

BOOK REVIEWS

Mineralogie Československa. Edited by J. H. Bernard. Academia Praha 1981, 2nd edition, 648 pages, 113 figures, 33 colour and 70 black-and-white photographs, 6000 copies. 135 kcs.

Czechoslovakian mineralogy has long held an established position in geological sciences. Its traditions dating back to the 16th century are still kept alive. Czechoslovakian mineralogists are in the forefront in the study of clay and ore minerals, post-magmatic minerals and tektites. It is worth noting that some 30 new minerals have been described from the area of Czechoslovakia since 1945. These are bukovite, bukovskyite, cyrilovite, hakite, heyrovskyite, hodrusite, kemmlitzite, kettnerite, kokaite, koutekite, krutaite, kutinaite, nováčekite, novákite, paxite, poubaite, pierrotite, sekaninaite, součekite, tuczekite, tunisite, and others.

It is obvious, therefore, that the second edition of the *Mineralogy of Czechoslovakia*, edited by Jan H. Bernard, aroused great interest. The first edition appeared in 1969 in 2000 copies and had 400 pages, 72 black-and-white and 3 colour photographs. The second edition, which came out ten years later, is more comprehensive as it has 648 pages and 70 black-and-white and 33 colour photographs. Its size was also increased to 6000 copies.

The authors of the book, prominent Czechoslovakian mineralogists, made it their aim to review minerals occurring in Czechoslovakia, with special emphasis laid on the most interesting mineral parageneses.

The book consists of seven chapters with references given at the end of each chapter. Chapter One (J. Sekanina, R. Kettner) presents an outline of the history of mineralogy in Czechoslovakia from the times of Georgius Agricola (1494—1555) till the present day.

Chapter Two, written by A. Dudek, K. Padera, F. Fediuk, L. Kopecky and M. Simov, discusses the minerals of igneous rocks. It gives detailed descriptions of the minerals of acid plutonic rocks of the Bohemian Massif and the Western Carpathians, followed by a description of the minerals of peridotites and serpentinized peridotites of the area of Mariánské Lázně, Bohemian highlands and Kutná Hora, and basic rocks occurring in Moldanubicum in the area of Stare Město and Letovice. Separate subsections are devoted to ultramafic xenoliths from basalts and to the minerals of eclogites and similar rocks. The chapter ends with a description of the minerals of extrusive rocks (palaeovolcanites and neovolcanites) of the Bohemian Massif and the Western Carpathians.

Chapter Three, characterizing pegmatite minerals, is the most interesting part of the book. It is preceded by an introduction discussing the classification schemes for pegmatites used by the authors of the chapter. More than 40 classification schemes

for pegmatites based on various criteria have been published so far. In this book the rocks in question are described according to the classical division of A. E. Fersman, the "textural-paragenetic" classification of K. A. Vlasov, which proved to be very useful in field investigations, and according to the geochemical division of A. J. Ginzburg. The subsections were written by well-known mineralogists. F. Čech gives a comprehensive description of mineral parageneses in Bohemia, J. Staněk describes pegmatite minerals of Moravia, while L. Stanek and Š. Davidova present pegmatite minerals of the Western Carpathians. The latter authors cite the classical study of W. Pawlica from 1913 on the "*Pegmatites of the Tatra Mountains and Their Magmatic Relations*". Rocks abounding in tourmalines and axinite veins are discussed separately by F. Čech.

Chapter Four (J. H. Bernard, M. Kodera, L. Kopecky) is most extensive as it deals with minerals owing their origin to hydrothermal processes. According to the authors, the following minerals are treated as the products of hydrothermal activity: 1. minerals of hydrothermal deposits; 2. minerals of the Alpine-type veins and of similar veins occurring in crystalline rocks; and 3. minerals of extrusive magmatic deposits. The authors discuss the regularities in the form and distribution of these minerals as related to the geologic structure of individual geological regions. Hence, they have distinguished several mineralogenic regions and made a detailed review of minerals on their basis.

Chapter Five (J. Petránek) is devoted to minerals of sedimentary rocks. The author describes minerals of non-metamorphosed and poorly metamorphosed Proterozoic rocks, Palaeozoic rocks of Barrandien and the Erzgebirge, Early Palaeozoic rocks of Moravia, Permo-Carboniferous basins, and Mesozoic, Tertiary and Quaternary rocks of the Bohemian Massif. A separate subsection deals with minerals making up the Palaeozoic, Mesozoic, Tertiary and Quaternary rocks of the Western Carpathians.

Chapter Six (F. Fediuk, D. Hovorka, S. Nemec) discusses minerals of metamorphic rocks. Minerals making up various metamorphic complexes are presented according to geological regions (Bohemian Massif, Western Carpathians).

Chapter Seven (J. Petránek) is the shortest and deals with minerals of weathering crusts. It is divided into two sections, one presenting minerals produced by chemical weathering, the other minerals being formed today, both in the natural way and through human agency.

The book also includes the indexes of minerals, geographical names and authors, compiled by J. Šarf and J. Švenk. It is printed on fine paper and is well illustrated. It contains a large number of topographic diagrams and figures. Worth noting are the typography of the book and excellent photographs.

The book is certainly a great achievement of Czechoslovakian mineralogists. It is only to be regretted that when discussing minerals occurring in the areas bordering upon Poland, e.g. the Karkonosze-Izera block or Złote Hory, the authors did not refer to any publications of Polish investigators (E. Gajda 1960, E. Zimnoch 1961, 1967, A. Kozłowski 1973, 1978, and many others). This would have undoubtedly enriched their book.

Michał Sachanbiński

H. STRUNZ, CH. TENNYSON: *Mineralogische Tabellen*.

8 Auflage. Akademische Verlagsgesellschaft Geest und Portig K.-G. Leipzig 1982. V+621 pp., 101 figures, tables.

The first edition of H. Strunz's Mineralogical Tables appeared under the difficult war conditions in 1941. It was notable for its methodical approach and the profound treatment of the subject, as well as for the lucid editorial form. In 1944 it was published in Ann Arbor, USA. The following revised editions appeared in 1949, 1957, 1966 and 1970. The third edition was translated into Russian and published in Moscow in 1962. The Tables became an indispensable book in the library of every mineralogist. Its position was strengthened by the sixth edition, published in 1976, prepared in co-operation with Christel Tennyson and consulted by Michael Fleischer, Chairman of the Commission of New Minerals and Mineral Names of the International Mineralogical Association.

This edition was the best but also the last of real value in the series of Mineralogical Tables of Strunz or Strunz and Tennyson. The seventh edition from 1978 appeared to be a reprint of the sixth edition, and so was the eighth edition published in 1982. During these six years more than 600 changes were made on the list of minerals; many new minerals were introduced, some were re-defined or struck off the list, and several agreements were reached concerning, e.g. amphiboles or zeolites. The latest Tables do not take into account any of these changes. The reader must be warned, therefore, that the last edition of Mineralogical Tables is more of historical than actual value.

Andrzej Bolewski

TUNGSTEN 1982: Proceedings of the Second International Tungsten Symposium — San Francisco, June 1982. Mining Journal Books Ltd. London, 1982, pp. 179+numerous figures and tables.

The annual production of tungsten raw materials exceeded 50000 tons in 1980. Its main producing countries were People's Republic of China (28.9%) and USSR (16.8%), whereas tungsten ores are mined in 31 countries. The essential use of this element consists in applying tungsten carbide materials in producing the tools for machine cutting of metals (50—60% of total production) and in special steels. The situation of the tungsten market in non-socialist countries is rather complicated, since it depends on supplies from China, USSR and People's Republic of Korea (5.5% of world production). Consequently, a special committee on tungsten was formed at the United Nations Organization. Besides, in 1975, the Primary Tungsten Association (PTA) was organized, grouping representatives of significant producers of tungsten raw materials: Australia, Bolivia, Brasil, France, Portugal, Rwanda, Thailand, Zair etc. These countries altogether produce ca. 20% of world tungsten resources. China representative participates as observer in the works of this association. Earlier, in 1970, the countries using tungsten materials, have formed the Consumer Reporting Group (CRG) to overcome the difficulties in getting sufficient amounts of this metal. Actually, this group unites the representatives of enterprises from Austria, Brasil, France, India, Japan, FRG, SAR, USA and Great Britain.

PTA and CRG are cooperating by organizing meetings and scientific sessions. The reviewed publication comprises 13 lectures presented and discussed by outstanding specialists during the 2nd symposium (1—5 June 1982). They are dealing with nearly all the problems of tungsten production, including technology of concentrates and semiproducts for further processing. Other subjects are mechanical

and chemical processing of various types of tungsten ores, particularly that concerning the production of APT (Ammonium Paratungstate Process) used to obtain $(\text{NH}_4)_{10}\text{H}_{10}\text{W}_{12}\text{O}_{46}$, the main output product in metallurgical and chemical technology. Particular attention was also paid to secondary tungsten raw materials, being the source of more than 20% of tungsten used in developed countries. Other lectures were devoted to the development of production and needs for tungsten in the world, as well as to the investments of newly recognized deposits. The final part of the volume deals with the analysis of tungsten market and the prognosis for 1990.

Because of lack of economic tungsten deposits in Poland, our country is importing this metal. However some insufficiently recognized occurrences of wolframite and scheelite are reported. Consequently, the presented confrontation of opinions of producers and users of tungsten in other countries is of interest for Polish specialists in this subject.

Andrzej Bolewski