

BOOK REVIEWS

FACTEURS CONTRÔLANT LES MINÉRALISATIONS SULFURÉES DE NICKEL. Edited by M. Besson. Mémoire du Bureau de Recherches Géologiques et Minières (BRGM) No. 97, Orléans Cédex, France, 1979. 281 pages, paperback. \$36.00.

This compilation of information on the factors which control nickel sulfide mineralization is divided into three sections.

The first section, which deals in a general way with the magmatic and geotectonic properties considered favorable for ore formation, contains an introduction by G. Troly who summarizes its five chapters. L. Zanone, B. Capitant, F. Hahn, and H. Teil who wrote the first of these chapters established data files on 205 worldwide basic and ultrabasic rock complexes and on 117 nickel sulfide ore deposits. The second chapter by G. Rocci, D. Ohnenstetter, and B. Henry discusses the geotectonic positions of nickel sulfide deposits associated with Archean komatiites. In the third chapter M. Besson deals with magmatism associated with mineralized rock complexes. The fourth chapter by D. Ohnenstetter, M. Ohnenstetter, A. Paupy, and G. Rocci treats the diversity (duality) of ophiolites, the importance of the nature of their fractionation, and the metallogenic consequences. The fifth chapter by P. Chevremont discusses the alkaline affinities of the basic plutonic rocks of the Tassent-Tasraft district in the High Atlas, Morocco.

The second section, introduced by H. de la Roche, discusses the geochemical approach to characterize and discriminate between favorable and unfavorable (for ore occurrence) rock complexes. Of the six chapters in this section the first by B. Henry deals with rock sampling for analysis and the second by H. de la Roche discusses analytical methods. In the third chapter H. de la Roche and D. Ohnenstetter present major-element data produced by 601 analyses of 384 Australian and Canadian mafic and ultramafic rock samples, and discuss the petrologic and metallogenic implications. The fourth chapter by B. Henry, P. Lecuyer and C. Roquin is a statistical treatment of the results of analyses of 712 mafic and ultramafic rock samples from 11 countries. F. Hahn and M. Vannier, in the fifth chapter, describe the compilation of a petrographic file on basic and ultrabasic rock complexes and how this file can be used as a tool in prospecting for nickel sulfide deposits. The final chapter of the second section was written by M. Besson, G. Meyer, and M. Treuil. It discusses trace-element and some rare-earth element distributions in 20 rock samples (metapicrites) from four ultramafic complexes in Western Australia.

The third section is devoted to a treatment of the mineralogical and experimental approach to obtain criteria for distinction between favorable and unfavorable rock complexes. This section is introduced by Z. Johan, who also wrote its first two chapters. The first deals with a study of pyroxenes from mafic and ultramafic complexes, some copper-nickel mineralized and some barren. The results indicate a peculiar magmatic evolution of the mineralized intrusions. The second gives the results of a study of spinels in mafic and ultramafic rocks from copper-nickel mineralized and from barren complexes. Spinel from mineralized complexes indicate $2Mg-Al < 0$, whereas spinels from barren rocks have $2Mg-Al > 0$. The third chapter by A.H. Barabas describes an effort to determine by fluid inclusion observations if the post-magmatic fluids in differentiated gabbroic intrusive complexes (Lynn Lake, Manitoba) containing economic nickel sulfide mineralization differ significantly from fluids in barren intrusions (Flag Lake and

Fraser Lake, Manitoba) of similar age and composition. These fluids from mineralized and barren intrusions were not found to differ markedly. The fourth chapter by M. Vannier describes a theoretical study of the activity of FeO in mattes and of the solubility of sulfur in basic magmas; the fifth by J. Libaude and G. Sabatier covers an experimental study of reactions at 1000°C between sulfur vapor and nickeliferous olivine; and the sixth by C. Nguyen Trung, M. Pichavant, and A. Weisbrod discusses an experimental study (at 350° and 600°C and P = 1 kbar) of the MgO-SiO₂-HCl-H₂O system.

The last seven pages of this book are devoted to conclusions. M. Besson evaluates in this article the information presented in the book's 17 chapters and draws conclusions based upon the collected total data.

This book makes interesting reading; it is well organized and most of the material is presented in a concise manner. The figures and tables are useful and with few exceptions clear and easy to read. Bibliographies accompanying each chapter are adequate, up-to-date, and appreciated by the reader. Some of the chapters are rather pedestrian from a scientific point of view and do not contain much new information, but on the whole this book makes a valuable contribution to our knowledge of copper-iron-nickel sulfide deposits.

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THE GEM COLLECTION. By Paul E. Desautels. Photography by Dane Penland. Smithsonian Institution Press, Washington, D.C., 1979. 77 pages, 40 color, 9 black and white photos, 13 diagrams. \$12.50 hardcover, \$6.95 paperback.

Do you yearn over beautiful jewels? Do you wish you could take them home with you? Now you can. Show off the Hope Diamond, the Eugenie Blue, the crown that Napoleon gave to Marie Louise. They are all in Paul Desautels' new book on the Gem Collection of the Smithsonian Institution, and the color photographs by Dane Penland make them glow and sparkle.

There are a great many other fabulous jewels and historical pieces shown in the book. The inventory includes 48 unset stones, 18 pieces of jewelry, and 19 semi-precious stones carved into vases, bowls, or more fanciful objects, all pictured in their glorious colors. All this seems like a lot, but it is only a small sampling of the Smithsonian collection, as a partial catalog at the back of the book makes clear.

In addition to the pictures, there are about 40 pages of text, including some diagrams and black-and-white pictures. As Dr. Desautels says, "The treatment is not meant to be complete, but enough information is given so that museum visitors may better understand and remember what they have seen." Following a brief history of the collection, there is a general discussion of the characteristics that make a gem, the faceting of gemstones, gem substitutes, and gem lore.

The bulk of the text covers the principal gem species, from diamonds and rubies to zircons, quartz, and jade. With only a page or two for each species, not much detail is possible, but there is a good general description and some interesting background information for each one.

The book is not, and is not intended to be, technical in any way. Almost the only numbers used are those for the scale of hardness. The most complex chemistry is covered in the statement that "jadeite . . . is a sodium aluminum silicate."

The Gem Collection is very readable and great to have if you want to know more about those beautiful displays at the Smithsonian. The text will tell you a lot about your own precious stones, and the pictures will whet your appetite to go see the real things.

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ATLAS OF ECONOMIC MINERAL DEPOSITS. By Colin J. Dixon. Cornell University Press, Ithaca, New York. 1979. 143 pages, 53 full-page illustrations. \$80.00.

This book, according to its author, deals specifically with the geology of economically workable deposits of the solid, non-combustible mineral resources of the earth. Its purpose is to describe the geology of a carefully selected group of mineral deposits; to show where they are, what they consist of, how big they are and how they are related to the geological environment in which they occur. Forty-eight mineral deposits or groups of deposits are described. In making the choice of which mineral deposits to include in this atlas the author tried to cover the widest possible range of types from a geological point of view as well as the widest possible range of commodities. Ore deposits from the U.S.S.R., China and Eastern Europe are not among the examples selected for inclusion in this book. The author intended this atlas to serve as a basic work of reference for any reader who wishes to study economic mineral deposits and had in mind when writing the book that it could make up the basic descriptive part of a course on this subject. The introductory chapter outlines the scope, layout and purpose of the book, and discusses the discovery and exploitation, the methods of study as well as the origin and classification of ore deposits.

The main body of the book is divided into five sections each of which is preceded by a separate introduction. The first section treats deposits in geological environments at the earth's surface. The occurrences selected for discussion in this part are: The bauxite deposits of Jamaica, the Onverdacht bauxite deposit of Surinam, the nickel deposits of New Caledonia, the Nsuta manganese deposit in Ghana, the tin deposits of Kinta Valley in Malaysia, the beach-sand deposits of North Stradbroke island in Australia, the Witwatersrand gold-uranium deposits in South Africa, the uranium deposits of the Blind River area in Canada, the Esterhazy potash deposits in Canada, the Sulphur Salt Dome in the U.S.A., the iron deposits of the Northampton district in the U.K., the Mesabi iron range in the U.S.A. and the iron deposits of the Itabiri district in Brazil. Section two which is devoted to mineral deposits in sedimentary rocks discusses the Luanshya copper deposit in Zambia, the Ambrosia Lake uranium field in the U.S.A., the Laisvall lead-zinc deposit in Sweden, the Picher lead-zinc field in the U.S.A., the zinc, lead and barite deposits of the Silvermines district in Ireland, the zinc-lead deposits of the Pine Point district in Canada, the Sullivan deposit in Canada and the Broken Hill deposit in Australia. Section three which discusses deposits associated with felsic magmatic environments uses as examples the Helen iron deposit in Canada, the pyritic deposits of the Tamasos field on Cyprus, the Skorovas pyritic deposit in Norway, the Rio Tinto deposits in Spain, the sulfide ores of the Noranda-Rouyn district in Canada, the Kuroko deposits of the Kosaka district in

Japan, the Almaden mercury deposits in Spain, the gold-quartz vein deposits of the MacIntyre-Hollinger field in Canada, the Homestake gold deposit in the U.S.A., the Bunker Hill silver deposit in the U.S.A., the El Salvador porphyry copper and the Chuquicamata copper deposits in Chile, the Bingham Canyon copper and the Climax molybdenum deposits as well as the Butte deposits and the Pine Creek tungsten deposit in the U.S.A., the Santa Eulalia deposit in Mexico, the south-west England district in the U.K. and the Bikita pegmatite deposits in Rhodesia.

The fourth section describes mineral deposits in basic and ultrabasic magmatic rocks. It treats the platinum deposits of the Merensky Reef in South Africa, the chromite deposits of the Great Dyke in Rhodesia, the Sudbury nickel deposits in Canada, the Tellnes ilmenite deposit in Norway, the chromite deposits of the Mugla district in Turkey, the asbestos deposits of the Theftford district in Canada, the Palabora carbonatite complex in South Africa and the Mwadui diamond pipe in Tanzania.

The fifth section discusses the world distribution of mineral deposits. Five maps show the geographic situations of the major copper, lead and zinc, iron and ferro-alloy metal, light metal and precious metal deposits of the world.

The book in addition contains a 5-page glossary of mineral names, a 1-page table of units of measurement, a 2-page key to stratigraphic names and a 3-page general index. The author voices the opinion that we (economic geologists) would probably arrive at the most generally useful classification of ore deposits if we could fit all of them into types of common origin. In consequence he tries to move towards a general typology in his grouping of mineral deposits, and seeks to avoid commitment to the traditional form of classification. I think this is a healthy attitude which should be more generally adopted by economic geologists.

The reader may not agree in all instances that the selected deposits are the best of all available for inclusion in an atlas of this kind. The Skorovas deposit is hardly familiar to most geologists, whereas famous occurrences such as those of Rammelsberg, Cripple Creek and Michigan's upper peninsula are not mentioned in the text. The format of this volume (10 inches by 15 inches) is convenient for the presentation of geologic maps of mining regions and individual mines, but not for text reading.

The maps are instructive although some are generalized to the point where important structural details are lost. The book is well written. Information is provided for each deposit pertaining to its locality and geographical setting, history, geological setting, ore geology and interpretation, size and grade and mining methods. Very little mineralogical information is presented. Mineral associations and compositions, textural relations *etc.* are not mentioned, there are no photomicrographs to illustrate mineralogical features and the physical-chemical conditions prevailing during and subsequent to ore formation are not discussed.

Information bearing on the origin of the selected deposits, derived from application of pertinent known ore and country rock systems and from stable and radioactive isotope studies, is not presented. Such information would be exceedingly useful and would add greatly to the value of this book.

The book contains its share of printing errors. I found 10 or more misspelled locality names on some of the maps. The glossary of mineral names is useful but omits numerous rather common minerals such as acanthite, bravoite, idaite and millerite. Digenite is given the composition "Cu₂S usually with copper deficiency," pentlandite "(Fe,Ni)₉S₉ to (Fe,Ni)S" and "pyrrhotite Fe₈S₉ to FeS often with Ni." The readers will undoubtedly know better.

The book is printed on good quality paper and is well bound. It contains sufficient basic information to serve as the descriptive

part of an undergraduate course on economic mineral deposits; however, its prohibitively high price (\$80.00) puts it out of reach of most students. It should find a place in all geology libraries.

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PETROLOGY AND GENESIS OF LEUCITE-BEARING ROCKS. By A. Gupta and K. Yagi. Springer-Verlag, New York, 1980. xiv + 252 pages. \$39.00.

The preface to this book begins: "Many interesting and perplexing questions arise in connection with the highly potassic volcanic association dominated by mafic and ultramafic rocks containing leucite. Its occurrence is very restricted as compared with the olivine-basalt trachyte kindred, but it is distributed at widely scattered points on all the continents and its chemical and petrographic individuality is both remarkable and constant." This rather eloquent statement has been lifted, essentially verbatim and without benefit of quotes or acknowledgment, from Turner and Verhoogen's *Igneous and Metamorphic Petrology*, 2nd edition (1960, p. 245)—a rather inauspicious beginning that is, regrettably, a forewarning of things to come.

The book may be conveniently divided into two parts for discussion. The first part is a review of the literature on the classic occurrences of leucite-bearing mafic and ultramafic rocks, their petrography, mineral and bulk chemistries, and tectonic settings. Curiously, the chapter on tectonic setting is separated by 100 pages from the opening chapters on the above topics. And in spite of strong circumstantial evidence that the crustal tectonic setting plays an important, perhaps even a crucial, role in the genesis of these unusual rocks, the authors choose to completely ignore this in their subsequent arguments for a mantle origin. Whatever, these chapters do constitute a reasonably comprehensive introduction to leucite-bearing rocks and their peculiarities. One could wish, however, that the authors had been a bit more curious and/or disbelieving in reporting the work of others. This reader would like to know, for example, why some volcanic rocks are leucite-free and some are leucite-bearing in the volcanic district south of the Ussuri River, Manchuria, if it is really true that "The compositions of the leucite-free and leucite-bearing rocks show little difference." Similarly I would like to know whether or not it is true that some of the volcanics in the Birunga Province, Africa, contain xenoliths of partly fused granite "... the glassy portion of which chemically corresponds to almost pure leucite." That is a mind-boggling statement to anyone familiar with Petrogeny's Residua System.

The remainder of the book is devoted to examining the experimental evidence bearing on the relationships between the various types of leucite-bearing mafic and ultramafic rocks and on the genesis of potassium-rich magma from the mantle. There is also a short chapter on pseudoleucite. This part of the book is largely a failure. Many of the phase diagrams are drawn from only a few data points and/or extrapolations from bounding systems. But worse than that, the authors' discussion of these and other natural systems is simplistic in the extreme. Although the term "fractionation" is mentioned a (very) few times in the book, fractional crystallization or melting is never developed nor discussed for any of the systems presented. In fact, the authors apparently do not even realize there can be wide-ranging differences between the products of fractionation processes and those of equilibrium processes. Thus they analyze the glass from an equilibrium run to "disprove" 0003-004X/80/1112-1309\$00.50

the suggestion that fractionation of eclogite from a picritic magma, at depth, may produce a high potassium liquid. Never mind that the P_{H_2O} of the run was 25 kbar, more than sufficient to stabilize phlogopite as a crystalline phase and so deplete the liquid in potassium.

Perhaps the best example of the authors' fuzzy thinking is found in their major conclusion that partial melting of a phlogopite peridotite explains all. They state: "... a successful hypothesis dealing with the genesis of highly potassic magma should explain why leucite-bearing rocks are richer not only in Rb, Sr, Ba, Li, and Zr (characteristic of salic rocks) but also in Ni and Cr (characteristic of ultramafic rocks)." And a few sentences later: "Thus, if the partial melting of phlogopite-garnet peridotite produces a crystal-liquid mush, the liquid should be relatively enriched in Rb, Sr, Ba, and Zr, whereas the relict crystals should have higher concentration of Ni (in olivine) and Cr (in garnet and clinopyroxene). The bulk chemistry of the crystal-liquid aggregate will thus be characterized by enrichment of elements, typical of not only salic rocks but also of ultramafic rocks." Now that is *magic*. The requisite elements are enriched by partial melting alone—*i.e.* without changing the bulk chemistry. Why didn't I think of that?

In sum, this book provides a convenient guide to the literature on leucite-bearing rocks but should not be read with a view toward understanding their genesis. "Many interesting and perplexing questions" remain.

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CATALOG OF ANTARCTIC METEORITES, 1977-78. Smithsonian Contributions to the Earth Sciences, No. 23. Edited by U.B. Marvin and B. Mason. Smithsonian Institution Press, Washington, D.C., 1980. 50 pages. Free on request from B. Mason, Mineral Sciences, Smithsonian Institution, Washington, D.C. 20560.

This monograph provides an excellent introduction to the collection, curation, and distribution of Antarctic meteorites in the U.S., as well as descriptive and analytical information about them. Although called a catalog, the monograph is written entirely in a narrative format. There are an editors' introduction, four chapters, and two appendices. The editors' introduction and the chapter on field occurrences and collecting procedures briefly cover the history of discovery of meteorites in Antarctica by a Japanese glaciological team and the history of U.S. involvement in the search for Antarctic meteorites. The chapter on curation and allocation procedures includes a thorough discussion of the precautions taken in handling and documenting the meteorites. The third chapter, "Meteorite Descriptions," is the substance of the *Catalog*. There are brief descriptions of about 50 meteorites accompanied by a good selection of high-quality photographs. The descriptions and photographs provide illustrations of the nature of and degree of weathering to which the meteorites have been subjected. A summary of the classification is given at the beginning of the chapter and revisions to classifications previously published in the "Antarctic Newsletter" are separately noted. A final short chapter provides the terrestrial ages (0.1-0.7 million years) of 27 Antarctic meteorites. The first appendix lists the characterized meteorites in the 1977-78 Allan Hills collection with their weights, classification, olivine and pyroxene compositions, and degree of weathering. The final appendix consists of chemical analysis of eight Allan Hills meteorites. This monograph is recommended as a good introduction to the topic of Antarctic meteorites as well as a source

of specific information about the U.S. 1977-78 Allan Hills collection.

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GEOLOGY OF TIN DEPOSITS. By R.G. Taylor with chapters by C. Cuff. Developments in Economic Geology, Vol. 11. Elsevier Scientific Publishing Company, New York, 1979. xi + 543 pages. \$73.25.

This book, according to its authors, attempts to blend academic and practical geological information on tin mineralization, which they hope will be valuable to research, exploration, and mining specialists. It is the first modern comprehensive text on geological aspects of tin. A short introductory chapter gives the general background on tin production, properties, and industrial uses. Chapter 2 discusses the distribution and classification of tin-bearing metallogenic provinces and their relationship to plate tectonics. Unfortunately only 4-5 known tin provinces are younger than Jurassic and most of these are in the USSR, from where needed tectonic and metallogenic data are not available. Chapter 3 treats the classifications and associations of primary tin deposits. Chapter 4 is devoted to the geochemical cycle of tin, chapter 5 discusses the relationship between granitoids and tin concentration, and chapter 6 treats some significant geological features of tin deposits and their application in search techniques. The following three chapters (7, 8, and 9) are devoted to observations of secondary deposits respectively.

Of this text's 11 chapters, the 10th on "The mineralogy and aspects of the crystal chemistry of tin" is the most comprehensive (148 pages). It examines tin (II) and tin (IV) bonding, Mössbauer data, tin-containing systems, oxidation of stannite, tin-tantalum-niobium minerals and a variety of other tin-bearing minerals.

The final chapter on "Transport of tin in the formation of ore deposits" discusses chemical transport of tin, concentration in magmatic processes, and concentration and transportation processes associated with fluids other than silicate melts.

The book contains 3 useful appendices of which the first (20 pages) on "Notes on selected tin provinces" is intended to convey an impression of major province types, and to provide some evidence for the classification derived in chapter 2. The second appendix consists of a 2-page list of naturally-occurring tin-bearing minerals. The third appendix is a one-page list of tin deposits in the USSR based on information in the 3-volume text *Ore Deposits of the USSR* edited by Smirnov and published in 1977. The book has a 15-page author index and a 14-page subject index. The book is adequately illustrated; the figures are clear and the tables are

well organized. Most of the material appears to be carefully researched and substantiated through meticulous literature search. Pertinent references to the literature up to mid-1978 are given at the conclusion of each chapter. This book is well written and gives the reader a rather unbiased view of the present state of knowledge of tin deposits. The reader by comparison of chapters will find that the depth of treatment and detail varies considerably from one chapter to another. The book has few misprints, is well bound, and is printed on good-quality paper. It will find many readers among economic geologists and exploration geologists and should find a place on the shelves of all good geological libraries.

GUNNAR KULLERUD
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THE EVOLUTION OF THE IGNEOUS ROCKS: Fiftieth Anniversary Perspectives. Edited by H.S. Yoder, Jr. Princeton University Press, Princeton, New Jersey, 1979. 588 pages. \$35.00 cloth, \$15.00 paper (in U.S.), \$44.00 cloth, \$19.00 paper (foreign).

In 1928 Princeton University Press published *The Evolution of the Igneous Rocks*, a 334-page volume by N.L. Bowen "based on a brief course given to advanced students in the department of geology at Princeton in the spring of 1927." (It had the unique distinction, for a book on petrology, to be reprinted by Dover Publications in 1956.) It would be difficult to overestimate the debt petrology owes to whoever was responsible for inviting Bowen to give those lectures and ensuring their publication in book form (I suspect it was A.F. Buddington, who worked with Bowen at the Geophysical Laboratory prior to taking a position at Princeton University). Thus it is entirely fitting that 50 years later, the Princeton University Press has published this large multi-authored volume edited by the present director of the Geophysical Laboratory. In his preface Dr. Yoder states "The book *The Evolution of the Igneous Rocks* by N.L. Bowen taught us that the principles of physical chemistry can be applied successfully to petrological processes. The major petrogenetic questions discussed by Bowen in his lectures at Princeton University in the spring of 1927 persist today. Only the answers appear to change with time. The purpose of the present volume is to provide a new view of those questions in the light of almost fifty years of accumulated observations using the principles so clearly set out by Bowen."

This book is a worthy tribute to the enduring value of the principles enunciated by N.L. Bowen and their continuing application to the field of igneous petrology.

BRIAN MASON
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LIST OF BOOKS RECEIVED

TRACE ELEMENTS IN IGNEOUS PETROLOGY. Developments in Petrology 5. Edited by C.J. Allègre and S.R. Hart. Elsevier Scientific Publishing Company, New York, 1978. xi + 272 pages. \$49.95.

A DYNAMIC STRATIGRAPHY OF THE BRITISH ISLES, A STUDY IN CRUSTAL EVOLUTION. By R. Anderton, P.H. Bridges, M.R. Leeder, and B.W. Sellwood. Allen and Unwin, 9 Winchester Terrace, Winchester, Massachusetts 01890, 1979. x + 301 pages. Cloth \$35.00, paper \$17.95.

COLOR ENCYCLOPEDIA OF GEMSTONES. By Joel E. Arem. Van Nostrand Reinhold, New York, 1977. xxvii + 147 pages. \$35.00.

ZEOLITES AND CLAY MINERALS. By R.M. Barrer. Academic Press, London, England, 1978. vii + 497 pages. £25.00, \$52.00.

MICROFOSSILS. By M.D. Brasier. Allen and Unwin, Winchester, Massachusetts, 1980. xii + 193 pages. Cloth \$27.50, paper \$14.95.

- OPTICAL PROPERTIES OF INHOMOGENEOUS MATERIALS.** Applications to Geology, Astronomy, Chemistry, and Engineering. By Walter G. Egan and Theodore W. Hilgeman. Academic Press, New York, 1979. xi + 235 pages. Price not given.
- THE SEAWARD MARGIN OF BELIZE BARRIER AND ATOLL REEFS.** By Noel P. James and Robert N. Ginsburg. Blackwell Scientific Publications, 1979; available in U.S. from Halsted Press, Wiley, New York. xi + 191 pages. \$22.95.
- CURRENT TOPICS IN MATERIALS SCIENCE, Vol. 4.** Edited by E. Kaldis. North-Holland Publishing Company, New York, 1980. vii + 596 pages. \$102.50.
- OPTICAL MINERALOGY.** By P.F. Kerr. McGraw-Hill, New York, 1977. xvi + 492 pages. \$22.50.
- LIGNITE TECHNOLOGY.** Energy Technology Review No. 53, Chemical Technology Review No. 146. Edited by P. Nowacki. Noyes Data Corporation, Mill Road at Grand Avenue, Park Ridge, New Jersey 07656, 1980. x + 228 pages. \$42.00.
- DISORDER IN CRYSTALS.** By N.G. Parsonage and L.A.K. Staveley. In International Series of Monographs on Chemistry, J.S. Rowlinson and J.E. Baldwin, General Editors. Oxford University Press, New York, 1979. xxviii + 926 pages. \$69.00.
- OIL SHALE AND TAR SANDS TECHNOLOGY: RECENT DEVELOPMENTS.** Noyes Data Corporation, Park Ridge, New Jersey, 1979. xii + 430 pages. \$48.00.
- REDISTRIBUTION OF ACCESSORY ELEMENTS IN MINING AND MINERAL PROCESSING: Part I, Coal and Oil Shale.** ix + 180 pages. \$9.25. Part II, Uranium, Phosphate, and Alumina. ix + 169 pages. \$12.25. National Academy of Sciences, 2101 Constitution Avenue, N.W., Washington, D.C. 20418.
- FUNDAMENTALS OF CRYSTAL GROWTH I. Macroscopic Equilibrium and Transport Concepts.** By F. Rosenberger. Springer-Verlag, New York, 1979. x + 530 pages. \$39.50.
- GEOPHYSICAL AND GEOCHEMICAL TECHNIQUES FOR EXPLORATION OF HYDROCARBONS AND MINERALS.** Energy Technology Review No. 52. Edited by M. Sittig. Noyes Data Corporation, Park Ridge, New Jersey, 1980. ix + 300 pages. \$40.00.
- GEMCUTTING: A LAPIDARY HANDBOOK.** By E. Smith and A. Schromm. Prentice-Hall, Englewood Cliffs, New Jersey, 1980. viii + 184 pages. Cloth \$14.95, paper \$6.95.
- SURFACE MINING OF NON-COAL MINERALS. A Study of Mineral Mining from the Perspective of the Surface Mining Control and Reclamation Act of 1977.** National Academy of Sciences, Washington, D.C., 1979. xxxiii + 339 pages. \$11.50.

NOTICES

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7th International Clay Conference

The AIPEA will sponsor the 7th International Clay Conference in Bologna and Pavia, Italy, September 6–12, 1981. Deadline for registration is January 31, 1981; deadline for submission of abstracts is April 15, 1981. For further information, write to:

Prof. Fernando Veniale
7th International Clay Conference 1981
c/o Istituto Mineralogia Petrografia—Università
via Bassi, 4
27100 Pavia, Italy

ERRATA

New Mineral Names: Admontite by Adolf Pabst (Vol. 65, 205–210).

The formula of admontite should be $2\text{MgO} \cdot 6\text{B}_2\text{O}_3 \cdot 15\text{H}_2\text{O}$.

The crystal structure of a ternary (Ba,K,Na)-feldspar and its significance by Krishnamoorthy Viswanathan and Karl Brandt (Vol. 65, 472–476).

Due to an unfortunate error in the input data, the r.m.s. displacements of the investigated barium feldspar have been calculated wrongly. There are also a few errors in the r.m.s. values of Spencer 'C' presented in Table 3. Hence the values of the third, fourth, and fifth columns in Table 3 must be corrected as follows. It must be emphasized that these errors do not affect the conclusions drawn in this paper.

correct values			incorrect values		
0.131	0.139	0.178	88	139	267
0.181	0.116	0.149	112	116	241
0.131	0.183	0.169	83	179	274
0.148	0.132	0.159	95	136	240
0.169	0.145	0.122	96	143	218
0.086	0.104	0.133	59	107	189
0.105	0.099	0.125	70	100	186
0.162	0.167	0.141	99	167	230
Spencer 'C'					
0.132	0.142	0.144	129	129	160
0.106	0.129	0.170	104	129	170
0.110	0.160	0.178	124	159	173
0.116	0.133	0.154	111	134	149
0.102	0.114	0.161	121	137	156
0.089	0.092	0.116	85	92	106
0.080	0.094	0.105	83	91	98
0.131	0.170	0.172	138	175	176