THE SOCIETY OF EARTH SCIENTISTS

# 1st International Geodiversity Day

celebrations

## NATIONAL PROGRAM AT DELHI

7th October 2022; 10:30 AM-2:30 PM Jointly with INSA

**Chaired by Dr. M. Ravichandran, Secretary, MoES**

Participation by Invitation

Contact: Prof. D. M. Banerjee; Dr. Rasik Ravindra

Email: dhirajmohanbanerjee@gmail.com,; rasikravindra@gmail.com

## FIELD WORKSHOPS

### Zawar Multi-heritage & Jhamarkotra Stromatolite NGMs, Rajasthan

11-13 October 2022

Zawar area is of interest because it has been globally recognized as the world's FIRST ZINC SMELTING SITE.
The prolific growth of stromatolites are in the carbonate rocks deposited between 3900 million years to 541 million years ago in Earth's history. The phosphatic stromatolites is exposed at Jhamarkotra, Rajasthan, about 25 km southeast of Udaipur.

Participants: 20 nos.
Base Station: Udaipur, Rajasthan
Participation Fee: Rs. 15,000/-
Contact
Prof. P. S. Ranawat, Udaipur
Email: psranawatk@gmail.com

### Bagh Dinosaur National Park, Dhar District, M.P.

5-8 November 2022

Bagh Dinosaur Geoheritage Site is one of the best exposed dinosaur fossil site of India. A Fossil museum at Mandu adds feather on the cap. The Fossil Park is under development as a Geopark by Government of Madhya Pradesh.

Participants: 20 nos.
Base Station: Indore, M. P.
Participation Fee: Rs. 15,000/-
Contact
Dr. Sameeta Rajora; Mr. K. Najmi; Mr. Vishal Verma
Email: sameeta_rajora@yahoo.co.in; khuzaimanajmi@gmail.com; vishalverma.dfnp@gmail.com

### Kachchh Paleo-rift basin: an ideal tectonics and sedimentary package for Indian Geopark

12-16 November 2022

The Kachchh Basin is known worldwide for its richly fossiliferous Mesozoic & Cenozoic sedimentary strata, which record evolution of ecosystem along the southern margin of the Tethys Sea, which progressively shifted northward across the equator.

Participants: 20 nos.
Base Station: Bhuj, Gujarat
Participation Fee: Rs. 20,000/-
Contact
Prof. D. K. Pandey, Jaipur
Prof. Mahesh Thakkar, Kachchh
Email: dhirendrap@hotmail.com; mgthakkar@rediffmail.com

### Cretaceous Succession of Perambalur and Ariyalur Districts, Tamil Nadu For Potential Geopark

19-22 November 2022

The uniqueness of the Ariyalur marine rocks is that almost every bed yield fossils, be it a sandstone, limestone, clay or conglomerate. Well preserved ammonites, belemnites and other molluscs, echinoids, coral-algal reefs, bryozoans, shark teeth, dinosaur egg, dinosaur bones, and fossil wood represent a rich Late Cretaceous fauna.

Participants: 20 nos.
Base Station: Chennai, Tamil Nadu
Participation Fee: Rs. 15,000/-
Contact
Dr. B. Gowtham, Chennai
Email: bgowtham23@gmail.com

For enquiry please contact: india.ses@gmail.com; 7607374176

# *I$^{st}$ INTERNATIONAL GEODIVERSITY DAY celebrations*

**INSA, Delhi; 7 October 2022; 10:30 AM-2:30 PM**

**FIRST CIRCULAR**

**Chairman:** Dr. M. Ravichandran, Secretary, Ministry of Earth Sciences & Patron SES

## PROGRAM (Tentative)

| | |
|---|---|
| 10:30-10:45 AM | Welcome Address by Prof. Mukund Sharma<br>Release of the Special Issue of magazine Land, Water & People and Indian Geoheritage Guidebook |
| 10:45-10:55 | Brief about the IGD celebrations-workshops by Dr. Rasik Ravindra |
| 11:00- 11:30 | Talk by Prof. D. M. Banerjee on 'Geodiversity: Indian Context' |
| 11:30- 11: 40 | Discussion and Views of delegates |
| 11:45- 2:15 PM | Talk by on 'Geoheritage potential of India' |
| 12:15-12:45 | Talk by Dr. Satish Tripathi on 'Status of legislation in India and IUGS initiatives' |
| 12:50-01:20 | Talk on 'Development of Geoparks in India: A Case study' |
| 01:25-01:45 | Discussion and exchange of views of Delegates |
| 01:45-02:00 | Address of Chairman |
| O2:00-02:15 | Address of Chief Guest |
| 0215-02:20 | Vote of Thanks by Prof. Rameshwar Bali |
| | LUNCH |

**PARTICIPATION BY INVITATION**

**CONTACT:**

**Prof. D. M. Banerjee**
Email: dhirajmohanbanerjee@gmail.com

**Dr. Rasik Ravindra**
rasikravindra@gmail.com

Organized by

**The Society of Earth Scientists**
www.earthses.org
**Indian National Science Academy**
https://www.insaindia.res.in/

# 1st International Geodiversity Day Celebrations

Field Workshop
on

## Zawar Multi-heritage National Geological Monument
&
## Jhamarkotra Stromatolite National Geological Monument

**Udaipur; 11-13 October, 2022**

## FIRST CIRCULAR

**Zawar**

**Jhamarkotra**

**Promoted by**
**The Society of Earth Scientists**
http://earthses.org.in/
**Organized by**
**Department of Geology, MLS University, Udaipur;**
**Society of Alumni**
**Supported by**
**HZL, GSI-FTC, Dept. of Archeology & Museums, Rajasthan, DMG,**
**INTACH Udaipur Chapter**

**PREAMBLE:**

The International Geodiversity Day (IGD) was approved by UNESCO on 22 November 2021 by the 193 member states attending UNESCO's General Conference in Paris. Geodiversity is a term which refers to the natural portion of the planet that is not alive, both at the surface and in the planet's interior. By geodiversity, we mean the Earth's minerals, rocks, fossils, soils, sediments, landforms, topography and hydrological features such as rivers and lakes. The term 'geodiversity' also spans the processes that create and modify these features. Despite the multitude of services that geodiversity provides, most people are not aware of how dependent we, as a society, are on it. This is why we need to promote a better understanding of the Earth's dynamic processes, so that citizens can make informed policy choices that will foster a more sustainable society.

UNESCO declared 6th October as International Geodiversity Day (IGD) and in the year 2022, we will be celebrating 1st IGD across the globe. India is blessed with great geodiversity as it has recorded 3.5 billion years\'s history of evolution of Earth, some of the sections are unique. The Indian rock record bears the signature of various global geological events including evolution of life, mass extinction, making of Himalaya, meteoritic impact craters, etc. We have decided to celebrate 1st IGD in a big way in India. A national program at Delhi followed by field workshops at different important geoheritage sites across the country.

Zawar area is of interest because it has been globally recognized as the world's FIRST ZINC SMELTING SITE. Zawar zinc-lead deposit is located in a rugged and thickly forested area about 40 km south of Udaipur, Rajasthan. This approximately 20-km long mineralized belt has a rich zinc-lead mineralization hosted in hard, compact, siliceous dolomite this geoheritage site typically contains numerous natural as well as cultural heritage elements. It has been recognized as National Geological Monument by the Geological Survey of India.

The American Society of Metals (ASM International) has recognized Zawar as an "International Historic Landmark" in 1988.

*"At this site are preserved the zinc retort distillation furnaces and remnants of related operation. The village artifacts together with temple ruins attest to the success of this metallurgical technology. This operation first supplied the zinc for making of brass instrument in Europe, a forerunner of the Industrial Revolution".*

Stromatolites record the signature of evolution of earliest life on Earth. The prolific growth of stromatolites is in the carbonate rocks deposited between 3900 million years to 541 million years ago in Earth's history. The Cyanobacteria, responsible for development of stromatolites obtain their energy through photosynthesis and thus utilizing carbon dioxide from the water and producing the oxygen. India fortunately has extensive development of stromatolites in the limestone and phosphate deposits, thus, provide a natural laboratory of study the past life and environment. The most prominent locality of the phosphatic stromatolites is at Jhamarkotra, Rajasthan, about 25 km southeast of Udaipur city on Udaipur–Jagat Road linking the famous Jhameshwar cave temple. Geological Survey of India declared the site as a National Geological Monument in 1976.

**Program:**

11.10.2022: Assembly at Dept of Geology, MLSU, Udaipur; 17-19 hr: Presentations by scientists; Dinner

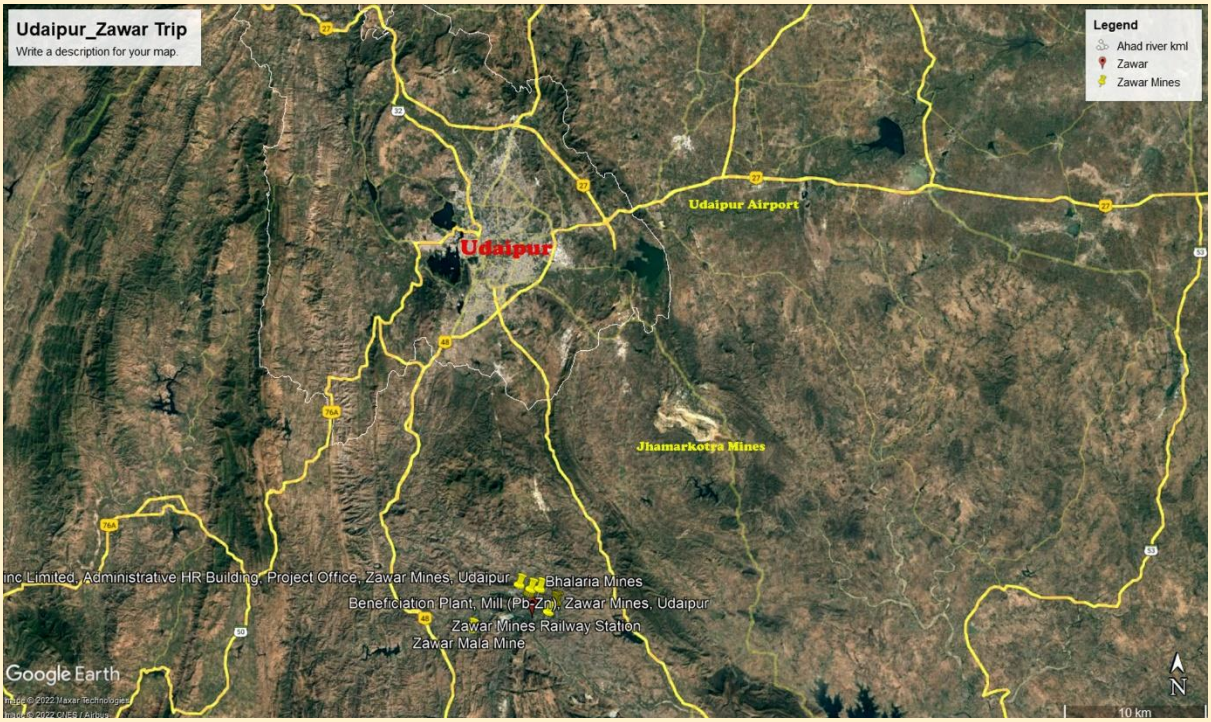
12.10.2022: 8:30 hr Departure Udaipur; 10:00 hr Arrival: Zawar (~50 km) drive. Starting point will be Ramanath Temple & Kund Area Geodiversity Park followed by a visit to GSI FTC + HZL Museum and Interpretation Centers and important geo-spots (ladder quartz veins, boudins-mullions-rods and other rock deformational structures); Visit to ancient mining, metallurgical and archeological sites (4 heritage spots), Field Lunch.

12.10.2022: Departure Zawar 14:30 hr; Arrival: Udaipur: 16:00 hr; Local sight-seeing; Fatehsagar, Maharana Pratap Smarak Moti-Magri. Night halt

13.10.2022: 8:30 hr Departure Udaipur; 10:00 hr Arrival: Jhamarkotra (~25 km SE of Udaipur), Visit to Stromatolite Park, Jhameshwar sacred grove, Baghdhara Natural Park (State Forest Dept). Field Lunch

13.10.2022: Departure Jhamarkotra 14:30 hr Arrival: Udaipur: 16:00 hr; Local sightseeing- Ahar Museum (~5000 yr old civilization) and other heritage spots-10th century Gangodbhav Kund, temples; Night halt at Udaipur; concluding session at the Dept. of Geology, MLSU, Udaipur.

Location plan of Udaipur City-Airport-Zawar-Jhamarkotra



**Number of Participants:**

Based on available resources we can accommodate up to 20 delegates. Depending upon financial grant a few senior scientists and research students may be provided full/part support.

**Participation Fee:**

Each Indian delegate need to pay Rs. 15,000/- as participation fee for the field workshop which include boarding & lodging during the workshop. Payment details will be provided in the second circular.

Interested participants are requested to send duly filled attached participation form to Prof. P. S. Ranawat (Email: psranawatk@gmail.com) before 15th July 2022. The selection will be on first come first basis.

**Patron:**
Dr. M. Ravichandran, Secretary, Ministry of Earth Sciences (Patron of SES)

**Organizing Secretaries:**

Prof. P. S. Ranawat, Udaipur
Prof. Harsh Bhu, Udaipur
Shree K. L. Verma, former MECL, Zawar
Shree Sudhir Bhatnagar, DMG, Udaipur
Shree Pradeep Kothari, RSMML, Udaipur

**Advisory Committee:**

Dr. R. Purohit, HoD, Dept. of Geology, Udaipur
Prof. Mukund Sharma, BSIP, Lucknow
Shri Neeraj Tripathi, Department of Archeology & Museums, Udaipur
Dr. S. K. Wadhawan, Jaipur
Prof. Manoj Pandit, Jaipur
Dr. Arvind Kumar, GSI-FTC, Zawar
Dr. Sunil Vashisth, HZL, Udaipur
Dr. Lalit Pandey, Convener INTACH, Udaipur Chapter

Zawar-GSI FTC

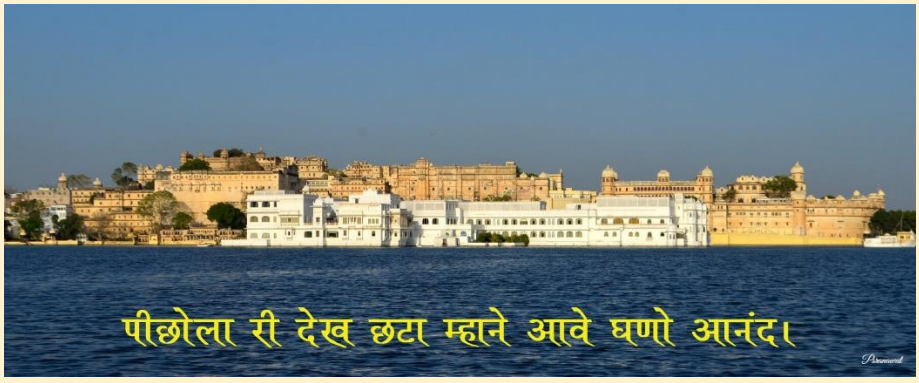
Jhamarkotra Stromatolites

Jhamarkotra Open quarry

Ripple marks in Aravalli metasediments


Ahar Museum

Maharana Pratap Smarak



1st International Geodiversity Day Celebrations

Field Workshop
on

# BAGH DINOSAUR NATIONAL PARK, DHAR DISTRICT, MADHYA PRADESH

5-8 November 2022

## FIRST CIRCULAR




**Organized By**

## The Society of Earth Scientists

http://earthses.org/

**PREAMBLE:**

UNESCO declared 6th October as International Geodiversity Day and in the year 2022, we will be celebrating 1st IGD across the globe. India is blessed with great geodiversity as it has recorded 3.5 billion years\'s history of evolution of Earth, some of the sections are unique. The Indian rock record bears the signature of various global geological events including evolution of life, mass extinction, making of Himalaya, meteoritic impact craters etc. We have decided to celebrate 1st IGD in a big way. A national program at Delhi followed by field workshops at different important geoheritage sites across the country.

The Late Cretaceous continental-marine-continental sedimentation took place over Precambrian basement with a hiatus during Cenomanian marine transgression along Narmada graben. The reactivation of Precambrian Narmada-Son lineament gave way to inland marine incursions. The continental sediments, overlying marine strata, contain well preserved dinosaur eggs, nests and bones, and fossil wood trees representing Late Cretaceous vegetation of the region. The end-Cretaceous outburst of lava in central and western India- the Deccan Trap responsible for the demise of Dinosaur, overlies/cover the fossiliferous sediments. Undisturbed well preserved sedimentary successions (8-19 m) are available for geological studies. It is one of the oldest discovery of Dinosaur fossils from Asia.

Bagh Dinosaur Geoheritage Site is one of the best exposed dinosaur fossil site of India. A Fossil museum at Mandu adds feather on the cap. The Fossil Park is under development as a Geopark by Government of Madhya Pradesh.

A three day field workshop is being organised to study the various outcrops and understand the conservation measures being taken up.

**PROGRAM:**

5.11.2022: Assembly at Indore; 5-7 PM: Presentations by scientists; Dinner
6.11.2022: 8:30 AM Departure Indore; 11:00 AM Arrival: Mandu HALT
Visit to Dino-museum, various geological sections of Deccan Trap; Historical site of Mondu. Halt at Mandu
7.11.2022: 8:30 AM Departure Mandu; 6:00 PM Arrival: Dhar HALT
Visit to various geological sections of Bagh Group around Jeerabad.
8.11.2022: 8:30 AM Departure Dhar; 7:00 PM Arrival: Indore HALT
Field work around Bagh and visit to proposed National park; Bagh Caves

**NUMBER OF PARTICIPANTS:**

Based on available resources we can accommodate up to 20 delegates. Depending upon financial grant few senior scientists and research students may be provided full/part support.

**PARTICIPATION FEE:**

Each Indian delegate need to pay Rs. 15,000/- as participation fee for the field workshop which include boarding & lodging during the workshop. Payment details will be provided in the second circular.

Interested participants are requested to send duly filled attached participation form to Dr. Sameeta Rajora; Mr. K. Najmi; Mr. Vishal Verma (sameeta_rajora@yahoo.co.in; khuzaimanajmi@gmail.com; vishalverma.dfnp@gmail.com) before 15th July 2022. The selection will be on first come first basis.

**PATRON:**

Dr. M. Ravichandran, Secretary, Ministry of Earth Sciences (Patron of SES)

**ORGANISING SECRETARIES:**

Dr. Sameeta Rajora, IFS, Bhopal
Mr. K. Najmi, Indore
Mr. Vishal Verma, Dhar

**ADVISORY COMMITTEE:**

Prof. Ashok Sahni, Lucknow
Prof. G.V.R. Prasad, Delhi
Dr. D. M. Mohabey, Nagpur
Dr. Rasik Ravindra, Faridabad
Dr. Satish C. Tripathi, Lucknow

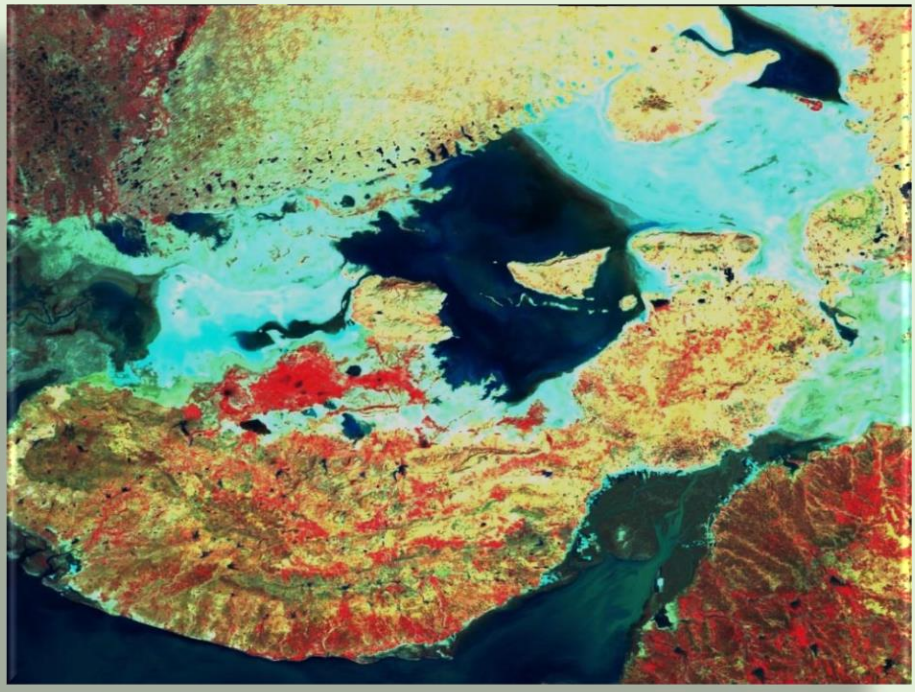
1st International Geodiversity Day Celebrations

Field Workshop
on

# Kachchh Paleo-rift basin: an ideal tectonics and sedimentary package for Indian Geopark

12-16 November 2022

**FIRST CIRCULAR**



**Organized By**


**Department of Earth and Environmental Science**
**KSKV Kachchh University, Bhuj (Kachchh)**
https://www.kskvku.ac.in
&
**The Society of Earth Scientists**
http://earthses.org/

***[Cover Photo:** A satellite imagery of Kachchh Basin showing three distinct rocky uplifts– 'Mainland', 'Wagad' and 'Island belt' separated by the Quaternary geomorphic features 'the Ranns' and 'the Banni plains'. The distinct geological boundary to the north separates 'Thar sand dunes' and 'Rann of Kachchh'; it is also an Indo-Pakistan international border. Large saucer shaped depression of the Rann is a Recent sedimentary basin. The yellow color in the rocky uplifts are the reflections of Sandstones and limestones while the dark gray color belt in the mainland depicts Deccan trap basalts, the western most whitish patches are Eocene Fulra/ nummulitic limestone. To the NE corner of the basin a small circular outcrop is the Precambrian exposure known as the Nagarparkar complex which happened to be the basement of the Kachchh basin. To the SE corner an exposed dark red unit is the Saurashtra horst, the southern limit of the Kachchh Basin. The sharp boundaries of each geomorphic unit are mostly following the faults.]*

## PREAMBLE:

UNESCO declared 6th October as International Geodiversity Day and in the year 2022, we will be celebrating 1st IGD across the globe. India is blessed with great geodiversity as it has recorded 3.5 billion years\'s history of evolution of the Earth; some of the sections are unique to the world. The Indian rock record bears the signature of various global geological events including evolution of life, mass extinction, making of Himalaya, meteoritic impact craters etc. We have decided to celebrate 1st IGD in a big way. A national program at Delhi followed by field workshops at different important geoheritage sites across the country.

The Kachchh Basin is known worldwide for its richly fossiliferous Mesozoic & Cenozoic sedimentary strata, which record evolution of ecosystem along the southern margin of the Tethys Sea, which progressively shifted northward across the equator. It was a rift basin situated at the western margin of the Indian craton. Synsedimentary faults subdivided the basin into several sub-basins, whose depositional history differs to some extent. The strata crop out in three areas; the so-called Island Belt, the Kachchh Mainland, and the Wagad Uplift. The Mesozoic and Cenozoic sediments deposited during the pre-rift, syn-rift and post-rift phases. The uplifts are delimited by the E-W running basinal faults that played major role in formation of the basin and present day landscape too. They are active in Quaternary and also are responsible for active seismic behavior of the basin. The faults from north to south are a) Nagar Parkar Fault, b) Island Belt Fault, c) Kachchh Mainland Fault, d) South Wagad Fault, e) Katrol Hill Fault and f) North Kathiyawar Fault. The entire structural and sedimentological system is governed by the basement tectonics which is very well discernible in the patterns of sedimentation and various structural domes, anticline, synclines, basins and secondary faults. The Rift related sedimentation in Mesozoic is separated from the open sea sag basin type Tertiary sedimentations by a plume generated volcanism and plutonism. The last major episode of Quaternary is characterized by Rann, coastal alluvial and hinterland fluvial deposits.

During the workshop the key Mesozoic and Cenozoic exposures, atypical exposed fault systems, ideal dyke and lava flows with K/T boundary, ideal Quaternary tectono-geomorphic features, small to large structural domes, exposures of Martian analogues and ideally restored large Jurassic fossil wood will be covered.

Several stratigraphical sections with diverse fossils groups will be covered for sedimentological, palaeoecological, and litho-, bio- and sequence-stratigraphic point of view. Mesozoic & Cenozoic environments range from flood-plain deposits, represented by red beds and fluvial sandstones, to shallow-marine nearshore, partly deltaic, fine- to coarse-grained siliciclastics and to offshore basinal mudstones with spectacular condensation phenomena. Carbonates were deposited mainly during the Bajocian–Bathonian and Eocene-Miocene time intervals. The intermediate time

intervals are nearly exclusively dominated by siliciclastics. This change in sediment composition is explained as a climatic shift from semi-arid and fairly warm to humid and cooler conditions. Ammonites and dinoflagellates allow a precise biostratigraphic zonation of the marine strata, whereas the benthic macrofauna, usually dominated by bivalves and brachiopods, in rare cases also by corals and sponges, as well as trace fossils help to fine-tune the palaeoenvironmental reconstructions.

Distinct and text-book type reverse, normal, strike slip and oblique slip faults associated with the major E-W running faults are always a prime attention to the graduate, post-graduate students of Geology. Atypical structural domes near Bhuj and in the western Kachchh near Guneri are important to preserve for the next generation geologists. The neotectonic features like fault scarps, alluvial fans, gorges, triangular facets etc. are prime attractions for the Quaternary scientists. The vast plains of Banni and the great Rann of Kachchh are recent Geological basins where sediments are laid down in the half-graben depressions. Coastal dunes and mudflats as well as associated fluvial sediments are showing sea level changes and land uplift as well as subsidence in last few thousand years.

A four-day field workshop is being organised to study the various outcrops and landforms to understand the facets of Kachchh geology and also to think about its conservation measures as once we cut all these landforms and exposures no future geologist will ever understand the unique field geological features. The field group will also discuss the area/s to be proposed for creation of a Geopark.

**PROGRAM:**

| Date | Traverse | Places to cover |
|---|---|---|
| 12-11-2022 | Arrival at Bhuj (Hotel) Lecture at Department of Earth and Environmental Science, Kachchh Univ. | Visit of Geological Museum at the Department and Presentations by Coordinators followed by Dinner |
| 13-11-2022 | Bhuj and surrounding area and Mandvi | Structural, Tectonic, Igneous and Geomorphological Heritage of the Kachchh. Tapkeshwari Caves, Khari Gorge, Kodki Dyke and Fault, Columnar Joints in Bhuj Sandstone, Deccan Flows of Dhunai, Bauxite and Bentonite Field, Estuary of Rukmavati River, Coastal Beaches and Beach rocks of Mandvi coastal geomorphic features |
| 14-11-2022 | Bhuj to Jumara to Guneri to Lakhpat to Bhuj | Mesozoic Heritage of Kachchh Basin: Middle-Late Jurassic of Jumara Dome Late Jurassic to Early Cretaceous of Jara Dome and Amiyu Village. Early Cretaceous-Deccan Trap unconformity, Cenozoic-Quaternary Faulted Contact (Kachchh Mainland Fault) at Guneri Dome Lakhpat Fort on the Eocene Landscape |
| 15-11-2022 | Bhuj to Matano Madh to Narayan Sarovar to Naliya to Bhuj | Cenozoic Geoheritage of the Kachchh Basin: Matanomadh Helipad Condense Section of Eocene-Oligocene and Miocene Deposit |

| | | |
|---|---|---|
| | | Matanomadh Jarosite Martian Analog site, Panandhro Lignite Mine, Narayan Sarovar Mudflats<br>Deccan Trap-Cenozoic Unconformity at Kakadi River section, Rakhadi River Nummulitic limestone section.<br>Wayor Miocene Coral Bed |
| 16-10-2022 | Bhuj to Kaladungar to Dharmashala to Dhordo and Back to Bhuj Valedictory function at Dhordo | Geotoursim sites of the Kachchh Basin, Kala Dongar Hill, Panoramic view of the Great Rann of Kachchh, Dharmashala, Dhordo white desert |

**NUMBER OF PARTICIPANTS:**

Based on available resources we can accommodate up to 20 delegates. Depending upon financial grant few senior scientists and research students may be provided full/part support.

**PARTICIPATION FEE:**

Each Indian delegate needs to pay Rs. 20,000/- as participation fee for the field workshop which include boarding lodging during the workshop. Interested participants are requested to send duly filled attached participation form to Prof. Dhirendra Kumar Pandey, Jaipur (9928369323; dhirendrap@hotmail.com) or Prof. M.G. Thakkar, Bhuj (mgthakkar@rediffmail.com) before 15th July 2022 for participation in the workshop. The selection of delegates will be on first come first basis.

**PETRON:**

The Vice-Chancellor, KSKV Kachchh University, Bhuj
Dr. M. Ravichandran, Secretary, Ministry of Earth Sciences (Patron of SES)

**ORGANISING SECRETARIES:**

Prof. Dhirendra Kumar Pandey, Jaipur (9928369323; dhirendrap@hotmail.com)
Prof. M.G. Thakkar, Bhuj (mgthakkar@rediffmail.com)
Dr Gaurav Chauhan, Bhuj (gdc.dew@gmail.com)
Dr Jitendra Kumar Sharma, Jaipur (jitendrageology@gmail.com)
Mr Suraj Bhosale, Bhuj (suraj6364geo@gmail.com)

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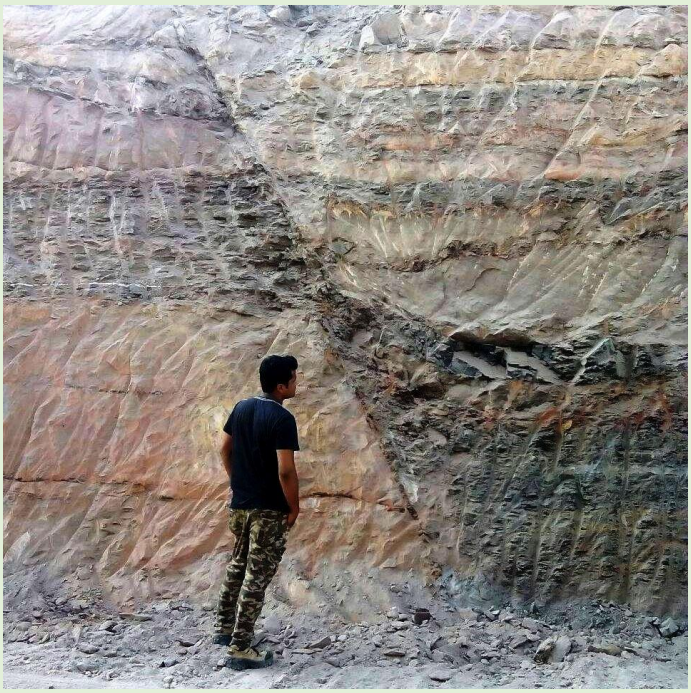
Prof. L. S. Chamyal, MS University of Baroda
Prof. D. M. Maurya, M S University of Baroda
Dr. Bhawani Singh Desai, Gandhinagar
Dr. Sabyasachi Shome, Kolkata

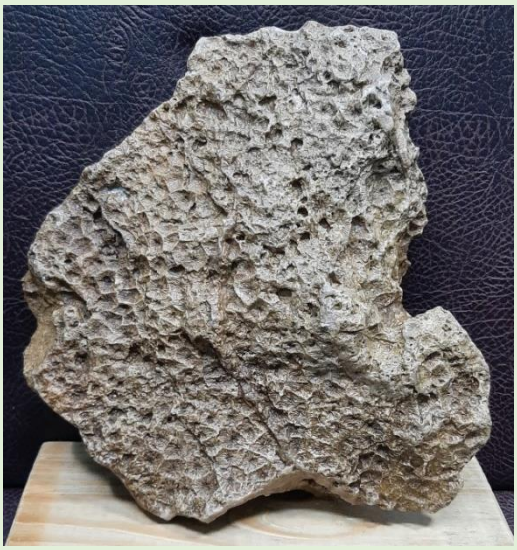


**Clockwise from top left:**

1. **Normal fault in the Bhuj Formation, near Kodlki village 10 km from Bhuj**
2. **Ammonite**
3. **Lignite mine at Panandhro**
4. **Dolerite Dike at near Kodki village**
5. **Rakhdi River: Nummulitic – Fulra limestone**








**Clockwise from top left:**

1. Corals weathered out from the high-diversity coral beds of the Bathonian Jumara Coral Limestone in the Jumara Dome
2. Tapkeshwari Cave – formed due to secondary porosity
3. Beach rocks at Mandvi coast
4. Khari River Gorge near Bhuj
5. Miocene Corals
6. Basal Cretaceous *Indotrigonia* concentration at Umia village, Kachchh Basin

1st International Geodiversity Day Celebrations

Field Workshop
on

# CRETACEOUS SUCCESSION OF PERAMBALUR AND ARIYALUR DISTRICTS, TAMIL NADU FOR POTENTIAL GEOPARK

19-22 November 2022

Organized By

**The Society of Earth Scientists**
http://earthses.org/
**Department of Geology, University of Madras**
https://www.unom.ac.in
**District Administration, District Perambalur, Tamil Nadu**
https://perambalur.nic.in/

**PREAMBLE:**

International Geodiversity Day (IGD) is marked on 6th October by UNESCO and in the year 2022, we shall be celebrating our First IGD across the globe. India offers a great geodiversity as seen in the past 3.5 billion years of Earth's history with a number of excellent geological sections. The Indian rock stratigraphy bears testimony of interesting global geological events, primarily of the evolution of life, periodic mass extinction of organisms, making up of Himalaya, great flood basalts, etc. We have decided to celebrate the First IGD in a grand way. It will start with a national program at Delhi, the capital of India, followed by field workshops at different important geoheritage sites across the country.

With the breakup of Gondwanaland that included all the Present southern continents and India, the Early Cretaceous continental sedimentation occurred on the Precambrian basement during the Aptian represented by Upper Gondwana rocks with its Ptilophyllum flora. These outliers are known all along the coromandel coast, from Sivaganga, Terani (Preambular district), Sriperumbudur, Nellore, Ongole, East Godavari district and Athgarh in Orissa. This was followed by a marine transgression along Cauvery basin in the Late Albian. The marine sediments, showing the maximum flooding surface in the first instance slowed down in the later periods with shallower marine sediments leading to a non-marine dinosaur bone bearing Kallamedu sandstone in Maastrichtian. The uniqueness of the Ariyalur marine rocks is that almost every bed yield fossils, be it a sandstone, limestone, clay or conglomerate. Well preserved ammonites, belemnites and other molluscs, echinoids, coral-algal reefs, bryozoans, shark teeth, dinosaur egg, dinosaur bones, and fossil wood represent a rich Late Cretaceous fauna. The end-Cretaceous shallowing of the sea and subsequent Palaeogene marine transgressions with huge nautiloids in the Niniyur Formation is a classic end of the marine cycle of events. Undisturbed, well preserved and easily accessible sedimentary successions (combined thickness > 1000 m) are available for geological studies. The Geological Survey of India started its collection and preservation of type specimens beginning with the fossils from this Ariyalur area.

Sattanur Fossil wood Geoheritage Site is one of the best preserved and well exposed fossil sites in India. The fossil is nearly 26.2 m (86 feet) in length and 8.6 m in girth (54 inches dia). A Fossil museum at Ariyalur adds a feather to the cap. A Fossil Park is under development near Karai village to exhibit the innumerable belemnites, worm tubes, molluscs and shark teeth as they occur. As is evident, the limestone at various stratigraphic levels from Upper Albian to Maastrichtian support seven cement plants in this Cauvery basin outcrop area. The mines of these plants are excellent sections to visit.

A three-day field workshop is being organised to study the various outcrops and understand the conservation measures being taken up.

**PROGRAM:**

**19.11.2022:** Assembly at Chennai and 5-7 PM: Presentations by scientists; Dinner, **Halt at Chennai**

**20.11.2022:** Proceed to Perambalur; 7.00 AM-1PM. Check in to hotel at Perambalur. Lunch
2.0-6.0PM field visits; Karai plant beds, Karai bad land, Sattanur fossil wood, Karambiyam ammonite bed. **Halt at Perambalur.**

**21.11.2022:** 8:30 AM Departure from Hotel: 8.30 AM to 1PM to Dalmia mine sections, Alandalaipur.
1.30-2.30 lunch. 3.0 to 5 PM visit to TANCEM and TAMIN mine sections. **Halt at Perambalur.**

**22.11.2022:** 8:30 AM Departure from Hotel; 8:30 AM to 1.00 PM Visit to Museum. Lunch, Departure to Chennai 2.00 PM. **Halt at Chennai.**

**NUMBER OF PARTICIPANTS:**

Based on available resources we can accommodate up to 20 delegates. Depending upon financial grant few senior scientists and research students may be provided full/part support.

**PARTICIPATION FEE:**

Each Indian delegate need to pay Rs. 15,000/- as participation fee for the field workshop which include boarding & lodging during the workshop. Payment details will be provided in the second circular.

Interested participants are requested to send duly filled attached participation form to **Dr. B. Gowtham, Chennai (Email: bgowtham23@gmail.com)** before 15th July 2022. The selection will be on first come first basis.

**PETRON:**

Dr. M. Ravichandran, Secretary, Ministry of Earth Sciences (Patron of SES)
Tmt. P. Sri Venkada Priya, District Collector of Preambular districts, Tamil Nadu

**ORGANISING SECRETARIES:**

Dr. B. Gowtham, Presidency College, Chennai
Prof. Shaik Mohamed Hussain, University of Madras, Chennai
Dr. Jyothi, National College, Trichy
Mr. Nirmal Raja, Chennai

**ADVISORY COMMITTEE:**

Dr. K. Ayyasami, Chennai
Dr. R. Nagendra, Chennai
Dr. K. Karikalan, Chennai
Dr. Mu Ramkumar, Salem
Dr. Satish C. Tripathi, Lucknow

# I$^{st}$ INTERNATIONAL GEODIVERSITY DAY

## Celebrations

## PARTICIPATION FORM

Please fill up the form and mail it to Organizing Secretary of respective Field Workshop. For details see the circular.

| | |
|---|---|
| Title of the Field workshop interested to attend | |
| Name | |
| Organization | |
| Post | |
| Postal Address | |
| Email | |
| Mobile No. | |
| WhatsApp No. | |

I agree to pay the participation fee as and when notified.

Signature

(Name )

6TH OCTOBER

# INTERNATIONAL GEODIVERSITY DAY

THE DIVERSITY SUSTAINS THE LIFE