

by Ferber's important series of works,—his *Treatise on the Mountains of Hungary*, his *Account of Travels*, and his *Contributions to the Mineralogy of Bohemia* (Berlin, 1774). Twenty years later, another descriptive work on the minerals of Bohemia was contributed by Franz Ambros Reuss, a mineralogist and physician resident in Bilin. The same author wrote a *Text-book of Mineralogy* that had a wide circulation. A pupil of Werner's, Reuss treated the basalts of North Bohemia as rocks of aqueous origin.

The most gifted of the early stratigraphers was Johann Ehrenreich von Fichtel (1732-95), a Hungarian by birth, whose researches in Transylvania were published in 1780; a later work on the Carpathian mountains appeared in 1791. The first volume of Fichtel's *Mineralogy of Transylvania* contains much valuable information about local occurrences of Tertiary fossils in the low range of hills in front of the Transylvanian Alps. In the second volume, Fichtel describes the massive accumulations of rock-salt in Transylvania, and gives an exhaustive technical account of the whole mining industry in Transylvania, the Carpathians, and Galicia. A topographical map shows the distribution of rock-salt in these areas.

Local stratigraphical relations are now and then elucidated, and the origin of the different kinds of rock is discussed, Fichtel declaring himself to be a thorough Volcanist. Amongst rocks of igneous origin Fichtel includes the granite composing the highest mountains, and the gneiss, schist, limestone, and metalliferous rock (rhyolite, dacite, trachyte) composing the mountains of intermediate height; the rocks composing the lower ranges in front of the middle and main chain are, he says, of pelagic origin, and include sand, clay, and pebble deposits. According to Fichtel, rock-salt originated by the evaporation of a fluid mixture of salt and rock-oil, which had sapped into huge crust-cavities after the cooling and consolidation of the earth's crust. Such cavities, with their saline intercalations, form, he says, the heart of the Carpathian mountains.

Fichtel's later work is devoted chiefly to a careful enumeration and description of the eruptive rocks in the Carpathians. He distinguishes *volcanic outbreaks*, with which superficial lava flows are associated, from *volcanic upheavals*, in the course of which wide regions are affected, and masses of igneous material are intruded in the crust.

It can be easily understood that Fichtel's work met with an