

SUPPLEMENT TO CHAPTER VIII.

ON THE GREAT COAL FORMATION.

BESIDE what has been already stated respecting the freshwater origin of the coal strata, I wish the reader to bear in mind, that the marine or freshwater character of formations, must be determined by the general assemblage of the organic remains, and not by a few individuals, or a few species of shells, which differ from the general character of the fossils; particularly as we now know, that several species supposed to be marine, are capable of living in fresh water.

In the great coal formation of England, the upper and middle beds, for many hundred feet or yards in thickness, abound in the remains of terrestrial or of marsh plants with some freshwater shells, but without any admixture of marine species. The whole mass of the coal measures, however, rest on marine limestone; and in some parts of England, the lowest measures alternate with beds of limestone, and also contain some shells supposed to be marine. Though the upper and middle parts of all the English coal fields are freshwater formations, we can have no doubt, that the limestone on which all the coal fields rest was deposited under the ocean; but many circumstances tend to prove, that its elevation was a slow and long-continued process, and that the lower part of the coal measures was deposited when nearly on a level with the sea, or in situations subject to interruptions of marine water; or else the ground was subject to oscillations, which brought it, at different times, below the level of high tides.

The great valley of the Mississippi contains the largest coal field in the known world; and what is now annually taking place in some parts of that valley, appears to confirm in a remarkable manner, the opinions I have advanced (pages 113 to 118) on the formation of coal and the cause of the frequent recurrence of the same series of strata at different depths, in the same mine; which I attribute to the periodical filling and desiccation of lakes. In the second volume of Mr. Stuart's interesting "Travels in the United States," there is a very instructive account of the Valley of the Mississippi, quoted from an American review. I shall here insert the parts immediately connected with the present subject:—

"What is called the Valley of the Mississippi is not in reality a valley, but an extensive elevated plain, without hills or inequalities deserving notice. It extends west from the western slope of the Alleghany Mountains, to the sand plains near the Missouri, a distance of about 1500 miles, and south from the valley of the northern lakes, to the mouth of the Ohio, about 600 miles. No part of the globe possesses such an extent of uniform fertility. The difference in ele-