

those which flowed out as lava; they are likewise destitute of the cellular scoriaceous structure and the ashy accompaniments so characteristic of superficial igneous rocks. Yet even if there were no well-marked petrographical contrast between the two groups, it would manifestly lead to confusion if no distinction were drawn between those igneous masses which reached the surface and consolidated there, like modern lava-streams or showers of ashes, and those which never found their way to the surface, but consolidated at a greater or less depth beneath it. There must be the same division to be drawn in the case of every active volcano of the present day. But at a modern volcano, only the materials which reach the surface can be examined, the nature and arrangement of what still lies underneath being matter of inference. In the revolutions to which the crust of the earth has been subjected, however, denudation has, on the one hand, removed superficial sheets of lava and tuff, and has exposed the subterranean continuations of the erupted rocks, and, on the other hand, has laid open the very heart of masses which, though eruptive, seem never to have been directly connected with actual volcanic outbursts. All subterranean intruded masses, now revealed at the surface after the removal of some depth of overlying rock, may be grouped together into one division under the names *Plutonic*, *Intrusive*, or *Subsequent*. On the other hand, all those which came up to the surface as ordinary volcanic rocks, whether molten or fragmental, and were consequently contemporaneously interstratified with the formations which happened to be in progress on the surface at the time, may be classed in a second group under the names *Volcanic*, *Interbedded*, or *Contemporaneous*.