225 Years of Botanic History

The Indian Botanic Garden (Howrah), now called Acharya Jagdish Chandra Bose Indian Botanic Garden, completes 225 years of glorious existence this year. It is a unique national heritage.

The Indian Botanic Garden (Howrah), now called Acharya Jagdish Chandra Bose Indian Botanic Garden, turned two hundred and twenty-five years old this year. Established in the year 1787, during the East India Company’s rule it was called “Company Bagan”. In 1857 when the Company’s affairs were taken over by Queen Victoria it was rechristened the “Royal Botanic Garden”. After India became a free nation the Royal Botanic Garden was renamed the “Indian Botanic Garden” in 1950. For the common man though it is still known as Botanic Garden or simply B-Gardens.

The Indian Botanic Garden is one of the wonderful relics of the British rule in Kolkata; a reminder of this city’s glorious past. The Indian Botanic Garden is Southeast Asia’s largest and one of the oldest botanic gardens of the world. Only The Royal Botanic Garden of Kew (England) and Botanic Garden of Adelaide (Australia) are its contemporaries.

The Indian Botanic Garden spreads out on the bank of the river Hooghly and covers an area of about 273 acres. To begin with, the total area of the garden was 313 acres but in the year 1820 forty acres of land lying on the eastern side of the garden was gifted to the then Bishop of Kolkata for the establishment of a college. The college was called Bishop’s College, which later turned into the Bengal Engineering College.

Historical Garden

The Indian Botanic Garden was founded by Lieutenant-Colonel Robert Kyd of the East India Company in the year 1787. Kyd was the secretary of the Military Board at Fort William Kolkata when he was appointed honorary superintendent of the botanic garden. Not only the company’s fund but also Robert Kyd’s personal fund was involved in the establishment of the botanic garden.

The First Superintendent of the Calcutta Zoological Gardens and the author of the acclaimed Handbook of Management of Animals in Captivity in Lower Bengal Ram Brahma Sanyal had devoted an entire chapter of his book titled Hours With Nature (1896) to the history of the Indian Botanic Garden (then known as the Royal Indian Botanic Garden). He had
mentioned that this chapter was based on the *Guide to the Royal Botanic Garden, Shibpore* (1895) by Dr. George King who was one of the acclaimed superintendents of the botanic garden and the founder-director of the Botanical Survey of India.

According to Sanyal's *Hours With Nature*, Col. Robert Kyd was an ardent Horticulturist. He had gathered a large collection of exotic plants in his private garden at Shalimar (Howrah). Kyd suggested the formation of a Botanic Garden keeping in mind that such an institution might be made a source of botanical information for the possession of the East India Company and as a centre for experimental purposes. His suggestions were adopted by the Court of Directors and he was appropriately made the first honorary superintendent of the botanical garden.

Col. Kyd introduced nutmeg, cloves and pepper vine plants but the climate of Bengal was found unsuitable for their growth. The equatorial fruits such as 'Mangosteen', 'Langoat', 'Dukko', and 'Breadfruit' as well as temperate fruits of Europe were also planted but this experiment too met with failure. Col. Kyd also experimented with cultivating Teak for its timber, which at that time was invaluable for shipbuilding. But after an experience extending over a period of 35 years it was found that though from outward appearance the Teak tree grew well on the alluvial soil of the Ganga (Hooghly) its stem became hollow near the base and was therefore useless for yielding timber of sound quality.

Lt. Col. Robert Kyd died on 26 May 1793. He had made a will that he be buried under his favourite Avocado Pear Tree in his garden at Shalimar. His family ignored his last wish and the founder-superintendent of the Indian Botanic Garden was buried in Kolkata's South Park Street Cemetery.

The Indian Botanic Garden could not have become a great institution without the contribution of the father of Indian botany William Roxburgh who also happened to be the first salaried superintendent of the botanic garden. William Roxburgh was the first botanist who attempted to draw up a systematic account of the plants of India. He prepared an account that contained systematic description of all the indigenous plants known to him as well as of many exotics then in cultivation in the botanic garden and in the vicinity of Kolkata.

Roxburgh's *Flora Indica* was the only book through which knowledge of Indian plants could be obtained until 1872 when *Flora of British India* was brought out in seven volumes by distinguished botanist and Director of Royal Botanic Garden Kew Sir Joseph Hooker. William Roxburgh also has the credit of introducing Mahogany the high quality timber-yielding tree in the garden. Mahogany was brought from the West Indies and planted in 1795. The garden still has a splendid Mahogany Avenue.

William Roxburgh laid the foundation of modern plant taxonomy (post Linnean) in India by establishing a large Herbarium (place where dried plant specimen are stored) in 1795 and which is presently known as the Central National Herbarium. It is the oldest and largest in the world. According to the Botanical Survey of India, it contains 2.5 million herbarium sheets of 350 families of plants as well as fifteen thousand cryptograms.

Another of William Roxburgh's legacy is the huge collection of original colour paintings of Indian plants using vegetable dyes. Presently electronic preservation project of these invaluable paintings is being carried out. Due to his ill health William Roxburgh had gone to Edinburgh to recuperate but sadly his wish to return to his 'Paradisi' on the bank of the river Hooghly could not materialize, as he died in Edinburgh.

Dr. George King was another botanist and scholar without whom the botanic garden could not have become a renowned botanic institution. Under Dr. George King the grounds were laid out for landscape effect and the garden was divided into twenty five sections, each specified for growing different types of plants. A conservatory was also built.

More importantly, rubber plantation was introduced in India by Dr. George King who brought six plants of Para rubber tree though the Botanic Garden's glorious past cannot return but anyone who comes here will realize that the Indian Botanic Garden is a different world of sylvan green, an escape from the hustle and bustle of city life.
(Hevea brasiliensis) given to him by Sir Joseph Hooker from the Royal Botanic Garden Kew (England) in 1873. A new herbarium building was constructed in 1882 at the suggestion of Dr. King and herbarium specimens were arranged according to the Bentham and Hooker’s system of plant classification.

Botanical Wonder

The Indian Botanic Garden has played a major role in the economic development of the country by introducing a large number of economically useful plants such as Tea, Rubber, Jute, Cinchona, Sugarcane, Mahogany, etc. Tea (Camellia sinensis) was discovered by Robert Bruce in 1823 from Northeast India and the foundation of tea cultivation in India was laid only after its successful large-scale trials in the Indian Botanic Garden by Francis Jenkins in 1834. Likewise Cinchona cultivation was introduced in the year 1862 in Sikkim and Darjeeling Hills after trials at the Indian Botanic Garden by Thomas Anderson when he was the superintendent of the garden. The seeds of Cinchona were brought from Royal Botanic Garden Kew (England).

A living witness of this historic garden’s past is none other than the Great Banyan Tree. This banyan tree has been a crowd-puller since the establishment of the garden. This Great Banyan Tree is older than the garden itself – it is estimated to be more than 255 years old. In November 1810, Maria Graham (who was the sister of Robert Graham a Professor of Botany at the University of Edinburgh), visited this garden and was fascinated by ‘this huge banyan tree festooned with colorful epiphytes’.

The banyan tree is a wonder of the plant world and the only one of its kind. No wonder that this tree gets a mention in the Guinness Book of World Records. According to archives, the Great Banyan Tree was born by a bird’s dropping, probably a crow’s dropping, and it grew on a phoenix tree (date palm). The strong roots of the banyan tree strangulated the date palm tree and the date palm tree was gradually killed. The banyan tree has more than 2,800 prop roots and covers an area of 1.50 hectares. The circumference of its canopy is about 450 metres giving an appearance of a miniature forest. In the cyclone of the years 1864 and 1867 the great banyan tree suffered damage. In the year 1925 its main trunk measuring sixteen metres in girth was removed after a fungal infection.

Apart from being the home of the Great Banyan Tree, the Indian Botanic Garden has one of the finest collections of native and exotic plants as well as a number of strange, rare and endangered species of plants and trees. According to officials of the Botanic Garden, recently a Census of plants and trees was conducted. According to the census report now there are 14,000 species of plants and 1,200 species of trees. Out of these, 500 species are rare. The last Census of the trees and plants of the garden was held in 2007. The latest Census report is positive and encouraging because the numbers of plants and trees have gone up.

A Guide published by the Botanical Survey of India lists bamboos, palms, orchids, cactuses, screwpines, jasmines, bougainvilleas, legumes, waterlillies, etc. as some of the rich and proud possessions of this garden. More than 2000 sets of indigenous as well as exotic orchids are maintained in a special section called National Orchidarium. Amongst these, Aerides, Cattleya, Cymbidium, Coelogyne, Amhersia nobilis – The Queen of Flowers

Brownea coccinea – The Mountain Rose

Couroupita guianensis – The Cannon ball tree

Victoria amazonica – Giant water lily
Eria, Vanda, Vanilla, Dendrobium, Epidendrum, Euphobia, Bulbophyllum, Phaius, Pholidota, Renanthera, Rhynchostylis, etc are worth mentioning.

The garden grows and maintains a large number of bamboo species collected from different parts of the country. There are more than 26 species of bamboos in the garden which include several curious, and ornamental species like "Buddha’s bamboo", or "Buddha Belly bamboo" Bambusa wamin Camus, "Yellow bamboo" or "Golden bamboo" Phyllostachys aurea A. & Ch., "Giant bamboo" Dendrocalamus giganteus Munro, etc.

The garden has more than 140 cultivars of Bougainvillea chiefly belonging to two species namely Bougainvillea glabra Choisy and B. spectabilis Willd. “Mahatma Gandhi”, “Lady Mountbatten”, “Maharaja of Mysore”, “Lady Mary Baring”, “Mary Palmer special”, “Lady Hope”, “Million Dollar”, “Golden Glow”, “Sweet Heart”, “Spring Festival”, “Summer Time”, “Scarlet glory”, etc are the names of some of the cultivars being found here.

The Indian botanic garden is renowned for its native and exotic Palms. The garden has 109 species, which is one of the richest collections in Southeast Asia. Branching Palm or Martius Hyphanea thebaica, which is a native of Egypt and East Africa, is a curious looking palm due to its repeatedly dichotomously branched trunk.

A very rare giant Palm called the “Double Coconut Palm Tree” Lodoicea maldivica (Gmelin) Pers. is a prized possession of the botanic garden. It produces the largest known seed in the plant world. A double coconut palm tree has a life span of 1200 years! It takes nearly a century to determine the sex of the plant. The double coconut palm tree in the garden is a female tree and has been in the garden since 1894. The garden authorities have been trying to gather pollen from a male tree in Sri Lanka and induce pollen germination in this female tree. Recently a swelling in the ovaries has been noticed.

Another rare palm in the garden is the Century Palm (Corypha elata Roxb. and C. umbraculifera L.). It produces seeds only once in its lifetime and dies. The female plants after reaching maturity at the age of 75 to 100 years produce a dense inflorescence of flowers at the apex of the tall trunk. By the time its seeds reach maturity the plant sheds all its leaves and only a tall, leafless pillar-like trunk remains with apical dense crown of thousands of seeds. On maturity the seeds fall and the trunk dries up and dies in due course of time. The rare, endemic palm Phoenix rupicola T. Anders., has only two populations surviving today – one in the Eastern Himalayas (only a few plants) and the other in the garden having a population of five plants.

P. unguifer an endemic, rare and threatened pandanus (screw pines) of Mungpoo hills, Darjeeling. Eastern Himalaya can also be seen in this garden.

The botanic garden has a splendid collection of cacti and Adansonia digitata – Baobab tree

The Branching palm

The Branching palm

Vermilion variety “Escaroucle”; Red flowered “Omariana”, and Odorous Pink coloured varieties “Rose Arey” and “General pershing” are also pride possessions of the garden.

Another curious looking aquatic plant growing the garden lakes is Euryale terax Salisb. The roasted edible seeds of this plant are sold in the market as “Taal Makhana”.

The Indian Botanic Garden also has a splendid collection of cacti and
succulents that are maintained in a specially built glasshouse. More than a hundred species of cacti and succulents representing ten different families are there of which some are of a rare type.

Several legumes are a prime attraction here. Many legumes produce attractive flowers that are economically important, endemic and even rare and threatened. One of the prominent species is “Queen of Flowering Trees” or “Trees of Heaven” Amherstia nobilis. This flower is rated as one of the ten most beautiful flowers of the world. The tree produces flowers that are orchid-like in appearance and resemble little dancing dolls. It is a native of Myanmar and is also called “Pride of Burma”.

Unique Denizens
The Garden is home to some other bizarre trees like:
1. Cannon Ball tree Couroupita guianensis aubl. The fruits of this tree look like Cannon ball hence the name. Often the fruits crack open upon hitting the ground. In Western countries the pulp of the fruit is used to feed pigs, and birds like chicken, ducks, turkeys etc. The Cannon ball fruit is not consumed by humans.
2. Bread Fruit tree Artocarpus communis J.R. & G. Forst. The scientific or the Latin name is derived from Greek words “Artos” meaning bread and “Karpos” meaning fruit. When this fruit is baked or roasted in a fire the fruit has a starchy texture and fragrance of freshly baked bread hence the name bread fruit tree. The founder of the botanic garden Lt. Col. Robert Kyd had tried to grow this fruit tree in the garden but was unsuccessful. His predecessor William Roxburgh successfully introduced
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The bread fruit tree in the garden. The bread fruit is edible and grows in abundance.

3. Mad tree *Pterygota alata* var. *irregularis* (Roxb) R.Bk. The mad tree is also a wonder of nature. Each leaf produced by the tree is different in shape and size from the other. In local parlance it is called “Paagla gaach”.

4. Cocaine plant *Erythroxylon coca* Lamk. This plant is the source of the narcotic “Cocaine”.

5. Powder Puff shrub *Calliandra haematocephala* Hassl. This bushy shrub produces attractive dark crimson heads resembling powder puff.

6. Sausage Tree *Kigelia pinnata* Dc. This tree bears large sausage or pumpkin shaped fruits hanging from long tread-like peduncles giving the tree an amazing appearance.

Some other strange looking fruit-bearing trees or plants have been locally named like “Phuchka plant”, “Rashogolla Tree”, “Gach Begun” and “Mishri Phal”.

- Phuchka Plant *Asclepias fluticosa* L. This small shrub produces golden-white to whiteish, papery, puffed round fruits resembling Puchka or Golgappa or Pani Puri.
- Rashogolla tree *Chrysophyllum cainito* L. The fruit of this tree is big and white in colour and has a round shape and sweet taste just like one of the famous and famous sweetmeat Rashogolla or Rasgulla.
- Mishri phal *Labromia bojeri* A.Dc. This tree bears fruits that are sweet and look like mishri or sugar crystals. This fruit is edible. Both Rashogolla tree and Mishri Phal trees bear fruits between November and February.
- Gach Begun *Solanium grandiflorum* Ruiz ex Pav. The fruits of this tree resemble a Brinjal. In Bangla “begun” means “brinjal” and “gach” means tree.

Apart from a large number of medicinal plants growing in the garden, an exclusive collection of some medicinal

**Botanical Survey of India**

The Botanical Survey of India has its Headquarters at Kolkata with Pharmacognosy, Cryptogamy, Ecology, Plant Chemistry, Flora Cell, Palynology, Library, Publication Unit, & Technical Section located at Kolkata/Howrah. Besides, four other units of the Survey, viz., AJC Bose Indian Botanic Garden, Howrah, Central National Herbarium, Howrah, Central Botanical Laboratory, Howrah and the Industrial Section, Indian Museum, Kolkata. In addition, the Survey has 11 Regional Centers in different bio-geographical regions of the country.

The Survey is currently engaged in following activities to achieve these objectives:

- Survey and exploration of plants, especially in fragile ecosystems and protected areas, including Antarctica
- Documentation of plant diversity at national, regional, state, district and ecosystem level. Documentation of indigenous knowledge of plant resources
- Maintaining national botanical collections and museum exhibits centrally at Central National Herbarium, Howrah and Indian Museum, Industrial Museum, Kolkata and all its Centre Offices located in different regions of India
- Cultivation, multiplication and ex situ conservation of threatened, endemic and economically important species
- Pharmacognostic studies on species listed in Schedule VI of the Indian Wildlife (Protection) Act, 1972; Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and Negative List of Export (PN-47)
- Capacity building in taxonomy
- Environmental awareness and education
- Environmental Impact Assessment on flora (wherever specifically asked by the administrative ministry)
- Digitization of herbarium specimens
- Advisory services in the field of identification, distribution, status and ex situ conservation of plant species
- Dissemination of scientific information related to different aspect of Indian flora through hard copy publications of Floras, Journals and other thematic publications

**During the East India Company’s rule it was called “Company Bagan”**.

For the past some time there have been frequent complaints about lack of upkeep as well as lack of security in this historic botanic garden. But change is on the cards. For tourists, battery-operated buses have been introduced in the gardens and parking of cars and buses has been banned in the garden premises. During the British Raj musical soirees were held every evening and on Christmas prizes were given away to the best gardener.

Though the Botanic Garden’s glorious past cannot return but anyone who comes here will realize that the Indian Botanic Garden is a different world of sylvan green, an escape from the hustle and bustle of city life.

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