

PART II. EPIGENE OR SURFACE ACTION

An Inquiry into the Geological Changes in Progress upon the Earth's Surface

On the surface of the globe and by the operation of agents working there, the chief amount of visible geological change is now effected. This branch of inquiry is not involved in the preliminary difficulty, regarding the very nature of the agents, which attends the investigation of plutonic action. On the contrary, the surface agents are carrying on their work under our eyes. We can watch it in all its stages, measure its progress, and mark in many ways how well it represents similar changes which for long ages previously must have been effected by similar means. But in the systematic treatment of this subject, a difficulty of another kind presents itself. While the operations to be discussed are numerous and often complex, they are so interwoven into one great network that any separation of them under different subdivisions is sure to be more or less artificial, and is apt to convey an erroneous impression. While, therefore, under the unavoidable necessity of making use of such a classification of subjects, we must bear always in mind that it is employed merely for convenience, and that in nature, superficial geological action must be viewed as a whole, since the work of each agent has close relations with that of the others and is not properly intelligible unless this connection be kept in view.

The movements of the air; the evaporation from land and sea; the fall of rain, hail, and snow; the flow of rivers and glaciers; the tides, currents, and waves of the ocean; the growth and decay of organized existence, alike on land and in the depths of the sea—in short, the whole circle of