

abroad could have been placed in their total geological setting and the type deposits containing the larger reserves could have been better illustrated.

Notwithstanding these apparent and not too significant shortcomings, the book should serve as a useful compendium on the geology of uranium and thorium deposits in India, that can be followed by students of economic geology and also exploration geologists who need an introduction to the subject. The book has a good get up and is well printed. Running to a total of 226 pages, it is moderately priced.

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ORE GENESIS - A HOLISTIC APPROACH by Asoke Mookherjee; Allied Publishers Ltd., 657p, Price: Rs.570/-

This magnum opus by Prof. Asoke Mookherjee, who after an illustrious career in teaching at the prestigious Indian Institute of Technology, Kharagpur, devoted five fruitful years as Emeritus Scientist (1991-95) at Jadavpur University producing this book, is unique in its uniform high cerebral quality and excellent writing. It has 582 pages of text, 53 pages of references, 54 tables and 146 text figures. The book is divided into three sections - the first, deals with background information on spatial and temporal distribution of ore bodies, geochemical features, evolution of earth's crust and ore genesis; the second section deals with mode of occurrence of ore bodies, ore textures, mineral assemblages, chemical composition of ores, organic matter and fluid inclusion in ores and the live ore forming geothermal systems; the third section deals with ore genesis categorised under (a) orthomagmatic ores of mafic-ultramafic associations, (b) ores of siliceous igneous rock association, (c) ores of sedimentary affiliations (placers and sedimentary, syn-sedimentary deposits), (d) ores of metamorphic affiliation and (e) deposits affiliated to weathering and weathered surfaces.

Going through this book is akin to mountaineering. It needs preparation (to get acquainted with the processes and terminology of plate tectonics) and acclimatisation (matter in sections I and II need slow reading). Then, the climb to top and walk on the *altiplano* (ore deposits and genesis - section III) is comfortable and, in fact, exhilarating. Most chapters start with a review of retrievable information and end with an excellent summary.

A large number of experimental results, deep understanding of physico-chemical-geologic-tectonic factors and references to a large number of world class ore bodies and theories on their origin are ably handled. More than 25 gold/gold-uranium deposits, including Witwatersrand, Kalgoorlie, Carlin, Barberton, Homestake, Kolar, Timmins, Blind River, Denison etc. are referred to. So is the case with other ores; copper, lead-zinc, nickel, bauxite, platinum group, diamond, iron ores, chromite etc. The parts dealing with liquid inclusions, REE, isotopes and organic matter in ore are uncommon and informative.

The description of and discussion on the genesis of gold in Witwatersrand (pp.406-413) make compelling reading. It highlights the special features of the basement, basin evolution and possible alternative genetic models - modified placer/ hydrothermal. Therefore, rocks in other parts of the world, similar to those at Witwatersrand, need not be auriferous unless other events that happened at Rand also took place.

Similarly, the part dealing with diamond in kimberlite rocks (pp.274-284) is interesting. How

many know that diamonds (which are of peridotite-eclogite generation) are older than the kimberlite/lamproite intrusives? There is no genetic nexus between diamonds and kimberlites. The section dealing with manganese ores and the three types of BIF (Algoma/Superior/Rapitan) (pp.418-449) are very informative.

It is unfortunate that in the copious examples of ore deposits cited in the book, Indian examples are few and far between and many Indian examples quoted are of unimportant ore bodies. We hope that this lacuna will be bridged in future.

The price of the book is not mentioned, nor the year of publication. It is understood from the publishers that the book is priced Rs.570/-, which is very reasonable for a book of this size and calibre. I congratulate the erudite author and recommend this world class book as a must to all libraries of Surveys, mining departments, university colleges, exploration and mining companies as a standard work for reading and reference.

Bangalore

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BIOGEOCHEMISTRY OF RIVERS IN TROPICAL SOUTH AND SOUTHEAST ASIA (1999): Eds.: V. Ittekkot, V. Subramanian and S. Annadurai. Published by Institute of Biogeochemistry and Marine Chemistry, University of Hamburg, Germany. Scope Sonderband. Heft-82. pp.vi+297.

This special issue of the Institute containing diverse research papers presented at the International Workshop on Environmental Biogeochemistry held in New Delhi in December 1998 was released in March 1999. The organisers have chosen a well-focussed theme, the authors have well-discussed papers and the publishers have a well-produced volume which is going to be well-utilised by environmental scientists and planners. Experts from Bangladesh, Belgium, Bulgaria, China, France, Germany, India, Indonesia, Kenya, Nigeria, Sri Lanka, Thailand, Vietnam and USA have recommended initiation of efforts within the countries of Monsoon Asia to foster international cooperation for training and research in the field of environmental sciences, as any lack of common methodology makes comparison between results obtained by different groups difficult, which is compounded by the absence of adequate infrastructure and lack of trained personnel. The papers emphasize more serious studies on sediment discharge, trace element contamination in rivers, air and soil related to human influence.

The sacred rivers of India are worshipped for their pure and life-sustaining water from time immemorial, but the present polluted state of river water would shock anyone. It is unsafe for drinking in many cities. To bring about an awareness among the planners and the public, books like this are very useful, as the 'environment' is the current focus of attention all over the world. Any mismanagement of environment is bound to have an adverse effect of irreparable degree to the living species.

Out of the 27 papers, 11 are directly related to problems in India, 9 are of general nature, 2 are related to Vietnam and 1 each to Sri Lanka, Bangladesh and Nepal, Thailand, Indonesia, Vietnam and China. These papers cover sediment discharge, trace element contamination in rivers, air and soil related to human influence, pesticide contents etc.

In the introductory paper, the authors (also editors) give a brief idea about the processes that affect the transport of material by the rivers to the oceans with special emphasis on the changes in