have been raised together, when that part of England emerged from the ocean; unless the red marl was formed in a mediterranean lake or sea, surrounded by distant high ground. Adopting this view of the subject, though we may be certain that the beds of granite in England were elevated before those of the Alps, it does not follow that England must necessarily have been dry land, before the Alps of Savoy. Since, therefore, the elevation of the beds in mountain ranges, may have preceded their final emergence above the ocean, this consideration deprives the investigation into the relative antiquity of the elevation of the beds in mountain ranges of much of its value.

Before proceeding to describe the secondary and tertiary formations, I shall offer some preliminary observations, connected with the enquiry respecting the relative age of the different beds. Where a similarity of mineral character, and a similar association with other beds is observed in different districts, we may sometimes infer that their origin was cotemporaneous; but when the organic remains are also the same in both, we attain a full conviction of the fact.

It will not be denied that the chalk and oolite in Yorkshire, were cotemporaneous with certain parts of the chalk and oolite formations in the southern and western counties. In the same manner, we may admit, that the chalk, and oolite, and lias, on the opposite side of the Channel, in France, are cotemporaneous with similar formations in England, with which they preserve an identity of mineralogical and zoological characters. Having once traced these formations to the north of France, we may admit their identity with similar formations, preserving the same identity of character through many of the inland departments of France, and to the Salins at the foot of the Jura range. Over so large an extent of country we may expect to find, as we do in distant districts in England, that certain parts of a series which occur in a certain formation in one place, are wanting in another. In France, some beds occur, under the lias, for instance, which have not hitherto been found in Great Britain: but making allowance for such partial variations, we cannot hesitate to admit the identity of the formations in both countries, and also their identity of age. When we enter the Jura, or the great calcareous ranges of the Alps, the enormous thickness of the beds, which are frequently inaccessible, and the indurated and subcrystalline texture which they often assume, present considerable difficulties, if we attempt to identify them with well known formations. Much confusion and contrariety may be observed in the classification of these rocks by different geologists; but this has arisen partly from the observers not being thoroughly acquainted with the formations with which they were to make the comparison, and partly from the vague and contradictory use of the terms Alpine limestone *(calcaire Alpin)* and Jura limestone *(calcaire de Jura.)* There is, however, in some parts of these mountains, both an identity of mineral and of zoological characters, with some of the formations in the upper secondary strata in England. A thick