

STANISŁAW BORKOWSKI (1782—1850)
THE FIRST POLISH MINERALOGIST

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As a boy Borkowski already showed a strong predilection to natural history, especially to mineralogy and geology. His good knowledge of foreign languages facilitated his scientific journeys and the publication of mineralogical treatises in foreign periodicals. After graduating from Lwów University he went to Germany and entered the Mining School in Freiberg, where he attended the lectures and classes of an unusually successful teacher Abraham Gottlob Werner, "the father of German geology". After a year's stay in Freiberg Borkowski went to Paris where he studied mineral chemistry under the prominent French chemists L. N. Vauquelin and L. J. Thenard.

Encouraged by the French mineralogists Laumont and Lelièvre, Borkowski wrote in 1809 a paper *Observations générales sur les rapports des différentes structures de la terre d'après la théorie de Werner*. It was one of the first treatises published in France propagating Werner's new geological views. It was published in French periodicals "Journal des Mines" and "Journal de Physique, Chimie et d'Histoire naturelle". In these periodicals he also published the papers *De la Bothriolith* (On the Datolite, a basic orthosilicate of boron and calcium); *Du Fettstein* (On Nephelite: Fettstein is an old German name used by Werner for this important rock-forming mineral, aluminium silicate of sodium); and *Observations générales sur les différentes méthodes de classification minéralogique* (General observations on different methods of mineralogical classification).

In the paper of Villefosse published in 1810 *La richesse minérale* (Mineral Resources), Borkowski gave the index of minerals occurring in the southern Poland.

In 1815 and 1816 Borkowski visited Italy. The result of this journey was the paper *Geognostische Beobachtungen in der Gegend von Rom* (Geological observations of the environs of Rome). It was published in 1820. It was issued first in the German periodical "Leonhard's Taschenbuch für die gesammte Mineralogie", and later as a separate paper.

For many years Borkowski published the results of this investigations on different minerals in Polish, German and French. There were descriptions with analyses of vesuvianite, named by Werner "egeran", after the locality Eger in Czechoslovakia, of alunite and of tantalite. The paper on

tantallite, which is found in Bavaria was a great success for the Polish mineralogist and brought him membership of the Academy of Science of Munich (München). He carried out the chemical analyses in the laboratory in his estate Winniczki.

At a session of the Academy of Sciences in Paris (1816) Borkowski presented an important paper on the mineral sodalite *Mémoire sur la sodalite de Vésuve*, which was published later in French and in English (translated by the outstanding English chemist T. Thomson). This rock-forming mineral, hitherto found only in Greenland, was discovered by Borkowski on the Italian volcano Vesuvius.

Borkowski described some minerals occurring in his country, such as: amber, sulphur, copper and lead minerals, too. One of his papers *Einige Notizen über Fossilien aus Ost-Galizien und der Bukowina* (On the fossils from eastern Galizia and Bukowina) was one of his first publications on the fossils of the south-eastern part of Poland.

The mineralogical works of Borkowski were highly valued by German and French scientists. Some of his descriptions and chemical analyses are often mentioned in the textbooks of a prominent German mineralogist C. Leonhard (1779—1862). The French mineralogist and founder of crystallography, R. J. Haüy (1732—1822), thought Borkowski an excellent mineralogist and a great credit to the Freiberg Mining School. The famous French naturalist Georges Cuvier (1769—1832) called the Polish mineralogist a zealous scientist.

Borkowski was a member of many scientific societies, including those of Paris, Vienna, Jena, Dresden.

During his numerous journeys Borkowski collected many minerals, which formed a fine mineral collection. In his later years poor health made Borkowski give up his work in the chemical laboratory and stop carrying on mineral analyses.

Stanisław Borkowski was the first Polish mineralogist, in the modern sense of the word.

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