

PRECAMBRIAN GEOLOGY OF INDIA. by S. M. Naqvi and J. J. W. Rogers. Oxford Monographs on Geology and Geophysics, No. 6, Oxford University Press, 1987, 223 pp.

There has been a quantum jump in Precambrian research in India since the seventies, which has outdated the classical works of E. H. Pascoe, M. S. Krishnan and C. S. Pichamuthu. The long-felt need of the geoscientific community for an up-to-date book on the Indian shield geology has been happily fulfilled with the publication of this monograph. This handy and well-got-up book represents the commendable effort of the authors to encapsulate the voluminous new information in an easily assimilable form.

The book is organised into eleven chapters, starting with a succinct introduction to Indian geology. Nearly half of the volume is devoted to the geology of southern Indian shield, with which the authors are personally familiar. They have striven to maintain the balance of presentation in respect of the other areas of the shield, such as the cratons of Central India, Singhbhum and Aravalli, as well as the Eastern Ghat belt, rift valleys and the Himalayan Precambrian. The unevenness of detail in some sectors is mainly due to the poor data base. On the whole, the coverage of essential aspects and new developments is judicious and pithy. The maps which accompany the text, though small in scale, provide a good synoptic view. References listed at the end of each chapter do a fair amount of justice to the topic, but the emphasis on recent literature, after the current fashion, has introduced its own bias. Durable criteria like priority and quality, as determined by the citation index or other relevant parameters, have been sacrificed, which might lead to the mistaken impression that all the new ideas presented in the book are the authors' own.

The understanding of the tectonic framework of India is still in its infancy as seen in the several tentative attempts published in recent years. The pattern adopted in this book appears to be largely based on the impressions of J. J. W. Rogers, as outlined by him in his recent paper. The rationale for these divisions into cratons, terrains, belts and rift valleys as well as speculation on the nature of their joins are treated rather casually. The elevation of two parts of a craton into two independent Western and Eastern Dharwar cratons appears rather premature. By the same token, several sub-provinces in the Canadian and Australian shields may have to be upgraded to the status of provinces. Further, the nomenclature of Bhandara craton, derived from the tiny Bhandara 'triangle' of intersecting trendlines, is singularly inappropriate for the vastness and diversity of the central Indian terrain.

The main basis for deciphering geological history and constructing crustal evolution models is regional stratigraphy. Several conflicting stratigraphic schemes are normally in vogue in the different Precambrian terrains of India. The pressing constraints for space for treating these various schemes adequately in a book of this type and size should have ideally led to a balanced presentation of facts. Instead, one is surprised to find some perfunctory classification schemes claiming prominence over well-established stratigraphic classifications. Further, the 'other view' often does not find a place or gets only a peremptory treatment. These are some serious lacunae in an otherwise well-planned volume.

The book has arrived at a time when major revisions and syntheses of the Indian Precambrian are in progress. Recent *Memoirs of the Geological Society of India* on

the Purana basins, Aravalli mountains, Singhbhum terrain and Quartz-pebble conglomerates have already rendered obsolete a good amount of data in the new book. This is perhaps inevitable in the face of rapid progress in the publication scene. The authors also do not have access to the valuable unpublished information from Government agencies, which if available, would have placed the geological base on a sounder footing. These odds and the authors' own predilections have in no way diminished the usefulness of this valuable work. Students will find it a ready source-book and the libraries a precious addition.

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Notes

EXPANDING EARTH

Thanks to the publication of the Geological Atlas of the World (UNESCO) on scale of 1 : 20,000,000 under the editorship of G. Choubert and A. Faure Muret it has become possible to make a quantitative study of the distribution of areas of oceanic crust by individual epochs, both for the world as a whole and for the individual oceans.

Study of the zonation of ocean floor (N. YA Osipishin and V. F. Blinov, Published in *International Geology Review* vol. 29, September 1987, pp. 1009-1020) has shown that the largest part of the oceanic crust consists of young zones. This indicates an accelerated process of formation of oceanic crust. This age zonation is believed to have arisen as a result of uncompensated spreading associated with expansion of the earth.

ASTERIOD IMPACT IN LATE PLIOCENE

A recent letter in *SCIENCE* (Vol. 241, 1st July, 1988, pp. 63-65) reports of new evidence of impact of an asteriod spread out at least 600 km of the ocean floor in the South Pacific. The stratigraphic age of this impact is the same as that inferred from the onset of glaciation in the northern hemisphere.