

NOTES

WORKSHOP ON THE EASTERN GHATS MOBILE BELT : A SUMMARY

A workshop on the Precambrian Eastern Ghats Mobile Belt (EGMB) was organised by the Geological Survey of India (GSI) at Visakhapatnam in Andhra University Campus on 15th and 16th June 1994 to review the status of knowledge and identify information gaps on EGMB. The scope of the workshop was limited to the geological unit of EGMB extending from Brahmani River in Orissa to Ongole in Andhra Pradesh. The geomorphic unit of the Eastern Ghats upto the Niligiris as well as the traditionally defined extensions of the Southern Granulite Terrain (SGT), which was recently shown to be part of a younger Pan-African Pandyan mobile belt are excluded from the purview of the workshop. The workshop evoked overwhelming response with over 100 abstracts received, of which 75 were printed in a well got up abstract volume. Over 150 delegates from GSI, NGRI, the Universities (mainly Osmania, Andhra and Utkal), IITs, State Directorates of Mines and Geology, CGWB and other research institutions attended the workshop. The highlight of the workshop was the display of the draft geological map of the EGMB on 1:250,000 scale compiled by GSI (mainly by J.K. Nanda and P.F. Augustine). A small exhibition of rocks, minerals and thematic maps was also arranged. The workshop was followed by a field visit to the manganese belt near Vizianagaram on 17th June 1994.

The workshop was inaugurated by Dr. M. Gopalakrishna Reddy, Vice-Chancellor, Andhra University and concluded with Valedictory Address by Prof. S. Acharya, Vice-Chancellor, Utkal University. Shri D.B. Dimri, Director General, GSI unveiled the geological map of EGMB.

The workshop was organised in six technical sessions, viz., (1) Regional Geology, Geophysics and Tectonics, (2) Magmatism, (3) Metamorphism, (4) Geochemistry and Geochronology, (5) Mineral Resources and (6) Geomorphology and Environmental Science. Each technical session commenced with a key paper on the major theme.

M. Ramakrishnan presented a key paper co-authored by J.K. Nanda and P.F. Augustine on the geological evolution of the EGMB. The longitudinal zonation of EGMB into the Western Charnockite Zone, the Central Khondalite Zone and the Eastern Migmatite Zone was outlined.

K. Gopalakrishnan concurred with the conference theme that the EGMB does not extend into the SGT but into Antarctica. The role of ductile shear zones in the evolution of EGMB was elaborated by Chetty and Murthy. The geological contact between the cratons and EGMB (Patra *et al.*, Rath *et al.*), geophysical nature of the boundary (Rao and Tewari, Murthy), and crustal structure (Subba Rao) were also discussed. Lakshmi Raju presented palaeomagnetic results and Reddy *et al.*, described ophiolites from Kanigiri.

C. Leelanandam presented the key paper on the magmatism in EGMB. The other papers presented deal with gabbroic complexes of Prakasam (Ratnakar *et al.*), granitoids of Orissa (Khuntia and Swain), rapakivi charnockite and granite (K.N. Rao).

A. B. Mukherjee in his key paper on metamorphism suggested that Eastern Ghats type metamorphic belts require a unique thermotectonic model very different from that of Alpine type belts. Other papers presented include incipient charnockites of Vizianagaram (Rajesham *et al.*), high temperature feldspars (900°C) in leptynites (Ramamohana Rao) and opaque oxide thermobarometry (Ramesh Kumar *et al.*).

D.K. Paul presented in his key paper an overview of the geochronological evolution of EGMB with A. Sarkar as co-author. He described major orogenic events at 3000 (?),

2600, 1500 and 900 Ma, as well as important thermal rejuvenation events at 2100 and 500 Ma. A. Sarkar *et al.*, presented several new Rb-Sr isochron ages in EGMB viz., Kommalapadu Charnockite (1500 Ma), Kotappa Konda Charnockite (1270 Ma), Tikri Charnockite (970 Ma), migmatites of Ludu Ludi (790 Ma) and Harbhangi (880 Ma), Sankarda granite (1000 Ma) and alkaline complexes of Khariar (1440 Ma), Rairakhol (1410 Ma), Uppalapadu (1350 Ma) and Vikruti (1100 Ma). Sarkar also traced the tectonic evolution of EGMB in terms of Wilson Cycle.

V. Divakara Rao *et al.*, presented a geochemical model for the genesis of EGMB lithounits. The various views presented on the origin of these lithounits include the following: Khondalites as metapelites, shales as residual soils; leptynites as felspathised Khondalites and greywackes; BIF as of Sargur type as opposed to Algoma type, granodioritic to tonalitic protoliths for charnockites, mafic granulites as tholeiitic lavas and sills (Divakara Rao *et al.*, A.T. Rao *et al.*, Subba Rao *et al.*, Nanda and Patil, Sreenivas and Srinivasan).

R.N. Mishra presented the key paper on the broad metallogenetic framework for EGMB. Other papers presented include those of the manganese ores of Orissa (Mishra *et al.*) and Andhra (Sharma *et al.*) and graphite of Orissa (Acharya). Some bauxites have been studied by remote sensing (R.S.Rao *et al.*) and SEM techniques (Som).

N.K. Mahalik presented the key paper on the geomorphology of EGMB. He emphasized the lithological controls on topography and described four planation surfaces at 1500-2400 m, 1150-600 m and 20-150 m. He mentioned also about rejuvenation of the river systems. A.K.Mishra *et al.*, outlined the geomorphic history of parts of EGMB in Orissa. Other papers presented on environmental science include impact of urbanisation (Viswanath *et al.*), iodine deficiency in groundwater (Suryanarayana) and dephosphorisation of manganese (Prem Kumar *et al.*).

The technical session was followed by a panel discussion chaired by Dr D.K.Paul. During this session, R.Ravindra presented a brief account of recent geoscientific studies by India in Antarctica and explained a close fit of eastern India with Enderby Land using extension of sedimentary basins. The panel recommended that there is an urgent need to intensify geochronological, geochemical and structural studies, more rigorous approach to the fit of India with Antarctica, and speedy publication of the geological map, together with an explanatory brochure, which will act as a catalyst for increased multidisciplinary studies and for economic mineral prognostication.

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BIOSEDIMENTOLOGY AND CORRELATION OF MICROBIAL BUILDUPS

A new International Geological Correlation Programme (IGCP) Project has been accepted by IGCP Board and Scientific Committee. The newly started IGCP-Project No. 344 "Biosedimentology and Correlation of Microbial Buildups" was proposed by Professor Claude Monty, Laboratoire de Biosedimentologie, Nantes, France. The Indian National Committee (INC) for I.G.C.P. has also recently approved Indian participation in the Project 344. The main objectives of the project are to foster multidisciplinary research that will lead to detailed understanding of the nature, origin, genesis, and significance of the major types of microbial buildups (stromatolites, thrombolites, microbial boundstones, mudmounds etc.) that have appeared in the Earth's history as a result of the evolution of life and the biosphere. The project has been accepted for five years (1993-1997). The