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ANNUAL REPORT OF THE INDIAN BOTANIC GARDEN, CALCUTTA FOR 1961-62

(One hundred and seventy-fifth report)

GENERAL

A general programme of restoration has been under operation during the year under review. The library and both the garden and the local herbarium have received notable additions. Many students and research workers have made use of them. It has been particularly a year of sustained effort to provide more and better recreational facilities for the visiting public. The rules for preservation and use of the Garden have been revised by a public notification (in *Calcutta Gazette*, No. 7901-B.G., dated 26th December, 1961). A short guide with a map of the Garden has been published ; the book was much in demand during the winter months.

Distinguished personalities like Mr. L. I. Brezhnev, President of the Presidium of the Supreme Soviet of the U.S.S.R. and his party, His Majesty the Yangdi-Pertuan Agong, Paramount Ruler of the Federation of Malaya, and Her Majesty the Raja Permaisuri Agong, and their party visited the Garden on 21st and 26th December, 1961, respectively. Major Y. Gagarin, the first Cosmonaut, visited the Garden in the same month. Many other dignitaries and distinguished scientists from different parts of the world, including a delegation of Russian botanists, were shown round the Garden. A large number of school and college students and research workers from different parts of India and elsewhere came here on study tours. The number of such visitors totalled about 1,235.

Shri S. N. Mitra, Assistant Botanist, carried on the duties of the Superintendent in addition to his own till 30th November, 1961. He was relieved by Dr. J. Sen of Calcutta University, who joined on 1st December, 1961, as the Superintendent of the Garden. During this period Dr. Sen attended scientific meetings at Birbal Sahni Institute of Palaeobotany, Lucknow, as an official delegate. Shri K. D. Mukherjee, Curator of the Garden, visited Allahabad, Delhi and Lucknow and collected a number of interesting specimens of Cinnamon, Rose and Vine.

THE GARDEN

A jetty was temporarily constructed by the side of the old one to receive dignitaries. The open space in front of the temporarily constructed jetty, Public Relations Office, Curator's Office and Herbarium were decorated with beautiful pot-grown winter annuals like Dahlias, Pansys and Petunias. Some of these Dahlias were imported from Europe.

In connection with the laying of foundation stone at Rabindra Smarani (National Theatre), by Shri Jawaharlal Nehru, Prime Minister of India, a big area the Garden Medical Unit and by the Relief Welfare Ambulance Corps, Calcutta.

During winter months a large number of visitors came to the Garden. About 70-80 thousand persons visited the Garden both on Christmas and on New Year's day. The launch service was of additional help for the visitors particularly on holidays. Necessary police arrangements were made for the maintenance of law and order and the mobile court functioned as usual. Medical facilities for the visitors were also provided by the Garden Medical Unit and by the Relief Welfare Ambulance Corps, Calcutta.

The Restaurant was again opened after a lapse of 15 years. The construction work of a new pavilion for picnickers (in Division No. 22) is nearing completion.

Two boards showing the important aspects of the Garden were set up. One movable drinking water tank was provided in addition to the existing facilities.

One of the species of bamboos, *Melocanna humilis* Kurz (Fig. 1), profusely flowered during this year, and some plants of *Metasequoia glyptostroboides* Hu and Cheng (Fig. 4) and *Ginkgo biloba* Linn., the two species of immense botanical interest, were successfully established. The characteristic "cypress knees" (of *Taxodium distichum* Rich.) (Fig. 3) and pneumatophores of *Heritiera fomes* Buch.-Ham. and *H. littolaris* Dryand became objects of special attraction to students of botany.

A large number of seedlings and saplings belonging to 41 species were planted in the open, and brick gabions and other types of fencing were erected for protecting them. They replace many of the dead and old trees. *Polyalthia longifolia* (Sonn.) Thw. var. *pendula* was planted on both sides of the road (since named Calder Path) connecting Clarke and Hooker Avenues. A number of flower beds were made

by the side of the Small Palm house specially for growing different varieties of *Canna orientalis* Rosc. (including *C. indica* Linn. of Watt).

The Flower Garden area was particularly made attractive by raising seasonal flowers during rains and winter. A number of garden varieties of the following hot weather and rainy season annuals were successfully grown as usual in pots as well as in beds in and outside the Nurseries : Balsam, *Coreopsis, Gaillardia, Gomphrena, Ipomoea, Kochia, Torenia, Tithonia,* Yellow Cosmos and *Zinnia.* Because of continuous rains, some pot-grown Chrysanthemums were badly affected. Still all care was taken to protect the selected varieties which were displayed while in bloom in December.

Among others, the garden varieties of the following winter annuals were very successfully grown in pots as well as in beds : *Aster, Antirrhinum, Clarkia, Dianthus, Gypsophila,* Larkspur, *Marigold, Nasturtium,* and Small, Large and Double varieties of *Petunia, Phlox, Portulaca* and *Verbena.*

The following Orchids flowered during the year : *Cattleya trianaei* Linden & Reichb. f., *Coelogyne* sp., *Dendrobium aggregatum* Roxb., *Dendrobium pierardi* Roxb., *Eria flava* Lindl., *Phaius wallichii* Lindl., *Phalaenopsis schilleriana* Reichb. f., *Saccolabium lancifolium* King & Pantl.

Aralia spp., *Codiaeum* sp., *Dieffenbachia* spp., *Licuala grandis* Wendl., *Livistona rotundifolia* (Lamk.) Martius, *Sabal minor* (Jacq.) Persoon. were planted in the large Palm house, while, *Chrysalidocarpus lutescens* Wendl., Cacti, *Codiaeum* sp., *Dieffenbachia* spp., *Euphorbia* spp. were planted in the small Palm house. In the Orchid house, *Aristolochia grandiflora* Swartz, *Aristolochia saccata* Wall., *Anthurium* spp., *Adiantum tenerum* Swartz, *Diffenbachia* spp., *Dracaena* spp., *Maranta* spp., *Pteris ensiformis* Burm., *Vanda roxburghii* R. Br. were planted.

About 1,924 layerings, 3,015 gooties, 6,000 cuttings and 113 grafts of many useful and ornamental plants were produced in addition to about 12,000 seedlings to meet the public demand and our own requirements.

Plant Introduction : Attention was given to the introduction of horticultural and economic plants. The Garden authorities tested the possibility of establishing and propagating many varieties, which might be suitable for introduction in this Garden. Among others, the following plants were introduced during the year under review : *Macropsychanthus lauterbachii* Harms (Leguminosae ; source—New Guinea ; introduced on 13-11-61) *Ochna kirkii* Oliv. (Ochnaceae ; source—Singapore ; introduced on 14-11-61).

Ornamental Plants : Special care was taken to protect the rare collections of Bougainvilleas, Crotons, Cannas, etc., in addition to rare and beautiful flowering trees like Amherstias, Browneas and Tabebuias. Particular care was taken for propagation of the recently introduced *Mussaenda phillipica* A. Rich. (Fig. 2) and some other ornamentals.

Students' Garden : Due attention was given to the Students' Garden, and the following plants were added: *Amaryllis* sp., *Asparagus* sp., *Brassica* sp., *Dianthus* sp., *Momordica charantia* Linn., *Opuntia elatior* Mill., *Ocimum sanctum* Linn., *Phlox* sp., *Polypodium* sp., *Portulaca* sp., *Santalum album* Linn., *Viola odorata* Linn.

Aralia spp., *Euphorbia antiquorum* Linn., *Euphorbia dendroides* Linn., *Opuntia* sp. were planted in the Rock Garden.

Large Palm House : The Large Palm house attracted a good number of visitors. The chief attraction of the House was a Double Cocoanut palm [*Lodoicea maldavica* (Gmelin) Persoon]. The plant is now pressing against the roof of the House, and it is desirable to rebuild the House with a higher roof to help the normal growth of this palm.

Great Banyan Tree : The circumference of the crown was 1,350 ft as against the previous record of 1,328 ft. About 53 additional aerial roots touched the soil. A large number of fresh aerial roots were taken down and arrangements were made from protecting them. Diseased and dried branches were cut and painted and plastered as necessary.

Victoria amazonica Planch. : It was successfully grown in lakes in Division Nos. 2 and 5. The characteristic leaves and flowers of immense size attracted large number of visitors.

Other interesting aquatic plants like white and pink flowering Nelumbiums, and *Nymphaea mexicana* Zucc. with yellow flowers, growing in some of the jheels were added attractions of the Garden. A patch of *Euryale ferox* Salisb. also came up in King Lake.

Seed and Plant distribution and Acquisition : 174 packets and 22 lbs. of seeds of different species were distributed to different institutions and parties in India. 16 packets of seeds of different species were received from various institutions and parties in India and abroad. 673 plants and 3,000 bulbs of different species were purchased. A large number of plants were sold to members of the public to encourage gardening habit among them.

FLOWER SHOW

This year the Garden won the largest number of trophies including Dalmia and Jalan challenge cups and another important cup in the annual flower show at Royal Agri-Horticultural Society, Alipore, Calcutta.

The Superintendent helped the Royal Agri-Horticultural Society by acting as a judge in their flower show.

VANAMAHOTSAVA

During Vanamahotsava month the State function was held in Calcutta in the maidan near Birla Planetarium. 9,362 seedlings and saplings were distributed free of charge to Government departments, municipalities, educational institutions and members of the public.

PUBLIC RELATIONS

The Public Relations Officer conducted tours for many dignitaries and parties of students. He attended to numerous verbal enquiries regarding the Garden, and along with other officers provided healthy recreation to the public. A number of reports regarding some plants of the Garden and visiting public appeared in the local dailies.

On being invited by the authorities of All India Radio, Shri S. N. Mitra, Assistant Botanist, delivered a talk in Bengali from its Calcutta Station on 29th August, 1961 on *"Arthakari Chas Hisabe Fulbagicha O Tar Paricharya"* (Commercial floriculture and its development). He delivered another talk on *"Tabe Phuler Chas"* (Floriculture in pot) on 3rd October of the same year.

SCIENTIFIC ACTIVITIES

The garden and local herbarium and library were maintained in the usual manner. The laboratory of the Garden was reorganised and proposal for setting up of a weather station was under consideration. Exchange of seeds and plant materials with other botanical and horticultural institutions of the world has been revived. Shri M. L. Sashankar, Overseer, Parks and Gardens, Cooch Behar, received training in gardening practice.

An up-to-date catalogue of non-herbaceous phanerogams of the Garden, and a list of its weeds were compiled. Two other papers on the leaf shape variabilities of *Samanea saman* (Jacq.) Merr. and degraded wood were also completed and sent to the press. The distribution pattern of some alpine and sub-alpine members of Himalayan Ranunculaceae received attention as part of a more comprehensive research programme.

A scheme of work to develop grafted *Cephalocereus, Mammillaria* and *Neomammillaria* was started with *Cereus* as the stock. Some of the grafts did well, and others were under observation.

Garden and Local Herbarium : About 100 specimens were mounted in the Garden section of the Herbarium. The total number of specimens at present is 9,063. There were some interesting additions to the Local section bringing a total of 4,654 specimens. The Garden section was mainly consulted by the departmental officers for ready identification of the plants growing in the Garden. The Local section was consulted also by a large number of research workers from other departments.

About 350 plant specimens were identified during the year under report. The specimens were received from different Government departments, commercial organizations, research workers and scientific institutions. Technical advice in gardening and other scientific matters were also given to a large number of individuals and organizations.

The forensic work was continued as usual. A number of plant materials were received from Excise and Police authorities for identification and expert advice, and in this connection some of the officers gave evidence before the local law Court.

LIBRARY

The authorities faced much difficulties in properly maintaining the Library without a qualified Librarian. Only a few items (excluding periodicals) could be acquired. 39 different periodicals were subscribed, and 31 were received on exchange basis. The Library now contains about 31,300 volumes. 31 finely executed water colours of Angiosperms were added to the collection.

A large number of students and research workers used the Library, and many of them borrowed books and journals from it. The Library continued to participate in the inter-library loan service programme organised by the Indian Association of Special Libraries, Calcutta.

PUBLICATIONS

SEN, J. Further studies on the structure and composition of variably degraded ancient woody tissues. *Palaeobotanist.* 9 : 32-48, 1960 (1962).

SEN, J. ed. *A short guide to the Indian Botanic*

Garden, Calcutta. Government Printing, West Bengal, 1962.

—— *A guide to the Lloyd Botanic Garden, Darjeeling.* Government Printing, West Bengal, 1962.

CHAUDHURI, S. K., N. MALLIK & J. SEN. The history of the vegetation of the lower Gangetic plain. *Proc. Indian Sci. Congr.* 3 : 259-260, 1962.

—— Distribution of plant fossils in the Raniganj Coalfield, Bengal. *Ibid.* 3 : 260, 1962.

REVENUE

A sum of Rs. 43,154.58 only was realised from the sale of surplus seeds, plants, grass, fish and dead trees.

EXPLANATION TO THE PLATE

Fig. 1. A fruiting specimen of bamboo, *Melocanna humilis*, in the Bambusetum of the Garden.

Fig. 2. A flowering plant of *Mussaenda phillipica.*

Fig. 3. The characteristic "cypress knees" of an elegant *Taxodium distichum* growing near the northern end of the Shadir Lake of the Garden.

Fig. 4. A growing specimen of *Metasequoia glyptostroboides* in the Garden.


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