basalts into Subgroups and Formations based mainly on reconnaissance and chemostratigraphy. This has largely superceded all earlier attempts at local and regional correlation. The reconnaissance geological map of Subbarao and Hooper will be a valuable source of reference, in spite of its oldish get-up. Detailed stratigraphic accounts, geochemical data and statistical analysis of Deccan basalts are presented in good papers.

Petrogenetic studies have veered round to the view of picrites being cumulates rather than primitive liquids (Beane and Cooper). The melts were probably generated at 10–15 kb at 35–45 km depths from N–MORB-type mantle (Sen). Papers on petrogenesis have dealt with the role of mantle metasomatism and AFC in the evolution of Deccan basalts. Mineralogy of mantle nodules from alkaline basalts, zeolites in traps, giant plagioclase basalts (GPB) and mafic dyke swarms have also been covered in good measure.

There are also valuable papers on magnetic studies, DSS studies, gravity and magnetic studies, and structure of the continental margin. In an editorial entitled 'Welcome intensification of interest in Deccan flood basalts' (*J. Geol. Soc. India*, April 1989), B. P. Radhakrishna called for multidisciplinary studies on plateau uplift, laterite, bauxite and black soil formation, and relevant studies to meet human needs like soil and groundwater resources, as well as utilization of zeolites. The present volume addresses most of the fundamental problems and signifies a major landmark in Deccan Trap studies, including advances in chemostratigraphy, petrogenesis and the plate-tectonic framework.

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Tell-tale features

Regional Geophysical Lineaments: Their Tectonic and Economic Significance. Geological Society of India Memoir No. 12. M. N. Qureshy and W. J. Hinze, eds. Geological Society of India, Bangalore, 1989. 305 pp.

The scientific importance of regional geophysical lineaments was highlighted at the Indo-US Workshop on Regional Geophysical Lineaments and their Tectonic and Economic Significance (Bangalore, 19-27 April, 1987). This volume includes the presentations and discussions at the Workshop, and the resolutions and recommendations agreed upon by the participants. A rapidly evolving technology in the geosciences as the specialised, it has been dealing with the isolution inhancement, recognition and tectonic interpretation of geological lineaments in regional geophysical data field.

The generally accepted definition of a lineament is that it is a regional-scale linear or curvilinear feature, pattern or change in pattern that can be identified in a date set and attributed to a geologic formation or structure. Regional lineaments extending over distances of hundreds of kilometres have been observed for many years. The subsurface extent of lineaments is highly variable but those extending over hundreds of kilometres are likely to be related to major subsurface structures. In recent years interest in lineaments has been revived because of the increasing availability of geophysical maps. Furthermore, interest in lineaments has been generated by the evolving concepts dealing with plate tectonics. Now-a-days the availability of two-dimensional geophysical data in digital form has fostered the application of a variety of filters employed in the identifying and interpreting lineaments.

Some of the papers, e.g. 'Lineaments: a timely changed of a waning Illusion' (K. Watson, US Geological Service) and 'Suture zones' (E. M. Moores, University of California), are thought-provoking, and present an overview as well as the concepts of suturing related to plate tectonics since the formation of crust from pre-Archaean times. The contributions from Indian geoscientists are rather broad-based, incorporating the available data from the peninsular to the extra-peninsular, Himalayan region. Qureshy *et al.* and Thakur have attempted to collate the data on megalineament structures in the Himalayan region and their geophysical characteristics. An attempt has been made to explain more than 2000 km of crustal shortening in the post-collisional phase exhibited by near-doubling of the crust along the thrust structures in the Himalaya. The initial collision line is conventionally interpreted along the Indus–Tsangpo Suture. It has been contended that the Himalayan mountain chain developed entirely within the advancing Indian subcontinent and attained its present landscape during the last 20 million years. There has also been an attempt to correlate the Himalayan megalineaments with the Caucasus region. The tectono-magmatic history of their development and the mineralization of economic mineral deposits have been studied (A. K. Sinha and A. G. Jhingran, *Himalayan Geology*, vol. 7, WIHG, Dehradun). In the paper by Burke and Sengor on regional lineaments and continental evolution, it is emphasized that many of the world's most spectacular lineaments mark major strike-slip fault zones and some of the most prominent of these fields are related to continental collisions. Many contributors discuss the use of Landsat and Magsat data in the interpretation of geophysical lineaments. Gravity lineaments jointly demarcate the tectonic boundary. Positive gravity anomaly has been found to be in association with rift zones and mobile belts whereas negative gravity anomalies are seen over regions of ensialic anatexis evolving intracontinental subduction, sedimentary basins and younger granitic plutons. The lineament analysis of the coastal belts of peninsular India is a significant contribution from the Oil and Natural Gas Commission. A contribution from the Geological Society of India presents tectonic implications of geophysical lineaments. The concluding paper by Mabey (Utah Geological and Mineral Survey, Salt Lake City, Utah, USA), summarizes the significant mineralization associated with structures expressed in the northeast-trending and gravity lineaments in central Idaho. It is also reported that geophysical lineaments also occur in association with linear structures with deformed mineralized zones within sedimentary rocks.

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