

## Book reviews

A. Sutherland Brown (ed.). *Porphyry deposits of the Canadian Cordillera*. The Canadian Institute of Mining and Metallurgy, Special Volume 17, 1976.

The editorial committee are to be congratulated on this volume dedicated to Charles S. Ney for their successful presentation and for the balance in the data between fact, primary information, and intuition in each paper of the volume. The volume augments the published information on porphyry deposits, complements the volume by Titley and Hicks (published in 1966), which covers the majority of the porphyries in southwestern North America, and distinctly updates geological thinking on porphyry deposits.

The present volume contains a paper on practically all the porphyry-type deposits in the Canadian Cordillera, which at the present time are thought to constitute a significant mineral resource. The subdivision into five parts successfully highlights the different geological settings and ages of the deposits relative to one another. These five parts are broadly classified as follows:

- General aspects of porphyry deposits
- Porphyry deposits of the calc alkali suite
- Porphyry deposits of the alkali suite
- Molybdenum porphyries of the calc alkali suite
- The review.

In summary, unifying characteristics are highlighted and primary data well presented, with significant comment on the possibilities of ore genesis. The data as presented will be of considerable assistance in the exploration for further porphyry deposits and in their exploitation. The volume is excellently presented, and the map and plan data are of a very high quality.

D.L.K.

C. G. Down and J. Stocks. *Environmental impact of mining*.

This book presents an excellent overview of the environmental problems that can be encountered in the starting and running of a mining operation.

The titles of the chapters indicate the extent of the subjects covered: Mining and the Environment, Range and Importance of Environmental Problems, Visual Impact, Air Pollution, Water Pollution, Noise (Excluding Air Blast), Ground Vibrations from Blasting, Air Blast, Transport, Reclamation, Waste Utilization, Subsidence, Legislation and Control, and Future Trends. None of these topics is covered in sufficient depth for this book to be used as a text in the planning of action, but they give an excellent survey of the problems involved and what can be done about them. Case studies and a comprehensive bibliography are given at the end of each chapter.

This book has a very strong bias towards surface mining and quarrying in England, and environmental problems that are encountered in South Africa have not been touched at all, e.g., seismic events triggered by deep mining and the problems involved in the dewatering of dolomitic compartments. The chapter on

subsidence deals mainly with the subsidence caused by the removal of coal seams close to the surface.

As a check list of the problems that should be considered in the planning of a mine or quarry, and as an indication of what may be required in this country in the restoration of the environment after mining, this is a worth-while book.

C.T.S.

G. B. Rothenberg. *Refractory minerals*. Park Ridge (U.S.A.), Noyes Data Corporation, 1976.

The detailed information in this book is based on U.S. patents on refractory materials issued since early 1973.

The book serves a double purpose in that it supplies detailed technical information and serves as a guide to the U.S. patent literature in this field. By indicating all the information that is significant and eliminating legal jargon, it presents an advanced, technically orientated review of refractory materials as depicted in U.S. patents.

Many of the patents are being utilized commercially. By describing a number of technical possibilities, the book may open up profitable areas of research and development. It provides a sound background for those carrying out research in this field.

The present formulation of, and evaluation data for, all types of bricks, fibres, gunning mixes, ramming mixes, refractory coatings, cements, furnace linings, and metal-casting refractories are given. In all, some 203 processes and compositions are presented from the U.S. patent literature during 1973 to 1976.

It is clear that this book contains more practical information on commercial processes for refractory materials than is available from any other source.

D.A.V.

*Geology, mining and extractive processing of uranium*. London, Institution of Mining and Metallurgy, 1977.

The papers in this volume were presented at an international symposium co-sponsored by the Institution of Mining and Metallurgy and the Commission of European Communities, which was held in London from 17th to 19th January, 1977.

The papers embrace most aspects of the discovery, mining, and upgrading of uranium ore. Valuable information is provided, in a paper dealing with the diversification of energy sources to nuclear-generated electricity, on the uranium needs of Western Europe in relation to the needs of North America and Japan. This paper also gives the latest estimates of world uranium sources and production capacity, and outlines the growth of demand in the U.S.A. and the changes in traditional exploration, mining, and processing techniques to meet this growth.

The geology of deposits and exploration in Greenland, Australia, Canada, Spain, the Australian Alps, France, and Scotland is reviewed. The exploration methods generally applied to uranium are dealt with. Recent trends that utilize some of the less common methods to improve exploration for concealed deposits and to

evaluate lower-grade resources in unfamiliar geological environments are noted.

Heap leaching of marginal or lean ore is reviewed, and *in situ* leaching as applied to deposits of limited size in crystalline ground is considered. Papers on the recovery of uranium deal with the composition of amine mixtures and their relationship to recovery, the leaching

of beds of ore with bacterially regenerated lixiviant, the processes used in the ENUSA Salamanca Spanish mine and in the Forstau West German deposit, and the patented strong-acid leach of the United Kingdom Atomic Energy Authority.

D.A.V.

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