

I am sure that the students of Earth Science in India will be benefited if they carefully go through the different papers in the volume.

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References

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(The books reviewed are available in the library of the Geological Society of India for consultation - Ed.)

CARBONATES INTERTROPICAUX [INTERTROPICAL CARBONATES]: *Editor:* Françoise G. Bourrouilh-Le Jan.; *Memoir of the Geological Society of France; No.169; 1996; 436p.*

The Geological Society of France has published this thematic volume on studies in intertropical carbonates in memory of Prof. Gabriel Lucas, who made landmark contributions to the study of carbonate sediments and the roles of algae in carbonate build-ups. His contributions were published mostly in French and therefore remain only known to the few who know the French language. The present volume contains gist of papers published in French as well as English includes translations of the gists of the papers. In more ways than one, the volume represents a unique collection of papers tackling diverse aspects of carbonate studies, particularly tropical carbonates and forms a comprehensive, upto-date compilation of intertropical carbonate sedimentology.

After the introductory section devoted to the reviews of the works of Prof. Lucas, the remaining pages are divided into ten themes. The first Chapter contains five papers, all of which are in French, on the physicochemical nature of carbonate solutions and the methodology for studying carbonates. The next has three papers on the studies on the carbonate production by biotic agents in an intertropical environment. This chapter is closely linked with the third chapter on Biosedimentology, in which six papers document how nutrient supply, climate, accretion, erosion potentials and species variations influence carbonate accumulation. The following group of five papers are devoted to the global variations in sea-levels through time and their influence on the rhythms in marine carbonate deposition. The next two chapters containing six papers in all, focus on the carbonate facies associations (assemblages) and the Palaeogeographical-Palaeoenvironmental aspects of carbonates. Continental carbonates are discussed in the seventh chapter with four papers which document the microbial, environmental, hydrological and volcanic influences on such carbonate precipitation and accumulation. Although much work is available on carbonate diagenesis, for example on dolomitisation, the chapter on this theme contains only one review article and another discussing the article. The five papers on karst processes and controls cover a wide range of aspects including palaeoclimatic and palaeohydrochemical signals that can be derived from karstic limestone terrains. The last chapter devoted to "Carbonates and cultural heritage" furnishes an interesting summary on societal aspects of carbonate studies.

Although language barrier may impede a clear understanding of all the papers included in the volume, the translated gists make it a truly bilingual publication. One may be critical that several important topics on carbonate studies find poor representation in the volume, but it scores much

more in the wide spectrum of topics which are covered. The volume is an excellent compilation focusing on intertropical carbonates and is unquestionably a fitting tribute to a worker who contributed so many new and enduring ideas in our current understanding of carbonate rocks. Anyone working in these sediments must have a look at this volume, not only to keep up to date in terms of the theoretical aspects of these studies, but also to obtain a working understanding of the intricacies of studying carbonate deposition. The added advantage of having such a multi-authored, edited volume is that it presents an unbiased and a more holistic perspective of the methods, problems and solutions of the subject.

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“GEOLOGY OF PAKISTAN (1995)”, Edited by F.K. Bender and H.A. Raza with contributions by D. Bannert, F.K. Bender, H. Bender, F. Gruneberg, A.H. Kazmi, H.A. Raza, F.A. Shams, F. Barthel, H. Fohse and H. Porth, Gebruder Borntraeger, Berlin Stuttgart, with 140 figures, 38 tables, 414 pages. Price: DM 248.00. ISBN 3-443-11025-8.

The Geology of Pakistan in the series “Contributions to the Regional Geology of the Earth” is a synthesis of the present state of earth science research of this northwestern segment bordering the Indian Subcontinent. The book is divided into eleven Chapters covering General introduction, Geological Framework, Sedimentary sequence, Igneous and Metamorphic rocks, Tectonics and Structure, Palaeogeographic and geodynamic evolution, Energy Resources, Metallic raw materials, Non-metallic raw materials, Water and Soils.

The Chapter on Geological framework presents the principal geological divisions of Pakistan from south to north comprising Chagai and Ras Koh area including the Volcanic Arc, Makran-Khojak-Pishin Flysch Zone, West Pakistan Fold Belt, Indus Basin, Tethyan Belt including the Lower Himalaya, the Higher Himalaya, the Kohistan Island Arc Complex, the Karakorum Block and Hindukush Elements. Each of these divisions is described separately. The Chagai and Ras Koh are shown to represent two geanticlines with the Dalbandin Trough in between filled by Palaeogene, Miocene and Pleistocene deposits. The West Pakistan Fold Belt occupies an area east of Makran-Khojak-Pishin Flysch Zone in eastern Baluchistan, Western Sindh and part of Waziristan and west of Indus plain. The Indus Basin forms a vast area east of the West Pakistan Fold Belt and west of Indian Shield and is enclosed between Main Boundary Thrust in the north and Sargodha high in the south.

The Tethyan Belt is not properly defined in this book. Similarly the term Lower Himalaya is used in a physiographic sense rather than as a geotectonic zone. The Hazara Crystallines can be compared with the Salkhala Group of J & K Himalaya. The Kohistan Island Arc Complex is the western analogue of the Ladakh Igneous Complex. The Main Mantle Thrust Zone forms the northern limit of the Himalaya and links up with the Indus Tectonic Zone. The Kohistan Batholith is the western extension of the Ladakh Batholith. The Rakaposhi Volcanic Complex which appears north of the Batholith forms the Rakaposhi mountain at 7800 m and thus displays the highest outcrop of ophiolite in the world. The Main Karakorum Thrust Zone forms the northern limit of the Trans-Himalayan Zone and is occupied by the Chalt Ophiolitic melange. It links up with Shyok Tectonic Zone of Ladakh. The Karakorum Block extends from the Pakistan-Afghanistan border on the west to western Tibet in the east between Chitral and Karakorum Faults. Finally the areas from north of the Reshun Fault to the Pakistan-Afghanistan border constitutes part of the northeasterly extension of the Hindu Kush Ranges and merges with the Southwestern Pamir.