the number and magnitude of the petrified trees which remain. It is equally evident, that it was submerged before the Purbeck and Wealden strata began to be deposited; for the dirt-bed, and its contents, are covered by the freshwater limestone of the former. The tropical forest of Portland must, therefore, have gradually and tranquilly subsided (like many subterranean forests of the modern epoch) beneath a body of fresh water, sufficiently profound to admit of the accumulation of the limestone and fluviatile strata that compose the Wealden. What contemporaneous changes took place in other parts of Europe, it would be foreign to our purpose, and perhaps, in the present state of our knowledge, in vain to enquire; but we may remark, that the submergence of so extensive a tract of country, probably produced in other regions important mutations in the relative level of the land and water. At this epoch, then, the land and its tropical forest sank to the depth of many hundred feet, and became the bed of a vast lake or estuary, into which we have the clearest evidence that a river flowed, and formed a delta, made up of the debris of the rocks which composed its bed, intermixed with the remains of the animals and vegetables of the country from whence its waters were derived; for, as Mr. Bakewell has sagaciously remarked, a river that could form a delta of such extent as the Wealden, it must have required the drainage of a vast continent to supply.*

The proofs of the Wealden having been the delta of some ancient river, are so fully stated in the preceding chapter, that it is unnecessary to dwell upon the subject. Of its original extent, our conjectures must necessarily be extremely vague: Dr. Fitton has, however, ingeniously instituted a comparison between the known superficial surface of the Wealden, and the deltas of some modern rivers. Assuming that the occurrence of the Wealden strata at Beauvais is established, this eminent geologist computes that the remains of the delta of the Iguanodon period, are from west to east, or from Lulworth Cove, to the boundaries of the Lower Boulonnois, about 200 miles; and from north-west to south-east, or from Whitchurch to Beauvais, 220 miles; the total depth or thickness being about 2000 feet.† This but little exceeds the modern deltas of the Ganges, and the Mississippi; and is not equal to that of the Quorra, or Niger, which forms a surface of 25,000 square miles, being equal in extent to one half of England.

We have no data from which to calculate the probable duration of the Iguanodon epoch; it is, however, manifest that no brief period could have sufficed for that profuse evolution of animal life, of which we have such positive evidence in the organic remains. It may here, too, be remarked, that the vegetables and animals of this era, like the forest of Portland, denote a tropical climate, and belong to species and

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* Had the fossil vegetables of the Wealden been identical with those of the Isle of Portland, it might have been supposed that the latter was dry land at the Iguanodon period: but although the vegetable remains in both deposits indicate the floras of tropical climates, they are totally distinct from each other, and belong to different species and genera.

† Geology of Hastings, p. 58.