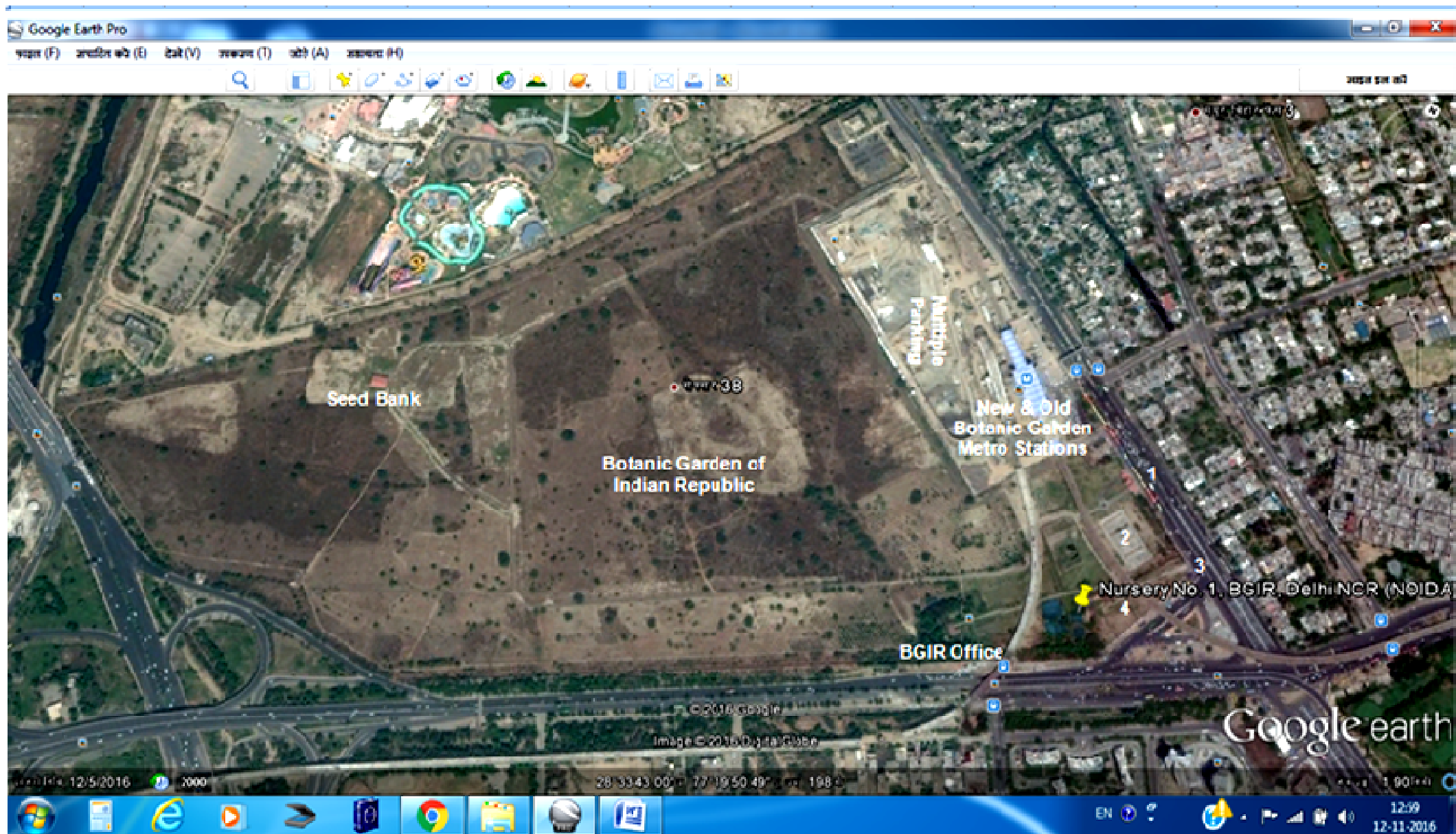


# BOTANIC GARDEN OF INDIAN REPUBLIC

## ANNUAL SCIENTIFIC MEET'2017



## PROFILE

1. Name of the Scientific Staff : Dr. SHEO KUMAR
2. Designation (with Department/Unit/Circle) : SCIENTIST 'E' & HEAD  
Botanic Garden of Indian Republic
3. Date of Joining in BSI : 18.06.2001 (AN)
  - a. As a Research Fellow : N/A
  - b. As a staff : SCIENTIST 'C'
4. Total tenure in BSI (including fellowship tenure) : 16 years 08 months

Field of work/specialisation :

a. As per Educational Qualification :

- i. Plant Pathology during 1<sup>st</sup> M.Sc. during 1983,
- ii. Ecology & Environment during 2<sup>nd</sup> M.Sc. and Geographic Information System (GIS) during 2004,
- iii. Physico-chemical Characteristics of Water & Soil and Aquatic Microbiology of different raw drinking water sources (Algae, Bacteria, Extra-Aquatic Fungi and Zooplankton) during UGC Project (1985 - 88) and Ph.D. Degree during 1990.

- b. As per requirement of Scientific Projects and Job Assignments in different Institutions :
  - i. Before Joining BSI :
    - a. Aquatic & Terrestrial Macorphytes, Heavy Metals, Bioaccumulation and Biomagnification as well as their toxicity in different micro to macro-organisms (like Algae, Bacteria, Zooplankton and Freshwater Polychaetes and Tadpole Larvae of Frog) during GPD Project of MOEF,
    - b. Aero-mycoflora and Mitigation against Impact of Ambient Air Pollutants on Terrestrial Plants during DOEn Project, MOEF,
    - c. Impact of plant extract on raw drinking water for elimination of undesirable chemicals and Microbes and their toxicity in Mice and Histo-pathological Studies, etc. during CSIR Pool Scientist Project
    - d. Environmental Impact Assessment (EIA), Environmental Management Plan (EMP), Environmental Designing and Clearances for Highway & Other Projects while working in ICT Pvt. Ltd.



ii. After Joining BSI :

- a. Phytoplankton of different Water-bodies while working in BSI Hqr.,
- b. Environmental Impact Assessment (EIA) while working in BSI Hqr.,
- c. Cactus & Succulents while working in AJCBIBG and BGIR,
- d. Terrestrial Fungi (Basidiomycetes specially Mushrooms and Ascomyetes) while working in AJCBIBG,
- e. *ex-situ* Conservation of endemic and threatened as well as other plants (Introduction, Plantation, Propagation/Multiplication, Training/Arboriculture, etc.) and curious aquatic and terrestrial plants like Lotus, Victoria, Great Banyan Tree, Double Coconut, etc. while working in AJCBIBG and BGIR,
- f. Designing of Museum, Conservatories, water-bodies, Landscaping and Environmental Training and Awareness while working in AJCBIBG and BGIR.

**Title of Ph.D. Thesis**

*Drinking Water Quality of Different Sources at Bhagalpur*

**Name of the project**

Drinking water quality of different sources at Bhagalpur and its suburbs

University/institution : T. M. Bhagalpur University, Bhagalpur.

# PROJECTS CARRIED OUT

## Annual Action Plan

### While working in BSI Hqr. :

- ❖ *Taxonomic Studies of Phytoplankton in India - Maldah District is Completed as reported 386 Phytoplanktonic algae and 37 macrophytes*
- ❖ *Preparation of Checklist of Algae (Freshwater and Marine) of India for Class : Cyanophyta, Order : i. Chaemosiphonales and ii. Stigonematales from 03.12.2003 to 03.01.2007*

### While working in AJCBIBG :

- ❖ *Basidiomycetes Fungi of AJCBIBG from 1<sup>st</sup> Sep., 2011 up to 31<sup>st</sup> Mar., 2013*

### Projects Ongoing in BGIR :

- ❖ *Collection of plants for introduction (from different destinations of the country)*
- ❖ *Development of database of introduced trees of BGIR, NOIDA*
- ❖ *Development of database of medicinal plants of BGIR*

## Number of Plant species conserved in BGIR

S. No.	Category of Plants	Number of Species Conserved
1	Endemic	175
2	Apparently Secure (Nature Serve)	1
3	Conservation Dependent (IUCN 2.3)	3
4	Critically Endangered (IUCN 2.3)	3
5	Data Deficient (IUCN 2.3)	8
6	Endangered (IUCN 2.3)	15
7	Extinct (IUCN 2.3)	1
8	Least Concern (IUCN 2.3)	23
9	Near Threatened (IUCN 2.3)	8
10	Secure (Nature Serve)	5
11	Vulnerable (IUCN 2.3)	15
12	Plant species of other Categories	973
<b>Total</b>		<b>1230</b>

**More than 10,500 individuals of 1230 introduced plant species existing in BGIR and**

**Seeds of 270 species have been conserved in Seed Bank**

**Medicinal Plants : more than 400 species among 121 species as endemic**

**Herbarium : 1800**



## Others :

- ❖ As Coordinator Monitored 68 EIA Projects for 03 years 06 months in BSI Hqr. from Aug., 2001 to Feb., 2005.
- ❖ On deputation in MOEF&CC monitored and assisted for about 150 Scientific Projects on AICOPTAX, CORAL REEFS, MANGROVES, FRLHT, Parliament Questions, Organising Workshop, Meetings, etc. for 01 year (from Feb., 2005 to Aug., 2005 and from Oct., 2005 to Mar., 2006)
- ❖ Assistance to Botanic Garden and made corrections in 'Guidelines for Assistance to Botanic Garden' from 20.02.2013 to 14.05.2013 in MOEF&CC.

# ADMINISTRATIVE WORKS CARRIED

## As HOO :

- Microbiology Section 18.06.2001 (AN) to Sep., 2006
- AJCB Indian Botanic Garden : Occasionally for 71 days.
- Botanic Garden of Indian Republic : Continuing since 12.03.2013.

## DDO

- AJCB Indian Botanic Garden : Occasionally up to 04.08.2008.
- Botanic Garden of Indian Republic : Continuing since 25th May, 2015.

**Technical** : Curator for 06 year 04 months (Oct., 2006 to Feb., 2013) in AJCBIBG

## Others :

As Coordinator on behalf of BSI for :

- Monitor Environmental Impact Assessment (EIA) of developmental projects in India for 68 EIA Projects within a period of 03 years 06 months (from Aug., 2001 to Feb., 2005) while working in BSI Hqr.
- Assistance to Botanic Garden from 20.02.2013 to 14.05.2013 in MOEF&CC.
- Rajbhasha Adhikari for 06 year 04 months (Oct., 2006 to Feb., 2013) in AJCBIBG.

**Judicial Matters :** On behalf of the BSI/AJCBIBG attended court matters since Nov., 2008 till Jul., 2011 :

✓ **High Court Case :**

- i. PIL, W.P. 2856 (W) of 2002 and associated Sub-sequent Court Cases attended several hearings in Hon'ble Calcutta High Court and West Bengal State Pollution Control Board, interacted with the CID Officials and Govt. Counsel at several occasions.
- ii. As per Special Officer constituted by the Hon'ble Calcutta High Court, monitored excavation work undertaken for detection of fault in 132 KV cable line for repairing by the CESC, Kolkata from 30.03.2011 to 07.04.2011.
- iii. Attended 21 Hearings/Meetings for different Court Cases under PIL WP No. 2856(W) of 2002 and concerned agencies like HMC, Howrah; CESC and WBPCB, Kolkata who were asked to comply the order of the Hon'ble Calcutta High Court and prepared and submitted Affidavits, Action Taken Reports, etc. for the following :
  - ✓ Fire incidents, contamination in Lakes and death of fishes, CESC, chemical and solid waste dumps and disposal, Tree inventory, etc.
  - ✓ **Led special duty from 06.04.2011 onwards between 05.00 AM to 08.00 AM to prevent entry of free visitors with their vehicle in the garden for seven days and complied orders No. AJCBIBG-135/NOTICE/ 2011-Admn./714(A) dtd. 04.04.2011 and 05.04.2011 satisfactorily and is of the greatest achievement.**
  - ✓ **The Case filed vide CAN. No. 4515 of 2011 (under PIL W.P. No. 2856(W) of 2002) by NGO's against AJCBIBG for entry of vehicle of free visitors and parking was looked after properly since inception and won the case in the Hon'ble Calcutta High Court on 19.05.2011 is of the greatest achievement.**
  - ✓ **Court Cases :** Cases filed by the incumbents for seeking service benefits.
  - ✓ **Juvenile Court Case :** Under Community Services work undertaken in the garden by the prisoners.

# PARKING AT HOWRAH GATE





# PUBLICATIONS

- ❖ Book(s)/Chapters in Book(s) [excluding abstracts]
  - ✓ Five Books / 16 Chapters published and 03 books are under preparation.
- ❖ Brochures/Pamphlets : Three
  - ✓ 'Ban of Activities and Entry of Items in Botanic Garden of Indian Republic', BSI, MOEF, Govt. of India, NOIDA, Jul., 2013,
  - ✓ Memorandum of Understanding (MOU) for developing BGIR during 2015 and
  - ✓ Flower Show'2016.
- ❖ Periodicals (only published/accepted) : 47(36 / 11 including Abstracts 12 / 4 in Proceedings) in National/International.
- ❖ Seminar/Conference/Workshop/Training/Exhibition (only in numbers)
  - (a) National : Attended 47 ; Delivered (oral/poster) : 15
  - (b) International : Attended 02; Delivered (oral/poster) : 02
- ❖ Coverage by Media and TV Channels in Consultation :
  - Two movies made by News Nation :
    - ✓ 'Kalpavrisha',
    - ✓ '40 Crore Saal Ki Mistry'
- ❖ More than 180 news articles published on BGIR since last 4 years.



## NEW REPORTS : 3+

- ✓ KUMAR, SHEO, J. LAL AND P. GUPTA (2005). *Ricciocarpos corda* Opiz (Hepaticae) from Maldah District, West Bengal : A new generic record from Gangetic Plain. *Bull. Bot. Surv. India* 47(1-4) : 131 - 132. ISSN : 0006-8128.
- ✓ New Distributional Area of Plant Species *Geodorum appendiculatum* Griff. also found in Andaman and Nicobar Islands on 20.06.2016 (and BGIR since last 3 years) other than Assam where it was 1<sup>st</sup> reported by Griffith during 1845 - Communicated for Publication.
- ✓ New living form of Fern species *Ceratopteris thalictroides* (L.) Brongniart (Family Pteridaceae) commonly known as water sprite, Indian fern and others, usually grow in water from sea level to 1300 m is found naturally growing in Nursery No. 2 of BGIR since June, 2016 under preparation.

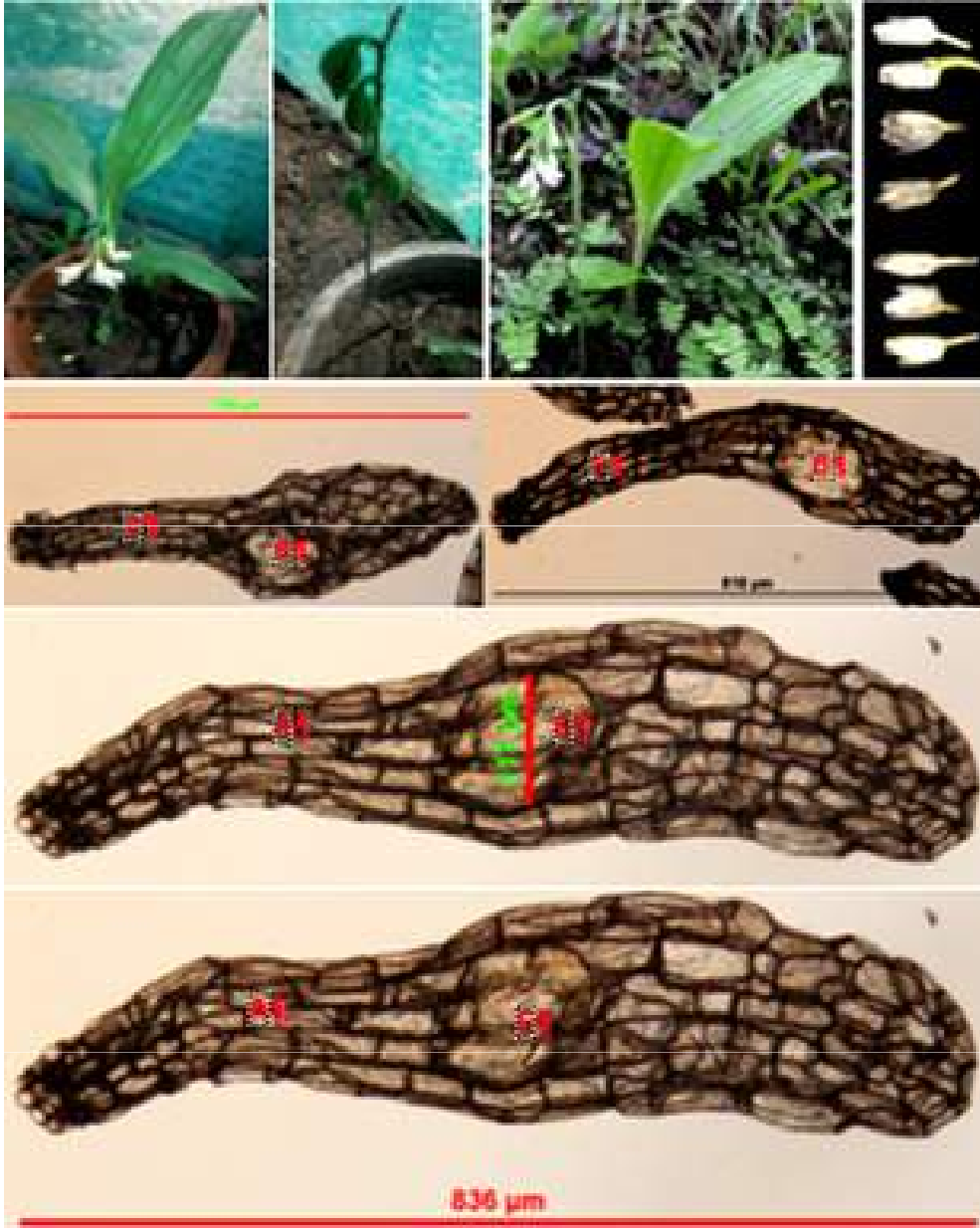
**Need to be Reported by getting them Published as identified many species are seems new to science and area of inventorisation from reported number of species :**

- ✓ Out of recorded 386 phytoplanktonic algal forms under the project '*Taxonomic Studies of Phytoplankton in India*' and
- ✓ Out of recorded 112 species of Basidiomycetes (Mushrooms) and Ascomycetes Fungi under the project '*Basidiomycetes Fungi of AJCBIBG*'.





In BGIR, NOIDA



In Andaman &  
Nicobar Islands



*Ceratopteris thalictroides* (L.) Brongniart,  
Planted in another pot on 29.06.2016, Two  
different kind of leaves are under  
development on 14.07.2016 and 4. Earlier  
formed leaves vanished on 12.08.2016.

*Geodorum appendiculatum* Griff. Live Plant with  
Flower and Mature Fruits in BGIR and in  
Andaman & Nicobar Islands; Microphotographs of  
Seeds (A = Cellular Wing of Seed; B = Actual Seed)

## AWARDS/MEMBERSHIPS

### **Awarded Awards of Different Funding Agencies/Scientific Societies :**

- CSIR, New Delhi, British Council Division, Calcutta and Organising Secretariat, INTECOL'94, Manchester, U.K in 1994.
- D.S.T., New Delhi and Organising Secretariat, ICCML, KASUMIGAURA'95, Ibaraki, Japan in 1995,
- CSIR, New Delhi for Pool Officer (PO)/Senior Research Associate (SRA) in 1996,
- CSIR, New Delhi and Organising Secretariat of 7<sup>th</sup> ICCML, LACAR'97, Argentina in 1997,
- Best Research Paper Under BRPM Competition (BPA Certificate-1998) of *19<sup>th</sup> Annual Symposium of the Academy of the Environmental Biology* at Bareilly in Nov., 1998.
- FIAAPC : Fellow of the *Indian Association for Air Pollution Control (IAAPC)*, Vadodara (India) on 5<sup>th</sup> June, 2004.

### **Memberships :**

- Indian Science Congress Association, Calcutta (India),
- Indian Association for Air Pollution Control, Vadodara (India),
- National Book Trust of India, New Delhi (India)

Edited/Reviewed (Books/Periodicals/Ph.D. Theses) [list the name of books and periodicals] :

1. In *Environment Bulletin* (ed. By R. C. Dalela, K. Gopal and D. Dalela), *Acad. Environ. Biol.*, Lucknow, **15(2)** : 63, 1999 the following books :
  - ✓ *Dictionary of Aquaculture* by Dr. Akhilesh Kumar Singh and Anil Mittal,
  - ✓ *Limnological Research in India* by Dr. S.R. Misra,
  - ✓ *Ecological Imbalances of the Ganga River System, Its Impact on Aquaculture* by Dr. P. Ray and
  - ✓ *Conservation and Management of Aquatic Resources* by Dr. Ashutosh Gautam.
2. In *Bull. Botanical Survey of India*, Kolkata, 41(1-4) : 196, 1999 (appeared in 2001) the following books :
  - *Microbial Interaction in Agriculture and Forestry* by Dr. N. S. Subba Rao and Dr. Y. P. Dommergues and
  - *Crop Improvement : Quality Characters* by Dr. U. S. Gupta.
3. Reviewed and submitted 11 Project Proposal for Seeking Financial Assistance to the Botanic Gardens located in different parts of India from MOEF on 07.09.2009.



## **As supervisor (supervising scholars for the award of Ph.D. only) : NIL**

However, supervised for 6 Master's Dissertation projects including one project is continuing are as follows :

- During Jul., 2013 - Three Projects entitled :
  - ❖ *Method to Break Seed Dormancy of Medicinal Plants* - by Ms. Kritika Gupta (E.No. 02016300312)
  - ❖ *Wild Plants of Botanic Garden of Indian Republic, NOIDA* - by Ms. Apoorva Dubey
  - ❖ *Impact of different concentration of Gibberellic Acid on Growth of Seedlings of selected Medicinal Plants* - by Ms. Preeti Singh (E.No. 00216300312)  
for their M.Sc. Degree in Biodiversity and Conservation from University School of Environment Management (USEM), GGSIPU, Delhi.
- During May, 2014 - One project entitled :
  - ❖ *Landscape proposal for Botanic Garden of Indian Republic* - by Ms. Tripta Singh (E No. SPA/NS/LA/508)  
for her Masters' Degree in Landscape Architecture from School of Planning & Architecture, New Delhi.
- During July, 2015 - One Project entitled :
  - ❖ *Inventory of Wild Medicinal Plants, Soil Characteristics and Conservation in BGIR* - by Ms Damini Sharma (E No. 01316300314)  
for her M.Sc. Degree in Biodiversity and Conservation from University School of Environment Management (USEM), GGSIPU, Delhi
- Feb., 2017 continuing since 06.02.2017 - One project entitled :
  - ❖ *Assessment for Value of Botanic Garden of Indian Republic (BGIR), NOIDA* - by Shristi Marwah  
for her M.Sc. Degree in Botany from Gautam Budha University, Greater NOIDA

## Work undertaken for Development in Institutions/Organisation :

Other than above, services also extended for development of the Institutions in various ways are as follows :

### ➤ **BSI Hqr. :**

Sifting of BSI Head Quarter from Brabourne Road, Kolkata to Salt Lake, Kolkata in two phases during 2004 (Phase 1 during Oct., 2004 and Phase 2 during Nov., 2004).

### ➤ **AJCBIBG :**

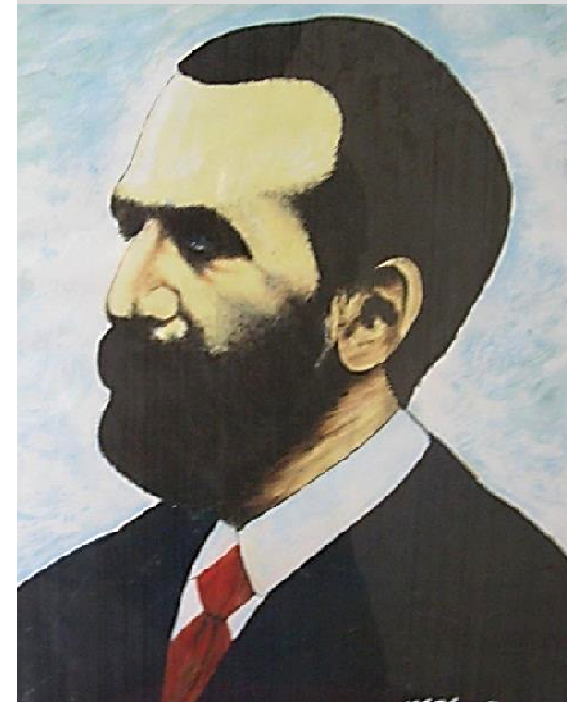
- ✓ **Plan to Make IBG Friendly** and digitised the **Garden Plan Map** along with **incorporation of monument of Carl Mez** and Boating in Prain & King's Lake - submitted to the Director, BSI on 16.02.2004.
- ✓ **Plan for Plantation as per Plant Phylogeny and Extension of Charak Udyan** submitted to the Joint Director, IBG, BSI, Howrah on 16.06.2006.
- ✓ **Layout of historic/archaeologically important William Roxburgh Building and Plan for William Roxburgh Museum** - submitted to the Joint Director, Indian Botanic Garden, BSI, Howrah on 10.07.2006 and 12.07.2006 respectively.
- ✓ **Layout Map of Flower Show'2012** with measurements of Stage, Pandal, Places of Exhibits, FIRST AID, etc. on 12.12.2011, approved by the **Flower Show Committee Members** on 14.12.2011 and accordingly, the Flower Show'12 was organised from Jan. 28<sup>th</sup> to 30<sup>th</sup>, 2012.
- ✓ Designed Hoardings/Sign Boards and direction Signage's along with slogans keeping in view of Environmental Education/Awareness.
- ✓ Boating in Prain and King's Lake during 2007.

ईस्ट इंडिया कम्पनी के ब्रिगेड सर्जन, लेफ्ट. कर्नल सर जॉर्ज किंग को इस उद्यान का अधीक्षक सन् 1871 ई. में बनाया गया तथा इस उद्यान का देख-भाल सन् 1897 ई. तक किया ।

इन्होंने अपने कार्यकाल में पूरे उद्यान का जीर्णोधार के साथ-साथ 25 झीलों तथा सड़कों का निर्माण करवाया जिसे जोड़ने पर इसकी लम्बाई 17 कि.मी. है जो आज भी विद्यमान है ।



लेफ्ट.कर्नल सर जॉर्ज किंग





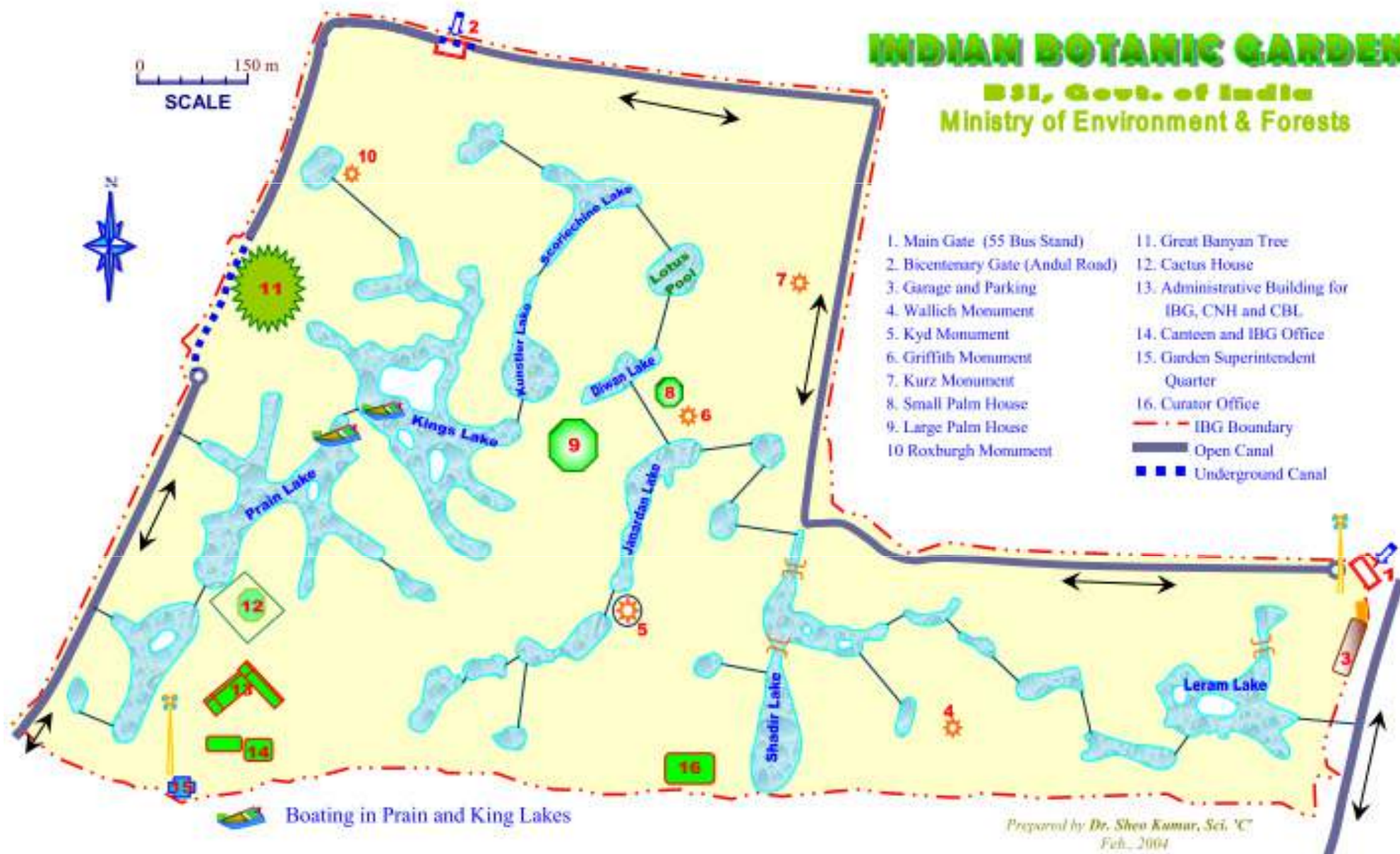




# LAKES AND ITS NETWORK

## INDIAN BOTANIC GARDEN

CSI, Govt. of India  
Ministry of Environment & Forests

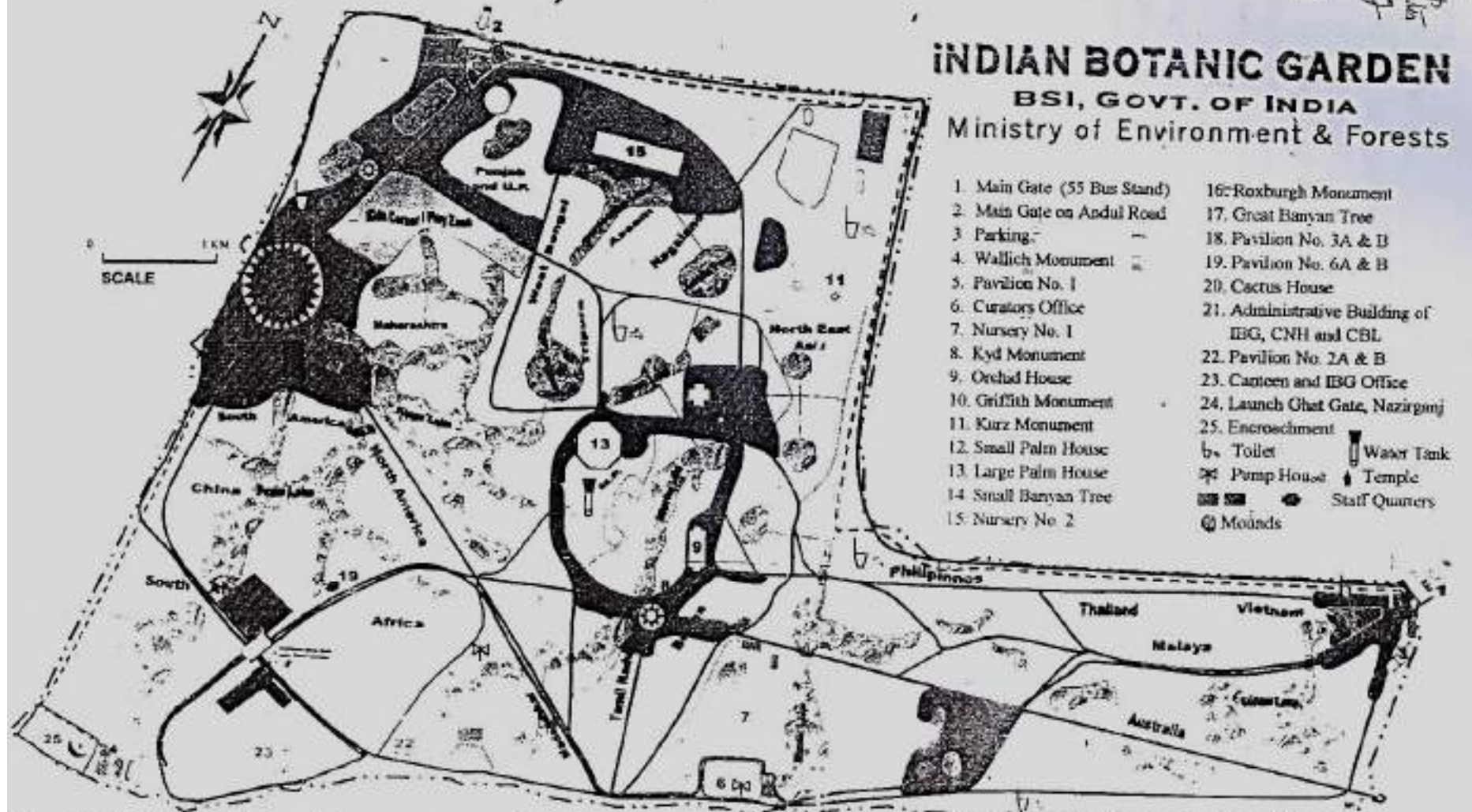




# Plan to Make IBG Friendly

Handwritten notes in the top right corner: "Not part of site plan", "to be provided by", "17/11/86".

## INDIAN BOTANIC GARDEN BSI, GOVT. OF INDIA Ministry of Environment & Forests

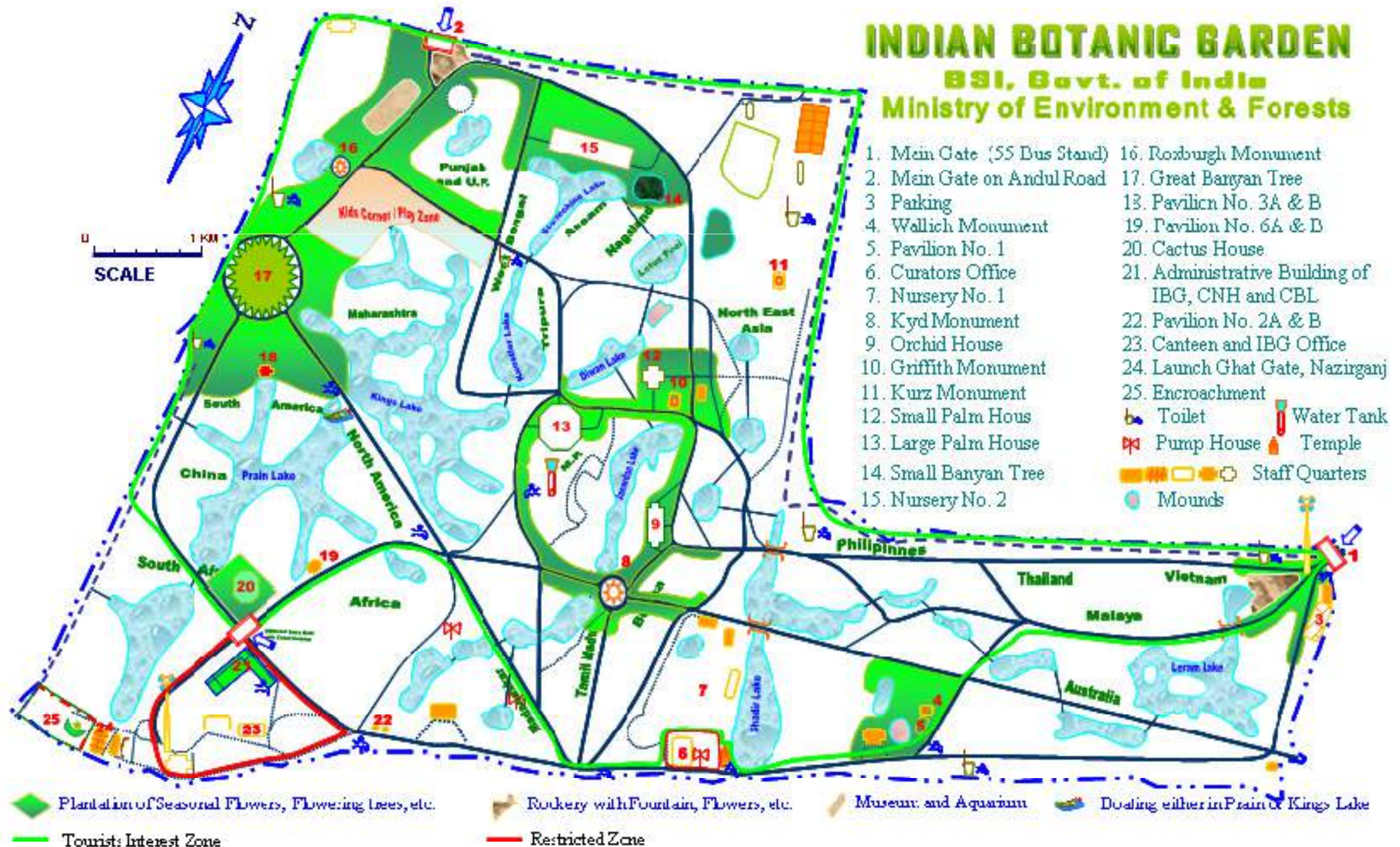


- 1. Main Gate (55 Bus Stand)
  - 2. Main Gate on Andul Road
  - 3. Parking
  - 4. Wallich Monument
  - 5. Pavilion No. 1
  - 6. Curators Office
  - 7. Nursery No. 1
  - 8. Kyd Monument
  - 9. Orchard House
  - 10. Griffith Monument
  - 11. Kurz Monument
  - 12. Small Palm House
  - 13. Large Palm House
  - 14. Small Banyan Tree
  - 15. Nursery No. 2
  - 16. Roxburgh Monument
  - 17. Great Banyan Tree
  - 18. Pavilion No. 3A & B
  - 19. Pavilion No. 6A & B
  - 20. Cactus House
  - 21. Administrative Building of IBG, CNH and CBL
  - 22. Pavilion No. 2A & B
  - 23. Canteen and IBG Office
  - 24. Launch Ghat Gate, Nazirganj
  - 25. Encroachment
- b. Toilet      Water Tank  
 \* Pump House      Temple  
 Staff Quarters  
 Mounds

◆ Plantation of Seasonal Flowers, Flowering trees, etc  
 ——— Interest Zone  
 ——— Restricted Zone  
 ☞ Rockery with Fountain, Flowers, etc  
 ☞ Museum and Aquarium  
 ☞ Boating either in Prain of Kings Lake



# Plan to Make IBG Friendly



## INDIAN BOTANIC GARDEN BSI, Govt. of India Ministry of Environment & Forests

- 1. Main Gate (55 Bus Stand)
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- Toilet
  - Water Tank
  - Pump House
  - Temple
  - Staff Quarters
  - Mounds

- Plantation of Seasonal Flowers, Flowering trees, etc.
- Rookery with Fountain, Flowers, etc.
- Museum and Aquarium
- Dooling either in Prain or Kings Lake
- Tourist Interest Zone
- Restricted Zone



## Plan to Make IBG Friendly

### **General**

1. The whole Garden may be divided into three zones viz.,
  - 1) Tourist Importance Zone - Entry through Ticket only (For Public),
  - 2) Free Zone for Local Habitants or regular visitors and
  - 3) Restricted Zone for Administrative and Scientific work.
2. Name plates of plants should be fixed at suitable height on the trees with an additional signage with brief description of some of the very important plants should be installed nearby the trees.
3. Weed eradication in aquatic and terrestrial system should be done atleast quarterly or in adverse case must be done half yearly.
4. Waste/Mud should be taken out from the lakes atleast at an interval of 15-20 years to have maximum water level for easy access to the plants and may be used as manure.
5. Orchidarium, Cactus House, Palm House, etc. needs to be maintained and strengthened.
6. Treatment to the diseased trees/plants may be give as and when required.
7. Piece/Aqua culturing may be introduced in some of the lake for revenue generation and attraction of tourists.

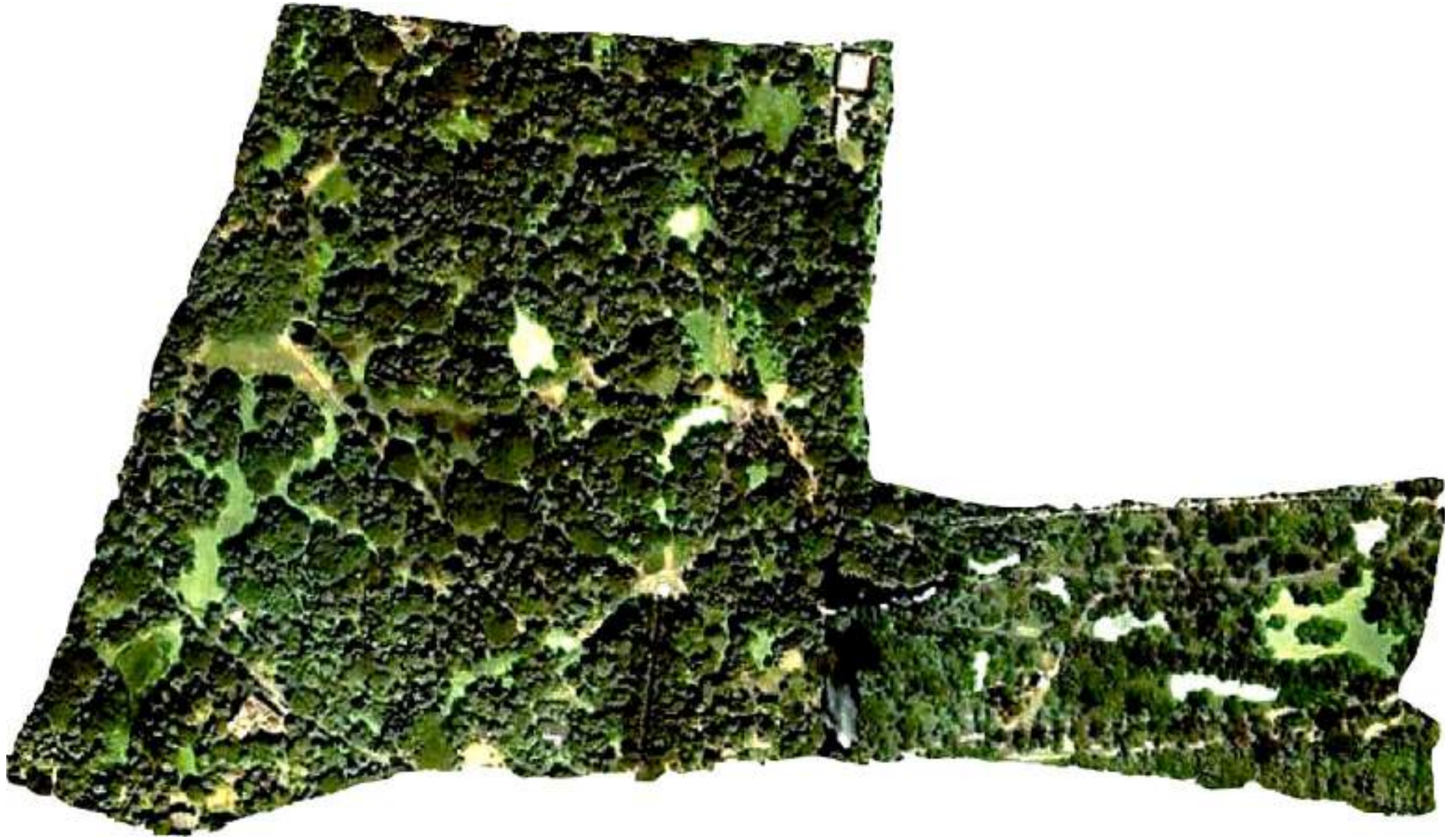
### **Tourist Importance Zone - Entry Through Ticket only (For Public)**

8. One more ticket counter may be installed within the Garden for entry of those people who have already visited in Free and Restricted Zones and may wish to see the banyan tree, orchidarium, palm and cactus houses, etc. and enjoy the facilities of kids corner, ride on boat, etc.
9. Suitable signage for directions, protection and conservation of plants may be installed and in the interest of public and smooth working of IBG, brochure as well as pamphlets with "DO's and "DON'T" is to be distributed at the time of purchasing of ticket to each party/person.
10. Number of Security Guard and maintenance staff like Horticulturist/Planner, Gardener, Cleaner, Sweeper and other staff may be increased to fulfil the requirement.
11. Landscaping (without disturbing to the existing plantations) for seasonal flower bed and plantations of trees having aesthetic sense and other purposes may be done.
12. Rockery with fountain, aquarium and some aesthetic flowering plants may be incorporated.
13. Provision of drinking water, lavatory and seating may be increased and or strengthened the existing one.
14. Shelter for security guard may be constructed for to watch and ward at different places.
15. A small museum of plants pertaining to the plant products, study materials, poster, exhibits, etc. may be installed/constructed.
16. Kids Corner/Play Zone with swings, coasters, climbers, exercising utilities, etc. may be developed and incorporated.
17. Provision of boating (with ride ticket) in atleast one lake may be incorporated.
18. A refreshment centre "*Banayan Yum Yum*" may be started in one of the abandon Pavilion No. 3A & B existing in front of Great Banayan tree for tea, coffee, ice cream, cold drinks, snacks, biscuits, pastry, cake, toffees, chocolate, pop corn, and other dry eatables only.
19. Number of dustbin having aesthetic sense / value may be placed or constructed at an appropriate places or wherever seems is necessary.
20. First Aid Box, Suggestions and Complaint Books are to be available at the Security Posts/Ticket Counters.



माँ गंगा जिसे यहाँ हगली के नाम से जाना जाता है के दक्षिणी तट/किनारे पर यह उद्यान ऐसे अवस्थित है मानो यह अपनी माँ के गोद में सोया है । इसके अतिरिक्त आज इसके चारों तरफ घनी आबादी दिन-प्रति दिन बढ़ती जा रही है ।





जलिय, रेंगने व लता वाले पौधो को छोड़, आज इस उद्यान में 1200 किस्म के पेड़ व पौधे जैसे उद्यान के चारों तरफ घनी आबादी ।



# INDIAN BOTANIC GARDEN

BGI, Govt. of India  
Ministry of Environment & Forests

**ZERO POLY BAG ZONE**

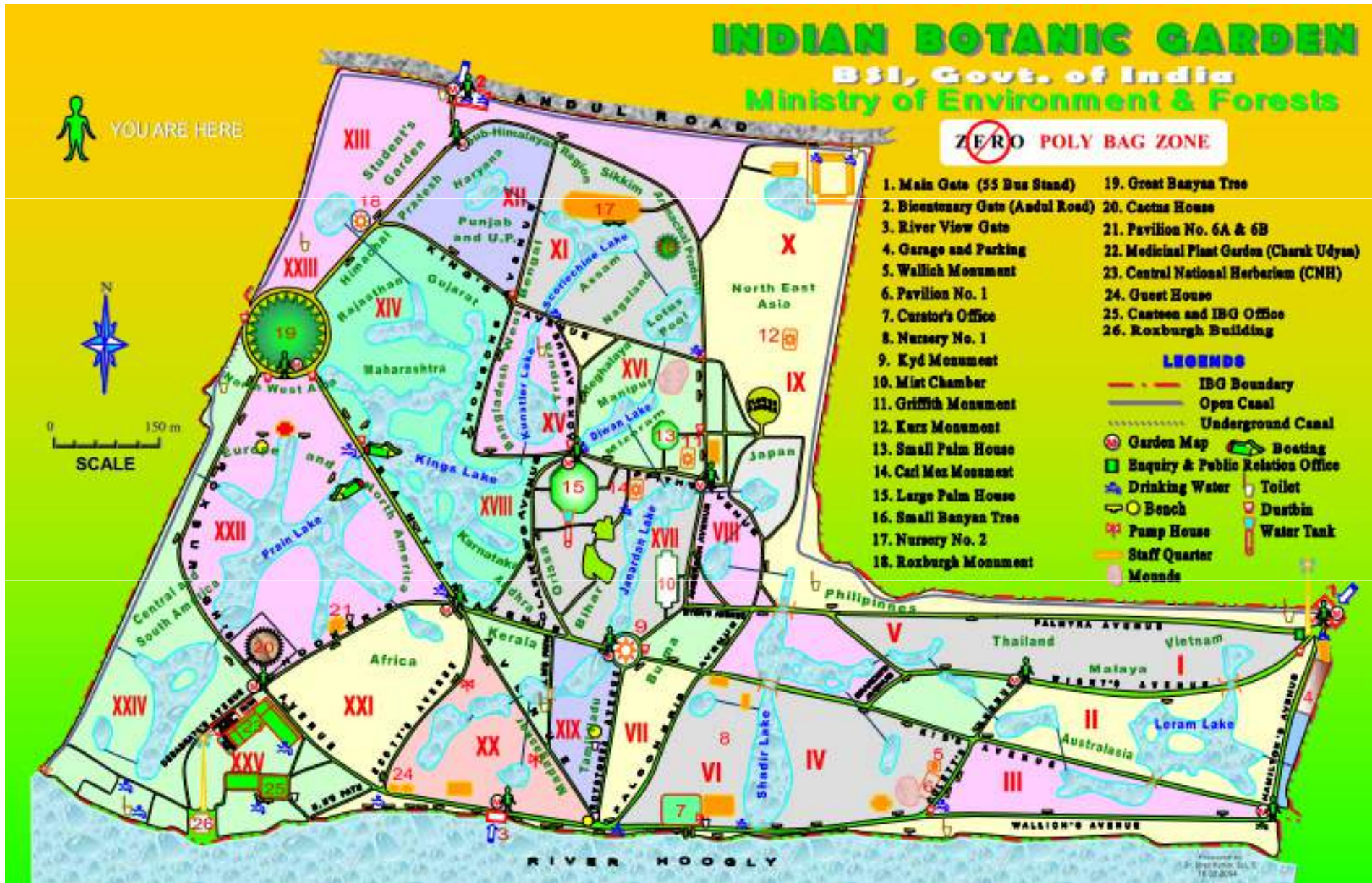


YOU ARE HERE



0 150 m  
SCALE

1. Main Gate (55 Bus Stand)
  2. Bicentenary Gate (Andul Road)
  3. River View Gate
  4. Garage and Parking
  5. Wallich Monument
  6. Pavilion No. 1
  7. Curator's Office
  8. Nursery No. 1
  9. Kyd Monument
  10. Mist Chamber
  11. Griffith Monument
  12. Kurz Monument
  13. Small Palm House
  14. Carl Mez Monument
  15. Large Palm House
  16. Small Banyan Tree
  17. Nursery No. 2
  18. Roxburgh Monument
  19. Great Baaya Tree
  20. Cactus House
  21. Pavilion No. 6A & 6B
  22. Medicinal Plant Garden (Charak Udyan)
  23. Central National Herbarium (CNH)
  24. Guest House
  25. Canteen and IBG Office
  26. Roxburgh Building
- LEGENDS**
- IBG Boundary
  - Open Canal
  - Underground Canal
  - Garden Map
  - Enquiry & Public Relation Office
  - Drinking Water
  - Bench
  - Pump House
  - Staff Quarter
  - Mounds
  - Boating
  - Toilet
  - Dustbin
  - Water Tank







The Name of  
**INDIAN BOTANIC GARDEN**  
has been changed w.e.f. 24.06.2009 as  
**ACHARYA JAGADISH CHANDRA BOSE INDIAN BOTANIC GARDEN**





# आचार्य जगदीश चन्द्र बोस भारतीय वनस्पति उद्यान ACHARYA JAGADISH CHANDRA BOSE INDIAN BOTANIC GARDEN

Botanical Survey of India, Govt. of India  
Ministry of Environment & Forests

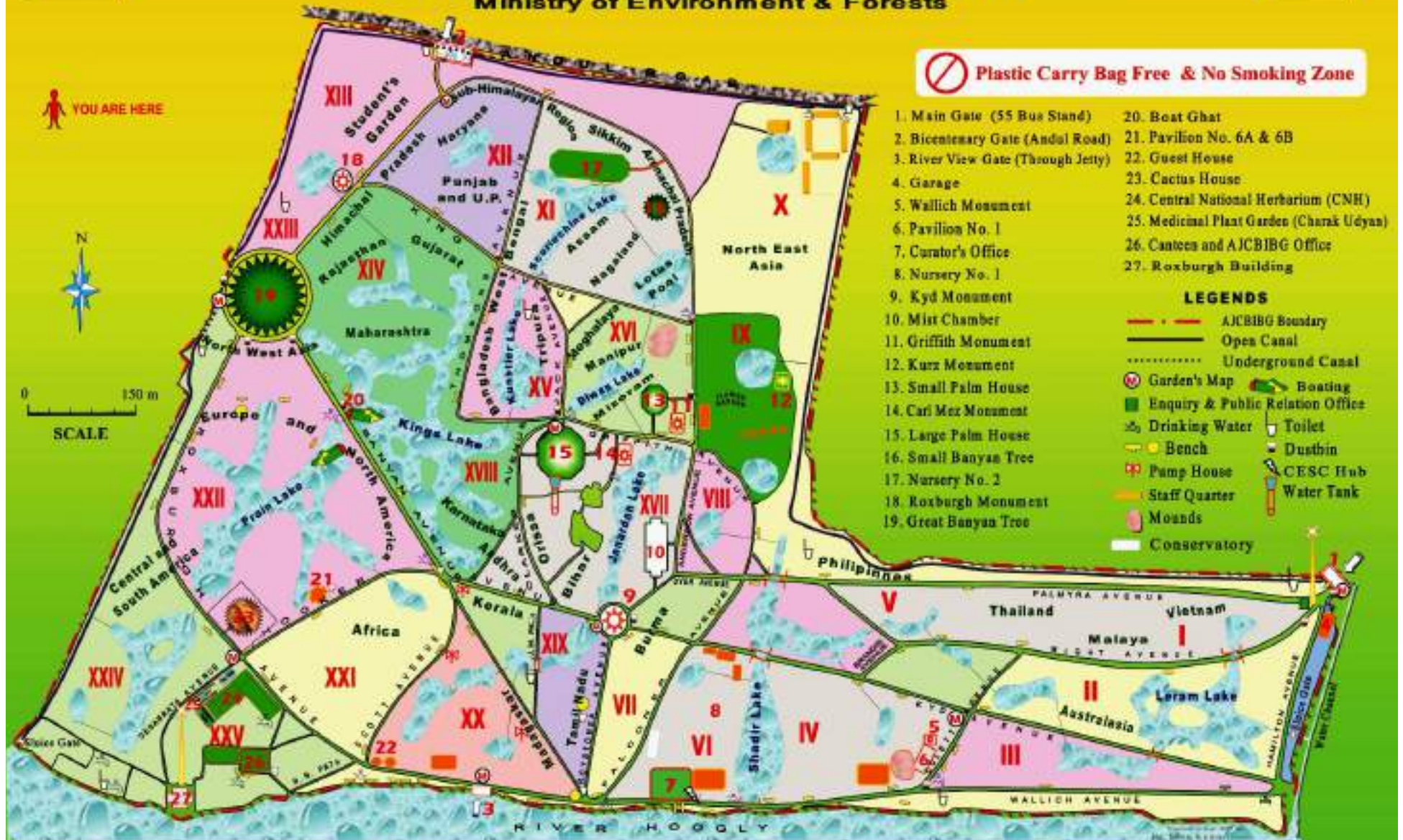


Plastic Carry Bag Free & No Smoking Zone

1. Main Gate (55 Bus Stand)
2. Bicentenary Gate (Andal Road)
3. River View Gate (Through Jetty)
4. Garage
5. Wallich Monument
6. Pavilion No. 1
7. Curator's Office
8. Nursery No. 1
9. Kyd Monument
10. Mist Chamber
11. Griffith Monument
12. Kurz Monument
13. Small Palm House
14. Carl Mez Monument
15. Large Palm House
16. Small Banyan Tree
17. Nursery No. 2
18. Roxburgh Monument
19. Great Banyan Tree
20. Boat Ghat
21. Pavilion No. 6A & 6B
22. Guest House
23. Cactus House
24. Central National Herbarium (CNH)
25. Medicinal Plant Garden (Charak Udyan)
26. Canteen and AJCBIBG Office
27. Roxburgh Building

### LEGENDS

- AJCBIBG Boundary
- Open Canal
- Underground Canal
- Garden's Map
- Boating
- Enquiry & Public Relation Office
- Drinking Water
- Toilet
- Bench
- Dustbin
- Pump House
- Staff Quarter
- Mounds
- Conservatory
- Water Tank





# Plan for Plantation at per Land Plant Phylogeny

**INDIAN BOTANIC GARDEN**  
 IIT, Govt. of India  
 Ministry of Environment & Forests

- 0 Lawn
- 1 Freshwater Macro Alga
- 2 Bryophytes
- 3 Pteridophytes
- 4 Gymnosperm
- 5 Angiosperms including Monocots

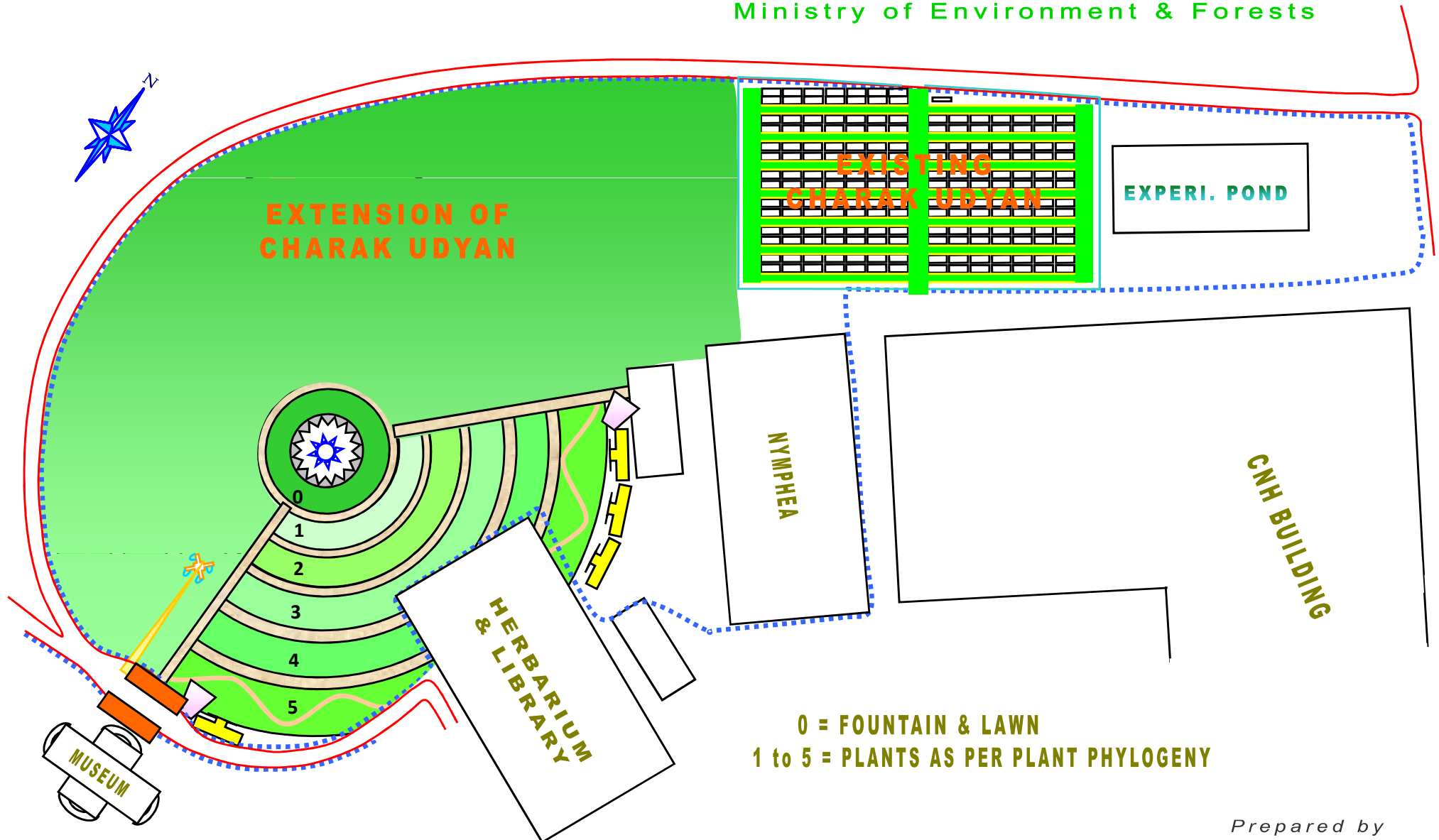
### LEGENDS

- IBO Boundary
- Road
- Proposed Fence
- Existing Fence
- Olive Fountain
- Circular Map
- Draining Water
- Bench
- Toilet
- Drizzle



# Plan for Plantation as per Plant Phylogeny & Extension of Charak Udyan

**INDIAN BOTANIC GARDEN**  
BSI, Govt. of India  
Ministry of Environment & Forests



0 = FOUNTAIN & LAWN  
1 to 5 = PLANTS AS PER PLANT PHYLOGENY

Prepared by  
Dr. Sheo Kumar, Sci. 'C'  
19.07.2006

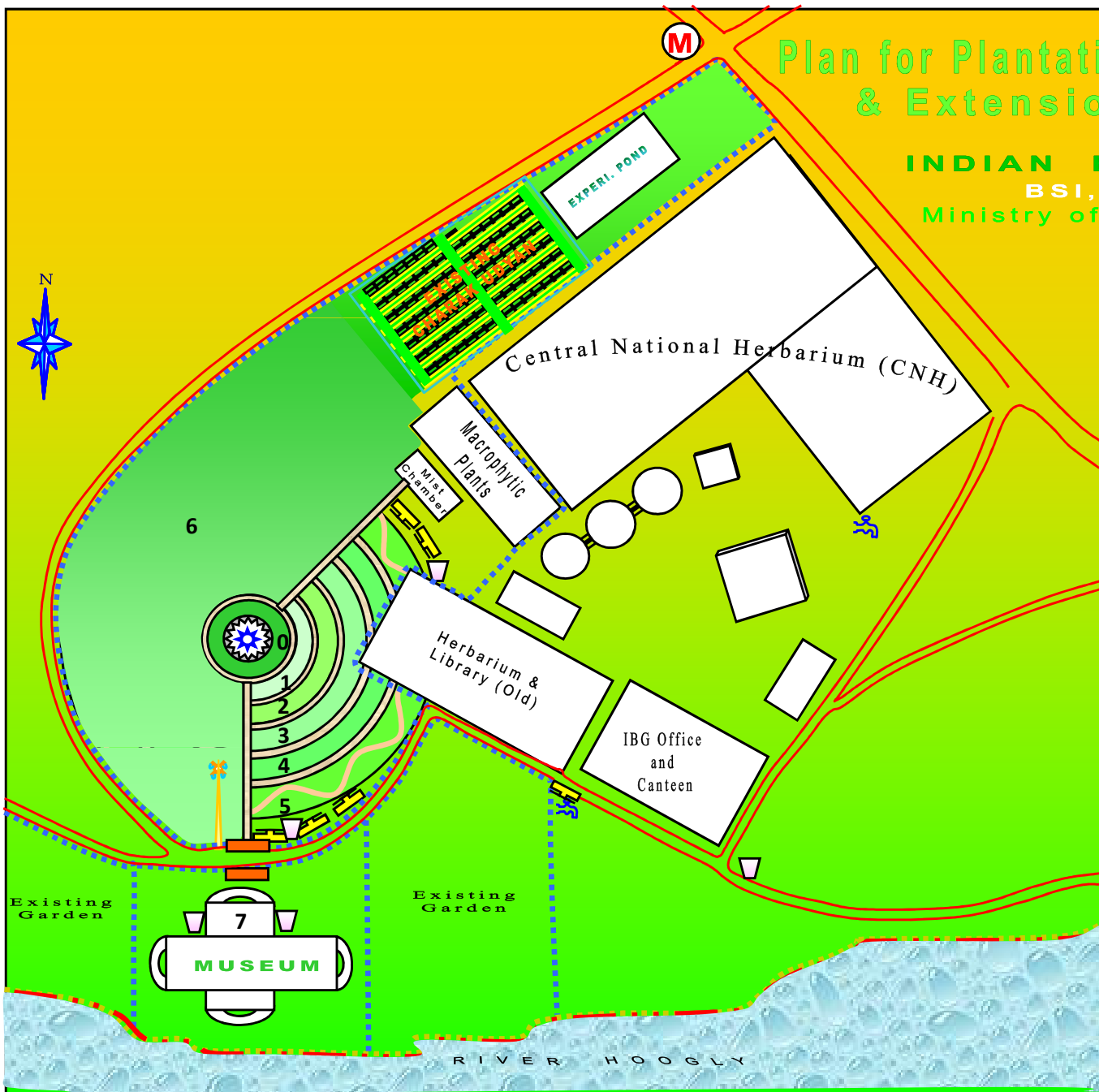
# Plan for Plantation as per Plant Phylogeny & Extension of Charak Udyan

**INDIAN BOTANIC GARDEN**  
BSI, Govt. of India  
Ministry of Environment & Forests

- 0 Lawn**
- 1 Freshwater Macro Alga**
- 2 Bryophytes**
- 3 Pteridophytes**
- 4 Gymnosperm**
- 5 Angiosperms including Monocots**
- 6 Extension of Charak Udyan**
- 7 Proposed Museum**

**LEGENDS**

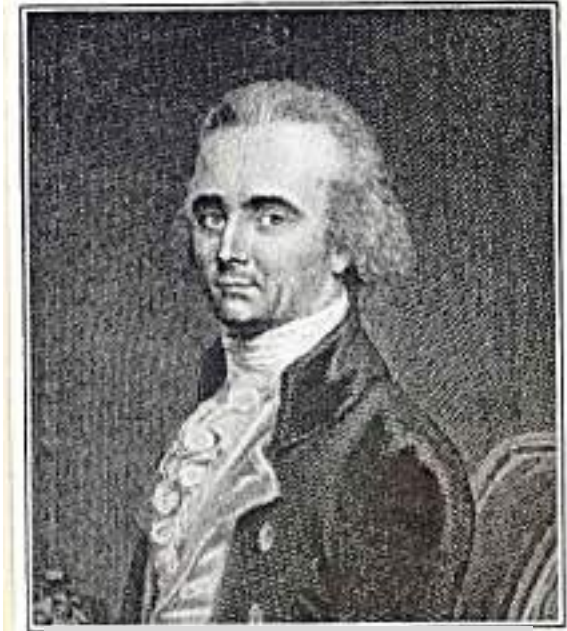
- IBG Boundary
- Road
- Proposed Fens
- Existing Fens
- Entrance Gate
- Globe Fountain
- Garden Map
- Drinking Water
- Bench
- Toilet
- Dustbin



Prepared by  
Dr. Sheo Kumar, Sci. 'C'  
19.07.2006

सन् 1793 ई. में कर्नल किड के मृत्यु के उपरांत ईस्ट इंडिया कम्पनी के एक सर्जन, डा. विलियम रॉक्सवर्ग को प्रथम वैतनिक अधीक्षक बनाया गया । इन्होंने इस उद्यान में वैज्ञानिक आधार पर पौधों को न सिर्फ लगवाया बल्कि पूर्व स्थापित एवं उनके द्वारा लगवाये गए पौधों को पहचान करवाने के साथ उनके हरबेरियम को संरक्षित करने का शुभ कार्य उद्यान में निवास करते हुए 1813 तक किया । इस अदभूत कार्य के लिए इन्हें भारतवर्ष का **वनस्पति विज्ञान का पितामह (Father of Indian Botany)** कहा जाता है।

अपने कार्यकाल में इन्होंने उद्यान के अन्दर लगभग 3,500 वृक्षों को लगवाया ।



डा. विलियम रॉक्सवर्ग  
**Dr. William Roxburgh**

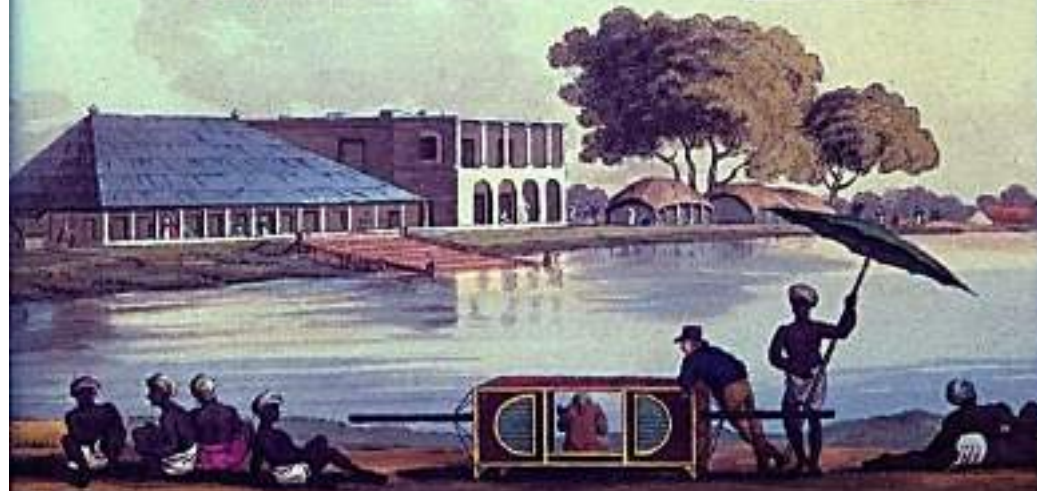




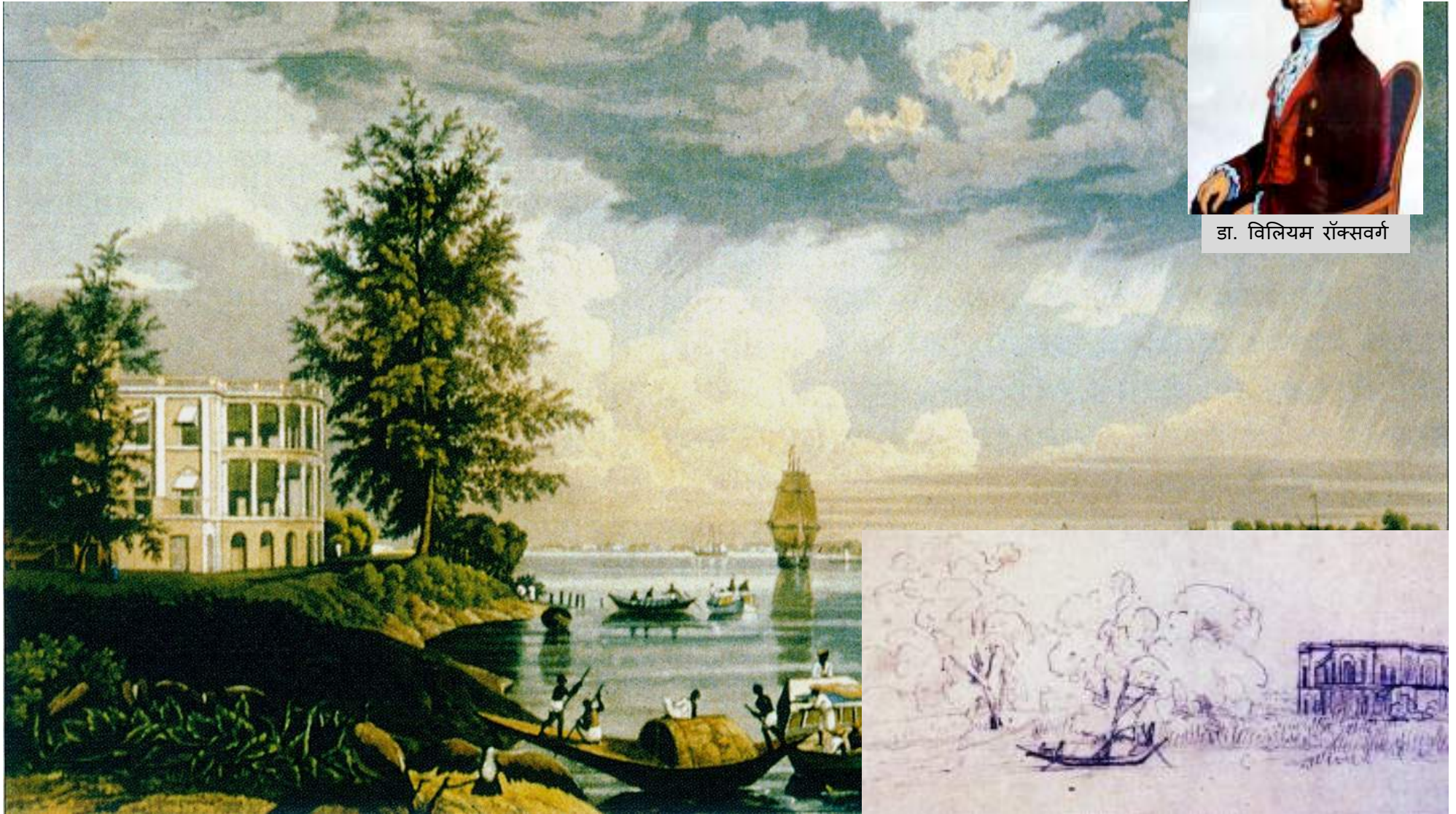
# WILLIAM ROXBURGH

*The Founding Father of Indian Botany*

TIM ROBINSON







डा. विलियम रॉक्सवर्ग

डा. विलियम रॉक्सवर्ग का तीन-तला घर

सर जॉर्ज गेय, स्थानीय  
जज का दो-तला घर







By September, Roxburgh was asking for reimbursement for the costs so far on the house, which must have been 8,000 rupees, for in May, he was asking for the balance of 7,000 rupees.<sup>22</sup> However, in November, Roxburgh wrote that 'the accompanying account of the money I have already laid out on the House erecting for me in the Botanic Garden, the expence has exceeded considerably the estimates delivered to me by the Master Bricklayer and Carpenter at the beginning of the work' and asked for the difference of 5000 rupees, a request that was turned down as the 15,000 rupees the 'Government consider as a very liberal allowance.' The costs submitted by Roxburgh are given in Table 1 of Appendix 9. However, the house had been expected to be completed 'soon' at the end of December 1794: builders' timings have never been reliable!<sup>23</sup> Equally, it looks very much as though Roxburgh planned from the outset to build a larger house than the Company gave permission for, starting with his initial estimate of 25,000 rupees. When this was reduced to 15,000 rupees, he still went ahead to build to a cost of 20,000 rupees: again, how often do people increase the size of their plans as these are being developed, but in this case it does look as though he cut his plans only slightly as a result of the Company's decision, and paid the rest out of his own pocket – once more suggesting that he had already amassed quite a fortune.



# ENTRY GATES



Before Entry



After Entry

## HOWRAH (55 MAIN) GATE



Before Entry for Pedestrians



Before Entry for Vehicles

## BICENTENARY GATE





भारत सरकार / Government of India  
 पर्यावरण एवं वन मंत्रालय / Ministry of Environment & Forests  
 भारतीय उदयवृत्ति सर्वेक्षण / BOTANICAL SURVEY OF INDIA  
 संयुक्त निदेशक का कार्यालय / Office of the Joint Director

भारतीय उदयवृत्ति उद्यान, हावड़ा-711 103 / Indian Botanic Garden, Howrah - 711 103

संख्या/No.: भा.उ./IBG-

दिनांक/Date:

Dr. G. S. Giri  
 Joint Director

No. IBG-Build (Roxburgh Building)/135-Admn.

Date : 16.06.2006

To,  
 Dr. Shree Kumar  
 Botanical Survey of India  
 CGO Complex, Salt Lake City  
 Kolkata

Sub.: Roxburgh Building - the proposed Roxburgh Museum : plan for floor-wise and room-wise display of important correspondences, manuscripts, paintings, etc. request for comment - reg.

Sir,

You are aware that the Roxburgh Building is one of the most important and heritage structures in Indian Botanic Garden (IBG) constructed during 1795 by William Roxburgh. The building had been used by Dr. Roxburgh during his stay in the garden from 1799<sup>1</sup> 1814<sup>2</sup> as the 1<sup>st</sup> salaried Superintendent of IBG and probably the name 'Roxburgh Building' appeared as such. The first herbarium of Indian Botanic Garden established by Roxburgh was also started functioning in this building.

The building is now very badly damaged and under renovation by CPWD keeping the architectural fineries intact. It is proposed that after renovation, the historic building will be converted to "Roxburgh Museum" considering the outstanding contribution of William Roxburgh to the development of IBG, as well as the growth of botanical studies and research in India for which he is rightly called as *Father of Indian Botany*.

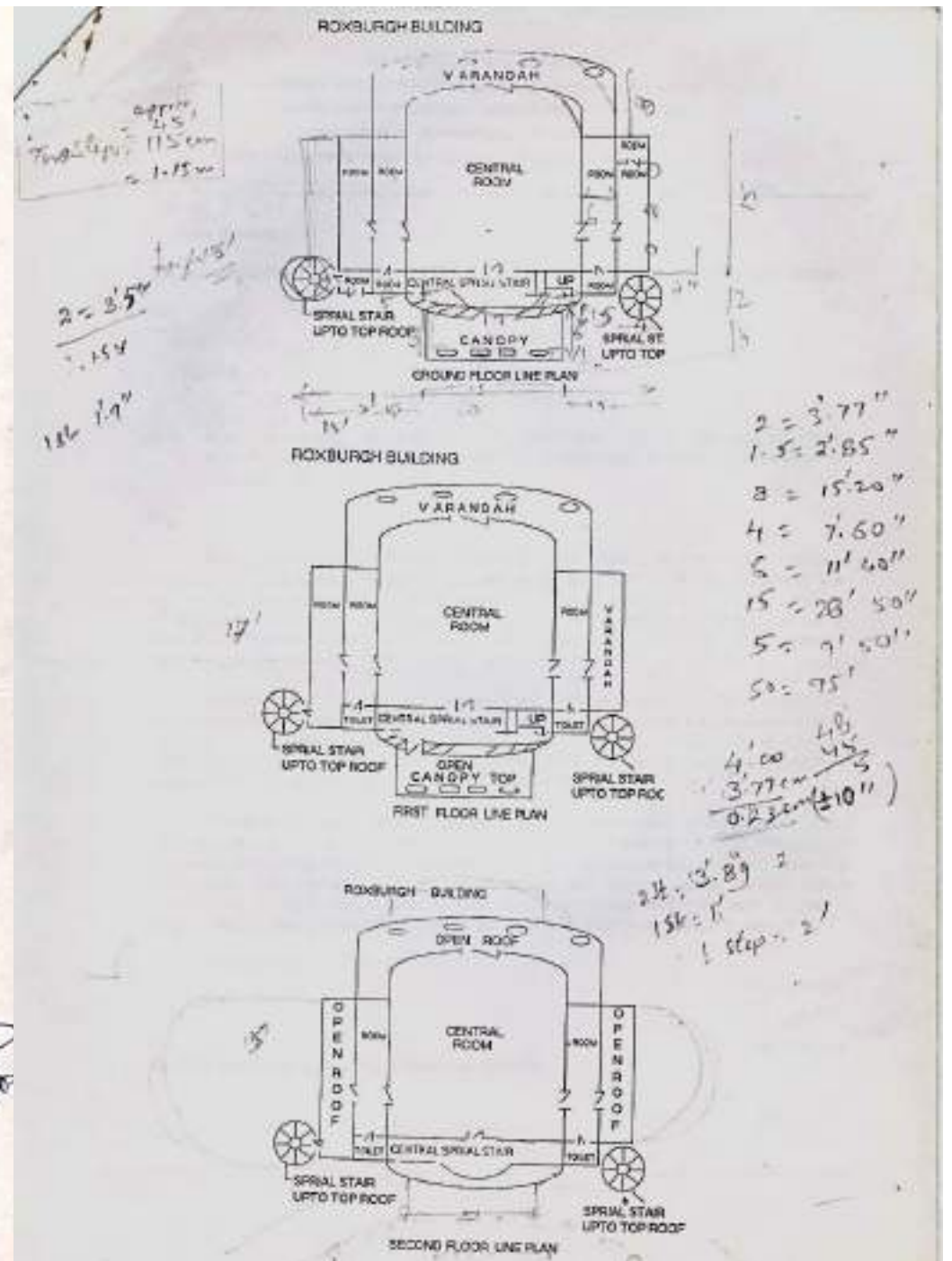
Therefore, you are requested to give your valuable opinion and comment about the floor-wise and room-wise display of historic documents and work of eminent botanists, paintings of important plants, items like ethno-botanically and economically important plants/parts, coloured photographs with annotations, provision of audio-visual system, lecture theater, sitting arrangements of staffs, guides, etc., at your earliest preferably within 15 days, so that a consolidated and befitting plan can be sent to the CPWD for interior decoration as desired.

Thanking you,

Yours faithfully,

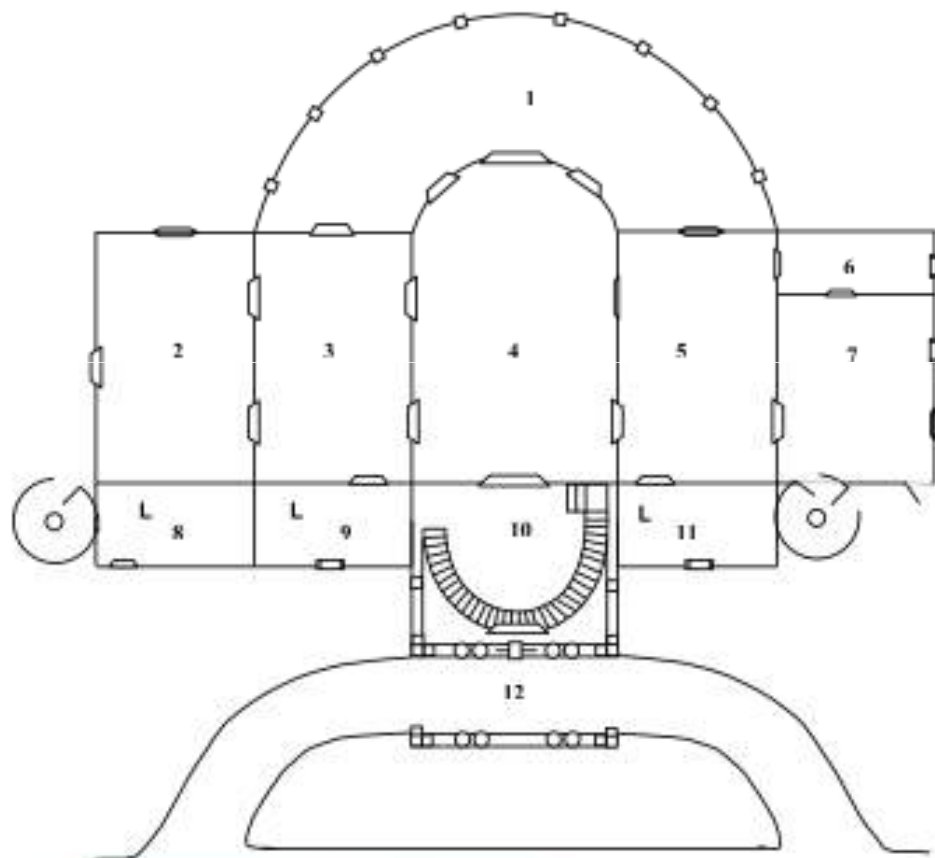
*(G.S. Giri)*  
 16.06

Encl.: Diagrammatic Floor Plan of Roxburgh Building.

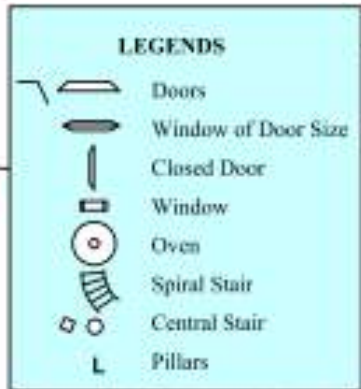




**LAYOUT OF WILLIAM ROXBURGH BUILDING  
GROUND FLOOR**



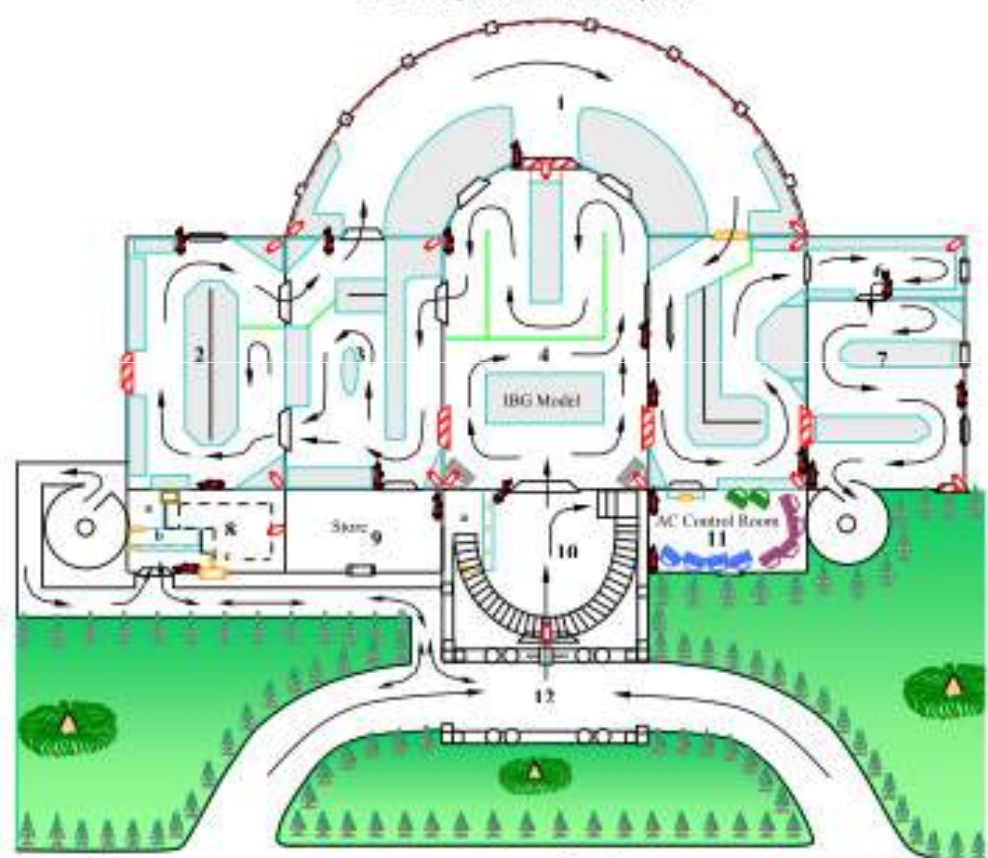
- Measurement Without Wall (approx.)**
- 1 = Open Corridor (13 ft x 44 ft at the Centre)
  - 2 = Room (24 ft x 15 ft)
  - 3 = Room (24 ft x 15 ft)
  - 4 = Room (30 ft x 18 ft)
  - 5 = Room (24 ft x 16 ft)
  - 6 = Room (6 ft x 14 ft)
  - 7 = Room (18 ft x 14 ft)
  - 8 = Existing Lavatory (8 ft x 15 ft)
  - 9 = Existing Lavatory (8 ft x 15 ft)
  - 10 = Passage without Stair (15 ft x 12 ft)
  - 11 = Existing Lavatory (8 ft x 16 ft)
  - 12 = Portico (11 ft x 24 ft)
- Height of Floor 15 ft



Prepared by Dr. Shree Kumar on 10.07.2009

**PLAN FOR WILLIAM ROXBURGH MUSEUM : GROUND FLOOR**

Indian Botanic Garden, BSI, MOEF, Govt. of India  
B. Garden, Howrah – 711 103, W.B.

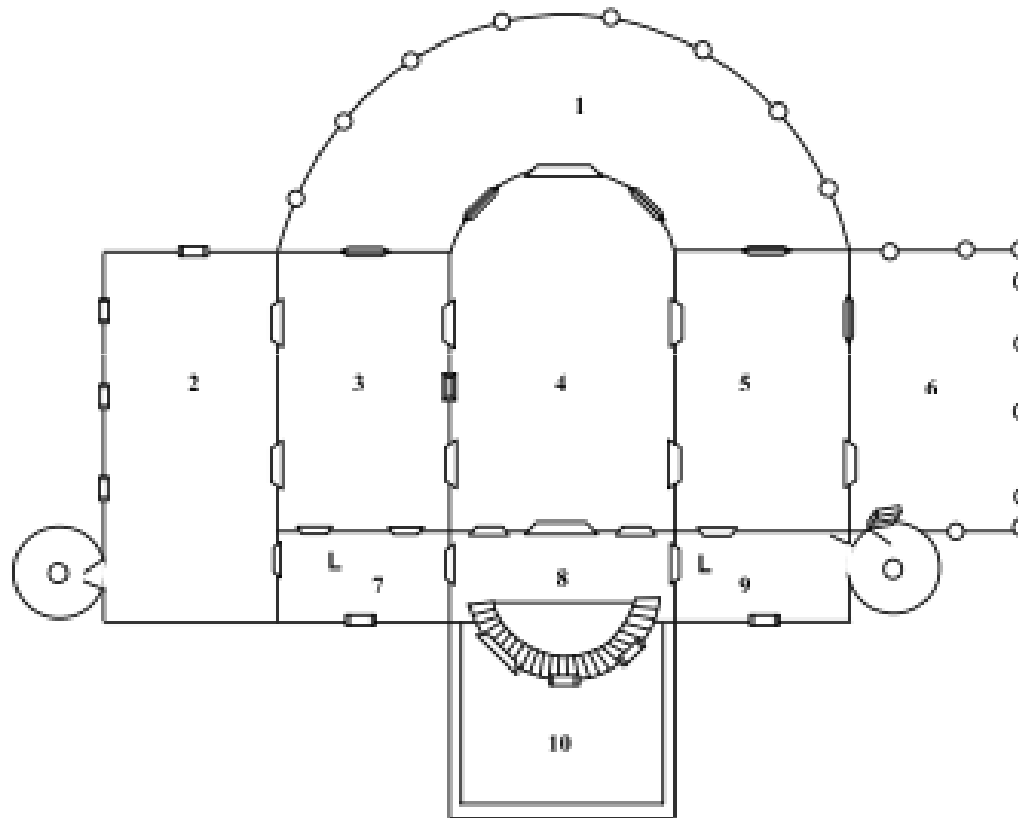


- Measurement Without Wall (approx.)**
- 1 = Corridor with Grill as Museum for Field Machinery (13 ft x 44 ft at the Centre)
  - 2 = Museum (24 ft x 15 ft)
  - 3 = Museum (24 ft x 15 ft)
  - 4 = Museum (30 ft x 18 ft)
  - 5 = Museum (24 ft x 16 ft)
  - 6 = Museum (6 ft x 14 ft)
  - 7 = Museum (18 ft x 14 ft)
  - 8 = Rooms (8 ft x 15 ft) for the following :  
a = Cashier; b = Ticket Counter and  
c = Property Counter
  - 9 = Store (8 ft x 15 ft)
  - 10 = Passage without Stair (15 ft x 12 ft) with  
a = Assistance Booth
  - 11 = Control Rooms (8 ft x 16 ft) with Control Panel for :  
1<sup>st</sup> Floor = ; 2<sup>nd</sup> Floor = ; 3<sup>rd</sup> Floor =
  - 12 = Portico (11 ft x 24 ft)
- Height of Floor 15 ft



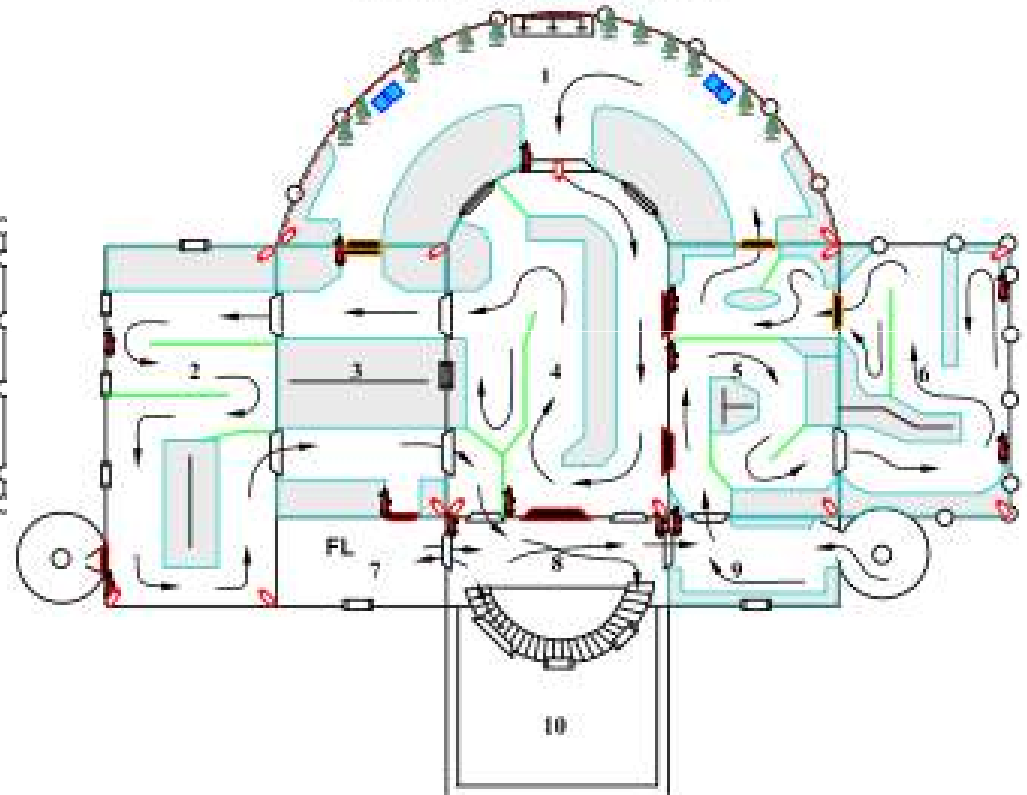
Prepared by Dr. Shree Kumar on 17.07.2009

**LAYOUT OF WILLIAM ROXBURGH BUILDING  
FIRST FLOOR**



**PLAN FOR WILLIAM ROXBURGH MUSEUM : FIRST FLOOR**

Indian Botanic Garden, BSI, MOEF, Govt. of India  
B. Garden, Howrah - 711 103, W.B.



**Measurement Without Wall (approx.)**

- 1 = Partly Open Corridor (13 ft x 44 ft at the Centre)
- 2 = Room (33 ft x 15 ft)
- 3 = Room (24 ft x 15 ft)
- 4 = Room (30 ft x 18 ft)
- 5 = Room (24 ft x 16 ft)
- 6 = Partly Open Corridor (26 ft x 14 ft)
- 7 = Existing Lavatory (9 ft x 15 ft)
- 8 = Passage without Stair (8 ft x 16 ft)
- 9 = Existing Lavatory (8 ft x 16 ft)
- 10 = Terrace (18 ft x 24 ft at the Centre)



Height of Floor 16 ft

**LEGENDS**

- Doors
- Window of Door Size
- Window
- Oven
- Spiral Stair
- Central Stair
- Round Pillar
- Steps to Spiral Stair
- Existing Lavatory

Prepared by Dr. Shiv Kumar on 10/07/2008

**Measurement Without Wall (approx.)**

- 1 = Corridor with Grill as Museum for Big Machinery, etc. (13 ft x 44 ft at the Centre)
- 2 = Museum (33 ft x 15 ft)
- 5 = Museum (24 ft x 15 ft)
- 4 = Museum (30 ft x 18 ft)
- 5 = Museum (24 ft x 16 ft)
- 6 = Partly Open Corridor (26 ft x 14 ft)
- 7 = Lavatory for Female (9 ft x 15 ft)
- 8 = Passage without Stair (8 ft x 16 ft)
- 9 = Museum (8 ft x 16 ft)
- 10 = Terrace (18 ft x 24 ft at the Centre)



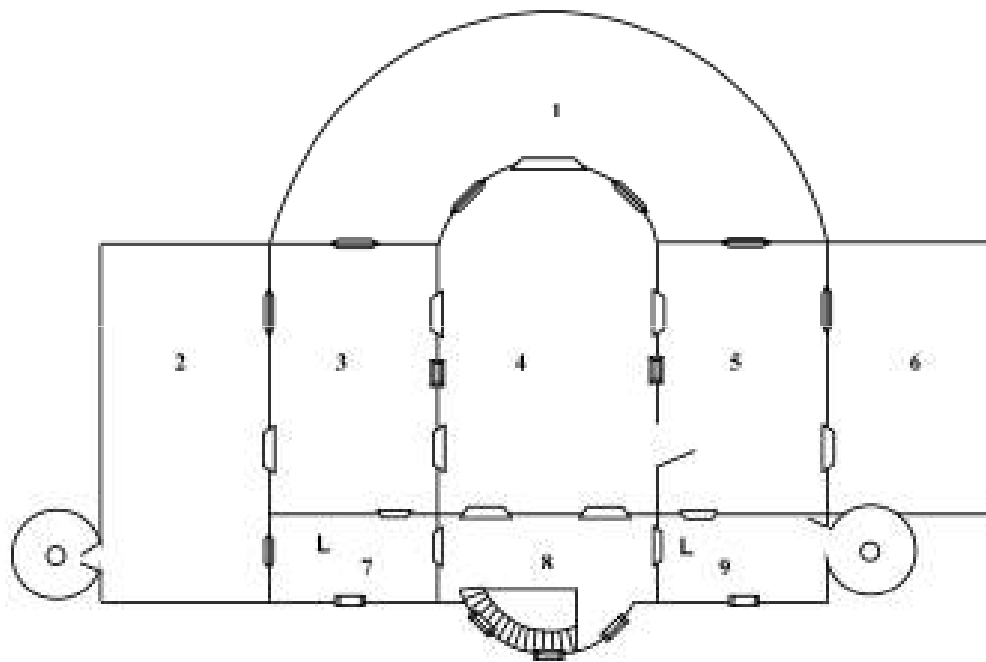
Height of Floor 16 ft

Prepared by Dr. Shiv Kumar on 17/07/2008

**LEGENDS**

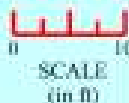
- Doors
- Windows of Door Size
- Concentration of Door Size Window into Door
- Emergency Doors
- Windows
- Doors
- Spiral Stair
- Central Stair
- Pillars
- Fire Extinguisher
- CCD Camera for Surveillance
- Metal Grill of Mesh Size 1-7 inch
- Glass Cabinet for Display
- Panels for Photo/Script, etc.
- Drinking Water
- Chairs
- Plants
- Lavatory for Female

**LAYOUT OF WILLIAM ROXBURGH BUILDING  
SECOND FLOOR**



**Measurement Without Wall  
(approx.)**

- 1 = Terrace (13 ft x 44 ft at the Centre)
- 2 = Terrace (34 ft x 14 ft)
- 3 = Room (24 ft x 16 ft)
- 4 = Room (32 ft x 18 ft)
- 5 = Room (24 ft x 16 ft)
- 6 = Terrace (26 ft x 14 ft)
- 7 = Existing Lavatory (8 ft x 16 ft)
- 8 = Passage after the Stair (8 ft x 16 ft)
- 9 = Existing Lavatory (8 ft x 16 ft)



Height of Floor 16 ft

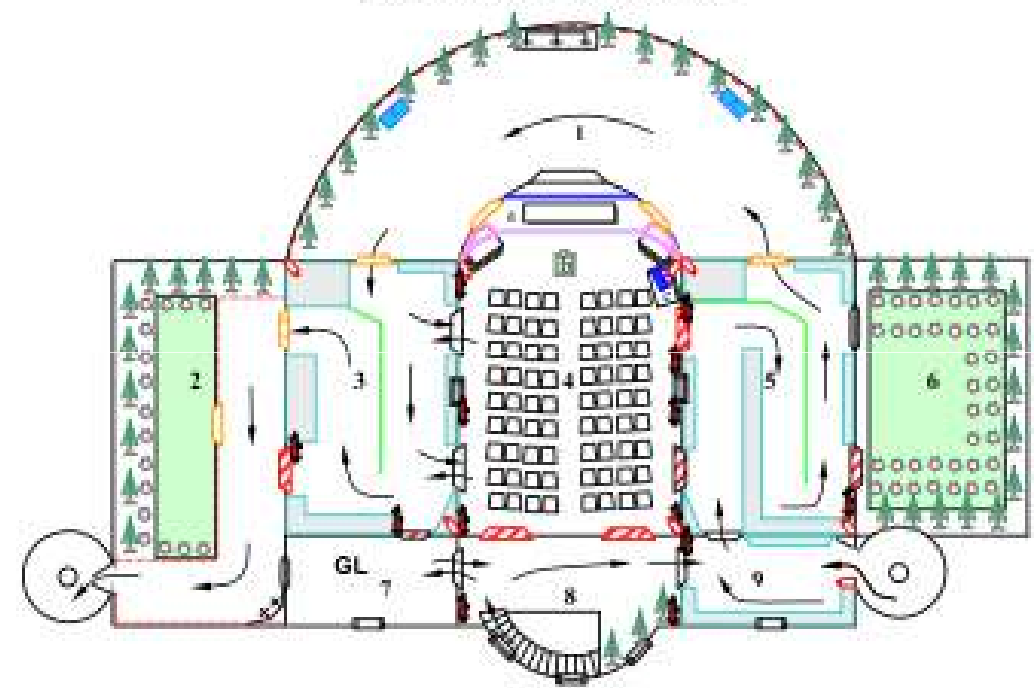
**LEGENDS**

- Doors
- Window of Door Size
- Window
- Oven
- Spiral Stair
- Central Stair
- Existing Lavatory

Prepared by Dr. Jibon Kumar on 16.07.2006

**PLAN FOR WILLIAM ROXBURGH MUSEUM : SECOND FLOOR**

Indian Botanic Garden, BSI, MOEF, Govt. of India  
B. Garden, Howrah - 711 103, W.B.



**Measurement Without Wall (approx.)**

- 1 = Grilled Terrace with Plants, Drinking Water & Chairs (13 ft x 44 ft at the Centre)
- 2 = Grilled Terrace with Plants & Lawn, Drinking Water and Final Exit through Spiral Stair (34 ft x 14 ft)
- 3 = Museum (24 ft x 16 ft)
- 4 = Auditorium for Auto Start Movies with the help of Sensors fixed at the Doors (32 ft x 18 ft) with -  
a = Stage with Curtain, Screen, Light Fixings, Sound Box, etc.  
b = Hanging Projector  
c = Control Panel for Audio-Visual Presentation
- 5 = Museum (24 ft x 16 ft)
- 6 = Terrace with Plants and Lawn (26 ft x 14 ft)
- 7 = Lavatory for Gents (8 ft x 16 ft)
- 8 = Passage without Stair and Plants (8 ft x 16 ft)
- 9 = Museum (8 ft x 16 ft)

Height of Floor 16 ft

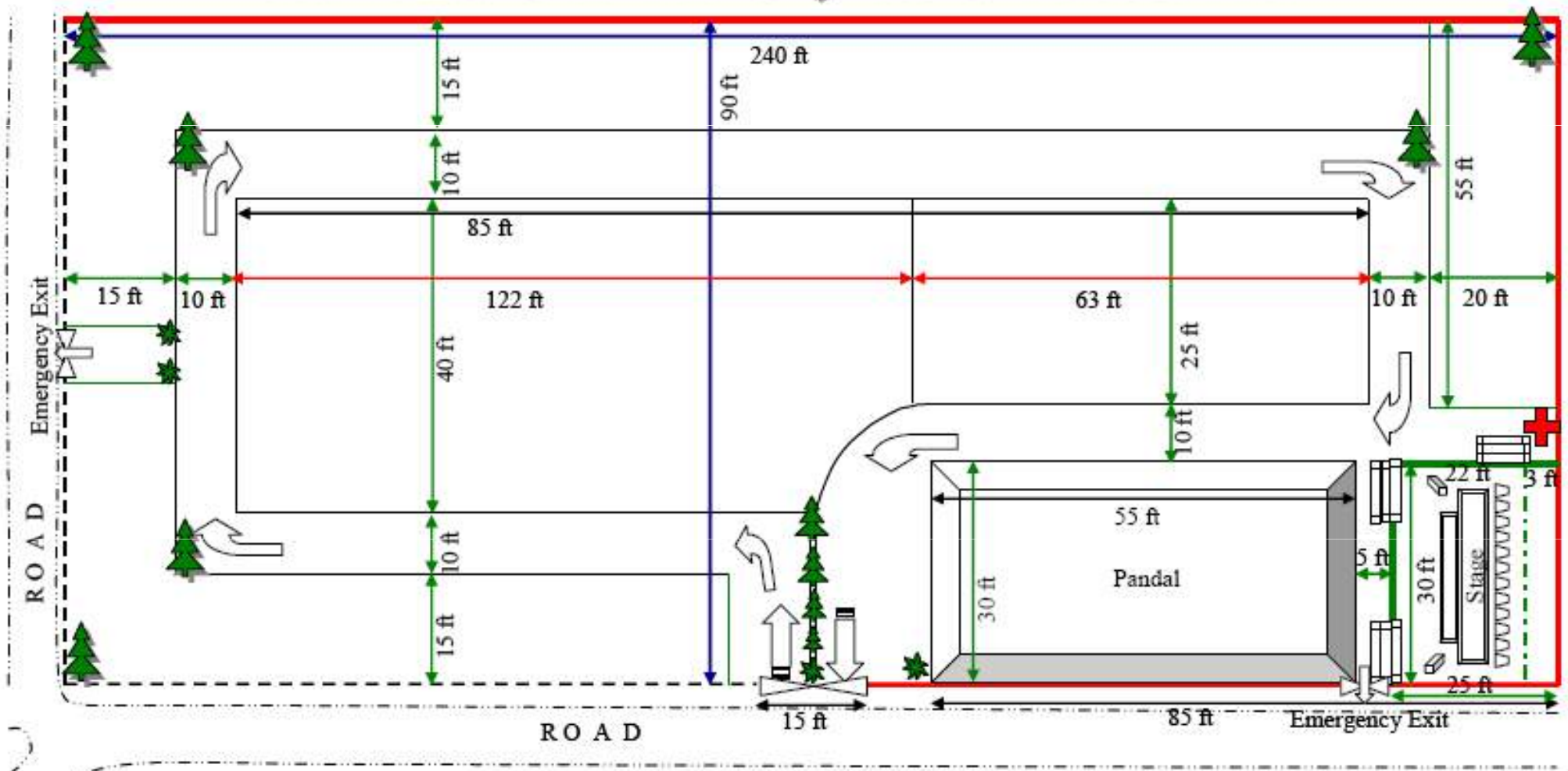
Prepared by Dr. Jibon Kumar on 17.07.2006

**LEGENDS**

- Doors
- Windows of Door Size
- Conversion of Door Size Window into Door
- Emergency Doors
- Installation of Door
- Windows
- Green
- Spiral Stair
- Central Stair
- Fire Extinguishers
- CCD Camera for Surveillance
- Metal Grill of Mesh Size 1-2 inch
- Glass Cabinets for Display
- Furniture for Power/Scraps, etc.
- Drinking Water
- Chairs
- Plants and Lawn
- Lavatory for Gents

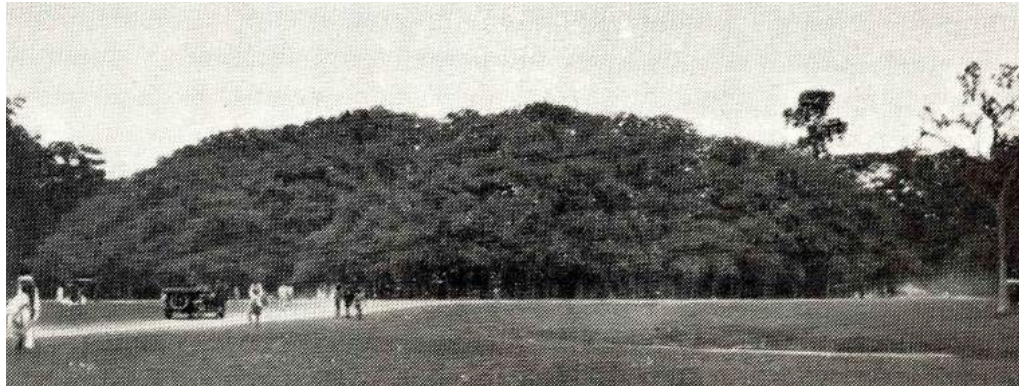
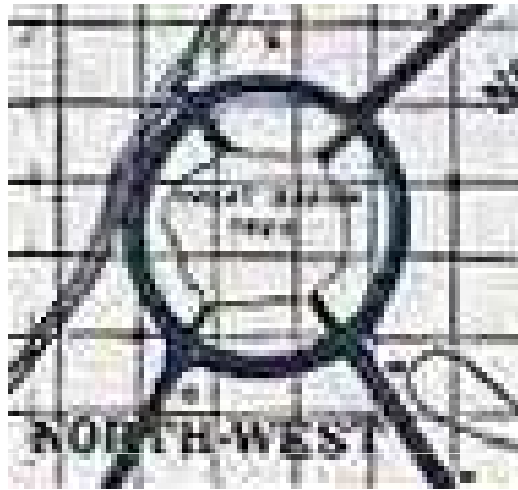


# Layout Map of Flower Show '12 in AJCBIBG, HOWRAH

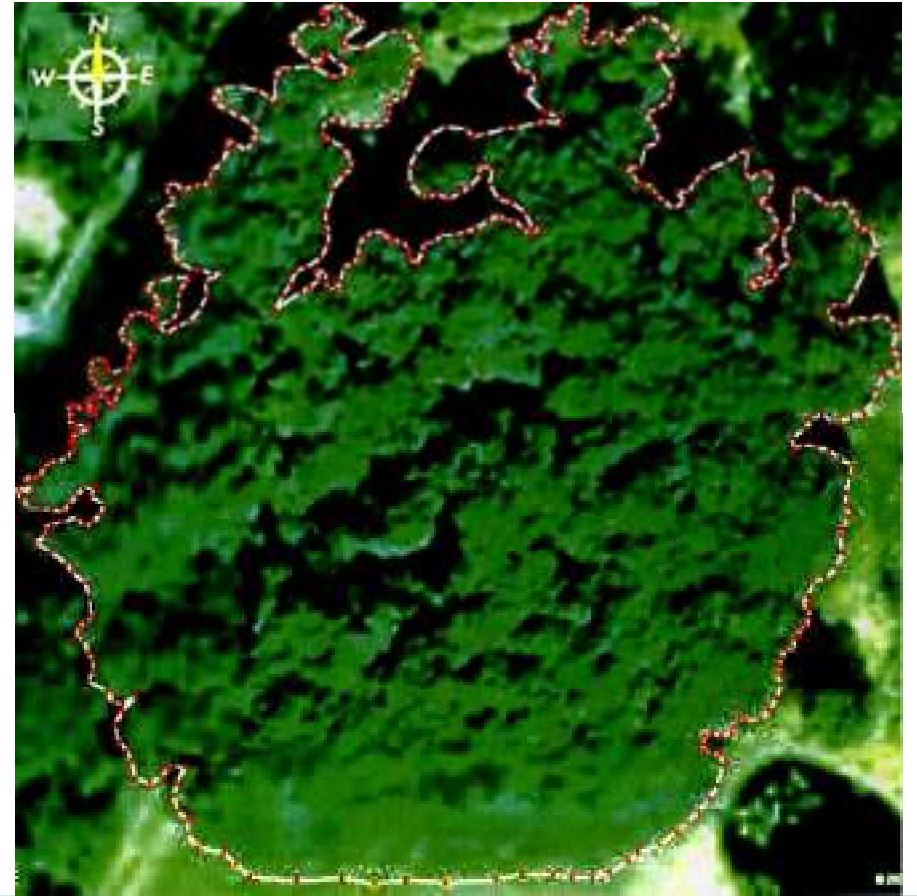








सन् 1942 ई. में वृहत वरगद वृक्ष का दृश्य





2011-2019  
संस्थागत 100वां वर्ष  
संस्थागत 100वां वर्ष  
संस्थागत 100वां वर्ष

# वनस्पति वाणी

वर्ष 24

सितम्बर 2014

अंक 28



भारतीय वनस्पति सर्वेक्षण  
FOREST SURVEY OF INDIA

भारतीय वनस्पति सर्वेक्षण

वनस्पति वाणी अंक 28 : 136-138(2014)

## एक वृक्ष का अद्भुत जंगल

शिव कुमार

राज्यीय वनस्पति सर्वेक्षण, भारतीय गणराज्य वनस्पति विभाग, गोंय



वन को अनेक रूपों, स्वरूपों में विभिन्न परिभाषाओं से परिभाषित किया गया है। सामान्यतः एक छोटे क्षेत्रफल के अंतर्गत बहुत सारे पेड़-पौधे (जैसे जंगल-वटिबनीय रूपा तथा जंगल-सुष्क फाड़वृक्ष) या फिर कुछ पेड़-पौधों का ऐसा समूह जो एक बहुत बड़े क्षेत्रफल (जैसे जंगल तथा मानवसहयोग-पर्यवेष्ट वन) में होता है तथा विभिन्न प्रकार के पौधे-जन्तुओं को अपने अंतर्गत में करने-सुलने का आधार प्रदान करता है। किन्तु यह ही नहीं, इसका बायोमास भी किसी अन्य प्राण समुदाय से अधिक होता है। जिसमें इनकी प्रभुता की अवधिक संख्या जमीन के अंदर तथा के जड़ों के इतने-गहरे तथा एतने दृढ़ या सघनात्मक अंशों को अपरिचित करने में महत्वपूर्ण भूमिका निभाती है। वास्तव में इन वृक्षों, लुप्त या इतिहासिक, लुप्त-पुटीयों या शहरो का वास्तव का एक ऐसा समुदाय है, जिसमें वृक्ष सबसे ऊँचा और अधिक स्थान घेरने के कारण प्रमुख होता है। वन होने पर, ईंधन, इमारती लकड़ी, औषधियों, रेशे, फल-फूल, बीज ही नहीं बल्कि जीवमण्डली अंतर्गत वन भी देता है, वनवासन में उष्णकटिबंधीय-उष्ण और उष्णकटिबंधीय को अंतर्गतित वन पर्यावरण को संतुलित रखता है। वन मानव जाति के लिए प्रत्यक्ष (जैसे कच्चा का महत्वपूर्ण रेशे, रेशेदार के अन्तर्गत, कुटीर तथा लघु-उद्योगों की लकड़का, फर्निचर, इत्यादि) तथा पर्यवेष्ट (जैसे सौभाग्य स्थानों की उत्तमवृक्ष पर अनुसृत प्राण, भूखलन, बंध और सूखे पर नियंत्रण, शल तथा मृदा संरक्षण, अनार्युधि, कोसलत सहित पर्यावरण के अन्य घटकों के जंगल हो रहे प्रदूषण के दूषणको को कम करने, इत्यादि) का भी महत्वपूर्ण कार्य निभाता है।

वनवास की दुष्का ने श्रीमद् भारतवासी गोंय में कहा है कि जंगल वृक्षों में वट वृक्ष श्रेष्ठ है। इस वृक्ष को 'सद्वृक्ष संघर्षात्मित' (मैनेरी कुल) नाम से जाना जाता है। हिन्दी में इसे जंगल, वट वृक्ष, बंध बंगाली में इन्ड, संस्कृत में अजोश, बहुधा के नाम से जाना जाता है। हिन्दू संस्कृति के अनुसार वट वृक्ष को 'अल्पवृक्ष' भी कहा जाता है। यह भारत का 'राष्ट्रिय वृक्ष' (एथेनिक वृक्ष) होने के साथ ही 'राष्ट्रीय वृक्ष' भी है। परिवर्तन भारत के दो मुख्य शहरों के नाम 'बहोदा' तथा 'वटवट' इन्ही वृक्ष के नाम पर रखे गये हैं। कई राज्याधीन पूर्व देशांतर-पर्यटन करने वाले लोगों को इन वृक्षों के पौधे ने (जिसमें बंध, बनिध, बनिध वा भारतीय बौधायण) जमा लेकर व्यापार करने हुए दर्शाया गया है। पुर्तगालियों के द्वारा इन वृक्ष का प्रवेश महात्मा भारतीय बौधायणों के लिए किंचित् तथा पर्यवेष्ट जंगलों में भी इसका इतिहास वन 1598 ई. से शुरू किया, तथा वन 1634 ई. से अंतर्गत संरक्षणों में 'वैभव वट', एक ऐसे वृक्ष जिसके पौधे भारतीय बौधायण जमा व्यापार किया करते थे, को अन्तर्गत पर अपने जंगलों में लिखने लगे। इस वृक्ष के द्वारा अल्पवृक्ष जमा प्रदान किया जाने के कारण इनके नाम 'डाम-बन्ध', गौरीया तथा वटवृक्षों का इन विभव वृक्ष कहा था। यह विश्वविद्यालय जंगल भी जाती है। इस प्रकार इस वृक्ष का नाम 'वैभव' पड़ गया।

वहीं यह बताते हुए हमें यह भी कहना है कि ऐसा ही एक सर्वव्यापी वनस्पति विज्ञानकार वट वृक्ष, पश्चिम बंगाल राज्य के अन्तर्गत बंगाली वट वट भारतीय वनस्पति विभाग, भारतीय वनस्पति सर्वेक्षण, भारत में 22°33'38.84" से लेकर 22°30'42.28" उत्तरी अक्षांश तथा 88°17'5.6" से लेकर 88°17'14.18" पूर्वी देशांतर से मध्य विभव वट 22°30'38.88" उत्तरी अक्षांश तथा 88°17'11.47" पूर्वी देशांतर पर है एवं समुद्र तल से 39 मीटर की ऊँचाई पर अवस्थित होने के साथ सर्वाधिक वन को परिभाषित व अनुसृत भी करता है।



# LARGE PALM HOUSE

The Large Palm House was built in middle part of 19<sup>th</sup> Century for planting interesting palms and shade loving plants which is situated in Division No. XVII of the Indian Botanic Garden. The climbers grown over iron structure of this house are *Antigonon leptopus* Hook. & Arn. and *Porana paniculata* Roxb. provide shade to planted palms inside. At the center of house just below the tomb grows *Lodoicea maldivica* (J. F. Gmelin) Persoon – the Double Coconut tree with glorious trunk and crown of green foliage (large leaves). Indigenous to Seychelles Islands (West Indian Ocean), this palm species was introduced and planted here in 1894. The largest fruit so far recorded is about 42 kg bears the largest seed bearing plant (mature seeds weigh up to 30 kg (44 lbs) so far described from Plant Kingdom. The seed looks like two coconut seeds fused together for which name stands the 'Double Coconut'. Other interesting palms planted in this Palm House are namely *Areca nagensis* Griff. (North East India), *Arenga engleri* Becc. (Malaysia), *Astrocaryum maxicanum* Liebm. ex Mart. (Mexico), *Bentinckia nicobarica* Becc. (Nicobars), *Licuala peltata* Roxb. ex Buch.-Ham. (Regional Himalaya), *Livistona jenkinsiana* Griff. (Regional Himalaya), *Orbignya cohune* (C. Martius) Standley (Honduras), *Rhopaloblaste augusta* (Kurz) H. E. Moore (Nicobars) which are now endangered in their natural habitat. The climbing palm *Calamus andamanicus* Kurz. (Andaman), the bird nest fern *Asplenium nidus* L. and various shade loving plants including *Rhaphidophora dicursiva* Scott planted in Palm House altogether creates an environment that is comparable to a rain forest. Besides these, other notable plants include *Cycas circinalis* L., *C. rumphii* Miq., *Myristica fragrans* Hoult. (Nutmeg) and other plants.



*Areca nagensis* Griff.



*Astrocaryum maxicanum* Liebm. ex Mart.



*Licuala peltata* Roxb. ex Buch.-Ham.



*Rhopaloblaste augusta* (Kurz) H. E. Moore



Crown of Green Foliage



Leaf Bases and Scars on Trunk



Plicate at Frond Base in Young Leaves



Open Leaf Plicate & Blind Tips



Female Inflorescence and Mature Flowers



Matured Female Flower with Exudates



Gobelet made-up of Half Seed used mostly by Sanyasi/Saint



Seeds in Different View

*Lodoicea maldivica* (J. F. Gmelin) Persoon : Large Palm or Double Coconut



# Victoria Lindl. (The Giant Water Lily) and its Profile



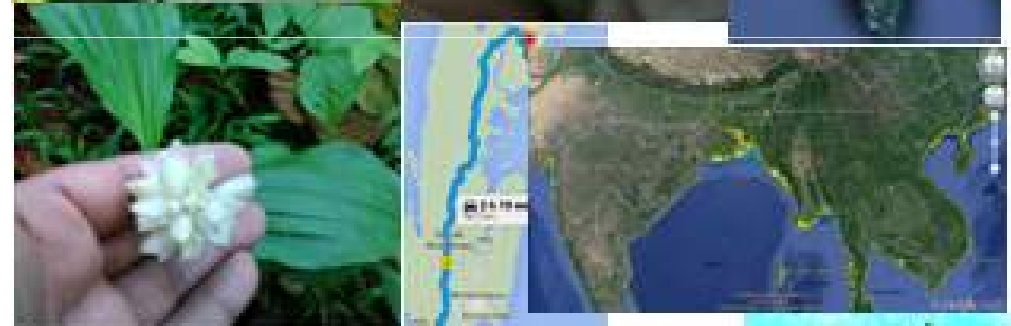
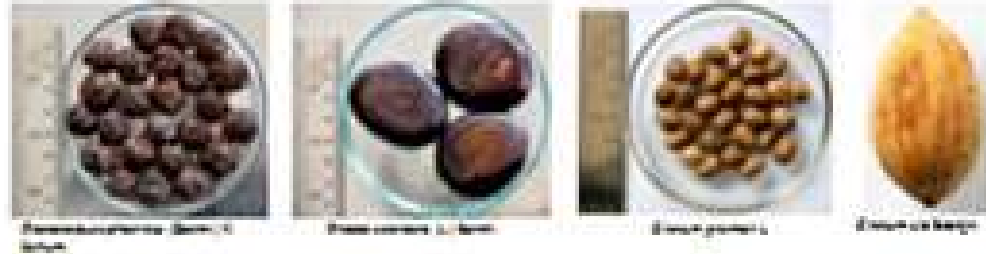
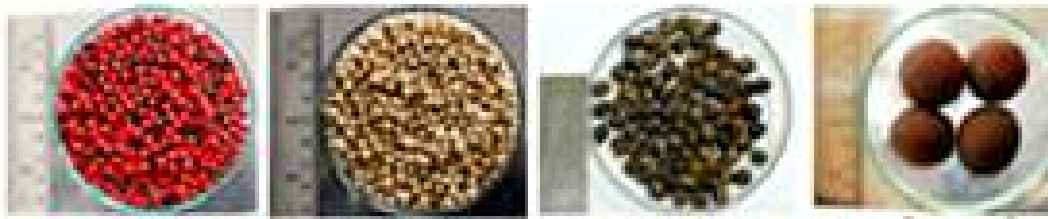
हिन्दी दिवस समारोह  
प्रश्नावली प्रतियोगिता

दिनांक-१४/०९/२०१२

केन्द्रीय राष्ट्रीय पादपात्रय  
भारतीय वनस्पति सर्वेक्षण

हावडा -७१११०३







## **BGIR :**

- Cactus and Succulent House during Oct. - Nov., 2013
- Map of India 1<sup>st</sup> developed during Dec., 2013 and up-graded during Feb., 2016.
- Water bodies Sep., 2015
- Plan for establishment of a Museum to be run by NMNH, New Delhi during Nov., 2016
- Independence Day and Republic Days as well as various Environmental Education/Awareness Programme including Flower Shows and others.
- Temporary Shed for Organising Environmental Awareness Programme, Film Show, etc. – during 2016
- Charaka Udyan - to be inaugurated during Flower Show'2017
- Aquatic Nursery - to be inaugurated during Flower Show'2017



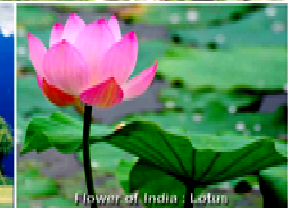
**BOTANIC GARDEN OF INDIAN REPUBLIC**  
BSI, Ministry of Environment, Forest & Climate Change, Govt. of India  
Capt. Vijyant Thapar Marg, Sector - 38A, NOIDA - 201 303, U.P.



Map of India made by Live Plants in BGI, NOIDA (Size 63 x 78 ft)



Tree of India : The Great Banyan Tree in Ajobba, Howrah recorded in Guinness Book since 1984 (Periphery 100km)



Flower of India : Lotus

*Merry Christmas and Happy New Year 2017*

From Dr. Sheo Kumar, Scientist 'E' & Head



































## Nature Walk for Plants of Special Interest

Curious Plants in Beds, Cactus and Succulents, Medicinal Plants in 'Ayur Vatika', Economic Plant Section, Fruit Section, Green Belt Nursery, Water bodies, Herbarium, Seed Bank and Soil Testing Laboratory.



## INAUGURAL CEREMONY

The 'Flower Show' was inaugurated by the Hon'ble Chief Guest, Dr. (Mrs.) R. Dalwani, Advisor, MOEF&CC on Feb. 25th 2016 at 09.00 AM along with Guest of Honour, Dr. Paramjit Singh, Director, BSI. All participants, Hon'ble Guests, Students/Scholars/ plant lovers were welcome by Dr. Sheo Kumar, Sci. 'E' & Head, BGIR to make the occasion a GRAND SUCCESS.



## CLOSING CEREMONY

The 'Flower Show' will end on 28.02.2016 at 04.30 PM along with Prize Distribution ceremony of the organised 'National Science Day' from 12.00 Noon to 03.00 PM with series of event like Nature Walk, Documentary Film Show and Display of Exhibits (i.e. 1). Poster, Model, etc. made on 'Application of Science for Conservation of Plants/Best from Waste, 2). Poster and Drawing Competitions and 3). Slogan Writing, etc.

### Participating Institutions

- Botanical Survey of India  
MOEF&CC, Govt. of India  
CCO-Complex, Salt Lake, Kolkata - 700 064, W.B.
- AIC Bose Indian Botanic Garden (AICBSIG)  
BSI, MOEF&CC, Govt. of India  
Botanic Garden, Howrah - 711 002
- Central National Herbarium  
BSI, MOEF&CC, Govt. of India  
Botanic Garden, Howrah - 711 002
- Central Botanical Laboratory  
BSI, MOEF&CC, Govt. of India  
Botanic Garden, Howrah - 711 002
- Industrial Section in Indian Museum  
BSI, MOEF&CC, Govt. of India  
7, Sudder Street, Kolkata - 700 006
- Southern Regional Centre  
BSI, MOEF&CC, Govt. of India  
100, Kausambi Road, Chennai - 600 080
- Botanic Garden of Indian Republic  
BSI, MOEF&CC, Govt. of India, Sector - 25A, NOIDA
- Summerville School, Greater NOIDA

### ORGANISED BY

Botanic Garden of Indian Republic  
Botanical Survey of India, Government of India  
Ministry of Environment, Forest and Climate Change  
East, Midland Nagar, Sector - 25A  
NOIDA - 201 305, Gautam Buddha Nagar, U.P.

Phone : 011 8452161, Mob.: 9886775794  
E-mail: bi\_bgir@yahoo.com / drsheo\_kumar@rediffmail.com



Feb. 25<sup>th</sup> to 28<sup>th</sup> 2016  
09.00 AM to 04.30 PM



### Interesting Feature

- Seasonal Flowers and Foliage
- Rare, Endemic and Threatened Plants and Seeds
- Smallest and Largest Seeds in Plant Kingdom
- Ethno-botanical Museum Exhibits
- Economic Uses of Plants & Parts
- Biological Control of Mosquito
- Documentary Film Shows
- Nature Walk





## BACKGROUND

**Botanic Garden of Indian Republic** is functioning as a living repository of more than 10,500 (total 10,666) individuals of 676 plant species [comprising 25 species of Pteridophytes (Non-Flowering Plants), 11 species of Gymnosperms (Naked Seed Plant) and 840 species of Angiosperms (Flowering and Closed Seed Plants)] among 45 species are listed in IUCN Red List, brought from 23 States of the country have been conserved as per Article 9 of Convention of Biological Diversity (CBD) i.e. *ex-situ* Conservation in different sections/areas of the garden. Besides, seeds as 'Genetic Material' of 268 plant species belonging to 77 Family, comprises 132 endemic and 36 threatened species and rest of other plant species having economic, medicinal and ornamental properties have been conserved successfully in 'Seed Bank' of BGIR. Even, seeds of an endemic and Extinct (IUCN 2.3) species i.e. *Sterculia khasiana* Deb. has also been conserved.

### Aim and Objective

The aim and objective of this 'Flower Show' is to impart awareness about importance of plants, their uses, conservation measures, different kinds and variety of non-flowering and flowering plants by displaying the live plants, plant parts, museum specimens, etc. Considering the same, 'Flower Shows' have been organised in BGIR since 2014. These are as follows :

### Orchid Show - 2014

'Orchids Show' [Orchids are Monocot (contain single 'cotyledon'), classified primitive than Dicot (with two 'cotyledon'), known as most advanced/evolved plants in whole living Plant Kingdom] were exhibited in live form, photographs and paintings as well as lecture also organised on Feb., 09<sup>th</sup>, 2014 for two days. However, on public demand and since the plants retained bloomed flowers, the show continued for two months.



### Flower Show - 2015

The 1<sup>st</sup> 'Flower Show of most Dicot Plants' (specially Winter Annuals/Seasonal) developed in the BGIR, was held from Feb. 25<sup>th</sup> to 28<sup>th</sup>, 2015. The show was concluded along with the Prize Distribution ceremony of the organised 'National Science Day' on Feb., 28<sup>th</sup>, 2015. More than 35 varieties of Seasonal Annuals, Cactus & Succulents were displayed along with plants known to occur at different Geological Time Scale & History of Life on Earth viz. *Psilotum nudum* (L.) P. Beauv. of Silurian & Devonian periods, *Equisetum hyemale* L. of Carboniferous period and *Ginkgo biloba* L. of Jurassic period. Five Documentary Films were also screened. Thousands of national and international students, teachers, researcher, scientists, intellectuals and plant lovers witnessed the show.



### The attraction of this year's Flower Show'16 ...

Besides, display of full bloom 36 Winter Annuals/Seasonal plants and developed area, as well as curious exhibits brought from different Regional Centre of Botanical Survey of India exhibited during this year's 'Flower Show' are as follows :

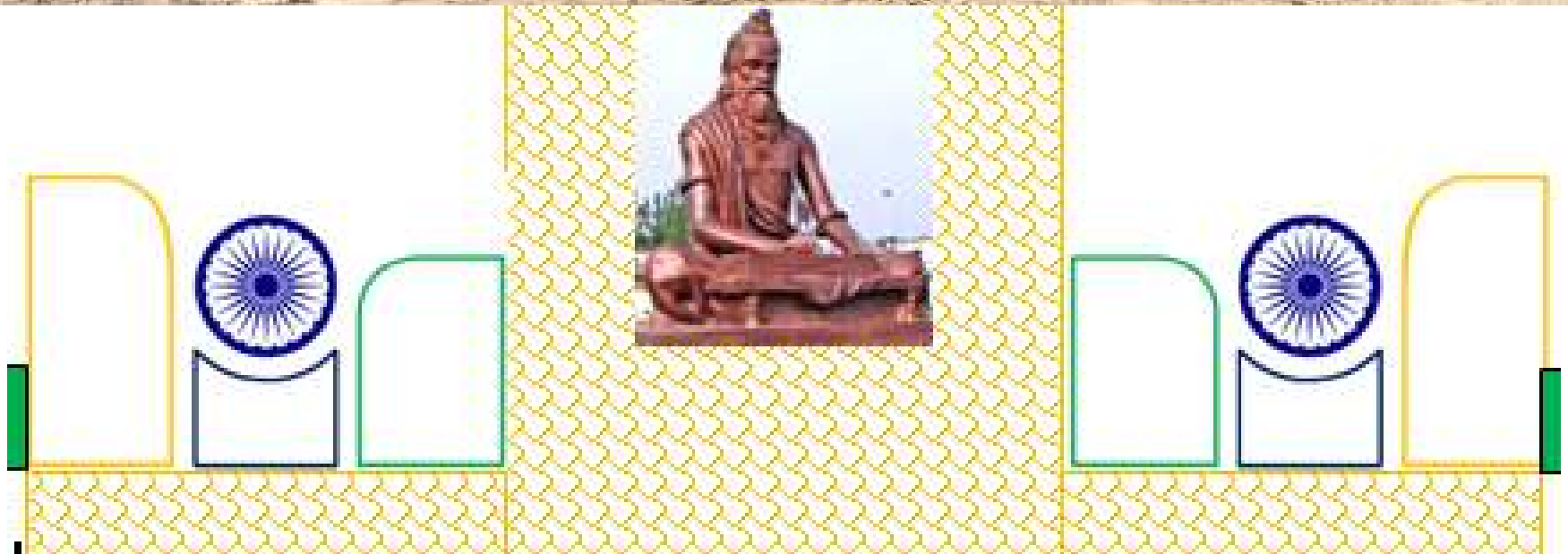
- 'Map of India' made by live plants (size 83 ft. x 74 ft.) along with three oceans, mother Ganga and Yamuna.
- Seasonal Flowers
- Economic and Medicinal Plants
- Types of Fruits
- Seeds of Endemic and Threatened species
- Seeds of Sequoia/Meta Sequoia (Tallest tree develop from Seeds in mm)
- Seeds of Victoria (Largest Leaf bearing Aquatic Plant)
- Orchid and Double Coconut (Smallest and Largest Seeds of whole Plant Kingdom)
- Economic Uses of Plants & Parts
- Ethno-botanical Museum Exhibits
- Biological Control of Mosquito
- Documentary Film Shows in Committee Room on Plant Diversity of the Country and Herbarium Technique, etc.







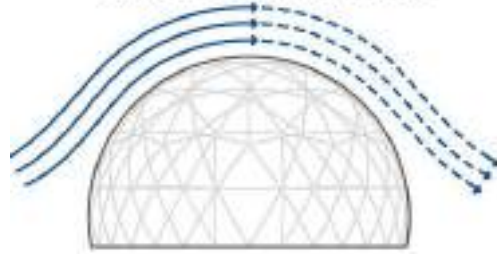




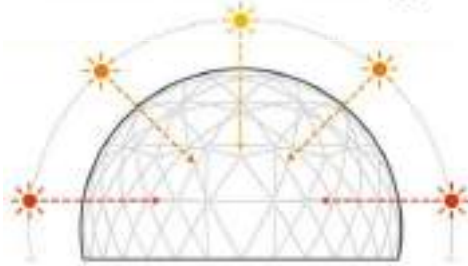




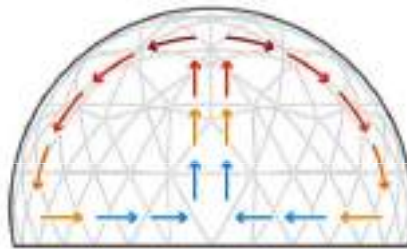
**Wind & Storm Resistance**



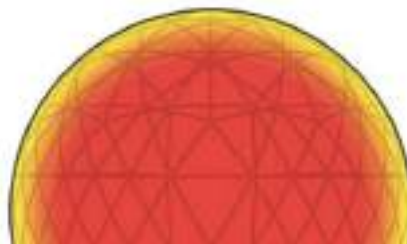
**Maximum Solar Gain & Light**



**Air Flow & Ventilation**



**Uniform Temperature**



HAPPY NEW YEAR AND REPUBLIC DAY '2012



शत-शत  
नमन







Sir George King, The Superintendent of the Royal Botanic Garden, Calcutta since 1871 who became first ex-officio Director of BSI on day on foundation i.e. on 13.02.1890



Dr. Paramjit Singh, Present Director  
as on 13.02.2012

*Congratulations*

*on*

*122<sup>nd</sup> Anniversary of the Botanical Survey of India*

*From*

**Dr. Sheo Kumar**, Scientist 'D', AJCBIBG

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### 122nd Anniversary of BSI

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on

122<sup>nd</sup> Anniversary of the Botanical Survey of India.

Dr. Sheo Kumar

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# FUTURE PLAN OF THE RESEARCH

- Depends upon Formation of Society
- Otherwise whatever, ongoing projects are assigned during 2016 – 17 may be continued
- Number and Frequency of Tours may be increased to introduce more number of endemic and threatened plants of the Country for which this garden has been established
- As number of Sections increased and maintained in last four years hence, number of field, ministerial, administrative may be increased.



THANKS