

summits still projecting above the volcanic flood.¹⁴⁰ At a few points on the plain and on its northern margin, the author observed some small cinder cones (Fig. 70). These were evidently formed during the closing stages of volcanic action, and may be compared to the minor cones on a modern volcano, or better, to those on the surface of a recent lava-stream.

In Europe, during older Tertiary time, similar enormous outpourings of basalt covered many hundreds of square miles. The most important of these is that which occupies a large part of the northeast of Ireland, and in disconnected areas extends through the Inner Hebrides and the Faroe Islands into Iceland. Throughout that region, the paucity of evidence of volcanic vents is truly remarkable. So extensive has been the denudation, that the inner structure of the volcanic plateaus has been admirably revealed. The ground beneath and around the basalt-sheets has been rent into innumerable fissures which have been filled by the rise of basalt into them. A vast number of basalt-dikes ranges from the volcanic area eastward across Scotland and the north of England and the north of Ireland. Toward the west the molten rock reached the surface and was poured out there, while to the eastward it does not appear to have overflowed, or, at least, all evidence of the outflow has been removed in denudation. When we reflect that this system of dikes can be traced from the Orkney Islands southward into Yorkshire and across Britain from sea to sea, over a total area of probably not less than 100,000 square miles, we can in some measure appreciate the volume of molten basalt which in older Tertiary times underlay large tracts of

¹⁴⁰ Prof. J. LeConte believes that the chief fissures opened in the Cascade and Blue Mountain Ranges. *Amer. Journ. Sci.* 3d series, v. (1874) p. 168.