

and another wide-spread and complicated series dating from the older part of the Tertiary period.¹

It is unnecessary to trace the progress of investigation in other countries regarding the volcanic action of former geological periods. In Germany, the lavas and tuffs of Devonian and Permian age have long been made familiar by many able writers. In France, besides the complicated history of the Tertiary volcanic history which, first sketched in broad outline by Desmarest, has been followed into the minutest details by Fouqué, Michel Lévy, Boule and other observers, a great series of Palæozoic eruptions has been brought to light by Barrois. In the United States also, a long and complicated volcanic record, dating from older Tertiary time, has been made known by the geologists of the various surveys which have been extended over the Western States and Territories. And thus the present active volcanoes of the globe have been shown to be the latest in a series which can be traced backwards into the remotest geological periods.

We have seen in the course of these chapters that volcanoes and earthquakes were assumed, even as far back as the time of the ancient Greeks and Romans, to be connected phenomena arising from one common cause, but that no attempt was made during all the subsequent centuries either by close observation or well-devised experiment to discover what this active cause might be. The prevalent opinion was that which looked upon subterranean wind as the main

¹ I have given a full account of this volcanic history in my *Ancient Volcanoes of Great Britain*, 2 vols., 1897.