

CHAPTER XXI.

ON THE DESTRUCTION OF MOUNTAINS, AND THE FORMATION OF SOILS; AND ON ALLUVIAL AND DILUVIAL DEPOSITIONS.

Erroneous Opinions respecting the Growth of Stones, supported by the Authority of John Locke.—On the Causes in present operation that wear down Rocks.—Rapid Destruction of Mountains dependent on their Structure.—Fall of Mont Grenier in Savoy.—Breaking down of the Barriers of Mountain Lakes.—Scattered Masses of Rock.—Increase of Land by Alluvial Depositions in Lakes, and the Deltas of large Rivers.—On the Formation of productive Soils.—Recent Strata formed in Lakes.—Peat and Peat Moors.—Inundations of Sand.—Remains of Elephants and other large Animals found in the Diluvial Beds in England, and the Frozen Regions of Europe and Asia.

Few persons can have travelled a hundred miles through any country without having seen beds of gravel, or of rounded stones, or fragments of rock scattered in different directions, which were evidently never brought into their present situation by the labour of man. In some instances, these masses of loose stones, or large fragments of rock, occur on the summits of hills, or on elevated ground, and the stones are, altogether, unlike any rocks or strata in the adjacent districts. Among the hundreds of travellers to whom such objects are familiar, it is surprising how few have ever raised the enquiry—“*How did these masses of rock, or beds of loose stones, come here?*” One great reason for this indifference arises from a cause that may surprise geologists. Many well educated persons, who possess much information on various subjects, still entertain the belief that stones grow in the places where they are now found: this belief excludes the necessity for further enquiry. They can also refer to the authority of the ablest philosopher this country ever possessed, for a confirmation of their opinion, should it be controverted.

The celebrated John Locke states, in his “*Elements of Natural Philosophy*,” that “*all stones, metals, and minerals, are real vegetables; that is, grow organically from proper seeds, as well as plants.*”

If, in the present age of general information, any one should think it superfluous to notice this extraordinary passage, let him enquire among his friends, *whether stones grow?* and he will be somewhat surprised by the answers he may receive.

These scattered fragments of rock, or beds of loose stones, together with beds of sand and gravel, present objects of enquiry of the most interesting kind. From what districts were they transported? What were the causes by which they were removed? What was the epoch of their removal?

A farther enquiry also presents itself, as some of the beds of loose stone are rounded, or water-worn, like the shingles on the sea beach, but are now raised many hundred feet above the high-water mark.