

§ 3. Structure of Volcanoes

We have now to consider the manner in which the various solid materials ejected by volcanic action are built up at the surface. This inquiry will be restricted here to the phenomena of modern volcanoes, including the active and dormant, or recently extinct, phases. Obviously, however, in a modern volcano we can study only the upper and external portions, the deeper and fundamental parts being still concealed from view. But the interior structure has been, in many cases, laid open among the volcanic products of ancient vents. As these belong to the architecture of the terrestrial crust, they are described in Book IV. The student is therefore requested to take the descriptions there given, in connection with the foregoing and present sections, as related chapters of the study of volcanism.

Confining attention at present to modern volcanic action, we find that the solid materials emitted from the earth's interior are arranged in two distinct types of structure, according as the eruptions proceed from large central cones or from less prominent vents connected with fissures. In the former case, volcanic cones are produced; in the latter, volcanic plateaus or plains. The type of the volcanic cone, or ordinary volcano, is now the most abundant and best known.

i. *Volcanic Cones*

From some weaker point of a fissure, or from a vent opened directly by explosion, volcanic discharges of gas and vapors with their liquid and solid accompaniments make their way to the surface and gradually build up a volcanic hill or mountain. Occasionally, eruptions have