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NEWS AND NOTES

A Review of the article "Paleoarchean Surface Processes and Volcanism: Insights from the Eastern Iron Ore Group, Singhbhum Craton, India" by Rajat Mazumder, Trisrota Chaudhuri, Shuvabrata De, Wilfried Bauer, Muzna Al Hadi, Kenichiro Sugitani, Mark A. van Zuilen, Ryoko Senda, Mariko Yamamoto, P.V. Sunder Raju, Tohru Ohta, Octavian Catuneanu, Sreejoni Mazumder, Satoshi Saito, Kazuya Shimooka published in Earth Science Reviews, 2022, v.232, doi:0.1016/j.earscirev.2022.104122.

Shrinivas Viladkar, Earth and Environmental Sciences Department, Indian Institute of Science Education and Research (IISER), Bhopal, Bhopal By-Pass Road, Bhauri, Bhopal - 462 066, India
E-mail: *sviladkar@gmail.com*

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Among the five cratonic blocks of India, the Dharwar and Singhbhum cratons bear Paleoarchean supracrustal rocks. The Dharwar craton is well studied in terms of tectonics and sedimentation, oregenesis, magmatism and metamorphism, and geodynamics. The Paleoarchean surface process, volcanism, and traces of early life (carbonaceous matter) from the Eastern Iron Ore Group (EIOG) are well presented in this overview published in Earth Science Reviews. Chaudhuri et al. (2018) reported xenocrystic Hadean zircons (4.24-4.03 Ga) from Paleoarchean (~3.4 Ga) tonalite-gneiss called the Older Metamorphic Tonalitic Gneiss (OMTG) from the Champua area of the Singhbhum craton (Chaudhuri et al., 2018, Scientific Reports) 8:7069 | doi:10.1038/s41598-018-25494-6).

Fifteen academicians from India, Oman, France, Japan, and Canada, have intensively studied Paleoarchean successions of the EIOG. The tectonic history of any craton can be inferred by understanding the ancient sedimentary sequences. The Paleoarchean Singhbhum craton, India, consists of an Archean nucleus of voluminous TTG gneisses and intrusive granitoids of ~3.5-3.2 Ga age, flanked by three Paleoarchean greenstone successions, which are named the Iron Ore Group (IOGs) on western, eastern and southern encircling the Singhbhum granitoid complex. The sedimentary rock associations of the lower and upper EIOG sequences differ strongly in terms of texture and primary sedimentary structures and constitute two distinct facies associations. This review article provides a valuable insight into mafic-ultramafic volcanism with excellent photomicrographs and field photographs of komatiites. These komatiites are very similar to the komatiites of the classical Barberton greenstone belt of South Africa. Using Raman Spectroscopy, carbonaceous matter (CM) was analysed, and it has been confirmed that CM in the EIOG succession is syngenetic; it experienced the same thermal history as the host rock in the range of upper greenschist- to lower amphibolite- facies metamorphism and does not represent later migrated bitumen or modern organic contamination. As pointed out by the authors, the occurrence of Paleoarchean supracrustals is rare. A thorough sedimentological and paleobiological research in the eastern, western, and southern IOG belts will provide valuable insight into the mysteries of early Earth and the co-evolution of life and the environment. Therefore, researchers should focus on the Archean geology of the Singhbhum craton to decode the mysteries of early Earth.

Announcement

The Council of the Geological Society of India in its meeting held on 10th August 2022, appointed Shri P. Sahoo, Scientific Officer-H (Retd), Atomic Minerals Directorate (AMD) as the Election Officer in place of Dr. S. Ravi, who had resigned. Shri P. Sahoo will continue with the election process for the triennium 2022-25. The Council also approved the extension of the last date for receipt of the ballot papers up to 15th September 2022 in view of the non-receipt of ballot papers and delayed receipt of the duplicate ballots by many Fellows/Members of the Society.

The President has appointed Dr P. Krishnamurthy, Regional Director (Retd), AMD, as the interim Secretary General to fill the vacancy resulting from the sad demise of Shri R. H. Sawkar.

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