

University of Bristol Botanic Garden

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Origins

In 1882 Bristol University College awarded their Lecturer of Botany, Adolf Leipner, a grant of £15 for the purpose of laying out a botanic garden. Leipner raised a further £89 and the garden was built on waste ground adjacent to the newly opened buildings of University College at the top of University Road, near to Royal Fort House in Clifton, Bristol. Later the garden moved to a site adjacent to Tyndall Avenue which became known as Hiatt Baker Garden.



The Bracken Hill Site



In 1959 the present Senate House was built on the site of this garden and the collections were moved to Bracken Hill. Built in 1886, Bracken Hill had been the home of Melville Wills, a noted benefactor of the University. For the 46 years until 2005 the gardens of Bracken Hill have been the home of the University Botanic Garden.



The first garden

The Holmes Site

In 2002 as part of an overall review of its estates and gardens policy the University decided to relocate its botanical collections and establish a new Botanic Garden in grounds closer to the University. The Holmes at Stoke Bishop was subsequently chosen as the site for the new Botanic Garden, thereby allowing the sale of Bracken Hill. The relatively undeveloped ornamental garden at The Holmes was an ideal location for the new garden because it is of comparable size to Bracken Hill and is ideally situated just off the Downs on Stoke Park Road within walking distance of the University and City Centre.

Situated opposite Churchill Hall, The Holmes was built in 1879 in the 'Arts and Crafts' style as a large residential house sitting within 1.77 hectares of gardens. During the planning of the Normandy landings in 1944, The Holmes was used as a base for top US Army generals and today the house functions as a University hall of residence and small conference centre.



Designing the new garden

Top garden designers Land Use Consultants, whose previous commissions include The Eden Project and Heligan, drew up a detailed design for the new garden in close consultation with the Garden Director, Professor Simon Hiscock, the Curator, Nicholas Wray, External Estates Manager Alan Stealey and a team of botanical and horticultural advisors. The final design for the garden was agreed by the Curatorial Advisory Group in July 2004. The design offers a meandering 'organic' trail through a blend of informal and formal plantings both educational and aesthetically pleasing.

Professor Sir Peter Crane, Director of The Royal Botanic Gardens, Kew, who acted as specialist botanical advisor on the project said: *"It has been wonderful to follow the process of developing the New Botanic Garden. This is an important investment by the University that will not only enhance teaching and research, but that will also further enrich the City of Bristol for all its citizens"*.



Plant Collections

The 1.77 hectare garden is home to 4,500 species arranged in four core collections, [Evolution](#), [Mediterranean](#), [Local Flora and Rare Natives](#) and [Useful Plants](#), to provide a unique teaching, research and conservation resource. Planted in inspirational displays each collection has been designed to be attractive as well as educational, with some displays allowing visitors to walk through and be 'immersed' in the plantings. Each core collection is divided into a number of sub-collections (displays) which focus on a specific aspect of plant biology, ecology, or use.

Glasshouses

Introduction

The glasshouse allows cultivation of plants from warmer climates and provides a valuable teaching environment and visitor experience. The 640m² glasshouse is divided into four distinct climatic zones: warm temperate, cool, sub-tropical and tropical and is home to plants from all four core collections. A fifth zone is devoted to propagation and is not open to the public. There is a wealth of

plant diversity growing within the glasshouse and plants can be seen flowering at any time of year. An information display is erected during spring, summer and autumn when themed exhibitions give more information about the plants on display.

Warm Temperate Zone

The warm temperate zone is home to plants from the garden's Evolution Collection, including Adaptation to the Environment Displays and some of the garden's Mediterranean Climate Regions Collection as well as plants from the garden displays of African fynbos, Canary Islands flora and arid land plants.

The central display is planted to illustrate different but interconnecting plant communities, known as biomes, representing the Western, Southern and Eastern Cape regions of South Africa. In the wild these communities represent the greatest diversity of plant species to be found anywhere in the world and are collectively known as the Cape Floral Kingdom. On display are plants representing fynbos, succulent karoo, nama karoo and thicket biomes. These are home to some very attractive and striking plants including: the bird pollinated king protea, *Protea cynaroides* and coral aloe, *Aloe striata*, the aromatic kapok bush, *Eriosephalus ericoides* and the ancient karoo cycad *Encephalartos lehmannii*.



Namaqualand daisies represent part of the succulent karoo display



Echinocactus grusonii, a New World stem succulent

Old World (African) stem and leaf succulents including: *Euphorbia horrida* and *Aloe plicatilis* are displayed alongside (New World) American stem and leaf succulents including: *Echinocactus grusonii* and *Furcraea longaeve* highlighting striking examples of convergent evolution to survival in seasonal arid desert environments.

From the Canary Islands the succulent stemmed *Kleinia neriifolia* and *Dracena draco* are two further examples of convergent evolution to a seasonally arid environment.

The Canary Island display illustrates the phenomenon of 'adaptive radiation' where related plants (or animals) evolve to fit the demands of each island's slightly different environmental conditions. In time plants from the other Macaronesia Islands, Azores Madeira, Cape Verde and the Savage Islands will be developed. A collection of plants from Madagascar is also being developed. In addition to these oceanic island communities, the fynbos biome illustrates plants growing in 'island' communities on land, isolated by climate, topography and soils.

A large collection of species pelargoniums is grown as an illustration of adaptive radiation. (*Diversification of a species or single ancestral type into several forms that are each adaptively specialized to a specific environmental niche*).

Carnivorous plants including the sticky leaved *Drosera capensis* and *Pinguicula sp.*, together with the quick acting venus fly trap, *Dionaea muscipula* and spring trapped bladderworts *Utricularia sp.* trap insects by sticky leaves and movement. These plants highlight examples of convergent evolution in plants showing their adaptation to trap and digest animals to supplement their nutrient diet when growing on poor soils.

This zone is still under development and when complete will display other island communities.



The sticky leaved *Drosera capensis*

Sub-tropical Zone

The sub-tropical zone is home to plants from the garden's Evolution and Useful Plants Collections, including displays of Angiosperm Phylogeny, Floral Diversity, Adaptation to the Environment and Chinese Medicinal Herbs.

Central to the display is a raised bed planted to represent a sub-tropical montane forest (those forests at middle to high altitude, which derive a significant part of their water from mist and cloud). Here three artificial trees have been erected to provide a home to displays of epiphytic plants including some of the Garden's collection of orchids. These are the most diverse family of flowering plants with some 30,000 species. A wide range of plants are grown including the sweetly scented *Zygopetalum mackayi* and *Stanhopea oculata*. Amongst these the kapok tree *Ceiba pentandra* and fish tail palm *Caryota mitis* grow, representing tall forest trees and palms while the shrub layer is represented by a collection of shrubby and climbing fig species.

A collection of ancient cycads, ferns and anthuriums represent the ground flora.



The sweetly scented *Stanhopea oculata*

A fallen tree is the setting for ancient flowering plants known as Basal Angiosperms: *Sarcandra chlorantha*, *Piper longum*, *Aristolochia trilobata* and *Peperomia blanda* displayed as part of the



Evolution of Land Plants Collection.

Amborella trichopoda is the most ancient basal angiosperm and is sometimes displayed here.

Economically important plants such as coffee, *Coffea arabica* and tea *Camellia sinensis* are displayed in the montane forest display alongside a collection of ten sub-tropical *Ficus* species which have unique relationships with their wasp pollinators.

Amborella trichopoda, an ancient Basal Angiosperm

The surrounding benching is home to various collections of orchids, bromeliads, gesneriads, impatiens, begonias and carnivorous plants illustrating adaptation to the environment and flowering plant diversity. Mosses, liverworts, whisk ferns, selaginellas and ferns are displayed along one bench as an indoor display supporting the main Evolution of Land Plants display which can be seen outdoors in the Evolutionary Dell. Chinese Medicinal Herbs such as the fern *Cibotium barometz* are also grown here.

Tropical Zone

The tropical zone contains plants from the garden's Evolution and Useful Plants Collections, including displays of Floral Diversity, Adaptation to the Environment and Chinese Medicinal Herbs.

A raised tropical pool is the centrepiece of this zone and is home to many tropical aquatic plants including water hyacinth, *Eichhornia crassipes*, water lettuce *Psittia stratiotes* with the corner planters planted with marginal plants: papyrus *Cyperus papyrus*, powdery alligator flag, *Thalia dealbata* and the blue taro, *Xathosoma violaceum*. Here two plants of the giant Amazon water lily

Victoria cruziana and sometimes *Victoria amazonica* produce huge leaves and large beetle pollinated night blooming flowers. Surrounding these are a collection of sacred lotus, *Nelumbo nucifera* from China representing the most comprehensive collection of traditional Chinese sacred lotus in the United Kingdom, which flower throughout the summer when many different colour forms can be seen.



Nelumbo nucifera, the Sacred Lotus from China

Tropical economic 'crop' plants including, cocoa *Theobroma cacao*, sugar cane, *Saccharum officinarum* and banana *Musa acuminata* 'Dwarf Cavendish' are grown direct in a narrow border. Potted plants of dwarf pineapple, *Ananas comosus* 'Nanus', vanilla, *Vanilla planifolia*, ginger, *Zingiber officinale* and tumeric *Curcuma longa* are grown on the benches.

Cool Zone

The Cool Zone houses plants from the Evolution Collection, including displays of Floral Diversity and Adaptation to the Environment, is home to many bulbous plants, and some of the garden's Mediterranean Climate Regions Collection, including plants from the garden's collection of Australian *Proteaceae*

Under development the cool zone will eventually house a display of tender Australian *Proteaceae* such as *Banksia*, *Grevillea*, *Hakea* and *Lomatia*. These will form part of a permanent display featuring plants from the Mediterranean Climate Region of Western and Southern Australia. In particular plants from the heathlands of Western Australia will be grown in a specially built raised bed. The display will complement the African fynbos display in the warm temperate zone, both being home to the *Proteaceae* family with dramatic examples of adaptation to the environment.

Illustrating adaptation to a seasonally dry environment, a large display of South African bulbous or 'geophytic' grow including:

Haemanthus coccineus and *Brunsvigia orientalis*, whose orange-red flowers appear in autumn before the leaves emerge. The carion fly pollinated *Ferraria crispa* and bird pollinated watsonias are grown along with many other bulb species. In time more bulbous plants will be added to the collection from other Mediterranean Climate Regions.



Haemanthus coccineus has adapted to a seasonally dry environment

Future plans for this area include a display of plants illustrating extreme pollination relationship, for example fly pollinated plants: *Sauromatum venustum* and *Arisaema consanguineum*, together with a much extended collection of carnivorous plants including a large display of *Sarracenia* species and principal hybrids.

The cool zone has very little heat during winter when temperatures can drop to a few degrees above freezing. The cool zone is also used as a reserve area for growing on young plants, overwintering plants and as a holding area for tender plants.

It is currently not open to the public, but many plants are displayed near to its entrance and can be seen easily.

Bristol University and the Botanic Garden

The plant collections at the Botanic Garden are used extensively for undergraduate teaching in the University's School of Biological Sciences where courses are available in Biology.

The Evolution Collection and Useful Plants Collection are important for teaching first year plant-based modules such as: Evolution of Land Plants, Plant Evolution in Action and Evolution and Exploitation of Crops. The Flowering Plant Phylogeny Display and Floral Diversity Display (both sub-collections within the Evolution Collection) provide living plant examples to illustrate topics covered in the third year course on Flowering Plants. Third year project students use the garden as a source of material and have developed a range of innovative interpretation now used by garden visitors.



Biology undergraduates of Bristol University touring the Botanic Garden

Other courses on Plant Growth and Development, Ecology, and Evolution also utilise specific elements of the collections. The garden is used to help deliver study days and events through the University's Centre for Public Engagement. Garden and Centre for Public Engagement staff work closely to deliver a number of initiatives centred on the public understanding of science including the Ballast Seed Garden project.

Visitor Information

Address:

University of Bristol Botanic Garden
The Holmes
Stoke Park Road
Stoke Bishop
Bristol
BS9 1JG
(Opposite Churchill Hall of Residence)

Directions to The Holmes

Travelling by car

From the city centre go straight on at the traffic lights at the top of Blackboy Hill, proceed across the Downs towards Stoke Bishop. Cross the traffic lights at the edge of Durdham Down at the top of Stoke Hill. Stoke Park Road is the first turning on the right off Stoke Hill. The entrance to the Botanic Garden is opposite Churchill Hall.



The Tropical Zone Pool

If you are using a GPS system (Sat nav, etc), please use the postcode: **BS9 1JG**.

Travelling by public transport

- **From Bristol city centre** catch a City Line bus no. 40 going to Stoke Bishop. Get off at the top of Stoke Hill (press the stop button when you reach the water tower) by the traffic lights. Walk down Stoke Hill and take first turning right off Stoke Hill.
- **From Temple Meads railway station** catch Numbers 1 or 54 and get off at the Whitetree Roundabout on Westbury Road. Walk 50 yards down Parry's Lane then left into Saville Road. At the traffic lights turn right into Stoke Hill and right again into Stoke Park Road.

Opening times

January, February, March, November and December

Open Monday to Friday

From 10:00am until 4:00pm, or dusk if earlier

The Welcome Lodge will be closed but informational leaflets will be available and a donation from non-Friends is requested.

Please note the glasshouses will be closed due to essential work from 13th to 24th February

April and May

Open Monday to Friday and Sundays

From 10:00am until 4:30pm

Admission charge Adults £3.50 School age children free

June, July, August and September

Open Monday to Friday, Saturdays and Sundays

From 10:00am until 4:30pm

Admission charges apply.

October

Open Monday to Friday and Sundays

From 10:00am until 4:30pm

Admission charges apply.

Garden admission charges

- Adults - £3.50; children under-16 - free
- Friends of the Garden - free
- University Staff, University Retired Staff and Students free

Please note: Pre-booked Guided Tours of the Garden for groups of 10 upwards are available seven days a week: call 0117 3314906 for more information.

Contact details

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URL: <http://www.bristol.ac.uk/botanic-garden/>