

Report on the International Fossils week, 2022

International Fossil Day is an annual celebration held to highlight the scientific and educational value of palaeontology and the importance of preserving fossils for future generations. Due to overwhelming response & interest, international fossils week, 2022 was celebrated in India from the 15th-22nd October 2022 by the Palaeontological Society of India (PSI), Lucknow in close association with its Regional Student Chapters spread all over the country. Post Covid-19, this year, the events could be organised through multi-modal programs that included both Offline (Classroom), Online, Hybrid mode and Museum & Field events with active participation of young students, professionals and researchers. The main centres of the celebrations included Nagpur Chapter (in association with The Gondwana Geological Society and Alumni Association of PG Department of Geology, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur); Pune-Mumbai Chapter (including Earth & Climate Science (ECS) Department of IISER Pune); Southern India Student Chapter, Chennai; North-Eastern Universities Student Chapter, Dibrugarh; Silcher University, Silcher; Central University of South Bihar, Gaya; Goa Student Chapter, NIO, Goa; besides the Central body of the PSI (in association with Geological Survey of India and Jai Narayan PG college), Lucknow. The International Fossils Day-2022 events/programs were meticulously planned and successfully coordinated by Dr. Sudhir Shukla, Vice President, Palaeontological Society of India, Lucknow; along with the program-committee members (Prof. V. K. Kathal, Sagar; Prof. S. M. Hussain, Chennai; Dr. Rajani Panchang, Pune and Dr. V. P. Misra, Secretary, PSI Lucknow).

“Fossils: Preserving the Past for Our Future” was the theme of the International Webinar in Nagpur to highlight the scientific and educational value of Palaeontology and the importance of fossils in geoscience studies. Prof. M.P. Singh presided the inaugural function and Dr. Sudhir Shukla was the Guest of Honour in the events. Dr. A. K. Chatterjee, President, GGS, Nagpur delivered the welcome address and Prof. Sumedh Humane, Convener, IFD-2022 and Coordinator, PSI- Nagpur Student Chapter. Dr. Bandana Samant and Dr. Samaya Humane, Organizing Secretaries conducted the proceedings. Four talks were delivered by eminent speakers from India and abroad on various aspects of fossils and microfossils. The first talk was delivered by Dr. D.M. Mohabey, Former, Deputy Director General, GSI, Central Region, Nagpur on “All about Dinosaurs in India”. Dr. Syed Azharuddin, School of Environmental Studies, Nagoya University, Nagoya, Japan spoke on “Paleoceanographic significance of traditional and emerging geochemical proxies in foraminifera”. Dr. Arindam Chakraborty, Institute of Earth Sciences, Academia Sinica, Taiwan talked on “Past environment of the Emerald Islands

of India: Evidences from the white and black box fossils”. The fourth talk was by Dr. Bandana Samant, Associate Professor, Dept. of Geology, RTM Nagpur University on “Fossils: Thermometer of our planet”. Talks were followed by the interactive session in the form of discussion and questions-answers by the speakers and the participants. A large numbers of students, research scholars, faculty members, Scientists etc. actively participated in the Webinar through the online platforms of Google Meet and YouTube.

At Pune-Mumbai Student Chapter, Dr. G. R. Tripathy, Chair of ECS, IISER and Dr. Rajani Panchang Department of Environmental Science (SPPU) organised offline lectures. Dr. Vijay Sathe, formerly Deccan College and Research Institute, spoke about the status of Vertebrate study in the Indian Subcontinent and their importance in reconstruction of India’s palaeoenvironment and past vertebrate community. Three short talks, respectively by Dr. Rajani Panchang, on “The Giants of Palaeontology: Foraminifera”; Dr. Debpriya Chattopadhyay, from ECS IISER, on “Live, Dead and the Very Dead: Tracing Evolution in Deep Time” and Dr. Tushar Kaushik from Agharkar Research Institute on “Challenges in integrating Genetic data to Foraminiferal morphological taxonomy, its current status, need and the facility” were also presented to about 350 participants. The event was also attended online by the PSI office bearers, Lucknow namely Prof. M.P. Singh, Dr. Sudhir Shukla and Dr.V.P. Misra. The event was also live streamed on YouTube and Zoom and is available for viewing on <https://youtu.be/aKIm1NM3Of8>.

Department of Geology, University of Madras organized International Fossil day on 17th October, 2022 under the stewardship of Prof. S.M. Hussain, Head and Prof. M. Suresh Gandhi in hybrid mode where sixty students and scholars from different Govt. Departments and Universities from Tamil Nadu attended the program. Speakers included Dr. C.N. Ravindran, GM (Retd), and Dr. A.N. Reddy, DGM (Retd), ONGC Ltd, Chennai, and Mr. V. Chandramouli, Director, GSI, Chennai. “Fossils, their applications and significance; modes of preservation, past life through different geological periods” discussed and a Quiz program for school students & visit to museum was conducted by Dr. A. Rajkumar and Mr. K. Radhakrishnan, Organizing Secretaries. “Mega and microfossils from Cauvery Basin were discussed with reference to Palaeoenvironmental interpretation, value in Geohistory analysis in space and time” citing Indian examples. All the three lectures were very interesting and students interacted with the speakers. Active participation/felicitations by Mr. P. Prakasheswar; Prof. M.P. Singh, Dr. Sudhir Shukla, Dr. V. P. Misra and Prof. S.P. Mohan, Former Head of the Department were recorded.

Goa Chapter organized half-day interactive field event titled 'Living to Fossil' for Bachelors and Masters' students along with a few faculties from various parts of Goa, including the School of Earth Ocean and Atmospheric Sciences, Goa University, Dhempe College, Miramar and Dnyanprasarak Mandal College, Mapusa and a total of 150 students attended the program. Dr. Rajeev Saraswat, Principal Scientist, NIO introduced the theme and interacted with the participants on what fossils are, fossilization processes and other related processes. Dr. Saraswat, explained various processes in the transformation of living organisms to fossil, sediment sampling, handling and processing of sediments for micropaleontological studies; Dr. Thejasino Suokhrie, Scientist, NIO and Dr. Sujata Raikar, Principal Investigator, NIO, explained "seawater sampling for environmental parameters" like dissolved oxygen (DO), salinity, temperature, etc. "Multi-parameter probe and the process of fixing DO using Winkler A and B method" was shown. Akshay and Prerna, Research scholars at NIO, discussed macrofaunal groups, site selection and "sampling methods using quadrant" as well as the staining techniques for macrofauna.

The Paleontological Society of India and GSI organised a lecture by Dr. R. S. Chandel, Director (Geology), GSI and an educational museum visit for the UG and school students at Geology Museum, Geological Survey of India, Lucknow, on October 19th, 2022. In order to spread awareness, interest and knowledge about the fossils and their role in geosciences and environmental applications, students programs are conducted in hybrid mode to highlight the scientific and educational value of palaeontology and the importance of preserving fossils for future generations. School children and UG students were told that fossils aren't just interesting and fun to look at but they are also proof of the existence of once-living beings (Dinosaurs, other animals, plants and even DNA remnants). Through these fossils we're able to learn a lot about life since origin of earth, billions of years ago. We can even take a look at animals and life-forms that are no longer on the planet! These fossils (and the education around them) deserve to be preserved and explored. Prof. M. P. Singh, Dr. Sudhir Shukla, Dr. V. P. Misra and Dr. R. S. Chandel alongwith Dr. Nawal Tiwari and colleagues/faculties from Schools deliberated in the meeting and during the Museum visit.

To commemorate the *Azadi Ka Amrit Mahotsav*, the 75th year of India's independence, Department of Applied Geology, Dibrugarh University in association with the Palaeontological Society of India organized a National Webinar on "Fossil For Society: Exploring The Past For Future" during International Fossil Week from 18th to 22nd October, 2022. On behalf of the North East chapter, Dibrugarh University organized seven lectures delivered by eminent palaeontologists. The organizing committee comprised members of Nagaland, Mizoram University, North Eastern Hill University, Shillong, Assam University, Silchar, Oil India Limited, Duliajan, ONGC, Jorhat. Prof. Jiten Hazarika, Vice Chancellor Dibrugarh University spoke

on the educational importance of fossils for the society and inaugurated the webinar. Prof. Kalpana Deka Kalita, coordinated with Dr. Sudhir Shukla, VP & ex ONGC. Guest Speakers included Prof. Ashok Sahni who spoke on topic "Indian Fossils: Their beauty and value". Prof. Bikash Gogoi from the Department of Geological Sciences, Gauhati University discussed "Palaeontological records for lithofacies analysis: its implication and limitations"; Prof. Kalpana Deka Kalita, Dibrugarh University talked on "Meghalaya Shelf and Upper Assam Shelf: Micropalaeontological Evidence in Late Palaeocene and Early Eocene" especially the palaeodepositional setups observed by microfossils on Meghalaya and Upper Assam Shelf. Prof. Yengkhom Raghumon Singh, Manipur University, spoke on "Applications of Palynology in Geology" and Ms. Maya V. Panicker, ONGC, Jorhat, Assam talked on "Foraminifera and it's applications in Hydrocarbon exploration". Prof. Sunil Bajpai, Indian Institute of Technology, Roorkee talked on "India's northward drift: evolutionary and biogeographic insights from recent discoveries of fossil vertebrates" and Prof. Rajeev Patnaik, Panjab University, Chandigarh spoke on "Fossil teeth as palaeoclimatic indicator". Active participation/interaction, suggestions continued through the sessions and valedictory by Dr. Sudhir Shukla; Mr. Pranjal Pradip Barua, ONGC; Mr. Premjit from Wadia Institute of Himalayan Geology, Dehradun; Dr. Sanjai Kumar Srivastava, Nagaland University, Dr. V. P. Misra, PSI and Dr. Diganta Bhuyan, Dibrugarh University.

"Learning Fossils! (An awareness program for school children)" was the theme for webinar organized by Department of Earth Science, Assam University, Silchar, India with PSI, Lucknow. Vice Chancellor, Assam University, Silchar blessed the event. Prof. M. F. Hussain, Dean and Head, Department of Earth Science, Assam University Prof. N. Pandey, Ex-Dean and Dr. Sudhir Shukla, PSI spoke on the occasion. Technical session focussed on school students by lectures from Dr. Sudhir Shukla on "Fossils, their occurrences and use in exploration" and Dr. Urbashi Sarkar on "Who wants to be a palaeontologist?" The informative talks presented microfossil/megafossils including Dinosaurs to create awareness and interest in the subject in the minds of younger generations, both students to researchers. Showcasing of the department's macro fossils was held for children of Kendriya Vidyalaya, Badarpur; Narshing Higher Secondary School, Silchar and Dharanidhar Autonomous College, Keonjhar.

Central University of South Bihar, Gaya (CUSB) in association with Palaeontological Society of India, Lucknow (PSI) organised an online event graced by Prof. Kameshwar Nath Singh, Vice Chancellor, CUSB, Gaya, Bihar. Special lecture on the "Applications of Microfossils" was delivered by Prof. P. K. Kathal, Centre of Advanced Study in Geology, Department of Applied Geology, Dr. H.S. Gour University, Sagar. Larger fossils v/s microfossils; Biostratigraphy; Stratigraphic Zones, Mineral-walled Microfossils: Larger Foraminifera, Smaller Foraminifera, Ostracoda, Calcareous Nanoplanktons Radiolaria, Diatoms etc were discussed.

Prof Pardhan Parth Sarthi, Dean School of Earth, Biological and Environmental Science, Prof. P. K. Singh, HoD, Dr. V. K. Singh and co-faculties along with Prof. M. P. Singh, and Dr Sudhir Shukla, welcomed participants, deliberated and wished success to the budding department. Dr. K. Milan Kumar Sharma, Dr. Priti Rai, and Dr. Dharendra Kumar coordinated and managed the event graced by Shri Niteesh Kumar Dutta, Ex DG, GSI, Dr Rajiv Nigam, ex NIO, Goa, Prof. S. M Hussain, University of Madras, Prof. R. Nagendra, Ex. Anna University, Chennai, and many scientists and academicians. More than 200 participants were connected during the event.

Student Chapter: North Zone, Department of Geology, Delhi University conducted IFD program on October 21, 2022, under guidance/deliberations of Prof. Anupam Chattopadhyay, Prof. G.V.R. Prasad and Dr. Ashutosh K. Singh. Significant findings in the talk on “A synoptic view of Dinosaur Fossil Heritage of India” included: A snake predating dinosaur egg; Recovery of protein biomarkers;

New data on reproductive biology of sauropods; Preservation of Organic layer Membrana Testacea; First ovum-in-ovo pathologic egg of a sauropod Dinosaur explaining more about their reproductive biology comparable to birds and turtles. Fossil exhibition guided by Manjeet Kinni, SRF Manjeet Kinni, SRF was attended by a quite good number of participants from different science disciplines showing keen interest to understand “Earth’s history through remains of past life”. Fossil occurrence, origin of life, episodes of mass extinctions and Proterozoic to Quaternary life was exhibited.

On behalf of the Palaeontological Society of India Dr. Sudhir Shukla, extended thanks to all the Guest Speakers, Departments/Student Chapters, Organizing members and participants for making the event successful.

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