

LATERITISATION PROCESSES. P. K. Banerji, Editor, Memoirs Geological Survey of India, Volume 120, Calcutta-700 016 (1986), pp. 102, Price Rs. 40.

The aim of this Memoir is to summarise the contributions by various research groups of different countries towards the multi-disciplinary and multi-faceted IGCP Project on 'Lateritisation Processes'. The volume contains nine chapters. Each chapter may be taken as a review article of the state-of-art on a specific theme. Some of the papers have already been published in some Journal or the other. The same have been, thoughtfully, reproduced in this volume because of the importance of the theme and the excellence of the contribution.

Schellmann (Chapter I) in his article on 'A New Definition of Laterite' opines that laterites have to be defined according to the same criterion as other rocks, i.e., on the basis of their genesis and mineral content. Such a categorical conclusion with supporting data must set at rest the one and a half century old confusion and contradiction involved in the definition of 'Laterite'. Aleva (Chapter II) has attempted a 'Classification of Laterites and Their Textures'. In doing so he has rightly identified the variety of interests in Laterites by different specialists (Table II.I), and tried to give a general classification and nomenclature. To what extent such an elaborate nomenclature and textural classification is applicable, on-the-ground, by field geologists is a matter of opinion. It is perhaps desirable to simplify the descriptive terminology to the extent possible for adaptation by non-specialists who, more often, encounter these rocks during the course of their field work. Mcfarlane, in her article (Chapter III) on 'Geomorphological Analysis of Laterites and its Role in Prospecting' summarises succinctly the state of our knowledge on this theme prior to 1974 and afterwards. High-lighting the improved concepts and revised comprehensions on the genetic and geomorphic aspects, she is of the opinion that the time is now ripe for promoting interdisciplinary studies which combine detailed geomorphological analysis with mineral exploration programmes. Creation of a data bank for the variety of information collected the world over and undertaking research on the microbiological aspects of lateritisation, are the other aspects that deserve consideration in future. In Chapter IV entitled 'Lateritic Bauxites', Bardossy and Szabo discuss the several facets of lateritic aluminium ores. About 96% of the total tonnage of lateritic bauxite is localised in tectonically quiet continental platforms, 3% in orogenic belts and less than 1% on oceanic islands. Trescases (Chapter V) reviews the researches carried out during the last decade on 'Nickeliferous Laterites'. A better understanding of the influence of tectonics on weathering processes, a detailed geomorphological approach to reconstruct the weathering history, and computing the global geochemical balance, are the thrust areas of study. Ogura (Chapter VI) concentrates on the 'Mineralogical studies of Nickeliferous Laterites in the Southwestern Pacific area'. These are described as formed by the *in situ* weathering of ultramafic rocks, nickel getting concentrated in goethite in the upper layer, serpentine in the lower layer, and smectite in the vicinity of the boundary to form hydrous magnesian-nickel silicate minerals. Banerji (Chapter VII) has attempted 'Trace Element Geochemistry of Laterite over concealed Mineral Deposits'. Instruments for multi-element analysis, standardisation of sequential leaching techniques, vapour geochemistry. International reference standards etc. have all been sought to be developed especially in the third world countries. Idnurm and Schmidt (Chapter VIII) discuss 'Palaeomagnetic Dating of Weathered

Profiles'. Future advances in Palaeomagnetic dating would need to come from a better understanding of the stage of weathering at which stable magnetisation is acquired. Schorin and Labrecque (Chapter IX) in their contribution captioned 'Three laterite standard reference materials from Venezuela', describe the methods employed for the preparation, homogeneity, testing, and statistical evaluation of the analytical data.

The contents of the volume are, no doubt, a welcome addition to our knowledge on Lateritisation Processes. A crisp review, country-wise, of what was the status before the IGCP project 129, and the progress achieved under the aegis of this project would have added value to the publication. The specific objective of presenting the contributions of different national working groups under the IGCP-129 programme, has been fulfilled only partially. The contribution from the global leader's country is a glaring omission. There is no Abstract or Synopsis to any of the papers. The references cited in Chapter III are not arranged in alphabetical order.

There are minor printer's devils. Otherwise, the printing and the get-up of the volume are good. The price is well within the reach of individuals. The publication is a valuable addition to the literature on laterites.

Hyderabad

P. K. RAMAM

PRINCIPLES AND APPLICATIONS OF PHOTOGEOLOGY. Shiv N. Pandey, Wiley Eastern Limited, New Delhi, 1987, 366 pages, Price : Rs. 100.

Since a couple of decades, students of photogeology in India have been invariably consulting the books by Ray, Lattman and Ray, Miller and Miller, von Bandat, Leuder, and Manual of Photointerpretation of American Society of Photogrammetry. In recent years, after satellite pictures (LANDSAT scenes) came into circulation and use, the 'Manual on Remote Sensing' published by ASP, besides a few others, are being consulted. The photographs studied (stereograms or stereopairs) are invariably imported from abroad. Though a few aerial photographs of parts of our country have been partially declassified by Government, yet, most of the educational institutions are still wary about procuring them, because of security problems.

The book under review, therefore, is a welcome contribution, for (i) it includes in an abridged form all the essential elements, (ii) it contains about 22 stereograms/triplets, depicting typical geological features, though all of them are mostly of areas in USA or Canada and none from India, (iii) it introduces the subject matter in a readable form with good illustrations, and (iv) it contains a list of references adequate for anyone who is interested in furthering his knowledge of the subject.

Besides Introduction (Chapter I), Chapters II to VIII deal with aerial photography, geometry, films and filters, instrumentation, vertical exaggeration (which is a very conspicuous feature of an overlapping stereopair), radial triangulation, preparation of photogeological map and quantitative determination of geological data. It is not often that a photogeologist really uses all the instruments described in the text (some of them have become obsolete), but it is desirable he should know something about them. The author has devoted an entire Chapter on Vertical Exaggeration. But, there is as yet no finality about the correct method to obtain the actual