they are therefore to be considered as new occurrences in the history of Nature. The volcanic state appears to be foreign to the earth." [1]

The similarity of basalt to many undoubtedly volcanic rocks had long been noticed, and could not escape the observant eyes of Werner. But he did not therefore infer basalt to be of volcanic origin. He had already established, as one of the indisputable canons of geognosy, that basalt was precipitated from chemical solution in a universal ocean. The way in which he accounted for the resemblance between basalt and lava must be regarded as a signal proof of his ingenuity. He announced that volcanoes not only occur where there are seams of coal, but where these are covered by sheets of basalt and wacke, and that eruptions of lava take place when these overlying rocks are melted by the combustion of the coal. He thus provided himself with a triumphant answer to any objector who felt inclined to question his dictum as to the origin of basalt. If the rock occurred on isolated hill tops, it was a member of the Floetz-trap formation produced by universal chemical precipitation. If it was found in the condition of lava, the original precipitate had been fused by the burning of underlying seams of coal.

With so flexible a theory to defend and apply, it can be understood how the pupils of the Freiberg school scouted the notion that volcanoes were of any real geognostical importance, and how they had a ready

[1] Jameson's *Geognosy*, p. 96. Werner could not claim even originality for this absurd doctrine, for it had been adopted by Buffon before the Saxon professor was born (*ante*, p. 93).