

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

B.K. DHRUVA RAO

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

aquatic systems which in turn reflect the environmental degradation brought about by human activities such as changed agricultural practices, landuse patterns, deforestation, major dams, urbanisation, industrialisation, etc. The paper by Lydia Dumanil of Max-Planck-Institut for Meteorologie, Hamburg on the simulation of the Indian summer monsoon in the Land-Ocean-Atmosphere system of a coupled GCM and ECHAM4-T42-OPYC3 deals with a 150 year long numerical simulation of present day climate that can be linked to sea surface temperature (SST) anomalies in the Pacific, related to El Nino-Southern Oscillation (ENSO) and non-ENSO changes. The emphasis is on both continental and oceanic temperature and circulation anomalies having an influence on the monsoon, which in turn affects the fluvial processes in the rivers. It is a model study for researchers with the much useful analysis of various components, results and computer graphics of ENSO and non-ENSO ensemble.

Annadurai and others give an overview of the ENVIS Centre on Biogeochemistry and Environmental Law, JNU, New Delhi which is one of the 24 centres under the Ministry of Environment and Forests. These centres are established to provide environment related information to scientists, policy makers and researchers all over India. Environment-specific numeric and hard copy data are made available through these centres. In view of the role of the methane emission as a major contributor to greenhouse effect, the paper on methane and climate variability by R. Ramesh and G.R. Purvaja of Anna University makes a very important contribution.

With the dwindling grades of available ore for exploitation, the necessity of making use of biometallurgy in beneficiating low grades hitherto considered uneconomical, is gaining importance all over the world. Although it does not fit into the theme of the book, this paper by K.A. Natarajan of IISc, deals impressively with bioleaching methods vis-a-vis microbial ecological features of copper, gold and uranium deposits.

The paper on the status of surface water quality in Sri Lanka by E.I.L. Silva attempts to improve public awareness from the environmental point of view. Similar studies in other parts of the world would help to considerably minimise many of the health hazards by effectively implementing remedial measures. Also the need to have an effective national monitoring programme to assess the quality of surface/groundwater is highlighted in this paper. Many of the papers on trace element contribution mainly to river and groundwater systems by way of discharging industrial effluents, sewage, mine discharges etc. make very interesting reading. However, the nature of ill effects in terms of possible diseases on the living species could have found a place, since the incidence of toxic effects of As, Cd, Cr, Cu, Pb, Zn, U, Th etc. are commonly reported and some are of even carcinogenic nature. The paper on 'Arsenic mobilisation in groundwater: analysis and leaching experiments on aquifer soils of Bangladesh and Nepal' by S. Safiullah et al. of Jahangirnagar University, Dhaka makes an interesting contribution in understanding the processes involved in the world's worst arsenic poisoning in West Bengal and Bangladesh. The review article on water pollution in Andhra Pradesh by K. Shivakumar, has focussed on the role of lakes and tanks in preserving the environment and overdrafting of groundwater in the coastal areas leading to sea water incursions.

The paper on Brantas river system, Indonesia by Seno Adi is quite interesting. It highlights the effect of landuse changes due to intensive agriculture, urban, industrial development and dam construction. The studies on C, N and P distribution in the Brahmaputra basin by C. Mahanta of IIT, Guwahati is a good attempt. The paper on C, P distribution in river – back water system of Kerala by S.K. Bajpayee and A. Verma of JNU provides useful information on the analytical methods adopted to determine the ion chemistry quoting relevant references. The application of $\delta^{15}\text{N}$ cited in the paper by B.K. Das and others on the biogeochemical studies in Lesser Himalayan Lakes of Jammu district may prove to be useful to isotope researchers.

The book on the whole makes a very comprehensive and interesting reading material for the environmentalists and has given important data to the researchers. Such an useful reference volume should have been bereft of numerous printing mistakes. Nearly four to five pages of errata are required to guide the readers.

However, the merits of the book far outweigh these omissions and the publishers have to be complimented for recognising the significance of biogeochemistry related to environmental appraisal.

*Geological Survey of India
Vasudha Bhavan, K.S. Layout
Bangalore - 560 078*

B.R. VENKATESH
H.S.M. PRAKASH

ANNOUNCEMENTS

FLUVIAL GEOMORPHOLOGY WITH SPECIAL REFERENCE TO FLOODPLAINS: **March 20-25, 2000** at Indian Institute of Technology, Kanpur - 208 016, India. The workshop aims to highlight the latest developments related to floodplain processes, evolution and sedimentology through a series of lectures, presentation, panel discussion and field excursions in the Gangetic floodplains. Interested persons from universities, post-graduate level colleges and government organisations may submit their CV through proper channel particularly highlighting their current research activities and publications. For further details contact: Dr. Rajiv Sinha, Engineering Geology Group, Department of Civil Engineering, Indian Institute of Technology, Kanpur - 208016, U.P.

INTERNATIONAL SEMINAR-CUM-FIELD MEETING ON LATE NEOPROTEROZOIC-EARLY CAMBRIAN OF KROL BELT-SPITI BASIN, HIMACHAL HIMALAYA: 30 September - 9 October, 2000. Centre of Advanced Study in Geology, Punjab University, Chandigarh. **Main themes:** Mega events, biota, sedimentary cycles and facies. **Programmes:** One day meeting at Chandigarh followed by field meeting at Nigali Dhar - Korgai, Sirmur, H.P. and Batal-Chandra Tal, Lahaul-Spiti, H.P. Concluding session at Manali on 8 October 2000. For details contact: Dr. A.D. Ahluwalia, Centre of Advanced Study in Geology, Punjab University, Chandigarh 160 014. **Phone:** 172-541740; **Fax:** 172-541409; or #T-II/25, Sector 25, Chandigarh 160 014; **ph:** 722973. **Email:** adahluwalia@usa.net; adahluwalia@mailcity.com. **Web sites:** <http://www.puchd.ac.in>; <http://www.freeyellow.com/members7/himalayanseminar/index.html>.

IGCP PROJECTS FOR INDIAN PARTICIPATION: The 25th Annual Meeting of the Indian National Committee for IGCP was held on 14th December, 1999 at the Geological Survey of India, Calcutta under the Chairmanship of Dr. S.K. Acharyya, Director General. The Committee recommended for Indian participation the following two projects viz. IGCP-30 – Mantle Dynamics and Natural Hazards by M.F.J. Flower, V.I. Mocanu, R.M. Russo and N.T. Yem (proposers), and IGCP - 440 Rodinia Assembly and Break Up by C. McA. Powell and R. Unrug (proposers). Individual Geoscientists/Institutes/Universities who are interested in participating in these IGCP projects are requested to contact the INC Secretariat: Dr. D. Haldar, Member Secretary, INC for IGCP and Director, International Division, Geological Survey of India, 27 Jawaharlal Nehru Road, Calcutta - 700 016. **Fax:** 91-33-249-6956; **Email:** gsi@gems.vsnl.net.in.