

Geo Track 2012

A Geological Field Trip from on 4th March, 2012

A geological field trek was organized by the Society of Petroleum Geophysicists, India (SPG) on Sunday the 4th March 2012. The objective of the trek was to acquaint its members comprising of geophysicists and geologists and engineers with the sedimentological, structural and stratigraphic aspects of one of the best exposed and widely studied Late Proterozoic-Lowermost Palaeozoic sequences of the world. The other objective was to create awareness and sensitize the members about the international significance and need for preservation of this traverse, which is one of the very few places in the world where the important Pre-Cambrian versus Cambrian boundary is unambiguously demarcated.

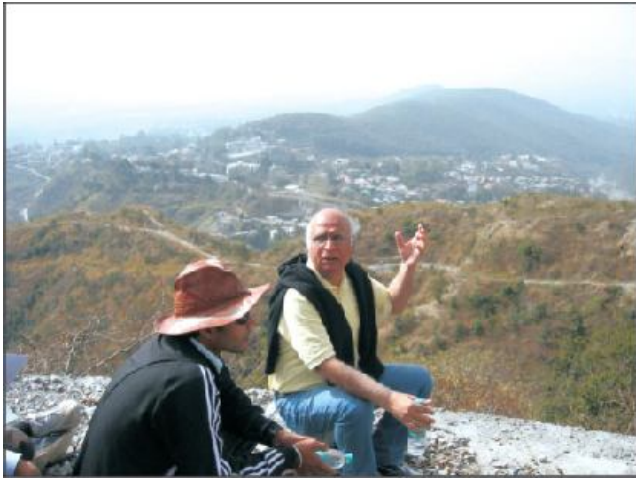
As per schedule, the participants were briefed about the objectives and the details of the trek by Dr. Alok Dave and Dr. Bijai Prasad, the designated field guides for the trek, before the team was jointly flagged off exactly at 8:45 am from KDMIPE, ONGC by Dr. C.H. Mehta, Former Vice President SPG India and Mr. A.K. Arya, Vice President, SPG India along with Mr.K.M. Shukla, Secretary, Mr.Radhakrishna and Mr.Bijendra Singh Executive Members, SPG India. The first stage of the trek covered the distance from Shahenshai Ashram to Oak Grove School, Jharipani along the old mule track built during the days of the British Raj. Stoppages were made at various places along this track for observing the Main

Boundary Thrust and its manifestations, the Upper Riphean Jaunsar Group represented by the Chandpur Phyllites and the Nagthar arenaceous unit, and the Vendian units of Blaini, Infra-Krol and Krol limestones (Krol units A, B, C and D). Participants were absolutely fascinated to note that the latest movements along the MBT have tilted a temple along the mule track. It was fun coupled with detailed discussions as the participants enjoyed the challenges offered by the steep and long climb. The faculty explained how every process results in a product and how every geological product that we now see can be interpreted for the process that led to its genesis. Thus the Jaunsar Group was explained to have formed as a coastal sand bar/shoal complex, the Blaini diamictites as a result of glaciomarine processes and the Krol unit formed in inner shelf, subtidal to supratidal conditions, as deciphered from modern day analogies. At Jharipani, the tired trekkers saw the welcome sight of the vehicles waiting for them. That was time for a drive to the Picture Palace side of Mussoorie where a buffet lunch was waiting at Green Vegetarian restaurant.

After a sumptuous lunch, the second leg of the trek started along the Mussoorie- Dhanaulti road section. This part of the traverse was covered by bus and regular stoppages were made to study the exposures of Krol units D & E and Lower, Middle and Upper Tal units. The shale-marl interbeds



Dr. C.H. Mehta, Former Vice President SPG India and Mr. A.K. Arya, Vice President, SPG-India jointly flagging off Geo Track 2012 along with Mr.K.M. Shukla, Secretary, Mr.Radhakrishna and Mr.Bijendra Singh Executive Members, SPG India.



Dr. Dave (above) and Dr. Prasad (below) describing the geology of the area to the participants.

of the Krol-E unit along this section pass gradually into the chert-phosphorite member of the Tal Group and the boundary between the two demarcates the Pre-Cambrian versus



View of the Main Boundary Thrust (Proterozoic rocks override the Siwalik rocks at this point from left to right of the photograph)



SPG team members studying the Pre-Cambrian versus Cambrian contact. Mr. Radhakrishna taking keen interest in the historical contact.

Cambrian boundary in the region. The occurrence of phosphorites in the Lower Tal Member coincides with the global occurrence of phosphorites along the Pre-Cambrian Cambrian boundary. The faculty shared how the observed lithology and sedimentological aspects of the Tal Group help in interpreting that this unit had formed in a tidal flat, protected lagoon and embayment. Explaining the structural aspects of the traverse, the participants were made aware that the southern part of the Mussoorie Syncline which has traveled piggy back along the Main Boundary Thrust over the geologically young Siwalik sediments was studied during the course of the day's traverse.

Not a single participant, including the four students of M.S. University Baroda, wanted to turn back but the fading daylight meant that the guides had no option but to call it a day.

The vote of thanks was offered in the field itself. The participants thanked Dr. Dave and Dr. Prasad for the pain they took to describe in detail each and every aspect of the geology along the traverse.