

STUDY TOUR 2019-2020

Introduction

The department of zoology, Goa University conducted an educational tour from 22 February 2020 to 1st march 2020 for first year students of masters in zoology.

About 29 students and 5 faculty members were the participants. We arrived at Delhi at 2 am and travelled to Bhimtal via bus n reached our destination at 9 am. Bhimtal, Uttarakhand is a hill station which is around 300km away from Delhi, the capital state of the country.

Trip Objective

The main purpose of the tour was to get the students closer to natural environment and also make us aware about the various researches going on in different universities of the country and their contribution towards environment.

Field observation



On the first day after the 32 hours journey, 24th February we visited the first institute **ICAR –DIRECTORATE OF COLDWATER FIHERIES**

RESEARCH BHIMTAL. Sir Santosh Arya, showed us the Himani aquarium having some of the beautiful and colourful fishes like tiger Shark, Mahaseers Carps, parrot fish etc. D. Thakuria sir from molecular genetics lab explained us about the research related to synthetic biology i.e producing GnRH hormone to induce breeding, they were also working on alteration of structures of anatomic peptides which would replace antibiotics and decrease production cost. He was also working on producing silver nanoparticles to prevent fungal diseases in aquaculture which would increase productivity. Mr. Krishna, PhD scholar explained us studies being carried in diagnostic bacteriology lab which included finding target organs like gills or intestines in fish which a particular pathogen attacks most common being E. Coli. Lastly we visited the ICAR museum having 78 species out of 258 species recorded from Himalayan cold inland waters. Local fishing nets and gears were also displayed. Colourful models of Mahaseer and Trouts were displayed for them being the exotic species. We were also shown the cultures of various fishes in the tanks in their backyard. We being situated at coastal region with a wide marine diversity could compare the fresh cold water fishes and differentiate their morphology. Later that evening we visited Bhimtal lake which has mythological importance as it is said lord ram and his wife bathed in the series of 5 lakes during their Vanvasa. This place was serene and peaceful surrounded by trees and the pleasant weather.



On day 2,25th February we visited the Department of Zoology, **KUMAON UNIVERSITY** state university headquartered at Nainital. Dr. Sat Pal Singh Bisht sir showed us the museum of their department which included organisms from invertebrates to mammals. we also visited their research lab which was well equipped central laboratory with UV-Vis Spectrophotometer , Electrophoretic Units, Gel Documentation unit ,Research Microscope unit including inverted microscope with photo-compatibility, High Speed Refrigerated Centrifuge , PCR machine and many other instruments required for the research and teaching at Master's and Doctoral degree level programmes. The PhD scholars explained us about their studies going on in entomology and avian diversity. The environment here was really remarkable. We later visited **NAINITAL ZOO** located on Sher Ka Danda hill at a height of 2,100m or 6900 ft. above sea level. The zoo is spread over a green area of 4.6 hectares or 11 acres. The main attractions were Bengal tiger leopard red panda and Yellow-throated marten.



On day 3, 26th February we visited **JIM CORBETT NATIONAL PARK AND MUSEUM**. We went for jungle safari in the afternoon in Sitabani, Lohachaur and Bijrani zones and spotted various wildlife including barking Deers, Spotted Deers, etc.



Later we met sir Prakash in charge of Corbett Tiger Reserve Ramnagar. He explained us the difficulties and challenges faced in conserving and monitoring the forest as it surrounded by small villages. He also gave us a brief account of various wildlife spotted. It was an interactive session and we understood the

various aspects of the national park. We spent 4th Day travelling to back to Delhi.



On day 5, 28th February we visited Department of Zoology, Delhi University.

Dr. Rina Chakrabarti madam welcomed us and showed us the culture of zooplankton, daphnia as it is economically important. They also have twin screw extruder to produce pellets of plants to feed the fish. The PhD scholars showed us the aquacultures and zooplankton cultures and methodology as to how they harvest and feed the fish. Later we visited the physiology research labs where fresh water fishes were introduced to various concentrations of vegetal nutrition and controlled conditions. We also visited instrumental lab which had instruments like -centrifuge -80degree Celsius freezer, ultracentrifuge, RT –PCR, PCR, multipurpose plates, incubators, water sample portable meter for probe attachment, BOD and pH estimation, spectrometers, high seed amino acid analyser. The faculty members and PhD members explained us each instrument and a brief account of their work.

Conclusion

Our trip ended on 1st March 2020. It can be concluded that the trip was successful and we believe that our objective was achieved. We learned so many things beneficial for us during our course and future as well. This trip provided us a lot of knowledge about the ongoing projects and research work along with laboratory instruments and their functioning.