

contains pebbles of various finely vesicular porphyrites, and in one place includes a band of true tuff. In the lower Cambrian period the tuffs and diabases of Pembrokeshire were erupted. Still more vigorous were the volcanoes in the Lower Silurian period, when the lavas and tuffs of Snowdon, Aran Mowddwy, and Cader Idris were ejected. During the deposition of the Upper Silurian rocks a few volcanoes were active in the west of Ireland. The Lower Old Red Sandstone epoch was one of prolonged activity in central Scotland. The earlier half of the Carboniferous period likewise witnessed two distinct epochs of volcanic activity over the same region. In the earlier of those, lavas (andesites and trachytes) were poured out in wide level plateaus from many vents, while in the later, groups of minor cones like the puy of Auvergne were dispersed among the lagoons. During Permian time, more than a hundred small vents rose in scattered groups across the centre and southwest of Scotland, while a few similar points of eruption appeared in the southwest of England. No trace of any British Mesozoic volcanoes has been met with. The vast interval between Permian and older Tertiary time appears to have been a period of total quiescence of volcanic activity. The older Tertiary ages were distinguished by the outpouring of the enormous basaltic plateaus of Antrim and the Inner Hebrides.¹⁴⁹

In France and Germany, likewise, Palæozoic time was marked by the eruption of many diabase, porphyrite, and quartz-porphry lavas. In Brittany, for example, Dr. Barrois has found a remarkable series of older Palæozoic dia-

¹⁴⁹ For a detailed summary of the volcanic history of Britain, see Presidential addresses to the Geological Society, Quart. Journ. Geol. Soc. xlvii., xlviii. (1891-92).