

to a highly variable set of conditions. The Neogene history of the Mediterranean has received a zoological approach by Por and Dimentman which reformulates the biological and evolutionary views regarding the continuity of Messinian biota. Steiningar *et al.*, have attempted a study of the migration and spread of the mammal taxa and fauna in close conjunction with the distribution of continents and seas throughout the Neogene of the circum-Mediterranean area.

The final chapter is an Appendix by Ruggieri which summarises the highlights of the geological excursion in central and western Sicily.

The book is a well-documented account of the geological evolution of the Mediterranean sea and adjacent lands and serves as an excellent reference work on the region. The variety of topics, the diversity of approach and multidisciplinary treatment of a modern basin make it eminently useful to any geoscience research worker. The value of this book would have been greatly enhanced if region-by-region synthesis had covered all the sectors of the Mediterranean basin. The absence of any paper on the Cyprus region in the extreme eastern part of the Mediterranean sea seems to me a major omission since the Mediterranean (Tethys) was formed by sea floor spreading and that most of it was apparently destroyed during or before the Alpine orogeny which involved the collision of the African and Eurasian plates and the Troodos ophiolite complex of Cyprus represents one of the preserved parts of the old Tethyan oceanic floor. Apart from this shortcoming the book is a major contribution to our knowledge of the geological evolution of the Mediterranean and should form part of all geoscience libraries. The book is well brought out and is in the best tradition of Springer-Verlag publishers.

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PROCEEDINGS OF NATIONAL SEMINAR ON COAL RESOURCES OF INDIA.

Ram Murti Singh (Editor). Department of Geology, Banaras Hindu University. Published by R. M. Singh, Convenor, National Seminar on Coal Resources of India. Printed by Tara Printing Works, Kamacha, Varanasi 220 010, Delux Edition: Rs. 500/-.

The National Seminar on Coal Resources of India was held at Varanasi from December, 27-29, 1986. The volume under review includes forty-six selected papers, and is followed by an appraisal of the National Seminar by the Convenor.

The volume commences with the Presidential Address – Coal Resources of India by G. L. Tandon and is followed by papers presenting 'Evolutionary Scenario of Lower Gondwana Coal Basins of Peninsular India', and on the structure and tectonics of the Gondwana basins. Three papers deal with source potential aspects of coal. Economic significance of the Wardha valley coalfield is enunciated in papers from exploration agencies. Aspects of modern strategy and modern techniques in coal exploration, as also optimum exploitation of coal reserve are well covered. Coal-fields of Bengal alluvial basin/plain, Birbhum, Hill districts of Assam, Godavari valley, Langrin, and Gujarat have been described in considerable length with regard to their coal potentiality. The lignite deposits of Karewa in Kashmir, and of Rajasthan, have been elaborated.

Fourteen papers are on general and applied coal petrology, one on palynostratigraphy, and one on photogeological studies as guides for exploration in concealed North Rajmahal coalfield. The presentation of laboratory data pertains to the Indian coals in overall assessment, and the coalfields of Jhilla, Raniganj, Sohagpur, Singrauli, Makum and Mehsana, in particular. Petrographic characterisation of Australian and Indian coals (Permian) is significantly presented. A paper on the role of petrological studies in bringing out the governing temperatures of lamprophyric intrusives in Jharia coalfield highlights the effect on coal seams by intrusives. Five papers deal with current trends in coal utilisation which include underground coal gasification, coal preparation, hydrogenation and on synthetic oil from coal. Thus, the volume encompasses a wide spectrum of field and laboratory studies on coals of India.

The volume is dedicated to the memory of Late Prof. Rajnath. The printed volume contains 637 pages. The volume has been brought out within a record time of eight months from the date of conclusion of the Seminar, and the Editor deserves full credit for bringing out this useful publication. This book will be a valuable addition to Libraries in India, and abroad.

H. S. PAREEK

MINERAL DEPOSIT MODELS. Dennis, P. Cox and Donald A. Singer (Eds.)
U. S. Geological Survey Bulletin 1693 (1986), 379 pages.

'Economic Geology has evolved quietly from an 'occult art' to a respectable science as the speculative models have been put to definitive tests'. The U. S. Geological Survey attempted through this volume creation of a data bank *inter alia* synthesis of the data thus created of the mineral deposit models on a conceptual basis mainly to describe the characteristics of groups of similar deposits. The classification of similar deposits has been attempted with a two-fold objective: i) It must be open so that new types of deposits can be added in the future, and (ii) the user must be able to find easily the appropriate models to apply to the rock and tectonic environments being investigated.

The deposit models are classified into a Tree diagram and described accordingly. The geologic-tectonic environment has broadly been grouped under igneous, sedimentary, regional metamorphic and surficial types. The igneous domain has been dealt with under intrusive and extrusive categories. A further subdivision has been made into mafic-ultramafic (stable and unstable areas), alkaline and basic, and felsic (phanero-crystalline and porphyroaphanitic) under the intrusive category, and the mafic and felsic-mafic types under the extrusive category. Likewise, deposit models of sedimentary environment are described under clastic rocks, carbonate rocks and chemical sediments. The regional metamorphic environment models are subdivided into metavolcanic and metasedimentary, and metapelite and metarenite types. Residual and depositional models fall under the purview of surficial type.

In all about 85 descriptive deposit models and 60 grade-tonnage models have been described. In the descriptive models, the basic data comprising the approximate synonym, description, general references and examples constitute the main titles under which the relevant data are catalogued. Under the grade-tonnage models, the references to data followed by comments on the deposits considered for their grade and tonnage, are included.