DEPARTMENT OF ENVIRONMENTAL SCIENCE, SHILLONG COLLEGE

B.Sc. FIRST SEMESTER INSTITUTIONAL VISIT

TO

SHILLONG GEOPHYSICAL RESEARCH CENTRE AND INDIAN METEOROLOGICAL DEPARTMENT ON THE 25th NOVEMBER 2021



An institutional visit under the guidance of the faculty was carried out for the 1st semester students of B.Sc. Environmental Science on the 25th November, 2021. Two Institutes of environmental significance *viz.*, the Shillong Geophysical Research Centre and Indian Meteorological Department located at Upper Shillong were visited. The one-day trip was carried out in partial fulfilment of the requirements of the B.Sc. degree in Environmental Science. The purpose of the trip was to provide experiential learning and exposures to students which will help them have a better understanding of what they have learnt in their course.

On the 25th November 2021, the group reached the Shillong Geophysical Research Centre located at three and a half mile, Upper Shillong at 10 am. The visit started with a lecture on "Earth Crust: at a glance" delivered by Dr. Sujit K. Pradhan, Technical Officer II in SGRC, followed by another lecture on "Plate Tectonics: an overview" by Mr Abhilash K.S, Technical Officer I in SGRC. The lectures were followed by the poster viewing where there was an interaction between the students, the faculty of the department of Environmental Science and the scientist and researchers of the Geophysical Research Centre. The students also got the opportunity to see the various instruments which were at the Centre like the Atmospheric Electric Field Meter (AEFM), Seismograph, Digital Fluxgate Magnetometer, Induction Coil Magnetometer (ICM), Declination Inclination Magnetometer and Portable Radon Meter. Demonstration on the working and application of these various instrument to the students was done by Dr N K Hazarika, Technical Officer-III, SGRC.

The group also visited The Indian Meteorological Department (IMD) at Upper Shillong. At IMD the students got the opportunity to see the instruments which were used for seismological studies. They also got to learn about the 128 telemetry network station in India, out of which 28 telemetry network station were located in various parts of North eastern India and the Real time seismic monitoring network (RTSM). They also got to see the different meteorological instruments like the Rain Gauge, Pan Evaporimeter, Stevenson screen, Anemometer, Thermograph, hydrograph, and automatic weather station which were used for collection of various weather data.

The trip that was undertaken was of great benefit to the students. They received a lot of information on earth science and seismology from the lectures and demonstration that were delivered during the visit. The students had the opportunity to see various seismological and meteorological instruments and learn about them through interactions with the staff,

researchers and scientists in these institutions. Overall the trip has helped in increasing the knowledge of the students about the significance, importance of earth science and seismology studies and the role of these institutions in contributing to the data bank of scientific data and knowledge and how these can be used for understanding about our environment and for the well-being of human beings. On behalf of the Department of Environmental Science, Shillong College, we would like to extend our gratitude to the Principal, Dr E. Kharkongor, for granting us the permission and support for the fieldtrip. We especially like to express our profound gratitude to Dr Mala Bagiya, Head, SGRC and Dr Andrew C Lyngdoh, Director, IMD for granting permission to visits their Centre/Department and the staffs of these institute for sparing their time and sharing their valuable knowledge and information with the students.









DEPARTMENT OF ENVIRONMENTAL SCIENCE SHILLONG COLLEGE B.Sc. THIRD SEMESTER INDUSTRIAL VISIT TO IAINEHSKHEM SELF HELP GROUP INDUSTRIAL COMPOSTING UNIT ON THE 27th NOVEMBER 2021



A field trip was undertaken by the 3rd Semester (Honours) students of the Department of Environmental Science under the guidance of the faculty members on 27th November 2021. The field trip was conducted with the intention to give students a field based study on the importance of composting and its potential of providing a mean of livelihood to the people. Composting is an essential process that can be adopted in order to reduce waste generation and contribute to a environmental conservation as well as to promote sustainability.

The field trip was made to the municipal disposable site which is located in Mawiong, Shillong and is run and maintained by the Shillong Municipal Board (SMB). Within the confines of this site a self-help group named Iainehskem Self Helf Group, has set up an industrial composting unit where the biodegradable waste collected from the Shillong City is turned into fertiliser through various composting techniques. The product is then packaged and sold to various agencies and individuals. It is important to note that this self help group is made up entirely of women rag pickers.

The students got the opportunity to learn two composting techniques, namely Bokashi and vertical composting. The trainer gave an excellent deliberation of the techniques and also demonstrated the Bokashi technique along with all the necessary components that were involved. This industrial visit was highly educational for the students who got firsthand accounts of the socio economic importance of composting from the members of the Iainehskem Self Help Group

As a Department we are thankful to the Principal of Shillong College for her support and encouragement which made this industrial visit possible. We extend our gratitude especially to the women of Iainehskhem self help group who shared their knowledge and skills with our students







DEPARTMENT

OF

ENVIRONMENTAL SCIENCE

B.Sc. FIFTH SEMESTER FIELD TRIP

TO

MAWPHLANG SACRED GROVE

ON THE

10th December 2021



On the 10th of December, the students of 5th Semester, Department of Environmental Science, Shillong College were taken on a guided field trip to Mawphlang Sacred Grove. The students along with the faculty members trekked the forest and experienced the peaceful harmony and tranquility of the place. The objective of the trip was to orient students on traditional knowledge systems and culture that gave importance to ecological preservation. Today under the garb of 'modern thought' such concepts and practices are undervalued leading to the destruction of nature in the name of development. In addition to this, the trip is an essential part in partially fulfilling the requirements of the B.Sc. degree in Environmental Science.

On reaching the place the visiting team was led by the local guide, Mr Babiangthew. He imparted important information on important tree species, their fruits and the beliefs associated with the plant species. Prior to entering the sacred forest, Mr Babiang explained the meaning of Mawphlang which refers to "grassy stone" and also gave insights on how the local ancestors took a stand to preserve the forest. They used to perform rituals and ceremonies for maintaining the divinity of the forest. This sacred forest belongs to the particular clan Lyngdoh, but for the whole community, this place is sacred. They preserved this sacred forest through customary rules and regulations. This is totally maintained by the community generation after generation and they strongly believe that God will punish for any destruction of their sacred forest. So, they never allow anybody; outsider and even own community people to harm the flora and fauna of their age-old Mawphlang sacred forest. The sacred forest, old monoliths, and the open grassy land can show the beauty and symbolize the history of the place.

The size of the forest is about 76.8 ha and it abounds in around 200 species of flora and 200 species of fauna while being preserved for more than 700 years. The important tree species that were shown by the local guide included Castanopsis kurzii, Camellia caduca, Engelhardtia spicata, Exbucklandia populnea, Ficus nerifolia, Garcinia cowa, Myrica

esculenta, Pyrus pashia, Rhododendron arboreum and Taxus baccata in Mawphlang sacred forest.

Mr Babiang also explained to everyone about the significance of the monoliths right outside the forest. For the remembrance of the clan member they erected the stone as one dolmen (table stone, horizontally established) with 3 to 5 menhir (erect stone, vertically established), the middle one is the longest. The dolmen symbolizes the old women or mother of the clan. And the menhir symbolizes the uncle of the women or clan head. And another menhir symbolizes the other male members, son or nephew of the women (dolmen). Sometimes it can be seen at some places there are three to five or seven menhirs where the middle one is very long shaped and three to five dolmens where the middle one is very big and round shaped. The big dolmen is called Mawkynthai. For this megalith, the Khasi people bring the stones from a distance. The quality and color are also important during the erection of monolith. The entire Khasi Hills depicts the huge stone henge which indicates the age-old tradition since prehistoric (Neolithic) time period. Furthermore, the monolith or megalithic tradition is still a living tradition among the Khasi people. Now only the traditional Khasi (Niam Khasi) people practise this tradition and during every ritual, festival, death or any type of important occasion they erect stones at a particular place.

The local guide also enlightened the team about the biodiversity of avifauna in Mawphlang sacred grove which includes Grey Sibia (*Heterophasia gracilis*), Whiskered Yuhina (Yuhina flavicollis), Golden Throated Barbet (*Megalaima franklinii*), Phylloscopus sp. leaf warblers, Large Niltava (*Niltava grandis*) and Green tailed sunbird (*Aethopyganepalensis*).

In conclusion, the field trip benefited the students greatly. It has given an unnderstanding of how the forefathers of indigenous people made a simple way for conservation of sacred forests by attaching various orthodox religious laws, myths and taboos attached with them. Over the years, these forests have become a part of the cultural life of the indigenous people of the Meghalaya. These forests often act as a gene bank, as they are rich in genetic resources. Through strong belief to the different environment protecting deities, they guard their natural environment through cultural practices. Here the protection of the Mawphlang sacred forest is based on the community's cultural resource management. Therefore, they maintain biodiversity through the protection of the sacred forest.



Image 1. Phipandi the ritualistic place inside the sacred forest



Image 2. Megalith infront of the sacred forest



Image 3. Local guide briefing the students