

BOOK REVIEW

ANNUAL REPORT OF THE NATIONAL GEOPHYSICAL RESEARCH INSTITUTE (1988-89). N.G.R.I., Hyderabad (1990) pp. 1-95.

The Annual Report for 1988-89 of the National Geophysical Research Institute lists the main achievements in various fields, such as Drinking Water Mission, utilisation of powerful computer system (CYBER 850 A) for interdisciplinary studies, seismic, magneto-telluric and other geophysical studies of the Indian Lithosphere, geochemical and geochronological studies on Precambrian rocks as well as other activities such as publication, training, research and publicity.

Studies on Indian Lithosphere represent a major thrust area of the Institute's activities. Seismic studies on Cambay and Bengal basins as possible oil sources have produced valuable subsurface information. Gravity, magnetic-telluric EM and heat-flow studies as well as theoretical modelling of geophysical data have also contributed to our knowledge of the lithosphere. While sponsored research in economically important areas will continue to be the pattern of expensive geophysical studies, there is a vital need to address to the fundamental problem of the earth's crust. When international collaboration has brought out several models of evolution of southern Indian shield, there is no back-up data from seismic studies particularly along a critical N-S traverse across the regional grain to understand the role of shear zones and suture zones.

Geochemical studies have concentrated on the evolution of life in the Precambrian with the advent of stromatolites and cyanobacteria in the Dharwar times (2800-2600 Ma.) For a vast subcontinent like ours, with a prominent shield area, the geochronological data are absolutely scanty and, therefore, it is rightly recognised as a thrust area. The geochronological laboratory recently set up at NGRI has become fully functional and the first set of data are ready. It is, however, unfortunate that the trial runs and early outputs concentrate on the Rb-Sr dating of the difficult mafic rocks on which early pioneers like Crawford could not make much headway. This accounts for the geologically meaningless ages of Dharwar lavas produced recently. A more coherent geochronological programme in the unstudied areas of southern Kerala and Tamil Nadu, the Eastern Ghats mobile belt, etc., would have produced more meaningful results. Identification of various age components in Closepet Granite may also prove fruitful. It is not clear why the progress of work in these important fields is listed under the non-descript heading of 'Geochemical Fine Structure'.

Natural hazards like earthquakes take us by surprise with frequent regularity and every time we mount rear-guard action and mount studies of causative forces. While scientific prediction of possible quakes and tremors in aseismic belts like Peninsular India is still to be attempted even in the developed world, NGRI being a centre of excellence in geophysics, should devote its energies to monitor the seismic hazards in India on a more urgent basis.

While the achievements are by no means insignificant, there is a vast scope for striving for excellence and for addressing the fundamental problems of the society in terms of drinking water and earthquake hazards. We should also strive to achieve excellence in research, which is a direct measure of our growth and development.

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