

The fissure-eruptions, wherein lava has risen in innumerable rents in the ground across the whole breadth of a country, and has been poured out at the surface over areas of many thousand square miles, flooding them sometimes to a depth of several thousand feet, undoubtedly prove that molten rock existed at some depth over a large extent of territory, and that, by some means still unknown, it was forced out to the surface (*ante*, p. 434). In investigating this subject, it would be important to discover whether any evidence of great terrestrial crumpling or other movement of the crust can be ascertained to have taken place about the same geological period as a stupendous outpouring of lava—whether, for example, the great lava-fields of Idaho may have had any connection with contemporaneous flexure of the North American mountain-system, or whether the basalt-plateaus of Antrim, Scotland, Faroe, and Iceland may possibly have been in their origin sympathetic with the post-Eocene upheaval of the Alps or other Tertiary movements in Europe. The most striking instance of an apparent connection between such terrestrial disturbances and volcanic phenomena is that supplied by the great semicircle of eruptions that sweeps from Central France by the Eifel, Hochgau, and Bohemia into Hungary, and which has been referred to the dislocations consequent on the upheaval of the Alps.¹⁶¹

In the ordinary phase of volcanic action, marked by the copious evolution of steam and the abundant production of dust, slags, and cinders, from one or more local vents, the main proximate cause of volcanic excitement is obvi-

¹⁶¹ Suess, "Antlitz der Erde," i. p. 358, pl. iii.; Julien, *Annuaire du Club Alpin*, 1879-80, p. 446; Michel-Lévy, *Bull. Soc. Geol. France*, xviii. (1890), pp. 690, 841.