

cautious enough to admit the lack of adequate dates for the key horizons (p. 95) to give precise ages for the different formations within the Quaternary.

This monograph is a very good synopsis of the published work of this team on various journals, on the stratigraphy, sediments and structures within the Quaternary of Gujarat Alluvial Plains. The recognition of i) major changes in the drainage pattern, ii) varieties of sedimentary structures as specifically related to types of fluvial morphology, and iii) stratigraphic sequence reflecting changes in the processes and environments, have all been adequately presented with appropriate maps, figures, tables and excellent colour photographs. Perhaps maps of each of the drainage basins of Sabarmati, Mahi and Narmada, within the Gujarat Alluvial Plains, showing the *actual* locations of the studied sections, instead of their general location in terms of distance in kilometers from a locality, would have helped subsequent scholars to visit some sections to study further, the stratigraphy. So also a few sequential block diagrams, showing the provenance, the agent, nature of sediment and shifting locations of depocentres with time, if included, would have added to the better understanding of the geology and geomorphology of this region.

The text is very well presented with few flaws. However, it may be noted that 'average' is never a range (p. 34), but a specific number; it is disconformity and not non-conformity (p. 44) between Hirpura and Saroli Formations. If Valsana Member in the Sabarmati river sections is only a lensoid body (in Madhavghat Section, p.50), there is no need to describe its absence elsewhere (Mahudi Section, p. 48) as 'disappearance', which implies earlier deposition and later erosion. Perhaps it was not deposited at all, quite in keeping with such variations in fluvial deposition.

This publication with over 100 references should be of interest to sedimentologists in general and students of fluvial morphology in particular, and can be taken as a guide as to how one should go about in studying Quaternary unconsolidated sediments.

Cuddalore - 607 001

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PROCEEDINGS OF THE INTERNATIONAL SYMPOSIUM ON APPLIED GEOCHEMISTRY (NOV.19-21, 1991), Editors: K.Surya Prakash Rao and R.D. Schuiling; Published by the Department of Applied Geochemistry (R&T), Osmania University, Hyderabad, 1996, 472 p; Price not indicated.

The above symposium organised at the Osmania University in 1991 was to commemorate a decade of collaboration between the Dept. of Applied Geochemistry of the Osmania University (O.U.) and the University of Utrecht of the Netherlands. Prof. K. Surya Prakash Rao of the O.U. and Prof. R.D. Shuiling of the Utrecht University were, and continue to be the architects of this fruitful collaboration in the field of Applied Geochemistry, which has assumed paramount importance in several important areas of Earth Science, like in Mineral Exploration and Environmental Geology.

The symposium also co-sponsored by the Geological Survey of India (Southern Region, Hyderabad) attracted 140 scientific papers and the present publication incorporates 48 selected papers covering the gamut of:

- a. Trends in geochemical exploration for mineral deposits with special reference to Au, U and basemetals;
- b. Instrumental analytical techniques in geochemical work;
- c. Hydrogeochemistry with special reference to fluorine;

- d. Environmental geochemistry and Geochemical "Engineering" and
- e. Miscellaneous topics in applied geochemistry.

The first group of papers include a summarised account of geochemical prospecting for uranium in the country by officers of the Atomic Minerals Division and an attempted historical review of geochemical prospecting in general in the country by the officers of the Geological Survey of India.

The paper by J.B. de Smeeth on the preparation of geochemical maps emphasizes the importance of such work in environmental assessment and control. It is high time that a systematic attempt is made in our country to bring out geochemical maps on different scales covering the entire country over a period of time.

The next group of five papers deal with analytical techniques which include trace analysis by AAS and ICP-MS with special reference to Au and PGE, analyses of aromatics in crude oils by UV-Spectrophotometry, organic matter in formation waters and geobotanical work on uranium in plant twigs.

The next group of ten papers deal with exploration geochemistry of gold in greenstone belts of the Indian shield and elsewhere as well as with tungsten mineralisation and metallogeny in granitic rocks.

The next group of papers deal with hydrogeochemistry with special reference to fluorine, industrial effluents and ground water contamination (with reference to tanneries in Tamil Nadu). These and the papers in the Environmental Geochemistry Section are of utmost relevance to us in the context of our urbanisation and the tendency of shifting high pollution industries from the affluent west to the third world countries. There is tremendous scope for environmental geochemistry to provide timely warnings and guidelines about metal toxicity and ground water contamination where already several new and non-specific health disorders are on the rise. The last five papers of the open session deal with aspects of chromite metallogeny, geochemistry of BIF, lamprophyres and Mn-ore deposits.

The Applied Geochemistry Department of the Osmania University deserves all appreciation for bringing out this publication as a starting point for further challenging work in an increasingly important field of Earth Science.

*Geological Survey of India
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