Book Reviews

GEOLOGICAL EVOLUTION OF THE MEDITERRANEAN BASIN. Daniel Jean Stanley and Forese-Carlo Wezel (Editors). Springer-Verlag, New York, Inc. 1985. pp. 589, with 287 Figures.

The Mediterranean sea, covering an area of 2,511,300 sq. km representing the main existing fragment of the Tethys sea which formerly girdled the eastern hemisphere, is the subject matter of this book dealing with its geological evolution. This is the outcome of an international conference under Advanced Research Institute with support from the NATO Scientific Affairs Division at Erice in November 1982. The book is dedicated to Raimondo Selli of Italy.

The book is unique in the sense that it focusses on the evolution of a present sea and attempts to provide a clearer picture of the basin through diverse disciplinary angles. The fact that the structure and the present form of the Mediterranean basin have been determined by the convergence and recession of the continental blocks of Eurasia and Africa adds a new dimension to the evolution of this important basin. Besides, it represents an excellent natural sedimentation laboratory and thereby, offers a remarkable variety of settings and conditions resulting in a diversity of deposits.

The book is divided into four parts. Part I deals with the physiographic and geotectonic framework. The physiography of Mediterranean offers a magnificent field for morphogenetic study.

Part II gives region by region synthesis.

Part III contains five papers dealing with the Messinian to recent volcanism, tectonics and sedimentation.

The significance and development of evaporite deposits in the Mediterranean region are discussed in two papers. These represent models explaining Messinian evaporite deposition by two-way flow and also due to climatic causes.

The sedimentation processes in Mediterranean basin are discussed in papers by Got *et al.*, who have considered the shelves to have experienced alternating phases of sediment equipment, sediment erosion and bypassing; and Stanley emphasizes the role of mud transport and also of redepositional processes in fine-grained sediment transport.

Part IV deals with Paleoclimatology and Paleooceanography of the Mediterranean region.

Vergnaud Grazzini discusses the oxygen and carbon isotope analyses of benthic and planktonic foraminifera from the Mediterranean basin which have proved useful for the establishment of an isotopic stratigraphy, the reconstruction of paleoenvironment and the recognition of major paleohydrographic events since Neogene. It is significant to note that the Antarctic ice cap expansion as well as Boreal glaciation initiation can be recognised on Miocene and Pliocene oxygen isotope records respectively at about 14 and 2.4 m.y. Bizen reviews the foraminiferal data from the present-day Mediterranean sea to evaluate these with respect to climatology and water-mass circulation pattern. The study of biostratigraphic and paleoenvironmental evolution of the Mediterranean sea during the past 10 m. y. by Muller indicates a response to the global paleoclimatic evolution. Riedel *et al.*, describe the late Neogene Radiolaria and discuss their significance on the paleoenvironment of the sea. The pollen climatological study by Bertolani-Mazchetti indicates that the region since Messinian time experienced a complex series of vegetation changes owing

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 apparantly 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 from 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.