sion to the 'era of existing continents,' a period supposed to have coincided in date with the first appearance of Man upon the earth, since which event it was imagined that the relative level of the sea and land had remained stationary, no important geographical changes having occurred, except some slight additions to the deltas of rivers, or the loss of narrow strips of land where the sea had encroached upon its shores. But modern observations have tended continually to dispel this delusion, and the geologist is now convinced that at no given era of the past have the boundaries of land and sea, or the height of the one and depth of the other, or the geographical range of the species inhabiting them, whether of animals or plants, become fixed and unchangeable. Of the extent to which fluctuations have been going on since the globe had already become the dwelling-place of Man, some idea may be formed from the examples which I shall give in this and the next nine chapters.

Upheaval since the Human Period of the Central District of Scotland.

It has long been a fact familiar to geologists, that, both on the east and west coasts of the central part of Scotland, there are lines of raised beaches, containing marine shells of the same species as those now inhabiting the neighbouring sea.* The two most marked of these littoral deposits occur at heights of about forty and twenty-five feet above high-water mark, that of forty feet being considered as the more ancient, and owing its superior elevation to a longer continuance of the upheaving movement. They are seen in some places to rest on the boulder clay of the glacial period, which will be described in future chapters.

* R. Chambers, 'Sea Margins;' 1848, and papers by Mr. Smith of Jordan Hill, Mem. Wern. Soc. vol. viii., and by Mr. C. Maclaren.