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Ore Deposits of the USSR (Rudnye Mestorozhdeniya SSSR), Volumes 1-3

Edited by V. I. Smirnov and others
Nedra, Moscow, 328 p. + 391 p. + 471 p., 1973-1974.

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The USSR represents one sixth of the world and is, along with China, the last unexplored frontier for the American economic geologist or student of metallogeny. While the most prominent models of mineral deposits' setting known throughout the Western and Third worlds already have been tested, and equivalents sought in North America, the Russian (and Chinese) models still await their turn. At present, the AGI translation of Magakyan's 1961 book "Ore Deposits" (International Geology Review, 1968, 202 p.) contains the only collection of recent descriptions of several Soviet mineral deposits available to the English speaking reader. The selection of deposits and their coverage in this textbook is rather elementary.

The newly published three volumes of "Ore Deposits of the USSR" are a collective work prepared under the editorship of V. I. Smirnov. These volumes are up-to-date and contain information on many recently discovered deposits not previously described elsewhere.

Most Canadians, unfortunately, will not be able to make an immediate use of this book because of the language barrier. Those able to read Russian will find that many messages in the book are coded in the form of unfamiliar terminology, while information such as that related to production, reserves, grades, size of ore bodies, etc., is limited (ferrous metals) or not given at all (the rest). Probably the greatest shortcoming of all, well known to the readers of Soviet literature, is the fact that localities cannot be found unless you know their location from other sources. Furthermore, maps and sections do not have scale - except for ferrous metals. There is not a single locality name, even name of a

stratigraphic unit, in the chapters on deposits of uranium, beryllium, tantalum-niobium and rare earths. These chapters are perfectly anonymous, pleasing apparently to the censors but not acceptable to geologists.

The three volumes are divided into 28 chapters, each devoted to a metal or a group of metals. Deposits of iron, manganese, chromite, titanium, vanadium, and bauxite form Volume I. Deposits of nickel, cobalt, copper, lead and zinc, bismuth, antimony, mercury, and uranium are in Volume II. Volume III covers deposits of gold, silver, platinum metals, molybdenum, tungsten, tin, lithium, caesium, beryllium, tantalum and niobium, rare earths, germanium, strontium and "dispersed elements" (Re, Se, Te, Cd, Ga, Ti, In, Sc). Each chapter starts with a short introduction about genetic grouping and is followed by descriptive examples of Soviet ore deposits. The number of examples vary with the importance of the metal: from three for bismuth to 33 for iron. The description of each deposit varies in length from one half to seven pages. Many descriptions are accompanied by very detailed half or full page maps or sections which can be rated very good.

The Canadian reader will find in the book many close Soviet analogs to North American deposits, for example: 1) the Krivoy Rog equivalent of the Superior-type iron formations which has reserves of 37.6 billion tons of ore; 2) the Ridder-Sokolnoe "Kuroko" type Paleozoic massive sulphide, very similar to, for example, Buchans; 3) the Bugdaya molybdenite-bearing stockwork closely similar by its inside barren conical shape of orebody to Climax; 4) celestite-bearing evaporitic sequence of Central Asia similar to Canadian deposits in the Windsor Group; and many others. Many Soviet deposits described in the book may potentially have not-yet-discovered analogs on this continent, for example: 1) Paleozoic (mainly Devonian) bauxites of the "geosynclinal" type; 2) the palladium-bearing semi-stratabound Ti-magnetite, bornite, chalcopyrite and apatite accumulations in gabbros genetically associated with basic-ultrabasic massifs of the "platiniferous belt" in the Urals (Volkovskoe); 3) several Paleozoic porphyry coppers in or near

"secondary quartzites"; 4) Fe-Mn-Zn and barite deposits of the "Atasu" type (Zhairem); 5) beryllium-bearing helvite metasomatites and great variety of associations with bertrandite; and 6) germanium-bearing coals.

Despite the shortcomings listed, most of which are due to the severe restrictions imposed on the authors from above, this work contains an unsurpassed wealth of data and recent information on Soviet mineral deposits. These data are easy to find; much information can easily be extracted from geological maps and sections even by the non-Russian-speaking geologists, using a dictionary. If ultimately translated into English, this book would become a major reference and inspiration to Canadian geologists, particularly to those engaged in mineral exploration.

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