

Newsletter

Department of Geology, Durgapur Government College

July - December 2022

Preamble

After a long two years of nightmare of pandemic, ultimately the normal condition gradually revived. Consequently, the teaching-learning processes retrieved in full swing during this Semester. Efforts have been made, not only to carry forward the scheduled course work, but also to make up the backlog caused to the students due to forced isolation from the scope of their hands-on practical training. As a result, we had to pass through a tight schedule during this Semester. Much scope was, thus, not there to extend the students' activities beyond the scope of the University curriculum. Still, within this limited scope, students participated in all academic and extra-academic activities with full enthusiasm.

Field Training Programme



A week long (14th to 21st October, 2022) field training programme for the students of 3rd and 5th Semester Geology Honours was undertaken in Ghatshila and adjoining areas of Singhbhum, Jharkhand by Dr. Prabir Dasgupta, Dr. Supratim Pal and Dr. Proloy Ganguly for hands-on training on different aspects of field study. It was mainly focused on the study of lithology, analyses of the key structural elements present therewithin, and the preparation of Geological Map of the study area on different scales.

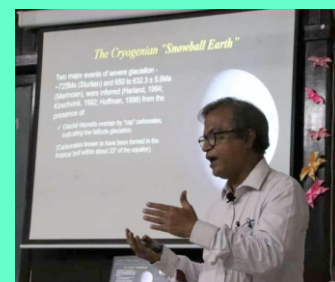
Invited Lecture



Dr. Sayantan Chakraborty, Assistant Professor, Earth System Science and Engineering Division, Department of Civil Engineering, IIT Guwahati delivered a talk on *Decoding the enigma of the Main Central Thrust in the Himalaya - A shear zone geometry-based approach* on 16th July 2022. The webinar was held on Google Meet platform. Besides the members of faculty and students of this Department, students, research workers and members of faculty of different institutions from different parts of the country attended the lecture. Dr. Chakraborty elucidated the deformation history of the Main Central Thrust from a new angle, and enlightened us with analyses of new set of data.

Seminar and Conference attended

Dr. Prabir Dasgupta, Head of the Department was invited to deliver the 46th Professor S. Ray Memorial Lecture organised by the Geological Institute, Presidency University, Kolkata. The lecture was held on 7th September 2022. Dr. Dasgupta spoke on "*The saga of Cryogenian Earth-from the pages of Lesser Himalayan Krol succession*".



Dr. Proloy Ganguly, Assistant Professor of Geology participated in the American Geophysical Union Fall meeting 2022. He delivered a talk on *Metasomatic Transformation and Deformation at the Calc-silicate Granulite and Charnockite Interface in the Phulbani Area of the Eastern Ghats Province, India: Implications on the Fluid Movement and Strain Localization in the Lower Crust*. His presentation was on 15th December 2022.



Subrata Ghosh, Associate Professor, presented his research on *Finding the big picture of the tectonic-geodynamic evolution of the Himalayas: How far are we from the facts of Nature?* at the National Conference on Rock Deformation and Structures (RDS-VII) organised by the Structural Geology and Tectonic Studies Group of India (SGTSGI) at B.H.U., Varanasi, during 13 - 15 October, 2022.



Dr. Pinaki Roy, Assistant Professor delivered a talk on *Turritellid species from Miocene of Kutch, Gujarat and its Palaeobiogeographic Implications* at the National Conference on Popular and Basic Sciences: A Quest Towards Foundation of Science, held at Sarat Centenary College, Dhaniakhali, Hooghly, during September 23-24, 2022

He also delivered a talk on Remote Sensing and GIS techniques in earth's feature identification and ground water prospecting at the Bilateral International Conference on ecotoxicology and environmental sciences (ICEES-2022) organised by IEES, Khulna University, Bangladesh & BEDS during 19th - 20th October, 2022,

Undergraduate Project work

From this year we have introduced research projects for the undergraduate students under the LOCF curriculum guideline. Two B.Sc. final year students are carrying out research projects on the effect of Permian-Triassic extinction event on land vertebrates in India. The Permian-Triassic extinction event (popularly known as the Great Dying) was an event in the geological past where scientists estimate up to 90% of marine life and 70% of terrestrial (land) animals went extinct. It is hypothesized that rising atmospheric greenhouse gas concentrations are what led to this great extinction. Interestingly, the loss of major vertebrate groups in the Late Permian was replaced by the newly evolved vertebrates in the Early Triassic. The present ecosystem was made possible by this faunal turnover. Three short field trips have been carried out in and around Madhukonda, Raniganj Basin. The primary objective of their work is to comprehend the pattern of recovery of land vertebrates during the Early Triassic and to ascertain how lithology and climate altered across the Permian and Triassic boundary in this basin. These projects are funded by the DBT Star College Scheme.

From Guinness World Record



It is a matter of great pride that Sri Manas Banerjee, one of the alumni of this Department (B.Sc. 2000-04, M.Sc. 2004-06) has been enlisted in the Guinness World Record

for the discovery of the world's largest uncut emerald (7,525 carats / 1.505 kg / 3 lbs and 5.09 oz). He shared this honour with his colleague Mr. Richard Kapeta, who named the gigantic gem as Chipembele, meaning "rhino" in the local indigenous dialect of the Bemba people of Zambia. This rarest piece of emerald was unearthed on 13th July 2021 from the Kafubu emerald deposit of Zambia.



Research Projects

At present, two Science & Engineering Research Board (SERB), Government of India sponsored research projects are running in our department.

1. Tectonothermal history of the high-grade rocks of Angul and Tikadpada domains and its bearing on the evolution of the northern Eastern Ghats Belt, India. PI - Dr. Proloy Ganguly, Assistant Professor, Date of commencement: 27th December 2021.
2. The end Permian mass extinction event (EPME) and its effects on the non-marine, Triassic vertebrates: an integrated study from The Indian Gondwana basins. PI - Dr. Saradee Sengupta, Assistant Professor; Co PI - Dr. Prabir Dasgupta, Associate Professor. Date of Commencement: 31st August 2022

Publications

Sarkar, D.P., Ando, J., Ghosh, G., Das, K., **Dasgupta, P.**, and Tomioka, N., 2022. Fault zone architecture and lithology-dependent deformation mechanisms of the Himalayan frontal fold-thrust belt: Insights from the Nahan Thrust, India. Geological Society of America Bulletin. <https://doi.org/10.1130/B36246.1>

Sengupta, S. and Bandyopadhyay, B., 2022. The Osteology of *Shringasaurus indicus*, an archosauromorph from the Middle Triassic Denwa Formation, Satpura Gondwana Basin, Central India. Journal of Vertebrate Palaeontology. <https://doi.org/10.1080/02724634.2021.2010740>

Ghosh, S., 2022. Influence of the Himalayas on Anthropocene Climate, Ecology and Environment Underlines the Urgent Need for Unambiguous Understanding of the Evolution of the Mountain Belt. *In*: Babu Nallusamy, M.A. Mohammed Aslam, Suresh Gandhi M. and Shaik Mohammad Hussain (Editors), Geological Developments in Anthropocene, Excel India Publishers, New Delhi. pp. 14-36.

Bhattacharya, B., Banerjee, P.P., and **Roy P.**, 2022. Implications of marine Gastropoda *Baylea* DeKoninck, 1883 from the Permian Barren Measures Formation, Lower Gondwana, West Bokaro Basin, eastern India. Journal of Earth System Science 131. <https://doi.org/10.1007/s12040-022-01950-w>

Faculty Development Programme

Dr. Proloy Ganguly, Assistant Professor participated in 9th UGC Sponsored Faculty Induction Programme, organised by the Human Resource Development Centre, Jadavpur University. It was held during 1st August to 2nd September 2022. Dr. Ganguly obtained A+ Grade.

Dr. Pinaki Roy, Assistant Professor participated in the Inter-disciplinary Refresher Course on Disaster Management, organised by the Human Resource Development Centre, Jadavpur University. It was held during 5th December to 17th December 2022. Dr. Roy obtained A+ Grade.

Photo Gallery



Remedial class is being taken by Sri Bikas Saha, Assistant Professor.



Sri Manas Banerjee addressing the audience during his felicitation at the Bidhan Sabhagriha.



Basaltic pillow lava formed due to submarine volcanism, Chandil, Jharkhand.



Penecontemporaneous deformation structure within sediments bearing the evidence of strong seismic shock, Dhalbhumgarh, Jharkhand.