PG degree holders may be considered for one-year attachment to any professional organization like GSI, AMD, CGWB, ONGC, Coal India etc. so as to expose them to the current trend of geoscientific work in a emerging field. There is urgent need for such scholarship schemes to be introduced for eligible candidates. Such experience and exposure in a professional organization may be framed on similar lines as internship in case of medical professionals. A certificate to be issued by the concerned organization after successful completion of such internship should be given due weightage while recruiting them not only in professional organizations but also in universities. Such an experience would also equip the motivated persons to formulate suitable research programmes in those application areas of geoscience having an important bearing on societal benefits. It would also benefit the professional organization with availability of young blood in collection of certain types of field data.

(6) *Closer interaction among earth science organizations, Universities and Research Institutes:* While formulating research programmes, integration of data from several disciplines of earth science like geology, geophysics should be a built-in component of the programme. Moreover, interactions from diverse areas of physics, chemistry, biology, geology, engineering, sociology and economics have to be considered in R&D programmes. Collaborative activities among universities, research institutes and professional organizations need to be strengthened.

(7) *Planning research programmes in tune with the society's demands:* Effective presence has to be established in the emerging fields of geo-environmental studies and geoscience aspects of societal concern. Some of the areas may relate to:

(i) Studies on natural hazards, aimed at long-term mitigation, planning and for short-term prediction of events, along with likely mid- and post-disaster scenarios.

(ii) Developing a comprehensive, time-sequenced geo-environmental database incorporating chemical characteristics, source and dispersal of contaminants, climatic changes in the geological past and their effect on biota etc.

(iii) Developing in association with other disciplines, groups and agencies, locale-specific ecosystem management strategies to restore degraded habitats and facilitate sustainable development.

(8) In formulating R&D programmes in earth science, there should be an overriding emphasis on geological aspects. Research on mathematical modelling, laboratory-scale simulation of various earth processes etc. would definitely be encouraged, but not by diminishing the role and ignoring the underlying reality of geology as it exists in nature.

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BOOK REVIEW

EASTERN GHATS GRANULITES, A.T. Rao, V. Divakara Rao and M. Yoshida (Editors). Gondwana Research Group Memoir no.5, 1999. Published by Field Science Publishers, Osaka, Japan.

The first thing one notices by looking at the contents is that out of 12 articles 7 are co-authored by the editors. This percentage is rather too high and not very desirable. Over the last decade it is being increasingly recognized that the Eastern Ghats Belt (EGB) is one of the key areas not only with respect to Ultrahigh Temperature Granulite petrogenesis, but also in relation to Indo-Antarctic correlation in the Precambrian. This has resulted in some major seminars/symposia, foreign collaboration and a large number of research papers in national and international journals. Geological Survey of India brought out a special publication (no.44) in 1998, and this is followed by the present one under review.

This volume contains 12 research articles, which covers several aspects of the geology of the EGB. There are five articles basically on the geochemistry of different rock types

(khondalites, charnockites, basic granulites, calc-silicate granulites and leptynites), which are the major constituents of this belt. In all the papers, lots of new geochemical data are presented. Treatment of data is, however, done in a traditional way and the conclusions do not yield any surprises. One good feature is that several authors have tried to correlate geochemistry with tectonic milieu, or with depositional environment (for metasediments). This database will be useful to others as well. However, it would have been helpful to have petrographic data on the analyzed samples. There are two papers on reaction textures and their interpretations in sapphirine granulites and both papers recognize the importance of multistage evolution of the granulites. There is one paper on mesoscopic structures, which are interpreted in terms of thrust tectonics and shear zone development in the EGB. The topic is interesting but some field photographs instead of hand sketches would have been more helpful. There is an article on landform development in northern Orissa, which brings a new flavour to the volume. The authors have traced with the help of satellite imagery data, the development of landforms in relation to extension/uplift of the EGB and resultant drainage controls. The time constraint is missing, however. But the most interesting contributions in this volume are those dealing with new geochronological data, regarding which there is a lot of confusion in literature. The paper dealing with model ages in particular, gives some ideas on isotopic provinces – a much-needed target for geoscientists working on the EGB.

Overall, the volume contains some new data and is therefore worthy. However, printing quality leaves much to be desired and is somewhat inferior to the other publications of Gondwana Research Group.

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CHARNOCKITES AND GRANULITE FACIES ROCKS, N.G.K. Murthy and V. Ram Mohan (Editors). Published by Geologists' Association of Tamil Nadu and Department of Geology, University of Madras, Chennai, 1999, 384p.

An international symposium on charnockites and granulite facies rocks was organized by the Geologists' Association of Tamil Nadu and Department of Geology, University of Madras at Chennai between 29th August and 2nd September 1996 to mark the centenary of the discovery of charnockites at the type area of St. Thomas Mount, Chennai. The aim of the symposium was to discuss the origin and evolution of granulite facies rocks. The programme was organized as multi-theme sessions, which included geology, tectonics, petrography, metamorphism, geophysics and geochemistry.

A summary of the papers included in the volume is given below:

1. The South Indian granulite terrane has been considered as a composite ensemble of different blocks (3 or 4), whose peak metamorphic events took place at different times. The contacts between different blocks are considered as sutures or collisional zones with the Eastern Ghat belt as an allochthonous unit that travelled across from the Indian Ocean sector or East Antarcticata the proto-Indian east coast. The uplift of South Indian granulite terrane is regarded as a result of isostatic adjustment caused by the loading of Deccan volcanics in Central India.
2. Integrated studies in the Limpopo belt of South Africa suggests that the formation and exhumation of this high-grade gneiss terrane resulted from a granulite facies event that occurred in Late Archaean. This crustal thickening event was controlled by contractional faulting caused by the south-to-north collision of the Kaapvaal and Zimbabwe cratons.
3. The granulite facies rocks of Sandmata Complex in the Aravalli craton are formed during 1725-1645 Ma and exhumed during the end phase of the Aravalli orogeny. Further, the pelitic and calcareous granulites and charnockites of Balaram-Mawal-Danta areas of northern Gujarat are considered as the southern extension of Sandmata Complex.
4. A unitary model of evolution of the Precambrian Indian shield has been proposed based on several features of the granite-greenstone domain and high grade domains. It is considered that the GGD forms the central cratonic region of the shield and the