

Exposure Trip to BRDC, 51/2 mile, Upper Shillong on the 3rd of May, 2023

A total of 19 students of 6th Semester Environmental Science Honours accompanied by four teachers of the Department including Dr J. T. Sawian, Ms. I. Rynjah, Ms L. Jeengaph and Ms. M. D. Khongwir went on an exposure trip to Bio Resource Development Centre at 51/2 Mile, Upper Shillong on the 3rd of May, 2023. The objective of the trip is to learn about the Centre's activities and the initiatives taken to promote conservation of biodiversity.

The students observed the Tissue Culture laboratory and learnt about the process of culturing of different indigenous orchid species, local potato varieties, banana and strawberry. They learnt about Preparation of the media, importance of Sterilization of the instruments like forceps, needles, etc. in the autoclave which is followed by sub-culturing the samples under the laminar air flow chamber. After which, hardening is done followed by transportation.

Students were also introduced to the concept of Apical rooted cutting technology (ARC). When the newly transplanted tissue cultured plants have been fully grown after 3 weeks, the apical portion of these plants are cut and transplanted to a different bed where they form proper shoots and roots. After they have grown up to 10 inches, they are given to the farmers where they plant it in the poly house to get tubers from each plantlet. It was told that 1 apical cutting is equal to 10-12 tubers. Tubers received from the first ARC are called G0-tubers and they are all kept for seeds. The bed mix is composed of cocopeat and vermicompost.

Following the demonstration at the Tissue Culture Lab and Soil Testing Lab, the students were then taken to the Organic Experimental Farm at Laitmynsaw. At the organic farm, medicinal and aromatic plants are grown along with potato, strawberry, kiwi, orchids. Students got the opportunity to visit a seed Bank within the farm, Compost pits, Rainwater harvesting ponds and vertical farming. The Centre is involved in making different types of compost including Vermicompost , Nadep Compost, Non-soil Compost and 18 Day Compost. Cultivation of Dendrobium orchids in polyhouses is carried out using coconut blocks as the growing media. The coconut medium should be changed after every 2 years. Charcoal is given as a carbon source to cool the media during summer. Drip Irrigation is provided at least 3-4 times a week and is

avoided during rainy season. Different sources of nutrients like NPK, humic acid, fungicide and insecticide if needed, are being provided. When the flowers bloom open, they are sold off.

Another notable feature of the experimental farm is the Vertical farming. The advantage of Vertical farming is that it can be carried out in a small plot of land or even in terraces and is ideal for urban settings. In 1 square feet area, 40 samplings of plants can be generated, 10 plants from each side. Only leafy vegetables like salad, mustard, etc. are grown at the farm. Firstly, the plants have to be nursery raised and then they can be transferred to the vertical farming bed. A slit/cut is made and the samplings are inserted and placed upward. In the early stages, watering should be done twice a week. Rooted plants such as beetroot, creepers such as cucumber and bitter gourd can be planted on top. Companion cropping such as mustard and garlic can be planted. The middle is made into a hole so that water can penetrate directly to the roots. The bottom should not be touched or cut as nodes of the roots are present. The soil content consists of top soil and compost. It lasts for 2-3 years.





Field visit to an abandoned stone quarry located at Demthring, Nongthymmai to study Mycorrhizal Association in Pine species

Date: 12th May 2023

Field trips/visits play an important role in the teaching-learning process as it gives the students an in-depth understanding about a particular topic or areas of studies. Realizing the impact of field visit on students' understanding of any topics taught theoretically inside the classroom, the Department of Environmental Science under the supervision of Damewanmi Suchiang, conducted a Field Visit to an abandon stone quarry located at Demthring, Nongthymmai to study Mycorrhizal Association in Pine species.

The main objective of this field visit was to enable the students to learn not only through illustrations and experiments in the laboratory but to actually witness how plants evolve in nature to co-exist and to share mutualistic and symbiotic relationship between plants and microorganisms (fungi, bacteria, etc) especially in a degraded ecosystem.

The significance of this field visit was to reduce the impact of collecting specimens from the natural ecosystems for the requirement of study in the laboratory. Ever since such blended mode of conducting practical was initiated, the department has been able to lessen the numbers of pine saplings that is generally collected from the forest for this experiment.

The field visit was conducted amongst the students of the 6th Semester. Such field visits have proved to be very informative as students are able to correlate better their theoretical learning with their practical and to broaden the prospects of learning beyond the four walls of classroom.

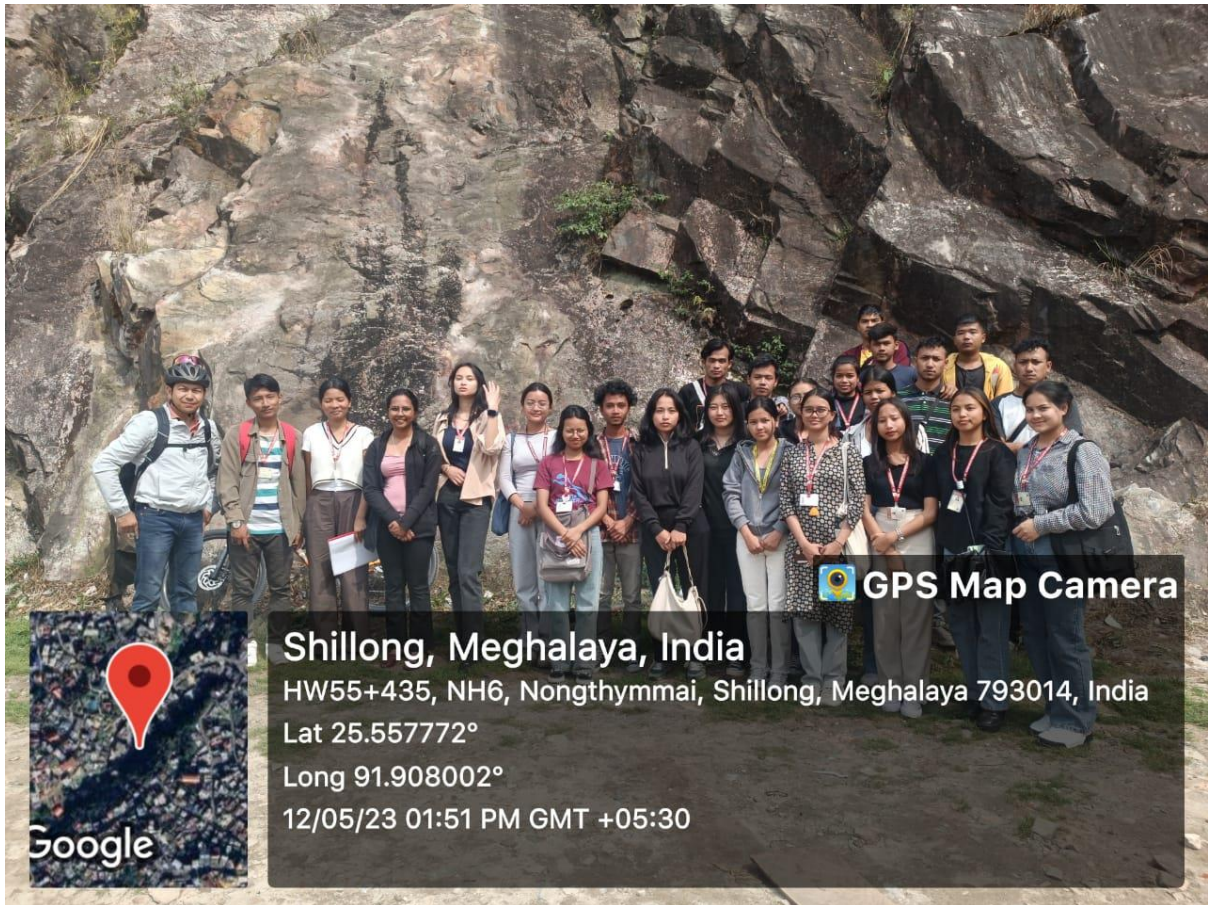


Figure : Field visit to an abandoned stone quarry located in Demthring Nongthymmai, Shillong (6th Semesters students, 2023 Batch)