seated batholites, as laccolites intruded at various horizons between the sedimentary deposits, as fissure eruptions, or volcanic explosions. He summarises his views in the following sentences: "The uppermost peripheral parts of the earth's body are held firmly arched in virtue of the tangential tensions. Either radial tensions or crust sagging causes a part of the earth's body to split away from the outer crust towards the interior, and a large cavity or macula forms more or less parallel with the earth's surface, lenticular in shape if produced mainly by sagging, and wider if due to radial fracture. The macula fills with lava; and if the surface rocks subjected to tangential tensions find escape from them in any direction, for instance by a folding movement or by the overthrust of another mass of rock, then the relieved portion of the arched crust which is immediately above the macula sinks into it and lava wells forth at the faults and deeper inthrows" (*loc. cit.*, vol. i., p. 220).

Dr. Reyer, in his work *Theoretische Geologie* (1888), groups batholites, laccolites, domes (Kuppen), and sheets as massive eruptions, and distinguishes them from true volcanic eruptions associated with fragmentary discharges. At the same time he allows that in Mexico, Iceland, and in other localities, massive intrusions and outpourings occur in combination with typical tuff volcanoes. Reyer contests Gilbert's explanation of laccolites as intrusions following the bedding-planes of strata; he regards them primarily as surface protrusions contemporaneous with the sedimentary deposits in association with which they occur; and with regard to the apophyses extending from laccolitic invasions into superincumbent strata, Reyer says they are intrusions altogether subsequent to the laccolites. True volcanic mountains must, according to Reyer, include tuffs and loose fragmental products, but may or may not include lava; these are piled round the orifice and arranged as inclined successive layers. The craters are, he thinks, usually the result of explosion; occasionally, however, they arise from inthrow. The larger areas of subsidence, on which the volcanic mountains are found, appear to have been formed by repeated eruptions.

It had been recognised by Dolomieu and Spallanzani that the violent outbursts from active volcanoes could not be entirely due to the pressure of the outer firm envelope of the earth upon internal molten material. But, whereas Dolomieu