1. **Cones of Non-volcanic Materials.**—These are due to the discharge of steam or other aeriform product through the solid crust without the emission of any true ashes or lava. The materials ejected from the cavity are wholly, or almost wholly, parts of the surrounding rocks through which the volcanic pipe has been drilled. Some of the cones surround-

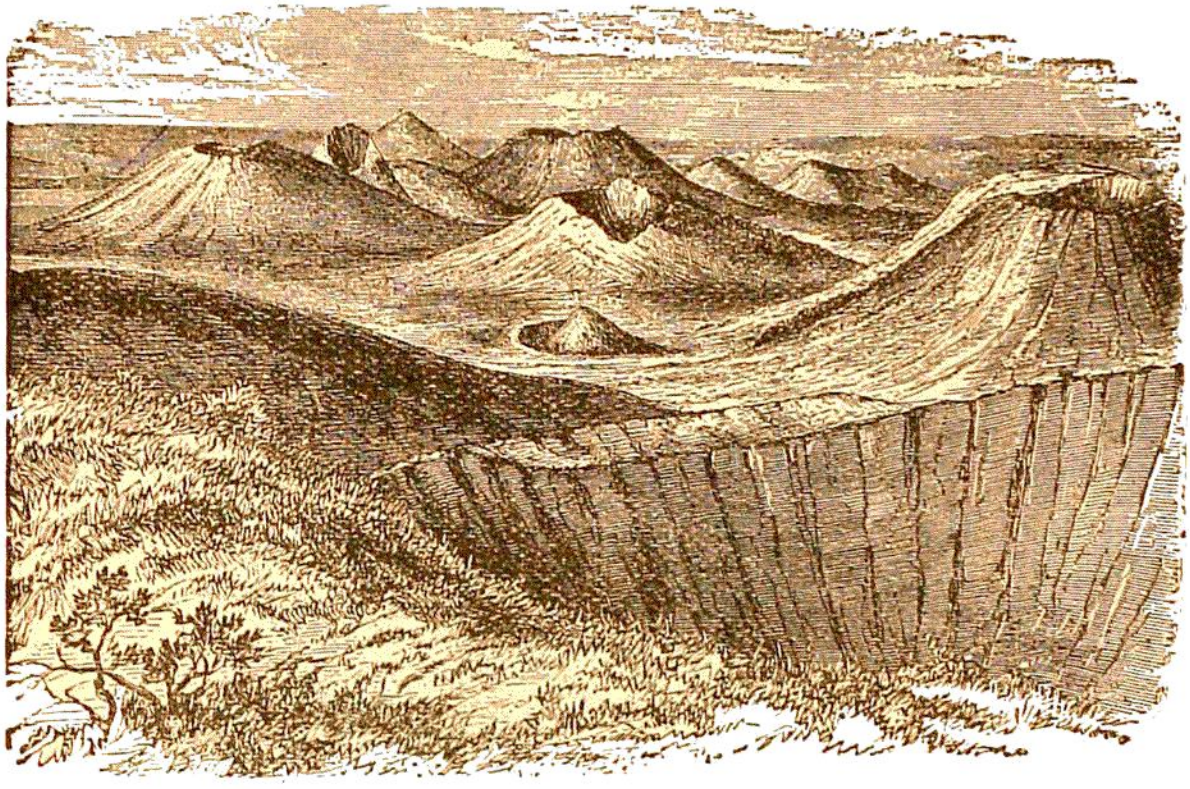

Fig. 56—View of the Tuff-cones of Auvergne, taken from the top of the cone and crater of Puy Pariou.

ing the crater lakes (*maare*) of the Eifel consist chiefly of fragments of the underlying Devonian slates (pp. 341, 363).

2. **Tuff-Cones. Cinder-Cones.**—Successive eruptions of fine dust and stones, often rendered pasty by mixture with the water so copiously condensed during an eruption, form a cone in which the materials are solidified by pressure into tuff. Cones made up only of loose cinders, like Monte Nuovo in the Bay of Baiæ, often arise on the flanks or round the roots of a great volcano, as happens to a small extent on Vesuvius, and on a larger scale upon Etna. They

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lava, with little or no accompanying fragmentary discharges, without craters or chimneys, or at least with only minor examples of these volcanic features. He believed that the same volcano might at different periods in its history belong to one or other of these types—the determining cause being the nature of the erupted lava, which, in the case of the dome volcanoes, is less fusible and more viscid than in that of the bedded volcanoes. (See below, under "Lava-cones.")