

of Chelima-Zangamrajupalle areas and Mahabubnagar area respectively (b) ferrosyenites and ultrapotassic rocks to syenites of Gundlapalle and Vikurthi areas. Ahijado et al. have presented a comprehensive account of the field characteristics, mineralogy and petrology of sheeted dyke swarms of Amanay Massif that intrude Fuerteventura Basal Complex, Fuerteventura, Canary Islands (Spain). Their study has indicated a distinct geological and mineralogical variability that results from differences in the degree of fractional crystallization of the primary melt which in turn, are formed by different degree of partial melting in the mantle. Wernick and Menezes present results of the exhaustive geochemical treatment of seven groups of Neoproterozoic, high potassic rocks that intrude Ribeiro Fold Belt, southeast Brazil. An interesting feature of some of these plutons is the enrichment of Cu, Zn and Gd.

J. Plá Cid et al. have discussed major, trace and REE data on mafic minerals from a Palaeoproterozoic anorogenic, oversaturated alkaline Sera do Meio suite located within the Riacho do Pontal fold belt, northeast Brazil. They observe annite in meta-aluminous granites, aegirine-augite in peraluminous granite and a crystallization sequence of riebeckite-winchite to Ti-aegirine augite to Ti-aegirine in strongly peralkaline granites. Timothy Liverton and Nilson

F. Bostelho describes two suites of tin related alkaline granites namely – Scagull-thirty mile granite of the Yukon Territory, Canada, which was emplaced in a Cordilleran setting during Cretaceous and the Parana Suite of Goias which were emplaced during Mesoproterozoic time. Comparison of these two suites of alkaline granites of very different age and diverse tectonic setting indicates that plutons of similar metallogeny (reduced, high Fe/Mg tin related types) and chemical composition may result from either a rift related anorogenic setting or a probable transtensional environment in a Cordilleran orogen. Both are low- P_2O_5 granitoids and are derived from remelting of meta-igneous sources. Biotites in the reduced type tin-related alkaline granitoids are distinctive in their ferrous iron rich compositions, being distinct from S-type tin granites.

This special issue of the Journal of Asian Earth Sciences should form a compulsory reading for all students and researchers of alkaline and carbonatite magmatism in the Indian Peninsular Shield.

*AMSE Wing
Geological Survey of India
Bangalore - 560 078*

FAREEDUDDIN

ANALYSIS OF SEDIMENTARY SUCCESSIONS – A FIELD MANUAL

by A. Bhattacharyya and C. Chakraborty. Special Indian Edition (Paperback), Oxford & IBH Pub. Co., 2000, 445p. Price Rs.275/-

This book is a summary of field features of sedimentary deposits progressing from the analysis of the important sedimentary lithologies to facies (palaeogeographic setting), trace fossils, palaeosol/palaeokrast, sequence and event stratigraphy, and basin analysis. It emphasizes the main components of sedimentary succession and is weighed in favour of its main lithologies such as conglomerate, sandstone, shale and limestone. It highlights their field features. Significant information and signatures can be observed and recognized from field characters, organization of sediments, sedimentary structures, palaeosol and trace fossils. We can recognize these signatures only if we know and are trained as to what is to be observed. The book meets this requirement of the students and researchers on sedimentary geology, especially during their field studies. The description of field features and their interpretations are at places mingled together in the book that may be

separated. The book concentrates on terrestrial alluvial and mainly shallow marine sediment associations. Certain other associations of lithology are nevertheless very important e.g., oceanic pelagic sediments, volcanoclastic association. These have been totally excluded from treatment.

The sedimentary structures in sandstone, shale, structures in palaeosol and trace fossils are well illustrated. The latter two are presented in great detail. This is commendable, as these features are generally not well described in other text books on sedimentary geology. Especially for palaeosol profiles, however, use of colour photographs would have been very useful in recognition of field features. The geometry of trace fossils in argillaceous beds often gets modified due to later compaction. This aspect has not been touched upon.

In terms of sediment lithologies, sandstones and their

structures are presented most exhaustively. But its basic lithotypes such as arkose, arenite or greywacke and their commonly associated field features have not been discussed. The problem of recognition of some sedimentary structures and confusion about their distinction from similar structures at times pose problem e.g., recognition of rain prints. These have often been erroneously identified for small-scale interference ripples. The figure 2.2.3b for rain impact ripple structure is not clear and convincing. Several sedimentary structures that yield information on palaeo-current have been briefly mentioned but the reliability of different structures as indicators of palaeocurrent, their azimuthal spread, procedure for analysis of vector data, procedure for tilt corrections have not been discussed. Presentation on conglomerates is succinct and precise, with a listing of the main features that need to be studied in the field. But sedimentary structures of the conglomerates or its absence in mass flow conglomerates have not been presented. Diamictites are mentioned in the passing. More elaborate treatment on various massflow conglomerates, tillites would make the treatment comprehensive.

Shales and their associated structures have been well presented. But while mentioning various terms used for shales authors instead of referring to 'pelite' mention 'psammite' (p-71) by oversight. The limestone chapter (p.99) starts with description of stromatolites. Classification and nomenclature of limestone and dolostone lithotypes are totally missing. This is a major shortfall, which would pose problem to students and the non-specialist readership.

The 'Event Beds' chapter is presented with emphasis on 'tempestite' and 'seismite'. Whereas, volcanoclastic association has been totally excluded. These play very important role in many sedimentary environments such as in rift and ocean basins. These mark important events in the basins where they occur and also provide important clues to discern the tectonic setting of such basins. They can also occur as event markers from extrabasinal volcanic sources. In several field studies on sedimentary basin analyses, the association of acid volcanics has escaped recognition in the past. It is suggested that volcanoclastic lithologies, their diagnostic feature for recognition in the field may be included in future edition of the book.

The chapter on 'Palaeogeographic setting' has been dealt schematically. The sediment types and their features within the various subenvironments would make the treatment more meaningful. Sequence stratigraphy has been well presented, clarifying the main features regarding parasequences and unconformities bounding them. Authors have presented sequence stratigraphic discussion of an alluvial succession. The methodology followed

here is different from 'traditional' approach followed for marine sediments.

Authors have chosen three basin types as examples of different mechanism of subsidence. These have been described very briefly and in a generalized fashion. Absence of treatment on volcanoclastics is felt once gain in this analysis. Different examples of litho-columns to demonstrate the influence of subsidence in sedimentary succession may be presented.

Although the title of the book is on analysis of sedimentary succession, the treatment in general excludes presentation and description of litho-columns, which could have been invaluable to students and researchers.

Authors are to be complemented for their pointer to importance of 'Code of Stratigraphic Nomenclature' which are included as appendixes. It starts with reproduction of the 'North American Code of Stratigraphic Nomenclature', which is often the mother document for the codes of other countries. This is followed by the 'Code of Stratigraphic Nomenclature of India'. But unfortunately its reference is nowhere included, although references cited in this code have been reproduced! Authors acknowledge permission to reproduce excerpts of the code from the Director General, Geological Survey of India (GSI), but their statement that the code has been prepared by the GSI is factually incorrect. Although GSI had taken the lead role, the code was formulated and adopted by a National Committee with representatives from various national organisations and academic institutions.

It is suggested that the subject index of the book may be made more exhaustive for easy reference. Selected references for additional details have been mentioned occasionally in the text. It would be preferable, if at the end of each chapter, a list of important references is included.

In the present trend of decreasing importance of field studies, the effort of authors is praiseworthy. It reemphasizes the value, significance and enormous opportunity of field studies in the 'Analysis of Sedimentary Succession'. The book has minor lacunae but the authors can attend to these in the next edition. The book is well printed, with good quality black and white photographs of field features, and is moderately priced. In conclusion, it is recommended that not only the libraries of the Geology Departments should possess this book but also the students and researchers on sedimentary and environmental geology are advised to have it in their bookshelf.

*Department of Geology
Jadavpur University
Kolkata - 700 002*

S.K.ACHARYYA