DEPARTMENT OF BOTANY

CITY COLLEGE

Report on Long Excursion 2023

Date of visit : 29/09/2023 to 04/10/2023

Place Of Visit : Ranchi, Netarhat, Betla

Paper : SEM III (Hons) Paper BOTA-CC-4-8-P : SEM V (Hons) Paper –BOTA-DSEB-6-8-P

Participants: Students of SEM III (Hons) and SEM V (Hons)

Name of the Teacher's : Smt.Sutapa Gupta,Smt.Saayela Chowdhury, Ms.Sandhya Datta

Name of the Student's : SEM III (Hons) – Amrit roy, Barun Ghosal, Snigdhodeb Sinha, Snahasish Das, Deep Mondal ,Ishika Ghosal.

SEM V (Hons) : Devakash Kar, Devangsh Kar, Deepbendu Kar, Sahil Akhtar, Rohit Das, Sneha China, Mukti Singh, Sreeparna Maity.

Aims and Objectives:

Aim:

This excursion trip is conducted away from college locality solely for educational purpose.The aim of this long excursion is to study different geographical peculiarities,biodiversity composition of that particular phytogeographical areas.This tour gives perfect trip of exploring tribal land,water falls,hills,forest cover comprising of wild Floras and Faunas.Ranchi is known as **" Land Of Forests"** as it has water bodies,enthralling terrain,hills and dense forests.

Objectives:

1.Long excursion is conducted to get a first hands on knowledge for the students to learn about different biodiversity.

2.To provide a general idea about forest ecosystem, biodiversity and understanding its all aspects.

3.To study about various aspects of altitudinal, forests habitat , its flora and fauna.

4.To study ecological aspects of their local tribes and its people.

5.To have an idea about the conservatory measures of the protected area.

Report on The Excursion

- On 28thSeptember,2023 we three teachers andstudents started our journey from Howrah Station by boarding Kriya Yoga Express to Ranchi JN at 9.30 pm. We reached Ranchi on 29thSeptember,2023.
- On29/09/2023 we visited different falls like SitaFalls,Jonha Falls,Hundru Falls and seen several angiospermic plants.Some local weeds are also collected,we studied local ecosystem as well as plant diversity. The plants collected like: *Lantana camara,Sida sp,Tridaxsp,etc.*We have seen several angiospermic trees like: Sal (*Shorea robusta),* Sagoon (*Tectona grandis)* comprising forest area and both of them are economically important also.
- On 30/09/2023 We visited Patratu Valley, Dam and Patratu Lake and collected some local weeds like –*Cassia sp,,Alternenthera sp,Sida acuta , Chrysopogon sp , Leucas sp etc.*
- On 01/10/2023 we reached Netarhat which is kmown as **" Queen of Chotanagpur Hills"** ,there we visited Netarhat Dam,Sunset Point,Netarhat School.Due to bad weather no plant collection done.In between our journey to Netarhat Hotel we saw dense Pine forests comprising of Gymnosperms like *Pinus roxburghii,Pinus excels,Araucaria sp. Etc.*
- On .2/10/2023 we headed to Betla National Forest where in between we saw Upper Ghagri Falls.Here also we saw dense Pine forests and collected some local weeds.At evening we visited Betla National Park where we witnessed Barasingha,Deer,Bison,Elephant,peacock etc. as wild fauna.
- On 03/10/2023 In the morning students were taught about local flora for their Quadret Ecological Study and collected some angiospermic weeds like *Sida acuta,Scoparia dulcis,Justicia sp.,Ageratum Conyzoides etc.*
- On the way to Ranchi we saw Palamau Fort, Kechki River Sangam, en route we saw Bryophytes *like Plagiochasma sp, Pogonatum sp etc.* Among pteridophytes we saw *Azolla sp., Adiantum sp.etc.*
- On 04/10/2023 While in Ranchi we visited Rajarappa Temple saw Getalsud Dam, then returnedto hotel and proceed towards Ranchi Station at9.15 pm.

Notice:

Notice

Students of Botany Department (3rd a
5th Sem. Hons.) will go for an educationa
excursion at Betla, Netarhat and
adjoining area from 28.09.23 to 05.10.23
Prof. Saayela Chowdhuri, Prof. Sulāpa
Guplā and Prof. Sandhya Datta will
accompany them.

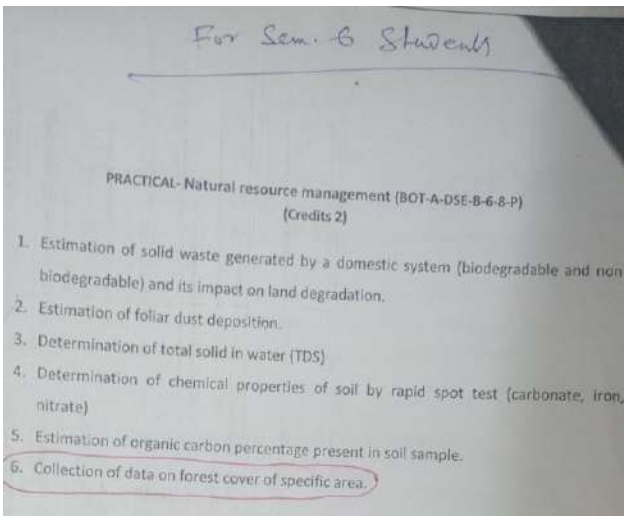
Nandini Chakrabarti
21/9/23

Associate Professor and Head
Department of Botany
City College, Kolkata-9

Sulā Chakraborty
22/09/23

copy to
Dept. of Zoology
Dept. of Physiology
Notice Board (Botany)

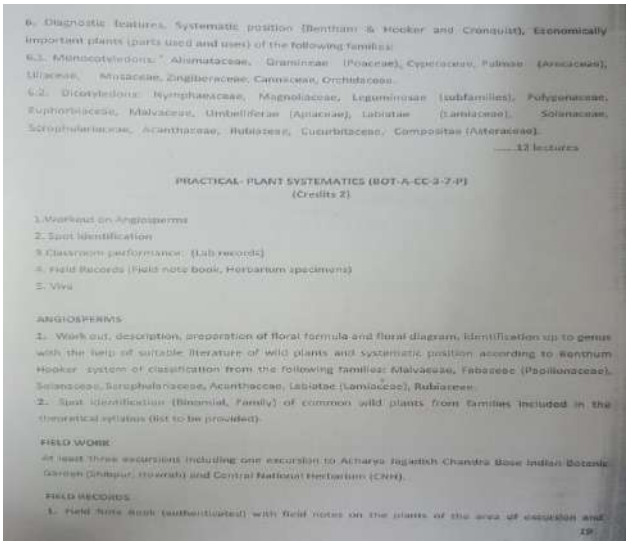
Syllabus : (According to C.U.CBCS curriculum)



For Sem. 6 Students

PRACTICAL- Natural resource management (BOT-A-DSE-B-6-8-P)
(Credits 2)

1. Estimation of solid waste generated by a domestic system (biodegradable and non biodegradable) and its impact on land degradation.
2. Estimation of foliar dust deposition.
3. Determination of total solid in water (TDS)
4. Determination of chemical properties of soil by rapid spot test (carbonate, iron, nitrate)
5. Estimation of organic carbon percentage present in soil sample.
6. Collection of data on forest cover of specific area.



6. Diagnostic features, Systematic position (Bentham & Hooker and Cronquist), Economically important plants (parts used and uses) of the following families:

6.1. Monocotyledons: Alismataceae, Graminae (Poaceae), Cyperaceae, Palmae (Arecaceae), Liliaceae, Musaceae, Zingiberaceae, Cannaceae, Orchidaceae.

6.2. Dicotyledons: Nymphaeaceae, Magnoliaceae, Leguminosae (subfamilies), Polygonaceae, Euphorbiaceae, Malvaceae, Umbelliferae (Apiaceae), Labiatae (Lamiaceae), Solanaceae, Scrophulariaceae, Acanthaceae, Rubiaceae, Cucurbitaceae, Compositae (Asteraceae).

.....12 lectures

PRACTICAL- PLANT SYSTEMATICS (BOT-A-CC-3-7-P)
(Credits 2)

1. Workout on Angiosperms
2. Spot Identification
3. Classroom performance: (Lab records)
4. Field Records (Field note book, Herbarium specimens)
5. Viva

ANGIOSPERMS

1. Work out, description, preparation of floral formula and floral diagram, identification up to genus with the help of suitable literature of wild plants and systematic position according to Bentham Hooker system of classification from the following families: Malvaceae, Fabaceae (Papilionaceae), Solanaceae, Scrophulariaceae, Acanthaceae, Labiatae (Lamiaceae), Rubiaceae.
2. Spot identification (Binomial, Family) of common wild plants from families included in the theoretical syllabus (list to be provided).

FIELD WORK

At least three excursions including one excursion to Acharya Jagadish Chandra Bose Indian Botanic Garden (Shibpur, Howrah) and Central National Herbarium (CNH).

FIELD RECORDS

1. Field Note Book (authenticated) with field notes on the plants of the area of excursion and

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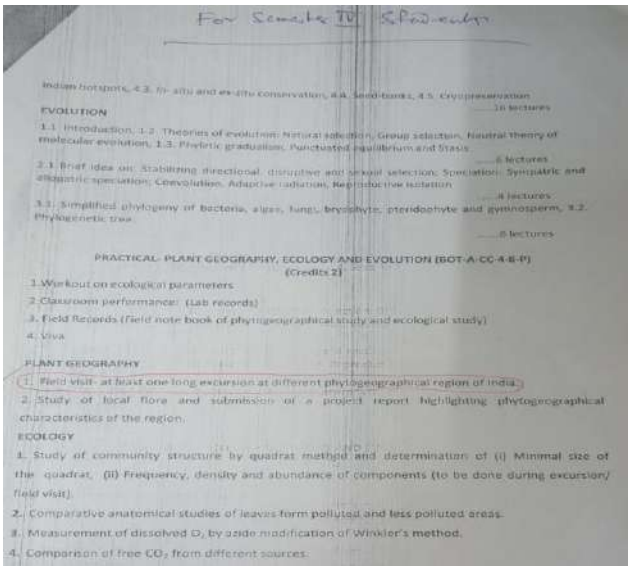


For Semester IV Students

Indian hotspots, 4.3. In- situ and ex-situ conservation, 4.4. Seed banks, 4.5. Cryopreservation

.....16 lectures

EVOLUTION

1.1. Introduction, 1.2. Theories of evolution: Natural selection, Group selection, Neutral theory of molecular evolution, 1.3. Phyletic gradualism, Punctuated equilibrium and Stasis

.....6 lectures

2.1. Brief idea on: Stabilizing directional, disruptive and sexual selection; Speciation: Sympatric and allopatric speciation; Coevolution, Adaptive radiation, Reproductive isolation

.....4 lectures

3.1. Simplified phylogeny of bacteria, algae, fungi, bryophyte, pteridophyte and gymnosperm, 3.2. Phylogenetic tree.

.....6 lectures

PRACTICAL- PLANT GEOGRAPHY, ECOLOGY AND EVOLUTION (BOT-A-CC-4-8-P)
(Credits 2)

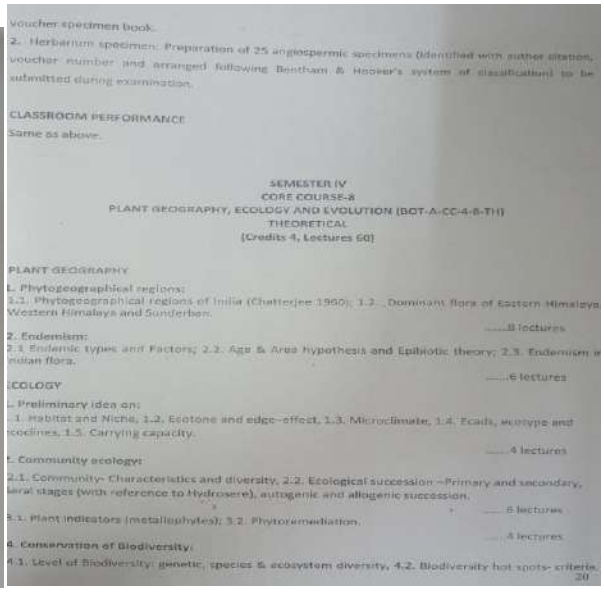
1. Workout on ecological parameters
2. Classroom performance: (Lab records)
3. Field Records (Field note book of phytogeographical study and ecological study)
4. Viva

PLANT GEOGRAPHY

1. Field visit- at least one long excursion at different phytogeographical region of India.
2. Study of local flora and submission of a project report highlighting phytogeographical characteristics of the region.

ECOLOGY

1. Study of community structure by quadrat method and determination of (i) Minimal size of the quadrat, (ii) Frequency, density and abundance of components (to be done during excursion/ field visit).
2. Comparative anatomical studies of leaves form polluted and less polluted areas.
3. Measurement of dissolved O, by azide modification of Winkler's method.
4. Comparison of free CO_2 from different sources.



voucher specimen book.

2. Herbarium specimen: Preparation of 25 angiospermic specimens (identified with author citation, voucher number and arranged following Bentham & Hooker's system of classification) to be submitted during examination.

CLASSROOM PERFORMANCE

Same as above.

SEMESTER IV
CORE COURSE-8
PLANT GEOGRAPHY, ECOLOGY AND EVOLUTION (BOT-A-CC-4-8-TH)
THEORETICAL
(Credits 4, Lectures 60)

PLANT GEOGRAPHY

1. Phytogeographical regions:
1.1. Phytogeographical regions of India (Chatterjee 1960); 1.2. Dominant flora of Eastern Himalaya, Western Himalaya and Sunderbon.

.....8 lectures

2. Endemism:
2.1 Endemic types and Factors; 2.2. Age & Area Hypothesis and Epibiotic theory; 2.3. Endemism in Indian flora.

.....6 lectures

ECOLOGY

1. Preliminary idea on:
1.1. Habitat and Niche, 1.2. Ecotone and edge-effect, 1.3. Microclimate, 1.4. Ecads, ecotype and ecoclines, 1.5. Carrying capacity.

.....4 lectures

2. Community ecology:
2.1. Community- Characteristics and diversity, 2.2. Ecological succession – Primary and secondary, seral stages (with reference to Hydrosere), autogenic and allogenic succession.

.....6 lectures

3.1. Plant indicators (metallophytes); 3.2. Phytoremediation.

.....4 lectures

4. Conservation of Biodiversity:
4.1. Level of Biodiversity: genetic, species & ecosystem diversity, 4.2. Biodiversity hot spots- criteria,

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Photographs :

Group Photo with the students and teachers at Ranchi Station

Twig with crustose and foliose lichen

Pinus **sp plant**

At Betla National Forest

Moss a Bryophyte

Students Collecting Angiospermic weeds