

BOOK REVIEW

GEOLOGICAL MAP OF INDIA, Seventh Edition, 1998. Compiled by A.K. Dasgupta and K.K. Chakravorty, Geological Survey of India, Kolkata. Price: R.835 per set.

The first edition of the Geological Map of India was published by the Geological Survey of India in the year 1877 under the supervision of R.D. Oldham. The last edition (the sixth) was published in 1962. During the last three and a half decades, geological mapping of India on 1:50,000 has been completed. Large unmapped areas of the Himalaya have been covered and new ideas regarding the nature of crystalline terrain of Peninsular India have emerged. Without doubt, a revision became imperative and the present seventh edition fulfils this long felt need of earth scientists in India and abroad. The map is printed in four sheets and is based on Lambert conical orthomorphic projection on 1:2,000,000 scale. The geological database included is up to 1990-91.

The presentation of Archaean and Proterozoic geology represents a major improvement. Considerable new information is incorporated and geology is fairly updated. However, the stratigraphic position of Sargur Group (it should actually be a Complex) shown in the legend is contrary to the views accepted by majority of earth scientists and it should have been placed below the Peninsular Gneiss in which it occurs as enclaves. Even the term Charnockite Group is not in conformity with the Code of Stratigraphic Nomenclature, as it is a petrological term. Charnockites are placed at the bottom of the legend as part of Archaean, though these are of 2500 Ma, 1900 Ma and 550 Ma ages. However, it is mentioned that the charnockites show widespread Proterozoic reactivation. As the reactivation has taken place in three phases separated by time and space, it would have been very useful if this aspect had been shown on the map with certain symbols or characters.

The metabasalt, which is a subordinate lithological unit of Chitradurga Group, is depicted on the map albeit selectively, whereas in the Bababudan Group, where metabasalt is the dominant unit, it finds no mention. Similarly the basic and komatiitic rocks are the dominant components of Sargur Group and yet these are not shown in the map.

Closepet Granite has been precisely dated as 2500 Ma and hence cannot be shown exclusively as Palaeoproterozoic. It would have been more appropriate as Archaean-Palaeoproterozoic. Major tectonic features in the Indian peninsular geology like the well known Moyar-

Bhavani, Palghat-Cauvery, Achankovil dislocations do not find a place on the map, though in the Himalayan sector most of the tectonic features are shown. The geology and significance of Eastern Ghat belt could have been better appreciated if the tectonic limit of the belt had been shown. In the absence of such a delineation, the true significance of the belt is lost. The Proterozoic rocks are adequately covered. Chattisgarh, Indravati and the Kaladgi Groups could have been shown in the same slot as the Kaimur-Semri of the Vindhyan and the Cuddapah. In the Himalayan sector, the Proterozoic coverage is comprehensive, and represents a major advancement over the earlier edition. The compilers have put in a great effort to accommodate various nomenclatures adopted to describe the tectonic sheets of Proterozoic crystalline rocks.

The Phanerozoic representation broadly conforms to the prevalent knowledge about these sequences. The total Phanerozoic sequence is mainly seen in the Higher Himalaya of Ladakh, Lahaul-Spiti-Kinnaur and partly in Uttaranchal. The Himalayan sector, which was a weak link earlier, is fairly updated. Various lithostratigraphic units are represented fairly accurately, along with formation and group names on this scale. Most of the blank spaces seen in the 1962 edition pertaining to the Himalaya are now covered, excepting in NW and SE part of Ladakh of Jammu and Kashmir State and in Arunachal Pradesh. However, the gap shown SE of Leh in Ladakh is inexplicable because by 1990, the geology of this part of Ladakh was known and geological maps were available for this sector. The Indus Tectonic Zone in Ladakh Himalaya is well presented. However, there is no justification for abrupt termination of the thrust between the Sangeluma belt and the Kuling-Lilang belt in the last SE stretch up to Hanle beyond longitude 79°. Similarly, the thrusts paralleling the Indus Tectonic Zone are shown coalescing beyond long. 76° in the NW. Only the Indus Group closes and the Sangeluma belt continues towards Burzil in northern Kashmir. Though geological mapping of the area was completed by 1991, why these geological maps did not attract the attention of compilers is not known. Interaction with field workers would have helped in the proper depiction of geological information.

The Quaternary continues to be unclassified. This

sector needs attention, and the preparation of geological map of the Quaternary belts of India, which include the famous Indus-Ganga belt, could be an important programme in the new millennium. Geology in the Indian Exclusive Economic Zone of the Arabian Sea and the Bay of Bengal is not shown though this information could have added to the value of the map.

The quality of printing is good and the colours used are soft. It could have been better if adjacent geological

units had contrasting colours. There are not many geographical names particularly in the Himalaya. Many of these names may have got eliminated during map scrutiny at the Ministry of Defence! The Geological Map of India in the present 2 million scale should find a place in all institutions and has a very useful reference value.

*Geological Society of India
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S.V. SRIKANTIA

OBITUARY

Professor Robert Shackleton (1909-2001)

Robert Millner Shackleton was born in England on 30 December 1909. He studied geology at the Liverpool University and obtained doctorate for his research on the tectonic history of North Wales. He was an assistant lecturer in the Geology Department of Imperial College, London and later joined the Colonial Survey during the World War. He developed life long fascination for field geology, particularly in Africa, where he was involved in structural studies with reference to Precambrian collision tectonics. He later became the Director of the Research Institute of African Geology in Leeds. After his retirement from Leeds he became the honorary senior research fellow of the Open University.

He had indefatigable energy for field work and even at the age of 76, he led a delegation of Chinese geologists to Tibet. He visited India along with Prof. W.S. Fyfe to examine the reported occurrence of glaucophane schist in the Archaean Nuggihalli schist belt of Karnataka, as such a

unique find would throw new light on Archaean subduction processes. Although he may have been a trifle disappointed as the glaucophane schist proved to be elusive, his traverse in southern India gave him an insight into the progressively deeper crustal sections exposed from north to south in the greenstone-granulite terrain of south India. This view was presented by him in a landmark paper that appeared in 1976.

Robert Shackleton was the Vice-President of the Geological Society of London and Fellow of the Royal Society, London. Several awards came to him for his outstanding geological contributions.

He married thrice and has five children. In his death at the age of 91, the earth science community has lost an eminent field geologist.

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M. RAMAKRISHNAN

Balwant Singh Negi (1915-2001)

Balwant Singh Negi, a pioneer in oil exploration and discoverer of the giant Bombay High Offshore oil field breathed his last on 15 July 2001 at a Mumbai hospital. He was born on 22 May 1915 in Chamoli District of Garwal Hills' in Uttaranchal State. He obtained his MSc. in Physics from Lucknow University and Masters degree in geophysical engineering from Colorado School of Mines, USA.

After a short stint as lecturer he joined the Geological Survey of India (GSI) at Kolkata. He was mainly involved in geotechnical investigations for dams, tunnels and rocks in Bihar and Jammu and Kashmir. He was selected for exploration for oil in the sedimentary basins by the Oil and natural Gas Corporation (ONGC) where he organised seismic and borehole geophysical surveys in Cambay and