

identified a wide range of hazards such as those resulting from earthquakes, seismicity, landslides, volcanism, snow, floods, cyclones and tsunamis. It provides a comprehensive account, with enough Indian examples, of these hazards and highlights the importance of hazard zoning, risk assessment and its mitigation. Possibly, coastal erosion also could have been identified as a hazard, which is quite serious in some sectors of the West Coast, especially in Kerala. The author, in Part-V, takes us through myriad environmental problems caused by engineering structures. The emphasis here is on the need for applying sound geoscientific techniques during pre- and post-investment stages of projects such that least disturbances are caused to natural environment. Part-VI, the last one, is devoted to the topic- 'Pollution and Energy'. It gives a simple treatment of two complex problems. Under energy, only alternative sources of energy are covered and precious little is said about commercial sources of energy about which geologists are really concerned.

Many figures and illustrations do not always harmonize with the text or lack adequate description. In many instances, to understand figures, one requires not only the assistance of a library, but also expertise in many disciplines of science. To suggest a few are: Figs. 2.15, 3.2, 3.3, 4.1, 5.9, 7.13, 7.16. Lack of proper integration of scientific and technical terms appearing in figures with that of the text leaves a feeling of inappropriateness.

There are quite a few printer's devils. Subject index is not adequately representative. Printing is good and line-drawings have come out fairly well. Reproduction of photographs is, however, poor.

The book is an ambitious venture and in this process, it seems to outstep in its scope and content. This is apt to be forgotten in the light of the wealth of information provided and, to that extent, it is a very good compendium, which should serve the interest of different 'target groups'. It is a welcome contribution in the field of Environmental Geology, which should kindle the interest of readers. The book is reasonably priced and should find a place in all libraries.

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**ASPECTS OF FLUVIAL SEDIMENTATION IN THE LOWER TRIASSIC BUNTSANDSTEIN OF EUROPE.** Edited by Detlef Mader. Lecture Notes in Earth Sciences. Vol. 4, Springer-Verlag, Berlin. 1985, pp. 626.

The Lower Triassic Buntsandstein is a famous continental red bed sequence which originated in mainly fluvial environment in the Mid-European Triassic basin. The present volume contains the state of the art presentation of information on the fluvial sedimentation in the Buntsandstein. There are in all 22 contributions from various investigators in this field, which have been grouped into seven chapters covering almost all the areas of outcrop of Buntsandstein deposits in Europe. The papers are organised broadly on a concept of hierarchy of facies models based on the integration of every facies element into progressively larger-scale reconstructions of the depositional environment. The contributions cover wide-ranging aspects of fluvial sedimentation in the Buntsandstein of Europe usually in this climax of sedimentological research.

In the introductory chapter, the editor discusses the hierarchy of facies models, the regional, stratigraphical, palaeoenvironmental, organisational and maturity of case

studies and also the aims and scope of the book and references which provide a suitable background for following this voluminous publication.

The depositional reconstruction of fluvial Buntsandstein sequence at the first stage of hierarchical organisation of sedimentary model giving details of local sedimentary processes and depositional mechanisms forms the topic of two papers with examples from South Devon, England and Southeastern Iberian Ranges of Central Spain.

The various case studies of facies modelling at the second stage of hierarchy of reconstruction is the topic of four papers covering the Buntsandstein in Middle Europe and also Poland and France. The regional depositional milieu of fluvial systems within one member is classified into four types of organisation according to presence or absence of accompanying non-fluvial environments.

The case studies of reconstructions of the regional depositional milieu at the second level of the hierarchy of facies model focusses on the second type of braidplain organisation. Associated calcrete pedogenesis is an important mechanism in fluvial braidplain and the assessment of calcrete palaeosols that accompany fluvial sediments is a particularly suitable tool for unravelling relationships beyond the fluvial dynamics. There are three papers on this topic with examples from Middle Europe, Poland and Germany. The depositional reconstructions with examples from fluvial braid-plains that are not associated with co-existing aeolian dune fields and calcrete pedogenesis is discussed in four papers. The sixth chapter contains examples of braid-plains that pass laterally or vertically into coastal fluvial to deltaic or even marine milieu and is covered by three papers.

The seventh chapter has three papers on a great variety of depositional models at the second stage of the hierarchy of sedimentological reconstruction. The evolution of fluvial style forms the climax of facies modelling with regional relationship and is often the overall result of the final evolution of an area.

The eighth chapter presents some case studies of the post-sedimentary history and also focusses on some inter-disciplinary aspects with three papers based on investigations in Germany and the Netherlands.

The final chapter is an epilogue reviewing the general result of the numerous case studies that constitute this volume.

The contributions cover almost all the areas of outcrops of Buntsandstein deposits in Europe. The book is an outstanding exposition of fluvial sedimentation in all its complexity and range as observed in the Buntsandstein of Europe and is a very useful reference to investigators in this field.

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**VOLCANISM IN HAWAII.** United States Geological Survey. Professional Paper, 1350 (1987).

The comprehensive 2-volume professional paper has been brought out by the U. S. Geological Survey to commemorate the 75th anniversary of the founding of the Hawaiian Volcano Observatory (HVO) at Kilauea. The HVO established in 1912 by Thomas A. Jaggar has, over the last 75 years, contributed in a substantial measure to our understanding of volcanic processes both during and between eruptions, in addition to forecasting impending eruptions and paths of destructive lava flows. Descriptive terms of volcanic flow nomenclature like Pahoehoe and Aa are derived from Hawaii.