

the profile lines mentioned in Figures 8 to 15, p. 46-50, are not shown in Figure 4, page 44; drainage lines of all the rivers must be drawn to the edge of the figures if need be, with scale and index in an inset box, in Figures on pages 63 and 65; otherwise a reader from abroad, will have a very poor opinion of our mighty rivers (!); in Figure 2 of page 89, PALK is on  $80^{\circ}\text{E} - 12^{\circ}\text{N}$ . 'References' in most of the papers are adequately and properly presented. However, the numbers of Unpublished Reports and publications under some papers (for example see 15 and 17) are of no use from a reader's point of view, who will never have access to them. This is only to indicate the need to publish as much material as possible, as and when some piece of work is done.

It may very well appear that what has been obtained so far as data base on this vast expanse of seafloor and the sediments therein, is rather meagre. But then one has to start somewhere and the Geological Survey of India has done well to gather at least some part of the information available in the country and present it in this volume. The ONGC is to be congratulated for its active support – both technical and financial – in bringing out this publication.

*Bangalore*

R. V.

**THE WORLD OF PETROLEUM.** By B. G. Deshpande (1992), Wiley Eastern Ltd., New Delhi, 241 pages. Rs. 250/-

Authored by a renowned geoscientist whose association with the petroleum industry, both directly and via University teaching, spans nearly half-a-century this book recounts the petroleum story right from its complex origins in some ancient source-rock up to the manifold uses of its products in the service of mankind. The preface states that the objective of the book is to educate the common man on this vital subject; in keeping with this objective, the presentation is simple, persuasive and direct.

The book is divided into four main parts: (i) the energy scene with special emphasis on alternative sources of energy; (ii) exploration and production of crude oil; (iii) refining and petrochemicals; and (iv) notes on the future of the oil industry and on pollution due to the industry.

In dealing with energy alternatives, there is tacit recognition of the fact that the renewable sources: solar, wind, tides etc., have still a long way to go before they can effectively supplant fossil fuels which today meet more than 75% of the world's energy requirements. It is popularly believed that a renewable source is free and non-polluting; in the context of today's level of technology this is not true.

Understandably, nearly 70% of the book is on Exploration and Production of petroleum. The coverage includes the fundamentals of geology, petroleum geology, geophysics, drilling, well-logging, production and reservoir engineering and is liberally illustrated with sketches. The newer tools of recognition and interpretation of subsurface features are briefly touched upon. More emphasis on basin modelling, geochemistry and simulation studies would have been desirable.

The part dealing with refining and petrochemicals assumes a basic knowledge of chemistry on the part of the reader. The various processes are succinctly described while process flow-sheets help in the understanding of the overall picture. With

the increasing emphasis on ecology, a chapter has justifiably been devoted to pollution caused by oil industry operations and the efforts being made by the oil companies to combat it.

Several statistical tables have been given. At least in respect of oil and natural gas reserves, a cautionary note could have been given that statistics are notoriously fickle. Sources of information are authentic: World Oil, United Nations, Petro-consultants etc; but they more often than not furnish contradictory figures. For instance, the industry takes 6000 cft of natural gas as equivalent in thermal value to a barrel of crude oil, but U. N. statistics take 4440 cft as the equivalent, since most natural gases contain substantial proportion of inert constituents. The motives are honourable but the ultimate picture gets distorted.

Also tons and imperial barrels are going out of fashion and today it is tonnes (also written as metric tons and generally taken as equivalent to 7.33 barrels on world average sp. gr. considerations) and American barrels that prevail.

Let us consider two tables. In Table-7 on page 194 (Worldwide natural gas production and reserves) the source of information has not been given but presumably it is the highly respected world oil figures given in cubic feet and converted to cubic metres. The sources for Table-10 on page 207 are equally respectable and equally useful in as much as it gives the break up between onshore and offshore, but the totals of Table 7 and Table 10 do not match. In Table-6 on page 191, the figures could desirably have been given in tonnes. In Table-8 on page 204, the units are million tonnes of oil equivalent; to the layman this is mysterious and the author could have elaborated on the meaning and significance of this derived units.

Although this write-up on statistics is long, the lapse is minor and does not detract from the overall merits of the book. To the common man to whom it is addressed it still remains a fine introduction into the exciting world of petroleum.

*Bangalore*

S. N. VISVANATH

**'EXPLORATION GEOCHEMISTRY: DESIGN AND INTERPRETATION OF SOIL SURVEYS'** by W. K. Fletcher, S. J. Haffman, M. B. Mehrtens, A. J. Sinclair and I. Thomson. Reviews in Economic Geology, Vol. 3, Society of Economic Geologists, 1987, 180 pages.

This volume brought out by the Society of Economic Geologists (SEG) with the active collaboration of the Association of Exploration Geochemistry (AEG) has emerged from an initial version that was utilised for an SEG-AEG sponsored short course in Exploration Geochemistry. Therefore, special emphasis is laid on 'real life' situations to which the reader is urged to respond and the ground truth is bared to him for a critical evaluation.

It is the appreciation of the geochemical environment of a given landscape that enables one to discriminate between a false anomaly and a genuine but more subtle anomaly, that may receive a low priority or remain altogether unrecognised.

The publication is divided into eleven chapters starting with the first step of choosing the survey method and optimisation of the survey techniques. Orientation surveys, literature study and a theoretical orientation specific to the exploration