

## A Report on the 28<sup>th</sup> Indian Colloquium on Micropalaeontology & Stratigraphy (4<sup>th</sup> to 6<sup>th</sup> May 2022)

The Department of Environmental Science, Savitribai Phule Pune University hosted the Golden Jubilee Celebrations (1971-2022) of the Indian Colloquium on Micropalaeontology & Stratigraphy at the *Namdev Sabhagriha* on the University Campus from 4<sup>th</sup> to 6<sup>th</sup> May 2022. The Colloquium returned to Pune after 40 long years since the 10<sup>th</sup> Colloquium in 1982 at MACS. It was the first conference in physical mode after the COVID pandemic induced lockdown. 300 academicians from different parts of the country participated and deliberated on the theme *Proxy Development for Decoding Past & Modern Environments*.

The inaugural function of the Colloquium was presided over by the Hon'ble Vice Chancellor of Savitribai Phule Pune University (SPPU), Prof. Nitin Karmalkar. Shri P.R. Mishra, GGM-Chief Operations Geology - Corporate Geology Services, ONGC Mumbai was the Chief Guest. Recipient of the Joseph Cushman Award 2022 of the Cushman Foundation for Foraminiferal Research, USA, Dr. Rajiv Nigam, Former Deputy Director, CSIR- National Institute of Oceanography was the Guest of Honour. Dr. Anand Kale, Upstream Oil Industry Consultant and the President of the 28<sup>th</sup> ICMS, Prof. M.P. Singh, President of the Palaeontological Society of India, Lucknow, Prof. Suresh Gosavi the Host & Head of the Department of Environmental Science, SPPU and the Convener, Dr. Rajani Panchang graced the dias.

The Vice-Chancellor Prof. Nitin Karmalkar identified the organisation of the 28<sup>th</sup> ICMS under his patronisation as the culmination of his vision and pledge to revive the lost legacy of the city of Pune in Palaeontology & Stratigraphy!

The Chief Guest, Shri P.R. Mishra said, "During our student times, micropalaeontology being a difficult subject, always had fewer takers. But that has led to biostratigraphers being endangered and effectively the oil industry is still dependent on oil fields which were discovered decades ago. No new discoveries are being made! It is extremely heartening to see so many youngsters amongst the participants of the colloquium today. It gives us a hope that the future holds better promise." Apart from the delegates of the conference, it was attended by Heads and faculty/scientists of several institutes in Pune, Registrar and Deans of the different faculties of the SPPU, PRO SPPU, representatives from the print media.

The Presidential address was delivered by Dr. Anand Kale titled '*Henry F. Blanford 1862: Revisited after 160 years.*' in which he demonstrated how his observations and interpretations, primarily made on the basis of field observations have still stood the test of time and the subsequent attempts to revise the stratigraphic schemes and interpretations of the Cretaceous of Trichinopoly have erred.

About 140 research papers were presented across 13 technical sessions. They comprised 1 Presidential address, 17 Keynote lectures, 48 Oral presentations and 74 poster presentations. The session on 'Industrial Applications of Micropalaeontology and Stratigraphy' was chaired by Dr. Vandana Prasad, Director BSIP Lucknow. Mr. P. K. Mishra GGM-Chief Operations Geology ONGC Mumbai spoke about ONGC's '*Expanding Explorations - Charting New Horizons*' whilst Dr. Sudhir Shukla delivered a student-



oriented talk on '*Energy Perspective & Relevance of Geoscience specially Palaeontology in aid of Hydrocarbon & Mineral Exploration*'. This session had 10 papers presented in oral and poster sessions.

The second session on 'Proxy development (new microfossil groups biomarkers geochemical attributes) Taphonomy & Diagenetic effects on preservation' was chaired by Prof. M. P Singh, President PSI, Lucknow. Dr. Vandana Prasad presented an insightful invited lecture on the '*Role of plate tectonics and global climate in the diversification of tropical angiosperms: Evidence from fossil records*'. This session had 8 paper presentations on the theme.

The third session, 'Proxy development (new microfossil groups biomarkers geochemical attributes) Culture studies & Experimental Molecular and Evolutionary micropalaeontology' was chaired by Dr. Neloy Khare, Advisor, Ministry of Earth Science, New Delhi. Two keynote lectures were delivered on this theme: one on '*Foraminiferal Radiocarbon studies to elucidate ocean ventilation on glacial-interglacial timescales*' by Dr. Sushant Naik, Scientist, CSIR, National Institute of Oceanography, Goa and '*Laboratory studies of live foraminifera: an important link to Proxy Development*' by Dr. Sujata Kurtarkar, also from NIO Goa. A total of 13 papers were presented in this session.

Following day, Dr. Rajiv Nigam, chaired the fourth session on Palaeoclimate, Palaeoceanography and Biogeochemistry. Prof. Devesh Sinha Delhi University delivered a captivating keynote talk on '*Ocean Gateways of the Cenozoic as drivers of changing ocean circulation and climate*'. Dr. Rajeev Saraswat, Scientist, CSIR-NIO Goa presented a review of palaeoclimatic studies to answer the question if '*The Indian Ocean a passive responder or an active modulator of the global climate?*' 21 oral and poster presentations were delivered in this session.

The fifth session on the same theme was chaired by Prof. Devesh Sinha. 15 papers were presented with two key note addresses. Dr. Raj Kumar Singh, Faculty, IIT Bhubaneswar elucidated the '*Application of benthic foraminiferal proxies to assess the paleoceanographic and paleoclimatic variability*' while Dr. A V Sijinkumar, Faculty, Central University Kerala demonstrated the '*Spatial variability in Holocene Indian summer monsoon in the Bay of Bengal*'.

Prof. Pradeep Kundal, from Rastrasant Tukadoji Maharaj Nagpur University chaired the sixth session on 'Forgotten/Lesser-known groups/Micropalaeontology in Archaeology & Geochronology on the colloquium' on the second day of the conference. Two keynotes were delivered by the Faculty of Govt. College of Science, Aurangabad. Dr. K. M. Wanjarwadkar spoke about the '*Present Status and Future Prospects of Fossil Calcareous Algal studies in India*' while Dr. Mohan Sonar presented his latest findings on the '*Thalamoporellid and Microporid Bryozoans from the Neogene sediments of western Kachchh, Gujarat, India*'. 12 papers were presented in this session.

The third day commenced with a guided tour of the University of Pune Main Building, which is a heritage building, built in Deccan basalt and maintained by the Archaeological Survey of India. Built by the Britishers in 1864, it was the residence of the Governor of Bombay during the British Raj. The group photo of the conference was clicked in the backdrop of the heritage building.

The seventh session on 'Extinctions and Event Boundaries' was chaired by Dr. Bandana Samant from RTMNU. She presented a keynote lecture on '*The Impact of Deccan volcanic eruptions on flora and challenges in tracking Cretaceous- Paleogene boundary in Indian terrestrial sequences*'. Apart from the 7 papers presented in this session, Dr. Jahnavi Puneekar from IIT Bombay delivered an invited talk titled '*An Update on the Cretaceous-Palaeogene Boundary Mass Extinction*' where she drew attention to timing and effects of the Chicxulub impact, stress induced by ocean acidification and shift of oceanic environments from open shelf to marginal marine.

Dr. V. D. Borkar, Former Scientist, Agharkar Research Institute Pune chaired the eighth session on 'Micropalaeontology in the resolution of stratigraphic problems' in which Dr. Suraj Kumar Parcha, Former Scientist, Wadia Institute of Himalayan Geology delivered '*a synoptic keynote lecture on the Stratigraphy of the Tethyan Himalayan successions*'. 7 papers were presented in this session.

The theme 'Micropalaeontology in the resolution of stratigraphic problems' continued into the ninth session which was chaired by Dr. Suraj Kumar Parcha, in which 11 research papers were presented. The keynote titled '*Integrated Pliocene-Pleistocene Bio-magnetostratigraphy of deep-sea sediments in the Indian Ocean and Western Equatorial Pacific*' was delivered by Dr. Ashutosh Singh, Faculty, Delhi University.

Dr. Amalava Bhattacharya, former scientist BSIP Lucknow, chaired a part of the session in which Dr. Kapesa Lokho, Scientist WIHG delivered a keynote titled '*The magnificent power of microfossils: case studies in refining and resolving stratigraphic age, depositional environment and collisional tectonics in the Indo-Myanmar range*'.

The tenth technical session addressing 'Environmental Monitoring and Resource Mapping' was chaired by Prof. S. P. Mohan from University of Madras. Dr. K. Mohan, Faculty, VIT, Chennai delivered a keynote lecture highlighting '*the impetus provided by an integrated approach using proxy techniques, mainly foraminifera in the research and exploration of Gas hydrates*'. 6 research papers were presented in this theme.

Prof. S. M. Hussain from University of Madras chaired the eleventh session on the same theme. Whilst six papers were presented in this session, the keynote lecture was delivered by Dr. Karthick B, Scientist at the Agharkar Research Institute which was titled '*Exploring the freshwater diatom diversity of the Indian subcontinent to strengthen their role in various environmental and geological applications*'.

Youngsters were encouraged to present posters belonging to the above listed technical session themes in two poster sessions on 4<sup>th</sup> and 5<sup>th</sup> of May 2022. The oral and poster presentations were judged anonymously and five poster and paper presentation awards were given to researchers, not in employment. The awardees of the oral presentation were 1<sup>st</sup> - Puja Vijay, CUSAT, Kerala; 2<sup>nd</sup> - 2. Mohd. Salman, CSIR-NIO Goa; 3<sup>rd</sup> - Ipsita Roy, BSIP, Lucknow; 1<sup>st</sup> Consolation - Ramanand Yadav, CSIR-NIO Goa; 2<sup>nd</sup> Consolation - Deveshwar Prakash Mishra, BSIP Lucknow. The awardees of the Poster Presentation were 1<sup>st</sup> - 1. Gavendra Kumar, CSIR-NIO Goa; 2<sup>nd</sup> - 2. Arya Pandey, BSIP Lucknow; 3<sup>rd</sup> Pooja Ghadi, Goa University; 1<sup>st</sup> Consolation Komal Shinde, VIT Chennai; 2<sup>nd</sup> Consolation - Rudra Narayan Mohanty, IIT Kharapur.

Custom-made trophies of the statue of Savitribai Phule, mementos made from 125- to 118-million-year-old Habur Limestone procured from Rajasthan, and larger benthic foraminifera from the Tertiary of Kuchchh were gifted to distinguished guests, keynote speakers and participants respectively. Guests were enthralled by the cultural programme organized on the first day. The dances included Bharatnatyam, Kathak and Lavani i.e., the folk-dance of Maharashtra. The performers were all students and faculty of the Lalit Kala Kendra, Department of Performing Arts, SPPU. The video recordings of inaugural, cultural programme, valedictory event and all keynote lectures can be viewed at <https://www.youtube.com/@environmentsciencesppu8420>. A gala dinner was hosted by the Hon'ble Vice Chancellor of SPPU on the University lawns for all delegates after the Cultural Programme. The second day ended with a public, popular lecture by Dr. Rajiv Nigam, first Indian recipient of the Joseph Cushman Award for lifetime contributions to micropalaeontology titled 'Mahabalipuram, Dwarka, Remsetu: Indian History or Mythology'. This talk was live streamed as a webcast through the University's website upon public demand (video available at <https://youtu.be/Q0HCajT7gIg>).

The success of the event is duly credited to several

sponsors! The 28<sup>th</sup> ICMS received support from industry and government funding agencies namely ONGC New Delhi (the Platinum Sponsor) initiated through ONGC-KDMIPE, MoES, DST-SERB, ONGC Videsh, Association of Petroleum Geologists, Quality Improvement Programme Savitribai Phule Pune University, CSIR, Birbal Sahni Institute of Palaeosciences, Lucknow, Bank of Maharashtra, the Cushman Foundation for Foraminiferal Research USA, Shakun Scientific Traders and G.K. Scientific extended financial support. Additionally, well-wishers and family, namely Mr. Dnyaneshwar Nandu Ghate, Mr. Pradeep Khaire and Col. Amol Dhumal extended support in kind, in personal capacity.

Invitation to host the 29<sup>th</sup> ICMS by the Department of Geology, University of Delhi was unanimously accepted and Dr. Ashutosh Singh was entrusted the responsibility to organise the next Colloquium in Delhi.

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