

Field Transect: NR008, Evolution of the Lesser Himalaya—A Columbia-Rodinia-Gondwana Connect.

Geological Significance:

- The Proterozoic Lesser Himalaya sedimentary successions represent a unique record of sedimentation and volcanism during Columbian assembly (1.80 Ga) through Meso-Neoproterozoic (1.1 Ga-0.525 Ga) passing into Gondwana.
- The proposed sectors representing the continental margin of the Indian plate exhibit a unique stratigraphy with sedimentary record of over a period of nearly 1000 Ma.
- Excellent record of extensional tectonism, outpouring of basaltic magma and concurrent argillo-arenaceous sedimentation extending from Paleoproterozoic to early Mesoproterozoic are well documented in the sector.
- The sectors present an excellent opportunity to study the Meso- Neo Proterozoic in terms of litho/ bio-stratigraphy, sedimentology, structure, tectonics, chemical and isotopic constraint.

International Attraction:

The transect exhibits regional geological framework of Lesser Himalaya incorporating sedimentation and magmatism representing a unique record over a period since 1800 Ma.

During Field Excursion, the Sub-Himalayan and Lesser Himalaya will be covered in the following three sectors covering the following aspects:

- 1. Naglidhar-Koti Dhaman sector:** Studies on late Proterozoic Infra Krol, Krol and Tal sequences. Late Precambrian Fossils. Trilobite biostatigraphy. Early Cambrian Tal Trace fossils. Stromatolites & Cap Carbonates.
- 2. Mussoorie –Garhwal sector:** Studies on early small shelly fossils and spicules etc. Sedimentological studies & basin development. Litho-columns of Lesser Himalayan rocks. Fossils in Gopichand area mainly Brachiopods. Diamictites. Carbonate facies, Sequence stratigraphy and chemostratigraphic signatures. Trace fossils and Micro-palaeontological records & Phosphorites.
- 3. Rishikesh-Rudraprayag sector:** Studies on southern and northern contact of the Jaunsar and Garhwal Group. Siliciclastic sedimentation patterns and facies of Garhwal Group. Paleocurrent variations, Soft sediment deformations. Rudraprayag Volcanics and its association with the interstratified siliciclastics. Tons/ North Almora Thrust and Krol thrust and other signatures of Himalayan tectonics.

Duration-7 Days

Date of excursion: Post-Congress

Max.Participants:15

GEOTOURIST SITES



Kedarnath Temple



Badarinath Temple



Rafting in Rishikesh



World Heritage site-The vally of Flowers Hemkund Sahib Trek

Geological Field Photographs



Plunging chevron fold in Chandpur phyllite. Loc.: Kirtinagar



Rippled quartzite of Nagnithank Formation of Garhwal Group. Loc.: NW of Narkota



Crenulation cleavage in Chandpur phyllite. Loc.: Kirtinagar



Grayish-greenish quartzite beds of Nagnithank Formation. Loc.: Near Kaliyasaur



Basalt with quartz amygdules. Loc.: Near Chamdhar

GEOTOURIST SITES:

Haridwar Rishikesh- Badrinath also known as the “Region of Sagas” is surrounded by scenic beauty of the hills on all sides. The whole region is considered to be sacred as it is believed that meditation at this place leads to attainment of salvation. There are many temples along the rivers and its tributaries that drains the region.

Valley of Flowers also called Bhyundar Valley, Nandan Kanan (Garden of Indra) or Garden of Eden was discovered by a British Mountaineer Frank S. Smythe in 1931 and named it of what it's known today. There are 291 recorded varieties of flowers in this valley. Many of the flowers in this valley are of medicinal value which remains in full bloom for 3 months although the composition of flowers keep changing every few days. There is plethora of wild life in this area including black and brown bears, snow leopards, foxes, Musk Deer and Monal Pheasants. One also gets to visit Hemkund Sahib during this trek which is a highly revered Sikh Gurudwara located at an altitude of 4630 meters.

Hot Spring sites are in Rudraprayag are Vasuki Tal, Tapt Kund, Narad Kund, Surya Kund and Tapovan.

Adventure/ trekking spots are in Rishikesh and at Auli near Joshimath