

latitudes too cold for the growth of such timber, but the trunks are usually barked.

The leaves and lighter parts of plants are seldom carried out to sea, in any part of the globe, except during tropical hurricanes among islands, and during the agitations of the atmosphere which sometimes accompany earthquakes and volcanic eruptions.*

Comparative number of living and fossilized species of plants.— It will appear from these observations that, although the remains of terrestrial vegetation, borne down by aqueous causes from the land, are chiefly deposited at the bottom of lakes or at the mouths of rivers; yet a considerable quantity is drifted about in all directions by currents, and may become imbedded in any *marine* formation, or may sink down, when water-logged, to the bottom of unfathomable abysses, and there accumulate without intermixture of other substances.

It may be asked whether we have any data for inferring that the remains of a considerable proportion of the existing species of plants will be permanently preserved, so as to be hereafter recognizable, supposing the strata now in progress to be at some future period upraised? To this inquiry it may be answered, that there are no reasons for expecting that more than a small number of the plants now flourishing in the globe will become fossilized; since the entire habitations of a great number of them are remote from lakes and seas, and even where they grow near to large bodies of water, the circumstances are quite accidental and partial which favour the imbedding and conservation of vegetable remains. Suppose, for example, that the species of plants inhabiting the hydrographical basin of the Rhine, or that region, extending from the Alps to the sea, which is watered by the Rhine and its numerous tributaries, to be about 2500 in number, exclusive of the cryptogamic class. This estimate is by no means exaggerated; yet if a geologist could explore the deposits which have resulted from the sediment of the Rhine in the Lake of Constance, and off the coast of Holland, he could scarcely expect to obtain from the recent strata the leaves, wood, and seeds of *fifty* species in such a state of preservation as to enable a botanist to determine their specific characters with certainty.

Those naturalists, therefore, who infer that the ancient flora of the globe was, at certain periods, less varied than now, merely because they have as yet discovered only a few hundred fossil species of a particular epoch, while they can enumerate more than one hundred thousand living ones, are reasoning on a false basis, and their standard of comparison is not the same in the two cases.

Submarine forest on coast of Hants.— We have already seen that the submarine position of several forests, or the remains of trees standing in a vertical position on the British shores, has been due, in some instances, to the subsidence of land.† There are some cases

* De la Beche, Geol. Manual, p. 477.

† See above, pp. 290. and 311.