulsions, the latter would have concealed them. Vast and various blocks of primitive substances are found scattered, in particular countries, over the secondary layers, separated by deep valleys, or even arms of the sea, from the summits of crests whence they must have come. They have been either thrown there by eruption, or the depths which would have arrested their progress did not exist at the period of their removal, or else the fury of the waters which conveyed them there exceeded in violence any thing that we can imagine from our own experience. (1)

(1) The travels of Saussure and Deluc present us with a multitude of these facts; and these geologists have judged that they