# FIELD NOTBOOK

UNIVERSITY OF CALCUTTA

B.Sc. 4 YEAR HONOURS WITH RESEARCH IN BOTANY

UNDER CCF, 2022

SUBJECT : BOTANY (BOTM)

PAPER : DSCC-2 (PLANT SYSTEMATICS)

ROLL NO : 233044-11-0003

REGISTRATION NO : 044-1211-0244-23

EXAMINED

B.Sc. Practical Exam 20.....

BOTA/BOTG, SEM.....

Examined

31/10/24

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(NAAC ACCREDITED - 'A')

Ref. No.....  Date.....

**TO WHOM IT MAY CONCERN**

This is to certify that Ms. Sruti Poddar bearing Roll. No. 233044-11-0003, Registration No. 044-1211-0244-23, an examinee of B.Sc. 4-year Honours with Research in Botany (under CCF, 2022) examination, 2024 of University of Calcutta has successfully completed **Three** educational excursions (New Garia, AJC Bose Indian Botanic Garden & Central National Herbarium, Tinchuley, Takdah, Lamahatta, Chalsa) under my supervision. This is part of their DSC Core syllabus (Plant Systematics Practical) on Field Work and Field Records.

The examinee submitted field reports on local flora of the abovesaid regions which partially completes the Practical part of paper BOTM DSCC-2.

Shampriya Chowdhury 25/9/24

Dr. Shampriya Chowdhury

Associate Professor and HOD

Dept of Botany

Kinjalkini Biswas 25.9.24

Dr. Kinjalkini Biswas

Principal

Muralidhar Girls' College

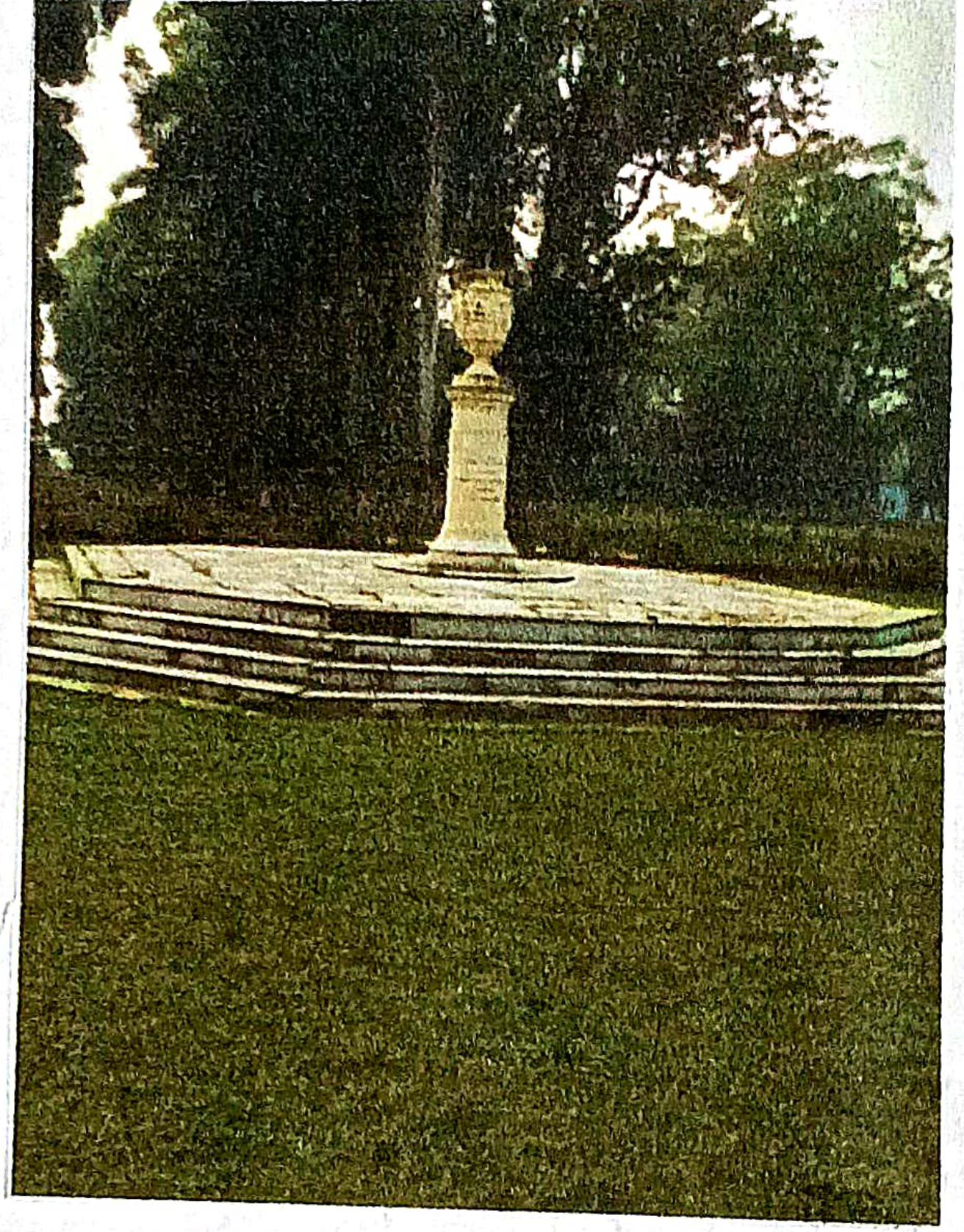
Principal
Muralidhar Girls' College

# EXCURSION TO AJC BOSE INDIAN BOTANIC GARDEN AND CENTRAL NATIONAL HERBARIUM (CAL)

Date: 19th January, 2021

Participants: 2nd and 3rd semester Botany (Hons.) students and 2nd semester students with Botany minors.

Accompanying teachers: Dr. Sangita Das Chowdhury
Mr. Avik Mukherjee.



Kyd monment

Botanical garden is a scientifically planned collection of trees, shrubs, herbs, climbers etc. which serve as a living repository of plant. In a planned Botanic garden, plant having close association or resemblances are usually grown together for better understanding of various plant groups for example different species of Bamboos are grown in exclusive group called Bambusetum, similarly the Gymnosperms in Pinetum screwpines (Pandanus) in Ponclanalum woody tree species in Arboretum and Orchids are grown in Orchidarium etc. The Botanic garden not only acts as a place of aesthetic beauty attracting tourists and nature lovers but also offers a lot of opportunities to botanists, horticulturists and researchers to study various aspects of plant Biology.

During the last few decades most of the public parks or pleasure gardens which has been established have been transformed into Botanic Gardens with multifarious objective and activities.

The intensive and extensive exploration and study of the Indian flora has revealed that more than 0% of the flora is endemic and about 10% of the species (1700) are under various degree of threat

In order to protect these rare and endangered species a large network of protected areas (Sanctuaries,

National park, Biosphere Reserves etc.) for in-situ conservation and Botanic Gardens for ex-situ conservation has been established.

In India there is a chain of Botanic Garden established in almost every region of the country of which the Indian Botanical Garden, Howrah is among the oldest and largest in South-East Asia.

This garden has played a very important role in economic development of the country by introducing, improving and distributing a large number of economic plants such as Tea, Rubber, Jute, Chinchona, Sugarcane, Mahogony etc.

Victoria amazonica

# INDIAN BOTANIC GARDENS

Situated on the west bank of the river Ganga in Howrah district of West Bengal. The Indian Botanic Garden is one of the most celebrated Botanic Garden not only in this continent but in the whole world.

Established in 1787 by Col Robert kyd under the East India Company's patronage the company began. Present day Indian Botanic Garden served as a platform for first introducing and subsequently slipping out horticulturally and economically important.

Plant species of this region like cardamom, cotton, tobacco, indigo, coffee, tea etc. And plant products like spicies, timber for ship building etc. to England.

Col Robert kyd, secretary of the Millitary Board as Fort William Calcutta, also functional as honourable Superintendent of this Garden from 1787 to 1793 and he was succeded by the first superintendent William Roxburg in 1993 who remained in change till 1814. The objectives to the gardens were re-orientea to a large extent towards plant taxonomy by Roxburg.

He laid the function of modern plant taxonomy (Post Linneaus) in India by establishing a large

herbarium (the present day Central National Herbarium) (CAL) and is rightly called 'Father of Indian Botany'.

William Roxburgh left behind a huge collection of coloured icons, more than 2500 original colour painting of Indian plant.

Roxburgh monument

# BRIEF HISTORY

Apart from William Roxburgh the other eminent botanists who served as superior during the pre independence period were :-

C.C. Colder from 1923-1937

Thomas Henry Colebrooks from 1813-1814

Buchanan Franchis Hali from 1814-1815

Nathaniel Wallich from 1815-1816 (relieved of his duties)

Thomas easly from 1816-1817

Nathaniel Wallich from 1817-1842 (left due to ill health)

William Griffith from 1842-1845

Nathaniel Wallich from 1845-1847

Hugh Falconer from 1847-1856

Thomas Thomson from 1855-1861

Thomas Anderson from 1861-1869

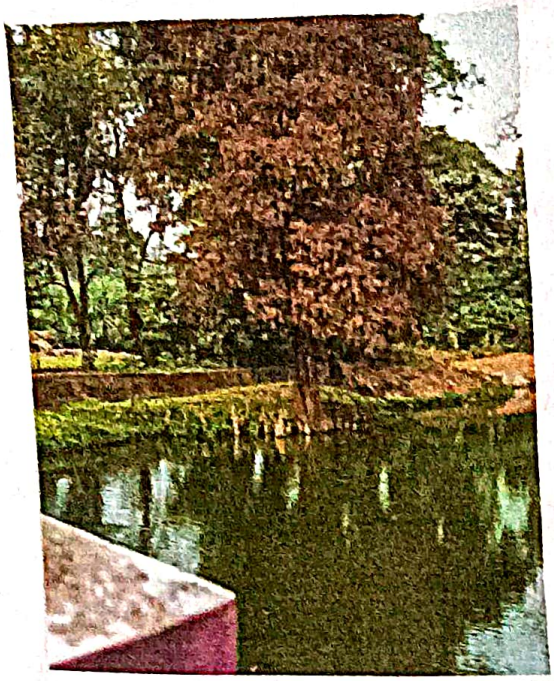
CB. Clanke from 1869-1871

Captain Greonge from 1871-1897

David Prain from 1897-1905

Lt Col Gage from 1906-1923

K. Biswas from 1937-1955



Taxodium distichum

Dillenia indica

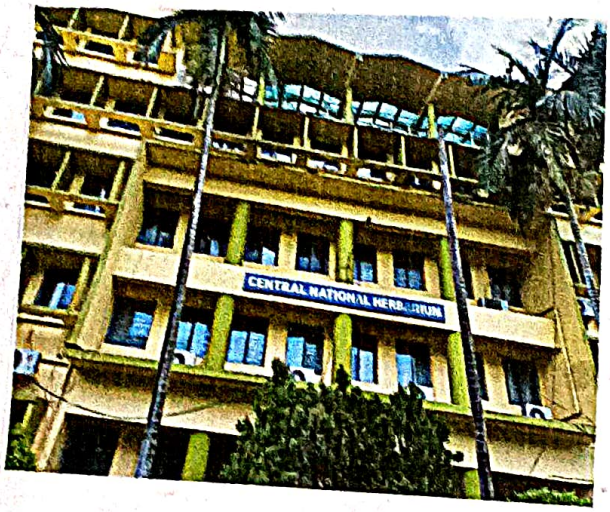
# SALIENT FEATURES OF INDIAN BOTANIC GARDEN

Situated at a distances of 8km from Howrah Railway Station and 25 km from Calcutta International Airport (Netaji International Airport). The I.B.G covers on area of about 273 acres on the west bank of river Ganga (Hoogly). The Indian Botanic garden is one of the most famous Garden of the world like the Royal Botanic Garden Kew (England). Its unique landscaping was initiated by Sir George King. The garden is derieved into 25 sections or divisions each specified for growing different types of plant. There are 24 lakhes in the garden which are inter connected with the underground pipes and connected with the river through sluice gate for the regular inlet of water. The roads insid the garden is the living avenues and lakes are named after famous Botanists and other technical stoffs of the garden. The garden is the living respiratory more than 120000 trees, shrubs and climbers, respresenting over 1400 species together with a large no. of wild and cultivated herbs. Unlike earlier established garden in India which were later on turned into either horticultured or fruit gardens

Great banyan tree
Ficus benghalensis

Nymphaea rubra

The Indian Botanic Garden preserves one of the best collection of native and exotic plants and large number of curious rare and endangered species. Rich collection of bamboos, screwpines, palms, Jasmine, legumes, Bougainvilleas, wall lilies, orchids etc. are some of the proud position of the garden.




Central National Herbarium (CAL)

# THE CENTRAL NATIONAL HERBARIUM (CAL)

The CNH (CAL), popularly known as/the full name is Central National Herbarium (CAL) is one of the oldest and largest herbaria in the world. Dr. William Roxburgh the first regular superintendent of the East India company's Garden at Shibpur, Howrah established the herbarium known as Calcutta herbarium in the ground floor of his residense in 1795. Sir George King the founder ex-officio Director of BSI, built a new double storied herbarium building in 1882 adjacent to Roxburgh's house and the specimens were transferred to the new building in 1883, almost after a century. The present four storied building of the CNH was constructed in 1972 to safely accomodation the herbarium specimens. Apart from the specimens from other the Indian subcontinent, the herbarium also houses a large number of collections from other parts of the world, which were recieved from different herbaria as gift or on exchange basis. Presently, the CNH holds about 2 million herbarium sheets belonging to nearly 350 families of higher plants, which are arranged ascending to Bentham & Hooker system of classification. These

Herbarium Specimen arranged in pigeon hole

Herbarium Specimen arranged in pigeon hole

include classical collection by eminent and pioneer plant explorers and botanists. A good collection of original drawings of Indian plants poined using natural dyes and the correspondences among eminent botanists of that time as archival collection are also housed at CAL cryptogamic collection that include fungi, lichens, algae (principally marine), bryophytes and pteridophytes are also housed in large numbers.

The CNH is the hub of taxonomic work in the country supporting floristic, monographic and revisionary studies. The herbarium collections provide the basiline data to ascertain status of plants to recommend its conservationpriority. A digital herbarium has also been established for digitization of both type and general specimens. It is a centralized national reference for literature and specimens to taxonomists.

Established: in 1795, moved to a specially built herbariumbuilding in 1883, and eventually to the current facility in 1972.

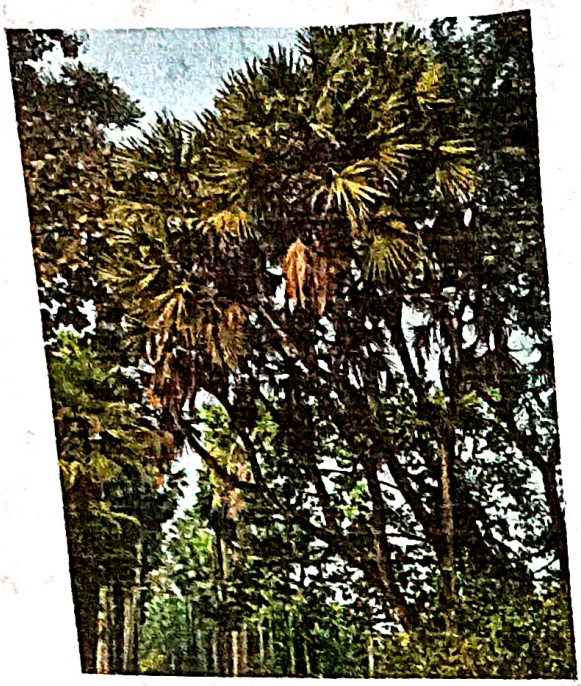
Herbarium acronym: CAL

Bambusa sp.

Zephyranthes citrina

# SOME IMPORTANT PLANTS OF ACHARYA JAGADISH CHANDRA BOSE INDIAN BOTANIC GARDEN

| Name of the Plants | Family |
|---|---|
| Hyphaene thebaica (branching palm) | Arecaceae |
| Asclepias fruticasa (phuchka plant) | Asclepiadaceae |
| Adansonia digitata (Boobab kalpa Vriksha) | Bombacaceae |
| Elaeocarpus serratus (Rudraksh tree) | Elaeocarpaceae |
| Couroupita guianensis (cannon ball tree) | Lecythidaceae |
| Ficus Krishnae (Krishna vat) | Moraceae |
| Saraca asoca (Asok) | Leguminoseae |
| Michelia champaca (Champa) | Magnoliaceae |
| Myris fragrance (Jaiphal) | Myristiceae |
| Euryale ferox (Makhana) | Nymphaeaceae |
| Andrographis paniculata | Acanthaceae |
| Pandanus foetida | Pandanaceae |
| Dendrocalamus giganteus (Bamboo) | Poaceae |
| Theobroma cacao (chocolate tree) | Sterculiaceae |
| Pterygota alata var irregularis | Sterculiaceae |
| Strychnos nux-vomica | Sterculiaceae |
| Amherst nobilis (queen of flowering plant) | Fabaceae |



Hyphaene thebaica

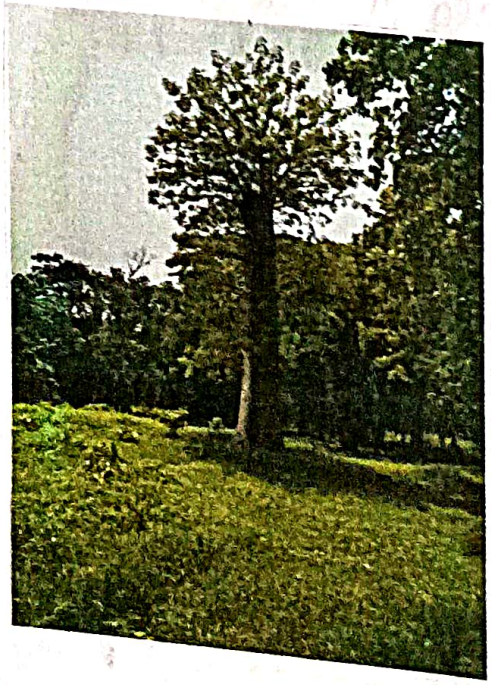
Couroupita guianensis
(shivlingi)

| Name of the plants | Family |
|---|---|
| Bauhinia coccinea | Fabaceae |
| Bucsophyllum (Rosogolla Tree) | Sapotaceae |

We have also seen few species of Gymnosperms growing of the pinetum of 'Acharya Jagadish Chandra Bose Indian Botanic Gaarden' They are:—

| Name of the plants | Family |
|---|---|
| Cycas circinalis | Cycadaceae |
| Cycas revoluta | Cycadaceae |
| Pinus roxburghii | Pinaceae |
| Podocarpus nerifolius | Podocarpaceae |

Vanda Sp.



Adansonia digitata
(the African baobab)

## Conclusion

It was a great experience to visit AJC Bose Indian Botanic Garden where we came across different plant species of the world species growing on harmony with the Indigenous. Here we gathered knowledge on various type of plants belonging different difficult families. In the B. garden we observed exsitu conservation of plants the medicinal plant in 'Charak Udyan' Orchids in the national orchidarium several species of palms in the 'Large palm house', few species cactus and other succulent in the 'cactus house'/'Glass house' different species of gymnosperms in the pinetum, bamboos in Bambuseturn etc.

We also saw the famous 'Great Banyan Tree' Giant lily, branching palm, cannon ball tree, Mad tree etc which are the most attractive plant of the garden.

During this excursion we visited the CNH (CAL) which is situated inside the garden, where we get some useful knowledge on herbarium.

It was our opportunity to visit the type section of CNH, where we had a look on the

Wallich. Catalogue and the beautiful colour icon. These icon were unique as these were painted with natural dye during early 19th - 20th century, mostly by the native artists.

It was also obvious that the visit to AJC Bose Indian Botanic Garden has increased our interest on plants, environment and their conservations. We are greatful to our teachers of the Botany Department for arranging this educational excursion.