Quaternary Chronicles
Happenings in the Sub-continent
Vol.7 No.2 August 2025

FROM THE AOQR DESK

Dear Reader,

Welcome to another volume of the Quaternary Chronicles, thoughtfully compiled by our new team of Early Career Researchers and Associates. I would like to extend my sincere thanks to the team, working under the guidance of our Secretary, Dr. Binita Phartiyal, for their dedication in bringing this volume together.

One of the major aims of the AOQR is to foster improved communication between scientists and society. In line with its scientific commitments, AOQR is proud to be a co-sponsor and knowledge partner of INQUA 2027.

Over the past quarter, AOQR has undertaken several meaningful initiatives. Notably, we hosted five engaging lectures on key topics in Quaternary science. I extend my gratitude to our esteemed speakers-Dr. Vineet Gehlot, Dr. Ravi Korisetter, Dr. Ignacio Jara, Dr. Francesco S. R. Pausata, and Prof. Jeffery R. Stone, for igniting the spirit of INQUA 2027 through the Standing Together for the Future talk series.

In addition, we presented a series of insightful podcasts addressing important areas in Quaternary research. I deeply appreciate the contributions of our content creators, Professor Shanti Pappu, Dr. Jyoti Srivastava, Dr. Swati Tripathi, Dr. Siddharth Prizomwala and Dr. Firoze Qumar. A special thanks goes to Ms. Veera Singh, whose voice brought each script to life with clarity and warmth.

The spirit of collaboration and enthusiasm in preparation for INQUA 2027, to be held in Lucknow, continues to grow-and it is truly heartening to witness this momentum.

I sincerely thank all the contributors to this volume and warmly invite our readers to join the Association and be a part of this exciting journey.

- Dr. Vandana Prasad
President AOQR

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AOQR Governing Body

To join QuatChron_AOQR Google Group:
Open https:// groups.google.com, login (using Gmail account), search for "QuatChron_AOQR" and ask to join.]

As this is a community-driven newsletter, the role of the ECR team is limited to copy editing and reporting only. It will be the sole responsibility of the author/ contributor to ensure the accuracy and authenticity of the contributions. The ECR team is pro-active in collecting as much useful information as possible; however, we rely on community inputs and will not be responsible for any omissions.

AOQR MEMBERSHIP CALL

Researchers of Quaternary Science of Indian sub-continent are welcome to submit your application. Be a part of a multidisciplinary team of researchers, and practitioners of Quaternary Science and represent Indian Quaternary Science at an international level. Members can get priorities at our annual e-conferences, publish in the edited books/ journal volumes by the members of the AOQR, access to webinars, e-conferences and specialized thematic workshops etc.

Write to us at **aoqr2019@gmail.com** *for membership application form.*
The membership of the AOQR is open to all individual of academia and industry subject to verification.

Welcome!

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Warming Up to INQUA 2027!

A Sneak Peek into the Action

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Organising General Secretary, INQUA 2027

INQUA Congress-the Olympics of Quaternary Congress's/Conferences is not merely a seven-day scientific congress held every four years, but an opportunity for the host country to connect meaningfully with the global scientific community in the years leading up to the event. For India, the road to INQUA 2027, to be held in Lucknow, has started gaining vibrant scientific exchange, public engagement, and collaborative momentum.

To mark this journey, the INQUA 2027 organizing team launched a rich tapestry of Pre-INQUA activities to strengthen networks and raise awareness about Quaternary science. Central to these efforts is the lecture series "Standing Together for the Future", a platform that has already featured more than a dozen talks by leading national and international scientists. These lectures, ranging from the South Asian monsoon, Quaternary glaciation, the Anthropocene, prehistoric tools, Greening of the Sahara, Climatic variations in the Tropical Andes, reflect the diversity and depth of inquiry within the Quaternary sciences. Each talk is live-streamed and archived on the AOQR India YouTube channel (www.youtube.com/@AOQR_INDIA).

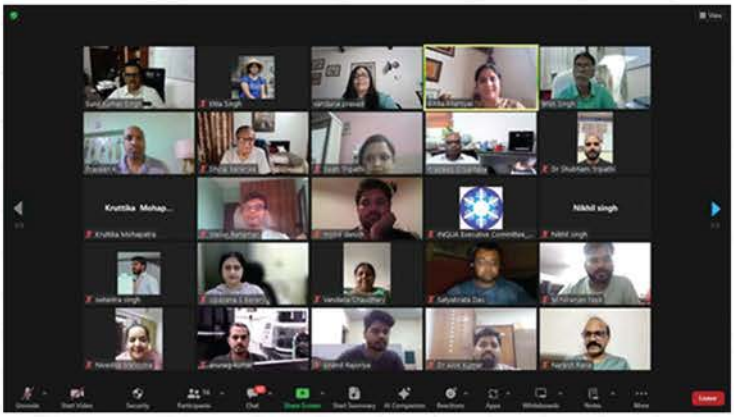
Complementing the lectures is the INQUA 2027 Podcast Series, available on Spotify (https://open.spotify.com/show/7fg9ARR9oleQJNCpZpThjp?si=iSrMRdvPSs6gjSgtZoxHCw). Designed to demystify complex concepts and engage broader audiences, the podcast has evolved through multiple seasons. From introducing the Quaternary period and India's unique geological story to celebrating Lucknow's culture, heritage, and history, the host city, the podcast bridges science and society.

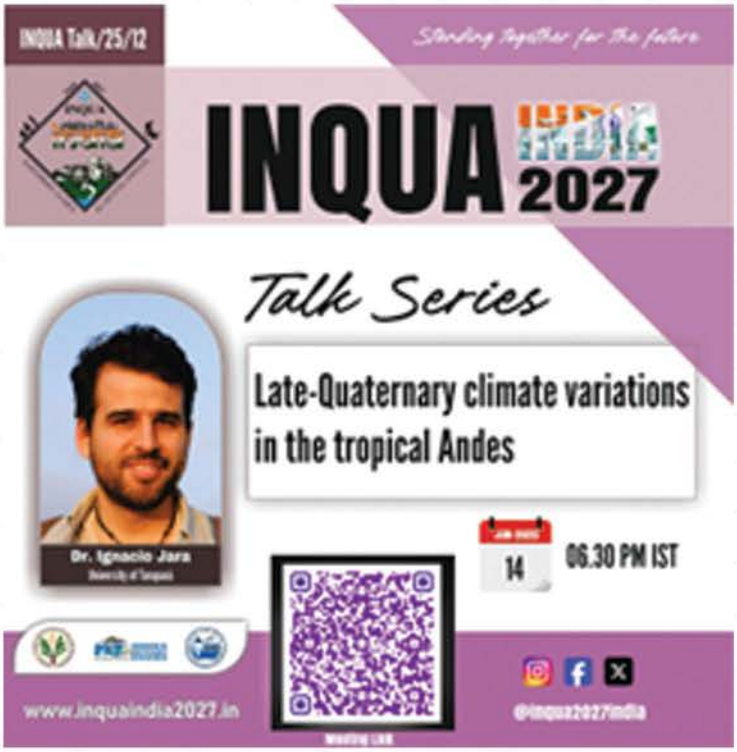
Further cementing this spirit of inclusion and co-creation, the release of the First Circular in June 2025 formally opened the call for session proposals and training programs and workshops, inviting contributions from researchers and educators worldwide. These calls reflect a

commitment to building a congress that is shaped not only by India but by the global Quaternary community. These Pre-INQUA initiatives embody the true essence of INQUA: not simply as an event, but as an ongoing, collaborative process.

Pre INQUA activities in the last Quarter (April to July)

The eleventh talk of the series was given by Dr. Vineet Gehlot from WIHG, Dehradun, on 'The Current state of strain rate in India' on 21 April, 2025. Dr. Ravi Korisetter delivered the twelfth talk on 'Late Quaternary human response to climate in southern India' on 31st May 2025. Dr. Ignacio Jara delivered the thirteenth talk on Late Quaternary climatic variations in the tropical Andes on 14th June 2025. Dr. Francesco S. R. Pausata -The Greening of the Sahara: Past Changes and Future Implications was scheduled on 22nd June 2025 as the fourteenth talk of the series and Prof. Jeffery R. Stone from Indiana State University, USA delivered the fifteenth talk on -The influence of Holocene marine flooding events on the coastal freshwater ecosystem of Lake Izabal, Guatemala, on the 26th July 2025.





SEASON 2

Episode 7: Chikankari and Zardozi: Pride of Lucknow on April 15, 2025, **by Veraa Singh**

Episode 8: Hand-axes to Heritage: South Asia's story on April 28, 2025, **by Dr. Shanti Pappu Veraa Singh**

SEASON 3:

Episode 1: The Indian Coastline and Mangroves on May 15, 2025, **by Dr. Jyoti Srivastava & Veraa Singh**

Episode 2: Awadhi Cuisine on May 28, 2025 **by Veraa Singh**

Episode 3: Unlocking Ancient Climates with Pollen Records on June 15, 2025 **by Dr. Swati Tripathi & Veraa Singh**

Episode 4: Soulful Wonders around Lucknow on June 28, 2025 **by Veraa Singh**

Episode 5: Tsunami Tales from the West Coast of India on July 15, 2025 **by Dr. Siddharth Prizomwala and Veraa Singh**

Episode 6: Indian monsoon and the case studies from the core Monsoon zone of India on July 28, 2025 **by Dr. Md. Firoze Quamar and Veraa Singh**

Podcast - Content Creators...

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SNEAK PEEK & Discussions

Manuscript Hostage: When Scientific Journals Stall Progress

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In academia, manuscripts and peer-reviewed publications serve as the currency of science, essential not only for disseminating research findings but also for securing new funding, advancing scientific careers, and building collaborative networks. However, researchers are increasingly facing a troubling trend, with journals holding submitted manuscripts "HOSTAGE" for extended periods without initiating meaningful peer review or engaging in protracted reviews/comments that end in rejection based on already known and declared issues. We recently experienced this first hand with one of our manuscripts submitted initially in a journal XYZ (journal name matters less than the pattern itself). After submitting our manuscript to this journal, which is highly relevant to our research work, we received initial reviews within a fair 1.5 - month time frame.

All three reviewers recommended major revisions, with two of them raising some general concerns and significant concerns over the "limited sample size", an issue we had already acknowledged in the original submission. Given the project constraints, our initial manuscript had already outlined why further sample collection was unfeasible. In response, we thoroughly revised our manuscript based on the reviewer comments, specifically clarifying the limitations with logical constraints and providing contextual justification supported by robust discussion and data. For readers' context, "the additional sampling required to address reviewers' concern was beyond the scope of our project, constrained by time, field logistics, and available funding". Still, we believed that our initial datasets offered valuable insights for the scientific community. However, following the revision, the first two reviewers rejected the manuscript, citing the same limitations we had chose to overlook when recommending revision. Their decision stated that the dataset was "too limited to meet the standards typically expected for publication in that journal." While we fully acknowledge and agree with the sampling limitations in our work, we were left wondering why the manuscript was sent back for revision at all, if the reviewers had already determined it did not meet basic publication criteria of the journal. This kind of delayed rejection suggests an inefficient, perhaps careless use of the peer review process, which costs researchers precious time (four months in our case), delays the dissemination of legitimate findings, and weakens their ability to pursue new research funding. It raises the uncomfortable possibility that some reviewers knowingly prolong the review cycle for manuscripts that face insurmountable methodological constraints, thereby stalling scientific progress. Had the same decision been communicated at the initial review stage, it would have saved months of effort and enabled faster redirection to a more suitable journal. As researchers, we need to advocate for greater transparency and accountability in the journal peer review process to ensure that the gatekeeping process remains fair, timely, and scientifically constructive and not a mechanism of delay and discouragement for scientific researchers.

I wanted to take this opportunity to request that my colleagues/researchers, especially those serving as reviewers and journal editors, recognise that it is equally important not to endorse or perpetuate such practices. Let us commit to upholding fairness, clarity, and professional integrity so that the peer review system truly serves the advancement of scientific research.

Seriously Funny: Cartoons That Explain Science

Ayyappadas C. S., *PhD Scholar,*
Oxford Luminescence Dating Laboratory
Department of Geography and the Environment,
University of Oxford

Who are we?
We're a group of people who study and work with complex scientific ideas—you can call us scientists.
What do we know?
We know a great deal about Earth's history, such as its age, the formation of minerals, the timing of the last Ice Age, and the state of sea levels 20,000 years ago.
What techniques do we use?
We use advanced tools and methods, both in the lab and in the field, involving detailed calculations, measurements, and instruments.

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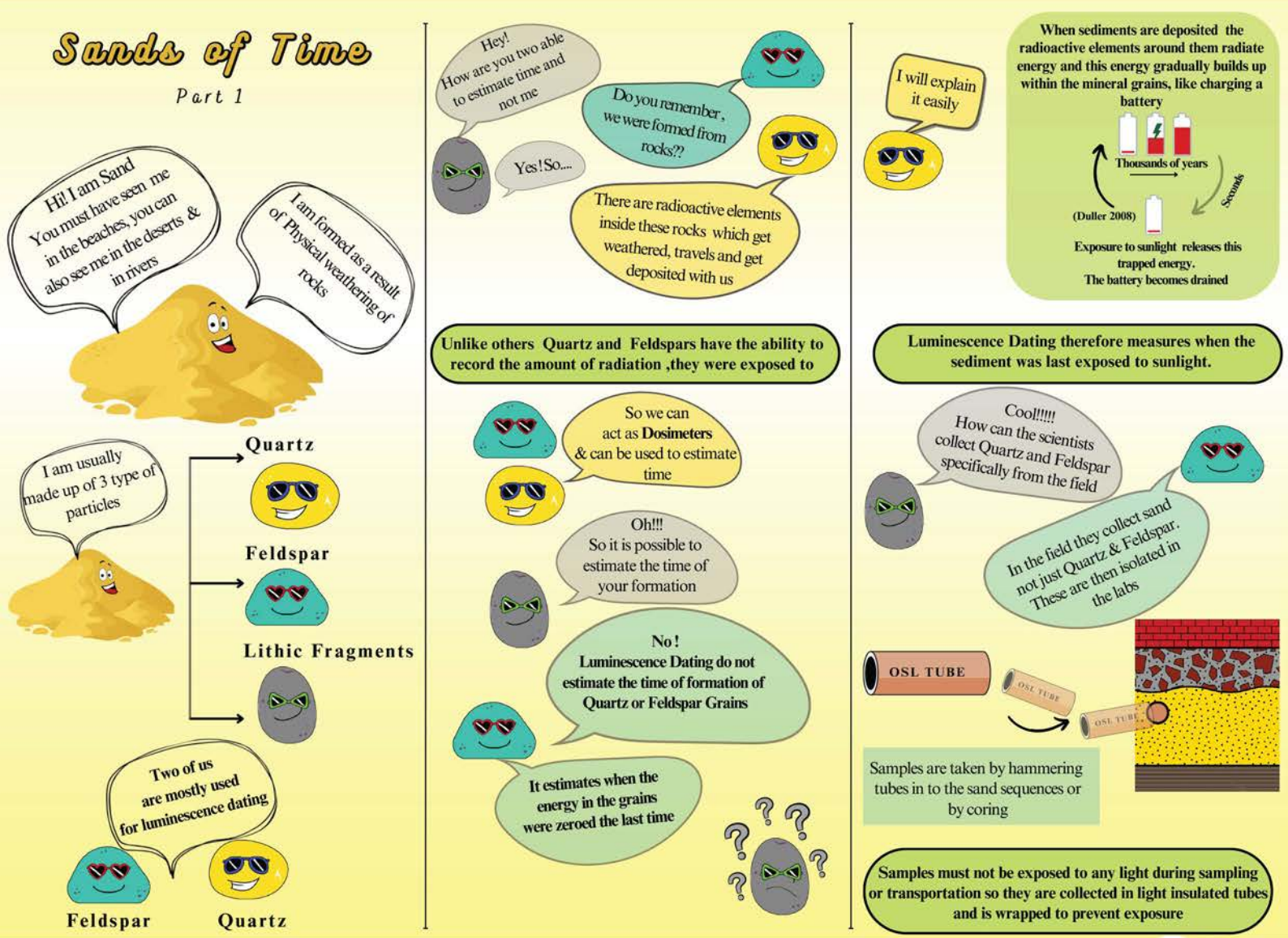
Can you explain it to a ten-year-old?

!! Not sure…….

You might wonder why we should explain a palaeoscience concept to a ten-year-old. But the truth is, most people outside your research field, including other scientists, understand your work at about the level of a ten-year-old. While academic papers, conference presentations, and technical journals play a vital role in communicating science within expert communities, their language and structure often create barriers for non-specialists. Even within science, a researcher from one field might struggle to understand the work of someone in another. Hence, it is important to find effective ways to communicate your science so that anyone, regardless of background, can understand and appreciate what you do.

The human brain is naturally wired to respond more effectively and quickly to visuals than to text. Visuals also trigger emotional and intuitive responses, making information more engaging, easier to understand, and more memorable. Therefore, visual communication, through illustrations, infographics, and storytelling, becomes a powerful tool for conveying complex topics to broader audiences. Cartoons are often undervalued as simple, missing deeper meaning, and as a medium meant for children, but this lighthearted nature is what makes them one of the best tools for transmitting science across diverse backgrounds.

Cartoons, in particular, have a special power; they can break down a big idea into a single comic panel or walk the viewer through a process step by step. Using familiar characters, comparisons, humour, emotion and always with creativity, they can bridge the gap between technical knowledge and everyday understanding. Many people perceive scientists as serious, rigid, and distant individuals; however, using cartoons helps challenge this stereotype. They can portray scientists as curious and creative individuals who



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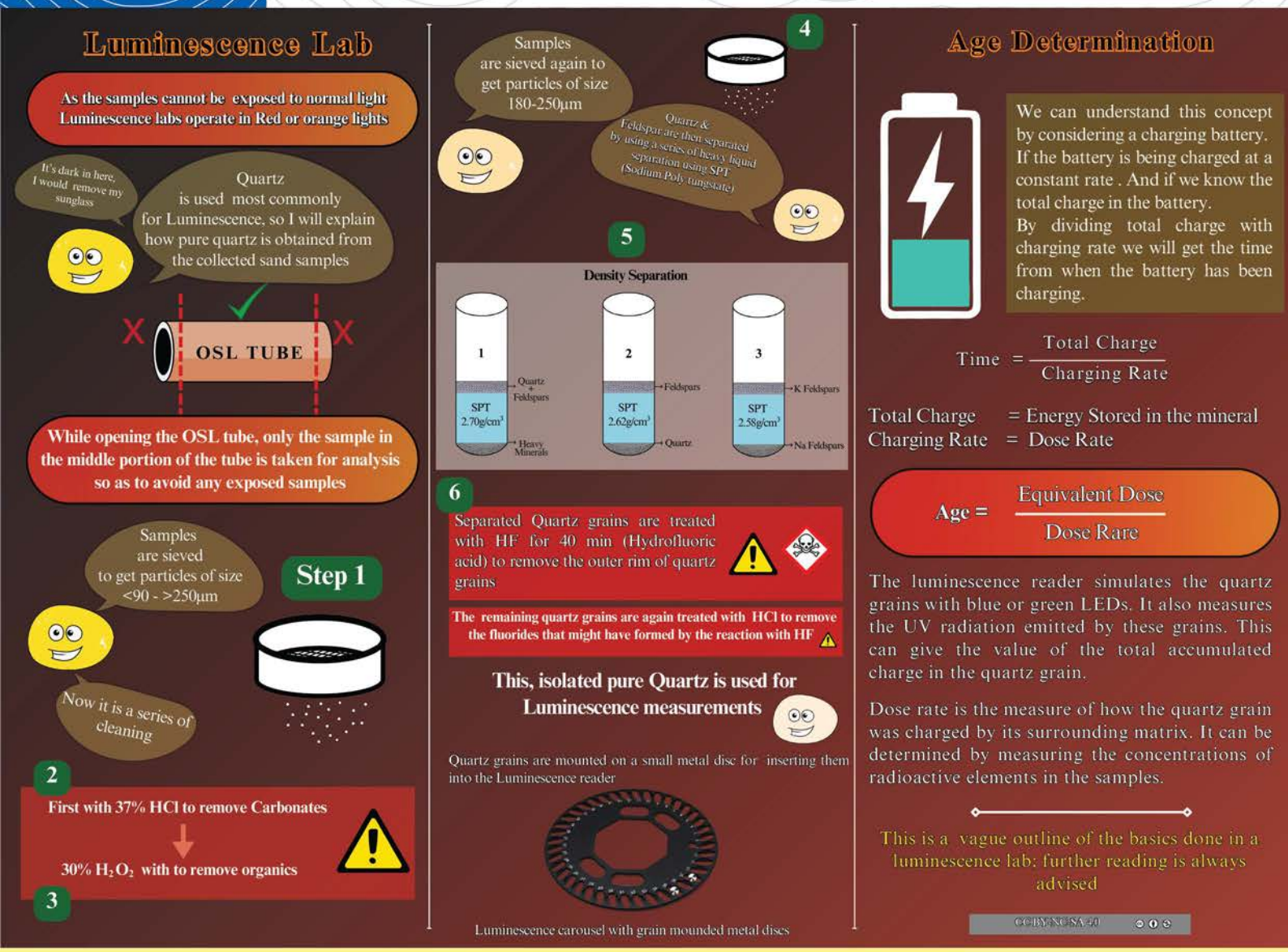

are also confused explorers and skilled storytellers. This work marks the beginning of a broader project, "Googly Eyes," which aims to explain geomorphic techniques through cartoons and illustrations. The featured illustration, "Sands of Time," offers a simplified introduction to the Optically Stimulated Luminescence (OSL) dating technique and was used during lab inductions for first-year undergraduate students. Remarkably, even those with no prior background were able to grasp the basic concepts of OSL dating. By turning complex scientific methods into engaging visual stories, this project seeks to bridge the gap between expert knowledge and public understanding, making science more accessible, inclusive, and enjoyable for all.

https://sites.google.com/view/cartooonlearn/home

Acknowledgements

I acknowledge the use of ChatGPT for language corrections and Canva for creating my illustrations.

Report / Views:

Bihar Museum: A Confluence of Human and Natural Histories

Prabhin Sukumaran

A recent visit to the Bihar Museum in Patna revealed a rich and thoughtfully curated space that underscores the significance of museums in bridging human and natural histories. Unlike conventional state museums, Bihar Museum goes beyond the display of artefacts; it provides an immersive narrative that situates the evolution of human society within broader environmental and temporal frameworks. It was an honour to have the opportunity to look around the exhibits alongside Prof. Ravi Korisettar and Dr. Simadri Ota, two of the finest archaeologists in the country, together with museum officials. Their insights into the exhibits enriched the expe-

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rience, highlighting the importance of critical archaeological perspectives in interpreting India's long and complex human past. Quaternary science researchers find a compelling case study in the museum of how they can effectively weave archaeological, paleontological, and historical records together for public engagement. The exhibits span from the prehistoric era to the contemporary period, strongly emphasizing the cultural transitions of Ganga plains—a region that has been a cradle of human–environment interaction for millennia.

Of particular relevance are the galleries on early human settlements, the Mauryan Empire, and tribal life, which collectively reflect the dynamic interplay between environmental change, resource use, and cultural evolution. The natural history gallery complements this by showcasing regional biodiversity and geological formations, creating an integrated context in which the human story is inseparable from the landscape.

Museums like this are crucial in translating scientific research for broader audiences. They act as living archives where stratigraphy, material culture, and oral histories intersect, making them invaluable for public education and interdisciplinary collaboration. For the Quaternary science community, such institutions offer both a repository of data and a platform to communicate the relevance of deep-time perspectives to contemporary issues such as climate change, land use, and sustainability.

A field visit to the Luni River floodout zone, northwestern India

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A report (postgraduate research blog post) was published by the British Society for Geomorphology (BSG) on 3rd June 2025 based on a recently completed (January 2025) field trip by the author. A team comprised of the author, Dr Manudeo Singh (The Royal Society-Newton International Fellow) and Prof Stephen Tooth (lead supervisor) from Aberystwyth University conducted an extensive fieldwork along the lower ephemeral Luni River floodout zone (LRFZ) in the Indian Thar Desert. The project is supported by the Postgraduate Research Grants from BSG, Quaternary Research Association (QRA), AberDoc and President Scholarships. The research focuses on deciphering the palaeoenvironmental and geomorphological dynamics of the ~60 km LRFZ in southern Rajasthan, where the river bifurcates into anabranching and distributary channels. The team collected sediment samples for Optically Stimulated Luminescence (OSL) dating, micromorphology, and geochemical analysis to uncover the region's "landscape memory." The palaeochannels serve as vital geoarchives, offering insights into past monsoon variability and Holocene based river activity. A key finding underscores the unintended consequences of the Narmada canal irrigation project, which has intensified soil salinisation, degraded farmlands, and disrupted traditional water harvesting practices. This has led to declining agricultural yields and socio-economic challenges, including out-migration.

The author's PhD aims to trace human-environment interactions from the Indus Valley Civilisation to modern irrigation impacts. The

study underscores the importance of integrating geomorphological and quaternary science with indigenous knowledge to inform sustainable water and land management in dryland regions.

For more, visit the YouTube channel (https://www.youtube.com/@stephentooth3141/playlists) curated by Prof Stephen Tooth.

Link to field report: *https://www.geomorphology.org.uk/2025/06/03/sand-water-and-change- documenting-the-dynamics-of-a-dryland-river-floodout-zone-in-the-indian-thar-desert/*

The Tons River Valley Corridor: Archaeological and Environmental Perspectives between the Vindhyas and the Ganga

Shivani Dubey, M.A. (2022–2024)
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South Asia is pivotal for understanding early human dispersal, adaptation, and cultural development. Strategically located at the crossroads between Africa and the eastern Old World, the region plays a crucial role in global narratives of human evolution (Athreya, 2015). Prehistoric research in South Asia has yielded significant contributions, particularly through its long and continuous record of lithic technology, which offers valuable insights into behavioral adaptations, technological innovation, and human–environment interactions (Pappu et al., 2011; Akhilesh et al., 2018; Mishra et al., 2013).

Within this broader framework, the Tons River Valley in central India emerges as a relatively underexplored yet highly promising region. Geographically, it occupies a transitional zone between the Vindhyan uplands and the alluvial plains of the Ganges Basin. This unique location provides a rich geological and archaeological context for investigating sedimentation patterns, landscape evolution, and the preservation of cultural materials. Importantly, it also enables studying how prehistoric populations adapted to a diverse and dynamic terrain.

Archaeologically, the valley lies along a proposed inland migratory corridor that may have facilitated early human movement across the subcontinent. This hypothesis, supported by studies suggesting that such inland routes enabled Homo sapiens dispersals within South Asia, has significant implications for understanding population dynamics, technological change, and regional adaptation strategies (Field et al., 2007; Clarkson et al., 2020). The region's density and diversity of prehistoric material culture further reinforce the inland migration model that Petraglia and colleagues proposed, underscoring the Tons Basin's strategic importance.

Evidence of prehistoric activity in the region dates back to the mid-nineteenth century, when Le Mesurier (1856, 1860) recorded a chert arrowhead and Neolithic ground stone axes. Later, Mishra et al. (1996) discovered a primary Acheulean site in Jhukehi, Satna district. At this site, diagnostic artifacts, including handaxes, cleavers, and scrapers, were found in surface contexts and rain gullies. These findings point to multiple phases of prehistoric occupation, from the Late Palaeolithic to the Neolithic (Misra, 1997).

Further excavations in the Teonthar region (Rewa district) and at Bara near Allahabad have established a cultural sequence from the Lower Palaeolithic to the early historic period. Stratified deposits at Amilkoni, near the Tons River, yielded Northern Black Polished Ware (NBPW), Kushan pottery, microliths, iron artefacts, faunal remains, and a burial site, indicating sustained occupation from the 5th century BCE to the 2nd-3rd century CE (Misra et al., 1998; Sengupta, 1964). Additional sites, including Sahijawar and Sohagighat, have yielded earlier Palaeolithic artefacts, further illustrating the region's deep and varied archaeological record.

Significant surveys by the University of Allahabad, led by Prof. G.R. Sharma documented numerous Late Stone Age sites in the Tons Valley, including Kapasi-Kalan, Kondi, Jadipur, and Jharna-ki-Pahari. These yielded microlithic assemblages made from chert and other fine-grained raw materials, including blades, flakes, and cores likely used in subsistence activities such as hunting and processing. Painted rock shelters and megalithic structures, particularly those near Chachai Falls, suggest symbolic and ritual practices, adding further cultural depth to the region's archaeological profile (Sharma, 1967).

While these earlier studies provided a foundational understanding of the Tons Basin's archaeological potential, they relied heavily on traditional survey methods and surface collections. Archaeology has embraced a multidisciplinary approach in recent decades, in-

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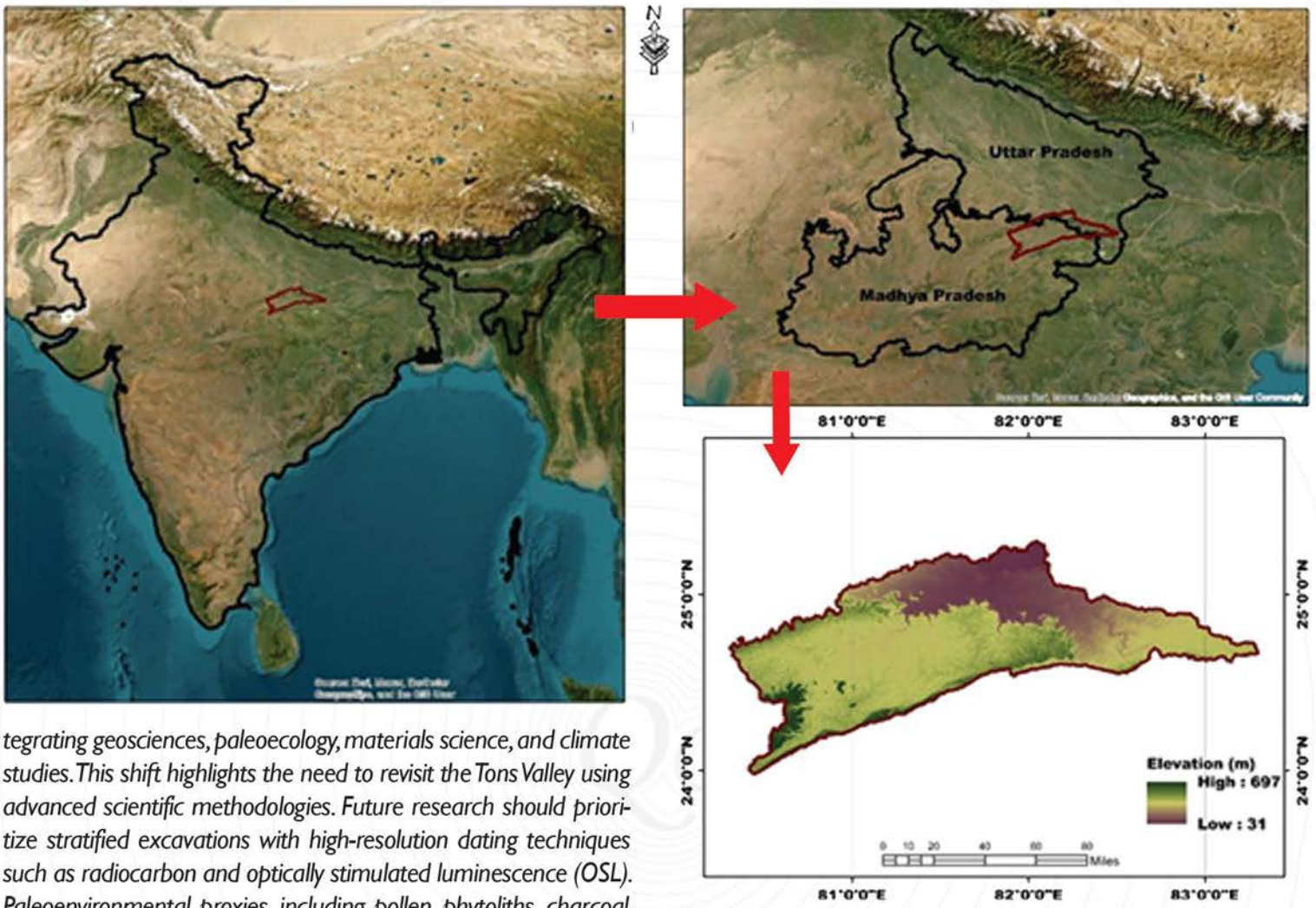

tegrating geosciences, paleoecology, materials science, and climate studies. This shift highlights the need to revisit the Tons Valley using advanced scientific methodologies. Future research should prioritize stratified excavations with high-resolution dating techniques such as radiocarbon and optically stimulated luminescence (OSL). Paleoenvironmental proxies, including pollen, phytoliths, charcoal, and sediment analysis, can shed light on past vegetation dynamics and climate variability. Correlating these data with archaeological records will illuminate how prehistoric populations adapted their mobility, settlement patterns, and technologies to changing environments.

Additionally, lithic sourcing studies can reveal raw material procurement zones, exchange networks, and patterns of territorial behavior. Remote sensing and GIS-based spatial modeling can enhance our understanding of settlement distribution and landscape use over time. These interdisciplinary tools are vital for reconstructing long-term human-environment interactions. Given its strategic location and archaeological richness, the Tons River Valley holds immense potential for advancing our knowledge of prehistoric human behavior, technological evolution, and cultural resilience in South Asia. A renewed, multidisciplinary investigation of the region can address longstanding research gaps and contribute significantly to broader discussions on early human dispersal and adaptation across the subcontinent.

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Exploring the Timeless Secrets of Rajgir: A Journey to Ajatashatru's Fortress

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Rajgir, an ancient town in Bihar's Nalanda district, holds significant cultural and historical importance. One of its notable landmarks is Ajatshatru Ka Qila (Ajatshatru Fort), associated with King Ajatshatru of the Magadh Empire, who ruled around the 5th century BCE. The fort gained historical significance as the place where Ajatshatru imprisoned his father Bimbisara before seizing power. Beyond this dramatic episode, Ajatshatru is remembered for his contributions to early Buddhism and Jainism, and the fort stands as a testament to the period's military and architectural capabilities. Another remarkable feature is the Cyclopean Wall, dating to the 3rd century BCE during the Mauryan Empire. This fortification demonstrates sophisticated early Indian engineering, characterised by massive stones fitted precisely without mortar - a technique similar to ancient Greek construction but developed independently. The wall, which once encircled Rajgir, protected this vital capital of the Magadh Empire and showcases exceptional craftsmanship in its nearly seamless stone fitting.

Recent palaeoclimatological and archaeological investigations have enhanced our understanding of this historical site. In an excavation led by Dr. Sujit Nayan (Archaeological Survey of India),

Field photographs of sample collection from the Rajgir archaeological excavation site at Ajatshatru Ka Qila (Ajatshatru Fort).

various samples were collected for comprehensive analysis—the sampling aimed to study pollen-vegetation relationships to reconstruct cultural history and Quaternary paleoclimate patterns. The collected samples provide data about historical vegetation patterns, climatic events, and lake-level fluctuations during the Quaternary Period. The sediment samples, gathered for radiocarbon dating and phytolith analysis, will reveal information about ancient agricultural practices and their evolution in response to monsoon variability in the Ganga Plain, representing a crucial phytogeographical region of India.

Tracking Holocene Hydroclimatic Oscillations in the NW Himalaya: A Palynological Approach from Renuka Lake

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DOI: https://doi.org/10.3390/quat8010006

The Indian Summer Monsoon is a dominant climatic system influencing the Indian subcontinent, characterized by large-scale seasonal wind reversals and the northward migration of tropical rain belts associated with the Inter-Tropical Convergence Zone. It represents a complex interaction among atmospheric, oceanic, and terrestrial systems, functioning across a range of temporal scales, from daily to millennial. As a key component of the broader Asian monsoon system, the ISM delivers approximately 75 to 90% of the annual precipitation to the subcontinent, predominantly between June and September, and exhibits considerable variability at multiple time scales. The Holocene epoch, spanning the past ~11,700 years, provides a crucial framework for palaeoclimatic investigations due to its relative climatic stability and significance in the rise and development of human civilizations. This period also experienced several abrupt climate fluctuations, including intervals of warming and cooling, as recorded in numerous global and regional palaeoarchives.

In this study, we reconstructed Holocene palaeoclimatic conditions of the Renuka Lake region in the northwestern (NW) Himalaya using high-resolution pollen data covering the last ~7500 calibrated years before present (cal yr BP). Our findings were further corroborated by precipitation simulations derived from the Earth System Palaeoclimate Simulation (ESPS) model. A 240 cm sediment profile from Renuka Lake was analyzed to assess climate-driven ecological responses, particularly focusing on the development, expansion, and temporal variability of Shorea robusta and its associated taxa.

The pollen record reveals significant hydroclimatic variability governed by ISM strength throughout the Holocene. Between ~7500 and 4460 cal yr BP, dense vegetation and the widespread presence of Shorea robusta indicate an intense ISM phase, corresponding with the Holocene Climate Optimum. A subsequent decline in Shorea robusta pollen from ~4460 to 3480 cal yr BP suggests a weakened monsoon under cooler and drier conditions, aligning with the 4.2 ka (Meghalayan) climatic event. From ~3480 to 1965 cal yr BP, a gradual resurgence of Shorea robusta and other moist deciduous elements points to improving monsoonal conditions. Strengthened ISM activity during ~1965–940 cal yr BP is marked by a sharp increase in Shorea robusta and enhanced vegetational diversity. A weaker ISM phase prevailed between ~940 and 540 cal yr BP, followed by renewed intensification of monsoonal activity from ~540 cal yr BP to the present, reflected in expanded wetland development and herbaceous cover. The ESPS model simulations from ~7500 cal yr BP to the present corroborate the palynological findings, capturing six prominent hydroclimatic oscillations in the region. Notably, the model identifies a pronounced drought between ~4460 and 3480 cal yr BP—coinciding with the 4.2 ka event—and a secondary dry phase around ~2100 cal yr BP, both of which are supported by the pollen evidence from Renuka Lake sediments.

Together, the multi-proxy evidence underscores the dynamic nature of the ISM during the Holocene and its profound influence on vegetation patterns, ecosystem dynamics, and regional landscape evolution in the NW Himalaya.

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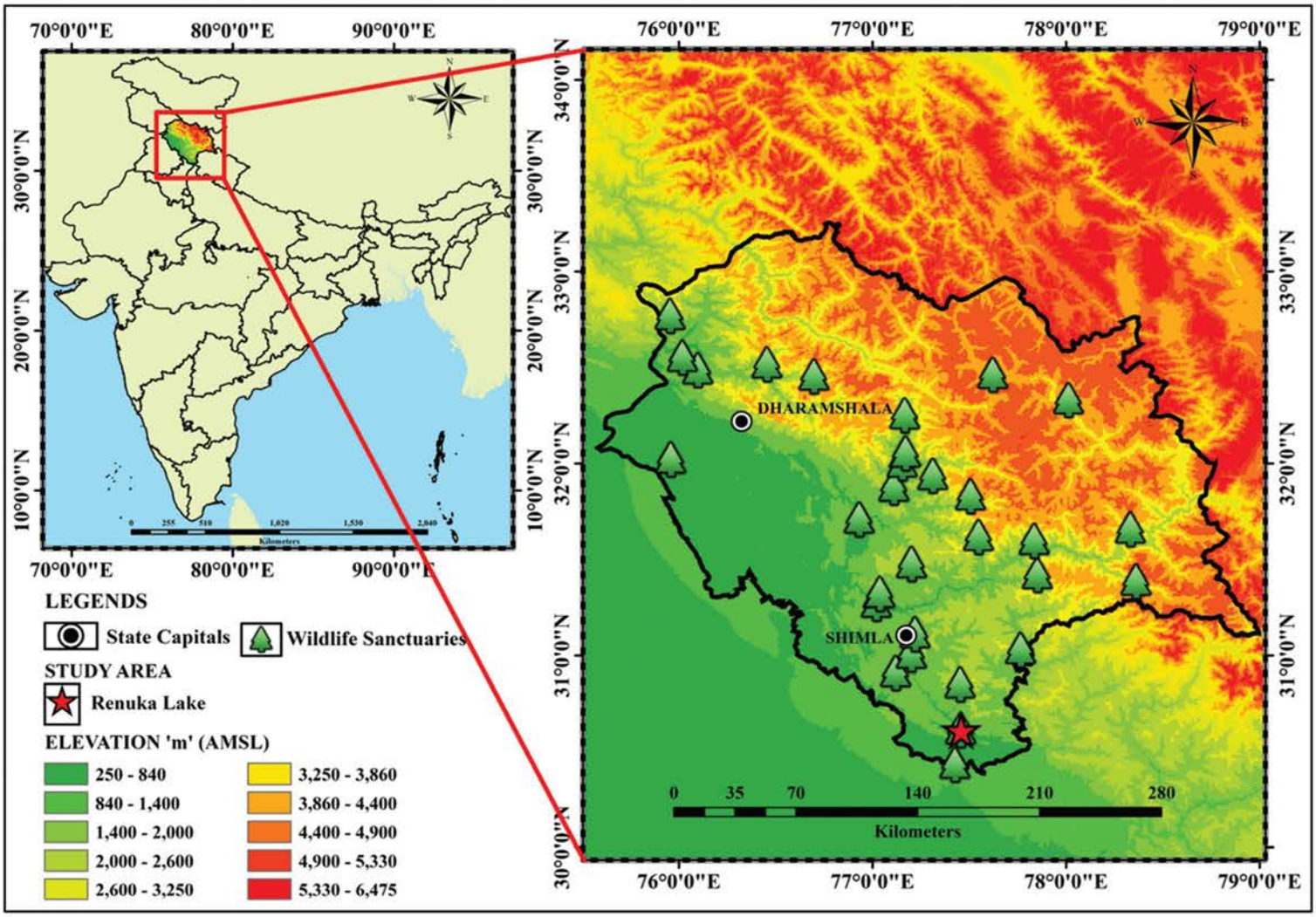

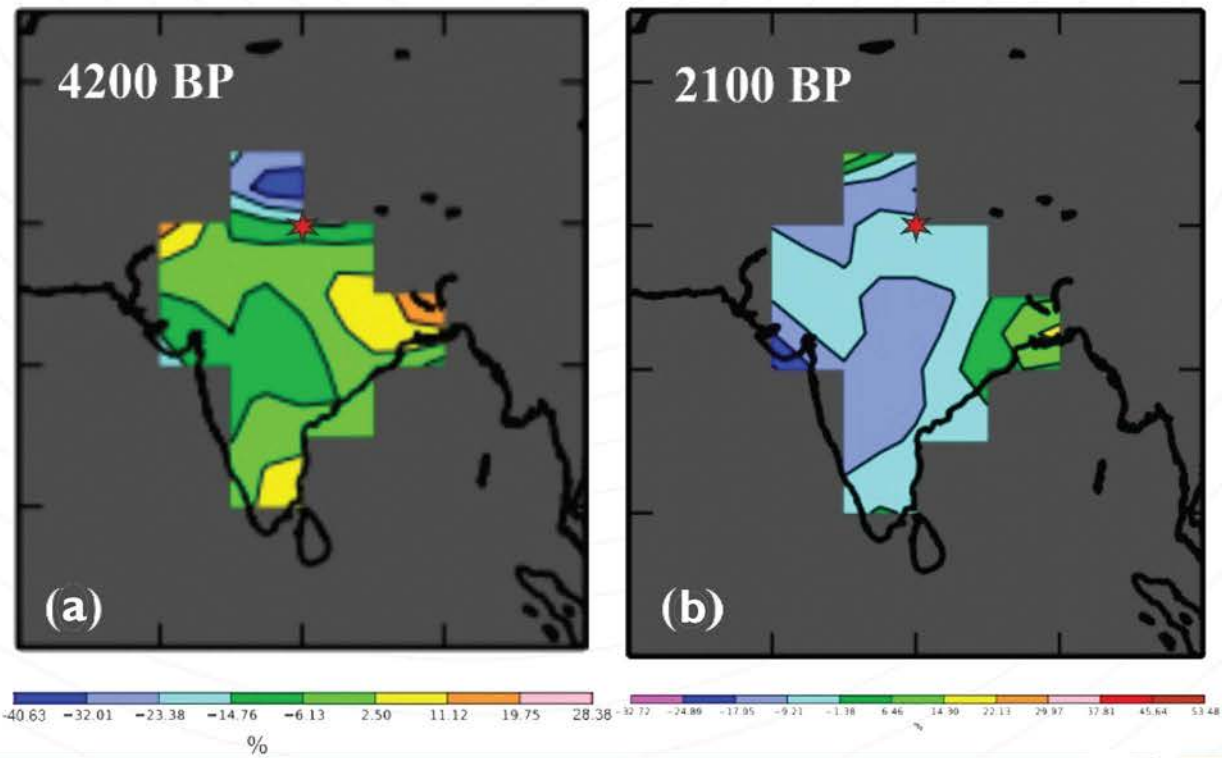

Figure: Digital Elevation Model (DEM) showing the location of Renuka Lake, NW Himalaya, Himachal Pradesh, India, along with Earth System Palaeoclimate Simulation (ESPS) mapping and modelling of the Indian Summer Monsoon (ISM) region, where subfigures (a) and (b) illustrate two periods of weakened ISM conditions over the Indian subcontinent at ~4200 and ~2100 cal yr BP, respectively.

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Investigating historical attribution: luminescence dating of bricks from a submerged structure in southeastern India

Morthekai, P., Singhal, M., Sharma, S.K., Sivasubramaniam, S., Kamarasu, M., Singh, P., Chauhan, N., Kumar, K., Nawaz, S.A. and Khonde, N., 2025. Investigating historical attribution: luminescence dating of bricks from a submerged structure in southeastern India. Frontiers in Environmental Archaeology, 4, p.1464315.
DOI:https://doi.org/10.3389/fearc.2025.1464315

There was a brick-made structure exposed in the middle of the southernmost river (Thamirabarani) of India and the place was near Korkai, an ancient port city believed to be the first capital city of Early Pandyas (400 BCE–300 CE), an ancient Tamil dynasty. Local people started believing that the structure could be of Early Pandyas. Two bricks were luminescence dated using coarse grain quartz, K-feldspar and polymineral (feldspar dominant) fine grains. The age of the bricks, thus the age of the exposed structure was estimated to be between 1430 and 1530 CE based on the coarse grain K-feldspar. This period coincides with the Vijayanagar Empire in Tamil Nadu and the Late Pandyas had some autonomy during this time in the south. So it was not of the Early Pandyas but of the Late Pandyas during Vijayanagar Empire.

There were two unusual observations. First, a large value of anomalous fading rate (temperature independent decrease of luminescence signal, IRSL) observed from both the fine-grain polymineral (9.5–10.5 %.decade−1) and coarse-grain K-feldspar (15.5 %.decade−1), and the fading correction was successful irrespective of large fading rate. The second observation was the fading of luminescence, OSL, from otherwise stable quartz (3 %.decade−1). Sanidine, a high temperature feldspar phase was the reason for high fading rate in feldspar, but we couldn't find a reason for the non-ignorable fading rate in quartz. The ages of fine grain polymineral (1700 CE) and coarse grain quartz (1689 CE) were found underestimated, and the reasons are being investigated.

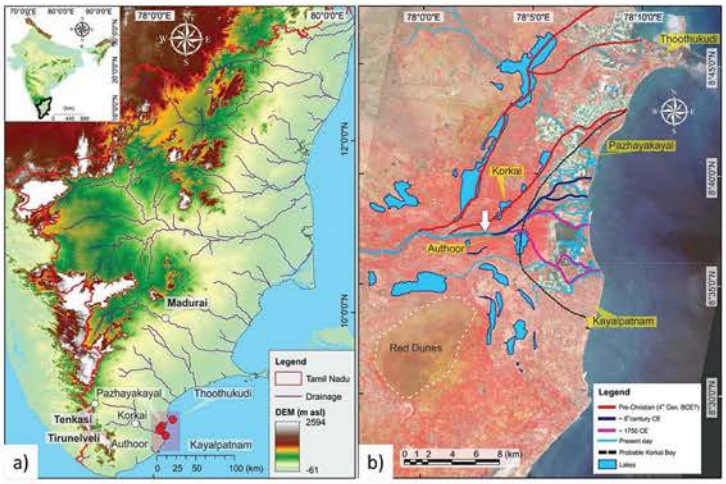

Figure 1. The location of study area (a) and the archaeologically important sites around the study area (b). Pazhayakayal and Korkai were ports earlier, and Thoothukudi is the present port. White arrow indicates the study site. In (b) was modified after Gupta and Rajani (2023). Relevant places are indicated.

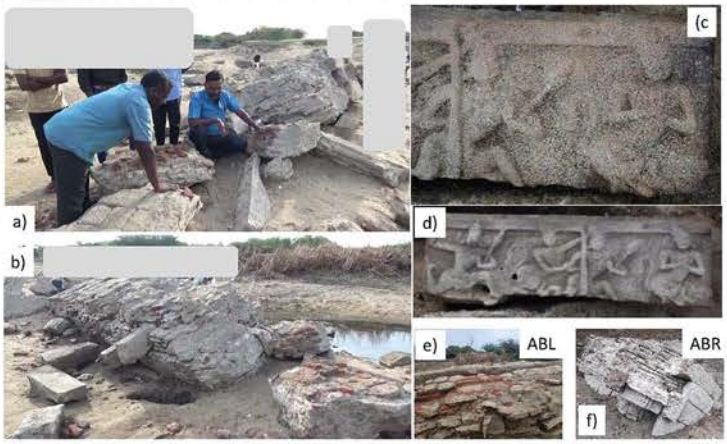

Figure 2. Brick structures (a, b), stone sculptures (c, d) and the samples used in this study [(e) middle of the river and (f) the right side of the river]. Except the authors (PM and MK—in squad position), others faces are not shown.

Decoding Loess in the Central Tapi Valley: New Insights into Paleoclimate and Human Adaptation

Prabhin Sukumaran (CHARUSAT, Gujarat) and Parth R Chauhan (IISER, Mohali)

Mukhopadhyay, S., Pandey, P., Sukumaran, P., Phartiyal, B., Verma, S., Vyas, V., Naidoo, N., Binani, A., Conroy, J.L., Chauhan, P.R. (2025) Late Quaternary Fluvio-Aeolian interactions and possible aridification in west-central India: Implications for prehistoric human adaptations in the Central Tapi Valley. Quaternary International. 379 109878. DOI: https://doi.org/10.1016/j.quaint.2025.109878

Our recent research in India's Central Tapi Valley provides significant new insights into Late Quaternary environmental changes, particularly focusing on fluvio-aeolian interactions and aridification, and their impact on prehistoric human pop-

ulations. This study, published in Quaternary International, utilised a multi-proxy approach, including microstructural analysis of quartz grains, grain size distribution, and magnetic susceptibility, to reconstruct the region's sedimentary history. The findings reveal a two-phase depositional process. Phase 1, represented by the upper layers, is primarily influenced by fluvial (river) processes, indicated by ferrimagnetic minerals linked to increased soil formation and intensified Indian Summer Monsoon activity. Quartz grains in Phase 1 are typically angular to subangular, showing signs of river transport and high-energy conditions, such as abrasion fatigue, solution pits, and conchoidal fractures.

In contrast, Phase 2, comprising the lower layers, strongly influences aeolian (wind-blown) processes and drier conditions. This phase is characterised by antiferromagnetic minerals and lower magnetic susceptibility values, indicative of aeolian processes and reduced sediment supply under weaker hydroclimatic conditions. This Phase 2 sediment package is explicitly identified as having characteristics consistent with loess deposition. Loess deposits are known to be widely distributed across the Indian subcontinent.

The quartz grains in Phase 2 exhibit distinct microtextural features that are hallmarks of wind transport, such as bulbous edges, rounded outlines, adhering particles, and meandering ridges. These features are typically generated by aeolian surface processes like those found in coastal and desert dune sands, involving grain-to-grain collisions. For instance, upturned plates and bulbous edges are prominent features on quartz grains from aeolian environments. The fine aeolian silty material from Phase 2 predominantly originates from proximal source regions within the middle Tapi River Basin. Grain size analysis further supports this, showing Phase 2 as a silt sequence with unimodal distributions and poor sorting. These characteristics, along with a relatively medium grain size and highly negative skewness, suggest short-distance transport by deflation. The study also notes an increase in grain roundness at the transition from fluvial to aeolian environments, indicating formation at a greater distance.

This research highlights broader patterns of intercontinental aridification extending into central India, significantly influencing past human habitation and adaptation strategies. The Central Tapi Valley is crucial for such studies due to its unique geomorphic settings and rich archaeological record. Evidence from ostrich eggshells found in the Tapi Valley, dated

approximately 47,000 to 53,000 years before present, supports the interpretation of extremely arid conditions during the Late Pleistocene. These findings align with observations from other parts of India, including the Thar Desert and Narmada Basin, suggesting widespread arid phases that likely shaped the distribution and adaptation of prehistoric H. sapiens.

In conclusion, this study offers valuable insights into Late Quaternary landscape transformations in West-Central India, demonstrating how climate variability and environmental stressors shaped human adaptation. It significantly contributes to understanding the interplay between dust fluxes and climate, which is crucial for improving future climate models. The study also underscores the need for continued geoarchaeological research to bridge the gap between archaeological records and geological studies in the Indian subcontinent.

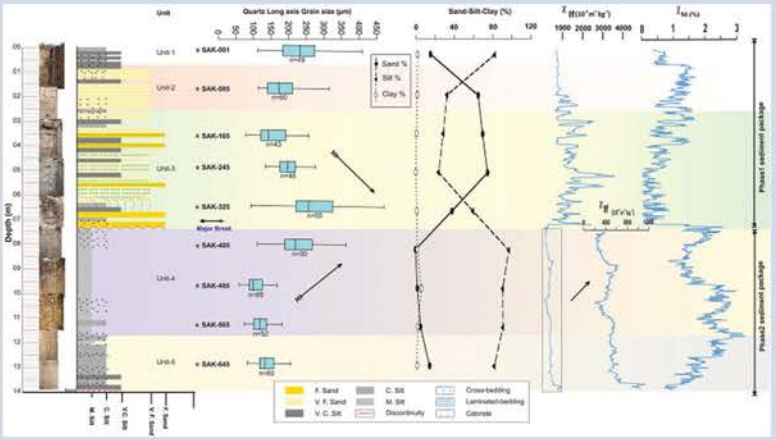

Figure: A simplified lithostratigraphy of the SAK sequence with SEM sample location, showing sand, silt, and clay percentages, along with comparison of the sedimentary character and magnetic susceptibility.

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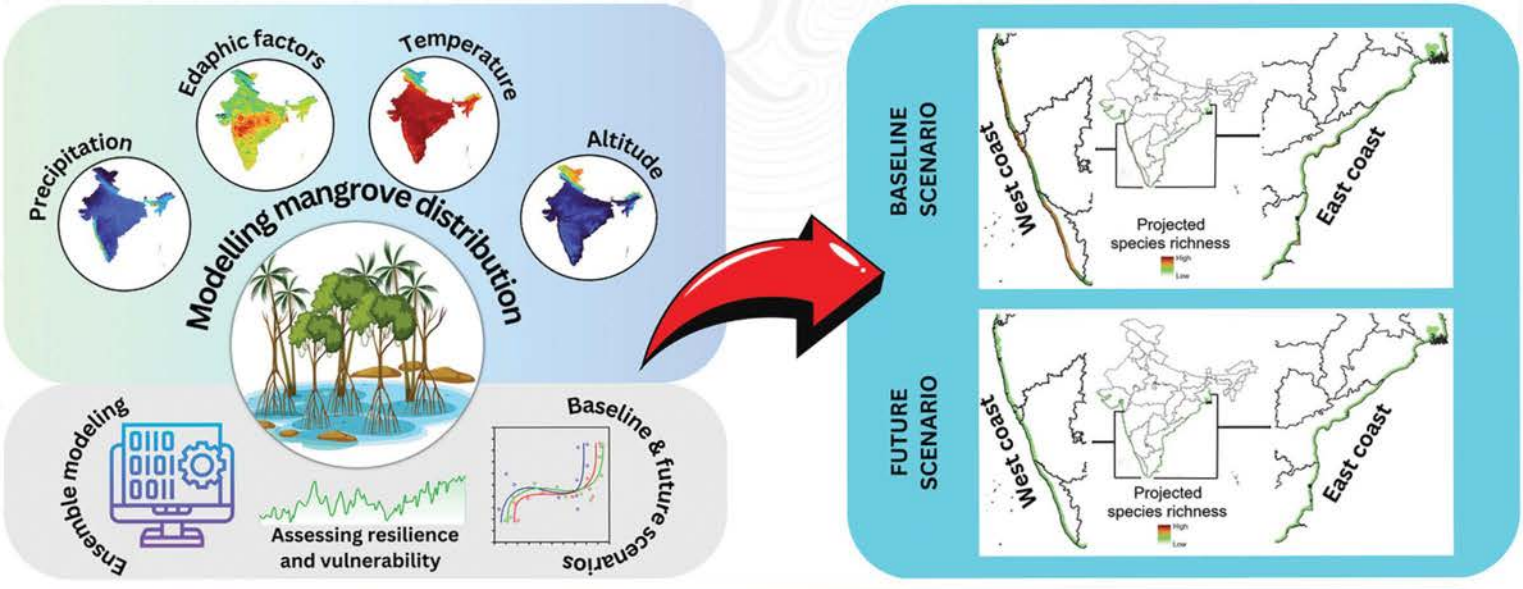
Climate-related coastal disparity in mangrove resilience in India: ensemble species distribution modelling calls for adaptive conservation

Pujarini Samal, Adhikari, D., & Chauhan, M. M. (2025). Climate related coastal disparity in mangrove resilience in India: ensemble species distribution modelling calls for adaptive conservation. Science of The Total Environment, 992, 179941. https://doi.org/10.1016/j.scitotenv.2025.179941

Mangrove ecosystems are increasingly threatened by climate change and human activities. Using species distribution modeling with eight individual algorithms, the study mapped present-day habitat suitability and forecasted changes for 20 mangrove species under two greenhouse-gas pathways (a low-emission SSP1-2.6 and a high-emission SSP5-8.5) for the year 2040, 2060, 2080 and 2100. Temperature limits and soil properties proved to be the strongest environmental controls for the distribution of the species. Under the baseline scenario, the most species-rich hotspots lie on the west-coast stretches of Malabar, Canara and Konkan, while the highest suitability on the east coast clusters in the Bhāgirathi–Hooghly delta and parts of the Godavari estuary. Projections show that by mid-century highly suitable west-coast habitat could contract by roughly two-thirds under SSP1-2.6 and virtually disappear under SSP5-8.5; on the east coast, highly suitable zones disappear entirely in both scenarios. By 2080-2100, the west coast loses all highly suitable area under the high-emission pathway and both coasts are left with only scattered low-to-moderate patches—mainly around the Sundarbans and lower Mahanadi delta—while most shoreline segments downgrade to the lowest suitability class.

Recognising these regional disparities, the study calls for adaptive, coast-specific conservation measures. On the east coast, safeguarding and reconnecting fragmented mangrove stands in cyclone-prone deltas, restoring river flow and countering salt-water intrusion are priorities. On the west coast, protecting the few remaining biodiversity pockets from urban encroachment and maintaining freshwater inflow are critical to offset rising heat and salinity. Such region-tailored planning, coupled with sustainable coastal development and strong community involvement, is essential to preserve the ecological integrity, blue-carbon stores and storm-buffering services of India's mangrove ecosystems through the coming century.



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Unraveling Late Deglacial to Middle Holocene Upper Water Column Structure in the Eastern Equatorial Indian Ocean: Insights from Foraminiferal Proxies and Stable Isotopes

Pradyumna Singh, Singh, A. D., Tripathi, S., Singh, H., Maurya, A. S., Naik, S. S., & Kumar, R., 2025. Changes in the upper water-column structure of the eastern equatorial Indian Ocean during 12.8–4.7 ka. Quaternary International, 743, 109917. *https://doi.org/10.1016/j.quaint.2025.109917*

The eastern equatorial Indian Ocean (EEIO), located at the core of the Indo-Pacific Warm Pool, plays a vital role in driving tropical ocean–atmosphere interactions that influence both regional and global climate patterns. The complex hydrography of this region mediates crucial inter-oceanic water mass exchange (Indonesian Throughflow; ITF), ocean-atmosphere coupling modes i.e., the Indian Ocean Dipole (IOD) and the El Niño–Southern Oscillation (ENSO), and the seasonally reversing South Asian monsoon (SAM) systems. Despite the global importance of the EEIO, the long-term feedback mechanisms linking these oceanic and atmospheric drivers to regional upper ocean structure and biological productivity remain insufficiently understood.

In the recent study, Singh et al. (2025) provide a multi-proxy reconstruction of surface hydrography, upper water-column stratification, and biological productivity in the EEIO, capturing multi-centennial to millennial-scale variability between 12.8 and 4.7 ka, spanning the late deglacial to mid-Holocene period. The data are derived from a well-dated spade core (SSD/25/SC-04B; 8.40°S, 98.00°E) retrieved from the EEIO at a water depth of 3440 m. The authors employ planktic foraminiferal census data—including the relative abundances of Globigerina bulloides and other symbiont-bearing vs. symbiont-barren taxa—as well as paired stable oxygen isotope (δ18O) records from Globigerinoides ruber (surface-dwelling) and Pulleniatina obliquiloculata (thermocline-dwelling). The isotopic offset (Δδ18Or-o) between these two species serves as a sensitive proxy for water column stratification and thermocline depth.

A key finding of the study is the temporal evolution of the vertical structure of the ITF. During the Younger Dryas to early Holocene (~12.8 to ~9.8 ka), high Δδ18Or-o values along with enriched δ18O in P. obliquiloculata suggest a shallow thermocline and relatively saline subsurface conditions, reflecting the dominance of surface-intensified ITF inflow. In contrast, during the mid-Holocene (~9.8–4.7 ka), lower Δδ18Or-o values and depleted δ18O in P. obliquiloculata point to a deepening thermocline and increasing influence of cooler, fresher waters at depth—conditions consistent with a strengthened thermocline-intensified ITF regime. This vertical reorganization appears to be modulated by seasonal monsoon dynamics. Specifically, south-east (SE) monsoon-driven upwelling enhances sea-surface height gradients, facilitating surface ITF inflow, whereas enhanced north-west (NW) monsoon precipitation promotes freshwater-induced stratification, inhibiting surface flow and redirecting the ITF to deeper levels.

The planktic foraminiferal assemblage further reveals periods of enhanced surface productivity—particularly during 12–9.2,

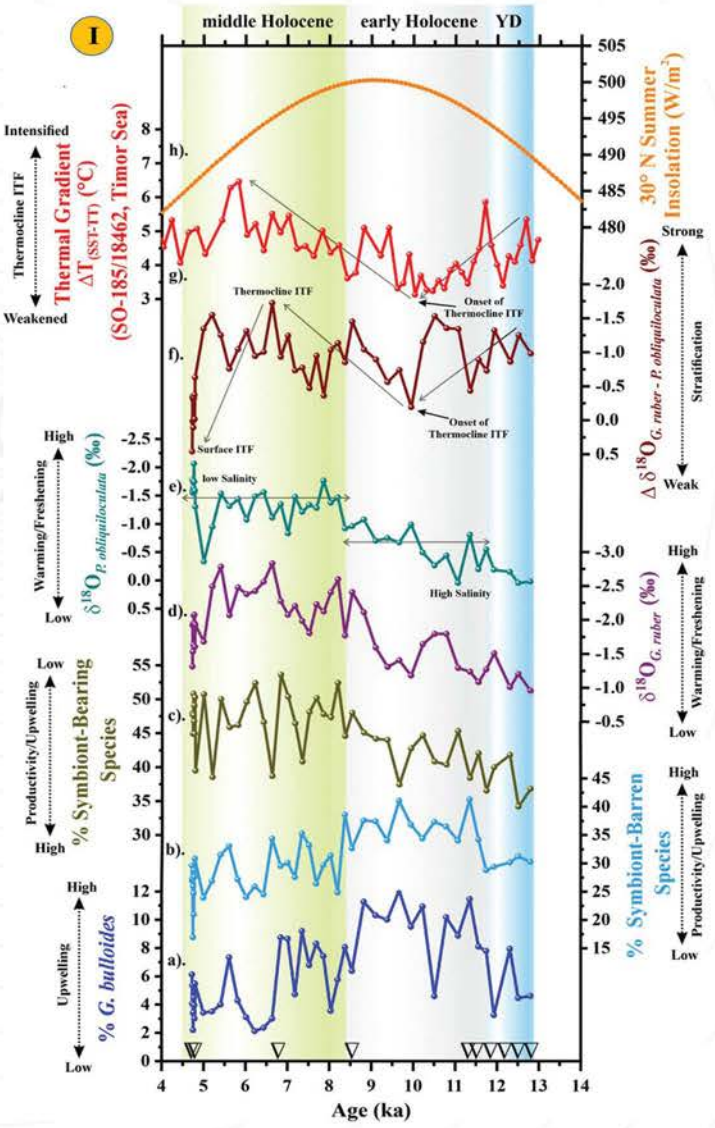

Figure: Synthesized faunal and oxygen isotope data from depth-dependent planktic foraminiferal records from core SC-04B and regional archives (marine, lake, and cave) across the tropical Indian Ocean, showing surface hydrographic variability driven by (I) ITF changes, (II) IOD-like mean state variability in the EEIO, and (III) potential teleconnections with high-latitude climate events.

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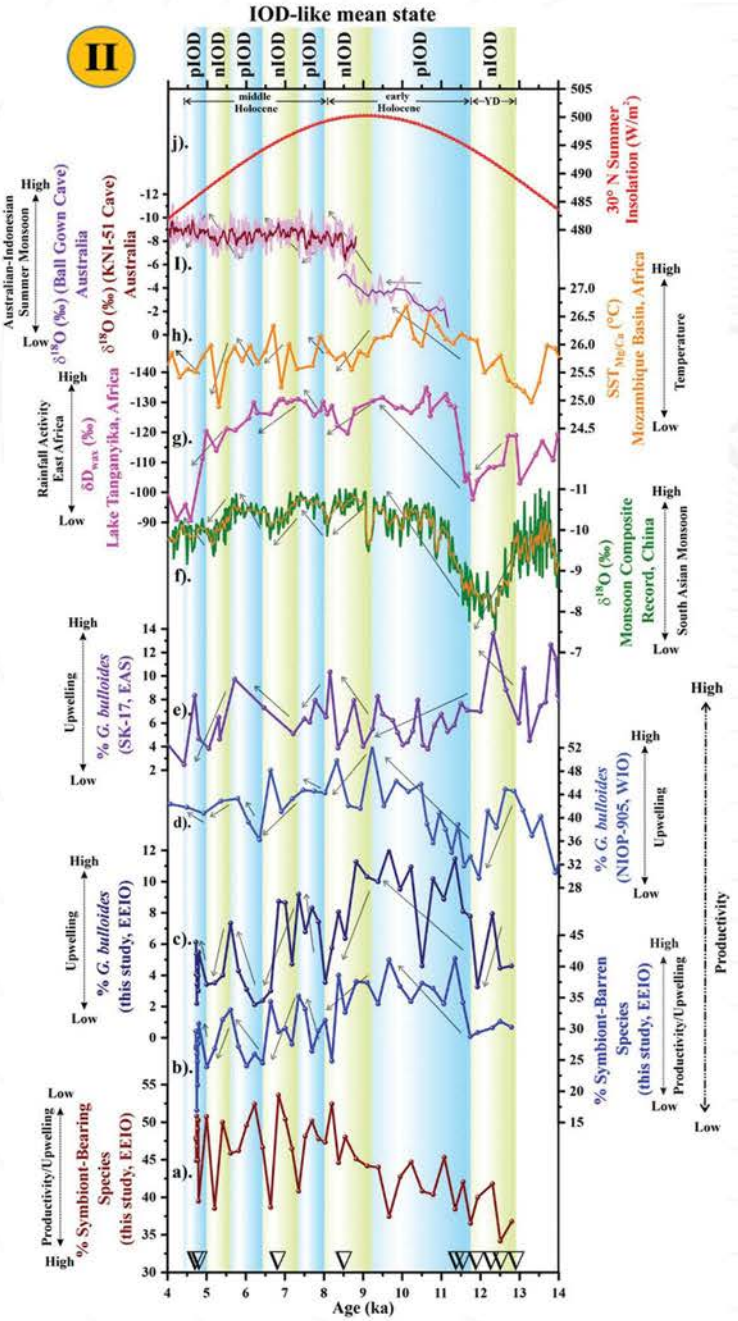
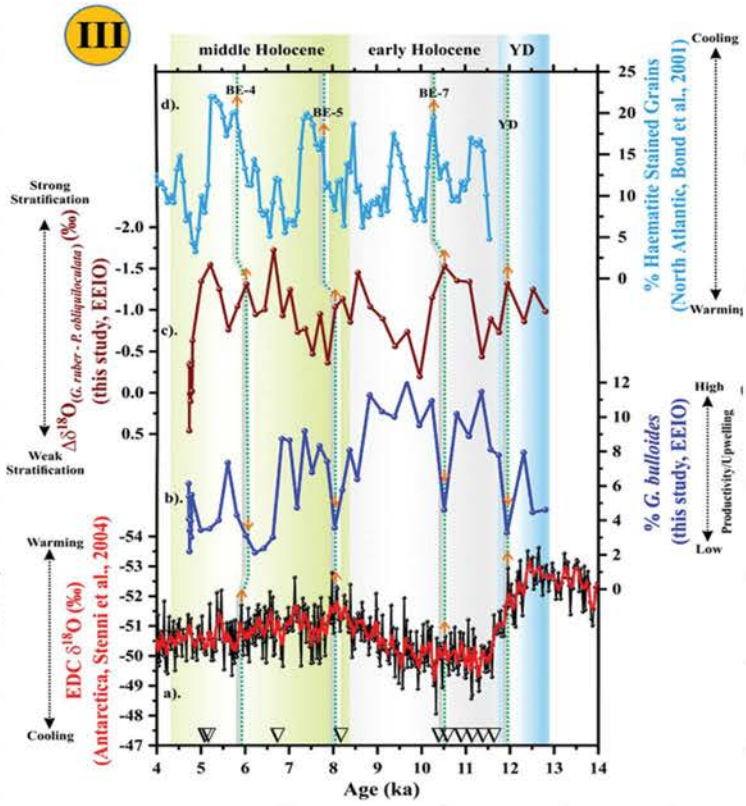
8.0–7.3, 6.4–5.6, and 5.2–4.7 ka—coinciding with elevated G. bulloides abundance and increased symbiont-barren species, indicative of nutrient-rich conditions driven by SE monsoon wind-induced upwelling. These intervals broadly correspond to positive IOD (pIOD)-like mean states, characterized by cooler conditions in the EEIO relative to the western Indian Ocean and an intensified SAM. On the contrary, periods such as 12.8–12, 9.2–8.0, 7.3–6.4, and 5.6–5.2 ka were marked by reduced G. bulloides abundance, higher dominance of symbiont-bearing species, and increased stratification—conditions reflecting weakened upwelling and a negative IOD (nIOD)-like mean states, likely driven by enhanced NW monsoon rainfall and surface freshening. Importantly, the study identifies four intervals (~12, ~10.5, ~8.2, and ~6 ka) marked by pronounced reductions in surface productivity and increased stratification, as inferred from both low G. bulloides percentages and low Δδ18Or-o values. These coincide with cold phases in the North Atlantic known as Bond Events (BEs 7, 5, 4, and the Younger Dryas). The faunal and isotopic patterns suggest that these anomalies may reflect high-latitude–low-latitude teleconnections, wherein North Atlantic cooling events (BEs) triggered a southward shift in the Intertropical Convergence Zone (ITCZ), intensifying NW monsoon activity over the EEIO and enhancing surface stratification.



This work sheds light on the evolving ocean–atmosphere dynamics of the tropical Indian Ocean between 12.8 and 4.7 ka, offering a clearer picture of climate variability during the Holocene transition. It highlights the role of the EEIO as a sensitive node where regional monsoon variability (SE-NW), inter-oceanic exchanges (ITF), coupled climate modes (IOD), and high-latitude climatic perturbations converge to shape upper water column structure and biological productivity. These findings contribute significantly to our understanding of past Indo-Pacific climate behavior and provide a useful paleo-context for assessing future changes in response to anthropogenic forcing.



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Revisiting Adansonia digitata L. (Baobab) in the Indian Context: Pollen Morphometry, Dating, and Evolutionary Significance

Arti Garg & Swati Tripathi *(2025) Pollen morphometric analogue in Adansonia digitata L. from India: implications for taxonomy, systematics and evolution. Grana, 1–23.*
https://doi.org/10.1080/00173134.2025.2499518

The Kalpvriksh, or Adansonia digitata-commonly known in India as Baobab, Parijat, or Vilaiti Imli-holds deep sacred significance. Mythologically linked to the Samudra Manthan, it is revered by both Hindus and Muslims as a wish-fulfilling tree. Notable specimens include the Jhunsi Parijat near Triveni Sangam in Prayagraj (Figure 1), associated with Sufi saint Baba Shaik Taqi, and the Kintoor Parijat in Barabanki, near a temple linked to Kunti, mother of the Pandavas. The Jhunsi tree is 14 meters tall with a 21.2-meter girth; the Kintoor tree is 13.7 meters tall with a 14.1-meter girth. The Baobab likely reached India from Africa, possibly through Arab traders, European colonizers, or natural seed dispersal. Another theory links its presence to the ancient supercontinent Gondwanaland. These theories reflect both human and geological contributions to its spread. A study by Singh & Garg (2017) of the Botanical Survey of India, in collaboration with the University of Romania, used Accelerator Mass Spectrometry (AMS) radiocarbon dating on living wood samples.

The results revealed that the Jhunsi and Kintoor Baobabs are approximately 800 ± 50 years old, dating to around 1200 CE. This makes them not only the oldest African-origin Baobabs in India, but also the oldest known specimens outside Africa—surpassing the previous record-holder, a 750-year-old tree in Mannar, Sri Lanka. India also hosts one of the largest Baobabs, the Golconda Parijat, known more for its size than age.

Figure 1. Adansonia digitata tree situated in Jhunsi, Prayagraj

Pollen morphological Analogue of Adansonia

This study indicates the presence of a distinct annulus forming a thick and clear annular ring encircling the pore in Adansonia digitata pollen was significant, being unique to this genus (Fig. 2). The present pollen morphometric findings of type species Adansonia digitata confirm the significance of pollen morphology as a genetically defined parameter for an auxiliary but most reliable and concrete diagnostic tool for authentication of taxonomic circumscription of the genus Adansonia L. in the independent tribe Adansonieae, and the quantum of pollen divergence analogue mainly the apertural features and absence of calotte in mesocolpium strongly advocate for an independent subfamily for the genus Adansonia L. (tribe Adansonieae). The derived pollen analogue would also find utility in the precise identification and differentiation of Adansonia pollen in fossil sediments designed for the reconstruction of past

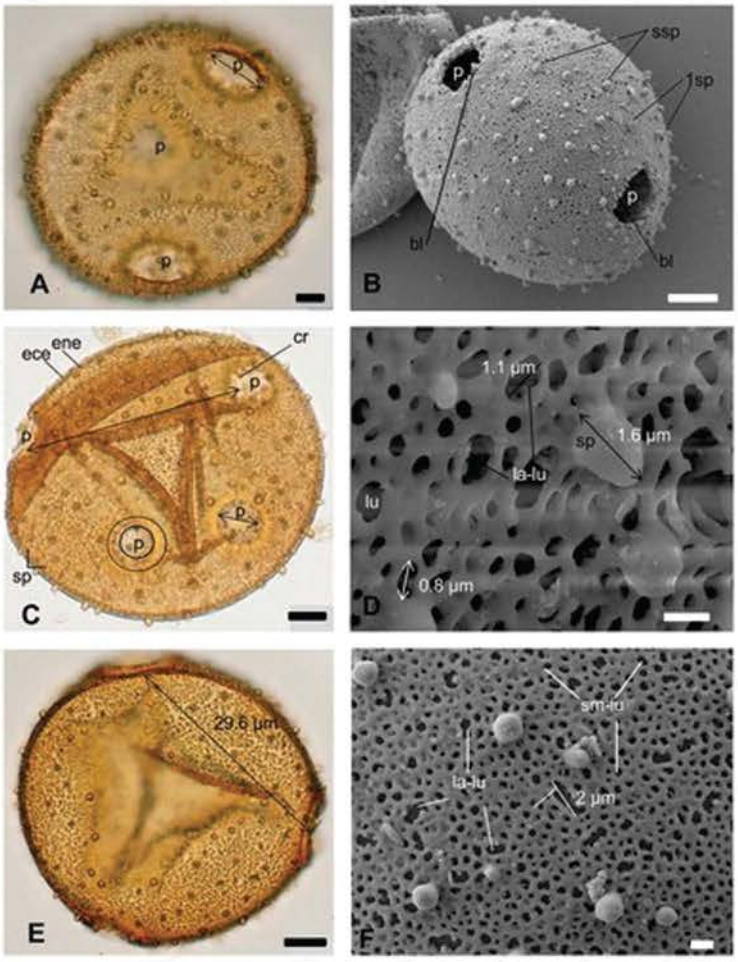


Figure. 2. Pollen micrographs of Adansonia digitata (Sultanpur tree). A. Equatorial view (slight oblique) of pollen under LM showing 3 pores in zonal position. B. Equatorial view (slightly oblique) of pollen under FESEM showing punctuate tectum and lumen along with bead like margins at the periphery of pore. C. Oblique polar view of 4-porate grain under LM showing zonal position with dimensions. D. Surface with heteropunctate tectum. E. Polar view of pollen under LM showing 3 zonal pores. F. Spinules and dense punctae on surface. Scale bars – 5 µm (A, C, E).

vegetation. Moreover, the supporting sexine characters shift from homo-puncti-tectate sparsely spinulose to hetero-punctitectate closely spinulose exine and homo-microreticulate closely spinulose exine and from spheroidal pollen shape to oblate spheroidal and suboblate, medium sized grains of 50–70 µm diameter, was interesting. These morphological characters not only corroborated the formation of the independent tribe Adansonieae in which the genus Adansonia is placed but these strong, genetically derived, and stable micromorphological characters of pollen grains strongly advocate for the assignment of an independent 'subfamily' status for the genus Adansonia, as subfamily 'Adansonioideae' under the family Malvaceae. To gain insight into pollen–pollination adaptations, morphometric data of Adansonia digitata was prepared along 26 parameters, including novel and maiden aspects of the ratio of pollen tube emergence site and pollen surface area. The pollen grains were 3–4-zonoporate (primary character) with tenuimarginate granular margins, which provide elasticity for pore expansion and harmomegathy during pollen tube emergence. The resultant pollen analogue with innovative parameters also paved the way for future correlations of taxonomic traits, fossil counterparts, and evolutionary adaptations in species.

Conservation measures: *A restricted extent of occurrence, diminutive area of occupancy, profound fragmentation of the population, exceedingly low regeneration, and a lack of indigenous knowledge have revealed that Adansonia digitata L. is confronting significant conservation threats and an elevated risk of extinction due to over-exploitation, mainly of bark, leaves, fruits and seeds. To address this pressing situation, it is imperative to classify this vital tree species as endangered, while simultaneously ensuring the preservation of its habitat. Climate changes in rainfall patterns and declines in rainfall is also detrimental to the species.*

Ph.D. Awarded

Dr. Richa, BSIP, Lucknow
Present address:
Regional Forensic Science Laboratory,
Panchkula, Haryana

Title of the thesis: Reconstructing the human population ancestry of the Ladakh region using Ancient DNA and stable isotope analysis

Name of the Supervisor(s): Dr Niraj Rai, BSIP, Lucknow, and Dr. Maanasa Raghavan, University of Chicago, USA

Located at the geographic nexus of Eastern and Western Eurasia, the Ladakh region has long functioned as a key corridor for trans-Eurasian exchanges of people, culture, agriculture, and language, particularly along the Silk Road. Previous genetic studies have highlighted the complex population history of modern Ladakhis, revealing links to Eastern and Western Eurasian ancestries. However, the precise timing of admixture events and the duration of human habitation in the region remain poorly understood.

To shed light on the peopling of Ladakh, we analyzed both ancient and modern human samples from the region. Specifically, we examined 12 ancient skeletal remains recovered from a prehistoric cave site in the Nyoma Valley. All samples were processed in the ancient DNA facility at the Birbal Sahni Institute of Palaeosciences, India. DNA was extracted, sequenced, and mapped to the human reference genome. Seven of the 12 individuals yielded authentic ancient DNA, characterized by typical patterns of post-mortem damage. Accelerator mass spectrometry (AMS) dating of three individuals placed their remains between 1500 and 250 years before present.

Mitochondrial haplogroup analysis revealed diverse maternal lineages among the individuals, including U7a3b, H2a1a, and M52a1b. These lineages reflect genetic affinities with Europe, Central/Eastern Siberia, and Southern/Western Asia. The data also revealed a pronounced founder effect in paternal and maternal lineages, indicating limited ancestral gene pools within the population. Consistent with broader regional patterns, modern populations in Ladakh harbor haplogroups associated with South, East, and West Asia, underscoring a complex history of admixture.

In addition to genetic analyses, we examined human dietary practices using stable isotope analysis of carbon and nitrogen from bone collagen in 24 individuals buried at the same site. The isotopic signatures point to a mixed diet incorporating both C_3 and C_4 plant-based resources, with a notable reliance on marine protein.

In conclusion, this study provides the first ancient genomic data from Ladakh, integrated with modern genetic and isotopic evidence. Our findings highlight a genetically heterogeneous population shaped by recurrent migration and admixture events, primarily from South and East Asia. This work offers critical insights into human colonization, range expansion, and the demographic history of the Ladakh region.

Dr. Nikita Karnatak

Title of the thesis: Hydromorphological analysis of a Himalayan River with special reference to stream management: A case study of the Yamuna River System, India

PhD Supervisor:
Prof. Vikrant Jain
Department of Earth Sciences, IIT Gandhinagar

Rivers shape landscapes, sustain livelihoods, and support ecological biodiversity. However, growing anthropogenic stress, such as reduced water flow and sediment transport, habitat alteration, and pollution, has severely degraded river systems. Despite existing research on Indian rivers, integrated hydrology, geomorphology, and ecology studies remain limited. Additionally, the role of groundwater interactions with surface water is often overlooked in hydrological studies, further complicating the understanding of river dynamics.

My research addresses these gaps by integrating hydrological and geomorphological perspectives, emphasizing their impacts on river ecology. It is focused on the Yamuna River system, characterized by two hinterlands with varying relief, geology, and rainfall patterns contributing to its complex hydro-geomorphic behaviour.

The study involves the River Styles framework to characterize the Yamuna River geomorphically. The findings emphasized the necessity of developing reach-specific management strategies. It was further integrated with future climate-change-driven hydrological scenarios. It helped identify sensitive and resilient reaches to highlight those areas where stream management should be prioritized. Further, GW–SW connectivity in the Upper Yamuna Basin was assessed by analyzing vertical connectivity across various reaches. Losing and gaining reaches were mapped and quantified, identifying priority management zones. The longitudinal connectivity of the river and its implications on river ecology were also analyzed, identifying (dis)connectivity structures within the river, emphasizing the influence of the cratonic hinterland on this Himalayan River. This research underscores the necessity for cross-scalar studies that integrate hydrology, geomorphology, and ecology to make effective river management strategies.

Dr. Manmohan Kukreti

Department of Geology, CAS, Kumaun University, Nainital
Supervisor: Late Dr. B.S. Kotlia

Thesis title: Reconstruction of paleoclimatic changes from Bhimtal and Bhikiasain area lake deposits, Kumaun Himalaya.

Two paleolakes from the Himalayan region, which are particularly important as they preserve extensive paleoclimatic records spanning long periods, were studied. Although previous research has investigated lake sediments, data on significant climatic intervals since the late Pleistocene remain limited. This thesis aims to enhance our understanding of paleoclimatic conditions in selected sectors of the Uttarakhand Himalaya. These two paleolakes were located at different altitudes. The Bhimtal paleolake, situated in the Nainital district, lies at an altitude of 1,370 m. The Bhikiasain paleolake profile, exposed along the Ramganga River in the Almora district, is at an altitude of 1,188 m. To establish a chronological framework, AMS radiocarbon dating and Optically Stimulated Luminescence (OSL) dating methods were applied to both profiles. A range of proxies—including grain size, Loss on Ignition (LOI), carbon isotope ratios ($\delta^{13}C$), Total Organic Carbon (TOC), and significant oxide concentrations (via XRF analysis)—were used to reconstruct past climatic conditions. The multiproxy data from the Bhimtal paleolake revealed several arid phases during the periods 40900 - 40200, 40200 - 37600, 37600 - 31800, 31800 - 28700, and 26500 - 24200 cal yr BP, interspersed with a single warm phase between

28700-26500 cal yr BP. The global climatic event known as the Last Glacial Maximum (LGM) was recorded between 26500 and 24200 cal yr BP. In contrast, the Bhikiasain paleo-lake records indicate warm phases during 42200-24700, 20000-15800, and 15800-9600 cal yr BP, along with moderately less humid intervals from 24700-20000, 9600-6200, and 6200- 3 600 cal yr BP. Key global climatic events such as the LGM, Allerød-Bølling, Younger Dryas, the 8.2 ka event, and the 4.2 ka event were also captured in the Bhikiasain profile. However, the durations of these events differ from global records.

Awards & Recognition

Congratulations
to Dr. Thamban Meloth,
Director of NCPOR, Goa,
on being honored with the 2025 Distinguished Alumni Award by the Cochin University of Science and Technology (CUSAT).

This prestigious recognition celebrates alumni who have demonstrated outstanding achievement in their fields and brought distinction to the university through their impactful contributions.

Congratulations to Prof. Milap Sharma *for being elected as a member of IPA. He will serve as a new representative of India in the IPA council.*

The Centre for the Study of Regional Development, Jawaharlal Nehru University, New Delhi, will act as the Adhering Body. Prof. Milap Sharma's work is focused on the glacial chronologies and surface processes associated with natural disasters. While his primary focus has been the glaciers of the western Himalaya, he is now expanding his research to include periglacial processes from Ladakh to Arunachal Himalaya.

IPA International Permafrost Association

Quaternary Chronicles
Happenings in the Sub-continent
ASSOCIATION OF QUATERNARY RESEARCHERS

Congratulations
to Dr. Swati Tripathi of BSIP, Lucknow,

for being awarded the prestigious Indian National Science Academy (INSA) Young Associate Award 2025. This prestigious honor is recognition of Dr. Tripathi's exceptional contributions to scientific research and her steadfast dedication to academic excellence. The INSA Young Associate Award is one of the highest recognitions conferred on promising young scientists in India, aimed at encouraging and nurturing excellence in science and technology.

INQUA

https://inqua.org/our-organisation/medals

The Sir Nicholas Shackleton Medal
For Outstanding Young Quaternary Scientists

2025 Call for Nominations Now Open!

INQUA is pleased to announce that the call for nominations for the 2025 Shackleton Medal is now open. This prestigious award recognizes outstanding contributions to Quaternary. We warmly invite you to submit nominations of eligible candidates who exemplify excellence and leadership in the field.

Deadline for submissions: 1 October 2025
More details on INQUA website

Fostering Innovation: AOQR Co-Sponsors Brainstorming Session on Startups in Geosciences

Compiled by Dr. Pradeep Srivastava, IIT-R & President IUGS, INSA

The Association of Quaternary Researchers (AOQR), in collaboration with the Indian National Science Academy (INSA) and Oil India Limited, recently co-sponsored a high-impact brainstorming session titled "Incubating the Culture of Startups in the Geoscience Community of India." Held on 7 June 2025 at INSA, New Delhi, the session brought together early-career scientists, Ph.D. scholars, aspiring entrepreneurs, and domain experts from the energy, disaster management, infrastructure, and academic sectors. AOQR, as a pre-INQUA 2027 activity, played a key role in organizing the event, with Dr. Pradeep Srivastava, Vice President of AOQR, and Dr. Binita Phartiyal, Secretary of AOQR, actively contributing to the planning and execution of the session.

Dr. Kaustav Nag, Additional Director General, Directorate General of Hydrocarbons, inaugurated the event, who delivered an insightful keynote address. He highlighted the evolving landscape of India's energy sector and the expanding role of geoscientists in energy innovation and sustainability. Mr. Shaji Varghese, CEO of the Society for Innovation and Entrepreneurship at IIT Bombay, shared a practical roadmap for aspiring geoscience entrepreneurs. He emphasized the need for cross-sectoral collaboration and the institutional mechanisms now available to support science-based startups.

Prof. Vikram Vishal, Department of Earth Sciences, IIT-Bombay, a successful geoscience entrepreneur, offered a compelling account of his startup journey, discussing real-world chal-

lenges and the importance of perseverance, strategic mentorship, and solution-oriented thinking. Prof. Surya Prakash from the National Institute of Disaster Management (NIDM) spotlighted the untapped potential of geoscience startups in early warning systems, risk mitigation technologies, and resilience planning critical for India's disaster-prone landscape.

Dr. Sudhanshu Sinha from the British Council emphasized identifying geoscientific domains where innovation could yield tangible societal and economic benefits. Echoing these thoughts, Dr. Aninda Mazumdar from the National Institute of Oceanography (NIO), Goa, advocated for need-based, problem-solving innovation focused on community well-being.

20 Early Career Researchers from Delhi and neighboring regions attended the event. Several distinguished experts and contributors enriched the discussions, including Prof. D.M. Banerjee, Dr. V.M. Tewari (Vice President, INSA), Prof. Sarajit Sensarma, Dr. Aninda Majumdar (Scientist-G, NIO-Goa), and members of the INSA Committee on IUGS and INQUA Affairs. Dr. Vandana Choudhary (Scientist-G) and Mr. Manish Shukla (Chief General Manager, ONGC) participated as special invitees and contributed significantly to the deliberations. As a significant outcome, the INSA Committee on the International Union of Geological Sciences (IUGS) and International Union for Quaternary Research (INQUA) resolved to pursue two key initiatives:

1. Establishment of a Consortium of Institutions for Geoscience Innovations to create a collaborative framework for startup incubation.

2. Convening a national-level meeting to widen participation across regions and sub-disciplines within the geoscience community.

The session concluded with acknowledgements to all co-sponsors, INSA, Oil India Limited, and AOQR, for their generous support. All organizing partners extended their best wishes for the successful hosting of INQUA 2027, where AOQR plays a pivotal organizing role.

This brainstorming session marks a forward-looking step in cultivating a robust startup ecosystem in the geosciences that champions innovation, societal relevance, and institutional synergy.

National Workshop on Training & Awareness Programme (NWTAP) on Methods of Geochronology & Research Opportunities from April 29–30, 2025, at the Nagaland University, Lumami Campus

Compiled by: Dr. Manasi Debnath

The Department of Geography, Nagaland University, successfully organized a National Workshop on Training & Awareness Programme (NWTAP) on Methods of Geochronology & Research Opportunities from April 29–30, 2025, at the Department of Geography, Nagaland University, Lumami Campus. The event was successfully conducted in collaboration with the Inter-University Accelerator Centre (IUAC), New Delhi. The primary objective of the workshop was to foster a comprehensive understanding of geochronological methods—scientific techniques that help decode Earth's surface processes, environmental changes, and geological events. In an era of rapid scientific advancement and growing concerns about climate and environmental change, geochronology serves as a crucial toolkit for reconstructing past climates and informing future research.

The programme commenced on April 29 with an introductory address by Dr. Manasi Debnath (Organising Secretary) and the welcome speech from Prof. Wangshimenla Jamir (Head of Department and Convenor), chaired by the Vice Chancellor in-charge, Prof. Bendang. Esteemed resource persons from across India graced the event, including Prof. Milap C. Sharma (JNU, New Delhi), Dr. Pankaj Kumar and Dr. Ambuj Mishra (IUAC, New Delhi), Dr. Jaishree Sanwal (JNCASR, Bangalore), Prof. H.J. Syiemlieh (NEHU, Shillong), and Dr. T. Walling (Nagaland University, Kohima). The workshop witnessed enthusiastic participation from scholars nationwide in both physical and hybrid modes.

A significant highlight of the event was the inauguration of the Glacier and Mountain Research (GLAMOR) Laboratory. The work-

shop emphasized the significance of advanced geochronological techniques such as Optically Stimulated Luminescence (OSL) dating, AMS ^{14}C, $^{10}Be/^{26}Al$ exposure dating, and Zircon geochronology—especially in the context of the North-East Indian region, including Nagaland. These methods hold immense potential for cross-disciplinary research. On April 30, a field training was conducted in the Mokokchung district, where participants explored the tertiary sediments—the final stages of Himalayan orogeny following the collision of the Indian and Eurasian plates. Participants studied fault structures, sedimentary features, and evidence of the changes in river courses due to the active tectonics in this region. The local sandstone and shales offered insight into ancient Tethyan marine conditions that contributed to the formation of present-day Nagaland.

The workshop underscored the urgent need for extensive geochronological research to understand regional landform evolution and support sustainable development planning. The event concluded with a certificate distribution ceremony at the field site in the evening.

IAVCEI 2025 at Geneva, Switzerland and Goldschmidt 2025 at Prague, Czech Republic

Compiled by Piyal Halder

The International Association of Volcanology and Chemistry of the Earth's Interior (IAVCEI) hosts its Scientific Assembly every four years. I was honoured to participate in this year's event held in the stunning city of Geneva, Switzerland, from June 29 to July 4, 2025. This year's theme, "The Energies of Magma: From Volcanic Eruptions and Mineral Resources to Geothermal Production and Sustainability," underscored the vital connections between our planet's dynamic processes and sustainable development.

I was privileged to present my research titled "Investigating the Influence of Deccan Volcanism and Hydrothermal Alteration on Seismic Hazards in the Koy-

Piyal Halder is a PhD student in Birbal Sahni Institute of Palaeosciences (BSIP) and Academy of Scientific and Innovative Research (AcSIR) under the supervision of Dr. Anupam Sharma (Sci-F, BSIP). He is also serving as the ECS Representative of the Geochemistry, Mineralogy, Petrology and Volcanology (GMPV) Division of EGU and a member of the Communication Committee of the EAG.

na-Warna Seismogenic Region, Western India." I extend my heartfelt gratitude to the IAVCEI organising committee for selecting me as the only Indian PhD student to receive a travel grant.

After my presentation, I enthusiastically invited my IAVCEI brothers and sisters to visit India for the upcoming INQUA Congress 2027, an opportunity to explore the extraordinary geological wonders of our diverse nation. I appreciate the IAVCEI Executive Committee for keeping my request to promote the INQUA Congress 2027 on the LED display near the entrance.

Looking ahead, the next IAVCEI Scientific Assembly is set to take place in the beautiful landscapes of Costa Rica in 2029, following the next General Assembly from July 15 to 23, 2027, in Incheon, South Korea.

My journey to Switzerland concluded with a trip to Prague, Czech Republic, for Goldschmidt 2025, from July 5 to 11, 2025. Organised by the European Association of Geochemistry and the Geochemical Society, this year's Goldschmidt was significant to me, as I was actively involved in the Communication Committee of the EAG and served as a Goldschmidt Student Helper as well as a Goldschmidt Blogger.

I was honoured to be among the 94 participants awarded the Goldschmidt Travel Grant, where I presented my research on "Decrypting the Role of Shallow Crustal Fluid-Rock Interaction on Fault Mechanics and Seismicity in the Koyna-Warna Seismogenic Region, Western India."

Around 4405 delegates from over 70 countries were at the Goldschmidt (4069 in person and 336 remote). The global response to my invitation for the INQUA Congress 2027 at the end of my presentation has been overwhelmingly positive. I am thrilled to see such excitement from the international community. The next Goldschmidt conference will be held at Palais des Congrès de Montréal in Canada, continuing our collective journey of geochemical exploration and collaboration.

European Geosciences Union (EGU) General Assembly 2025 (EGU-2025) at Vienna, Austria

Compiled by Monika Devi

The European Geosciences Union (EGU) General Assembly 2025 was held in Vienna, Austria, and online from 27 April to 2 May 2025. As one of the world's largest and most dynamic geoscience conferences, EGU-2025 brought together nearly 20,000 participants from across the globe to share and discuss the latest advancements in geology, climate science, hydrology, space science, planetary science, and more. The conference promoted interdisciplinary collaboration, early-career researcher engagement, and promoted the values of open-access science. I had the opportunity to present my research titled "Effect of Metamorphism on the Point Defects in Quartz: Characterization using Different Spectroscopic Techniques."

My work focused on use of Electron Spin Resonance (ESR), Raman Spectroscopy, Scanning Electron Microscopy with Cathodoluminescence (SEM-CL), Thermoluminescence (TL), and Optically Stimulated Luminescence (OSL) to study changes in quartz point defects caused by metamorphism, revealing insights into broader geological processes. It was an enriching experience to interact with leading scientists working in metamorphic geology, luminescence dating, and Earth sciences. I also attended inspiring sessions in diverse fields such as provenance studies, isotope geochemistry, and planetary sciences.

Along with the scientific research sessions, EGU-2025 launched a new EDI participation support scheme, which addressed financial and accessibility barriers, encouraged mental health

awareness, and created inclusive spaces for underrepresented researchers, participation of women in science, making the event more accessible and community oriented. Below are a few quotes from the speakers that I found especially inspiring:

1. You do not have to be Marie Curie to do science.
2. The world will be a more peaceful place if we include diversity.
3. Science is for everyone-but only if we build it that way.

After the conference, I explored the beautiful city of Vienna and enjoyed the beautiful museums and architecture of the city. This made my experience both academically fulfilling and personally memorable.

Biodata:

Dr. Monika Devi is a postdoctoral researcher at the Environmental Radioactivity and Nuclear Dating Centre at Babes-Bolyai University, Cluj-Napoca, Romania. She is working in European Research Council (ERC) Consolidator Grant-101043356, awarded to Prof. Alida Timar-Gabor, "PROGRESS – Reading provenance from ubiquitous quartz: understanding the changes occurring in its lattice defects in its journey in time and space by physical methods". She did her PhD from Physical Research Laboratory, Ahmedabad in collaboration with the Indian Institute of Technology, Gandhinagar, India under the supervision of Dr. Naveen Chauhan in the field of luminescence dating and its application to various fields such as in Geology and Archaeology. She studies defects in crystals to uncover the hidden stories of Earth's past, especially from the Quaternary period. Her research helps us understand landscape changes and human migration.

From Azamgarh to Australia: My Journey of Lessons, Reflections, and Resolve from WAC 10, Darwin, Australia, 2025

Dr. Tishyarakshita Nagarkar

Attending the 10th World Archaeological Congress (WAC 10) was more than a mere milestone; it was a profound experience that reshaped my understanding of archaeology and redefined my sense of purpose. The red earth and timeless escarpments of Litchfield and Kakadu were not just landscapes; they unfolded as living narratives of the Bininj/Mungguy people, custodians of some of humanity's most ancient rock art. Each moment—whether it involves standing before ochre-stained galleries, participating in mortuary rituals, or perfecting the craft of traditional archery—infuses scholarship with a deep sense of humility and awe. Here, heritage vibrates with vitality, intricately interlaced with the essence of the land, the cadence of the seasons, and the everyday experiences of those who protect it.

However, the chance for profound connection was perpetually shadowed by the burden of an unsettling awareness. I observed the significant struggles faced by these communities: climate change, economic pressures, and persistent marginalisation threaten not only the protectors but also the cultural legacy they work tirelessly to maintain. Kakadu's unique methodology—prioritizing Indigenous viewpoints in the preservation of heritage, environmental stewardship, and knowledge dissemination—has, for me, come to represent the core principles of ethical archaeology. It highlighted a deep understanding derived from each conversation and shared experience: true preservation goes beyond simple frameworks; it resides in empowering cultures to thrive and develop in alignment with their intrinsic values.

The vibrant halls of WAC 10 resonated with a dynamic exchange of ideas and global conversations, and I experienced a deep sense of pride representing my country and its rich cultural heritage in my roles as a presenter, panel convener, and workshop convenor. In my presentation of the paper titled "Death, Memory, and Mortuary Performance: Reinterpreting Megalithic Monuments and Associated Rituals Amongst the Indigenous Communities of Vidarbha, Maharashtra, India," I explored the significance of megaliths as dynamic symbols of memory and respect, perpetually sustained by living cultural traditions. The panel titled "Archaeology, Climate Change, and Ethnography: Possibilities, Paradoxes, and Shifting Paradigms" delved into how ethnographic viewpoints can transform archaeological

Dr. Tishyarakshita Nagarkar is a Senior Associate and Editor, (Project Ethnography of 45 Tribes of Maharashtra and Dept of Anthropology, Savitribai Phule Pune University, Pune, Maharashtra, India; Visiting Faculty (Historical and Anthropological Archaeology), Indian Institute of Heritage, Noida, India. She is a renowned archaeologist, storyteller, and ethnographer.

narratives in the face of contemporary challenges. My workshop, "Using Ethnography to Decode Ancient Subsistence Patterns with Special Reference to Bow and Arrow Usages Amongst the Hunting-Gathering Indigenous Communities of Western India," invited colleagues to embark on an interactive exploration of the complex interplay between ethnography and archaeology—blending experimentation, hands-on engagement with replicas, and a diverse array of cross-cultural insights.

Even within these enlightening discussions, the glaring absence of a common platform for dialogue—especially from South Asia and other marginalised regions—was profoundly apparent. This silence sparked a profound resolve within me, leading to the creation of "Archaeology Beyond Borders," an initiative dedicated to fostering inclusion, solidarity, and ethical engagement throughout the discipline.

The steadfast influence of mentors has served as the foundation for these accomplishments. I express my sincere appreciation to Dr. Rajiv Nigam and Dr. B. R. Mani for your steadfast support and profound insights. I express my sincere appreciation to the WAC 10 committee, especially to Prof. Claire Smith and Prof. Heather Burke, whose openness to innovative concepts enabled my contributions to flourish. To Dr. Chandraprakash Dwivedi, your unwavering belief in my abilities illuminated my path, encouraging me to confront obstacles and pursue ambitious goals. To my friends and collaborators in Kakadu and across South Asia, your generosity and willingness to share have profoundly influenced my path—creating experiences and reflections that echo far beyond the boundaries of fieldwork.

I must also acknowledge the crucial financial support offered by the WAC-10 travel grants program, which made my participation possible. Their commitment to supporting early career scholars and elevating under-represented voices embodies the fundamental ideals that WAC seeks to promote—guaranteeing access, nurturing equity, and opening new pathways for global interaction.

As I move forward, I hold the conviction that the essence of archaeology transcends the mere unearthing of history; it serves to deepen our current experiences and shape the moral frameworks of what is yet to come. The legacy of WAC 10 lingers in my thoughts—a profound reminder that our discipline thrives not in solitude, but through our identities as stewards, storytellers, and collaborators, breaking through barriers. I am resolute in my pursuit of this vision, fuelled by perseverance and persistence, and I know I will win in my pursuits.

Technological Transition or Independent Evolution? Investigating the Blade and Bladelet Industry in South Bihar, India

PI: Akash Pandey, Doctoral researcher

Affiliation: The Maharaja Sayajirao University of Baroda, Vadodara, Gujarat

Funding Agency: *Dissertation Fieldwork Grant, Wenner-Gren Foundation*

Collaborators: *Dr. Deepak Jha, Dr. Karthick Balasubramanian, Dr. Naveen Chauhan and Professor P. Ajithprasad*

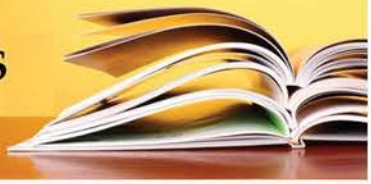
This project aims to investigate the transition from the Middle to Upper Palaeolithic in South Asia, with a particular focus on the emergence of blade and bladelet industries during the Late Pleistocene. While the South Asian Middle Palaeolithic is now well-established, with key dated sites across the subcontinent, the technological developments/shifts to the subsequent cultural phase remain underexplored due to the scarcity of stratified and securely dated assemblages. Early phase of the MIS (Marine Isotope Stage) 3 (~60–27 ka) marks a critical period of innovation in South Asia, including the continuity of Middle Palaeolithic tools, the rise of blade-based industries, and the introduction of microlithic technologies. However, the sequence, timing, and nature of technological shifts are still debated. This project addresses these gaps by examining lithic assemblages from the Kharagpur Hills

in South Bihar, an area of significant archaeological potential. The previous study by the PI highlights systematic production of laminar based industry and the Middle Palaeolithic core reduction methods by examining the complete operational sequence of the assemblages collected from primary context sites during recent field surveys.

Through systematic excavation, detailed typo-technological and morphometric analyses of lithics, chronometric dating (Radiocarbon and Luminescence methods), and paleoenvironmental reconstruction, the project aims to determine whether blade technologies evolved from the previous Middle Palaeolithic traditions or emerged independently. It also seeks to understand the relationship between technological change and environmental factors.
By focusing on an eastern Indian context, the project expands the geographic scope of prehistoric research and enhances our understanding of regional variability in hominin behaviour. Thus, this interdisciplinary research will generate a robust dataset for the transition assemblages, promote future investigations in lithic fossil-rich zones of Eastern India, and address the complex question of the Late Pleistocene archaeology of South Asia.

This project is a collaborative effort involving esteemed experts in their respective fields, with the majority of them possessing extensive experience in the study of the Quaternary period.

RESEARCH PUBLICATIONS



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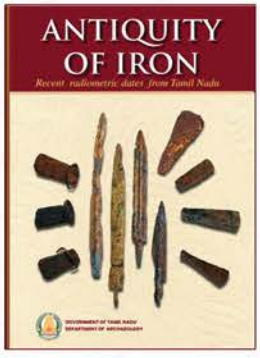
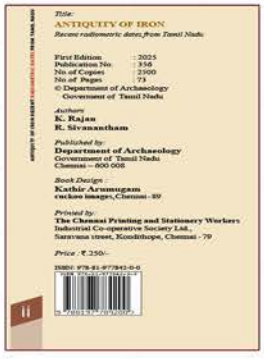
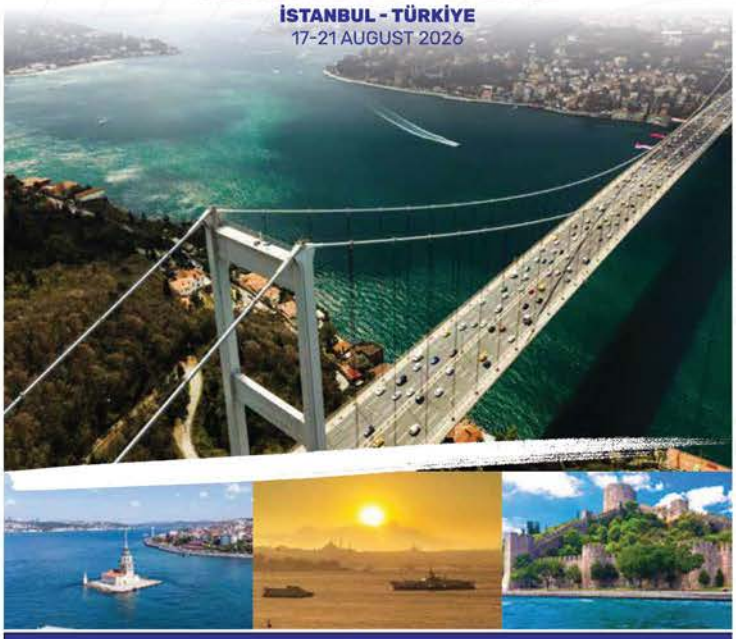




Quaternary Chronicles
Happenings in the Sub-continent
ASSOCIATION OF QUATERNARY RESEARCHERS

UPCOMING EVENTS

IRC 2026
REGIONAL CONFERENCE
İSTANBUL - TÜRKİYE
17-21 AUGUST 2026



www.irc2026.org

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Save Earth and Save Future

FIRST INTERNATIONAL PRAKRITI CONFERENCE, UDAIPUR-2025 (IPC Udaipur - 2025)

SUSTAINABLE EARTH AND GLOBAL RESPONSIBILITY
A CALL FOR COLLECTIVE CHANGE

11 - 12 OCTOBER, 2025

Prakriti Research Society, Udaipur
PRSU 2024
माता भूमिः पुत्रो ऽहं पृथिव्याः
IPC UDAIPUR-2025
October 11-12, 2025

Prof. P.R. Vyas	Prof. Pradeep Trikha	Prof. Palak Bhardwaj
Patron and Chairman	Organising Secretary	Convener
Mob.: 9116676627	Mob.: 9460112468	Mob.: 9468578448

INQUA

Call for INQUA Projects and Fellowships 2025🚀

INQUA invites applications for funding for the Projects and Fellowships programs. These opportunities support international collaboration and innovation in **Quaternary science**.

Researchers at all career stages are encouraged to apply!

Application deadline: 30 September 2025
Details and guidelines: INQUA website

Don't miss the chance to engage with the global Quaternary research community!

46th IIG ANNUAL MEET & INTERNATIONAL CONFERENCE 2025

First Circular

"DYNAMIC EARTH, FRAGILE ENVIRONMENT & PATH TO CLIMATE-RESILIENT SOCIETIES"

(25-27 October 2025)

Indian Meteorological Society's

International Symposium on Tropical Meteorology (INTROMET 2025)

18 - 20 November 2025 Pune, India

"Advances in Tropical Weather, Ocean, and Monsoon Climate Research for a Sustainable Future"
@
Indian Institute of Tropical Meteorology, Pune, India

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UPCOMING EVENTS

An International Conference on
Advancing Frontiers in Earth Sciences: Innovations, Challenges, and Future Perspectives

21ST -22ND SEPTEMBER, 2025

Organised by
School Of Earth Sciences
Banasthali Vidyapith
Banasthali, Tonk, Rajasthan

WHO CAN APPLY?

All research enthusiast including Students, Research Scholars, Faculty, scientists, social scientists, and corporate representatives, are welcome.

The last date for abstract submission-25th July, 2025

Abstract submission Link-
https://forms.gle/Tm6xLsQBwF1QvJEU9

Intimation of acceptance-1ST August, 2025

The last date for registration-05th August, 2025

Registration Link-
https://forms.gle/rNAPyUJGMnJ811RL9

3rd Indian Quaternary Congress "Tracing Earth System Dynamics and Human–Environment Interactions through the Quaternary" & Pre-conference training workshop on "Stable Isotopes in Palaeoclimatology"

(Venue: IITM, Pune; 19-23 Jan 2026)
Convener: Naveen Gandhi, IITM, Pune

The Indian Quaternary Congress (IQC) is a biennial event organized under the aegis of the Association for Quaternary Research (AOQR). Launched in 2022, IQC is envisioned as a rotating national platform, with future editions to be hosted in different regions of India through a competitive bidding process overseen by AOQR. The third edition, IQC-2026, warmly invites the Indian and international Quaternary science community to participate in this enriching academic gathering.

IQC-2026 will feature a two-day Pre-conference training workshop (19-20 Jan 2026), followed by a three-day scientific conference (21-23 Jan 2026). Proposed Activities are:

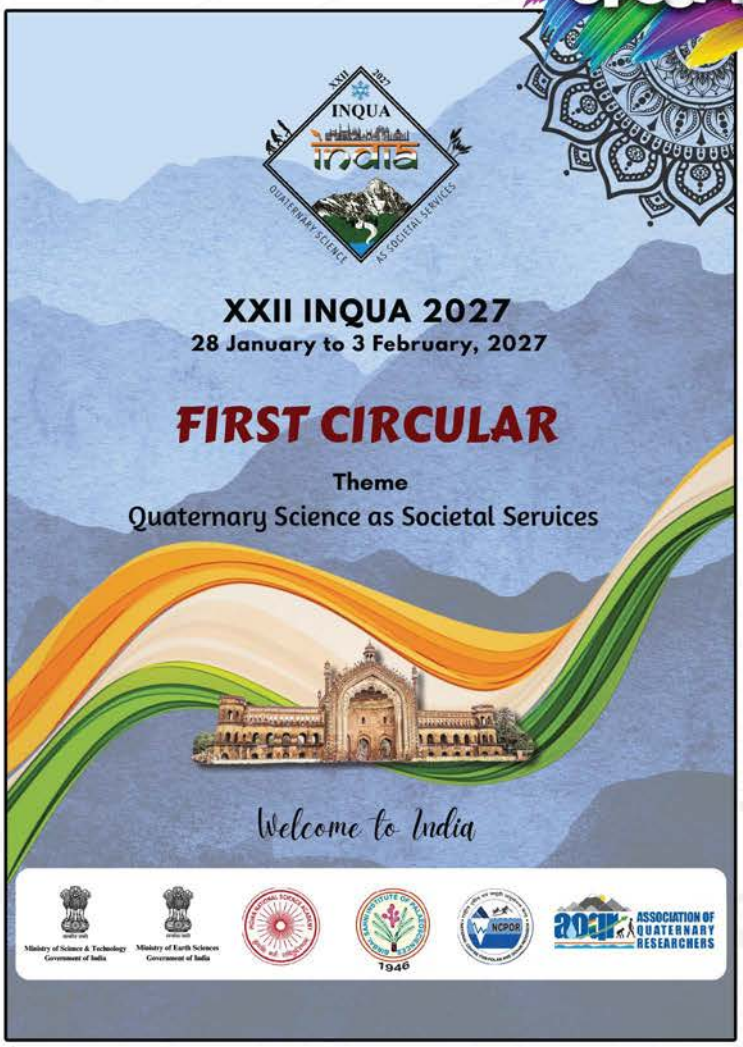
- Plenary and keynote lectures by eminent scientists
- Oral and poster sessions
- Pre-conference training workshop on "Stable Isotopes in Palaeoclimatology"
- Special panel discussions on interdisciplinary collaborations and future directions
- Field visit (optional) to a nearby Quaternary archive or relevant geological site

The IQC-2026 aims to foster discussions on the challenges and advances in Quaternary climate research.

Promote the use of interdisciplinary approaches in understanding past environmental and climatic systems, and Explore the intersections between human evolution, societal dynamics, climate variability, and landscape transformation over the Indian subcontinent.

Dedicated rapid-talk sessions will be organized in each theme, particularly to highlight the ongoing research by PhD scholars and postgraduate students. The congress will cover all aspects of the Quaternary period, encompassing the terrestrial, marine, and polar realms. The training workshop is designed to expose early-career researchers and students to core aspects of paleoclimate research through expert lectures, laboratory demonstrations, data processing, and hands-on sessions in modelling, programming, and software tools.

UPCOMING EVENTS



INQUA 2027	27 January	28 January	29 January	30 January	31 January	1 February	2 February	3 February	
9:00	Pre-conference Field Excursion	Return from Field	Registration			Mid-conference Field Excursion	Registration			Post-conference Field Excursion
9:00-10:30			Inauguration	Topical Session	Topical Session		Topical Session	Topical Session	Topical Session	
10:30-11:00			Tea/Coffee				Tea/ Coffee			
11:00-13:00			Plenary/ Public Sessions / Business Meetings / Expo				Plenary/ Public Sessions / Business Meetings / Expo			
13:00-14:00			Lunch				Lunch			
14:00-15:30		Registration and Ice Break	Topical Session	Topical Session	Topical Session		Topical Session	Topical Session	Valedictory Session and Closing ceremony	
15:30-16:00			Tea/Coffee				Tea/Coffee			
16:00-18:00			Topical Session	Topical Session	Topical Session		Topical Session	Topical Session		
18:00-20:00			Cultural Program / Group Interactions				Cultural Program / Group Interactions		Leave for Field	
20:00			Welcome Dinner	Local Tours / Social Activities / Shopping				Conference Dinner		

Proposed schedule of events

The programme will be developed on submitted session proposals in the framework of the scientific commission of INQUA. We invite everyone to submit proposals for sessions.

Pre-Congress Field Trips	20 - 27 January 2027
Exhibition(s) setup	26-27 January 2027
Onsite registration and Icebreaker party	27 January 2027
Opening Ceremony	28 January 2027
Scientific Program	28 -30 January 2027; 1 - 3 February 2027
Mid-Congress Field Excursion	31 January 2027
Congress Social Dinner	2 February 2027
General Assembly and Closing ceremony	3 February 2027
Post Congress Field Trips	4-9 February 2027 (may start leaving on evening of 3 February 2027

Category	Early Bird Fee Till 25 July 2026	Regular Fee Till 25 Sept 2026	Registration with Late Fee / On Site
Full Registration	€550	€650	€750
Student Registration ECR* and DCR**	€350	€450	€500
One Day Registration	-	€250	-
Registration for Accompanying Person	€300	€300	€300
Congress Dinner	€60	€60	€60

Quaternary Chronicles
Happenings in the Sub-continent
ASSOCIATION OF QUATERNARY RESEARCHERS

CALL FOR CONTRIBUTIONS

Quaternary Chronicle (QC) publishes three issues a year seeks to publish perspectives, recently published peer-reviewed papers in Quaternary science, new developments in Quaternary science methods/ techniques, past events, awards, abstracts of recently awarded Ph.D./MS thesis; Quaternary publications, obituaries and details on forthcoming conferences/opportunities/fellowships the world over. Each issue of the newsletter will therefore, comprise news on on/from the Indian sub-continent;. It will also have a platform for discussion on emerging questions and ideas in Quaternary science and details on new books/ monographs/ reviews. QC seeks to share original results, new ideas and innovative development for the common good and a possibility to serve as a catalyst for the initiations of major and coordinated initiatives in the country.

We now accept submissions for our upcoming issues. Submit all the contributions to ***aoqr2019@gmail.com****. Themes for contributions are given below:*

1.Perspective: *Perspective write-ups on emerging trends and new possibilities in Quaternary Science (500 words).*

2.Sneak-peek and Discussion: *Share any exciting findings/questions from your ongoing (unpublished) work already to facilitate discussion. Any other intriguing facts/ unanswered questions are also welcomed for discussion (150 words).*

3.Significant new manuscripts/ books/ monographs/ reviews: *Corresponding authors of recently published peer-reviewed papers are invited to submit a brief summary of their work (not published abstract) with complete reference, web-link, and corresponding email address (200-300 words). Also, include a PDF copy of the paper in the email (for reference only).*

4.Facilities and Instruments: *A list of available facilities at various Indian institutes will be given and updated as contributions are received. In-charge of the available facilities, mentioning whether it is open access or available on payment basis, may submit the details with contact details.*

5. Achievements: *Share national or international awards/ fellowships/ recognitions with the larger Quaternary community. Also, approved SERB/ DST/CSIR/ national/ international Quaternary projects with the title, affiliation details of the awardee and a brief abstract (200 words) may be submitted with a copy of the award letter (for reference only).*

6.Projects/Collaborations: *New projects and collaborations related to Quaternary Science may also be sought for enhancing the quality of ongoing/proposed research. Submit a brief summary of the project, collaborations required and the contact details for correspondence (200 words).*

7. New Thesis: *Abstracts of awarded PhD/MS degree are invited for contribution (250 words).*

8.Opportunities: *Submit details with web-link of any new openings and opportunities for wider circulation.*

9. Social media: *Follow, discuss and share Quaternary India News on https://twitter.com/ AOQRIndia (Twitter) and https://www.facebook.com/ AOQRIndia (Facebook).*

Come join us!

The Association of Quaternary Researchers (AOQR) invites you to register for AOQR Membership and ask your colleagues and students to make the AOQR Fraternity stronger and become a part of the AOQR family.
See the details in https://www.aoqr.org/#

ISSUES	Deadlines (Last date for submission)
Issue -1 (April)	**March 10**
Issue -2 (August)	**July 10**
Issue -3 (December)	**November 10**