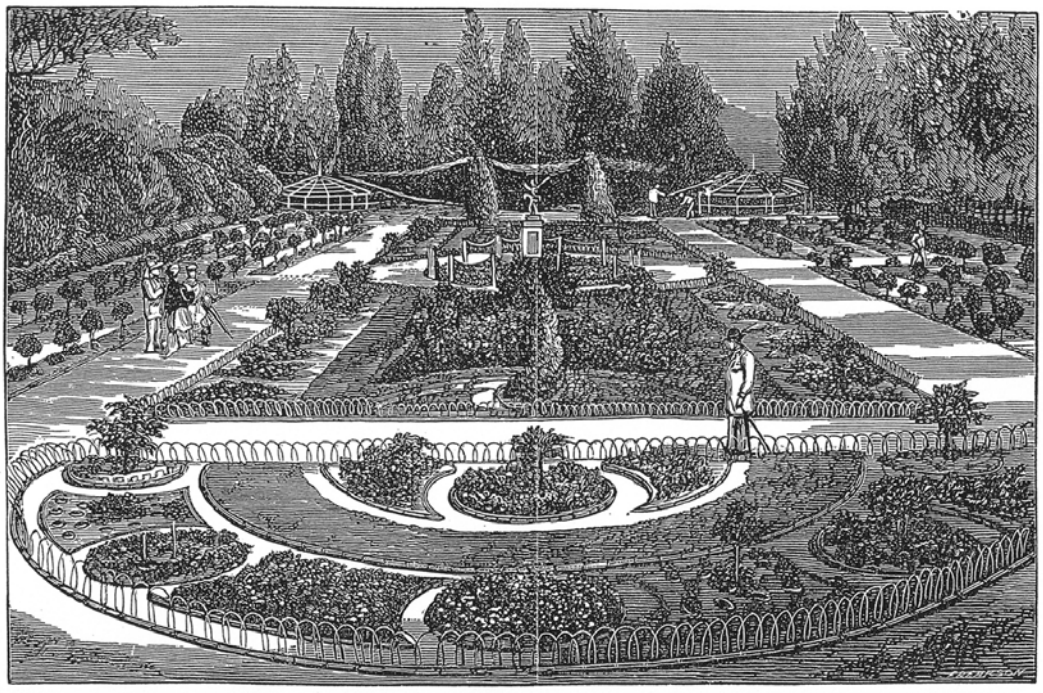
# Section 3.0

# THEMATIC ANALYSIS AND ASSESSMENT



# 3.1 INTRODUCTION

This report analyses and assesses Adelaide Botanic Garden from two major viewpoints. The first (in this Section 3.0) is a thematic analysis and assessment, where themes pertaining to the Garden as a whole are considered. The second (in Section 4.0) considers the Garden as a series of separate compartments, with their boundaries shaped by their initial (or subsequent major) development or by a tradition or pattern of usage.

# 3.2 ROLE OF BOTANIC GARDENS

## 3.2.1 Education and interpretation

**Botanic gardens and the advancement of knowledge**

The purpose of botanic gardens has varied significantly over time, ranging from their initial medicinal uses, to a philosophical role in searching for universal truths about the universe in the Age of Enlightenment, to their current role in plant conservation. Education in the context of botanic gardens has often focussed on the quest to understand and harness the vegetable kingdom for human benefit. When George Francis wrote in 1849 of the need for a botanic garden in Adelaide to act as 'a nucleus from which emanate a knowledge of plants and a taste for botanical and horticultural pursuits' he reflected the contemporary role for botanic gardens in 'planting' colonies.

Universities, as centres of learning, often maintained a physic or botanic garden, and those at Padua (1545), Pisa (*c.*1543), and Oxford (1621) are perhaps the best known examples. In such gardens, the teaching of botany and medicine and their constituent facets, such as pharmacology, was paramount. The link between medicinal properties of plants, so important in educating those in medical training, gave way during the eighteen century to a new quest for knowledge about the universe and its plant world. Systematic botany as a formal discipline grew rapidly, and botanic gardens were at the centre of imparting such information to professionals and the public alike. Much of this was accomplished by careful labelling of plants within the various botanic gardens, but was also achieved through a consolidation of botanic gardens as centres of learning through programmes of research and exchange of knowledge (by personal correspondence and through an ever-increasing flow of publications).

Within the realm of educational institutions, universities and colleges were not the only beneficiaries of botanic gardens. During the 1820s–50s the creation of mechanics' institutes and schools of art in Britain—and their emulation in the colonies—all promoted the advancement of their members. In the field of horticulture, this was also seen in the widespread formation of gardeners' mutual improvement societies, a process transferred to the colonies from the late 1850s. Although not custodians of botanic gardens, the ethos of self improvement espoused by the promoters of such groups—including social reformers such as Edwin Chadwick and J.C. Loudon—was well served by botanical study specifically and natural history more generally. In the mid-nineteenth century such education was often linked with moral improvement. The notion of 'taming the wilderness' was often invoked to describe a physical transformation in the Australian colonies, but this sentiment applied more subtly to a social transformation desired by many colonists. This was apparent in the tone of Francis's suggestion in 1849 that within a botanic garden, a 'museum of general curiosities, minerals and objects of Natural History ... with the native animals, alive, would afford a place of rational amusement, and of instruction to the young'. 'Rational amusement' was indeed at the heart of initial educational objectives in the Adelaide Botanic Garden, as was the advancement of horticulture.

**The advancement of botany and horticulture**

Initially, Francis fulfilled educational objectives at Adelaide Botanic Garden through plant labelling and the systematic arrangements of plants on a geographic basis. Although widely espoused in Europe, this arrangement was unusual in a contemporary Australian context and placed Adelaide in the forefront of intellectual thought applied to botanic garden design. A

botanic garden, Francis argued, 'instructs the colonists in the productions of the adopted country'. He delivered many lectures to local institutions—such as his widely publicised lecture on acclimatisation in May 1862—and contributed numerous educational articles to local journals such as *Farm and Garden* (1858–63) and the *Register* newspaper (1856–65). He also assembled a personal library of horticultural and botanical books and journals, and drew on these in much of his work, but public consultation was not available on any formal basis.

The *Catalogue of the Plants Under Cultivation in the Government Botanic Garden, Adelaide, South Australia* prepared by Francis was published in 1859. Intended to facilitate correspondence and plant exchanges, it was also published in order 'That the Colony may know the number, variety, and value of the plants introduced in the first three years of the establishment of the garden [and] ... That the student and the visitor may be assisted in their examinations [i.e. of the plants]'. Francis considered horticultural education an important task: on his arrival in 1849 he was 'astonished at the ignorance of the generality of gardeners here' and saw the establishment of a botanic garden of importance in 'extending a taste for gardening'. Francis, a committee member of the South Australian Floricultural and Horticultural Society (established 1856), saw ornamental horticulture as a focus for public appreciation of a botanic garden. The introduction of exotic plants—'adding to the beauty and riches of the Colony'—Francis saw as necessary to augment 'the paucity of [indigenous] ornamental plants'. Seed and plant distribution from a Botanic Garden could also enrich other sites, Francis observed, although this role was not implemented fully until Schomburgk's directorship, by which date Moore in Sydney and Mueller in Melbourne were freely endowing public parks and gardens with seeds and plants.

**Botanical education**

Like Francis, Schomburgk saw the Garden as a living museum and class room. In this sense, the Botanic Garden complemented other cultural institutions—Art Gallery, Library, Museum, Mechanics Institute, Exhibition Building, and University—that were gradually being developed along North Terrace. Schomburgk was able to reap the benefits of prosperous economic times and to build on the substantial legacy of his predecessor. Labelling was improved, the library collection was expanded (building on Francis's collection, which Schomburgk acquired), and revised editions of the *Catalogue* were published in 1871 and 1878. Schomburgk also instituted a tradition of published annual reports, often containing appendices of general interest, and these were complemented by published plans of 1874 and 1890.

Many of Schomburgk's major developments had specific educational objectives, especially the Class Ground (laid out and planted during 1872–76: see Section 4.1.11) and Museum of Economic Botany (opened 1881: see Section 4.1.26). The Class Ground was based on the long tradition of system gardens, displaying plants according to their botanical affinities—for this Schomburgk adopted the natural system of Adrien de Jussieu for the arrangement. Economic botany underpinned European paradigms of colonisation. In addition to such uses as food, beverages, fodder, medicines, and construction materials, plant products then provided a diverse range of items that are now made with such products as synthetic fabrics, dyes, plastics, and metal alloys. Exhibits included plants yielding fibre, dyes, gums and resins, displays of cereals, olives and grape products, a carpological (fruit) and toxicological collection. Paul Foelsche contributed a collection of plants used for medicines, food and drink by Aboriginal people near Darwin. This collection was important in an era when most people viewed Aboriginal use of plant material with indifference and when ethnological displays in the South Australian Museum were very limited in their scope. Schomburgk also displayed timber specimens in a 'Wood Museum' (in a building used by Francis for botanical specimens—see Section 4.1.17) in an era when specialised industrial and technological museums were being established by colonial governments in Melbourne (1871) and Sydney (1881).

Educational objectives in the Garden stagnated during the directorships of Holtze, Bailey, and Greaves, due in part to strained financial times. Holtze pragmatically supported the Adelaide Demonstration Orchard, with its objective of demonstrating a range of varieties and clarifying nomenclature. His Board also supported the publication of a jubilee history and guide to the Adelaide Botanic Garden in 1907 (fifty years after its official opening), the first popular guide to the Garden. Bailey was keen on using the Garden as an exemplar for home gardeners, to

demonstrate what plants (especially trees) would thrive in the Adelaide climate. He also re-commenced the publication of annual reports, often illustrated with tree portraits.

Lothian was particularly active in using the Garden for horticultural education. He was a prolific lecturer, broadcaster, and writer, and ultimately developed a dedicated Horticultural Garden (1968: see Section 4.1.18) as a model for emulation by home gardeners. Lothian re-assembled and re-vitalised the library collection, continued the publication of illustrated annual reports, and published several popular gardening books, most notably *The Practical Home Gardener: A Guide to the Cultivation of Plants in Australia, with Special Details for the Drier Regions* (1955) which ran to many editions. In writing for a gardening audience, Lothian's output was comparable to fellow curators and garden managers, including Charles Gardner (1896–1970), Government Botanist and Curator of the Western Australian Herbarium; Ernest Lord (1899–1970), curator of parks and gardens (1935–41) at Horsham (Vic.) and founding editor (1947–49) of *Your Garden*; Harry Oakman (1906–2002), manager of the parks department of Brisbane City Council (1946–63); and Lindsay Pryor (1915–1998), Director, Parks and Gardens, ACT (1944–58), who each highlighted local or regional climates. Lothian also oversaw the publication of a new guide in 1955 (to mark the 100th anniversary of the Garden's commencement), the first for almost half a century. This was accompanied by a popular guide and catalogue, and complemented by a published plan (1953).

A new guide to the Garden was published in 1975, by which date public appreciation of the history of the site—and the need to conserve and explain this rich legacy—was widely acknowledged. Interest in the history of Adelaide Botanic Garden was aided by re-publication of Barbara Best's biography of Francis (1986) and Pauline Payne's research and PhD thesis on Schomburgk (1992). Brian Morley did much to stimulate this interest, and oversaw the publication of two new souvenir publications (1986 and 1988).

As part of a wider reappraisal of the roles of cultural and scientific institutions, a focus on learning replaced information. A generation of educators searched for ways of using the garden to facilitate learning for visitors in a manner that was diffused, informal, and enjoyable. The most recent educational and interpretative initiatives in the Adelaide Botanic Garden have been highlighted in the Strategic Plan 2002–2005. In addition to traditional knowledge about plants, issues facing local and global audiences, especially creation of more sustainable urban environments, ecologically sustainable horticulture (including water conservation programmes), and conservation of biodiversity will be highlighted. Outreach to arid areas will complement the role of the city site. In this, the Adelaide Botanic Garden will seek to 'enrich South Australia's social capital and cultural fabric'.

## 3.2.2 Experimentation

**Francis and the acclimatisation movement**

Upon arrival his arrival in South Australia in 1849, George Francis wrote to the Lieutenant Governor about the value of establishing a botanic gaden in Adelaide. He mentioned several objectives including education (see Section 3.2.1) and recreation (see Section 3.2.4). He also stressed the need for the 'vegetable riches of other countries, to be acclimatised and distributed'. Two acres (0.8 ha) were put aside within Adelaide Botanic Garden by Francis for an experimental and fruit garden, and he built on considerable local efforts in plant acclimatisation. Many of the colony's early horticulturists had trialled plants of economic and ornamental value, and Francis was able to build on and extend the knowledge of those plants best suited to the Adelaide Plains. Samuel Davenport (1818–1906), who had arrived in Adelaide in 1843, was another keen acclimatiser who saw economic benefits for the colony in plants suited to the local climate. He published *Some New Industries for South Australia* (1864), *The Extraction of Scent from Plants* (1864), and *The Cultivation of the Olive* (1870), and undertook much of his work through the Chamber of Manufactures and the Agricultural and Horticultural Society of South Australia.

Francis was instrumental in the establishment, in 1862, of the Acclimatisation Society of South Australia and acted as its secretary. This followed his widely reported lecture to the

Philosophical Society, soon published as *The Acclimatisation of Harmless, Useful, Interesting and Ornamental Animals and Plants*. The Society was chiefly concerned with animals—perhaps Francis and others thought that plants were well enough covered in the various colonial botanic gardens and through private exertions. Francis had already introduced animals into the Adelaide Botanic Garden in the period prior to the establishment of Adelaide Zoo (1878), although this was as much for 'rational amusement' as for acclimatisation. Environmental problems caused by some animal introductions became manifest within a short time, but issues with weed species of plants took longer to recognise.

Francis also saw the Botanic Garden in economic terms as 'adding to the beauty and riches of the Colony'. He wrote of 'the almost total neglect of those plants of other and corresponding climes, which yield so large a return', claiming to be 'anxious to know what the country naturally produces'. If the Botanic Garden demonstrated 'what plants of other climes will flourish here' the colonist would be enabled 'to turn his attention to the culture of certain of them with more advantages to himself'. Yet in the decade of his superintendency, Francis had little time or funding for anything much beyond ornamental experimentation.

**Schomburgk's experimental garden**

Richard Schomburgk built on the foundation laid by Francis. Some earlier initiatives, such as the move by Francis to introduce the Sultana grape, had their successful conclusion early in Schomburgk's curatorship. Cuttings obtained from the Cape of Good Hope colony in 1867 were propagated at the Garden and nearly 1,800 propagated cuttings were distributed in 1868–69. Sultanas were well-established within a short time and with Zante currants, could produce a profitable dried fruit product at a time when much dried fruit was imported into Australia. News in 1880 of the spread of the vine disease *phylloxera* caused considerable concern. Schomburgk became part of the remarkable international scientific network researching the problem and developing control procedures. *Phylloxera* resistant root-stock was obtained from California for propagation in Australia and New Zealand.

In the wake of self-government for South Australia (1856), the colonial government was greatly concerned with economic development. With small farmers playing a relatively influential role in the legislature, Schomburgk correctly anticipated that there would be support for research into crop plants suitable for South Australian conditions. He catered for these concerns most directly by the establishment in 1867 of an Experimental Garden 'for the cultivation of medical, industrial, and fodder plants, suited to the climate' (see Section 4.1.6) and a nursery, from which seeds, cuttings, and plants could be exchanged or otherwise distributed. Schomburgk's 1871 catalogue—like that of Francis (1859)—and of later revisions (e.g. 1878), and yearly updates (via annual reports), were a key means of facilitating plant exchanges.

Schomburgk paid special attention to grasses (including cereals) and in the first year he reported having imported 162 different species of grasses for trials, including those potentially suited to lawns such as couch and buffalo. He lectured on grasses and pasture plants to the Chamber of Manufactures in 1873, and published this in pamphlet form in 1874. Another large group of utilitarian plants trialled in these years were the pulses and species suitable for oil, fibre, medicinal, and culinary uses. The fodder tree Tagosaste (*Chamaecytisus palmensis* now *Cytisus ploleferus*) was also introduced in this period. Sorghum/millet trials were aided by strong links with agricultural researchers in the United States. These links were also important in the study of wheat varieties suitable for South Australian conditions. Trials of wheats, such as the South African variety Du Toits at the Botanic Garden and distribution of samples to farmers, was particularly important in the period up until 1883 after which the focus shifted to the newly established Roseworthy Agricultural College (the first of its kind in Australia) and work in the agricultural societies. Schomburgk was one of many people who were enthusiastic about the possibility of establishing a sericulture industry, an idea that was also supported by the South Australian government. However, by 1887 the Director reported that demand for mulberry trees planted in the Botanic Garden had been quite limited as growers did not find sericulture sufficiently profitable. Schomburgk continued the work of his predecessor in promoting of olive culture. He also promoted the potential of the cultivating plants for the perfume industry,

and plants which could be used in the tanning industry, of which wattle bark from *Acacia pycnantha* proved to be the most important economically in South Australia.

Schomburgk also expanded horticultural experimentation with the creation of an Australian Forest (1868) and Palm Garden (1870)—to highlight two major surviving achievements—and also in his broad-scale planting of Botanic Park (1874). Schomburgk's fine legacy of annual reports also comunicated these and a myriad other experiments in ornamental horticultural and economic botany to the legislature and the public.

The role of agricultural experimentation was largely transferred from the Botanic Garden with the creation of Department of Agriculture (*c.*1881), to Roseworthy Agricultural College (1885), and the Central Bureau of Agriculture (1888). The exception was the creation during Holtze's directorship (and with his keen support) of the Adelaide Demonstration Orchard in 1907. A Type Orchard had been established at Mylor, in the Adelaide Hills in 1899 to trial and display a comprehensive range of fruit trees, but the new facility was intended to demonstrate and educate the public about varieties not suited to the Hills' climate. This orchard, supplemented with vines, survived until the 1930s. This role was also taken up by the nursery trade and, as with acclimatising and introducing ornamental plants, the commercial impetus often meant that information and plants could be introduced and distributed more efficiently through private initiative than government action. Where the Botanic Garden still maintained a vital role was through the use of its living collections as highly visible trial grounds, for example, in the introduction of arid plants suited to garden use in the Mallee Garden from 1953 (see Section 4.1.24). Increasingly though, experimenation has given way to display and interpretation of work trialled elsewhere.

### 3.2.3 Botanical research

**Early European botanical exploration**

The earliest South Australian botanical observations and collections by European-trained botanists were made in 1802. Robert Brown (1802), botanist with Flinders on the *Investigator*, approached along the coast from the west. Their party met Leschenault de la Tour, botanist with Baudin on the *Le Géographie* (approaching from the east) at Encounter Bay. Leschenault's plants are now at the Jardin des Plantes, Paris, and plant descriptions by Brown are contained in his unfinished *Prodromus Florae Novae Hollandiae et Insulae Van Diemen* (1810), the first Flora of Australia. Little was then done for several decades. Charles Sturt made observations of vegetation along the Murray (1828–31); Edward John Eyre (1840–41) on his expeditions into Central Australia made some collections but these were lost; and Sturt (1844–46) observed the nature and vegetation of Central Australia, and included a botanical appendix (by Brown) in his *Narrative* (1849).

The first generation of European-trained botanists to settle in South Australia arrived in the 1830s–40s. John Bailey was South Australia's first Colonial Botanist (1839–41), but little tangible research was undertaken. Hans Hermann Behr, a physician and naturalist, collected widely in Australia. Behr's 'On the Character of South Australian Flora in General', published in Hooker's *Journal of Botany* (1851), was perhaps the first work to consider the definition of geographical plant-regions in South Australia, proposing grass-land (including 'pit-land' and dried river beds) and scrub (including pine forest and sand plains). Behr's German compatriot, Ferdinand Mueller, arrived in Adelaide in 1847 and within months had formulated a plan to prepare a 'Flora of South Australia'. He botanised at every opportunity although in the absence of a herbarium in Adelaide had to send specimens to Germany for taxonomic description. In 1852 Mueller's paper 'The Flora of South Australia', which displayed the fundamental features of his subject and treated the subject comparatively, was published in Hooker's *Journal of Botany*. Armed with his collection of South Australian herbarium specimens, Mueller left to become Victoria's Colonial Botanist in 1852.

**Botany at the Adelaide Botanic Garden**

George Francis, on his appointment as inaugural superintendent of Adelaide Botanic Garden noted the vacuum in South Australian botanical science. He wrote to William Hooker of occasional 'ramble over the hills and scrub botanising'. 'But', added Francis, 'the flowers remain many of them strangers, and small, stiff and sombre strangers they must remain, for we have no book on our general Flora, except for the very imperfect one of the *Prodromus* of Brown, at least I know of none other.' (The 'small. stiff and sombre' sobriquet appears to refer to dried and pressed herbarium specimens.) Although Francis wrote and spoke of the scientific usefulness of Adelaide Botanic Garden, systematic botany was not an early priority. There was little time and few resources for collecting, no adequate storage for herbarium specimens (apart from the superintendent's residence), and no facilities for research. Francis did, however, commence a botanical library, many items from which are still held in the library of the Botanic Gardens of Adelaide.

Other collectors and botanists worked to extend knowledge of the local flora. Mueller accompanied Babbage as botanist on an expedition to the 'North-western Interior of South Australia' in 1858, and prepared the botanical appendix to John McDougall Stuart's *Journals* (1864) describing plants in the country from the Finke River to the MacDonnell Range. The *Flora Australiensis* prepared by George Bentham & Ferdinand Mueller was issued in volumes from 1863–78, and this provided a new benchmark for Australian botany. Surveyor George Goyder and naturalist Frederick Schultze undertook some botanical exploration of the colony's Northern Territory during the survey of Palmerston (now Darwin) in 1868–69. This latter work was undertaken following the appointment of Richard Schomburgk as director of Adelaide Botanic Garden, whose *Flora of South Australia* (1875), although of less interest from a botanical viewpoint than for his comments on acclimatisation and economic botany, nevertheless constituted the first flora of the province. Schomburgk proposed three geographic vegetation regions: scrub-land, grass-land, and intra-tropical. His species list, however, was mostly from Bentham & Mueller, and he concerned himself far more with economic botany than systematics.

Botany received its greatest boost in South Australia with the appointment in 1875 of Ralph Tate to the inaugural Elder Chair of Natural Science at the University of Adelaide. Tate produced several papers on the local flora before publishing his *Handbook of the Flora of Extratropical South Australia* in 1890. His Sydney compatriot J.H. Maiden wrote of Tate that 'For many years he was incomparably the most distinguished botanist in South Australia ... He largely added to, by original research, the plants found in South Australia. He purified records by means of his critical faculty which led him to examine all things, while he consolidated the flora as lawyers do the statutes of a country.' With the focus of systematic botany thus devolved onto the University, Schomburgk was free to concentrate on economic botany, most splendidly seen in the establishment of the Museum of Economic Botany (1879), which also doubled as a store for the Garden's collection of herbarium specimens. Schomburgk also added largely to the Garden's library, acquiring many botanical monographs and journals.

Under Holtze, Bailey, and Greaves, botanical research at Adelaide Botanic Garden was not viewed as a priority. The library collection was transferred to the Public Library of South Australia and the herbarium collection was largely dispersed. During this period (1890s–1940s) the state's leading botanist was John McConnell Black, whose *Flora of South Australia* (1922–29) superseded Tate's *Handbook*.

**Creation of a State Herbarium**

Lothian revived interest in botanical research at the Adelaide Botanic Garden soon after his appointment as director (1948). He repatriated the library collection and largely added to it, and established a herbarium in 1954, that incorporated earlier herbaria, particularly those established in the Adelaide Botanic Garden, the Botany Department of the University of Adelaide (including the extensive J.M. Black Herbarium), and the South Australian Museum. (More recently the collection of the Waite Agricultural Research Institute has been incorporated.) Lothian was also instrumental in the building of a dedicated herbarium building (1966: now replaced by the National Wine Centre).

In 1999, the State Herbarium and library were re-housed in the newly created Plant Biodiversity Centre within the Adelaide Botanic Garden. This shift also saw a strengthening of ties with the wider scientific and conservation programmes in the new Directorate of Science & Conservation within the Department of Environment & Heritage. Current projects include an electronic flora of South Australia to update the last published edition (1986), research on rare and endangered plants, maintaining a census of South Australian plants (to reflect ongoing taxonomic changes), and appropriate storage of herbarium specimens and associated records, reference, and research material. The herbarium is also a centre for knowledge and information on South Australia's naturalised flora.

### 3.2.4 Recreation and leisure

**Early recreational and leisure objectives**

In December 1849, within three months of his arrival in South Australia, George Francis had written to the then Lieutenant Governor of South Australia, Sir Henry Fox Young, about the value of establishing a botanic garden, including recreational benefits:

> *A Botanic garden, especially if a museum of general curiosities, minerals, and objects of Natural History, could be added to them with the native animals, alive, would afford a place of rational amusement for the public, and of instruction to the young, the more especially as there is at present no public garden, also place of general promenade.*

In a later letter (1851), Francis described a botanic garden as 'affording a healthful and useful recreation to the inhabitants if Adelaide'. Francis spoke with the authority of one who had travelled widely and who had witnessed at first hand the provisions for public recreation, leisure, and amusement in British and Continental European gardens. When the Adelaide Botanic Garden was established on its present site in 1855, a report of the Agricultural and Horticultural Society of South Australia concluded 'Your Committee are led to believe that this Establishment, as a means of providing healthful recreation and amusement to the citizens, and of providing a knowledge of a department of science of great interest to the Colonists at large, will be hailed with feelings of general satisfaction.'

Adelaide was well supplied with public park lands. Light's plan of 1836–37 had included rings of parkland encircling the two city blocks of Adelaide and North Adelaide. Natural features governed many features of the design. The manner in which the city grids were separated by the River Torrens valley ensured that a botanic garden for the city—envisaged in the initial plan—was located close to the river and therefore close to the city centre. Although subsequently developed on a different site, the relationship of the location to the city was not dramatically altered. Yet by 1855 the landscape of the parklands had not been developed and so this land catered for recreation only in a very general sense. Adelaide's squares had received some attention by landscape gardeners (Francis included), but these were jewel-like spaces, not conducive to extensive recreation. The Botanic Garden thus filled a recreational need for Adelaide's citizens, many of whom lived in comfortable distance of the site at this early date.

Apart from representation by the Agricultural and Horticultural Society and the colonial government, the Committee of the Botanic Garden also included representatives of the City of Adelaide Council. The Council had the recreational needs of its citizens in mind when it proposed the establishment of a public promenade or esplanade along the north side of North Terrace, extending east as far as Frome Road, close to the new Botanic Garden site, even though this land remained under state Government control until 1913 whereupon it was legally transferred to the Council. Following initial opposition to the new site, the Council embraced the new site in 1855:

> *… the Council conceiving that the Esplanade presents one of those healthful and agreeable places of public resort which should be encouraged in large towns ... and incidentally it would afford a very convenient and pleasant link of access to the gardens and a lasting and permanent improvement to the City. The Council*

*entertains the desire to carry a similar Esplanade to be planted with trees, all along the terrace as might safely admit.*

Recreational objectives for Australia's botanic gardens—which grew in number with the establishment of gardens in the colonial capitals Sydney (1816), Hobart (1821), Melbourne (1845), Adelaide (1855), and Brisbane (1855), and those in Victorian provincial centres such as Portland (1851), Geelong (1851), and Ballarat (1855)—were shaped in part by developments in Britain's burgeoning public park movement.

**Public parks and gardens**

The public park was a major contribution of the Victorian age to garden and urban history, yet open areas for public use were not a new idea. Town squares had been associated with urban development throughout its history, and large hunting parks and commons had also provided general precedents. However, it was not until the nineteenth century that land set widely aside in urban settings for public use. The word 'park' had also been used to describe the settings or domains of large residential estates, but this was almost exclusively for private use. Several of the royal parks formed some of the earliest examples of urban parks for public use in Britain. London's Hyde Park was opened to the public by Charles I (*c.*1635), and this was followed two centuries later by public access to St James's Park (1828) and Regent's Park (1838). Direct knowledge of these examples was brought to South Australia by Thomas Allen (1787–1868) who worked as a gardener and landscape gardener for the royal establishment (1806–31) before his emigration in the 1830s.

Amongst Australian public parks, Sydney's Hyde Park (1810) was by many years the earliest, and given its early date of reservation, amongst the earliest in the British-speaking world. In the Port Phillip District, Superintendent La Trobe demonstrated a particularly enlightened vision for parkland, especially in the land he reserved from 1839 for 'the public advantage and recreation'. This led to the creation of the public parks and gardens such as Fitzroy Gardens (1848), Carlton Gardens (1855), Flagstaff Gardens (1862), and Treasury Gardens (1867) that still form such a distinctive feature of Melbourne's urban form. In South Australia, George Goyder, Surveyor-General from 1861, required the provision of 'parklands' for every new town surveyed in the colony, in part to enable both tree planting and recreation.

**Recreation and leisure at Adelaide Botanic Garden**

The 'Regulations for Admittance', adopted for the opening in 1857 and published by Francis in the 1859 *Catalogue*, gave a clear idea of the freedom of access that the public could enjoy without charge. The Garden was open on weekdays (Saturdays excepted) from nine until sunset, and on Sundays from two until five o'clock. (By way of qualification, the regulation added 'Children not attended by a proper protector, and persons accompanied to the gate by a dog, cannot be admitted.')

The initial emphasis on floriculture, an enthusiasm for ornamental buildings and features (such as fountains and the conservatory), the inclusion of aviaries for birds by 1858, and the provision of seating, all indicated a keen appreciation by the Director and his Committee for leisured appreciation of the Garden. Zoological exhibits, although accompanied by the rhetoric of acclimatisation, were clearly intended initially for the 'rational amusement' of visitors—aviaries were also introduced into the botanic gardens in Melbourne (1858) and Sydney (1860). Francis introduced musical performances into the Garden in 1857, although this use fluctuated and was not formalised until the introduction of a bandstand, as happened at the botanic gardens in Melbourne and Sydney in 1858, and in Melbourne's Fitzroy Gardens (1862). The siting of the exhibition grounds adjacent to the Botanic Garden (in Frome Road) meant that flower and horticultural shows were not staged in the Botanic Garden, unlike Melbourne and Sydney. In fact, Francis distanced himself from staging such third-party activities within the Garden, however closely they may have matched his overall objectives, fearing a proliferation of requests.

On assuming the directorship in 1865, Richard Schomburgk continued and enhanced the recreational objectives commenced under his predecessor. He immediately instituted

improvements to the condition of walks and was able to increase their extent by inclusion of new areas to the north and west. He enhanced ornamentation within the Garden, at a detailed level by the incorporation of statuary and in a wider sense by the addition of popular new features such as the Rosary (1867: see Section 4.1.20), Victoria House (1868: see Section 4.1.34), and Palm House (1877: see Section 4.1.32). The zoological collection was greatly augmented, especially of the larger mammals that Francis had begun to add by the late 1850s. The re-establishment of this collection in the northern portion of the Garden by Schomburgk gave a new focus for recreation north of the Main Lake (see Section 4.1.12). Problems of maintaining zoological collections within institutions primarily devoted to botany were shared by other Australian botanic gardens. After initial enthusiasm, zoological exhibits were removed from Melbourne and Sydney in the 1870s–80s at a time when acclimatisation societies were transforming into zoological societies, with aspirations for their own dedicated zoos.

The development of Botanic Park from 1874 gave Schomburgk great scope to provide for recreation safely away from the confines of the intensive horticulture of the Botanic Garden (see Section 4.2). His design contrasted formal areas (such as the central 'Reserve for Horticultural Exhibitions and Music' and the carriage drive) with sweeping pedestrian paths through the park setting catering for more active visitors. Areas were also designated for an 'Archery Ground' and two 'Croquet Lawns'. The addition of Botanic Park formalised the link between the Botanic Garden and an adjacent park in much the same way as Eastern Park (developed from 1874) and Geelong Botanic Gardens were linked. This linkage also existed at the botanic gardens in Melbourne, Sydney, Hobart, and Melbourne with their adjacent government domains. Botanic Park also gave great scope for formal and informal public assemblies: in 1935 R.H. Pulleine recalled: 'Here in the circuses provided for in the original plan, meetings of all grades of political and social opinion are held on Sunday afternoons.'

The popularity of Adelaide Botanic Garden and Botanic Park for recreation and leisure continued under subsequent directors. Holtze, Bailey, and Greaves all laboured under restricted budgets compared with the predecessors, but public enjoyment figured prominently in their thinking and budget allocations. Holtze relaxed the adherence of regulations in Botanic Park, allowing ladies and children to sit on the lawns, and admitting picnics and perambulators. The experiment, he reported in 1893, had been pleasing to him, and 'I doubt not, more pleasing yet to the public'. Bailey responded to contemporary enthusiasm for public parks and gardens, and transformed large areas of the Botanic Garden into attractive lawn areas, fringed with shrubs and dotted with trees. He even created a new lawn for visitors at the North Terrace Gate where the Main Walk had previously run (and was subsequently reinstated by Greaves) (see Section 4.1.23). Bailey's directorship coincided with the beginnings of professional organisations for garden curators and managers, tending to enhance recreational objectives, often at the expense of botany. The professional separation of botanical research from garden management, prevalent in the 1920s–30s, reinforced this new emphasis in Australia's botanic gardens. At Adelaide, this was perhaps most visibly demonstrated by the inclusion of tennis courts in Botanic Park, commenced during the Holtze era and clearly shown on the 1928 plan.

The appointment of Noel Lothian in 1948 coincided with an upsurge in the South Australian economy. The expansive years of Playford's premiership (1938–65), following the austerity of the Second World War (1939–45), profoundly changed the state, and the advent of post-war modernism provided an increasing focus on North America rather than Britain. The increasing professionalisation of management of parks and gardens, especially those in the public ownership, coincided in a renewed interest in recreation. During 1955, moves were made to establish the Australian Institute of Parks Administration, an organisation that had begun as the Victorian Tree Planters' Association in 1926. The new national body was established in 1962, and the shift from tree planting to parks administration signalled a transition in the upper levels of the profession from practical horticulture to managerialism. It was also accompanied by an emphasis on planting requiring low maintenance and ease of selection, aspects not well suited to the scientific basis of botanic gardens. In the wider sphere of public parks and gardens, a shift in emphasis was signalled in 1966 with the inclusion of the word 'recreation' in the renamed Australian Institute of Parks and Recreation. Lothian firmly resisted intrusions into the area under his control, and by the early 1950s the tennis courts had been removed from Botanic Park.

More recently, directors have been confronted with an increasingly relaxed attitude to public spaces, and the special qualities of the Botanic Garden have often been overlooked in an age of jogging and conspicuous exercise. Botanic Park has provided an appropriate outlet for such activities, and has been sufficiently expansive to allow provision of bike paths, unthinkable in the confines of the original Garden. Most recently, the Strategic Plan 2002–2005 has a vision of enriching South Australia's 'social capital and cultural fabric', to be achieved in part by promoting recreation and leisure in the Garden.

# 3.3 LANDSCAPE DESIGN

## 3.3.1 Siting within the city

**Figure 3.1** *Photograph of the North Terrace gates and gatehouses, with Agaves in flower, and unplanted expanses of the east Park Lands (Rundle and Rymill Park) behind.*

The original plan for Adelaide, a town surrounded by parklands, identified an area within these parklands for a botanic garden, thus firmly fixing the concept of a botanic garden located on the River Torrens banks and within the parklands in the public consciousness. All of the sites mooted for the Adelaide Botanic Garden, prior to its final location, shared this characteristic, although the first site proposed lay to the west of both North Adelaide and Adelaide and was more removed from the town grids than the final site (see Section 2.2.1). Unlike Sydney, Hobart, and Melbourne, the Adelaide Botanic Garden was not contiguous with Government House and its domain.

The land in which the Botanic Garden is situated was designated Government Reserve, leaving it open for appropriation by government departments. Daly observed 'First Adelaide Hospital, then the Lunatic Asylum were built without specific surveys … It was not until the Botanic Garden was finally allocated a site with boundaries in 1855 that they were also automatically fixed for both the Hospital and the Lunatic Asylum.' The relationship with the hospital was to prove particularly fraught from the beginning, with additional parklands alienated as the medical services grew.

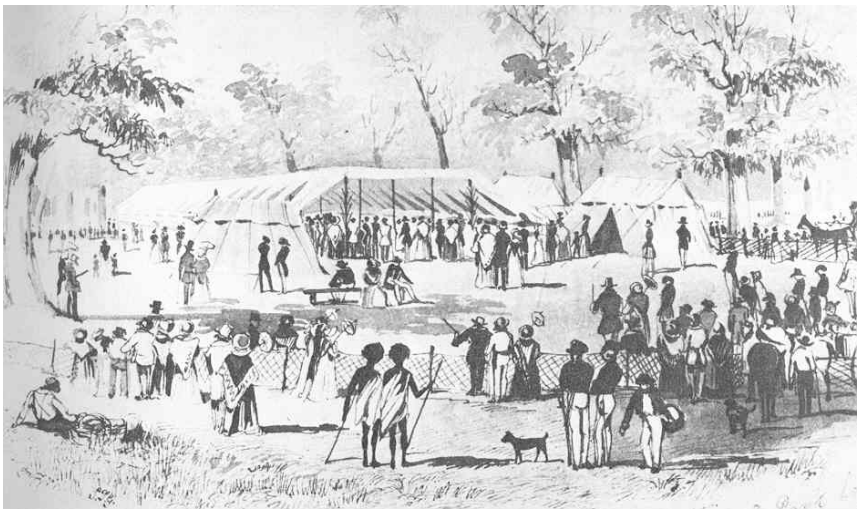


**Figure 3.2** *A gathering of the South Australian Agricultural and Horticultural Society on the Frome Road land. Note the mature eucalypt sp trees, and the Aboriginals in the foreground.*

The South Australian Agricultural and Horticultural Society occupied land on Frome Road entered via a gate from the Frome Road Bridge, and held shows there from 1844. An 1845 watercolour of an agricultural show gives an impression of the area in a relatively raw state. The Society's presence on the site and the pressure they brought to bear on the colonial Government assisted in the establishment of the Botanic Gardens in its current location. The Agricultural and Horticultural Society was a significant presence to the west of the Botanic Garden. An 1860 engraving of the exhibition building (proposed in 1856 and erected in 1859 with a government grant of £2,000) shows the nature of tree cover.

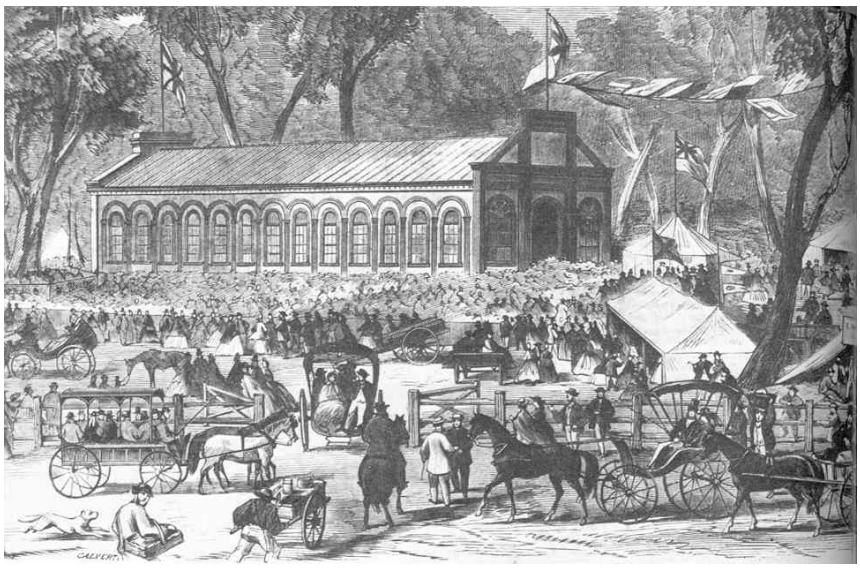


**Figure 3.3** *The South Australian Agricultural and Horticultural Society exhibition hall on the Frome Road land, from an engraving in 1860.*

The plan devised by George Francis, who had demonstrated skill and experience as a surveyor, bears signs of having been formed within a framework derived from a close reading of the landmarks of the grids of Adelaide and North Adelaide. Examination of the early town layout, bridges over the River Torrens, and high points in the generally flat topography suggest that Francis designed the Botanic Garden in reference to its surroundings. In this respect, it appears that Francis wished to emphasise the close relationship between the Garden as a part of the city as a whole, engaging on an intellectual as well as physical level (see Figure 2.8).

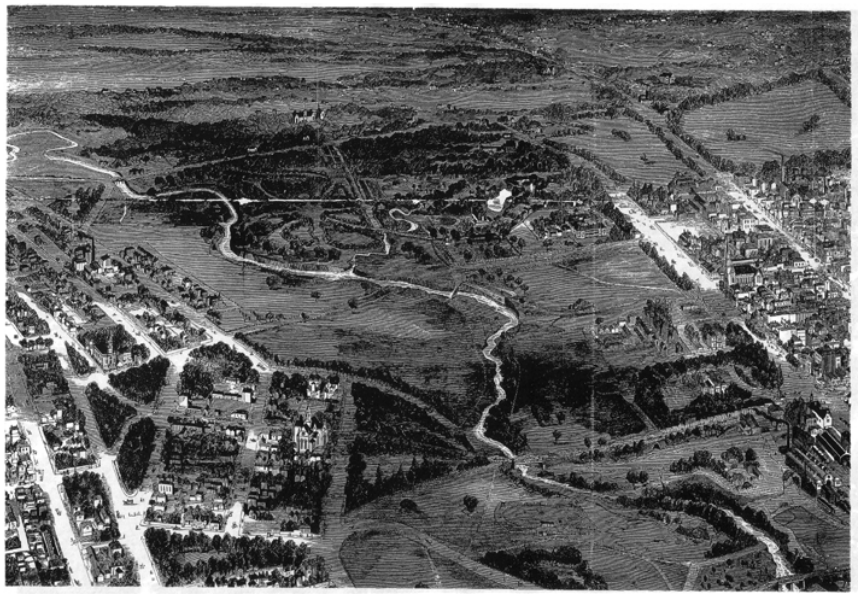


**Figure 3.4** *Extract of a 10 July 1875 lithograph panorama of Adelaide published in Australasian Sketcher, depicting the Adelaide Botanic Garden.*

The location fronting North Terrace makes the Botanic Garden a part of the North Terrace cultural precinct today. In the mid-nineteenth century the proximity to the Hospital, the Exhibition Grounds, and to a much lesser extent, the Asylum, placed the Botanic Garden in a context of public institutions. Government House, although not immediately adjacent, was relatively close by on the corner of North Terrace and King William Street, with the intermediate area later filled by the library, museum, art gallery and university. An early photograph taken from near the entrance to the Botanic Garden (looking out to the east and over what is now Rundle Park) shows the contrast of the relatively tamed environment of the Botanic Garden in comparison with the bare surrounding floodplain and parkland (see Figure 3.1). The enclosure of the entire Garden site with hedging, in 1860, physically defined the Garden as an entity and provided protection for the new plantings. The establishment of the University of Adelaide in 1874 and the opening of the Art Gallery in 1900 reinforced the character of the precinct as one of important cultural and government institutions. In this sense the Botanic Garden in Adelaide compares closely to that at Sydney where a line of early government institutional buildings borders the western extremity of the Domain and culminates with the Sydney Opera House at its north-western corner.

The alienation of land used as a Government Experimental Orchard (see Section 2.2.4) for the Hackney Tram Depot in 1908 meant land to the east of the Garden changed substantially in character. In 1985 when announcing the relocation of services, Premier John Bannon spoke of the 'major restoration of parklands' emphasising the importance of the concept of the parklands for the city of Adelaide. Similarly, the recent re-assessment of the appropriate use of the land occupied by the Agricultural and Horticultural Society in the nineteenth century signals a renewed appreciation for Adelaide's early town plan.

### *Rankings of cultural significance*

*High cultural significance*

- Adelaide Botanic Garden, for its key role as part of the Adelaide town plan conceived by Colonel Light
- For its role as part of a continuous line of significant government sites comprising the North Terrace cultural precinct.
- The planning of the Botanic Garden and Botanic Park is of historical importance for its emphasis of the close relationship between the Garden as a part of the adjacent Adelaide Parklands and the city as a whole.

### 3.3.2 Contemporary stylistic influences

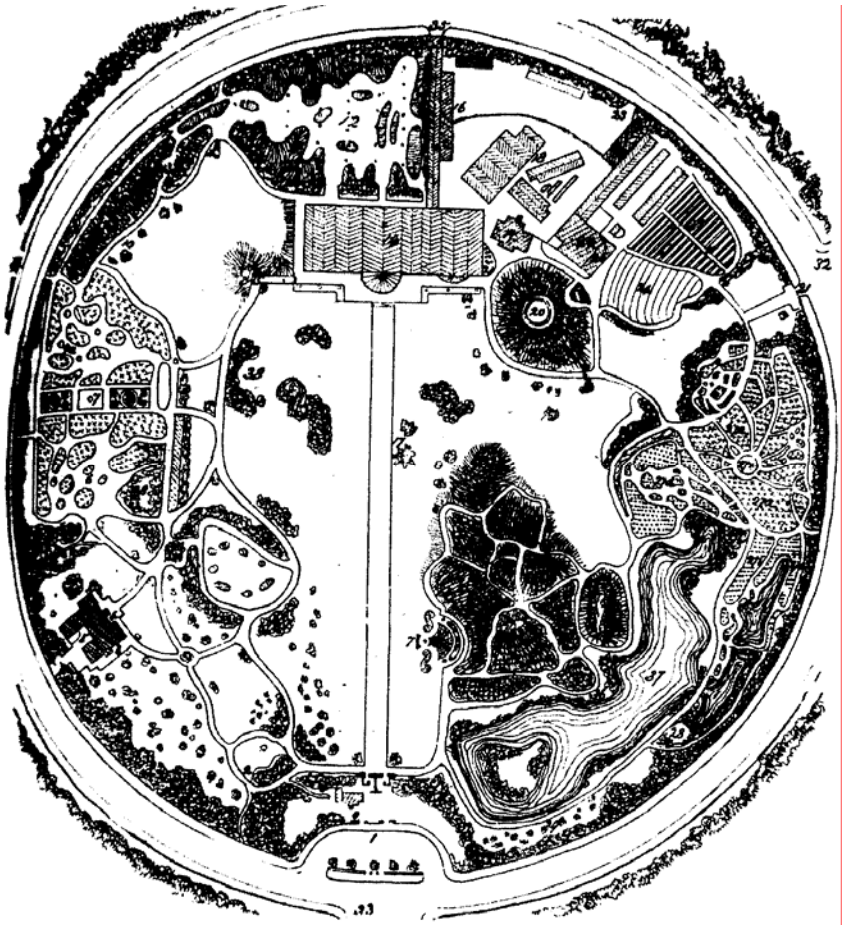


**Figure 3.5** *Conceptual birds-eye view of a theoretical botanic garden layout.*

#### The Francis plan

The Francis plan, drawn in 1864 (see Figure 2.8), is among the most remarkable designs implemented in Australia. Geometrically complex, its elaborate array of beds is underpinned by strong axial and geometric planning that centres on a point to the south of North Terrace, with a strong diagonal axis through a rise at the eastern side of the garden (Niobe Hill), and along the alignment of the former Asylum walling. Additional cross axes intersect the main central axis, a device that accentuated views to features within the Garden. Within this formal framework Francis employed the use of a series of circles or ovals, with interlocking shaped beds in the interstices. Stylistically the design could be termed formal *rococco* and there are few comparable mid-nineteenth century designs executed in Australia. Several cemeteries exhibit schemes that used interlocking shapes—Boroondara in Melbourne and the Wesleyan Section of Rookwood in Sydney both had designs that were based on a tear-drop-like pattern but neither possessed the complexity of the Adelaide design. The early garden at Rippon Lea, Elsternwick, Vic. (*c.*1870–82), epitomised by photographs taken in 1880, displayed a complex array of circular beds, which were swept away in William Sangster's re-working of the gardens in 1882–83.

**Figure 3.6** *Photograph looking eastwards across the Main Lake, towards the conservatories (now demolished), and the Adelaide Hospital buildings (now demolished).*

Francis's experience as a botanist, surveyor, and author was in the milieu of the botanical and horticultural world in London of the 1830s–40s. He contributed to Loudon's *Magazine of Natural History* and was conversant with Loudon's other publications on gardening. A number of the individual arrangements of beds within the overall plan of Adelaide Botanic Garden are in the Gardenesque style, and similar to designs published by Loudon in his *Gardener's Magazine* and *Encyclopaedia of Gardening*. The use of the circle as the principal shape for garden beds was favoured by Loudon and many early nineteenth-century gardeners, and was a mode suited for the display of collections of plants.

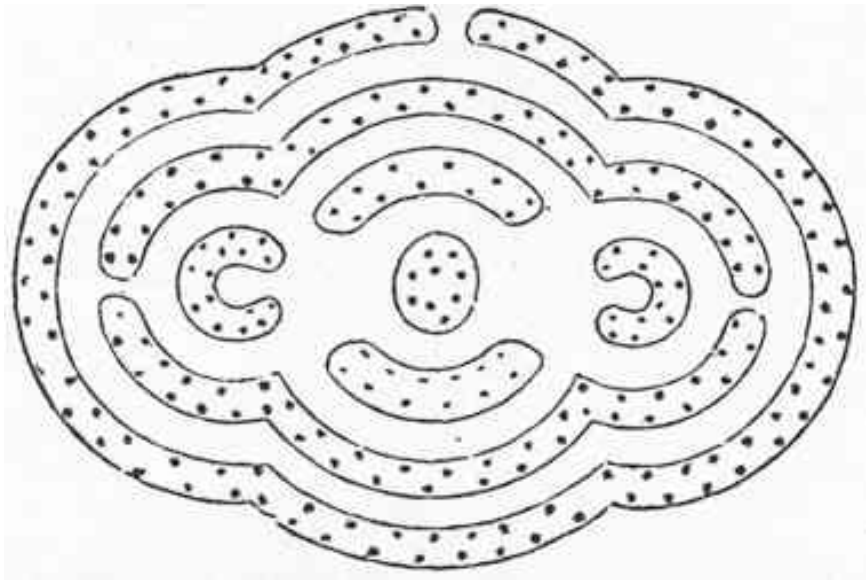


**Figure 3.7** *Plan by J.C. Loudon for a rose garden.*

Francis's knowledge of the Royal Botanical Society's garden, an 'Inner Circle' within Regent's Park has previously been identified as a major influence on the Francis design for Adelaide Botanic Garden (see Figure 2.8). Certainly, Francis presented a plan of Regent's Park to the Government in April 1855 as an example of a design for a botanic garden, along with his own plan of a circular botanic garden 'adapted for this colony'. As his biographer Barbara Best noted, Francis also advised that he could furnish a plan of any shape or size or adapted to any locality they desired. His inclusion of aviaries and enclosures for the acclimatisation of animals, similar in concept to the inclusion of Zoological Gardens at Regent's Park (separate to the botanic gardens there), is the aspect at Adelaide most similar but this was also representative of

the contemporary acclimatisation movement. The siting within parkland, a main axial path offset from a central position, and the inclusion of an elongated ornamental lake are all aspects the design for Adelaide Botanic Garden shares with Regent's Park. However, the complex geometrical layout of beds, strong axial lines and cross axes, and the distinguishing features of the Francis plan, bear no resemblance to Regent's Park.

It is clear that Francis followed principles promoted by Loudon in laying out his botanic garden. In his *Encyclopaedia of Gardening* (1850), Loudon noted:

> *If it is … desired to have a general collection, then a surrounding border for the trees and shrubs, internal compartments for the beds of herbaceous plants, and a space at one end or the side for the hothouses, frames, compost-yard, &c. will be sufficient; surrounding the whole with a walk, which may also cross the garden in one or more places. Such a walk, to display in succession every remarkable feature, is essential to all gardens, whatever may be their extent or kind.*

The establishment of a boundary—defined by planting commenced in 1855–56, with a hedge and a belt of trees completed around the Garden in 1860—provided both a framework and a backdrop for development within the Garden. Francis's 1855 plan showing work completed (see Figure 2.5), and his elaborate plan from 1864 (see Figure 2.8), indicate that he limited the area developed as a Botanic Garden in relation to the land set aside for that purpose. The early plan shows Francis's large circle close to the main entrance and beds shaped for the purpose of displaying individual specimens of plants as favoured by Loudon and other early nineteenth-century garden writers. By 1864 Francis had developed an intricate arrangement of garden beds, described by the *Register* (29 November 1866) as giving a 'taste of Dutch gardening' that gave way to larger areas of lawn and specimen trees as one moved north toward the area around the Main Lake. The use of the epithet 'Dutch' in the mid-nineteenth century implied geometrically-shaped gardens with beds set in grass for displaying bulbs and florist's flowers in masses, often surrounded by dwarf box edgings. Acquisition lists of plants and Francis's 1859 catalogue demonstrate that florists' flowers and bulbs, particularly Cape Bulbs, were an interest, although it should be noted that other plants from South Africa, particularly *Aloe* spp.were a notable feature of the 1859 catalogue. Schomburgk continued the tradition of growing florists' flowers, listing them separately when recording additions to the Catalogue each year. This provides a marked contrast with the approach of Mueller at Melbourne Botanic Garden, where his scientific arrangements did little to placate an audience seeking a more pleasurable public garden, or at Sydney, where, until the establishment of the Garden Palace Grounds from 1879, there was a great emphasis on shrubberies and sub-tropical foliage.

A subtle rise and fall in the topography through the site possibly accentuated the effect of the strong geometric underpinning to Francis's design from various points through the Garden. Views to the west across the site from the rise on the east revealed the complicated layout (see Figure 3.6). Near the Main Lake an arrangement in the shape of an equilateral triangle had obvious Masonic overtones, as did the introduction of two sphinxes near the main entrance. Francis was a Freemason, but any influence is speculative. Planting in a spiral arrangement on the island of the Main Lake (later Diana's Island) shown on the 1864 plan is a direct reference to an arrangement in the Jardin des Plantes in Paris and published plans by Gabriel Thouin (in his *Plans Raisonnes de Toutes les Espaces de Jardins*, Paris, 1819). James Herbert Veitch, when visiting in 1893, described the Garden as having been originally laid out in 'half French, half English style', proposing yet another translation, and implying that the Francis layout, to educated eyes, distilled both English and European ideas to create a new form in a migrant land.

'The imported plants', wrote Francis in his 1859 catalogue, 'are derived from the most authentic sources in England, Germany, and elsewhere'. The Francis plan was ideal for the acquisition and display of exotic or unusual plants. Francis used a method of arranging the plant collections according to their country of origin. He displayed an unusually developed appreciation for the relationship between the plants of Australia and those of its neighbours New Zealand, the Pacific Islands, and South Africa—prefiguring late twentieth-century fascination with Gondwanan plants. These predominantly Australasian plants were surrounded, according to the minutes (4 July 1856) by 'the plants of the Cape of Good Hope, the plants of Europe and of America [and] The Amaryllis tribe, medicinal plants etc. and the general scientific arrangement'.

In part this was a practice, advocated by both Humphry Repton and Loudon that had gained support following the great increase in plant introductions into Britain and Europe during the late eighteenth and early nineteenth centuries. It also paralleled a similar rise in the fascination for collections of specimens in the sense of museum objects. The value attached to acquiring a diverse array of birds and animals as a part of the Botanic Garden emphasised the idea of a live museum.

British models inspired the buildings constructed under the direction of George Francis, sited to one side of the Garden in accordance with Loudon's principles. Francis owned a copy of Charles McIntosh's *The Greenhouse, Hot House, and Stove: including selected lists of the most beautiful species of exotic flowering plants, and directions for their cultivation* (London, 1846) and the massing of the conservatory constructed at Adelaide has distinct similarities to the Duke of Northumberland's conservatory at Sion House illustrated by McIntosh in this book.

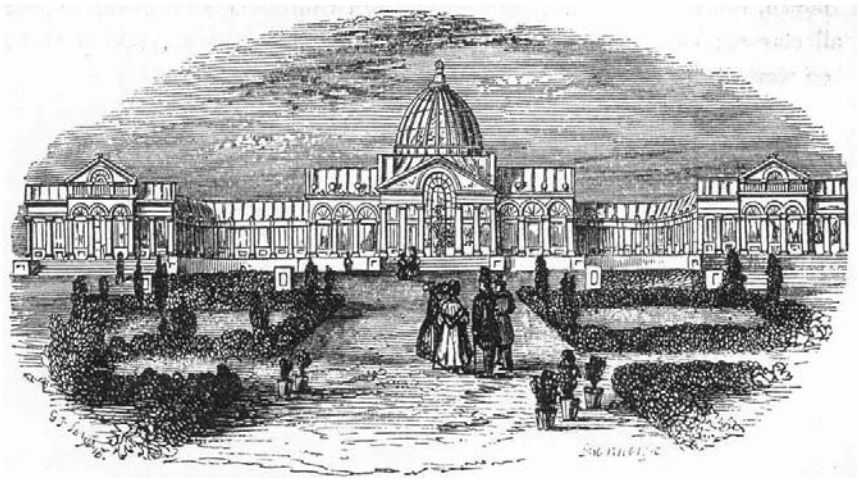


**Figure 3.18** *Illustration of the Duke of Northumberland's conservatory and hot houses at Sion House.*

## Schomburgk's high-Victorian vision

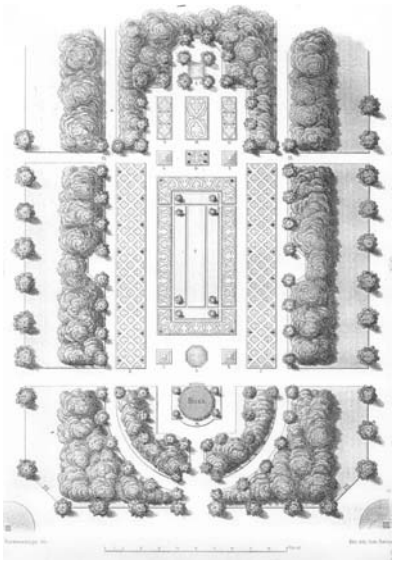
The construction of the Victoria House was a testament to the influence of exotic plant introduction on garden design. This lure of the exotic was evident in the report in the *Register* (29 November 1866) that ' In the central part around the ornamental pond there will soon be everything to suit the promiscuous taste of an Englishman, from the 'Victoria Regia' to the Malabar monkey … Dr Schomburgk has already a design prepared to embrace the whole of the ground above.' Schomburgk's major developments, or developments projected in 1866, were to the north of the Main Lake, beyond the principal existing part of the Garden.

In a sense, Francis had set the design guidelines for the Garden. Schomburgk continued expanding the extent of the Garden, with the development of land to the west and north. He built on the established intricate layout and reinforced established vistas, particularly with the planting of the Araucaria avenue. Such complexity compensated for the lack of striking topographical features within the Garden. Francis's concept of an arboretum was also incorporated by Schomburgk, when he planted an Australian Forest to the north-east of First Creek. Schomburgk's developments continued in the spirit of the Gardenesque—it is in his jewel-box-like placement of additions such as the Palm House, Victoria House, Museum, and individual compartment gardens that the Gardenesque quality is principally apparent today.

A number of Schomburgk's changes reflected period horticultural fashions such as his report, in 1866 of flower parterres 'laid out in different parts of the garden, planted in the new ribbon or mosaic style'. Ribbon bedding was described by Charles McIntosh in *The Book of the Garden* (Edinburgh, 1853–55). It was introduced into Australia in 1861 at Burnley Gardens, Victoria, and in 1865 by Alexander Stephen at Yaralla, a large estate near Sydney, prompting the observation in the *Horticultural Magazine* (March 1865) that 'it will require time to judge whether the system will answer well in this colony'. However, such bedding was not generally popular in the New South Wales climate and Director of the Botanic Gardens in Sydney, Charles Moore,

only adopted this form of bedding when laying out the grounds for the International Exhibition of 1879.

Schomburgk's plan of 1874 (see Figure 2.14) shows a moderate amount of simplification to the complex array of beds he inherited from Francis. Several of Francis's circular gardens were transformed into amoeba-shaped lawns with trees, as advocated by the Superintendent of Public Gardens in Vienna, Rudolph Siebeck, who was well respected in the German-speaking world, and whose garden plans, published in Paris in 1863 were later reproduced by Joseph Newton in *The Landscape Gardener* (London, 1876) a copy of which Schomburgk owned. Schomburgk's early introduction of a rosary bears distinct similarities to another German source. Although described as being in the 'oriental style' by one source, 'an oriental paradise' in another (*Register*, 29 November, 1866), the report that the roses would be planted in the 'Arabian style' (*Register*, 19 July 1867) points to Schomburgk's inspiration as a plan for a 'Blumgarten im arabischen Style' from G. Meyer's *Lehrbuch der Schöen Gartenkunst. Mit besonderer rücksicht auf die praktische ausführung von gärten und parkanlagen* (Berlin, 1862) that Schomburgk owned. The two pavilions or enclosures for animals or birds, at the southern end of the rose garden appear to have been inspired by a 'temple' for climbing roses as illustrated in William Paul's *The Rose Garden* (London, 1858). A copy of this book was owned by Francis and absorbed into Schomburgk's Botanic Garden's library collection. Other design ideas from Meyer, particularly the translation of his directions for the layout of broad sweeping paths in parkland to Botanic Park, appear to have been used by Schomburgk in his masterplan. This style of path layout had been popularised in parks in Europe by designer Pierre Joseph Lenne. Vestiges of Schomburgk's layout lingered in the area devoted to the Adelaide Zoo.



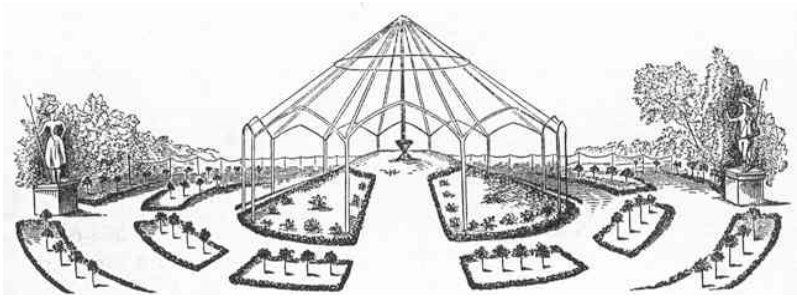


**Figure 3.19** *An illustration of a rose 'temple' from William Paul's The Rose Garden (London, 1858).*

**Figure 3.20** *A plan for a 'Blumgarten im arabischen Style' from Meyer's Lehrbuch der Schöen Gartenkunst. Mit besonderer rücksicht auf die praktische ausführung von gärten und parkanlagen (Berlin, 1862)*

When choosing a design for the Class Ground, however, Schomburgk, returned to a layout reminiscent of seventeenth-century botanic gardens, a circular design of beds divided by cruciform axes with a central water basin, a design well suited to the function of a systematic garden. Avenues surrounding this garden compartment gave it a sense of enclosure. Both the layout and its enclosure later proved ideal for its transformation to a rose garden in the twentieth century, a change prompted by criticism of this part of the grounds by Veitch when he visited in 1893.

Schomburgk also looked to Europe for inspiration for planting. His 1873 *Report* described 'the handsome ball acacia (*Robinia inermis*) which forms a stemless round compact shrub, but which when grafted on the stem of the common acacia (*Robinia pseudoacacia*) forms one of the most picturesque and beautiful trees. The dense growth of the branches, like a ball, is so symmetrical, that it is generally believed the trees have been clipped. These fine trees are made much use of on the continent, especially in Italy.' Schomburgk's introduction of grafted Robinia around the lawns near the Nelumbo Pond and the Museum formed a striking and unifying feature in the

Garden (see Figure 4.8). Although the majority of specimens were removed by the late 1960s, one specimen survived until 2003.

In planting the palm grove in 1870, however, Schomburgk was primarily mirroring contemporary colonial interests. Palms had grown at Sydney Botanic Garden from the 1820s when Allan Cunningham and Charles Fraser had collected specimens in northern New South Wales supplementing the local Cabbage Tree Palm (*Livistona australis*) and the introduced Date Palm (*Phoenix dactylifera*). In the 1860s Charles Moore, impressed at the success with his introductions from the South Sea Islands, initiated the transformation of one of the oldest areas of the Sydney Botanic Garden into a palm grove, reflecting a growing interest in Europe and Australia for bold-foliaged sub-tropical plants. Moore's supply of palms to Schomburgk in 1869 and his adoption of the idea to devote a small part of the Garden to a palm grove can be seen as directly related to Moore's influence.

Variety in foliage and grouping, qualities much praised by nineteenth-century landscape designers, were a priority in Schomburgk's planting of Botanic Park in 1874. Schomburgk reported in 1874 that he tried his 'utmost' to procure 'as many varieties as possible of European and North American forest trees, viz:- ash, oak, birch, lime, coniferous and the finest indigenous Australian trees'. When describing the planting of single specimens on the lawns so that they were 'conspicuous to the eye by their fine foliage or form', Schomburgk was affirming Gardenesque principles. Stylistically and functionally, Botanic Park, paralleled the role of government domains in other colonies.

From the late eighteenth century a taste for linear Grecian architecture was in vogue and Schomburgk proudly reported that the ground surrounding Museum of Botany was laid out in lawns and flower parterres in the 'Greek style,' in order to harmonise with the building itself. Maria Jackson, an early nineteenth-century garden writer, illustrated garden beds in an 'Etruscan style' using a geometric motif associated with that civilisation and presumably Schomburgk utilised a similar device in outlining his flower beds.

The final removal of animals to the Zoo in the 1880s created new opportunities for Schomburgk to consolidate his design. A performance space was defined by Plane trees planted in a circle that echoed a former animal enclosure to the east of Fig Tree Walk. When Schomburgk sketched the progress of the Garden in 1886, he wrote that 'although the garden itself does not now admit extension, the constant additions and small alterations that are made to and in the portions of the area which are already occupied show that the work of improvement and ornamentation is increasing'.

### Flowers for pleasure and display

Although initially occupied with thinning trees throughout the Garden and partly re-affirming Gardenesque principles, under Holtze the landscape design remained relatively unchanged. Veitch's visit early in Holtze's directorship and his comments again provided an international perspective on the landscape design. As a result Holtze initiated some minor changes, particularly in the Class Ground where he introduced more flowering shrubs and the construction of an oriental-influenced pavilion in Schomburgk's rosary (1893) confirming stylistic references to Meyer's garden in the 'arabischen Style'. Some simplification of garden beds and plant introductions from countries, such as Japan and China, that had become more accessible to collectors from the West, contributed a new quality to the displays. Holtze's interest in these floras led to the initial plantings for the now-popular Wisteria arbor. Holtze's major contribution to the landscape design of the Garden was to implement Francis's original concept of having a continuous main axial walk. The completed causeway (1893–96) over the Main Lake and the introduction of the Simpson Kiosk provided a new focus to the centre of the Garden.

Holtze's ideas were firmly rooted in the nineteenth century although his flair for displaying Nymphaceae (water lilies), roses, and flowering shrubs had started a subtle shift in emphasis in the Garden. Under Bailey the Garden increasingly reflected early twentieth century attitudes to maintenance, design, and new fashions in flower gardening. Bailey completed changes to the

Class Ground with its transformation to a Rosary. His introduction of dahlias into the area devoted solely to roses under Schomburgk paralleled an intense interest in dahlias in contemporary horticultural circles as demonstrated by moves by enthusiasts, among them J. F. Bailey, to form an Adelaide Dahlia Society in 1917. Interest in shade-houses—as opposed to glasshouses—manifest in A.E. Cole's 1922 publication *Half-Hours in the Bush House*, was on a rise and the donation of the Simpson Shadehouse in 1917–18 placed Adelaide Botanic Garden in a position to set an example for home gardeners. Although a revived interest in rockeries in the early twentieth century centred on alpine gardening in Europe, in Australia a number of rockeries were planted with succulents and other hardy plants. In addition to forming a rockery to the east of the main entrance to the Garden, Bailey introduced a rustic rockery devoted to succulents on the podium around the Palm House, removing the statuary formerly flanking the steps.

Economic strictures and pressures for broad swathes of lawn for picnickers, a different mode of use to that of the previous century, initiated a radical response from Bailey. The main axial walk near North Terrace was abolished and Francis's early layout modified to broad sweeps of lawn with specimen trees. 'This alteration', reported Bailey in 1924, 'necessitated the formation of a path on the eastern side of the lawn, and by reducing the width of paths in other parts additional space was provided for good seasonable displays of flowering plants'. Contemporary summaries of Bailey's contribution demonstrate an emphasis in design that was aimed at popular appeal: 'he changed it into a landscape garden, and gave greater encouragement to floriculture, which was much appreciated by the general public.' wrote South Australian horticulturist Alfred Quarrell in 1936. Under Holtze and Bailey, R.H. Pulleine observed in 1935, the Garden had, 'from being mainly botanical, become mainly floricultural'. This shift reflected a general community interest in colourful displays of annuals and an intense interest in roses that was to reach its zenith in the 1930s. This change in direction was paralleled, but to a lesser extent, in the Sydney Botanic Garden, where more beds devoted to floral displays were introduced during the same period.

Greaves faced similar challenges to those at other botanic gardens in the 1930s. Positions previously titled director were changed to 'Curator' and there were further strictures in budget with a reduced expectation and respect for the tradition of detailed annual reports. Despite this, Greaves was provided funds to incorporate the large area previously occupied by the Lunatic Asylum into the Garden. The approach taken to the design of the area was largely one of swathes of grass, scattered specimen trees, and flower beds, a strategy that has left the eastern section of the Garden unresolved with the older part of the Garden to this day. Sunken flower gardens centring on an ornamental pond were very popular during this period and examples by English authors such as Richard Sudell, G.C. Taylor, and Percy Cane spawned numerous re-workings by local garden designers for an Australian audience. The addition of a children's paddling pool reflected popular growing concerns throughout the interwar period from bodies, such as the Parks and Playground movement, for children's health and welfare.

In 1944–45 Greaves reversed Bailey's radical re-working of the original layout of the Main Walk. 'The front portion of the Main Walk which was closed years ago,' Greaves reported 'has been re-opened. This gives visitors a beautiful view from the front gates to the Botanic Park and, judging by comments made, the alteration has been appreciated.'

### The influence of Modernism

Of all the directors of the Adelaide Botanic Garden, the influence Lothian brought to the Garden was Modernism. Few areas of the Garden remained untouched. Francis's Conservatory (in land along the Western Boundary ceded to the hospital) was demolished, its place taken by the utilitarian Schomburgk Range, a salutary statement of post-war rationalism. A more subtle change was the re-modelling and re-planting of the circular Rosary. The policy for planting annuals for bedding displays continued until the end of the 1970s, when a decision was made to confine massed displays of annuals to the sunken garden.

A large-scale renovation of the trees in Botanic Park was commenced under Lothian with removal of many of the diseased and senescent stock planted in 1874. This re-development of

the area by planting new trees where necessary and establishing grassed picnic grounds effectively removed the strong internal definition provided by Schomburgk's masterplan.

A key influence by Lothian was the appointment of the position of landscape designer to the Garden. Landscape architect, Allan Correy, appointed in 1961, brought with him ideas from key practitioners in Britain and the United States (such as Christopher Tunnard, James Rose, Thomas Church, Garrett Eckbo and the Brazilian, Roberto Burle Marx) and incorporated Modernism and American romanticism into his personal approach to landscape design.

The Western Wild Garden (1964) retains the key components of Correy's concept design with the combined influences of Modernism and Romanticism. Correy used a similar Romantic informality when forming a concept plan (1963–64) for the Mallee Garden in a section where Lothian had started planting mallee and flowering eucalypts in the early 1950s.

Three major paths were removed by Lothian in the 1960s reflecting twentieth-century aesthetics that revived eighteenth century ideals for sweeping informal lawns—the Araucaria Walk (previously removed but reinstated), the Museum Walk, and the path bisecting the New Zealand Section and shrubbery near the Main Walk. During this period one of the principal paths from the early Francis plan also appears to have been removed—that running from the summerhouse across the creek to Niobe Hill.

A major task for landscape architect Doug Field, who followed Correy, was to realign First Creek into a concrete channel. Lothian appears to have instigated this as a more permanent solution to the problem of erosion caused by re-current flooding. Field used the device of including creek-worn stones in patterns to break up the visual effect of the concreted creek bed. In 1965 the main axial walk, Francis's unifying concept for the Garden, completed by Holtze, was again broken into two. Lothian's preference for the 'original pear shape of the lake' and a re-design of the entire area affirmed contemporary taste for smooth-edged free-formed ponds with similar re-modellings of natural lakes proving a popular innovation from the 1950s to the 1970s. Garden beds at the ends of main walk north and south of the lake (the nucleus of the current beds), were planted as part of this overall scheme, commencing the truncation of the major north–south vista through the Garden.

Lothian had featured the vista up the Araucaria Avenue from the Palm House, a prominent aspect of the early design of the Garden, in his Annual Report for 1954–55 (see Figure 4.1). Despite this, its importance appears to have been overlooked in anticipating the long-term effects from the re-design of Main Lake (1970–73) and the planting of its new islands and the surrounding of a paved area constructed at its western end. Appreciation of this vista became so forgotten that when the National Wine Centre was constructed (1999–2001) its height meant that views to the Mount Lofty Ranges were blocked.

A new horticultural garden on western boundary constructed in 1970–71, in its combination of paving, bricked pillars and slatted wood screens to form loggias with a loggia court, a fountain court and a sculpture court, was deliberately domestic in scale, to provide inspiration for home gardeners. Influences from post-war Modernism in Britain and western USA, particularly through publications by Sunset Books, gave rise to this style in landscape design. The use of *Schefflera actinophylla* (Umbrella Tree) for one of the courts was indicative of the contemporary interest in bold-foliaged feature plants that accompanied post-war Modernism.

In 1973–74 a new informal geometric 'water garden' (later called the Italianate Garden) was developed by landscape architect Graham Jones. The former Class Ground was re-modelled in 1975–77 along 'more modern and aesthetic lines' under the guidance of Brian Morley. Lothian's re-modelling of the Garden was in the context of post-war Modernism and had initially reflected a general contemporary design ethos, although, by the end of his directorship (1980), this was changing and new attitudes that valued cultural significance began to be asserted.

Morley initially concentrated attention on the conservation or upgrading of built elements in the Garden. This impacted on the appearance of the Garden without altering its overall landscape design. The introduction of the Bicentennial Conservatory on the eastern boundary of the

Australian Forest, although a substantial new innovation, made little impact on the established layout of the Garden. Renewed interest in the arts gave new impetus for the acquisition of sculpture, both classical and contemporary in form (see Section 3.3.5). Conservation of the Palm House, a manifestation of contemporary concerns for Australia's cultural heritage, saw the triumph of the aesthetic values of heritage architect over gardener when the necessary removal of Bailey's succulent filled rockery that had adorned its podium was not reinstated.

The addition of the entire Hackney Road Tramway site radically changed the Botanic Garden site as a whole. Neither Lothian nor Morley had satisfactorily resolved the transition from the former Asylum grounds to the early Garden site through landscape design and, although still unresolved, the new addition provided for more direct east–west access through the site. Stylistically, however, its impact is confined to the International Rose Garden with its post-modern design. This impacted on the early Garden by precipitating the removal of roses from their highly popular location in what is now the Economic Garden. The circular Rosary, established by Bailey in Schomburgk's Class Ground and improved by Lothian, stylistically adhered to traditional formal precepts, that proved extremely successful for the display of roses. It is difficult to assess the new International Rose Garden as a good example of late twentieth-century landscape design. The design philosophy was ' to create a journey through indvidually designed garden spaces. Structured landscape forms are used to provide definition of the garden spaces.' Its geometric layout, lacking circuit walks, seems to sit unhappily in its concave site, with principal paths and viewlines centering uncomfortably on the end of the former tramway building and the air conditioning duct of the Bicentennial Conservatory.

The planting of the Hackney Road frontage with arid flora signalled reinvigorated international concerns for sustainability and environmental responsibility that is gradually translating to landscape design. Stephen Forbes, appointed in 2001, has affirmed these contemporary values in the Strategic Plan and placed Adelaide Botanic Garden in a wider geographic context, both locally and internationally, with a vision 'to be an international leader in horticulture for sustainable landscapes especially in arid and semi-arid environments'.

It is ironic that after almost 150 years the dry South Australian landscape can be comfortably embraced from the established confines of a green urban landscape. What Francis designed was a deliberate escape from the surrounding environment—an oasis in a relatively bare, young city. That Adelaide Botanic Garden should be a garden to perform to an international standard is a vision shared by both its early and most recent directors.

### *Rankings of cultural significance*

*Exceptional cultural significance*

- The Francis plan for Adelaide Botanic Garden, for its unique translation of early to mid nineteenth-century British and European influences (particularly the *rococo* and Gardenesque styles) to an Australian context, remnants of which are the Main Walk (including its planned vistas), symmetrical plantings, statuary and location of the Owen Fountain, the Francis Lawn, the tradition of a Gardenesque character, and the concept for and initial formation of a system of lakes
- Schomburgk's 1874 masterplan, for its reinforcement of designed vistas and for the incorporation of mid-nineteenth century European design concepts. These were manifest in the layout of Botanic Park and the creation of discrete compartments within the Garden devoted to differing horticultural, botanical, and scientific concerns. Schomburgk's design contribution is principally demonstrated in the spatial arrangement of the garden to the north of Main Lake (including Fig Tree Walk), individual compartment gardens (Schomburgk's former Class Ground, former Experimental Garden, and the 1866–67 Rose Garden), Australian Arboretum, Palm Grove, Palm House, Museum and Araucaria Avenue.
- For the retention of Gardenesque qualities, principally apparent in the display of specimen trees and the jewel-box-like placement of Schomburgk's individual buildings (Palm House, Museum, Victoria House) and statuary

*High cultural significance*

- For the accomplished implementation of Modernist and twentieth-century Romantic design principles within the established layout of the Garden, manifest in the Western Wild Garden and Mallee Garden

*Contributory cultural significance*

- Sunken Garden as an example of formal interwar landscape design
- For the influence of twentieth-century aesthetics that gave rise to simplified lawn areas with specimen trees, principally manifest in the Bailey Lawns and the Conifer Lawn

*No appreciable cultural significance*

- International Rose Garden (see Section 4.3.3)

*Alteration or loss which has jeopardised cultural significance*

- The destruction of the principal vista along the north–south axis and diminution of this as Francis's principal organising device for the Garden
- The loss of the vista through the Araucaria Avenue from the Palm House to Mount Lofty Ranges by the construction of the National Wine Centre
- The removal of the Bailey/Lothian rosary and conversion to an Economic Garden
- The replacement of Schomburgk's original rose garden ('in Arabian style') with the Italianate Garden
- The removal of the Bailey Rockery on the podium of the Palm House, formerly a fine example of an interwar succulent rockery.
- The loss of the strong internal definition in Botanic Park provided by Schomburgk's masterplan and implemented plantings

### 3.3.3 Engaging with the Australian Flora

In 1886, when Richard Schomburgk reflected on the establishment of the Botanic Garden in his 'Sketch of the Botanic Gardens and its Progress', he drew attention to the remnant eucalypts of the site. 'They convey to the visitors,' he wrote, 'an excellent notion of the magnificence of the site of Adelaide and of the plains surrounding it before the "lords of the forest" fell before the axes of the settlers.'

The use of Australian plants has been a strong, if unheralded theme in the history of the Garden. Francis had left most of the very large trees and when he reported on progress in 1856 he wrote in the minutes (4 July 1856) that he intended that the four large circles he was forming as part of his design were 'for the plants and shrubs of Swan River, South Australia, New South Wales and Van Diemen's Land and Victoria, the whole to be surrounded by a belt of Acacias and other things common to Australasia'. Although Australian flora had been a pre-occupation of government botanists since Charles Fraser was appointed in New South Wales in the 1810s, the laying out of a section of a botanic garden in a decorative manner and exclusively for native plants in its initial design phase was unusual, if not unique.

Francis's 1859 catalogue lists an extensive list of acacias and a considerable number of Australian plants. Early plantings of *Araucaria* and *Ficus* spp. provided the Botanic Garden with its canopy of landmark trees today. In early 1861, Francis reported that during his journey to Melbourne and Sydney, the plants he returned with, he had 'partly collected in the neighbourhood of Sydney'. Before the close of the decade, Schomburgk declared his intention to continue in a similar vein. In his 1867 *Report* he outlined his plans for an Australian Forest to the north and east of First Creek: 'Most of this ground will be planted with Australian trees and shrubs especially such as are indigenous to the western, eastern, and north-eastern parts of Australia. Of these plants I have a great variety, raised from seeds in the nursery. The number of species of the eucalypti tribe amounts alone to forty-two; that of the acacia to seventy, found only in the before-mentioned localities. Without doubt, when accomplished, this part will make one of the most delightful and picturesque portions of the garden.'

**Figure 3.21** *The Australian Forest in the 1950s.*

Schomburgk was reflecting contemporary concerns for growing Australian trees, particularly that of Charles Moore, Director at the Sydney Botanic Garden who had a predilection for northern New South Wales and southern Queensland rainforest trees. The planting of a Fig Tree Avenue, with trees provided by Moore, directly related to Moore's fondness for the Moreton Bay Fig and his success with a similar avenue in the Sydney Domain. However, Schomburgk's planting of an arboretum devoted only to Australian trees again placed Adelaide Botanic Garden at the forefront of all Australian botanic gardens in the commitment to using solely Australian native plants in a decorative and instructive way. The Australian Forest significantly predates Guilfoyle's Australian Border established at Melbourne Botanic Garden in the 1880s. Schomburgk's choice of Kurrajongs for avenue planting, demonstrated a creative use of a tree suited for a semi-arid climate. When visiting in 1893 Veitch singled out the 'magnificent' *Stenocarpus sinuatus* with its 'heads of scarlet flowers' that was among a selection of rainforest trees at the northern end of his rose garden.

Schomburgk's 1883 *Report* revealed an advanced understanding of nutritive requirements for the successful cultivation of native plants. He wrote: 'The shortness of life of our native trees and shrubs, more especially the latter, becomes more evident each year. A large number of plants planted in the earlier days of the garden, and having reached of sixteen to eighteen years, now die off very fast, especially such as belong to the following genera, viz:- Hakeas, Acacias, Grevilleas, Callistemons, &c. Perhaps the reason for this early decline may be found in the quick and luxuriant growth of these plants when shifted into better soil than that of the poor and sterile soil of their native localities, so that altered circumstances so favourable to their growth produce over stimulation and finally exhaustion.'

When planting Botanic Park Schomburgk's choice was for a mixture of trees that included 'the finest indigenous Australian trees'. The mature growth of these were described in 1933–34 when Pulleine wrote 'In entering this forest the plant assembly, at first puzzling, resolves itself into the Australian Sterculias, Lagunarias, figs, Eucalypts, and Grevilleas, relatively few in species, but rich in numbers, associated with foreign species such as the camphor laurel, argan tree, olive and cypress and other conifers ... Of course, we must recognise that this forest is growing on a rich piece of river alluvium, with the ground-water at an easy level; this no doubt, has contributed to its early maturity, which is remarkable when we consider the density of the arboreal population and the consequent competition.'

Bailey praised Holtze for planting wattles, providing the Garden with a year round sequence of blossoms. Holtze's directorship coincided with a new nationalism and debate surrounding the

choice of a national flower, the wattle proving a universal candidate. J.H. Maiden, Director of the Sydney Botanic Garden, had a similar interest in establishing a wattle plantation in the Sydney Domain. Bailey's early reports emphasised his interest in Australian plants, and he implemented a strategy of demonstrating the most appropriate species for domestic and civic use and providing advice to regional communities (see Section 2.2.5). Additional small areas of the Garden were planted with Australian plants and of an inventory prepared in 1925–26 of twenty trees that had been growing in the Garden since the 1860s half of them were native to Australia.

During the Lothian era, ornamental eucalypts, valued for their flowers, compact growth, and tolerance for limestone soils were planted. This was followed by a dedicated Mallee garden, a concerted effort to engage with the more local arid and semi-arid flora, with plants not Australian in origin removed and 'extensive plantings of Australian shrubs' undertaken in 1965. The Australian Forest was supplemented with additional species. Other early plantings of Australian trees were senescing and in 1973 the Kurrajong Avenue was removed.

Although there are now Botanic Gardens that concentrate on the Australian Flora, particularly Mount Annan (NSW) and the National Botanic Garden, Canberra, the Adelaide Botanic Garden has maintained a significant commitment to the propagation and planting of Australian flora since its inception. It contains a substantial mix of Australian species growing beyond their normal range and the collection contains significant individual specimens.

***Rankings of cultural significance***

*Exceptional cultural significance*

- For the retention of mature specimens of *Eucalyptus camaldulensis* and for the significant commitment to the propagation and planting of Australian flora since the inception of the Garden with the dedication of specific garden areas for the growth of only Australian plants, initially demonstrated by Francis in his planting of four circular beds and continued by Schomburgk with the planting of the extant Australian Forest in 1868 and Lothian in twentieth century with the establishment of the Mallee Garden
- Australian Forest (see Section 4.1.2)

*High cultural significance*

- For the use of Australian plants generally throughout of the Garden, a tradition maintained by all directors of the Garden, and for the concerted effort placed in an education program promoting native plants for domestic and civic use
- Mallee Garden (see Section 4.1.24)

## 3.3.4 Ornamentation

The Great Exhibition in London in 1851 and the transfer, in 1854, of the Crystal Palace building to the London suburb of Sydenham, where it was placed in heavily ornamented landscaped grounds in a formal Italianate style, gave rise to the popularity of statuary and ornamentation in public parks and gardens. The establishment of the Adelaide Botanic Garden corresponded precisely with this period. The acquisition of the Owen Fountain, smaller 'rustic' fountains for the conservatory and the donation of a pair of stone lions in 1861 demonstrated the ambitions of prominent citizens for their Garden, as a showpiece for the city of Adelaide, to be embellished in an appropriate manner. The *Observer* noted at its opening that the Owen Fountain 'from its size and bold outline and its chaste and classic proportions, forms a most beautiful object, not to be equalled in South Australia, if in the other Colonies'.

This was not an overly expansive claim. The earliest examples of the use of fountains in Australia were gravity fed from an elevated source, such as at Alexander McLeay's Elizabeth Bay House (1835–40), Daniel Cooper's Rose Bay Lodge (1850s–60s), and W.C. Wentworth's Vaucluse House (1861–62), all in Sydney. A burst of fountain building came with the provision of reticulated water supplies to Australia's capital cities in the 1850s–60s, somewhat later in major provincial townships. Accompanied by swellings of municipal pride, these fountains (and drinking fountains) were commonly constructed in urban squares (for example, Prince's Square,

Launceston, Tas.: 1859), botanic gardens, public parks (for example, the River God Fountain, Fitzroy Gardens, Melbourne: 1862), and boulevards (for example, Sturt Street, Ballarat, Vic.: 1860s).

**Figure 3.22** *The original Owen Fountain on the Main Walk, looking north-west, with an open Eucalypt woodland behind.*

**Figure 3.23** *A sculpture with glasshouse conservatories behind.*

**Figure 3.24** *Photograph of sculpture and urns, recording the parterred garden beds with conservatories behind.*

**Figure 3.25** *Photograph of parterred garden beds, looking east, with the Owen Fountain to the far right and the directors residence to the far left*

In 1862, the *Observer* focussed on the architectural and ornamental embellishment of the Garden in its description written for the 'Old Colonists' of England:

> *Very much has been done to beautify it in the past year. A new and elegant front fencing and wall has been erected, a new Greenhouse forty feet long built, a second one has been enlarged; new aviaries have been made, as also new bridges, rustic seats and rock work; a large and elegant fountain, one drinking fountain and two smaller fountains have been installed; paddocks for animals made, avenues planted, and numerous vases, statues and other ornamental objects distributed with much taste in the more conspicuous situations, while the trees and shrubs have grown to such a size as to form vistas, through which the visitors may obtain the most lovely views of the surrounding country.*

Adelaide had been civilised—the city, parklands, and beyond could be viewed with appreciation from within the ornamented confines of the Botanic Garden. The Garden, replete with Conservatory, Francis's 'Temple' (with flanking glasshouses), a small rustic bridge over the creek, the Owen Fountain playing and the Garden ornamented with nature's beauties in the form of black swans, was painted in 1865 by James Shaw (1815–1881), a precious early coloured representation now in the Art Gallery South Australia. Additional statues, vases and busts, requisitioned by Francis in 1865, arrived from London in 1866 and were positioned in the Garden by Schomburgk. An obelisk was chosen as an appropriate form to commemorate Francis following his death, paralleling the commemoration of botanist and former Director of

Sydney Botanic Garden, Allan Cunningham. At Sydney, too, the obelisk was placed in a conspicuous spot in the Garden. Schomburgk's comments, when reporting on the acquisition of statues of Amazon, Niobe, and Venus (1867) reflected contemporary attitudes that public taste would be elevated through exposure to classical statuary and therefore, their literary allusions. Classical imagery pertained to larger structures too, such as Francis's greenhouse, referred to in the minutes (1 May 1863) as a 'Temple' greenhouse, an ideal that endured into the twentieth century. In 1919 a committee formed expressly to give an opinion on the statuary throughout the Garden pronounced: 'A replica from the antique or some well known classical style is the most suitable type for garden ornament. Some of the reproductions of animals, sphinxes and urns are of questionable merit, but they are serviceable at points in the design.'

**Figure 3.26** *Painting by James Shaw (1810-1881) of the Main Lake in the Garden in 1865, looking east, with the directors residence in the far left, the Owen Fountain middle background, the conservatories and 'Temple' in the right background, a small rustic bridge in the middle-ground.*

The placement of vases (urns), busts, and statuary in the gardens followed accepted principles—they were always placed on pedestals and were associated with an 'architectural' or structural element of the design such as the intersection of paths, symmetrical placement on either side of a walk, at the termination of a walk, or as the central feature of a parterre. Francis established rustic work in the form of small rockeries in the Garden, fashionable 'adornments' of the mid-nineteenth century. Schomburgk did not use this form of embellishment to the extent that it was used by Charles Moore in the sandstone-rich Sydney Botanic Garden or William Guilfoyle in Melbourne, with the exception of the grotto of imported rocks and stalactite constructed in the Adelaide Palm House. Holtze's addition of rusticated balustrading for the causeway across Main Lake and Bailey's installation of a 'bold' rockery around the Palm House in 1922 maintained the tradition of rustic work within the Garden.

Wirework 'basket' edging was used to define garden beds and taller baskets of wirework were used to surround fountains during the Francis and Schomburgk eras. The use of wirework was a common early to mid-nineteenth century practice for edging garden beds, particularly where circular beds were set in lawn in the Gardenesque style.

Francis's greenhouse and conservatory, the Victoria House, Palm House, and Museum, in the choice of their architectural styles and their siting, all provided ornamentation to the Garden on a large scale. The decision by Francis to arrange his plant-houses along the western boundary conformed to contemporary standards, provided a refined backdrop to views across the Garden from the higher ground, and architecturally balanced the massing of the Asylum buildings to the east. Schomburgk placed his Garden buildings like jewel boxes in a garden setting in an east–west alignment. They appeared spread out for appreciation either side of the Main Lake from the southern main approach.

The ornamentation of the Garden did not escape Veitch's eye when he visited in 1893. He noted 'plaster-of-Paris goddesses … dotted about' and at the lily pond wearily observed 'the inevitable Venus is rising from the waters in orthodox form'. A similar Venus rose from one of the ponds in Sydney Botanic Garden, and there too, goddesses and classical figures, the majority purchased for the 1879 International Exhibition, lined the walks.

A quatrefoil basin with small water jet was installed in the Class Ground in 1874, the jet later replaced by an elaborate Coalbrookdale Fountain of a Boy and Serpent in 1908, one of two from the English Foundry donated by the Barr-Smith family erected in the Garden. The other, the Boy and Swan Fountain, a Coalbrookdale copy of a fountain featured in the 1851 Great Exhibition, was installed in the Nelumbo Pond in 1907. These fountains, technically accomplished works, refined in detail and form, and guaranteed to meet with the approval of visiting British critics, reaffirmed the High Victorian character of the Garden. Many examples of these fountains were installed at the height of their popularity however the majority did not escape the modernisation of public parks and gardens. The survival of the Adelaide fountains is unusual, the Boy and Serpent being one of only two known examples of this pattern worldwide.

The donation of a commemorative Scarfe drinking fountain in 1909, a comparatively late date, reflected widespread community concerns for the provision of clean drinking water in public places. Increasingly common from 1880s, they were often elaborate pieces of ornamentation, for example the Levy Fountain (Sydney Botanic Garden), and ideally of cast iron for durability.

During the interwar period, taste in architecture moved toward the cleaner lines of the Georgian revival and the 'Moderne' or Art Deco, and the more Mediterranean Spanish Mission style. The High Victorian love of statuary became outmoded and the removal of embellishment from the Garden, or its replacement with new forms to conform to changing aesthetic taste, began. One of the most notable losses was the removal of Flora from the Main Walk.

Under Bailey the wire fences around the Lotus Pond and around the upper portion of the Main Lake, were removed, and replaced with others of rustic design. The two small fountains near to the main entrance, installed by Francis, were replaced in 1920–21 with Feather Palms (*Cocos plumosa*). Garden seats in a rustic design encircled trees and balustrading of exuberant rusticity ornamented the bridge and causeway over Main Lake, and the bridges to Diana's Island and the Simpson House lending new, fantastic, qualities to parts of the Garden (see Figure 2.18).

Few additions were made during the post-war years. The Brownie Memorial, placed appropriately near the Children's paddling pool and sand pit in 1942, marked a distinct departure from the classical collection. Niobe was destroyed in a regrettable accident when staff attempted to move the statue, and the Museum of Economic Botany was relieved of its allegorical attendants. This mirrored similar changes in public parks and botanic gardens nationwide. The public had tired of plaster of Paris goddesses, who had themselves become weather worn. Post-war economies meant all necessary resources were used for garden maintenance, and statuary, fountains, and urns were relegated to work yards and basements. The introduction of the Australian American Memorial in 1953 was symbolic of the prevailing sentiment of the period.

A revived interest in ornamentation during the Morley period reflected a more buoyant economy and respect for fine arts and craft. A piece of ornamental wrought iron work, commissioned by the Board in 1982 and carried out by Richard Howard, was erected at the now truncated end of the Main Walk (in the location of the former Owen Fountain). Ornamentation throughout the Garden was repaired and in defiance of its natural state, painted a metallic grey. 'Black Springs' by Andy Goldsworthy, installed as part of Adelaide's Festival of the Arts in 1992, indicated Morley's interest in enhancing the cultural values of the Botanic Garden, and like Francis and Schomburgk, his reaching beyond Adelaide's parochial boundaries.

The ornamentation throughout Adelaide Botanic Garden is disposed in a way that, in combination with the Palm House and Museum, enhances the High Victorian qualities, rendering it an integral component of the Garden. There are few other botanic gardens in Australia that demonstrate this characteristic to the same extent. Ballarat Botanic Garden, although smaller, is a notable exception. The Sydney Botanic Garden also arguably has a collection that is at least equally significant but its effect is more diffuse.

***Rankings of cultural significance***

*Exceptional cultural significance*

- The tradition of use of ornamentation, an integral component of the Adelaide Botanic Garden from its earliest years, enhances the High Victorian qualities of the Garden, making it an exceptional example of a botanic garden in this decorous style

*Intrusive*

- The Cascade Fountain, its form relatively assymetric, intrudes on views to the Bicentennial Conservatory from the south and sits at odds with the symmetrical form of the building

*Alteration or loss which has jeopardised cultural significance*

- The gradual removal of statuary pivotal to their setting particularly Niobe as a focus at the termination of the Araucaria Walk and Flora from the Main Walk

## 3.3.5 Gardening under glass

**Figure 3.27** *Photograph of the originally sequence of glasshouses, hothouses, and Francis's 'Temple' conservatory that lined the eastern Hospital boundary-line.*

The inclusion of a range of hot houses and a conservatory had become *de rigeur* for a British or European botanic garden in the mid-nineteenth century. The success of the 1851 Crystal Palace Exhibition in a palace of iron and glass imbued this building form with desirability. Francis owned copies of Robert Sweet's *The Hothouse and Greenhouse Manual, or Botanical Cultivator* (London, 1839) and Charles McIntosh's *The Greenhouse, Hot House, and Stove* (London, 1846), and would have been familiar with the use of heated horticultural buildings. In the warm Australian climate they were unusual and so Francis's early range of greenhouse (1856), conservatory (1859), stovehouses (1857, 1863, 1870), and orchid house and fern house (1863) were remarkable in an Australian context. Their erection in the short period (1856–63) displayed an enormous commitment by the Board and ambition to create a truly fine Garden. Their attitude was embodied in the reference in the minutes (1 May 1863) to the 'Temple' greenhouse, indicating that, in contemporary minds, the structure was likened to a temple for delicate plants and homage paid to their exoticism.

Cacti were also grown under glass, as cold rain affected them. The cacti collection was contained in Wardian cases—glass containers normally used in an Australian colonial context for transporting plants—placed on both sides of the main walk, a highly unusual use of the case and one that enhanced the ornamented nature of the Garden.

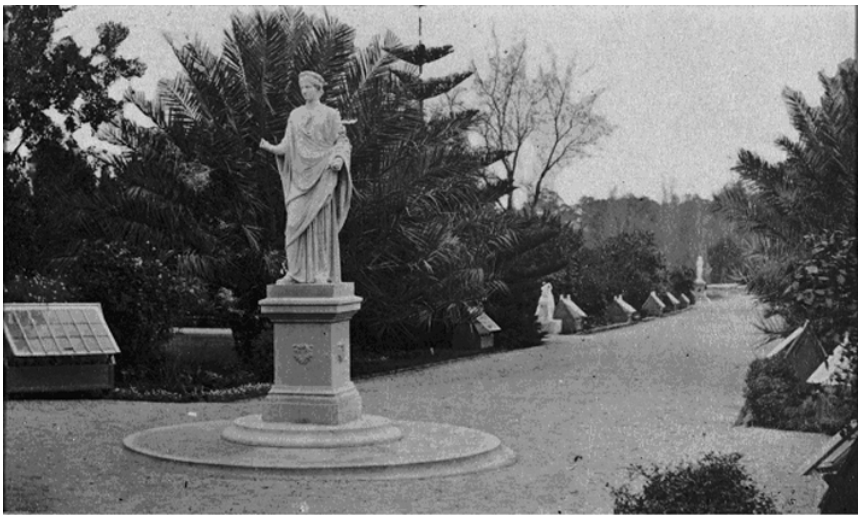


**Figure 3.28** *A photograph of the Main Walk in the 1870s depicting statuary, and the numerous Wardian cases that were placed along the Main Walk to display specimen plants.*

The precedent was set and ambitions to flower the *Victoria regia* (Victoria Lily) created new impetus for the Board to approve the erection of a Victoria House, although the resultant structure could not compare in grandeur to the earlier conservatory (1859) with its design reference to Sion House. Schomburgk's new Palm House, opened in 1877, and more impressive for its elevation on a podium, revitalised the status of the Garden as the foremost in Australia for gardening under glass.

Francis's Wardian cases, increasingly broken by 'malefactors' thus not improving 'the sight of the main walk,' were removed in 1880. Schomburgk had bigger visions and the removal of the animal cages to the west of Fig Tree Walk cleared the way for 'the erection of a large stove house, the want of which becomes more and more apparent', optimistically described in the 1882 *Report*. Plans held in the Garden's Library indicate that Schomburgk had selected his glasshouse, a desire that remained unfulfilled.

Veitch's description of the Garden (1893) reveals the extensive use of protected horticultural environments—ten glass houses and three shade houses—in addition to those buildings for public displays, a feature Adelaide shared with botanic gardens in other states. The display houses he described at length, singling out the Orchids as 'the palm of excellence', reflecting the 'greatest credit' to the foreman, for whom they were a personal hobby, a poignant reminder of the traditional personal involvement of the gardeners with the collections and the essential role they take in achieving excellence.

Veitch observed Holtze's effective use of hessian, nailed loosely to rafters for shade, a technique initially devised using calico to provide shade for growing ferns and tender plants in harsh Australian climates. The use of branches and brush over a timber frame to form a bush-house also grew in popularity and the Simpson Shadehouse utilised the latter form of construction when erected in 1917. The 1928 plan shows no change to the range of glass houses along the western boundary. The majority, however, were lost in the transfer of land to the hospital, demonstrating a pronounced shift in emphasis since the Francis and Schomburgk eras. The replacement structures, erected in the 1950s, were designed for function rather than ornamentation. Two houses near the Wood Pavilion, previously used for ferns, although later also used for cacti, remained until the 1980s (see Section 4.1.17).

Over a century after the construction of the Palm House, the Bicentennial Conservatory was built. The Conservatory attracted accolades in architectural circles. It followed a late twentieth-century revival in a fascination for this type of gardening to house the flora of specific microclimates. Others built in this period included the Pyramid Glasshouse, Royal Botanic Gardens, Sydney (1970–72, planted and opened 1976); Tropical Display Dome, Brisbane Botanic Gardens: Mount Coot-tha (1970–73); Conservatory at Ballarat Botanic Garden (1995), and the Pyramid in the Parklands, Perth near Swan Bridge.

The use of glass as a means to extend the range of plants grown in the Garden has featured prominently in the history of Adelaide Botanic Garden, where a high regard for the ornamental as well as functional characteristics of the form has given it a rich history and legacy of this building type. The 1994–95 conservation of this now rare example of a late nineteenth-century Palm House reflects the importance of the house, nationally and internationally.

***Rankings of cultural significance***

*Exceptional cultural significance*

- The tradition of gardening under glass, a prominent feature of the Adelaide Botanic Garden from its earliest years, is of exceptional historic and aesthetic significance in an Australian context. The surviving landmark Palm House has an integral role in providing a High Victorian quality to the Garden and is a rare example of this building type worldwide. Other significant aspects of this tradition survive from the flowering of the Victoria Lily, which gave the Garden a signature focus in the 1860s to the construction of the award-winning Bicentennial Conservatory.

## 3.3.6 Manipulation of water

All the sites deemed suitable for a botanic garden in Adelaide were close to the River Torrens. First Creek and an un-named creek presented an obvious advantage in a ready water supply, but this latter creek was subject to floods, 'which tore away its banks and altered its course to the great damage of the land on either side'. Francis's remedy was to excavate parts of the creek, redistributing the soil to raise low parts of the Garden and turning sections of the creek into lakes, 'thus contributing much' Schomburgk wrote in 1886, 'towards the future beauty of the garden', although keeping these ornamental waters clean and healthy remains a challenge. Planting the margins of the lakes with willows, which, Veitch commented some 35 years later, were 'amongst the chief features of the garden', provided stability to their banks, embellishment to the views and with their 'curtains of pale green, even to the water's surface', formed a green oasis in the naturally dry Adelaide climate.

The manipulation of watercourses in gardens to create ornamental lakes was a precedent well-utilised in Britain but with few examples in Australia. At Sydney Botanic Garden a pond was formalised where the mouth of Botanic Garden Creek met with Farm Cove in the 1830s and from the late 1840s–*c.*1879 two additional ornamental lakes were created during a process of land reclamation. At Melbourne Botanic Garden a swampy lagoon was progressively enlarged, first by Dallachy in the 1850s, then later in the century by Guilfoyle. In the 1830s, Alexander McLeay and his son George dammed a drainage line with ornamented walling to form an lake at Brownlow Hill, Cobbity, NSW, but this was an exception to the usual practice of creating dams or ponds principally for their functional uses. At Rippon Lea, Elsternwick, Vic., the first stage of an ornamental lake was commenced *c.*1870 but this example, in addition to being later than Adelaide Botanic Garden, differs in that it was created in a location that lacked a natural water supply on site. Francis's lakes within the Adelaide Botanic Garden therefore rank among the earliest ornamental lakes created in Australia.

A reticulated water supply came to Adelaide in 1859 but it does not appear to have been connected to the Garden until Owen's donation of a fountain in 1861. A piped supply was installed and the Owen Fountain was opened with suitable ceremony in November 1861. Much *fêted*, with dolphins drawing water into their mouths and ejecting it through their nostrils and the whole sporting ten jets in all, its installation overshadowed the 'elegant little rustic fountain near the Conservatory', another under its dome, and a drinking fountain. Two additional small fountains flanked the Main Walk just inside the entrance to the Garden, signalling the art of the gardener and the Garden as a cool retreat.

The early emphasis on growing water lilies and other aquatic plants (and particularly the Victoria Lily), contributed to the oasis quality of the Garden and contrasted to the naturally arid climate. This pleasurable engagement with water, however, masked continuing problems with flooding and pollution. Overflow from Main Lake to First Creek (via a small creek at its northern end)

proved troublesome and Schomburgk reported in 1866 that he had infilled it and formalised the overflow into a 'straight artificial channel … which adds to the symmetry of that part of the garden and gives a much stronger current'. A dam was lowered and a lake excavated on First Creek following flooding in 1870, the spoil from the exercise used to build a mound for the Palm Grove. In 1872, typhoid from foul water in the ponds caused illness and death in the Schomburgk family. Schomburgk's remodelling of First Creek and its banks, depicted on the 1874 plan, alleviated the problem of flooding in the Garden but the floods of 1877 prompted Schomburgk to raise the podium for the Palm House so that it would be above the floodline.

Schomburgk continued embellishing the Garden with fountains. Two small fountains, fitting ornamentation for a rose garden in an Oriental or Arabian style, were shown on his 1874 plan. A 'pretty waterfall, decorated with Ferns and Asparagus' described by Veitch, occupied one end of the Palm House. The Class Ground was adorned with a central basin with jet and planted with flowering aquatic plants. A large water jet, the celebrated accomplishment of Oswald Brown, was installed in Top Pond in 1880. In 1908 the donation of a large Coalbrookdale fountain to replace the small jet in the Class Ground took the combination of ornamentation and water to new heights.

Despite containing a natural supply, water did not come cheaply to the Garden. Veitch commented that the cost of water 'reaches on occasions £1,200 per annum'. In 1910 the open channel from Main Lake to First Creek was replaced with a brick–lined underground pipe but this was still not adequate to take the overflow from the lake in heavy rains. Flooding of the Garden continued to be a problem for many years and despite the Board's acknowledgment in 1913 for the need to expend considerable funds for a new drain, it was not built until 1950. Despite this improvement, floods still periodically inundated low-lying parts of the Garden.

Measures were taken to alleviate problems with the flooding of First Creek as well, with re-alignment, re-grading and concreting undertaken in the late 1960s. Leaking from Main Lake rendered repair of it a necessity and Lothian took the opportunity to substantially re-design the entire lake area when he addressed this issue reconstructing the edges of the Main Lake.

The Lothian era corresponded with an awareness of the desirability of matching plant collections to environmental factors and questioning the viability of growing plants in radically different climates to their natural habitats. The Mount Lofty 'Annexe' site was acquired during the late 1950s, enabling a larger range of moist and cooler climate species to be grown. At the same time a Mallee Section was established at the Garden, demonstrating a key aspect of South Australia's semi-arid zone. Older fountains were removed, the most significant loss being the Owen Fountain that had elicited such pride and praise in the Garden's early days. The old Aquarium to the south of Main Lake, from which rose the Venus that caused Veitch's disdain, was removed, and the Italianate Garden, initially called a 'water garden', was constructed.

Adelaide Botanic Garden has struggled with both too much and too little water since its beginnings—a necessity for its success, the Garden's position on the Adelaide Plains has meant flood mitigation is a perennial problem. With the current strategic plan placing an emphasis on arid and semi-arid plants, new attitudes to water have come to the fore.

### *Rankings of cultural significance*

*National cultural significance*

- The lake system at Adelaide Botanic Garden as one of the earliest ornamental lake system created in Australia. The use of water is of historic and aesthetic importance for the oasis quality it has contributed to the Garden, both in itself and in the opportunities it is provided for the growth of aquatic and other plants, a significant element of the individual appeal of Adelaide Botanic Garden.

*High cultural significance*

- The tradition of the use of fountains as an embellishment for the garden is of historical importance as an early demonstration of the impact of a reticulated water supply on the use of water for ornamental purposes—the Coalbrookdale fountain (1908) and Oswald Brown jet (1880) are of historic and aesthetic significance for the continuity of this tradition.

*Contributory cultural significance*

- The response to flood mitigation at Adelaide Botanic Garden is of importance as a process that has contributed to the design of the Garden since its inception.

## 3.3.7 Historic Living Collections

**Figure 3.28** *Photograph of the inside of the Palm House displaying many of Schomburgk's desired fernery plantings in the 1880s.*

**Introduction**

'If you have discovered errors in me, your superior wisdom must pardon them. Who errs not when perambulating the Kingdoms of Nature? Correct me as a friend, and I, as a friend, will acknowledge and requite the kindness.' So wrote George Francis, quoting a letter from Linnaeus to his friend Heller, in his preface to the 'Catalogue of the Plants under Cultivation in the Government Botanic Garden, Adelaide, South Australia' (1859). Francis catalogued his collection before many of the plants had flowered, making it impossible to authenticate many of the names sent with the plants.

One of the nineteenth-century ambitions for botanic gardens was to have the plant world encompassed within its boundaries. Francis and Schomburgk articulated this ambition but both clearly sought to provide separate areas for Australian plants, a tradition maintained in the Adelaide Botanic Garden. The historic living collections have been influenced by the Garden's role as a place to trial plants for more ornamental and economic uses within South Australia. The collections have also reflected the specific interests of individual members of staff. Bailey's interest in dahlias and J.H. Veitch's comments in 1896 on the excellence of the orchid collection (a hobby of garden foreman MacDonald) demonstrate this latter aspect of the changing emphases in the collections.

The relationship between the plantings in the Botanic Garden and those of Botanic Park is of interest in that Schomburgk often used massed planting in Botanic Park of a species where a single specimen had been planted in the Garden.

### *Ficus* and *Araucaria* species

Trees of these two genera conformed to the mid-nineteenth century taste for dark foliaged umbrageous trees and conifers -- in Adelaide a distinct contrast to the local vegetation. Francis's early plantings along Main Walk were araucarias and his 1859 catalogue lists *Araucaria bidwillii, A. cunninghamii, A. cookii* (now *A. columnaris*), *A. excelsa* (now *A. heterophylla*) and *A. imbricata* (now

*A. araucana*). Schomburgk's planting of Araucaria Avenue (1868) now forms a dramatic feature of the Garden (see Section 4.1.1). The related genera, *Agathis* (then known as *Dammara*), also formed early plantings, with Francis listing three species in the Garden in 1859. In 1888 Schomburgk reported that the *Dammara australis* (now *Agathis robusta*) planted in 1861 was 51 feet (15.5 ) in height. A number of these early plantings survive and the recent addition of the Wollemi Pine (*Wollemia nobilis*) continues the tradition of growing members of this family.

Some of the earliest extant fig plantings are *Ficus rubiginosa* (Port Jackson or Rusty Fig) and *F. platypoda,* that Schomburgk stated were planted in 1860 and 1861 respectively. *Ficus sycamorus,* planted near the early Director's residence and the *F. macrophylla* Avenue planted in 1866 are also representative of this genus. This avenue is particularly important on a national level as a mid-nineteenth-century avenue of the species (see Section 4.1.12). Francis listed 13 species of *Ficus* in his 1859 catalogue and the Garden maintains a comprehensive collection of the genus, of importance for its age and highly unusual for its diversity in an Australian context. There is a particularly interesting group of figs on the southern edge of Botanic Park near the north entrance to the Garden. The deep shade provided by their spreading canopies and their gargantuan surface roots appear as tropical interlopers on the dry Adelaide Plains, providing continual inspiration for visitors.

Francis and Schomburgk used araucarias and figs as the large structural plantings of the early Botanic Garden. These have gradually matured to form the framework, particularly the tall vertical elements that is such a distinctive element of the character of the Garden.

### Australian plants

Adelaide Botanic Garden was established on a site that included large specimens of *Eucalyptus camaldulensis* (River Red Gum). These were mapped by Francis and a number of them retained. The use of Australian flora and its historic importance has been discussed in Section 3.3.3. Although there has been an emphasis on the importance of growing this flora in well-defined compartments, particularly Francis's early circles (see Section 4.1.3), Schomburgk's Australian Forest (see Section 4.1.2), and the later Mallee Garden (see Section 4.1.24), Australian plants have also been grown throughout garden as individual specimens. For example, in the area of the Western Wild Garden and Lower First Creek, there are single specimens of *Schefflera actinophylla* (Umbrella Tree) and *Brachychiton rupestris* (Bottle Tree).

As a design device, the Australian Forest formed a protective backdrop for the Garden on its north-eastern side. Schomburgk provided his Rosary (in the location of the current Italianate Garden) with a cluster of trees from north-east New South Wales and southern Queensland, principally rainforest species, at its northern end. This effectively formed a small living collection, unusual in its South Australian context. During the twentieth century an Australian border was established beside the boundary wall on North Terrace, and the Mallee Garden devoted to semi-arid plants provided a counterpoint to the moister Australian Forest area. The expansion of the Australian plant collection from the 1950s onwards contributed to the public's increased interest in these plants for use in domestic gardens.

### Shrubberies and flower beds

*Bedding generally*

Francis's early plan shows that the majority of the Botanic Garden was laid out in a series of beds planted with either flowers or trees and shrubs; the beds separated by gravel paths. This practice was continued by Schomburgk, although he introduced more areas of lawn in his modification of the Francis plan and expansion of the Garden. Lamshed records that Holtze 'substituted broad general effects for the intricate flower beds and florid ornamentation of an earlier era' but just what these changes were is difficult to discern as there is no plan of the Garden between 1890 and 1928. This latter plan shows where Bailey had further removed the flower beds and shrubberies of the Francis plan, although he substituted a section of the Main Walk with lawn and displays of bedding flowers, using annuals and cannas. Cannas were a fashionable bedding plant in the early twentieth century and used in Melbourne and Sydney botanic gardens and at Centennial Park, Sydney. The most distinctive remaining feature of the

Greaves era is the Sunken Garden, a place for floral display of inter-war favourites such as Iceland poppies and pansies. Lothian's interest in semi-arid flora resulted in the transformation of an area of specimen trees and lawn to the Mallee Garden, a reversal of a process of turning garden beds to lawn that had occurred progressively throughout the twentieth century.

*Bulbs and florists' flowers*

Early reports indicate a propensity for growing bulbous and tuberous plants. Francis's 1859 catalogue lists many species of *Allium, Amaryllis, Babiana, Crinum, Gladiolus, Iris, Ixia, Lachenalia, Moraea* and *Oxalis*. Many of the more usual northern hemisphere bulbs were found to have a short-lived flowering life, although *Narcissus* thrived. In an appendix to his 1882 *Report*, entitled 'The Introduced Plants in our Gardens and Fields', Schomburgk wrote:

> *Bulbous and tuberous plants from the Cape of Good Hope thrive with us as vigorously as in their native country, chiefly Gladiolus, Brunsvigias, Haemanthus, Watsonias, Ixias, Babianas, Ornithogalums, Trichonemas, Tritonias, Antholyzas, Lacenalias, Moraeas, &c; so also do Hippeastrums, Amaryllis, Crinums, Pancratiums, Alstroemerias from any part of the globe. Not so the Liliums.*

By 1888 Schomburgk reported that 'many of the bulbs introduced from the Cape of Good Hope begin to spread in pasture lands near gardens'.

Of flowers, Schomburgk commented in 1882 that most of the handsome European perennials succumbed to the Adelaide summer but that '*Petunias, Verbenas, Zinnias, Tagetes, Amaranthus, Gomphrenas, Portulacas, Chrysanthemums,* and *Zonale Pelargoniums*', flowered to perfection 'with a little help of water'. Bulbs and florists' flowers were an important component of the collections during the nineteenth century but became less important as the trees and shrubs of the garden grew and horticultural tastes changed. Bailey's love of dahlias, however, was a prominent exception to this general trend. Schomburgk had noted in 1882 that on the Plains, the flowers of the dahlia were small and suffered from the 'slightest hot winds'.

Schomburgk's Rosary, however, where the established surrounding trees provided protection from hot winds, proved to be an ideal location for the tubers provided by the Dahlia Society of South Australia and planted in 1917. Each annual report during this period refers to the dahlia display and its great popularity. Another floral innovation of Bailey's was a bed on the side of Niobe Hill to represent a map of Australia that survived throughout the 1920s. Massed displays of annuals were popular throughout the mid-twentieth century and bulbous or tuberous plants continued to be important ground covers. The 1955 catalogue contains a very extensive list of Iris grown in the garden. In 1958–59 dahlias were transplanted to an area opposite the Museum of Economic Botany. Currently they are grown in a small triangular area at the northern edge of the Conifer Lawn, appropriately around the *Brachychiton acerifolius* planted by the Victorian Tree Planters Association (1948) in memory of founding member, J. F. Bailey.

*Roses*

Roses have always been grown in Adelaide Botanic Garden. Francis listed 24 species of roses in his 1859 catalogue and his appendix suggests an improbably large number of more than 3,000 varieties of roses in the Garden. Although the complex plan Francis had drawn up for the Botanic Garden contained a large number of beds, Schomburgk established a new area solely devoted to the rose collection. He found that the roses attained 'perfection' in a good season, which was a rare occurrence when he reported in his 1882 *Report* on 'The Introduced Plants in our Gardens and Fields', placing the blame for failure on hot winds and rose blight. Windbreaks of pines established around the Rosary grew so successfully that Schomburgk removed the row of *Pinus radiata* to the side of the Rosary in 1888. This enabled him to add an extra 100 roses, both standard roses and climbing roses with festoons of flowering vines, between the roses. In 1917 the rose collection was moved to the former Class Ground—a situation that was to prove popular with the public—and cultivars in the collection were chosen to reflect contemporary fashions. The layout of the rose garden was altered in 1950 and a single variety of rose was grown in each bed, with the formal circular layout surrounded by climbing roses. In 1955 the collection contained 1500 roses displaying approximately 250 varieties. The

interest in the rose collection and impetus to establish the International Rose Garden demonstrates the importance of this collection in the public eye.

*Flowering Trees and Shrubs*

'Of the splendour of Oleander,' wrote Schomburgk in 1882, 'no northern [hemisphere] gardener can have any conception'. Francis had listed 9 varieties of *Nerium oleander* in the 1859 catalogue and during Veitch's 1893 visit he remarked that the oleanders near the entrance were twelve to fifteen feet (3.6 to 4.5 m) high, 'with a luxuriance difficult to surpass'. Oleanders still featured on the 1953 plan but were confined to part of the western boundary with the Hospital and along a section of Botanic Creek on the eastern side of the Bailey Lawns.

Schomburgk remarked in 1882 on the success of some tropical flowering trees such as *Jacaranda mimosaefolia* and shrubs 'viz.: *Erythrinas, Raphiolepis, Bauhinias, Lagerstroemias, Guillandia, Brugmansia, Bignonias, Tecomas, Hibiscus, Lantanas, Astrapaea, &c*'. When Veitch visited he commented on the shrubberies and noted *Duranta* sp., *Cercis siliquastrum,* Pampas Grass*, Arundo donax, Hymenosporum flavum, Calodendron capense, Sophora japonica, Dombeya* sp., and *Ilex cornuta.* His list of shrubs and trees from a range of geographic locations clearly demonstrated the diversity of the planting in the Garden.

Holtze's directorship coincided with a rise in the introduction of the flora from China and Japan to the West. In addition to his well-known planting of wisteria, Holtze is known to have developed a collection of magnolias and syringas, although there were few species grown in the Garden according to the 1955 catalogue. The 1925 *Report* recorded the removal of gravel paths and small grass plots around the Victoria House. This was replaced by a shrubbery area with small winding paths leading in from each corner. Bailey presented this as a change that enabled a large new collection of shrubs to be planted 'and as each plant has been labelled the educational value to the public is obvious. These shrubs included *Grevillea banksii* var. *Forsteri*, *Sesbania tripeti*, and *Lagerstroemias*. By 1953, clumps of *Doryanthes* sp. were established on the eastern side of the Museum.

A small shrubbery bed, devoted to New Zealand plants and marked on the 1953 plan was established to the north of the summerhouse. This was aimed at demonstrating their attractiveness use for home gardeners. The 1955 *Guide* discusses the shrubberies around the Class Ground, Economic Garden and Trial Garden opposite North Lodge. Here the woody species were grown to show the botanical affinities within the groups. By this stage the shrubbery surrounding the Rosary (now the Economic Garden) comprising Schomburgk's woody plantings of the early Class Ground had grown into trees, the majority of which are still there today. Shrubberies and beds given over to perennials continue to play as a mode of display. The Western Wild Garden is a prominent example of a more Modernist style of arrangement and in the late twentieth century there has been an increasing emphasis on growing cycads in an informal shrubbery on the Main Lake Lawn, that complement the large specimens of succulents, *Beaucarnea* sp., and *Nolina* sp., relocated as old plants from elsewhere in the Garden following the adjustment of the boundary with the Hospital.

*Cacti and other succulents*

Francis included a substantial number of cacti and other succulent species in his 1859 catalogue, and the tall flowering spikes of *Agave americana* are a striking feature of one of the early photographs of the entrance to the Garden. The use of succulents as feature or specimen plants in Adelaide Botanic Garden followed fashionable horticultural practice—early depictions of Sydney Botanic Garden show a similar fascination for these plants. Interestingly Charles Moore listed 9 species of *Aloe,* 4 *Agave*, and 6 *Yucca* growing in Sydney Botanic Garden in 1857, and Francis 37 *Aloe,* 2 *Agave*, and 7 *Yucca.* In 1882 Schomburgk wrote that:

> *the South Australian climate suits all succulent plants, which develop out of doors to great perfection, especially Yuccas, Aloes, Opuntias, Rhipsalis, Pereskia, Cereus and Echinocactus. Agave americana and Fourcroya* [sic] *gigantea grow to an immense size and generally produce their flower in the tenth to twelfth year after planting. Only the smaller kinds of Mamillarias, Epiphyllums want protection in summer from the scorching sun, and in winter from the heavy rains.*

Initially those specimens requiring protection were grown in small glass boxes (Wardian cases) placed at intervals along the Main Walk, but these became redundant in 1881 when a special Cactus House and shed were completed on the western side of the Garden near the Nursery area. In the Melbourne Botanic Garden, William Guilfoyle had converted a conservatory into a special house for cacti in 1880. The Adelaide collection was immediately assessed and extended, requiring an addition to the Cactus house by 1884 and Schomburgk's 1887 *Report* includes as an appendix, a 'List of Cacteae cultivated in the Botanic Garden, Adelaide'.

When Veitch visited in 1893 he noted a large bed that included *Yuccas, Agaves, Aloes*, and *Dracaena draco* to the west of the Main Walk near the 'show houses' and Francis's domed Conservatory. The cactus collection he considered 'very complete' and of about 500 specimens, all grown under glass. During Bailey's directorship the public display of succulents came to the fore with the establishment in 1922 of a rockery around the Palm House, paralleling the establishment of rockeries in the botanic gardens in Melbourne (1897–1900, extant) and Sydney (now replaced by the *c.*1980 Succulent Garden). The Palm House podium remained the principal place for outdoor succulent and cacti display until their recent removal to a temporary bed (during the conservation of the Palm House), leaving only the large *Aloe bainesii* and *Beaucarnia* sp.

It appears, however, that the collection had languished between Veitch's praise and 1929–30, when Bailey reported that helped by co-operation from the Sydney Botanic Garden two small houses were established for families such as *Cactaceae, Liliaceae, Euphorbiaceae*, and *Asclepiadaceae*. These glass houses were on the western boundary with the Hospital (near the Francis Pavilion) and held the collection until 1984 when they were demolished and the collection moved to the Schomburgk Range. Today Adelaide Botanic Garden contains a number of large imposing succulents used as specimen plants throughout the Garden and this contributes to its nineteenth-century Gardenesque character, but the massed display of succulents, long associated with the Garden, is no longer a feature of the place.

*Palms*

Historically, palms have been grown outdoors in the Palm Grove (see Section 4.1.31) or garden beds but the principal collection—and most prized species—were grown indoors in the Palm House. Schomburgk reported 159 species of palms growing in 1884. The outdoor collection appears to have been sent from Sydney Botanic Garden by Charles Moore, who was establishing a palm grove there in the 1860s. The collection is of importance for its long association with Adelaide Botanic Garden rather than its composition, with certain species (such as *Jubaea chilensis*) having individual significance.

### *Specimen trees and lawn*

The use of a tree as specimen that can demonstrate the unconfined beauty of the mature form of the tree was a core tenet of the Gardenesque style. The coloured version of Schomburgk's 1874 plan, in particular, demonstrates the areas of lawn with carefully placed single specimens of trees, their forms destined to be appreciated in the round. An early example of a specimen tree is the large *Agathis robusta* on the Francis Lawn. The 1874 plan also shows the largest expanse of lawn to be that of the Conifer Lawns, the sides of the hill left clear and the lower slopes dotted with single plantings of conifers.

Despite the fact that only a limited range of conifers grow with success on the Adelaide Plains, this feature of the Garden makes a significant contribution to its character. In his 1873 *Report*, Schomburgk listed trees he considered 'highly ornamental' and suited as specimen trees on lawns, although the majority of those listed are not among the survivors in the Garden today.

It is of interest to see similar combinations of old trees repeated. For example, the grouping of *Agathis robusta*, *Cupressus torulosa*, *Phoenix reclinata*, and *Araucaria* spp. planted as specimens in the Francis Lawn are also seen to the west of the Palm House in the Western Pinetum Remnant. Many of the historic specimen trees reflect nineteenth-century tastes, for example trees with dark glossy foliage (such as species of *Arbutus*, *Ficus*, *Photinia*, and *Psidium*); umbrageous forms

(such as *Cinnamomum camphora*); or for the architectural form of the Palm family (such as specimen plantings of *Jubaea chilensis*, *Phoenix canariensis*, and *Washingtonia* spp.). Choices reflected, to some extent, the trees that directors of other botanic gardens were planting and plant exchange between the colonies/states, although the mix was largely determined by the Adelaide Plains' climate. The obvious success of early plantings of *Arbutus* spp. gave impetus for the collection to be augmented in the twentieth century.

In his 1925–26 *Report* Bailey provided a list of twenty trees that had been growing in the Garden since the 1860s, giving their height and where appropriate girth at waist height (although the list does not seem to be comprehensive—for instance he omits the *Ficus platypoda* and *F. rubiginosa*). Some were specimen trees and others were growing in beds. They were (using Bailey's nomenclature) *Agathis robusta*; *Araucaria cunninghamii*, *A. bidwillii*, and *A. excelsa*; *Casuarina glauca*; *Cedrela toona* var *australis*; *Cinnamomum camphora*; *Cupressus torulosa*; *Eucalyptus calophylla*, *E. maculata*, and *E. saligna*; *Fraxinus excelsior*; *Harpephyllum caffrum*; *Pinus canariensis*; *Platanus orientalis*; *Populus nigra* var. *italica*; *Sequoia sempervirens*; *Stenocarpus sinuata*; *Tarrietia actinophylla*; and *Ulmus campestris*.

Over the years of his directorship Bailey featured photographs of trees he considered significant in his annual reports. The following is the list of the 30 trees (using the nomenclature Bailey used): *Araucaria cookii*, *Brachylaena dentata*, *Cedrus deodora*, *Casuarina glauca*, *Cercis siliquastrum*, *Cupressus macrocarpa* and *C. torulosa*, *Dombeya mollis, Eucalyptus ficifolia* and *E. saligna*, *Eugenia ventenatii*, *Ficus baileyana* and *F. rubiginosa*, *Fraxinus americana*, *Jacaranda mimosaefolia*, *Lagunaria pattersonii,* Oleander, *Phoenix canariensis*, *Pinus torreyana*, *Pittosporum bicolour*, *Podocarpus falcatus*, *Populus alba* and *P. nigra* var. *italica*, *Prunus ilicifolia* ,*Quercus ilex*, *Sequoia sempervirens*, *Schinus molle*, *Taxodium distichum, Tilia vulgaris*, and *Ulmus campestris*.

In 1919 Bailey featured *Vitex lignum-vitae* (Queensland Lignum-vitae), a slow growing tree. The specimen, located to the western of the Main Walk (near the Main Entrance) at present (2004) appears to be of approximately the same height as when photographed in Bailey's *Report* for 1918–19.

The use of specimen trees and lawn was also adopted for the layout of the former Asylum Grounds. A now handsome row of six *Jacaranda mimosifolia* were planted beside the National Herbarium Building (demolished 1999). *Prunus* were widely planted as specimen trees, particularly on the southern side of the Araucaria Avenue, in the mid-twentieth century.

In Botanic Park, Schomburgk planned an arboretum and a carriage drive lined with shady trees. In 1873 he envisaged grassed areas 'with scattered clumps or single trees, conspicuous to the eye by their fine foliage or form', within the framework planting of rows or avenues of trees. Plane trees formed the outside rows and the inside rows planted alternately with native *Lagunaria pattersonii* (Norfolk Island Hibiscus) and *Sterculia diversifolia* (now *Brachychiton populneus*). Towards Hackney Road where the soil was fairly stony he planted conifers such as *Pinus halepensis* (Aleppo pine) and *P. pinaster* (Maritime or Cluster Pine). Figs and araucarias were used while slightly later plantings included *Ulmus suberosa* and *U. campestris*. Some of these were replaced in 1960–62 when *Pinus halepensis* var. *brutia* (Brutia Pine) were planted along the Hackney Road boundary and about 60 trees from Botanic Park were removed (including kurrajongs, Moreton Bay figs, lagunarias, olives, elms, and about 50 pines). The historic tree collection in Botanic Park is relatively small and confined to a few individual trees, for example, *Lagunaria Patersonia, Brachychiton populneus, Araucaria cinninghamii, Aruacaria bidwilli, Pinus pinea, Pinus roxburghii (*or *P. canariensis), Pinus torreyana*, that remain of the Schomburgk plantings, the Plane Tree Drive and an impressive group of figs.

### Collections under glass and shade

The historical importance of gardening under glass is discussed in Section 3.3. Many ferns, cacti, orchids, bromeliads, palms, and aroids require the controlled and protected environment provided by a glass or shade house. Historically, the growth of aquatic plants under glass has been a prominent aspect of the Adelaide collections and the flowering of the Victoria Lily captured public attention. A favoured project of Schomburgk's, the construction of the Victoria House, he wrote in 1886 'afforded an abode for 1,169 other tropical plants, so that it proved to

be an excellent investment of the funds expended upon it'. The *Victoria amazonica* (syn. *V. regia*) was grown annually up to World War Two and in 1955 had been 'recently reintroduced into the Garden, together with two other large growing water lilies, *V. cruziana* and *Eurayale ferox*'.

There were 127 species of *Bromeliaceae* in 1886 and 218 of *Araceae*. In 1888 the orchid houses held 411 species and varieties of orchids, and Schomburgk provided a long list for his annual report of those that had flowered that year, drawing attention to the Cattleyas and Cypripediums. There were 183 species of palms, principally grown in the Palm House, and 477 species and varieties of ferns. Schomburgk's 1888 comment in relation to ferns speaks of the gardeners' dedication in the dry Adelaide climate: 'All the specimens in the fern houses, and the others distributed through the palm, stove, and other houses, display luxuriant growth, especially the Adiantums, the result of careful and unremitting attention.'

Reports in the twentieth century give little detail about these collections. The addition of the Simpson Shadehouse had provided a sheltered environment for the growth of begonias, hardy ferns, azaleas, fuchsia and other shade loving plants. In 1939–40 Greaves believed the glass houses were 'up to standard'. The cyclamen in the Palm House had proved a 'great attraction', with a display of cineraria, calceolaria, cyclamen, and schizanthus planned for a repeat performance. This implied that there may have been an emphasis on horticultural display rather than botanical diversity during these years.

There was a marked interest in the orchid collection in the 1950s. In 1951–52 the Garden received a large consignment of New Guinea orchids and there were 'further importations of orchids' to the J.T. Mortlock collection. As a result of a gift from Mrs Mortlock and contributions from the Orchid Club of South Australia, it was possible to construct a new orchid house in 1952–53. Additional orchids were added that were purchased through the J.T. Mortlock bequest, and Mrs Mortlock continued to support this collection in subsequent years. Special displays were mounted for period of the visit of Queen Elizabeth II to South Australia in 1954, when there were extra visitors to the Garden, especially from people from regional areas. The most popular displays about this time were said to be dahlias, spring flowering bulbs (such as daffodils), and wisteria, together with water lilies such as *Nypmphaea gigantea* and plants grown in the conservatory (such as begonias, ferns, bromeliads and orchids). Lothian wrote in his 1953–54 report that the increased range of conservatory plants reflected improved skills on the part of staff as well as better facilities.

The late twentieth century brought an increased interest in *Bromeliaceae*, reflecting contemporary taste for tropical and sub-tropical plants with an architectural form (see Section 4.5.3).