Department of Geology
Field Trip Report: Geological Study in and around Duddukuru, East Godavari District

Date of Field Trip: 08 January 2025
Location: Duddukuru and Surrounding Areas, East Godavari District, Andhra Pradesh
Participants: 45 Undergraduate Geology Students
Faculty Members: 4

1. Introduction

The Department of Geology organized a one-day geological field trip to **Duddukuru** and adjoining areas in **East Godavari District** as part of its field training component. The primary objective was to provide students with practical exposure to **rock formations, structural features, and stratigraphic relationships** in the region. This trip aimed to strengthen the theoretical understanding acquired in the classroom through direct observation and field documentation.

2. Objectives of the Field Trip

- To study the lithological units and geomorphological features of the region.
- To identify and describe various rock types in the field.
- To understand the structural geology and stratigraphy of East Godavari basin margin.
- To train students in geological field methods such as outcrop mapping, rock sampling, structural measurement (strike, dip), and field sketching.

3. Geological Setting of East Godavari District

The **East Godavari District** is geologically significant due to its diverse lithologies and its position within the **Godavari Valley Belt**, which lies at the interface of the Eastern Ghats Mobile Belt and the Krishna–Godavari sedimentary basin. The region exhibits a complex geological framework including:

- **Archaean Crystalline Basement Rocks**: Comprising mostly **granite gneisses**, **charnockites**, and **khondalites**, which represent high-grade metamorphic terrains.
- **Proterozoic to Paleozoic Cover Sequences**: Sedimentary formations such as **quartzites**, **shales**, and **limestones** overlying the basement.

- **Mesozoic to Cenozoic Sedimentary Sequences**: Particularly in the **Krishna-Godavari Basin**, indicating episodes of marine transgression and regression.
- **Deccan Trap Intrusions and Dyke Swarms**: Indicating igneous activity in the geological past.
- **Alluvium and Laterite**: Covering the plains, especially along river courses.

4. Field Observations in and around Duddukuru

Key sites visited and notable observations include:

Site 1: Duddukuru Outcrop

- **Lithology**: Medium- to coarse-grained **granite gneiss** with prominent banding.
- **Structures**: Visible **foliation planes**, minor **fault zones**, and **joint systems** trending NW-SE.
- **Weathering Features**: Spheroidal weathering and formation of tors.

Site 2: Upland Terrain near Mandapeta

- Observed remnants of **khondalite suite rocks** with **garnetiferous quartzites**.
- **Field Tests**: Students practiced identifying minerals such as garnet, feldspar, and quartz.

Site 3: Fluvial Deposits near Godavari River Margin

- Deposits of **recent alluvium**, sand bars, and clay layers indicating active fluvial processes.
- Discussion on **geomorphological evolution**, sediment transport, and floodplain characteristics.

5. Student Activities

- Identification and classification of hand specimens in situ.
- Recording **strike and dip** of foliation and joint planes using compass clinometers.
- Preparation of field sketches and cross-sectional diagrams.
- Rock sampling and preparation of lithologs.
- Interaction with local farmers regarding soil and water conditions influenced by geology.

6. Learning Outcomes

- Students acquired first-hand experience of geological mapping and interpretation.
- Understood the relationship between **geological structures and landforms**.
- Gained insights into the **tectonic history and metamorphic evolution** of the Eastern Ghats belt.
- Developed skills in teamwork, observation, documentation, and field discipline.

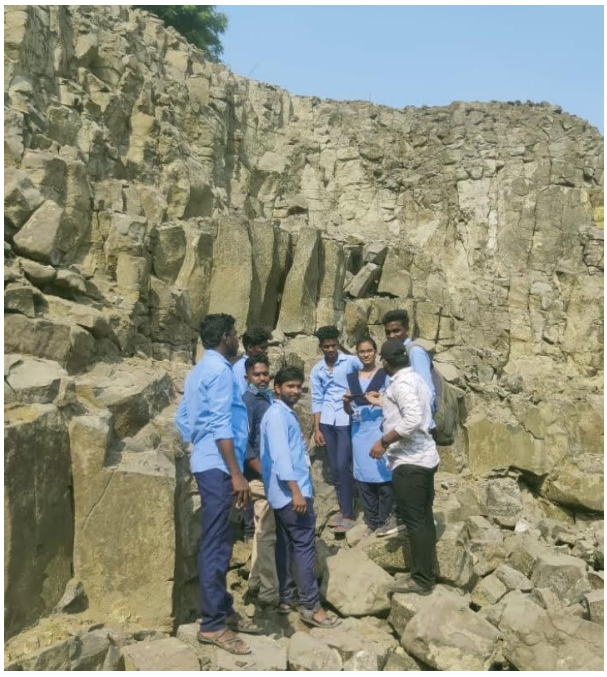
7. Conclusion

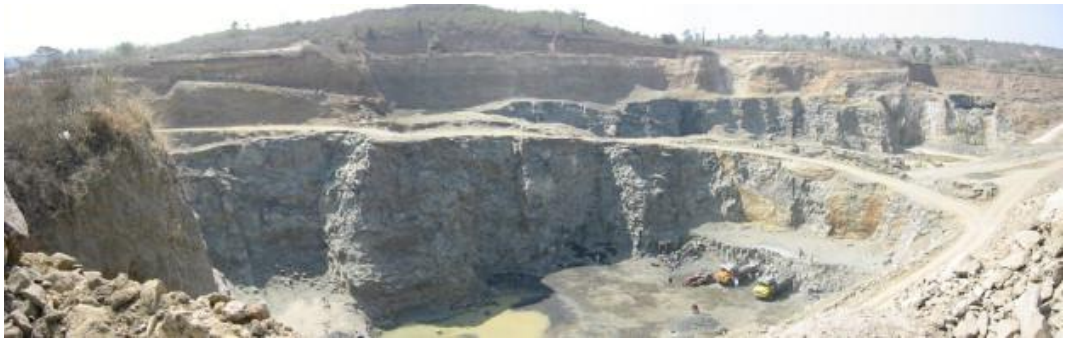
The field trip to **Duddukuru and surrounding areas** provided a valuable experiential learning opportunity. It bridged the gap between theoretical geology and practical application. The diversity of rock types and structures in the East Godavari District served as an ideal natural laboratory for budding geologists.

8. Acknowledgements

The Department expresses gratitude to the **Principal and college administration** for their support in organizing this trip. Special thanks to the **local villagers** for their cooperation, and to the **faculty coordinators** for guiding students throughout the fieldwork.

9. Photo Gallery





Rajahmundry Traps

Intertrapean Beds at Duddukuru

Measuring Attitude of Beds