

'One million and counting'

History and special collections of the State Herbarium of South Australia



Today, the State Herbarium of South Australia is located in the refurbished Tram Barn A situated in the beautiful Adelaide Botanic Garden. A significant national herbarium, containing more than a million herbarium specimens, the Herbarium is a resource enabling us to improve our knowledge of, and conserve, our native and naturalised plants, algae, lichens and fungi.

History of establishment

The earliest known preserved plant specimens collected from South Australia can be dated back to 1802. These were collections made by Robert Brown, the botanist accompanying Matthew Flinders on the Investigator. French explorers also made collections the following year; mostly from Kangaroo Island. Numerous collections were made by visitors to South Australia and many sent overseas following these expeditions.

The first serious botanist resident in South Australia was Ferdinand Mueller, a German migrant who arrived in 1847. In 1852 he was appointed Government Botanist of Victoria, and his collections, along with those of the many people who collected for him, are now held by the Royal Botanic Gardens Melbourne. Another early botanist was George Francis, who arrived in South Australia in 1849 and became the first Director of



A specimen collected by Robert Brown during the Flinders expedition in 1802 which is the 'type' specimen for *Hakea rugosa*

the newly established Adelaide Botanic Garden in 1855. The whereabouts of his plant specimens is uncertain, but it is possible that many would have been retained by Kew Gardens, England, when he died.

Significant institutional collections began with Richard Schomburgk's appointment as the Director of the Adelaide Botanic Garden in 1865 and Ralph Tate's appointment in 1875 as the first Professor of Natural History at the University of Adelaide. These collections were focal points for the retention of specimens in South Australia rather than their being sent to interstate or overseas herbaria. The collections that comprised the Schomburgk Herbarium were eventually transferred to the University of Adelaide Botany Department in 1940.

The South Australian Museum accumulated a substantial collection, partly through the efforts of another German migrant, Otto Tepper, who became honorary entomologist in 1888. The Waite Institute established an agriculture-

based collection in 1933. From the time of his appointment as Botanic Gardens Director in 1948, Noel Lothian aimed to establish a true State Herbarium. With agreement from the other main collection holders and limited Government funding the State Herbarium of South Australia was established in 1954, under the acting leadership of Edward Stirling Booth. The foundation of the new herbarium collections were those formerly held by the Museum and the University of Adelaide, Botany Department. An active collecting program was undertaken by early staff led by the first Keeper, Hansjoerg Eichler.

Over the subsequent decades, virtually all significant plant, algal and fungal collections in the State have been amalgamated within the State



J.M. Black notations on a South Australian endemic (i.e. only found in SA) *Correa calycina*

Herbarium. Especially significant additions include the large collection formerly held by the Waite Institute (around 57,000 transferred in 1985), and the marine algae from the Botany Department of the University of Adelaide (around 70,000 in 1990).

Other significant material within the South Australian collections include Cleland's fungal collection (from the Waite Institute), a large private collection of Australian and foreign mosses and lichens from D.G. Catcheside, a *Eucalyptus* collection from the Woods and Forests Department, and collections formerly held by the University of South Australia and the Animal and Plant Control Commission.

Having grown into the 4th largest herbarium collection in Australia, with over 1 million specimens, the



J.B. Cleland, ready for field work



J.M. Black, author of the Flora of South Australia (1922–1929)

State Herbarium of South Australia holds an internationally significant and diverse collection of plants, algae and fungi. These collections continue to be used in the discovery of new species, in analysis of changing climatic conditions and as evidence for changing biodiversity. The collections are used as a guide to detect new weed incursions and to understand the distribution of species within South Australia. Ongoing work of the Herbarium, with support and collaboration from the South Australian community, will maintain this important historical and reference collection of our plants, algae and fungi.

Special Collections

Important collections, in both size and historical significance, were gathered from the South Australian Museum and the Botany Department of the University of Adelaide when the Herbarium was formed. From the larger University collection came some of the earliest specimens retained within the State. Professor Ralph Tate collected widely and also acquired many valuable records; among them are specimens from early scientific expeditions to the interior regions of northern and western Australia:

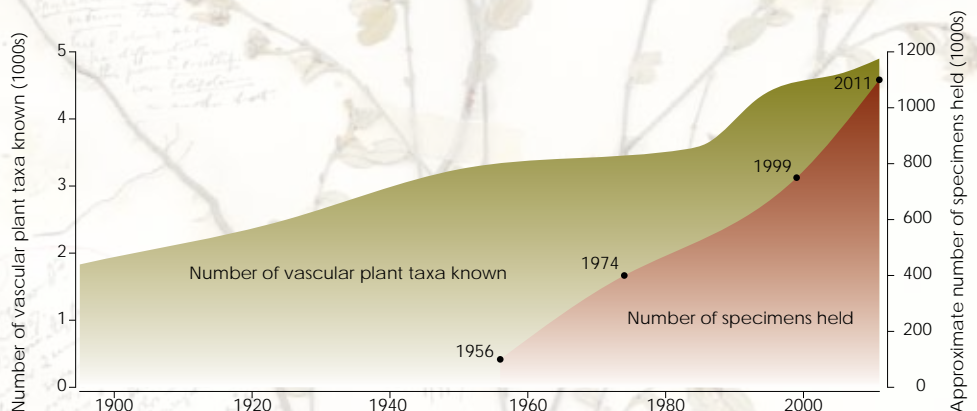
Elder Exploring Expedition (1891-2) [principal collector Richard Helms]

Horn Expedition (1894) [principal collector Ralph Tate]

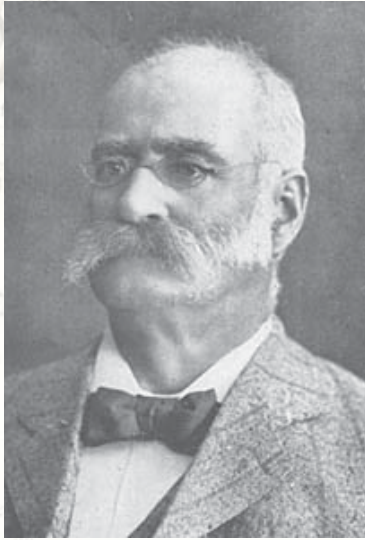
Calvert Expedition (1896-7) [collector George Keatland]

Important material from later expeditions added to this foundation; notably the Simpson Desert Expedition of 1939 and the Arnhem Land Expedition of 1948.

The University of Adelaide, in 1940, had incorporated the former Botanic Gardens Herbarium of Richard Schomburgk, which had fallen into neglect. Both collections contained Australian and overseas material of considerable interest; the breadth of which is still to be fully appreciated. John Burton Cleland had contributed his large collection of New South Wales plants in 1920; Richard Sanders Rogers bequeathed his large orchid collection in 1942, and John McConnell Black's highly important private collection was donated by his family in 1951.



South Australian records of plant taxa and collections held in the State Herbarium



R. Tate

Amongst material acquired from the Museum was the herbarium formed by the Field Naturalists Society, which had come to include the significant private collection of Otto Tepper. Ernst H. Ising had donated his considerable private collection to the Museum in 1945, and Alison Ashby contributed hers in 1949. The latter included considerable material from her father, Edwin, whose estate "Wittunga" is now included within the Botanic Gardens portfolio. Samuel A. White's collection had also been incorporated within the Museum holdings. Cleland's later plant collections and his highly important collection of fungi had also been part of the Museum collection, although the latter was later transferred to the Plant Pathology Department of the Waite Institute. The main part of this fungal material was later transferred to the State Herbarium. Important collections

of ethnobotanical material from Norman Tindale and others also came from the Museum.

The Waite Institute's plant herbarium, commenced in 1933 as an agriculture-based collection, had grown to about 57,000 specimens by the time of its transfer to the State Herbarium in 1985. This merger was most valuable, producing a far more comprehensive overall herbarium, and especially given the Waite's previous emphasis on weeds. In the 1940s, the Waite collection had also received the private herbarium of Albert Morris from Broken Hill. Its various past curators (C.M. Eardley, N.T. Burbidge, E.L. Robertson and especially D. E. Symon) all contributed significantly to the Waite material. Burbidge's eucalypt collections and Symon's Solanaceae are of particular significance.



C.M. Eardley

Almost all substantial South Australian plant collections from the 20th century are now held within the State Herbarium; later incorporations have included the eucalypt collections of C.D. Boomsma from the Woods and Forests Department, as well as collections formerly held by the University of South Australia and the Animal and Plant Control Commission.

Apart from flowering plant material, the State Herbarium holds important collections of other groups: the internationally significant collection of marine algae gathered by Professor Bryan Womersley was transferred from Adelaide University in 1990; the non-pathogenic part of the Waite Institute collection of fungi (including the J.B. Cleland material) was transferred in 1978 and 1997; historic lichen collections from the Mawson Antarctic expeditions were received from Adelaide University, as well as the arid-zone lichens studied by R.W. Rogers. A large private collection of worldwide mosses and lichens was donated by Professor D.G. Catcheside.

These collections all add to the breadth of the State Herbarium's vast information store. However, the historic collections tell only part of the story, and the collection still continues to expand our knowledge base. Current staff and Associates still contribute new and highly significant records, and at least 10% of the total specimen holdings have been contributed since 1984 through the Biological Survey of South Australia project.



Different forms of specimen preservation

The State Herbarium of South Australia

'South Australia's key centre for the preservation and generation of knowledge of native and naturalised plants, algae, lichens and fungi.'

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Moss specimen, (the small green smudges) with notations and drawings by J.M. Black made while specimen was fresh (specimen number AD97544132)



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