PHOSPHORITE: G. V. Rao, S. P. Dasgupta, A Pant and Ranjit Choudhuri (Editors), Geological Survey of India, Special Publication No. 17, 1984, pp. 210. Price: Inland Rs. 46.00, Foreign £ 5.40 or $ 16.60.

This special issue of the Geological Survey of India includes papers presented at the Fourth International Field Workshop and Seminar on Phosphorite held at Udaipur, during 25-27 November, 1981.

The volume includes 23 papers prefaced by two addresses. The very first paper and only one of its type, that of P. F. Howard is on exploration philosophy.

The paper by R. P. Sheldon on genetic model is unique and anti-uniformitarian in philosophy. The author relates the stages of falling rings of ice around the earth to different events in the early Precambrian earth history. This, according to him ultimately led to the periods of phosphogenesis following phases of glaciation. V. Subramaniam, in his paper, writes that river and estuarine waters are supersaturated with respect to all economic phosphate minerals.

There are five papers which deal with mineralogy and chemistry of phosphorites. The paper by L. G. Gilinskaya, Y. N. Zanin, L. M. Krivoputskaya, Y. V. Mirtov and V. N. Stolpovskaya furnish some interesting information on apatite mineralogy in ancient deposits. In another paper on ancient apatite, A. V. Ilyin and V. Z. Bliskovsky show a gradual substitution of CO_2 for phosphate in apatite cell dimension. Variation in carbon and oxygen isotopic compositions for carbonate that is structurally incorporated into sedimentary francolite in case of offshore and onshore deposits is the subject matter of a paper by R. A. Benmore, J. M. McArthur and M. L. Coleman. D. M. Banerjee, G. C. Saigal, Neeta Srivastava and M. W. Y. Khan present a case history of elemental variation pattern in the phosphorite and country rocks from the Udaipur region, Rajasthan. The paper by Ian Jarvis on the REE abundance pattern in chalks and phosphorite of northern France is very instructive. His study reveals how REE can be a potential tool in delimiting the geochemical environment during the formation of authigenic and diagenetic minerals.

Among regional surveys, the Udaipur deposits of Rajasthan appear to be the most popular theme. There are five papers (including one by Banerjee *et al* mentioned above) covering different aspects. Detailed macroscopic study of different forms of phosphorites is the topic of the paper by D. S. Chauhan and M. S. Sisodia. Regarding the origin of phosphorite, these authors reiterate their theory of a coeval and progressive replacement of initially developing carbonate stromatolites by collophane due to their interaction with phosphate-bearing waters. By contrast, K. K. Verma advocates importance of metabolic activity of algae in the formation of phosphorite. Two other papers from the Udaipur region are by M. K. Pandya, S. B. L. Srivastava and C. S. Dwivedi and V. M. Sant and S. B. Sharma. There are also two other papers reporting occurrences of phosphorites in the Aravalli region: in the Delhi Supergroup by B. Dayal, R. S. Jamwal, R. S. Negi, A. P. Sinha, P. K. Chaurasia and M. K. Hore; and in the Champaner Group by G. N. Dwivedi.

Out of four papers on the Himalayan phosphorites, two are on Mussoorie deposits. The study of R. P. Radcliffe, P. C. Mathur and P. L. Kotiyal suggests a shallow subtidal to intertidal environment of deposition for these phosphorites.

A. M. Patwardhan and P. K. Panchal, however, argue, that there are textural evidences of both shallow and deep water deposition. A. K. Bhattacharya and H. P. Sengupta discuss the geology of phosphorite occurrence in Kumaun Himalaya. Occurrence of stromatolitic phosphorites from Nepal region which is the eastern continuation of the Kumaun deposit has been reported by R. P. Bashyal.

P. K. Basu has attempted a correlation between copper mineralisation and apatite-magnetite deposits in the Singhbhum belt.

N. A. Krasil'nikova and R. K. Paul have put forward an interesting correlation between some Siberian deposits and those in the Aravalli Supergroup of Rajasthan.

The Chinese Scenario is presented in three papers. T. V. Liang and A. C. Chang give a fairly good account of the Precambrian phosphorite deposits of southern China. The authors visualise a Gondwana link of the Yangtse landmass, and discuss the Precambrian phosphorite formation in Southern China in the light of the evolution of the Gondwana Plate. Tectonic environments and temporal relations are the theme of Zhu Shangqing's paper. Luo Yiqing has attempted a comparative tectonic stratigraphic setting of the Proterozoic-Cambrian phosphorites of northern and southern China.

The volume is reasonably priced. The printing and the get up is refreshingly good. Illustrations and photographs have generally been well reproduced. There are, however, certain editorial blemishes which could better have been avoided. On the whole, however, the volume is a welcome addition to literature on the Precambrian-Cambrian Phosphorites, although the store of information contained in the volume is not entirely new.

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THE TRIAS AND ITS AMMONOIDS : THE EVOLUTION OF A TIME SCALE. By E.T. Tozer. Miscellaneous Report 35 of the Geological Survey of Canada, 1984. Price : US dollars 9.60.

The above book focusses attention on historical developments of the Triassic System in the last hundred and fifty years.

The publication under review though not a reference book, serves as a guide to students and research scholars, making them acquainted with the Triassic System, its problems and how they are to be tackled. It also gives an overall picture of the distribution of Triassic in the world, palaeogeography of the Triassic and many related aspects. Seventeen chapters of the book summarize researches carried out in important regions : (Europe, Himalaya, America, Asia and others), and covers early work up to 1850, 1867-1902, first quarter of present century, and recent work, which has reached a stage when a uniform time scale for worldwide correlation can be thought of.

The publication includes a number of maps, tables, illustrations and photographs. Maps of Palaeogeography of Triassic Period, distribution of Triassic formation around the world, locations of important Triassic sections and Tables of Triassic Time Scale of 1895 and 1984 are particularly important. The photographs of famous localities of Triassic and some important fossils are of much value to the workers.

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