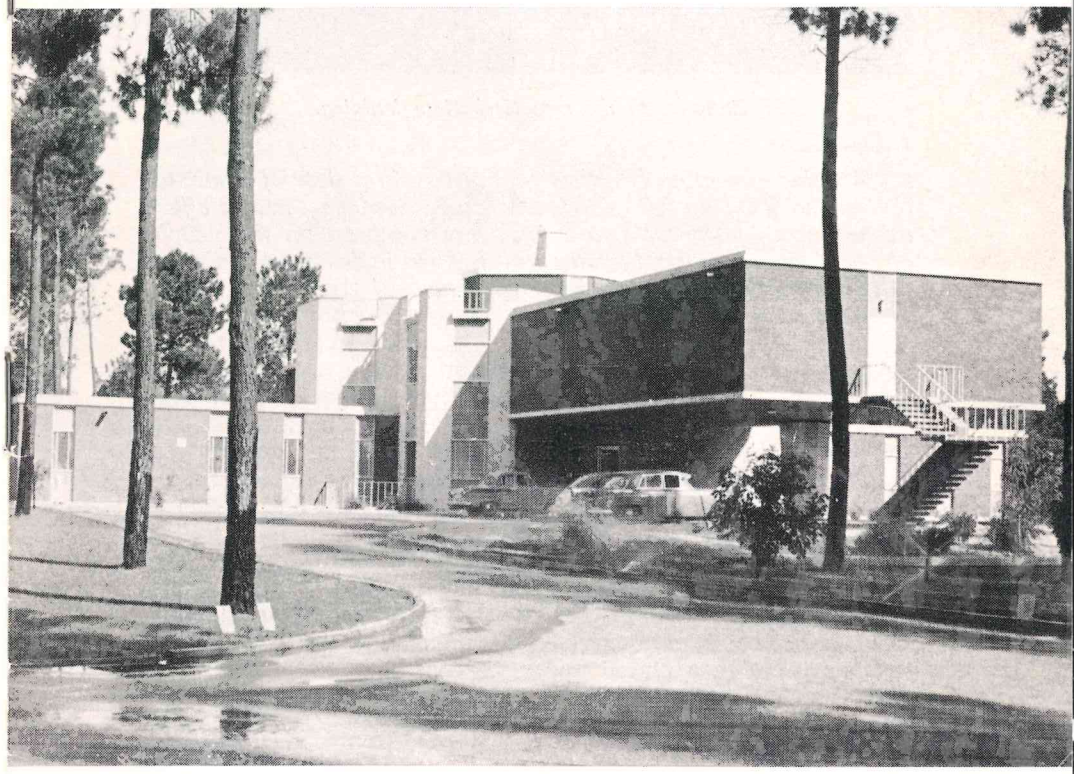
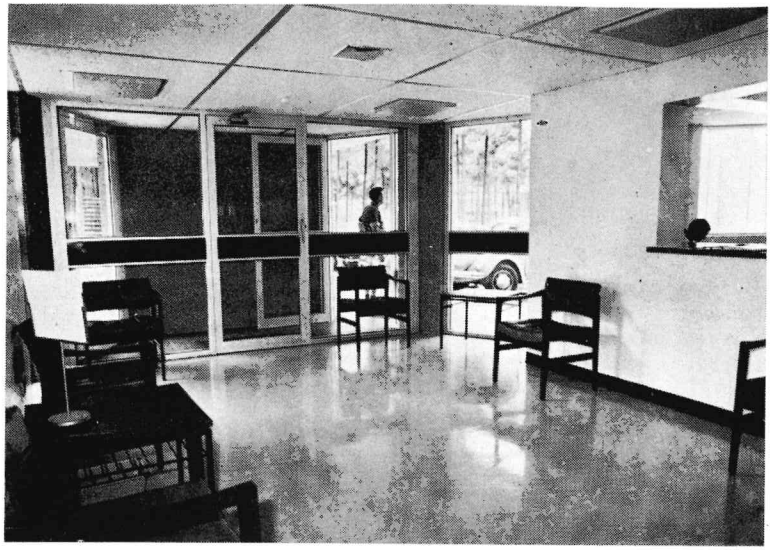
THE WESTERN AUSTRALIAN HERBARIUM



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



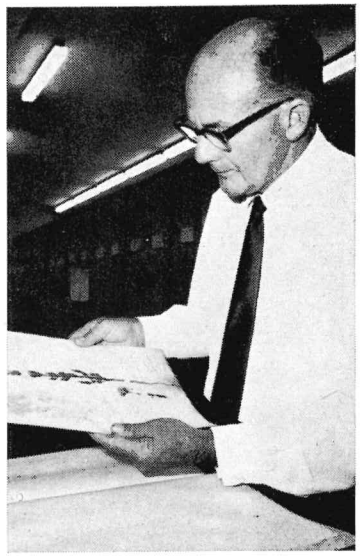
Entrance to the new Herbarium building.

"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.

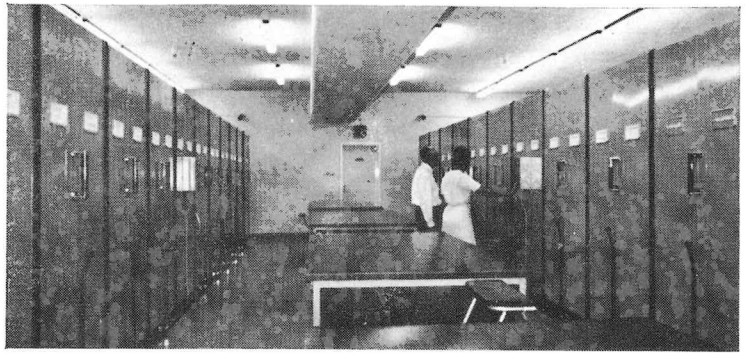
But because of accommodation and administrative difficulties it was many years before the separate collections were properly housed under one roof.

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.

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-cytology laboratory, and ecologist's rooms. Also on this floor is the office of the Curator, and working space available for the 20 to 30 botanists who visit the Herbarium each year.

The botanists' rooms and the herbarium wings are on the first floor. The wings are windowless and air-conditioned, and the specimens are stored in two rows of "Compactus" type mobile units. Each wing has its own fire-detecting and carbon dioxide

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

fire-fighting systems which together ensure the best possible protection for the specimens. When necessary the wings can be sealed off and fumigated for pest control.

At present more than 130 000 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.

A separate Reference Collection is being assembled which will contain one sheet of each species found in Western Australia. This will be used as a working collection for the routine identification of plant material.

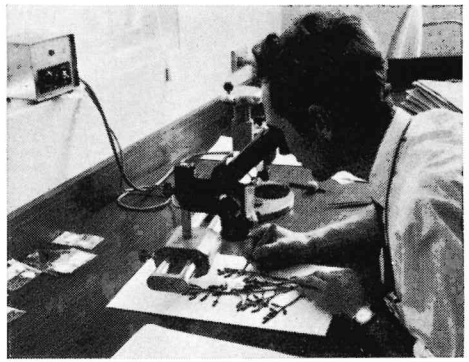
The Herbarium staff includes nine professional botanists. Five taxonomic botanists are directing their research towards writing parts of a projected *Flora of Western Australia*. As the correct naming of botanical specimens is vital to any science associated with botany, their research is of fundamental importance.

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.

Routine identification of plants is another important activity and each year about 11 000 specimens are submitted by various institutions and the public.

Work in cytology and anatomy helps to clarify problems encountered in systematic studies based on gross morphology, and often points the way to further useful avenues of research.

In the field of agricultural botany, the Herbarium provides a service to farmers by identifying and advising on poison plants and weeds of agricultural importance. Poison plant research is carried out in co-operation with the Department of Agriculture's Animal Health Laboratory.



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.

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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.

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