opened in lines and groups along the bottom of long narrow valleys in the Silurian uplands.[34]

Ordinary phase of an active Volcano.—The interval between two eruptions of an active volcano shows a gradual augmentation of energy. The crater, emptied by the last discharge, has its floor slowly upraised by the expansive force of the lava-column underneath. Vapors rise in constant outflow, accompanied sometimes by discharges of dust or stones. Through rents in the crater-floor red-hot lava may be seen only a few feet down. Where the lava is maintained at or above its fusion-point and possesses great liquidity, it may form boiling lakes, as in the great crater of Kilauea, where acres of seething lava may be watched throwing up fountains of molten rock, surging against the walls and re-fusing large masses that fall into the burning flood. The lava-column inside the pipe of a volcano is all this time gradually rising, until some weak part of the wall allows it to escape, or until the pressure of the accumulated vapors becomes great enough to burst through the hardened crust of the crater-floor and give rise to the phenomena of an eruption.

Conditions of Eruption.—Leaving for the present the general question of the cause of volcanic action, it may be here remarked that the conditions determining any particular eruption are still unknown. The explosions of a volcano may be to some extent regulated by the conditions of atmospheric pressure over the area at the time. In the case of a volcanic funnel like Stromboli, where, as Scrope pointed out, the expansive subterranean force within, and the repressive effect of atmospheric pressure without, just balance

[34] Quart Journ. Geol. Soc. vol. xlviii. (1892). Presidential Address, p. 156.