CHAPTER XIII.

ON THE SUSSEX BEDS, OR WEALDEN, CONTAINING REMAINS OF LAND PLANTS, AND AMPHIBIOUS AND FRESH-WATER ANIMALS.

Extent of the Sussex Beds.—Their Geological Position and Mineral Characters.—Remarkable Organic Remains of enormous Lizards and Plants, analogous to those of Tropical Climates found in the Sussex Beds.—Supposed Appearance of the Country when these Animals flourished.—Petworth Limestone.—Hastings' Sand and Weald Clay.—The Wealden Beds formerly furnished the greatest Part of the Iron manufactured in England.—Mr. Mantell's Enumeration of the Species of Terrestrial and Fresh Water Fossil Remains in the Wealden Beds.—Observations on the Wealden Beds, and the Change from Marine to Fresh Water Formations.

In an elementary treatise on Geology, it is desirable to present to the view of the reader, not the geology of a single country, but that of the whole globe, as far as it has been ascertained. In certain countries, particular formations occupy a considerable extent, and are of great thickness; in other countries, similar formations are often wanting altogether, or the beds are so thin as scarcely to excite notice. The secondary strata cover more than one half of England, and hence the English geologist might be suspected of bestowing upon them too great a portion of his attention; but a more accurate examination of other countries has fully proved, that many of the British strata, which were formerly believed to be of very limited extent, are spread over a great part of Europe, and preserve the same order of succession as in our own island:—a description of these strata is therefore an essential part of general geology. The formations of the magnesian limestone, the red marle, the lias, the oolites, and the chalk, have risen into geological importance within the last fifteen years; and the reproach cast upon South Britain by our neighbors on the other side of the Tweed, namely, "that there was little or nothing in England worth the attention of a geologist," has lost all its force. The beds of sand and clay, that intervene between the upper oolites and the chalk, were, however, still more recently regarded as unworthy of particular notice, but the labours of Mr. Mantell and of Dr. Fitton have made us acquainted with facts respecting these earthy and sandy deposits, which are scarcely exceeded in interest, by any discoveries in the lower strata.

The beds which are about to be described as the Wealden, because they occur principally in the Wealds of Kent and Sussex, are supposed to rest on the upper beds of oolite in these counties: they dip under the chalk hills by which they are every where surrounded, except on the east, where they are cut off by the sea. The oolite below, and the beds of chalk and green sand above, are admitted to