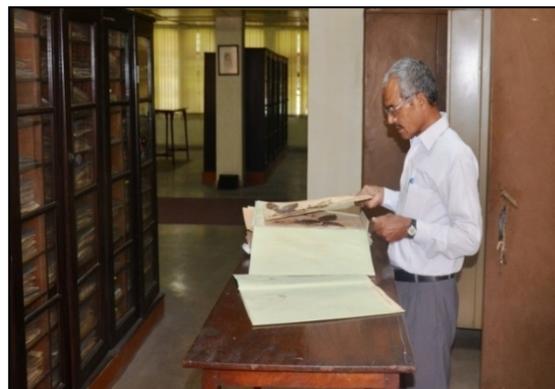
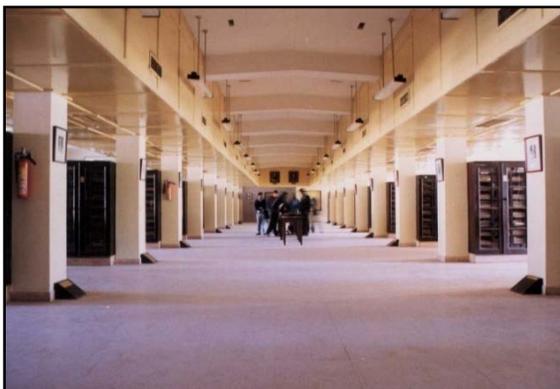


THE HERBARIUM OF FOREST RESEARCH INSTITUTE

Herbarium of the Forest Research Institute, Dehra Dun which is internationally known as Dehra Dun Herbarium (DD) was originally started by James Sykes Gamble in 1890 as the Forest School Herbarium with his own collections from Madras and Bengal, and private herbaria of several forest officers presented to the School. In 1908, the Saharanpur Herbarium which was started in 1816 was also transferred to Dehra Dun Herbarium. Dr George Govan was appointed the first Superintendent of the Saharanpur Botanic Garden in 1816. He collected plants mainly in the adjacent Sirmoor State, now in Himachal Pradesh. Dr. John Forbes Royle succeeded Dr. George Govan in 1823. He collected plants in the adjacent Himalayas. Dr. Huger Falconer succeeded Royle in 1831 and sent his collectors to Kashmir and Ladakh. Dr. William Jameson succeeded Dr. Falconer in 1842. After Jameson's retirement in 1876, John Firminger Duthie was appointed as his successor. During Duthie's time Gamble vigorously built up the Forest School Herbarium. Other classical collections of the late 19th Century are by John Ellerton Stocks and Aitchison. After the amalgamation, Dehra Dun Herbarium grew in proportion and prominent botanist like J.S. Gamble, Henry Haselfoot, Haines, Robert Selby Hole, R.N. Parker, U.N. Kanjilal, P.C. Kanjilal, B.L Gupta, C.E. Parkinson, N.L. Bor, M.B. Raizada, K.C. Sahni, K.M. Vaid, K.N. Bahadur, S.S.R. Bennet, R.C. Gaur, Sas. Biswas, H.B. Naithani, Ms. Veena Chandra, Ram Dayal, S.S. Jain, Sumer Chandra, Anup Chandra, Ms. Ranjana and P.K Verma deposited their collections in the Herbarium. In the recent years, excellent collections have been added from some of the under explored regions of India. Besides the departmental collections, there are notable collections by Falconer, Brandis, Thwaites, Strachey, J.H. Lace, Lowrie, Gammie, G. Mann, Rogers, Drummond, A.E. Osmaston, Talbot, Keshwanand Mangain , H.G. Champion, R.R. Stewart and N.D. Bachketi. In addition to the excellent collection of Phanerogams of India and other countries of the World, the herbarium has a valuable collection of Cryptogams.



Old Herbarium Hall (Monocot Section)

The original Herbarium was located in the Forest School, Dehra Dun city and later shifted to the imperial Forest Research Institute then located at Chandbagh (now Doon School). The Institute was again shifted to the present site (New Forest) in 1929 together with the Herbarium. A modern, fully air-conditional building on the design of Edinburgh and Kew Herbaria was build up in the F.R.I Campus and the Dehra Dun Herbarium was shifted in its new site in 1978. The collections, which contained over 0.3 million specimens, stored in 200 stationary wooden almirahs most of which were stifled within pigeon holes. Realizing the problem expansion cum modernization of Dehra Dun Herbarium executed in the beginning of the year 2017. With this expanded part, the Herbarium building now comprises of two sections, in the ground floor there is *Dicotyledons section* with mobile herbarium compactors and state to art facilities along with well equipped digitization lab whereas, the top floor is housing the Gymnospermic, Monocotyledonous and Cryptogamic (Pteridophytic and Bryophytic) collections.



*New Herbarium Hall (Dicot Section): 1. view of entrance 2.& 3. view of its range
4. Newly incorporated Mobile Herbarium Compactors*

The Dehra Dun Herbarium houses approximately 3,30,000 specimens. The system of classification of plant specimens followed is that of Bentham & Hooker. The oldest

collection dates back to 1807. Besides collections from the Indian region, Herbarium contains specimens from all over the world. In addition to the phanerogams the Herbarium has valuable collections of Pteridophytes. It also includes invaluable 1300 *Type specimens*.

Expeditions sent out from the Herbarium have explored many unexplored and underexplored parts of India viz. Indo- Nepal and Indo-Tibet border, Andaman and Nicobar Islands, Gir Forests, erstwhile Tehri Garhwal state, Sikkim, Goa, Daman & Diu and Ladakh.

The collections housed in the Herbarium have been of inestimable value to specialists of different Groups/Families/Genera in revisionary/monographic work.

The Herbarium serves as a ready reference in collecting information on rare and threatened plant diversity and their habitats, it also has many unknown or little known uses of plants recorded on their sheets. Besides, it serves many other educational purposes.

ADJUNCTS: The Herbarium has **CARPOLOGICAL MUSEUM** as its adjunct. It has approximately 1000 samples of fruits / seeds, some of which cannot be preserved with the Herbarium specimens. It supports in the morphological studies and in identifying fruits and seeds of plants from different parts of the country without resource to microscopic details.



DIGITIZATION OF DD HERBARIUM SPECIMENS: Dehradun Herbarium is working on digitization of its herbarium specimen collections. The current Herbarium database, named *Digital Herbarium Specimen Database* comprises of digital images along with label data and other information about species with the primary objective of storing invaluable data and to provide an easy access to the worldwide audience to the collection. It will also reduce the anticipated wear and tear of specimens thus ensuring their long-term preservation.

THE ARBORETUM, BOTANICAL GARDEN & BAMBUSETUM, FRI

THE ARBORETUM

The Arboretum of Forest Research Institute, Dehra Dun laid out in 1925 covers an area of about 30 ha at New Forest, Dehra Dun. It is divided into 12 compartments. The trees are grown mostly in group plantings. The important trees of the arboretum are *Betula cylindrostachya*, *Liriodendron tulipifera*, *Ginkgo biloba*, *Ficus krishnae*, *Bauhinia anguina*, *Liquidambar formosana*, *Haematoxylon* sp., *Salix babylonica*, *Podocarpus neriifolius*, *Pterygota alata*, *Aesculus assamica*, *Mesua ferrea*, *Flindersia australis*, Eucalypts, Conifers etc.

THE BOTANICAL GARDEN

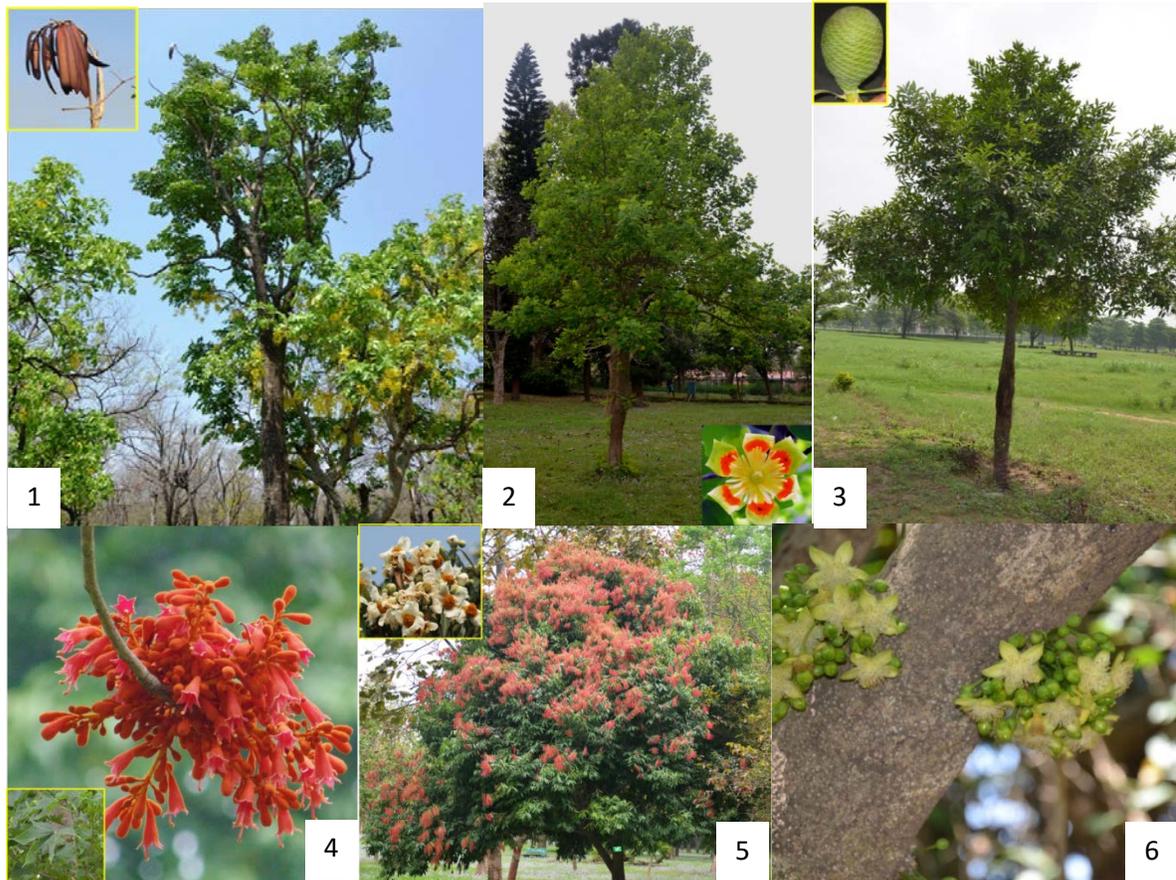
The Botanical Garden was established in 1925 by R.N. Parker who established seed exchange relations with a large number of institutions in India and abroad, accomplished a great deal of planting. Parkinson carried on the task following Parker's plants introduction and establishment. The first list of plants growing in New Forest Campus was published in (1936). The Botanical Garden covers an area of 10 ha. having all plant tagged with their Botanical Names, Family and Country of Origin. Although the introductions were made in large numbers but some have failed for a variety of reasons such as frost attack, insect and fungal attack etc. The plants were arranged alphabetically in the list along with its family name, habit origin, phenology and place of growing etc. Gupta *et al.* (1988) has made an attempt in bringing out a list of plants growing in the Arboretum of Forest Research Institute and about 330 plant species (including Arboretums) have been listed out. Plants from a fruticetum which had started several years before and later abandoned in the New Forest Estate were transferred to the new site to mark the beginning of the Botanical Garden. The garden has been divided into 8 sectors separated by the paths and avenues. They include many perennials, potted plants, annuals and grasses. About 55% of the plant species in the Garden are exotics, which have been brought from more than 25 countries, majority being from Australia and South America. Some of the important

ones are *Agathis robusta* (Australia), *Cupania anacardioides* (Australia), *Enterolobium contortisiliquum* (Brazil), *Eucalyptus alba* (Australia), *Eucalyptus deglupta* (Indonesia), *Flindersia australis* (Australia), *Homalium tomentosum* (Burma and Malaysia), *Joanesia princeps* (Brazil), *Koelreuteria paniculata*



1. *Bauhinia galpinii* 2. *Koelreuteria paniculata*

(China), *Liquidambar formosana* (Taiwan), *Taxodium mucronatum* (Mexico), *Liriodendron tulipifera* (North America), *Tipuana tipu* (South America), *Acacia confusa* (Philippines), *Ginkgo biloba* (China), *Aleurites moluccana* (Malaysia), *Castanospermum australe* (Australia), *Bauhinia galpinii* (South Africa) etc.



Some of the spectacular trees of botanical garden: 1. *Oroxylum indicum* 2. *Liriodendron tulipifera* 3. *Agathis robusta* 4. *Firmiana colorata* 5. *Mesua ferrea* 6. *Gynocardia odorata*

Apart from exotic there are large numbers of valuable indigenous species which contribute a great deal to the plant wealth in the garden, like *Gleditsia assamica*, *Duabanga grandiflora* (all from Northeast India). Garden of the institute possess rare, endangered and some spectacular species of forestry and economic value, for example *Indopiptadenia oudhensis*, *Trachycarpus takil*, *Tipuana tipu*, *Eucalyptus deglupta*, *Dillinea indica*, *Tectona hamiltoninana*, *Bauhinia anguina*, *Elaeocarpus sphaericus*, *Mesua ferrea*, *Firmiana colorata*, *Oroxylum indicum*.

THE BAMBUSETUM

The Bambusetum or bamboo garden of Forest Research Institute is situated in the Compartment No. 3 of FRI Estate Reserve Forests, which is behind the main building. This was initially laid out for the introduction of tree species in 4 ha of area. In 1930s the bamboos were introduced and now this is the one of the important collections of the germplasm of the bamboo resources of the country. The development of the Bambusetum



was a visionary step as in 1930s the forests resources were plenty and the concept of *in-situ* conservation was not well established. The Bambusetum of Forest Research Institute serves an important role in bamboo research and education. It has 32 bamboo species collected from different parts of country and abroad with collection mainly from Bangladesh, Myanmar, China, Japan, Malaysia, Indonesia, Thailand and South America. In addition to its role in research and education it also provides planting material to different organizations/ Institutes/ researchers. The Bambusetum is visited by students of biology, environment, and forestry research institutions from different parts of the country and abroad. Bambusetum is represented by the species and variability of *Bambusa balcooa* Roxb., *B. bambos* Roxb., *B. multiplex* (Lour.) Raeusch. ex Schult. *B. nutans* Wall. ex Munro, *B. tulda* Roxb., *B. vulgaris* Schrad. ex Wendl., *Dendrocalamus asper* (Schult.) Back. ex Heyne, *D. calostachyus* (Kurz) Kurz, *D. longispathus* (Kurz) Kurz, *D. membranaceus* Munro, *D. strictus* (Roxb.) Nees, *Gigantochloa atroviolacea* Widjaja, *Melocalamus maclellandii* (Munro) Naithani, *Melocanna baccifera* (Roxb.) Kurz, *Phyllostachys aurea* Carr. ex Riv, *Schizostachyum pergracile* (Munro) Majumdar, *Sinarundinaria falcata* (Nees) C. S. Chao & Renvoize and *Thyrsostachys oliveri* Gamble.