Precambrians of India – M.E.A. Mondal*, Iftikhar Ahmad, Mir Md. Ramiz, Department of Geology, Aligarh Muslim University, Aligarh - 202 002 (*E-mail: *Erfan.mondal@gmail.com*)

Earth is a unique planet in the solar system because it contains water, air and life-bearing flora and fauna. It is 4.6 billion years old and Precambrian alone constitutes ca. 88% of its age. Unraveling geologic processes operating during Precambrian is crucial for our understanding of the formation and evolution of the earth and the solar system. To reckon the recent developments, outstanding issues and future scope of the Precambrian terrains of the Indian cratons a national conference and field workshop on “Precambrians of India” was jointly organized by the Department of Geology, Bundelkhand University and The Society of Earth Scientists, Lucknow at Jhansi during November 22-24, 2016 with the last day devoted to the field trip. The meeting witnessed an overwhelming response from the Precambrian geoscientists of India with a high number of young researchers from across the country.

The inaugural function was started with opening remarks by Prof. S.P. Singh (Convener) who warmly welcomed the participants. Prof. M.E.A. Mondal (Organizing Secretary) presented highlights of the conference. The organizing committee felicitated five renowned geoscientists of India for their landmark contributions towards Precambrian geology. The felicitation included conferring “Life Time Achievement Awards” to Prof. A.B. Roy, Prof. A.K. Basu, Dr. Abhinaba Roy, Dr. V. Balaram and Dr. O.P. Pandey. After the felicitation program, Dr. Surendra Dubey, Dr. M.B. Verma and Prof. D.M. Banerjee welcomed the participants and expressed their views on the importance of organizing a national conference on Precambrians of India. This report summarizes some salient aspects of this conference.

Prof. A.B. Roy delivered an invited talk and demonstrated evolution of the Indian shield from Precambrian to the present day and showed how it differs from other Precambrian shields. Prof. N.V. Chalapathi Rao presented his work on Mesoproterozoic-late Cretaceous Timmasamudram kimberlites, Wajrakarur field, Dharwar craton highlighting their geodynamic implications. Dr. Abhinaba Roy spoke about the evolution of the Proterozoic Sakoli fold belt using field relationships. Prof. Santosh Kumar using U-Pb zircon geochronology demonstrated that the Meghalaya plateau has experienced four major magmatic episodes between 1800 and 500 Ma.

Dr. O.P. Pandey presented one of the most intriguing deliberations whereby he provided sufficient geophysical evidences of crustal thinning of the Indian lithosphere using deep scientific drillings at Killari and Koyna earthquake regions. Dr. Mukund Sharma gave an invited talk on “Megascopic Carbonaceous remains from Proterozoic basins of India: lessons in evolutionary biology” which was very enlightening. Dr. B. Maibam presented his work on Precambrian mafic rocks of Assam and Meghalaya. He suggested that these rocks are critical to understand the Gondwanaland reconstruction and Alpine-Himalayan orogenic system. In another important talk Dr. Adhir Kumar Basu discussed the tectonic evolution of the Bundelkhand craton during Proterozoic and demonstrated that granitic intrusions within the craton may have played a significant role in generating tectonic forces.

Dr. Rajneesh Bhutani shed light on Precambrian crustal evolution of the southern granulite terrain with special emphasis on the Madurai block. He suggested that the Wilson cycles are recorded in terms of placement of granite-charnockite association, high- and ultra-high grade metamorphism and subsequent retrogression. Prof. H.N. Bhattacharya demonstrated that the Chitradurga greenstone belt evolved as a result of initially slow sinking of the granitoid basement; followed by opening and rifting of a back-arc along a continental margin; and finally closure, collision and accretion of the arc to the continental margin. Dr. V. Balaram illustrated hydrogeochemical prospecting (direct and indirect) methods for platinum group element deposits associated with layered mafic-ultramafic complexes in the Bundelkhand craton. Prof. P.P. Chakraborty using petrographic and geochemical signatures of iron formations and carbonates from the Morar Formation (Gwalior Group) demonstrated that the Gwalior sea had suboxic condition during Paleoproterozoic. Prof. S. Mohanty presented a case study and proposed that the Sausar Group witnessed dominantly reducing conditions in the shallow ocean during the Archean-Paleoproterozoic transition. A number of other oral and postal presentations were made on the two days by young researchers and invited a lot of discussions. The last day of the conference involved a field visit to the salient outcrops of granites/gneisses of the Bundelkhand craton near the city of the Jhansi.