

The University of Melbourne Herbarium, from McCoy to MELU

A broken paper-trail

Linden Gillbank

Living plants can be studied and exhibited in gardens. But preservation allows their much longer exhibition and study in museums. The simple and very old technology of pressing and drying allows plant specimens to survive for centuries—as convenient, compact and enduring herbarium specimens in museums called herbaria. Over 3,000 herbaria, each with its unique acronym, are listed in the global directory, *Index herbariorum*. The 28 in Australia include the National Herbarium of Victoria in Melbourne’s Royal Botanic Gardens (MEL) and the Herbarium in the School of Botany at the University of Melbourne (MELU).

Documentation of herbarium specimens is essential. An affixed label should include the plant’s scientific (taxonomic) name, the collector’s name, and the date and place of collection. Specimen labels thus provide botanical, historical, geographical and personal information. Herbaria include specimens of plants which live together in ecological associations, and, as human activities affect global climate change and local urban and rural landscapes, herbarium specimens provide crucial botanical evidence of altered ecosystems and changes in the distribution of

indigenous and introduced species. Some species represented in herbarium collections are now extinct.

Herbarium specimens have a crucial role in systematic or taxonomic botany—the classification and naming of plants—and thereby in the generation of the universal lexicon of taxonomic plant names. The formal naming of new species requires the publication of the new name with a detailed description based on a specimen or specimens which must be deposited in an official herbarium. These herbarium specimens, called type specimens, and the associated published descriptions, are the reference objects of taxonomic botany. The University of Melbourne’s library collections include many publications carrying taxonomic descriptions, and the University’s herbarium collections include more than 150 type specimens. One of these is shown on p. 21.

Although much smaller than MEL, MELU might be almost as old. This is because, way back in the 1850s, a herbarium was established at the University using collections from Victoria’s young government herbarium, decades before it was called the National Herbarium of Victoria.

While investigating the botanical activities of the University’s professor

of natural science in the 19th century and the Botany School under its first two professors in the 20th century, I have attempted to winkle out information about MELU and any antecedent herbaria. University and other archival records provide clear herbarium paper-trails for parts of the 19th and 20th centuries, but, tantalisingly, their connection appears doubtful. Here is the story those paper-trails reveal—from the acquisition of a herbarium collection in 1856 to the official designation of the University of Melbourne Herbarium as MELU in 1974.

Frederick McCoy, professor of natural science, 1855–1899

The herbarium paper-trail begins at the very beginning of the University of Melbourne—with one of the four foundation professors, Frederick McCoy, the University’s first and only professor of natural science. Professor McCoy’s very broad intellectual territory spanned chemistry, mineralogy, geology, palaeontology, zoology and botany, and he convinced the government to allow the transfer of the colony’s geological and zoological collections from Melbourne’s Assay Office, rarely visited by the public, to his honorary curatorial care at the University.¹

This specimen of Grampians gum was collected by Julie Marginson in 1979 during her doctoral research at the School of Botany. It is now the isotype of *Eucalyptus verrucata*. University of Melbourne Herbarium.

An isotype is a portion of the primary type specimen (holotype), which for *E. verrucata* is lodged in MEL.

As illustrated on p. 22, a herbarium also reached the embryonic National (Natural History) Museum in its new premises in the new north wing of the University Quadrangle in 1856.

In the mid-19th century, museums such as the British Museum commonly included botanical material in their natural history collections. So McCoy's inclusion of herbarium specimens in Victoria's National Museum is not surprising. With museum experience gained in Britain, McCoy recognised two kinds of botanical museum 'for the exhibition of classically [taxonomically] arranged plants'—'Botanic Gardens for living specimens' and 'Herbaria for dried plants'²—and sought to develop both at the University of Melbourne.

The founding herbarium collection was from the substantial government herbarium which Victoria's government botanist, Dr Ferdinand (not yet Baron von) Mueller, had assiduously developed from his appointment in January 1853 until his departure in 1855 to join an expedition across northern Australia. According to McCoy, the government herbarium, containing specimens 'of most of the native plants of Victoria', had been left 'tied up in bundles, and kept in the little cottage in the Botanic Garden, where



the workmen took their meals and slept'. At the University specimens would be repaired and 'most carefully preserved'.³

During Mueller's absence in 1856, the Chancellor of the University, Redmond Barry, negotiated the transfer of a Victorian collection from the government herbarium to the Museum.⁴ University annual reports for 1856 and 1857 record the arrival of 'the Herbarium and Botanical specimens collected and prepared by Dr. Mueller',⁵ and that the 'Public Herbarium in the charge of the University is preserved in good order'.⁶ McCoy added Australian specimens from Mueller, and British and American collections.⁷ Even after Melbourne's Botanical Museum, long-sought by Mueller to house the government herbarium, was built in 1860 in the Reserve adjacent to the Botanic Garden, Mueller continued to send herbarium specimens to McCoy—for example, Western Australian specimens in 1863.⁸

As honorary director of the National Museum of Victoria, McCoy arranged natural history collections (which he sometimes called natural science collections) on the upper floor of the University Quadrangle's north wing; and, as the University's professor of natural science, taught science subjects in a

lecture theatre on the ground floor, and orchestrated the establishment of a systematically arranged botanic garden for the exhibition of living plants in the north-west corner of the spacious University grounds. Professor McCoy presented botany lectures to combined classes of Bachelor of Arts (BA) and Bachelor of Medicine (MB) students, sometimes illustrating his lectures with specimens plucked from the University botanic garden. Because plant groups (natural orders) were arranged to represent their positions in a classification system, the

University botanic garden was a systematic or class garden. Professor McCoy referred his botany students to the taxonomically arranged class garden, and perhaps to the taxonomically arranged herbarium.

But the herbarium paper-trail is petering out.

In the 1870s a third Melbourne museum displayed botanical exhibits—the new Industrial and Technological Museum behind the Public Library in Swanston Street—and McCoy was no longer director of the broad based museum which he had developed, but curator of the



‘The successful foray: or the professor’s return’,
Melbourne Punch, 14 August 1856, shows
Chancellor Barry and professors delivering natural
history specimens to the University.

somewhat diminished National Museum, and answerable to a new umbrella board of trustees for the Public Library, Museums and the National Gallery of Victoria. He was still teaching botany, but, with two other museums exhibiting botanical material and his own diminished museum control, perhaps his botanical enthusiasm was dampened. In 1880 McCoy offered for sale six long-unopened boxes of herbarium specimens.⁹

The 1880s were a decade of botanical losses for Professor McCoy. He lost control of the University garden and botany students to new science subjects in the BA course, and then, from the establishment in 1887 of the Bachelor of Science (BSc) degree, botany was taught by the new professor of biology, Walter Baldwin Spencer, leaving the garden-less professor of natural science, until his death in 1899, only a single, rarely-taken botanical subject—‘systematic botany’ in the new BSc course. Ironically, as the systematic arrangement of the University class garden became increasingly obscured and obliterated by weeds and neglect, it was sometimes called the System Garden.

Was a herbarium available to students taking McCoy’s systematic botany or Spencer’s biology?

Alfred J. Ewart, professor of botany (and from 1911 plant physiology), 1906–1937

From 1906 the University’s first professor of botany took over botany teaching—in a small extension (on Tin Alley) to Professor Baldwin Spencer’s biology building. Surely he would resurrect or re-establish a University herbarium. Perhaps not initially because, for 15 years, he was also in charge of the government herbarium. This was because, at a time of huge financial stringency, the University acquired only a half-time professor of botany. And Victoria gained a half-time government botanist. From February 1906 until February 1921, Alfred Ewart concurrently headed the University of Melbourne’s tiny botany department and Victoria’s substantial National Herbarium. To fulfil his University and government duties, Dr Alfred J. Ewart made twice-daily tram trips through the city and across the Yarra to spend mornings in the National Herbarium in the Domain near the Botanic Gardens and afternoons at the University.

Ewart quickly joined the organisation which nurtured Victoria’s botanical fraternity—the Field Naturalists Club of Victoria (FNCV), whose journal, *The*

Victorian Naturalist, was the main literary vehicle for Victorian botanical records. Ewart was in the tricky position of seeking the trust and assistance of naturalists who, having frequently consulted and contributed to National Herbarium collections, valued them hugely and feared their removal to the University. Ewart assuaged their fears, and in April 1906 noted his ‘difficult position in having to lecture without [herbarium] specimens being available for examination’ and asked FNCV members to collect ‘specimens of plants for the University Museum’.¹⁰

Apparently there was no University herbarium in 1906.

Anxious to re-establish the National Herbarium as Victoria’s, and possibly Australia’s, taxonomic authority, as it had been under Mueller, Ewart encouraged the deposition of specimens collected within and beyond Victoria and arranged for members of his tiny University department to undertake taxonomic work on herbarium specimens. Co-authors of his 36-part taxonomic series, ‘Contributions to the flora of Australia’, included a very young Ethel McLennan and her two female predecessors in the position of assistant lecturer and systematic botany teacher. Ewart sought to ensure the reliability of published

plant records, instigated regional plant surveys, and helped an FNCV committee prepare an up-to-date *Census of the plants of Victoria* (1923).¹¹

In one of his many attempts to spark consideration of rationalising his two positions by bringing them together—at either the University or the National Herbarium—Ewart remarked that, in order to reduce duplication, he had incorporated University herbarium collections into the National Herbarium in 1907.¹²

Had Ewart developed a University herbarium since April 1906?

Across and beyond World War 1 the number of University botany students and courses slowly increased, as did the proportion of Ewart's time spent at the University. From 1921 the University paid his full-time professorial salary, leaving Victoria again without a government botanist, and Ewart without direct access to National Herbarium collections.

Five years later, Ewart received a huge herbarium which is widely accepted as the foundation collection of the University of Melbourne Herbarium. In 1925, while beginning to focus his botanical attention on orchids, the Reverend Montague Rupp offered the non-orchid part of his extensive herbarium to his old college, Trinity, whose warden

suggested that it would be more useful at the University, which lacked a herbarium.¹³ Accepting this 'first large donation' of several thousand specimens, Professor Ewart commented: 'Until now there has been practically no herbarium at the University'.¹⁴ The cupboards built in 1926 to house Rupp's donation must have occupied a substantial space in Ewart's very cramped quarters. Perhaps fortuitously the collection's arrival coincided with an ecological research project.¹⁵

Now there is a definite University herbarium paper-trail.

In 1929 Ewart's department could at last expand into a building dedicated to botany, appropriately situated on the edge of the System Garden, and Ewart could use his National Herbarium experience to develop the University Herbarium. Staff and students would contribute, including Dr Ethel McLennan's mycology students and Dr Reuben Patton's systematic botany students who were required to submit herbarium specimens as part of their course work. Dr McLennan built a significant fungal collection, and Dr Patton added plant specimens collected during his ecology excursions.

Patton was already training a teenage assistant, Edward J.

Sonenberg, to collect plants. Sonenberg accompanied class excursions, collected specimens for Patton's systematic botany classes, looked after the University Herbarium and helped Ewart prepare *Flora of Victoria*.¹⁶ Busy with the much-needed *Flora* on top of his University duties, Ewart wanted a curator for the University Herbarium. The University agreed, provided the position was entirely honorary.¹⁷

Ewart recommended a retired school teacher, Herbert B. Williamson, 'our leading systematist in Victoria', whose taxonomic work was useful for his *Flora*.¹⁸ While contributing to the FNCV's *Census*, teacher Williamson had spent school holidays searching National Herbarium specimens for doubtful records, and echoed Ewart's desire to ensure the accuracy of published botanical records with the deposition of herbarium specimens of plants mentioned in published papers.¹⁹ In 1929 Williamson was pleased to take charge of the University Herbarium 'with a view to rearranging & extending it and making it as complete and accurate as possible'.²⁰ He oversaw Sonenberg's daily work, and checked the specimens in a collection received from the National Herbarium.²¹ Sadly, Bert Williamson died in January 1931, just before the

publication of Ewart's 1,257-page *Flora of Victoria*. In the preface Ewart noted that the *Leguminosae* family was entrusted 'to the late Mr. H.B. Williamson, F.L.S., Honorary Keeper of the University Herbarium' and thanked him 'for a partial revision of the manuscript and proofs.'

Two years later Ewart found a suitable successor—William H. Nicholls, another accomplished, modest, amateur naturalist, who walked and cycled far in search of plants. Several University annual reports mention his taxonomic work and small grants for research expenses. The report for 1934–1935 records that Nicholls 'collected over a wide area in Victoria, including the Brisbane Ranges, Steiglitz Ranges, Comoidai, Tallangatta, Grampians, Bennison Plains, etc., and many additions have been made to the University Herbarium as a result of this field work'.²²

In 1940 he used his £15 grant for 'travelling expenses in connection with work on Australian orchids'.²³ While Will Nicholls was honorary curator, he carried out substantial and beautifully illustrated taxonomic work on Australian orchids; and the low-paid technical assistant, Edward Sonenberg, continued the day-to-day curatorial care of the University Herbarium.

<h1>NOTES ON VARIOUS PLANTS</h1> <p>REPRESENTED IN THE HERBARIUM OF THE REV. H.M.R. RUPP, B.A.</p>
<p>FOREWORD.</p>
<p>As my herbarium is about to be presented to the Botany Department of the University of Melbourne, where I was a resident student of Trinity College from 1892–7, I have thought it as well to copy out some notes which I have jotted down at various times in comment upon some of the specimens. Except for some reserve specimens which I am now preparing, I am not including in the collection to be handed over to the University, any substantial assortment of Australian Orchids, of which I have herbarium specimens of about 220 species. These I am retaining, as I wish to continue the study of this fascinating order of plants. I have not, however, omitted from the Notes on Plants such as relate to Orchids; but have merely placed in brackets those which deal with species not represented in the Melbourne collection, as they may still be of some interest.</p> <p style="text-align: right;">H.M.R.R.</p>
<p>Paterson, N.S.W., January 1926.</p>
<hr/> <p>NOTES.</p>
<p><i>Acacia linearis</i>, Sims. — <i>A. longifolia</i>, Willd. — In N.S.W. these two species seem to approach each other very closely, and I am doubtful of the herbarium determinations.</p> <p><i>Acacia stricta</i>, Willd. — In Tasmania I always found this species with very pale green phyllodia; this is noticeable in comparison with</p>

By 1940, the world was again at war, Ewart had died, and his successor had arrived, bringing a fresh botanical vision to the University.

John S. Turner, professor of botany and plant physiology, 1938–1973

Dr John S. Turner was the University's second professor of botany and plant physiology, a title determined by his predecessor. Increases in the size and number of botany classes allowed Professor Turner to increase the number and diversity of staff and initiate ecological research in the Botany School.

Professor Turner supported the development of regional reference collections in the University Herbarium. Having organised funding for Maisie Fawcett's earlier work for Victoria's Soil Conservation Board, he facilitated her post-war ecological work on the Bogong High Plains (which was prompted by fears of the expensive threat of soil erosion to the massive Kiewa hydro-electric scheme, then under construction) by organising annual summer excursions to help her assessment of cattle-grazed and ungrazed vegetation.²⁴ His plant-recording team in January 1946 included Associate Professor Ethel

McLennan and her assistant, Sophie Ducker (a refugee from war-torn Europe), and James Hamlyn Willis from the National Herbarium. Sophie Ducker volunteered to help Jim Willis collect plant specimens and, on Turner's suggestion, formed a High Plains reference collection for the University Herbarium.

Given the urgent need for a reliable successor to Ewart's out-of-print and taxonomically out-of-date *Flora*, Professor Turner organised assistance for Jim Willis to prepare such a book; and Maisie Fawcett, who in 1949 succeeded Reuben Patton as the systematic botany and ecology lecturer, orchestrated the preparation of an interim student text, *The families and genera of Victorian plants*, to which Sonenberg, part-time lecturer Willis and other members of the Botany School contributed. Meanwhile, Edward Sonenberg continued contributing to and curating the University Herbarium, but without a designated curator or keeper. Some specimens disappeared. Some were apparently sent to the National Herbarium. Dr David Ashton began to contribute specimens from across the taxonomic spectrum and the kaleidoscope of Victorian ecosystems. But for the persistent support of McLennan, Sonenberg, Ducker and Ashton, the

University Herbarium may well have languished in the pervasive departmental feeling in the 1950s that it should include only teaching material and only Victorian species.²⁵

In the 1960s, Dr David Ashton and Dr Raymond Specht taught undergraduate ecology and supervised postgraduate ecological research, and Sophie Ducker introduced an undergraduate course on algae and supervised phycological research projects. They encouraged their postgraduate students to deposit voucher specimens in the University Herbarium. Enriched with specimens and respect, the Herbarium gained a new lease of life. So did its part-time keeper.

Following her retirement, Associate Professor McLennan was appointed as part-time (but salaried) keeper of the Herbarium in 1957. Immaculate in her lilac lab coat, 'Dr Mac' worked with care and dedication. In a pre-electronic era she began the important but onerous task of accessioning the entire collection and updating the nomenclature to conform to the system in Willis' *A handbook to plants in Victoria*,²⁶ whose two volumes were published in 1962 and 1972—Dr McLennan's and the indispensable Mr Sonenberg's last year. Known to generations of students and staff as 'Sony', he was

the modest, self-effacing and rigorously reliable authority on plants and their names. Who now would reliably answer the question asked by students and staff, gardeners and foresters, agriculturalists and veterinarians, school teachers and police, 'What is this plant?'

Sonenberg's numerous collections of indigenous and introduced plants are particularly important because they include specimens from areas which have since been overtaken by suburbia. Before the convenience of plastic bags, he lugged a suitcase, heavy with damp newspaper to keep specimens moist, on the train or tram to the 'wilds' of Studley Park or South Kensington, Port Melbourne or Cheltenham.²⁷ His distinctive handwriting on specimen labels reliably records collection localities and dates.

In 1974, the year after Professor Turner retired, Jim Willis was awarded a DSc degree for his *Handbook*, and moves initiated by Sophie Ducker were eventually successful with the listing of the University Herbarium as MELU in *Index herbariorum*. Its significance was now officially recognised.

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Edward Sonenberg in his room in the Botany School, c.1959. University of Melbourne Herbarium.



Linden Gillbank, whose doctoral research was in the School of Botany, has since explored various aspects of the history of Australian botany. An Honorary Fellow in the School of Social and Environmental Enquiry, she is currently investigating the history of the Botany School and earlier botanical contributions by Professor McCoy.

Notes

- 1 'Report of the proceedings of the Council of the University of Melbourne during the year commencing on the 1st of May, 1856, and terminating on the 30th of April, 1857', University of Melbourne Archives (UMA). See also R.J.R. Selleck, *The Shop: The University of Melbourne 1850–1939*, Melbourne University Press, 2003, pp. 85–88.
- 2 Frederick McCoy, 'Museums in Victoria', *Transactions of the Philosophical Institute of Victoria*, vol. 1, 1857, p. 131.
- 3 McCoy, 'Museums in Victoria', p. 132.
- 4 Linden Gillbank, 'University botany in colonial Victoria. Frederick McCoy's botanical classes and collections at the University of Melbourne', accepted for publication in *Historical Records of Australian Science* [2008].
- 5 'Report of the proceedings of the Council of the University, 1856–1857'.
- 6 'Report of the proceedings of the Council of the University of Melbourne, during the year commencing on the 1st of May, 1857, and terminating on the 30th of April, 1858', UMA.
- 7 Frederick McCoy, *On the formation of museums in Victoria*, Melbourne: Goodhugh and Hough, 1857, p. 5. From September 1857 until 1873 Mueller was director of the Botanic Garden as well as government botanist.
- 8 Ferdinand Mueller, letter to Frederick McCoy, 18 February 1863, M22, letters inward, box M and Mc 1854–1899, Library of Museum Victoria.
- 9 Sophie C. Ducker (ed.), *The contented botanist. Letters of W.H. Harvey about Australia and the Pacific*, Melbourne: Melbourne University Press at the Miegunyah Press, 1988, p. 347.
- 10 *Victorian Naturalist*, vol. 23, May 1906, p. 2.
- 11 Helen M. Cohn, 'Watch dog over the Herbarium: Alfred Ewart, Victorian Government Botanist 1906–1921', *Historical Records of Australian Science*, vol. 16, 2005, pp. 139–167. See *Victorian Naturalist*, vol. 24, 1907, pp. 65–67, 81–82, 84, 94–95 for Ewart's unsuccessful insistence on the deposition of herbarium specimens of all plants recorded in *Victorian Naturalist* as new to science or to Victoria or a Victorian district. Ewart prepared the 97-page census form for recording plant information to be sent to the National Herbarium and chaired the FNCV Plant Names Committee.
- 12 Alfred J. Ewart, letter to Chancellor of the University of Melbourne, n.d., 1909/27, UM 312 (Registrar's correspondence), UMA.
- 13 I[an] C. Clarke, 'The history of the herbarium, School of Botany, University of Melbourne', in Philip S. Short (ed.), *History of systematic botany in Australasia: Proceedings of a symposium held at the University of Melbourne, 25–27 May 1988*, Melbourne: Australian Systematic Botany Society, 1990, pp. 13–16; Lionel Gilbert, *The orchid man: The life, work and memoirs of the Rev. H.M.R. Rupp, 1872–1956*, Kenthurst: Kangaroo Press, 1992, pp. 54–57. Student Record for Herman Montague Rucker Rupp, Accession Number 88/51, Student Administration, University of Melbourne, UMA, shows that Rupp was a botany student of Professors McCoy and Spencer.
- 14 *Melbourne Herald*, 9 February 1926, quoted in Gilbert, *The orchid man*, p. 57.
- 15 In 1926 Ewart encouraged post-fire regeneration research by his demonstrator, Arthur Petrie, who brought ecological experience from the University of Sydney.
- 16 Ian C. Clarke, 'Farewell to Mr Sonenberg', *Victorian Naturalist*, vol. 106, 1989, pp. 155–159.
- 17 University of Melbourne Registrar, letter to Professor [Alfred J.] Ewart, 16 May 1929, 1929/90, UM 312, UMA.
- 18 Alfred J. Ewart, letter to Sir John [MacFarland], 8 May 1929, 1929/341, UM 312, UMA.
- 19 H.B. Williamson, 'Notes on the census of Victorian plants', *Victorian Naturalist*, vol. 34, 1919, pp. 11–19.
- 20 H.B. Williamson, letter to Alfred J. Ewart, 7 May 1929, 1929/341, UM 312, UMA.
- 21 Reuben Patton's note, 'When Prof. Ewart ceased to be Govt Botanist, the Nat Herbarium gave to the University a collection of plants to form an Herbarium. This specimen was among them ...', was affixed to a specimen of *Sarcopetalum harveyanum* / *Stephania bernandifolia*, whose National Herbarium label is initialed *HBW* by Williamson. Ian Clarke noticed this specimen in MEL in 1993. Many other MELU specimens have National Herbarium labels.
- 22 'Annual Report, 1934–35', *Melbourne University calendar for 1936*, p. 1128.
- 23 *The University of Melbourne annual reports 1939–1946*, Melbourne University Press, 1948, p. 72.
- 24 Linden Gillbank, 'Into the land of the mountain cattlemen: Maisie Fawcett's ecological investigations on the Bogong High Plains', in Farley Kelly (ed.), *On the edge of discovery: Australian women in science*, Melbourne: Text Publishing Company, 1993, pp. 135–151.
- 25 Clarke, 'The history of the herbarium', p. 18.
- 26 Clarke, 'The history of the herbarium', p. 18.
- 27 Clarke, 'Farewell to Mr Sonenberg', p. 155.