Book Reviews

MEMOIRS OF AN UNREPENTANT FIELD GEOLOGIST. F. J. Pettijohn (Ed.). The University of Chicago Press, Chicago and London, 260 pp. 1984.

Francis J. Pettijohn, one of the most noted and revered sedimentologists of the century, has done yeoman service to geology once again—this time by *mere restatement* of what all geologists are *supposed* to know from the day they enter the field of geology that—*questions, ideas and solutions come from and are tested in the field.* The central place is occupied by rocks in their field habitat, and that is not to be forgotten by the acquisition of glamorous data sets, be they REE values, $\delta O_{18}/\delta O_{16}$ values or their like. This restatement is expressed in the complete working life of an illustrious geologist—a founder of modern sedimentology. His philosophy is stated in sharp and unambiguous terms—some times even at risk of overstatement of the case.

Pettijohn emphasises that persons who do not understand the nature and methods of geology cannot see the significance of their work in the larger context—he is referring to those amongst our profession who claim that ' the map and hammer geologist is outdated ; those who scorn requests for purchase of hammers, and those who determine intellectual levels by the number of EPMA determinations done in a lifetime. Pettijohn cites the example of an unimaginative Departmental Chairman who was unwilling to provide support for a field trip on the plea of poverty, but a week later could provide $ 5000 for a colorimeter.

Apart from the expression of this main message, Pettijohn has journeyed through his career in various teaching departments of the U.S.A. more notably the Departments at Chicago and John Hopkins. He has brought out very clearly how rapid damage could be done to university departments by *poor leadership*. Pettijohn states and I quote ' only by having a chairman with both top-notch credentials as a scientist and a broad vision—one who also has tact and understanding and the confidence of his faculty—can the Department be held together. The Chairman, moreover, needs to be one who can deal with the deans, especially those from the ' exact ' sciences, and show them geology is not just applied physics and chemistry. He must have such stature that his judgement is respected '.

Apart from these two vital points, ' Memoirs of an Unrepented Field Geologist ' traces the growth of the discipline of sedimentology through half a century—the history of a subject fashioned and chiselled by W. H. Twenhofel, W. C. Krumbein, P. D. Krynine, Ph. H. Kuenen, F. P. Shepard and the author F. J. Pettijohn himself.

Pettijohn has been the author/co-author of some of the most clearly written and widely read text-books of sedimentology—*Sedimentary Rocks* running into three editions, *Palaeocurrents and Basin Analyses* running into two editions, *Atlas* and *Glossary* of *Primary Sedimentary Structures, Sand and Sandstone* running into two editions. Most of us who have read and used these text materials will find it interesting to learn about the motivating factors which led Pettijohn to write these books, in some instances, with P. E. Potter and R. Siever.

In addition to all of these, the first few chapters provide a vivid description of life in U.S.A. at the turn of the century, and also an account of a three hundred

mile canoe journey, of steam locomotion, pioneers and prospectors—a record of time and place swallowed up by the history of *development*.

There is a lot to be learnt from reading this book—compulsory text for first year undergraduate and retiring professors alike, but certainly a must for chairmen of university departments, past, present and future!

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'GEOLOGICAL EVOLUTION OF PENINSULAR INDIA: PETROLOGICAL AND STRUCTURAL ASPECTS' Editor A. K. Saha – Recent Research in Geology. Vol. 13. Hindusthan Publishing Corporation (1987). New Delhi. 160 pp.

This is a volume brought out in honour of Prof. Saurindranath Sen, a respected teacher of geology at the Calcutta University, known for his contribution to the structural aspects of igneous and metamorphic rocks. It includes papers contributed by his students and admirers.

S. Bhattacharjee in an important paper, points to reactivation of major lineaments in the peninsular shield as controlling the development of Proterozoic basins, more particularly the Cuddapah basin. A thermo-mechanical model including sedimentation and thermal driving is advocated to explain the geological and geophysical features of the Cuddapah basin. P. K. Banerjee speculates on the correlation of lineaments with metallogeny. His observations on the Narmada-Son lineament separating two fundamentally different Precambrian cratonic blocks, as a zone of possible concentration of economically important mineral deposits (Mississippi type) is worth pursuing. Papers on structural aspects include those of Naha on structural style of metamorphic terrain of Rajasthan, Ghosh and Sengupta on the Singhbhum shear zone, Gangopadhyay and Mukhopadhyay on structural geometry of Delhi Group of rocks. Ramakrishna and Anantha Iyer consider the geochemistry of the Javanahalli amphibolites of Karnataka. Trivedi and others report whole-rock Rb-Sr age of 720 Ma for the Idar granite, Gujarat.

Sarkar and Bose have described the layered-type anorthosite mass at Kadavur, Tamil Nadu. Leelanandam has a general paper on Archaean layered anorthosite complexes of the world. Saha has presented a review of growth in our knowledge of the continental crust of India from 1900–1985.

Although in a broad sense all the articles assembled in this volume deal with one or the other aspects of the geological evolution of Peninsular India, they are not interconnected and we miss a step by step evolution of one of the important shield areas of the world.

Containing as it does several excellent reviews, the volume is a fitting tribute to the dedicated service of an eminent teacher and should be read by all those interested in Precambrian Geology.

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