volcanic rocks in his time—Desmarest, Raspe, Arduino, and Faujas de Saint-Fond. Werner had at first included basalt among the rocks of highest antiquity; subsequently he removed it to the Flötz formation. In 1788, after a visit to the Scheibenberg, a basaltic summit in the Erz mountains, he wrote a special paper on basalt, from which the following passage is extracted :—

"The basalt rock is separated by several beds of sandstone, clay, and greywacke from the basal gneiss. The transition from one stratified bed to the next in upward succession is quite gradual. Even the greywacke merges gradually into the clays below it and the basalt above. Therefore the basaltic, clayey, and sandy rocks all belong to one formation, have all taken origin as moist deposits, precipitated during one particular epoch of submergence in this district.

"All basalt was formed as an aqueous deposit in a comparatively recent formation. All basalt originally belonged to one widely extended and very thick layer, which has since been for the most part disturbed, only fragments of the original layer being left."

Voigt, who had been a scholar of Werner, opposed this socalled "new discovery," and said that the Scheibenberg basalt was of volcanic and not aqueous origin, that it represented an old lava which had flowed over a sandy substratum. A lengthy controversy ensued, in the course of which Werner wrote his paper tracing volcanic activity to the burning of coal in the earth's crust. He argued that during volcanic action basaltic deposits might be converted into lava, if it so happened that the coal-beds were subjacent to the basaltic beds in the crust. The controversy between Neptunists and Volcanists waged for many years in Germany, and much labour and time were lost in the discussion of difficulties which had already been solved in other European countries.

The New Theory of the Origin of Mineral Veins was Werner's last contribution to science. His theory was that surface-water descends through crust-fissures; vein-stuff is precipitated from the water, and gradually fills up the fissures. Although this theory is no longer accepted for the majority of ore-deposits, Werner's work proved of the highest value in mineralogical science, since it contained a large store of accurate information about mineral veins, and suggested new methods of determining the relative age of vein-deposits.