

beds of limestone, supposed to be marine, and a few marine organic remains. In such situations we must admit, that the lakes or basins in which the coal strata are deposited, were nearly on a level with the sea, and subject to occasional irruptions of salt water ; or the relative level of the land and sea may have been changed, by frequent oscillations of the land. The strata of coal and ironstone are much too regularly separated from admixture with other substances, to allow us to suppose, that they were formed by matter drifted into the sea. If the regular coal strata in our English coal fields are not freshwater formations, deposited in marshes or in tranquil water, we can have no evidence for freshwater formations in any part of the world. All the coal basins were either formed in inland marshes or lakes, or were surrounded by dry land ; but a great submergence of the land took place, and they were covered in many parts by thick depositions of marine limestone. At a subsequent period, they again emerged from the ocean with a covering of marine secondary strata. (See *Appendix*.) It would not be difficult to accumulate proofs, of the repeated elevation and submersion of portions of the crust of the globe.

The following account is interesting, from the vast extent of surface to which it relates ; but it may be said to present rather a description of the present state of the earth's surface, than a direct proof of former changes. M. Humboldt, in a recent work, entitled *Fragmens Géologiques sur l'Asie Centrale*, the result of his late travels into Asia, observes, that the high part of central Asia, commonly called *le grand plateau*, is composed of four powerful ranges (*systèmes*) of mountains, directed east and west, and supported by a common base, also raised above the surrounding country. At the foot of this immense system of mountain chains and elevated ground, is an enormous depression, eighteen thousand miles square, and from 150 feet to 300 feet below the level of the ocean. The surface of the Caspian Sea and the level of Astracan is 300 feet lower than the sea, and the course of the Volga is 150 feet lower. M. Humboldt supposes, that this subsidence was the result of the elevation of the Plateau, which supports the Himalaya and Irun mountains, and perhaps those of Caucasus, an enormous mass, the elevation of which can be compared to no geological phenomena of the same order, observed on the other continents.

M. Humboldt notices the existing traces of volcanic agents in central Asia, which may be more or less directly connected with the internal force, that has produced such mighty results.

The epoch of these elevations is not precisely indicated by M. Humboldt, but the discovery of tertiary shells in the higher regions of Caucasus and the Himalaya mountains, analogous to those in the adjacent seas, may lead us to regard the elevation of these mountain chains, as being posterior to the latest tertiary epoch, which would (if established) confirm the conclusion, " that the highest chains of