



Department of Geology Bhadrak Autonomous College, Bhadrak



Field Tour Report - 2025

The Department of Geology, Bhadrak Autonomous College successfully organized a field tour program for the 3rd-year students to various significant geological sites in the Keonjhar district of Odisha on 12th Feb. 2025. The primary objective of this tour was to provide students with hands-on experience and facilitate their understanding of geological structures and processes. This practical exposure is essential for completing the DSE-4 project report, as mandated in the syllabus.

Field Locations and Observations

1. Khandadhar Waterfall

- Explored the scenic Khandadhar Waterfall, renowned for its geological significance (**Fig.1**).
- The lithostratigraphy of the area predominantly consists of Banded Hematite Jasper (BHJ), a significant iron ore-bearing formation **Fig.2A**.
- Discussed the geological formations of the region and the economic importance of BHJ.



Fig.1- Photograph showing Khandadhar waterfall

2. Batholiths of Sitabinji

- Investigated the massive intrusive igneous rock bodies (batholiths) (**Fig.2B**) in Sitabinji.
- Observed and discussed the petrogenesis and geological significance of these formations.

3. Naranpur Paharh

- Identified porphyritic granite (**Fig.2C**) with well-developed phenocrysts of quartz and feldspar minerals in the area.

- Studied the mineralogical composition and structural deformation of the rocks.



Fig.2- Field photographs showing

- A. Banded Hematite Jasper (BHJ) of Khandadhar area
- B. Batholiths of Sitabinji
- C. Porphyritic granite of Naranpur area
- D. Dolerite dykes of Raisuan area

4. Raisuan Dolerite Dyke

- Analyzed the dolerite dykes (**Fig.2D**) at Raisuan, providing insight into intrusive igneous activity.
- Discussed the cooling history and textural characteristics of the dykes.

5. Pyrophyllite Mines of Madrangajodi

- Visited the pyrophyllite mines (**Fig.3**) to study the mining operations and mineral extraction process.
- Collected samples of pyrophyllite for further analysis and discussed their industrial significance.



Fig.3- Photograph showing Pyrophyllite mines of Madrangajodi

Learning Outcomes

- **Measurement of Strike and Dip**
Students were trained to measure the strike and dip of rock formations using a clinometer compass, an essential skill for geological fieldwork.
- **Sample Collection**
Collected various rock and mineral samples from the studied sites for laboratory analysis and project preparation.
- **Photographic Documentation**
Captured photographs of significant outcrops, rock formations, and geological features for visual reference in the project report.

Acknowledgment

The field tour was conducted under the expert guidance of Sriballav Das and Dr. Amiyaranjan Parida, who provided invaluable insights into the geological features of the region. We extend our sincere gratitude to Principal Dr. D. S. Das sir and Coordinator Dr. P. Mohanty sir for granting us permission for the field tour. Your support and encouragement have made this opportunity possible, and we are truly thankful.

Conclusion

The field tour to the Keonjhar district was an enriching experience for the 3rd-year students of the Geology Department. It enabled them to apply theoretical knowledge in a practical setting, understand the significance of various geological formations, and develop essential fieldwork skills. This experience will play a pivotal role in the successful completion of their DSE-4 project report.