



Press information

Herbarium, Library, Art and Archives

The Herbarium at the Royal Botanic Gardens, Kew (RBG Kew) contains over seven million preserved plant specimens, representing 98 per cent of all the genera of the world. Each year the collection grows with 30,000 new additions. A new extension is currently under construction, and is due to open in early 2010.

The threat of climate change, combined with the additional concerns of habitat loss, over-exploitation and invasive species, is predicted to accelerate the loss of plants to a level unparalleled in human history. It is predicted that even with a small rise in global temperatures below 1°C, one in five of the world's plant species will be condemned to extinction. At 2°C, we will endanger one in three. RBG Kew is committed to using its scientific research to help communities worldwide mitigate and adapt to climate change. Many specimens from the Herbarium collection are available online and accessible to researchers across the globe.

Herbarium, Library, Art and Archives is based in an 18th century Grade II listed building on Kew Green. This was originally named Hunter House and was occupied by the King of Hanover until his death in 1851. Following its foundation in 1853, the Herbarium collections held at Kew Gardens grew with the amalgamation of private collections, including the personal herbaria of some of Britain's most celebrated scientists and explorers. Sir William Hooker, George Bentham, Charles Darwin, Joseph Hooker, David Livingstone, John Hanning Speke, Richard Spruce and Ernest 'Chinese' Wilson are just a few of the famous names whose collections can be studied in the Herbarium.

The Herbarium

The Herbarium contains over 350,000 type specimens – the original specimens on which new species descriptions have been based. These specimens, some dating back to the 18th century, are the ultimate reference point for a species, fixing a plant name for all time. They are invaluable to researchers and they represent a major and irreplaceable international asset. Type specimens are vouchers for plant names, so they are the essential reference point for a name that botanists consult in seeking to apply names correctly.

Dried and pressed plants attached to a sheet of archival paper with a label attached in the bottom right hand corner to indicate origin, collector, number and identity. Additional information, such as local uses, is often included in the label information.

The specimens are filed in systematic order, according to characteristics of their flowers, leaves, stems, fruit and roots. RBG Kew uses the Bentham-Hooker classification, which groups plants into families according to form and structure, and then these are sub-divided into genus and species.

Some specimens are stored in boxes as the dried collection. These are plant parts that are too large or awkwardly shaped to be pressed and mounted, such as palm fronds or large fruits.

The Herbarium also holds a spirit collection, containing plants that cannot be pressed, preserved in liquid. Fleshy fruits and complex flowers, such as orchids, are preserved using a mixture of methylated spirit (to stop mould and fungus from attacking the sample), formaldehyde (which fixes the plants as they are), glycerol (to prevent the specimen going brittle) and water. The RBG Kew spirit collection is probably the largest botanical spirit collection in the world.

The preserved collection has been built up over 150 years and it is now one of the world's most comprehensive. It is actively used as a reference for the accurate identification of plants, scientific studies including plant biochemistry, DNA sequencing and surveys of plant diversity to assist conservation, together with studies of plant uses including use by local people for medicinal and nutritional purposes.

More than 100 people work in the Herbarium, including expert plant taxonomists, digital map experts and scanning technicians. In addition to staff who specialise in particular plant families (such as Legumes, Palms, Coffees or Grasses) there are five regional teams that study the floras of dry Africa, wet Africa, South America, temperate regions and South-east Asia.

RBG Kew has started digitising and barcoding some of its Herbarium specimens and 130,000 specimen images are already accessible online to researchers around the world. Each record includes information about where and when a plant was collected together with its present name and any past variations.

Geographic information from satellites is being combined with specimen data to analyse plant life in new ways. These digital maps are generated by a dedicated team, the Geographic Information Systems (GIS) Unit. GIS enables botanists to cross-reference information such as altitude and soil type to see where they are most likely to find species, and can inform conservationists and politicians to determine which areas are in most need of a protected status.

For more information visit;

Herbarium collection www.kew.org/collections/herbcol.html

Electronic Herbarium catalogue <http://apps.kew.org/herbcat/gotoHomePage.do>

The Spirit collection www.kew.org/collections/spiritcol.html

Library, Art and Archives

The Library, Art and Archives collections includes over 150,000 books and a comparable number of pamphlets on plant taxonomy and systematics, horticulture, plant ecology and conservation, and the work of botanic gardens and herbaria. There are also 4,000 periodical titles, over 200,000 botanical illustrations and seven million sheets of archive material.

The illustrations collections range from the great masters of botanical illustration of the 18th Century, such as G.D. Ehret, P.J. Redouté and the Bauer brothers, through to Thomas Duncanson, George Bond and Walter Hood Fitch in the 19th century. A high proportion of the early originals prepared for Curtis's Botanical Magazine, together with the work of 20th and 21st Century contributors, are also included in the collection.

The Archives contain the official records of Royal Botanic Gardens, Kew, and the papers of many botanists, gardeners and other individuals. One of the largest sections of the archives collections is the Directors' Correspondence. This collection comprises the scientific correspondence received by senior staff from 1841 to 1928, and Sir William Hooker's correspondence from before 1841, which he brought with him to Kew Gardens.

For more information visit www.kew.org/library/about.html#colls

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For more information please contact the RBG Kew press office, telephone 020 8332 5607 or e-mail pr@kew.org