

HISTORY OF EARLY WESTERN AUSTRALIAN HERBARIA

By JOHN GREEN

- 1891 W.A. MUSEUM ESTABLISHED (B.H. WOODWARD DIRECTOR), HERBARIUM COMMENCED 1894-95 (PROBABLY THE FIRST OFFICIAL STATE COLLECTION OF SPECIMENS).
- 1894 BUREAU OF AGRICULTURE FORMED (BECAME DEPT. AGRICULTURE IN 1898).
- 1897 A. MORRISON APPOINTED TO BUREAU (FIRST OFFICIAL GOVERNMENT BOTANIST); RETRENCHED IN 1906; HONORARY WORK FOR W.A. MUSEUM 1906-1912.
- 1906 DEPT. AGRICULTURE POISON PLANT COLLECTION TRANSFERRED TO W.A. MUSEUM.
- 1911 F. STOWARD APPOINTED AS BOTANIST AND PATHOLOGIST BY DEPT. AGRICULTURE; RETRIEVED POISON PLANTS FROM W.A. MUSEUM.
- 1916 FORESTS DEPARTMENT COMMENCED AN HERBARIUM.
- 1920 C.A. GARDNER APPOINTED AS BOTANICAL COLLECTOR TO FORESTS DEPT. D.A. HERBERT PROMOTED BY DEPT. AGRICULTURE TO ECONOMIC BOTANIST AND PATHOLOGIST.
- 1924 C.A. GARDNER JOINED DEPT. AGRICULTURE.
- 1926 W.M. CARNE, ECONOMIC BOTANIST AND PLANT PATHOLOGIST, DEPT. AGRICULTURE, ADDRESSED ANZAAS URGING THE FORMATION OF A CENTRAL STATE HERBARIUM.
- 1928 (PRESUMABLY) W.A. GOVERNMENT DECIDED TO FORM A STATE HERBARIUM ATTACHED TO AGRICULTURE; IT COMBINED COLLECTIONS OF AGRICULTURE, FORESTRY AND MUSEUM.
- 1929 C.A. GARDNER BECAME GOVT. BOTANIST AND CURATOR OF THE STATE HERBARIUM.
- 1959-60 W.A. MUSEUM COLLECTIONS TRANSFERRED TO W.A. HERBARIUM.

WESTERN AUSTRALIAN HERBARIUM STAFF

SEPTEMBER 1986

PERMANENT STAFF

Professional

John W. Green
Ted E.H. Aplin
Bruce R. Maslin ✓
Paul G. Wilson ✓

Kevin F. Kenneally ✓
Beverley L. Koch
Nicholas S. Lander ✓
Margaret Lawrence
Terry D. Macfarlane ✓
Neville G. Marchant ✓
Gillian Perry ✓
Barbara L. Rye ✓
Judy R. Wheeler ✓

Marion L. Smith

Technical

Raymond J. Cranfield ✓
J. Wendy Lee-Frampton ✓
Cheryl L. Parker ✓

Peter J. Poli
Philip J. Spencer ✓

Clerical

Vicki L. Hamley ✓

Gardener

Stephen Hull

TEMPORARY STAFF

Studies on Acacia (ABRS)

Suzanne Curry
Karina J. Knight
Terena R. Lally

HONORARY STAFF

Honorary Research Associates

Emeritus Professor Brian J. Grieve
~~Dr Richard M. Cowan~~

Honorary Research Assistant

Ms Daphne C. Edinger

WESTERN AUSTRALIAN HERBARIUM STAFF

JULY 1988

PERMANENT STAFF

Professional

Bruce R. Maslin
Paul G. Wilson

Kevin F. Kenneally
Beverley L. Koch
Nicholas S. Lander
Terry D. Macfarlane
Neville G. Marchant
Gillian Perry
Barbara L. Rye
Judy R. Wheeler
Sue J. Patrick

Technical

Raymond J. Cranfield
J. Wendy Lee-Frampton
Cherly L. Parker
Philip J. Spencer

Clerical

Vicki L. Hamley
John Eygenraam (located at Shenton Park Para-quad Centre).

Gardener

Peter Rokich

TEMPORARY STAFF

Suzanne Curry
Karina J. Knight
Terena R. Lally
Richard S. Cowan
John Rainbird
Dinky Goble-Garratt

HONORARY STAFF

Honorary Research Associates

Emeritus Prof. Brian J. Grieve

Honorary Research Assistant

Ms. Daphne C. Edinger

WESTERN AUSTRALIAN HERBARIUM STAFF

OCTOBER 1988

PERMANENT STAFF

Curator	Level 8.3	Vacant (B. Maslin acting; D. Goble-Garratt held as temporary relief against this position at level 3)
Senior Botanist	Level 7	Paul G. Wilson Bruce R. Maslin Neville G. Marchant
Botanist	Level 6	Kevin F. Kenneally Gillian Perry Nicholas S. Lander Terry D. Macfarlane
	Level 5	Judy R. Wheeler Barbara L. Rye (0.5 FTE) Sue J. Patrick
	Level 2/4	Beverley L. Koch (0.5 FTE)
Administrative Officer	Level 3	Vacant
Technical Officer	Level 4	Raymond J. Cranfield
	Level 3	Wendy Searle (0.5 FTE) Cheryl M. Parker (0.5 FTE; maternity leave, K. Knight temp. relief)
	Level 2	Suzanne Curry -
	Level 1	Phillip S. Spencer
Clerical	Level 1	Vicki L. Hamley J. Eygenraam (0.5 FTE)
Gardener		Peter A. Rokich (resignation to take effect from November 1988).

TEMPORARY STAFF

Botanist	Level 2/4	Richard S. Cowan (0.6 FTE; ABRS) Alex R. Chapman (0.6 FTE; ABRS)
Technical Officer	Level 2	Terena Lally (ABRS) Diana Corbyn (ABRS: duties to commence about 10 Oct. 1988). John J. Rainbird (0.6 FTE; ABRS: request current with Human Resources Branch to increase from Level 1, 0.4 FTE)

HONORARY STAFF

Honorary Research Associate

Emeritus Professor Brian J. Grieve

~~*~~ Address.

Honorary Research Assistant

Ms Daphne C. Edinger

HERBARIUM STAFFING (FTE)1. AT THE TIME OF TRANSFER FROM DEPARTMENT OF AGRICULTURE

<u>Position</u>	<u>Incumbent Officer</u>	<u>Status</u>	<u>FTE</u>
Curator (Level 8.3)	Vacant	Permanent	1
Senior Botanist (Level 7)	Paul G. Wilson Bruce Maslin Neville G. Marchant	Permanent Permanent Permanent	1 1 1
Botanist (Level 6)	Kevin F. Kenneally Gillian Perry Nicholas S. Lander Terry D. Macfarlane	Permanent Permanent Permanent Permanent	1 1 1 1
(Level 5)	Judy R. Wheeler Barbara L. Rye Sue J. Patrick	Permanent Permanent Permanent	1 0.5 1
(Level 2/4)	Beverley L. Koch	Permanent	0.5
Technical Officer (Level 4)	Raymond J. Cranfield	Permanent	1
(Level 3)	Wendy Searle Karina Knight	Permanent	0.5 0.5
(Level 2)	Cheryl Parker	Permanent	1
(Level 1)	Phillip S. Spencer	Permanent	1
Clerical	Vicki L. Hamley J. Eygenraam	Permanent Permanent	1 0.5
Gardener (Level 1)	Brad Hasson	Permanent	1
Botanist (Level 2/4)	Richard S. Cowan (ABRS Grant - B. Maslin)	Temporary	0.6
Technical Officer (Level 2)	Terena Lally (ABRS Grant - T. Macfarlane)	Temporary	0.6
	Suzanne Curry (ABRS Grant - B. Maslin)	Temporary	1
Librarian	Janice Henderson	Permanent	1

TOTAL FTE 20.7

2. STAFF AS AT 5 DECEMBER 1988

20.7 FTE as previously, plus

Botanist (Level 2/4)	Alex R. Chapman (ARBS Grant - B. Maslin)	Temporary	0.6
Technical Officer (Level 2)	Terena Lally (ARBS Grant - T. Macfarlane) (Officer now full FTE)	Temporary	+0.4
	John J. Rainbird	Temporary	0.6
Administrative Assistant (Level 3)	Jenny Monck	Permanent	1

TOTAL FTE = 23.3

revised July 1985

HISTORY OF EARLY WESTERN AUSTRALIAN HERBARIA

By J.W. Green

This paper attempts to trace the history of herbarium collections, both official and private, as well as the botanists associated with them, prior to the formation of the official State Herbarium in late 1928 or early 1929.

In the closing years of the 19th century two government collections had their beginnings. The earliest general collection was probably that of the Museum which, following its establishment in 1891, began to receive interesting and useful specimens presented to it by members of the public.¹ Presumably some pressed plant specimens would have been included among them. The Bureau of Agriculture, formed in 1894, appointed a Botanist in 1897 who doubtless also began a herbarium collection of the plants which concerned him, principally poison plants as will be shown later.

Among the early documents which have so far come to light, precious few facts and figures have been discovered relating to the history of these embryonic herbaria. As the personalities concerned with them are a little better-documented, I shall begin with a brief account of two whose names are associated with the beginnings of early official collections, later to become amalgamated following considerable independent development. I refer to Woodward, of the Museum, and Morrison, of the Bureau of Agriculture.

Bernard Henry Woodward (1846-1916), a member of a distinguished English scientific family², was evidently on the staff of the Museum in 1894, as a letter dated 1897 referred to poison plant data collected by him "three years ago"³. Certainly he was at the Museum by 1895, as he referred to "this Museum" in a letter requesting a timber specimen accompanied by a botanical specimen or description

1 W.A. Museum, Annual Report 1964-1965

2 N. Hall, Botanists of the Eucalypts, 1978

3 Letter 29 July, 1897, W.A. Museum

to "enable the botanical name to be ascertained"⁴. Woodward was Director of the Museum & Art Gallery from 1889 to 1916, during which time he periodically forwarded specimens to the Bureau of Agriculture, or later, The Department of Agriculture for determination. As some extant covering letters advise of the return of these specimens, or most of them, it must be assumed that they were being added to a Museum herbarium: the earliest such letter is 1897⁵.

In view of the above, a starting date of around 1894-1895 seems probable for the Museum herbarium. Since no mention is made in correspondence of any other staff botanist, Woodward was presumably himself the curator. Although the Bureau of Agriculture existed at this time, having been established in 1894, it seems unlikely that a herbarium would have been started much before the appointment of a botanist three years later. It seems therefore that the Museum must be credited with originating the first official state collection of herbarium specimens.

The first person to be appointed to an official government position as Botanist was Dr. Alexander Morrison (1849-1913). A retired medical practitioner, Morrison, at the age of 48, joined the Bureau of Agriculture, Western Australia, on 1 July 1897, at a salary of £230 per annum. According to his obituary⁶, he continued to fulfil the duties of Botanist until he was retrenched on 19 June 1906. This suggests that he was in continuous employment with the Government, being one of the small staff of the Bureau absorbed by the Department of Agriculture in 1898. In curious contrast, however, is the statement made by the Secretary of the Bureau to J.J. Lee Steere M.L.A., in a letter dated 30 Oct., 1897⁷, that "Dr. Morrison was employed by the Bureau for a specific purpose viz., to catalogue and describe the poison plants of Western Australia for the "Settlers' Guide". This work is now completed, and Dr. Morrison severs his connection with the Bureau this month." Whatever the

4 Letter 25 June 1895, W.A. Museum

5 Letter 25 Oct., 1897, W.A. Museum

6 J. Nat. Hist. & Sci. Soc. W. Aust. 5: 108-109

7 Letter, W.A. Museum

significance of the last sentence, Morrison evidently did not sever his connection with the Bureau, continuing to serve it, and later the Department, until his retrenchment, as well as afterwards as a paid private consultant.

Between 1906 and 1912, when he left the state for Victoria, Morrison also undertook honorary botanical work for the Museum, mostly identifications, and made large collections of plants in the Stirling Range, "at the instance of the Government"⁶. Whether any specimens found their way into a government collection is not known, but it seems likely that one set was added to his private herbarium which, by 1912, occupied fifty cases. Morrison bequeathed his herbarium to Edinburgh University, from whence he had graduated; eventually many of his W.A. collections found their way back by way of a donation to the Western Australian Herbarium some 60 years later.

Less than a month after Morrison's retrenchment Bernard Woodward, by then Director of the Museum, was requesting his Committee to write to the Minister for Agriculture asking for the Department's "valuable Botanical collection" to be deposited for safe keeping in the Museum⁸. This was done, as evidenced by a return letter a year later⁹, asking for a suspected poison plant to be compared with specimens "from this Office, and now in your keeping". These letters contain two most interesting points: one, that the Department of Agriculture did indeed have a herbarium worth protecting, a fact that could only be surmised on earlier evidence, and the other, that the Museum became, for a few years, the sole repository of official herbarium collections, presumably under Morrison's honorary curatorship, doubtless encouraged by Woodward's interest. Tantalisingly, no evidence has been found suggesting even approximately the size of either collection at this time.

We still do not know when the Department of Agriculture herbarium was started. However, since Morrison was known as "all his life a collector of botanical specimens"⁶, and since the Department's collection was described as valuable nine years after his appointment to the Bureau, we can assume that he contributed to the official collection, as he did his own, commencing the year of his appointment, 1897. Pending the discovery of new evidence, this, then, seems the best estimate of the year the collection was started.

8 Letter, 2 July 1906, W.A. Museum

Prior to Morrison's time, the Western Australian flora had been studied by a host of visiting botanists and explorers who made collections, firstly along the coast (Dampier, 1699; Menzies, 1791; Leschenault, Guichenot, Brown, 1801; Gaudichaud, 1817 & 1820; Cunningham, 1820s; Baxter, 1823-1825 & 1828-1829; and Fraser, 1827) and then, following settlement, further inland (Huegel, 1833; Preiss, 1838-1842; Maxwell, 1858-1875; Mueller, 1867, 1877 and perhaps also 1856). Preiss' collections were particularly noteworthy, numbering almost 3,000 specimens.

The most prolific of the early collectors was, however, a settler: the gardener Drummond, who arrived with the first immigrants in the "Parmelia" and soon set about collecting and travelling widely in the south-west of the state. He died in 1863.

Most of the above collections were sent out of the state, to Britain, Europe and, following settlement, to Victoria or New South Wales. The emergence of two official collections in Western Australia, in the 1890s, and the official appointment of Morrison as Botanist, provided a much-needed focus for collections of the local flora. Even around this time, however, significant collections were being made by visitors (Helms, 1891-1892; Diels & Pritzel, 1901-1902; Dorrien-Smith, 1909), most of whose specimens left the state, as indeed did those of non-botanist state officials like Roe, 1836 & 1848-1849 and Fitzgerald, 1905-1906. (Many collections continued to leave the state in later years, even those by public servants responsible for the state collection, such as Stoward & Carne - see below.)

There is some confusion over Morrison's title and stipend¹⁰. Despite the fact that he sometimes styled himself "Government Botanist", even in some official reports¹¹, I believe his position was only ever officially designated as Botanist⁶; the appellation is an understandable and reasonable one for a civil servant, but the only person to occupy a position officially designated Government Botanist was Gardner, between 1929-1960. On the question of Morrison acting in an honorary capacity, there is abundant evidence that he drew a salary between 1897-1906, and received botanical consultant fees afterwards, although he probably acted in an honorary capacity at the Museum.

¹⁰ Serventy, W. Aust. Nat. 11: 170, 1970

Morrison was an admirable person to occupy the role of first Botanist: he is said to have been painstaking, kindly, scrupulously honest and an indefatigable collector. It is regrettable that he suffered the ignominy of being retrenched and his position rendered vacant, presumably to effect necessary economies but perhaps as a result of his falling out of favour with his administrators, as hinted in the rather peremptory "Dr. Morrison severs his connection with the Bureau this month"⁷! Morrison took up medical practice again, in Perth, after his retrenchment, as well as performing botanical consultancy work for the Department of Agriculture. He continued to be active in scholarly botany, publishing a paper on Vegetation and Rainfall in 1910, revising the official Year Book of W.A. and advocating botanical and forest reserves. It is somewhat surprising that in 1912, at the age of 64, he took up a position with Professor Ewart at the Melbourne Herbarium; unfortunately he was to die only a year later. One can only guess why he saw fit to leave his large private herbarium to his old university in Scotland, when it would have made a valuable addition to either the Museum or Agriculture collections both by then well-established.

In 1911, about the time of Morrison's departure, after an interval of five years with^{out} a Botanist, the Department of Agriculture appointed Frederick Stoward (1866-1931) as Botanist and Pathologist, and retrieved its collection of plant specimens, mainly poison plants, from the Museum. In the meantime, the Department's botanical work had been performed, or at least reported on, by the entomologist Newman^{12,13}, whose duties comprised mainly identification of weeds and poison plants.

Dr. Stoward was 45 years of age when appointed, having migrated to Australia 30 years before and specialised in fermentation and chemical processes², working mainly in Adelaide, S.A. His name appears in the Department of Agriculture Annual Report for 1911-1912 which contains the first clear reference to an actual herbarium: "Considerable additions have been made to the Departmental herbarium collection which, as time progresses, will be further augmented." Native flora, also alluded to for the first time in this report, was evidently included, along with weeds and poison plants.

12 Dept. Agric. W. Aust., Ann. Rep. June 1910

13 Dept. Agric. W. Aust., Ann. Rep. June 1911

By the following year, Stoward was able to report¹⁴ a "very considerable increase in the number of plant specimens ... received for determination", leading to "the very necessary undertaking of re-arranging and cataloguing the collection of plant specimens which at present comprise the Departmental Herbarium ... mainly carried out by my assistant Mr. Wakefield." Only the vaguest indication of the size of the herbarium is given, when Woodward, writing at this time to Maiden in Sydney¹⁵, refers to Dr. Stoward's having charge of "the greater part of the Government botanical collections." Evidently, by this time the Agriculture herbarium had overtaken in size that of the Museum. Stoward's own collections from W.A. are found in other herbaria, including that of the British Museum of Natural History, but are largely unrepresented in PERTH.

The following two annual reports, covering the period up to June 1916, indicate no more than quiet routine in the herbarium, still under Stoward as Botanist and Plant Pathologist.

In another department, however, a new herbarium had suddenly emerged. The Conservator of Forests, Mr. C.E. Lane Poole, writing in his Annual Report of December 1916, announced the establishment of a "forest herbarium ... the collection of material ... placed in the hands of District Ranger Schock." Dr. Stoward was thanked for undertaking the work of identifying the material. Of considerable interest is the practice, begun in this report and continued for some years, of listing botanical names, and local names, of specimens collected and identified during the year. The total for 1916 was 76 different plants identified to species, as well as a handful to genus or having affinity to a named species. Somewhat similarly-sized lists appeared for 1917 and 1918.

Stoward left the Department of Agriculture to return to his family wine business in South Australia in 1917, after which botanical work was placed under the Agricultural Chemist, Mann, "ably assisted in

14 Dept. Agric. W. Aust., Ann. Rep. June 1913

15 Letter, 11 Dec. 1913, W.A. Museum

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the Botanical section by Mr. D.A. Herbert, appointed Botanical and Pathological Assistant in May 1918. The Branch was rehoused in the office of the Government Analyst in July 1918, botanical work being "entirely transferred from the Department of Agriculture, where it had been previously housed."¹⁶ Despite the foregoing wording, this seems not to have involved a transfer to a different government department. The Government Analyst may have been a somewhat independent Branch, loosely called a "Department", yet still reporting to the Minister for Agriculture.

By June 1919 Mann was able to report on Mr. Herbert's considerable achievements in his first year: in addition to routine work, these included the elucidation of the parasitic nature of Nuytsia floribunda. The rearrangement and classification of the herbarium and the establishment of a mycological herbarium were listed as requirements for "further increasing the effectiveness of this branch."

In the same Report, Herbert, who had immediate charge of botanical work, made his own "Report of Botanical and Pathological Assistant" in which he gave the earliest known indication of the size of the collection: 13,000 specimens¹⁷, "mostly Western Australian species, but there are a number from the Eastern States and some German species, besides specimens of those exotic plants which have become naturalised." Meanwhile the Forests Department herbarium continued to increase, by 82 specimens in the year ending July 1919. As usual, a list of names was supplied.

By 1920 Herbert, having now acquired the degree of M.Sc., was Economic Botanist and Pathologist and had described two new species of native plants, Isopogon occidentalis and Xanthorrhoea reflexa. In this year the Forests Department officer in charge of its herbarium was detailed for other duties and only 34 specimens were added to the collection.

Herbert was busy again in 1921, describing new species, publishing on Xanthorrhoea, Santalaceae and carrying out other routine work, being assisted, as in 1920, by Miss V. Prowse B.Sc. in the

16 Dept. Agric. W. Aust., Ann. Rep. June 1919, pp. 5,24

17 Evidently an error for 1300

re-organization of the herbarium. She was combining "the several collections comprising it" and bringing up to date their nomenclature. Herbert proudly announces "When this is completed, it will be the best herbarium in the State, and will contain about 6,000 specimens, many of them types."

As will be seen later, 1920 was a momentous year for herbaria, as it marked the appointment of Charles Austin Gardner (1896-1970) as a botanical collector in the Forests Department. Recognizing Gardner's enthusiasm as an amateur botanist, Herbert had first tried to have him appointed as his own assistant and then, when this proved unsuccessful, recommended him to the Conservator of Forests. Gardner had already built up a sizeable private herbarium, under the guidance of Mrs. Emily Pelloe, and his efforts had an immediate impact on the rate of acquisition by the Forest herbarium. This was heightened by his participation in a major expedition to the Northern Kimberley in his first year, from April-October, 1921, when he brought back some 400 sets of specimens, writing a major report of 105 pages¹⁸, describing 20 new species, several varieties and recording an additional family for the state.

Gardner was to prove a towering figure in Western Australian botany for 40 years, dominating the herbarium scene and putting the state on the map with a world-class herbarium.

He was soon found a position in the Department of Agriculture as assistant to the Economic Botanist and Plant Pathologist, W.M. Carne, commencing duty in 1924. Inevitably, he rose two years later to become Assistant Botanist and Plant Pathologist. On Carne's resignation in 1928, his post was divided and Gardner became Government Botanist and Curator of the State Herbarium at the age of 33, in January 1929. Nothing is known of Carne's own collections which seem mostly to have left the state.

Before departing the scene, however, Carne took one last action which was to have major consequences: he addressed the ANZAAS meeting of

18 Botanical Notes, Kimberley Division of W.A., Forests Dept. Bull. 32, 1923

1926, urging the formation of a central state herbarium, by amalgamating the independent collections held by Agriculture, Forests and the Museum, the first being the most complete, and the only one under the control of a botanist. As soon as the Premier's Department began to inquire into this proposal, the Director of the Museum, Ludwig Glauert, advised his trustees to oppose any attempt to remove the Museum's collection, especially as it contained types, was of a considerable size (2,000-3,000 specimens) and was vested in a permanent body, the trustees. On the other hand, he was willing for the combined herbarium to be housed in the Museum.

The Department of Agriculture argued its case on the basis of having a botanist of standing on staff, which the Museum did not, a circumstance necessary for dealing with "the important herbaria of the World"¹⁹. Furthermore it was claimed that it had been found undesirable, throughout the world, to link herbaria with museums, and that they were more naturally linked with botanic gardens, this idea having been put forward by Carne. As the debate continued, extending even to letters in the press, the Museum's case was bolstered by its acquisition, in July 1982, of the substantial private herbarium (some 5,000 specimens) of Oswald Sargent. Sargent was convinced the Museum was "the proper place for a National Herbarium"²⁰ and made it a condition of his gift that "the specimens will remain ALWAYS at the Museum under the control of a corporate Board, and will always be available to serious students."

The Museum's arguments were to no avail, however, and the Government made its decision, presumably later in 1928, in favour of the combined central herbarium being attached to Agriculture, where it has remained ever since. Although the Forests Department was a willing partner in the coalition, it was not until 1957 that the Trustees of the Museum and Art Gallery resolved to make over their herbarium collection for amalgamation. According to A.S. George²¹, the Museum collection comprised 3,500 to 4,000 mounted sheets, together with a large quantity of unmounted material, much of it Sargent's.

19 Letter, 3 Jan. 1928, W.A. Museum

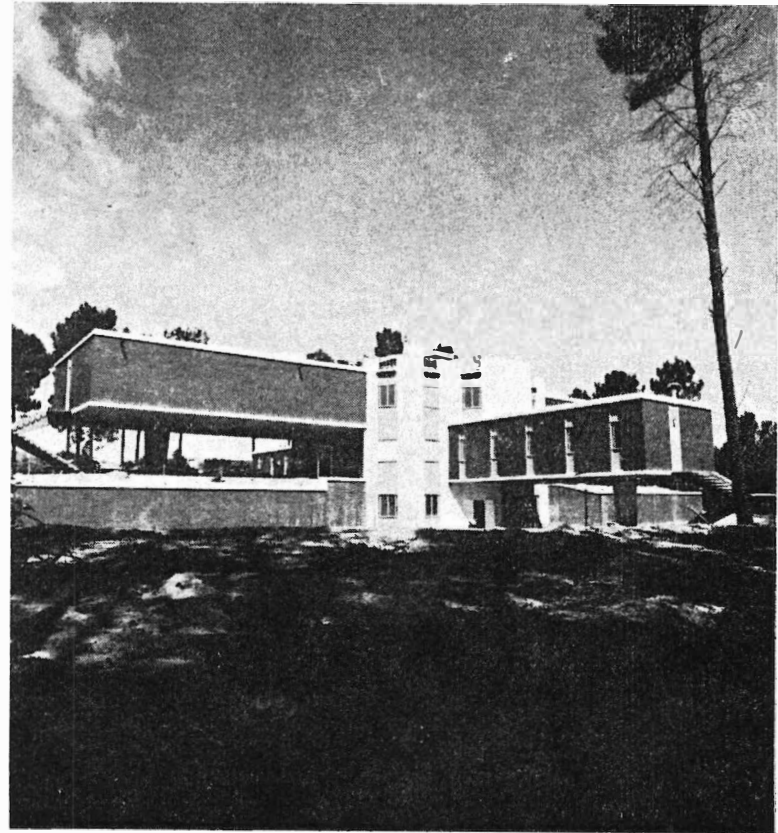
20 Letter, 30 June 1928, W.A. Museum

21 Pers. comm., 31 July 1985

It was incorporated into the State Herbarium in 1959 or 1960 following that herbarium's move early in 1959 from the old Observatory Building to the Department of Agriculture Head Office site at Jarrah Road, South Perth. Now renamed the Western Australian Herbarium, the combined State collection was finally moved in 1970 into its own, specially designed building at the western end of the South Perth site where it is now set in a fine native plant garden.



THE WESTERN
AUSTRALIAN
HERBARIUM





Entrance to the new Herbarium building

"Any herbarium, to be effective, must be in a state of continual revision to keep up with the increase of knowledge. . . . Its effectiveness is in proportion to its use and contact with the people of the State and the botanists of the world." W. M. Carne, Botanist and Plant Pathologist, Department of Agriculture, 1927.

The new Western Australian Herbarium building opened on March 5, 1970, provides, for the first time, ideal storage conditions for the State's priceless collection of plants, and adequate facilities for botanists to study them.

The Herbarium was established in 1928, when the late Mr. C. A. Gardner was appointed to the new position of Government Botanist and Curator of the State Herbarium. The separate herbaria of the Department of Agriculture and the Forests Department were then placed under his control.

The amalgamation of these two herbaria and that of the Western Australian Museum to produce a single State herbarium was first suggested in 1923 by the then Director of Agriculture, Dr. G. L. Sutton. He was supported by the Perth meeting of the



Curator of the Western Australian Herbarium, Mr. R. D. Royce, examines a type specimen of *Verticordia plumosa* collected by James Drummond, Western Australia's first Government Botanist, about 1840.

Australian and New Zealand Association for the advancement of Science in 1926, and by eminent botanists such as Dr. A. W. Hill, Director of the Royal Herbarium and Botanic Gardens, Kew, England.

The unique character of Western Australia's flora had attracted world-wide interest and it was obvious that the State needed a single herbarium recognised by the herbaria of the world. This would ensure safe storage of specimens and encourage exchange of material with other countries. Facilities were also needed for effective study and identification of the indigenous flora.

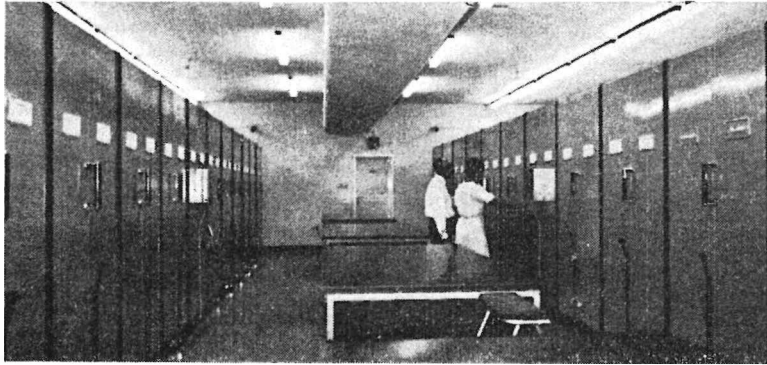
But because of accommodation and administrative difficulties it was many years before the separate collections were properly housed under one roof.

Amalgamation of the Agriculture and Forests Department collections began in 1933, when most of the specimens were transferred to the old Observatory building. It was not completed until 1941, when better storage space allowed the transfer of the Forests Department's valuable collection of eucalypts.

The Museum herbarium was finally included in 1958, when the State Herbarium was moved to the new Department of Agriculture buildings in South Perth.

By then, many important donations had been made to the Herbarium by scientific institutions, botanists and amateur collectors.

On the death of Dr. W. E. Blackall in 1941, his collection of over 6,000 specimens was donated to the Herbarium. Dr. Blackall, an enthusiastic amateur botanist, had collected specimens



One of the main Herbarium wings.

for more than 20 years. His herbarium contained part of the collections (including many type specimens) made by Dr. Cecil Andrews and Mr. W. V. Fitzgerald, both of whom collected and described Western Australian plants in the early years of this century.

Another notable accession came in 1942, when the collection of Col. B. T. Goadby was donated. This consisted of orchids collected over more than 40 years.

In 1944 the herbarium of the University Institute of Agriculture was donated; this included several important collections from the pastoral areas.

By the end of the 1940's the Herbarium had a good basic collection of Western Australian plants which was of service not only to the State but to the botanical world generally. It included fragments from early collections such as those made between 1801 and 1805 by Robert Brown, the naturalist who accompanied Matthew Flinders in the "Investigator." Type specimens collected by L. Diels and E. Pritzel from 1900 to 1901, obtained from the Berlin Museum in 1937, became of particular value when that institution was destroyed during the World War.

A large collection of Australian plants recently received from the Edinburgh Botanic Gardens included part of the personal herbarium of Dr. Alex Morrison, collected while he was Botanist with the West Australian Bureau of Agriculture at the turn of the century.

The Royal Botanic Gardens, Kew, has also sent a large collection of Western Australian plants gathered by James Drummond in the mid-19th century. These are particularly valuable because it was on Drummond's collections that much of the early study of Western Australian plants was based.

THE NEW HERBARIUM

During the past few years the collections have continued to increase as a result of the activities of the Herbarium staff and through exchanges with other herbaria.

When the State Herbarium moved to the Department of Agriculture buildings at South Perth it was realised that the space available provided for only about 10 years' growth, after which new quarters would be needed. Also the buildings were not designed to house a herbarium and complete protection from fire and insect attack could not be guaranteed.

The location chosen for the new Herbarium was in the Collier pine plantation, South Perth, close to the Department of Agriculture complex and the Forests Department's Como offices.

The Public Works Department designed and erected the three-storey building of brick and reinforced concrete. It has a central service core surrounded by hexagonal offices—an arrangement which provides large areas of essential bench space in the offices and minimum space wasted in passageways. Library, laboratory and herbarium wings radiate in a cross formation from the central core.

The basement contains preparation and storage rooms. Here, incoming specimens are received, fumigated and eventually mounted. Space is also provided for the "wet" collection (material kept in spirit), and for duplicate specimens which are sent to herbaria all over the world.

On the ground floor are a library, conference room, anatomy-cytophology laboratory, and ecologist's room. Also on this floor are the offices of the Curator and the Agricultural Botanist, and working space is available for the 20 to 30 visiting botanists who come to the Herbarium each year.



"Compectus" cupboards in which the herbarium specimens are stored are powered by an electric motor for easy movement.

The botanists' rooms and the herbarium vaults are on the first floor. The two vaults occupy the north and south wings; they are windowless and air-conditioned, and the specimens are stored in two rows of "Compactus" type mobile units. Each vault has its own fire-detecting and carbon dioxide fire-fighting systems which together ensure the best possible protection for the specimens. When necessary the vaults can be sealed off and fumigated for pest control.

At present more than 100,000 specimens are held in the Herbarium. Most are of Western Australian origin, but there is an increasing representation of Eastern States' flora, as well as a collection of cultivated species.

Sufficient space is available for about 15 years' increase.

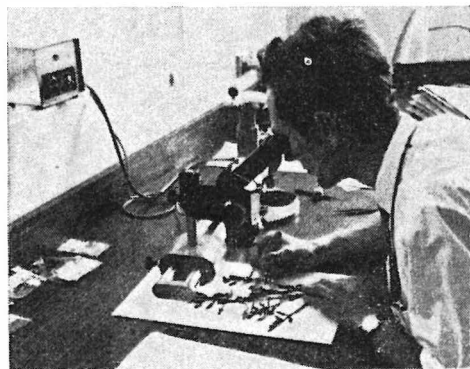
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Botanist examining a previously undescribed member of the samphire family recently collected on a field trip north-west of Cue. A general study of the economically important samphire family is a current project of the Herbarium.

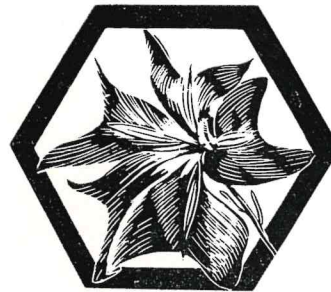
WESTERN AUSTRALIAN HERBARIUM

Some Current Research Projects

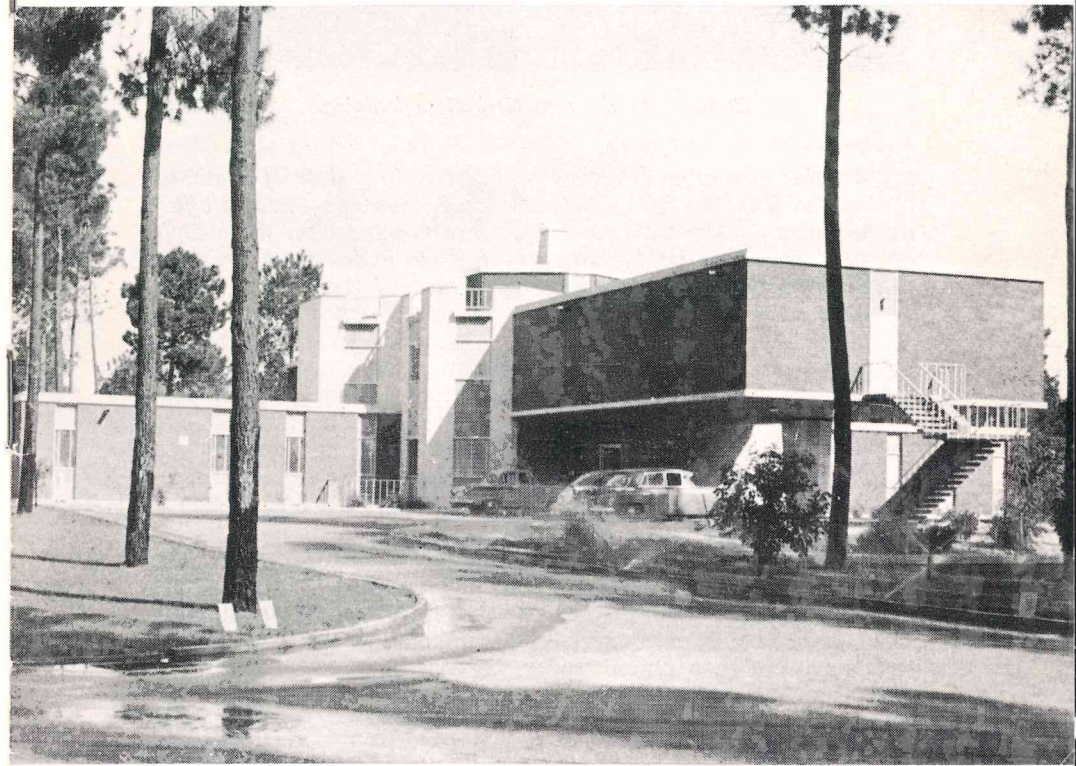
- "Flora of Western Australia".
- The families Chenopodiaceae, Pittosporaceae, Proteaceae, Orchidaceae, Casuarinaceae, and Rutaceae are being written up for inclusion in future numbers of the "Flora of Western Australia".
- Revisional studies are being undertaken on *Verticordia*, *Acacia*, and *Eucalyptus*.

Other Activities

- A vegetation survey of Western Australia.
- Accumulation of data on the poison plants of W.A.
- An account of the plants seen and collected by William Dampier in W.A. in 1699.
- A check list of the desert plants of W.A.



**THE WESTERN
AUSTRALIAN
HERBARIUM**



Department of Agriculture, South Perth, W.A.—September, 1973



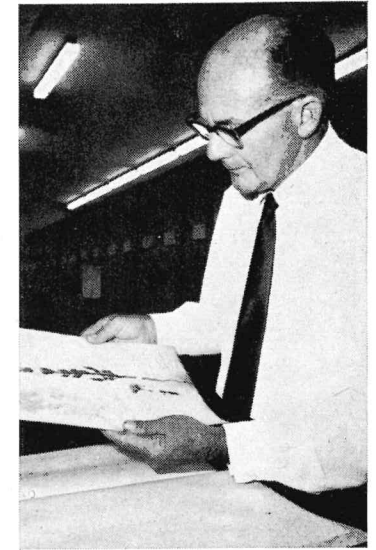
Entrance to the new Herbarium building.

"Any herbarium, to be effective, must be in a state of continual revision to keep up with the increase of knowledge. . . . Its effectiveness is in proportion to its use and contact with the people of the State and the botanists of the world."—W. M. Carne, Botanist and Plant Pathologist, Department of Agriculture, 1927.

The Western Australian Herbarium building opened on March 5, 1970, provides, for the first time, ideal storage conditions for the State's priceless collection of plants, and adequate facilities for botanists to study them.

The Herbarium was established in 1928, when the late Mr. C. A. Gardner was appointed to the new position of Government Botanist and Curator of the State Herbarium. The separate herbaria of the Department of Agriculture and the Forests Department were then placed under his control.

The amalgamation of these two herbaria and that of the Western Australian Museum to produce a single State herbarium was first suggested in 1923 by the then Director of Agriculture, Dr. G. L. Sutton. He was supported by the Perth meeting of the Australian and New Zealand Association for the Advancement of Science in 1926, and by eminent botanists such as Dr. A. W. Hill, Director of the Royal Botanic Gardens, Kew, England.



*Curator of the Western Australian Herbarium, Mr. R. D. Royce, examines a type specimen of *Verticordia plumosa* collected by James Drummond, Western Australia's first Government Botanist, about 1840.*

The unique character of Western Australia's flora had attracted world-wide interest and it was obvious that the State needed a single herbarium recognised by the herbaria of the world. This would ensure safe storage of specimens and encourage exchange of material with other countries. Facilities were also needed for effective study and identification of the indigenous flora.

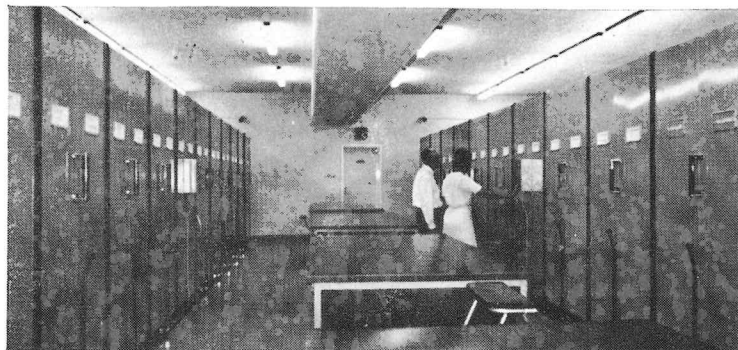
But because of accommodation and administrative difficulties it was many years before the separate collections were properly housed under one roof.

Amalgamation of the Agriculture and Forests Department collections began in 1933, when most of the specimens were transferred to the old Observatory building. It was not completed until 1941, when better storage space allowed the transfer of the Forests Department's valuable collection of eucalypts.

The Museum herbarium was finally included in 1958, when the State Herbarium was moved to the new Department of Agriculture buildings in South Perth.

By then, many important donations had been made to the Herbarium by scientific institutions, botanists and amateur collectors.

On the death of Dr. W. E. Blackall in 1941, his collection of over 6 000 specimens was donated to the Herbarium. Dr. Blackall, an enthusiastic amateur botanist, had collected specimens for more than 20 years. His herbarium contained part of the collections (including many type specimens) made by Dr. Cecil Andrews and Mr. W. V. Fitzgerald, both of whom collected



One of the main Herbarium wings.

and described Western Australian plants in the early years of this century.

Another notable accession came in 1942, when the collection of Col. B. T. Goadby was donated. This consisted of orchids collected over more than 40 years.

In 1944 the herbarium of the University Institute of Agriculture was donated; this included several important collections from the pastoral areas.

By the end of the 1940s the Herbarium had a good basic collection of Western Australian plants which was of service not only to the State but to the botanical world generally. It included fragments from early collections such as those made between 1801 and 1805 by Robert Brown, the naturalist who accompanied Matthew Flinders in the "Investigator". Type specimens collected by L. Diels and E. Pritzel from 1900 to 1901, obtained from the Berlin Museum in 1937, became of particular value when that institution was destroyed during the World War.

A large collection of Australian plants recently received from the Royal Botanic Garden, Edinburgh included part of the personal herbarium of Dr. Alex Morrison, collected while he was Botanist with the West Australian Bureau of Agriculture at the turn of the century.

The Royal Botanic Gardens, Kew, has also sent a large collection of Western Australian plants gathered by James Drummond in the mid-19th century. These are particularly valuable because it was on Drummond's collections that much of the early study of Western Australian plants was based.

THE HERBARIUM

During the past few years the collections have continued to increase as a result of the activities of the Herbarium staff and through exchanges with other herbaria.

When the State Herbarium moved to the Department of Agriculture buildings at South Perth it was realised that the space available provided for only about 10 years' growth, after which new quarters would be needed. Also the buildings were not designed to house a herbarium and complete protection from fire and insect attack could not be guaranteed.

The location chosen for the new Herbarium was in the Collier pine plantation, South Perth, close to the Department of Agriculture complex and the Forests Department's Como offices.

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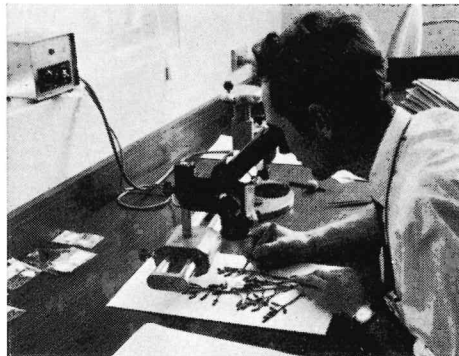
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Research findings are written up for publication in scientific journals, most being published in the Herbarium's own journal *Nuytsia*. A separate Flora Series will contain detailed descriptions of all plants found in Western Australia, prepared family by family. The following families have already been prepared: Rutaceae, Byblidaceae, Pittosporaceae, Violaceae and Casuarinaceae.

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WESTERN AUSTRALIAN HERBARIUM

Some current research projects

- The family Chenopodiaceae is being written up for publication in the *Flora of Western Australia*.
- Research leading to publication in the *Flora* is being undertaken in the families Asteraceae, Orchidaceae, Proteaceae, Myrtaceae, Mimosaceae and Droseraceae.
- A vegetation survey of Western Australia.
- Accumulation of data on poisonous plants of Western Australia.
- Surveys of the flora of the desert regions and the Cape Range.
- Ecological and floristic surveys of the National Parks of Western Australia.