

resembled those which in recent times have occurred at the Hawaiian volcanoes, where enormous accumulations of lava have gradually been built up into flat domes, of which Mauna Loa rises to a height of 13,675 feet. Vast floods of remarkably liquid basic lava have from time to time flowed out tranquilly without explosion or earthquake, and with no accompaniment of fragmental discharges. These currents of molten rock have spread out into wide sheets, sloping at so low an angle that they look horizontal. The lower and older portions of them have been eroded by streams so as to present escarpments and outliers not unlike those of western North America or the older basaltic plateaus of Britain and India.<sup>134</sup>

The most stupendous modern basaltic-floods of Iceland issued from vents along a fissure. According to Thoroddsen the post-glacial lava-fields of Odadahraun, covering an area of about 4390 square kilometres, have issued from about 20 distinct vents, while in the east of Iceland the lava has flowed from the lips of fissures.<sup>135</sup> It would seem that for the discharge of such wide and flat sheets of lava, great mobility and tolerably complete fusion of the molten mass is necessary. The phenomenon occurs among the more basic lavas (basalts, etc.) rather than among the more lithoid acid lavas (trachytes, rhyolites, etc.).

In former geological ages, extensive eruptions of lava, without the accompaniment of scorïæ, with hardly any fragmentary materials, and with, at the most, only flat

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<sup>134</sup> For a graphic account of the Hawaiian lava-fields, see Captain Dutton, Fourth Annual Report, U. S. Geol. Survey for 1882-83. See also Dana's "Characteristics of Volcanoes."

<sup>135</sup> See W. L. Watts' "Across the Vatna Jökull," Proc. Roy. Geog. Soc. 1876. W. G. Lock, Geol. Mag. 1881, p. 212; and papers by Thoroddsen and Holland, quoted ante, p. 345.