

Joseph Maiden and the National and Transnational Circulation of Wattle *Acacia* spp.*

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During the nineteenth century and in the early years of the twentieth century wattle was circulated by botanists, botanical institutions, interested individuals, commercial seedsmen and government authorities. Wattle bark was used in the production of leather and was the subject of debate regarding its commercial development and conservation in Australia. It was also trialled in many other locations including America, New Zealand, Hawaii and Russia. In the process, South Africa became a major producer of wattle bark for a global market. At the same time wattle was also promoted as a symbol of Australian nationalism. This paper considers this movement of wattles, wattle material and wattle information by examining the career of one active agent in these botanical transfers: Joseph Maiden. In doing so it demonstrates that these seemingly different uses of the wattle overlap transnational and national spheres.

Introduction

This paper explores the contributions of the botanist Joseph Maiden (1859–1925) to the national and transnational circulation of wattle. A Londoner by birth, educated in general science at the University of London (1879–1880),¹ he moved to Australia in 1881 believing that the warm climate would alleviate recurring respiratory illness. His biographer, Lionel Gilbert, explains that, not intending to stay, he carried a return ticket with him. Australia, however, presented itself as a land of opportunity for the emerging scientist. He was not to return to England for nineteen years, by which time he was an established botanist with a global professional profile.

Maiden was Curator of the Technological Museum in Sydney, 1882–1896, and then Government Botanist and Director of the Sydney Botanic Gardens, 1896–1924. His reputation was built through an active engagement with native and exotic flora. He is perhaps best known for his revision

of the *Eucalyptus* genus, but this was not the only genus that provided scientific work for him. He also worked on the invasive prickly pear *Opuntia* sp., experimented with indigenous and non-indigenous grasses, actively promoted Australian forest flora, and consistently advocated a botanical survey of New South Wales and indeed of Australia. Another important genus with which Maiden engaged for over thirty years was *Acacia*, or wattle.

Wattle, wattle material and wattle information were mobilized by Maiden and other scientists in three distinct arenas. Throughout the nineteenth century, wattle bark was used in the manufacture of leather. From the 1870s onwards, various groups promoted the systematic conservation and plantation of some species of wattle for the development of a local industry. This same time period saw many different types of Australian trees that were regarded as of economic value actively diffused into other settler locations, namely New Zealand, South Africa and the USA. Wattle seeds were sent as transnational botanical exchanges by many Australian institutions, organizations and individuals.

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However, Australian understandings of wattle were not confined to its economic role; it was also mobilized as a symbol of nationalism. Maiden played a part in all these domains. This article demonstrates how the work of one colonial scientist related to these different spheres of concern for settler Australia. At each stage in Maiden's career the institutions in which he worked contributed to his capacity to apply the science of wattles to matters of settlement.

An important feature of late-nineteenth-century botany was the exchange of information and plants. Maiden, like Ferdinand von Mueller in Melbourne, cultivated local collectors who sent him plant material.² Such people included the notable Sydney botanizer Reverend William Woolls, the superintendent of the Australian Agricultural Co., Jess Gregson, and a surveyor with the New South Wales Railways, Henry Deane.³ Simultaneously, Maiden exchanged wattle material with botanic gardens—with Charles Moore in Sydney and with the Royal Botanic Gardens at Kew in London, but also with gardens at Calcutta, Mauritius and Buitenzorg in Java.⁴ He established working exchanges with Mueller and the National Herbarium of Victoria, which at the time was the most important botanical institution in the southern hemisphere.⁵ Maiden's access to these networks was important for gathering the plant material, in the form of both herbarium specimens and seeds, that helped shape the science at both the Technological Museum and the Sydney Botanic Gardens. While constructed by people, these exchange networks were equally dependent on the availability of plants, plant material and plant information.

Transnational exchanges of wattle represented an important aspect of Maiden's work, at both the Technological Museum and the Sydney Botanic Gardens. In the period under consideration here, from the 1880s to the 1920s, Australia was a nation that was 'forming'. However, given that

nationalism was an important feature of European political systems well before Australia's federation, it is a reasonable conceptual tool to use in the Australian context, even in the era before federation. Ian Tyrrell argues that an essential feature of transnationalism was reciprocity in the exchange of technologies, ideas and objects across national borders.⁶ In this article, transnationalism broadly refers to 'multiple ties and interactions linking people or institutions across the borders of nation-states'⁷ while highlighting the communications that allowed this to occur. The movement of seeds, cuttings and scientific information about wattle generated by Maiden linked places and people in Australia to botanists and botanical institutions around the globe.

Maiden's association with wattle began at his first permanent position in Sydney, at the Technological Museum in Sydney.⁸ Under the guidance of the chairman of its board, Professor Archibald Liversidge, the museum focused on economic aspects of life in colonial Australia. The exhibits represented technological advance as progress of civilization.⁹ The museum arranged the exhibition of its natural history collections under the themes of economic botany, economic geology and economic zoology. Liversidge's vision for the Technological Museum incorporated a chemical laboratory within the structure of the organization, thus creating a site for research. Maiden focused the laboratory's work on botany, with a particular interest in the chemical components—kino, resins and tannin—that were available in indigenous plants. As a result of diligent laboratory investigations, Maiden was convinced he had sufficient evidence that these chemical components could benefit the local economy.

The museum's natural competitor in botanical research was the Sydney Botanic Gardens. However, under Charles Moore's directorship, this was very specifically focused on taxonomic rather than economic botany. No laboratory existed at the Sydney

Botanic Gardens, so this gave Maiden a niche in which he could nurture and enhance his botanical skills. While there was some overlap between the museum and the Botanic Gardens—for example, both had herbaria—Maiden was able to provide a complementary body of research rather than a competitive one. Economic botany was the field that Maiden embraced and championed for the rest of his career. This work led to the publication in 1889 of *The Useful Native Plants of Australia (including Tasmania)* followed by the first edition of *Wattles and Wattle-barks, being Hints on the Conservation and Cultivation of Wattles together with Particulars of Their Value* in 1890.

Maiden stated that the latter was a publication ‘issued to supply farmers, tanners, merchants, and others with authentic information in regard the value of wattles’.¹⁰ The articulation of the information presented as ‘authentic’ was an indicator of the growing importance of professional scientists. As Jim Endersby points out in his examination of the career of the botanist Joseph Hooker, Director of the Royal Botanic Gardens, Kew, the mid to late nineteenth century was the time when it became possible in British society to earn a ‘respectable’ living as a scientist.¹¹ Such authenticity enabled Joseph Maiden to cross into a range of different dimensions in the use of wattle for settler colonies, in Australia and abroad. The first of these was a consideration of wattle as an economic product.

Wattle as Economic Product

Tanning was a chemical process the antecedents of which are largely unknown. Small-scale manufacturing emerged within economic and social systems of domestication of animals. Animal skins were usually a by-product of the butchering of cattle, sheep and goats for food. Converting skins to leather enhanced durability and pliability, allowing simple clothing

to become more elaborate as tailoring technologies developed. Stitching, embroidery and tooling improved the marketability of manufactured leather in a range of geographical settings including Britain, Europe, the Americas and parts of Asia. Knowledge about tanning processes moved from place to place but tanners always experimented with local barks such as sumach, scotino, willow and oak bark.¹² The crumbly texture of wattle bark provided the perfect additive to water in the creation of a tanning solution.¹³

As these industries developed, abattoirs and fellmongers were often found together on water-courses on the fringes of urban life. Rivers supplied water for the tanning process but also supplied the means for the removal of wastes. Skins were washed in a series of deep pits of water and lime, and the hair and fat were removed before the skins were returned to the pits to soak in tannin solutions for up to two months. The skins were then dried and dampened in a process of smoothing that softened the texture of the leather. Tannin provided the colour for the hide but also aided in the chemical alteration that preserved this change. In the post-contact settlement of Australia, the bark of wattles was readily available. Stripped, dried and bundled, the bark was noted in the *Sydney Gazette* as an export product as early as 1845.¹⁴

The wattle or, more precisely, the wattle bark contained the right sort of tannin that made it a perfect local match for the production of leather. In this period, leather was a practical product for everyday life. As George Foord pronounced in 1870:

We have but to remember the wide range of applications for leather; – for boots and gloves, for saddlery, for coach-building, for belts and other adjuncts, machinery, for the binding of books and for countless other purposes which meet the eye in whatsoever direction we look.¹⁵

In cities reliant on horses, not cars, and in ambulatory lives dependent on the sturdiness of boots, leather was everywhere. Fellmongering and tanning provided an opportunity for botanists to match local tannins to this ancient trade, and in the process made an Australian tree into a local economic product.

Wattle was collected from trees by stripping the bark. What probably began as a chance application of a local bark to replace the distant and inaccessible European tannin barks was quickly incorporated into the manufacturing process. It was the local and abundant availability of wattle, combined with a trade practice imported from elsewhere, that saw the rise of this new possibility for the plant. The Ludowici Fellmongery and Tanning plant at Lane Cove in Sydney housed seventy pits to cope with up to 3,000 animal skins.¹⁶ By 1882 up to fifty tanned hides per week were produced from this factory alone.¹⁷ With tanning plants located throughout Sydney at this time, wattle bark was in high demand. By 1890 Victoria housed ninety-six tanneries and the local industry consumed between 12,000 and 15,000 tons of wattle bark each year.¹⁸ The viability of this industry was dependent on a steady supply of good quality bark, high in tannin content, from the Australian wattle.

To ensure this supply and the vigour of a local industry that supported over 1,000 families, and aware of its export capacity, the Victorian parliament appointed a seven-man Wattle Bark Board of Inquiry in 1878: E. J. Dixon (Chairman); J. Bosisto; M. L. King; George Fincham; John Rees; Thomas Cope and the colony's Government Botanist, Ferdinand von Mueller. Their task was to present a 'full and careful investigation into the subject of wattle conservation and the concomitant industry of bark-stripping'.¹⁹ The Board was charged with turning anecdotal evidence about the existing *ad hoc* approach to bark-stripping into a measured and controlled understanding of the situation. From these measurements, the

Board made a series of recommendations about how best to manage the resource for future use.

One of the key findings of the Board was that the stripping of trees was indiscriminate, particularly affecting the quality of the tannin because younger and younger trees were being denuded as a result of the increased demand. Wattles over five years old yielded the best tannin content in their bark. In the main, wattles were not cropped but strippers worked on stands wherever they happened to be available. This was piecemeal work undertaken by itinerant bush workers who moved between stripping and other types of short-term work depending entirely on availability. The increasing demand for wattle bark as an export product in addition to supplying the local market placed pressure on these natural resources.

The Board developed a series of recommendations aimed at protecting the wattle in a way that would maximize its commercial capability. At this time, conservation of forests was linked to an economic function. Foresters advocated plantations on the grounds that this would conserve valuable resources by ensuring sustainable extraction levels. In the same way, the Board outlined a scheme that called for the systematic cultivation of wattle. This meant restricting indiscriminate stripping. The Board proposed the introduction of a licence scheme policed by local constabulary; the planting and cultivating of wattle as a crop on crown, freehold and leasehold lands; and restricting the stripping season to spring to allow re-growth of wattle stands. In effect, what the Board recommended was that bark stripping be taken out of the hands of the itinerant working poor and placed in the hands of those with a legal claim on land. Cropping wattle was seen as an enterprise that could contribute to the economic stability of individual settlers and the broader economy.

The report was influential among the emerging Forestry Departments in Victoria,

New South Wales, Tasmania and South Australia during the last two decades of the nineteenth century.²⁰ Forest conservators planted wattle along railway corridors and then recommended against such action because sparks from passing steam engines created a fire hazard. In some cases licensing was introduced, for example, under the Forest Acts of Victoria. John Ednie Brown's 'Report on the Cultivation of Wattle' for the South Australian Legislative Council in 1884 followed the Victorian model, advocating the development of a wattle-bark industry in that colony.²¹

Reports to parliamentary or bureaucratic bodies are written for a specialized audience. The purpose of each of these reports was to gather information and present it to the respective Parliament. They each argued for statutory arrangements that are the purview of Parliament, including regulations, licences and the distribution of authority to inspectors. Maiden followed these two important reports with his *Wattles and Wattle-barks* in 1890. The audience for this work was vastly different. As noted earlier, Maiden stated that his intended audience was 'farmers, tanners, merchants and others'.²²

Maiden produced the first two of his three editions of *Wattles and Wattle-barks* at the Technological Museum of Sydney. Part of the museum's charter was to provide practical advice to the people of New South Wales. The overarching aim of Maiden's book was to provide authentic information for New South Wales settlers. It drew from many different sources, especially the influential report of the Victorian Wattle Board but also other publications and from his correspondence from Natal, New Zealand, California and Hawaii. While on one level *Wattles and Wattle-barks* was a simple reiteration of the material gathered by a range of experts in the field, several factors distinguished the work from others.

Maiden's goal was to make information accessible, translating a range of texts

written for specialized audiences into one for a more general reader. First, Maiden selected a lock-step structure for the pamphlet that made each of the important elements in the industry—from assessing soil to selecting seed and tending plantations—emerge from the mass of information that he had collected. The reports from Victoria and South Australia did not present material in this way. Maiden argued for wattle as an economically important crop, but he did so by presenting his work as a step-by-step guide. Second, he added an enumeration of New South Wales wattles including descriptions and wherever possible illustrations. In this way he was educating his audience in the identification of these Australian plants.

The third feature of *Wattles and Wattle-barks*, in comparison to the reports on wattle available in other colonies, was that Maiden was adapting and applying information from other contexts to those applicable in New South Wales. Maiden understood that environments varied across the continent and that information from elsewhere needed to be considered with this in mind. As he argued in another forum:

We in New South Wales have to work out our own problems, some of them the result of our special environment, and hence the experience of other countries can only help us as a guide, and we cannot slavishly follow models, however excellent.²³

Adapting intercolonial information had the same requirement. In this way Maiden cherry-picked what he considered to be the best of the information that was already available on the topic. He borrowed from all the known reports, and then synthesised this with data he collected from New South Wales situations.

In this way *Wattles and Wattle-barks* was innovative for the New South Wales context. 'Wattle conservation and cultivation', he said, 'have been little taken up in our own Colony, but we are already taking steps

to remedy this'.²⁴ The part he played in this remedy was actively to advocate the introduction of wattles and to stimulate change through a concerted campaign to bring relevant information to the attention of landholders. Maiden saw the potential for the plant to serve a range of economic functions. Wattle had the capacity to play a role as a plantation crop in the small-scale mixed farming of closer settlement, and it provided seasonal employment during the stripping process while also supporting a local manufacturing industry. In addition to these varied economic potentialities, Maiden also advocated wattle bark as an export crop.

Finally, Maiden's booklet added chemical certainty to help settlers draw an indigenous plant into their commercial operations. It also added to Maiden's authority in relation to Australian plants and their economic potential. This authority was partly built upon his ability to quantify the tannin content of the wattle. To do this Maiden carried out a series of analyses, the main outcome

of which were the tables of tannin content that were published in the booklet. Harrie Wood, the New South Wales Director of Agriculture and Forestry, reported in 1892 that Maiden was part of the process whereby a remedy for ignorance about productive plants was to 'actively diffuse accurate information in regard to the various articles the colony produces'.²⁵ Accuracy was not to be gained from anecdotal stories of those who lived with wattle, for example, but from a displacement of the wattle through vats and test tubes in the laboratory to give the information scientific legitimacy. Once accuracy was established, Maiden's recommendations were authorized by his tabulations of wattle tannin.

As Table 1 demonstrates, there was some variability in the tannin content of trees growing in New South Wales. Maiden also noted that the age of the tree correlated directly to the economic value of the tannin and extract. This confirmed the view reported by the 1878 Victorian Wattle

Table 1. Maiden's Chemical Analysis of *A. decurrens* and *A. mollisima* (Not Distinguished) from Different Locations; Compiled from *Wattles and Wattle-barks*, 3rd Edition, pp. 36–38

Location of origin	Tannic acid (%)	Extract (%) ⁹¹
Penrith (1)	33.5	61.85
Penrith (2)	35.3	59.05
Mulgoa, Penrith	35.56	59.2
Burraborang	34.85	61.5
12 miles from Burraborang Mountain	34.4	69.33
Cambewarra (1)	32.08	52.16
Cambewarra (2)	24.13	47.1
Nerriga (1)	36.3	62.54
Nerriga (2)	31.75	62.35
Nerriga (3)	29.25	59
Nerriga (4)	24.99	53.96
Bateman's Bay (1)	34	59.45
Bateman's Bay (2)	36.25	60.3
Bell's Creek, Araluen	31.25	64.15
Eden	30.25	51.65
Tombong, Snowy River	24.63	45.8
Booral	28.52	56.1
Booral (2)	27.5	57.1
Raymond Terrace	33.2	56.1
Gosford	22	46.4

Board: older trees yield better quality tannin.

Having completed the analyses, Maiden set out to distribute the information. He sent it to three main groups—newspapers, botanical institutions and individuals. This does not appear to be a case of people soliciting information but of Maiden conducting a concerted campaign to circulate information throughout the colonies. In New South Wales, 116 newspapers received the booklet in 1890. He also sent it extensively throughout Australia, to landholders located in remote regions and coastal abodes. Botanic gardens, Departments of Agriculture, universities and scientific and specialist societies such as the Royal Society of New South Wales and the Pharmaceutical Society were targeted. Where it went overseas, material was predominantly sent to Europe, North America and South Africa. Settler colonies dominated the pathways that Maiden chose for conveying this information.²⁶

Maiden distributed plant material as well as his published information.²⁷ Packets of seeds, seedlings and herbarium specimens travelled with *Wattles and Wattle-barks*. In this way, Maiden did more than just supply advice about how the tanning industry could be developed and whether wattle tannins were chemically superior to other plants. In the preface to the first edition of the work, Maiden recommended the following wattles for planting in New South Wales: ‘The South Australian Broad-leaved Wattle, *Acacia pycnantha*; The Sydney Black Wattle, *Acacia decurrens*; The Tasmanian and Victorian Black Wattle, *Acacia mollissima*’.²⁸ Wattles indigenous to one colony were subject to movement within Australia in the same way as exchanges occurred at an international level. Despite the apparent localness of the advocacy, moving wattles for economic purposes provided the possibility of environmental change in a range of places throughout the world.

On 1 July 1896, Joseph Maiden became the tenth director of the Sydney Botanic Gardens. His move to the Gardens saw an expansion of all the areas of interest he had developed at the Technological Museum. His new position gave him an increased capacity to pursue botanical science, applied science, acclimatisation debates, floral nationalism and everyday life pertaining to botanical matters. In addition to his work at the Technological Museum, Maiden had also been the Consulting Botanist for the New South Wales Forestry and Agriculture Departments from 1893. He continued this role until his retirement in 1924, advising on scientific forestry and advocating a national botanical survey. He had always been an active member of a range of learned societies and understood the importance of encouraging strong relations between scientific societies in Australia at this time.

During the twenty-eight years of Maiden’s tenure at the Gardens, wattle remained an area of passionate interest for him. As Table 2 demonstrates, correspondents in the late 1890s continued to pursue Maiden’s expertise about this indigenous economic product with transnational value. Despite six years having passed since the publication of the second edition of *Wattles and Wattle-barks*, requests for copies continued to flow in. However, this table also demonstrates that correspondence about wattle expanded beyond the narrow confines of Maiden’s text. His authority extended to the use of wattle in other arenas such as landscape planting. The State Nursery at Campbelltown supplied 1,066 seedlings of *Acacia baileyana* to the Sydney Botanic Gardens between 1898 and 1914.²⁹ This particular species was favoured for planting in Centennial Park and the Domain. The table also demonstrates that information about wattle was being requested by correspondents outside New South Wales. Hence, although written for a New South Wales audience, Maiden’s

Table 2. Sydney Botanic Gardens Correspondence Regarding Wattles, 1897–1898

Date	Letter and details ⁹²
11 October 1897	From I. W. Ellis, Fernholm, Manly, Re: <i>Acacia decurrens</i> .
9 October 1897	From the Overseer Centennial Park, Re: Border being planted with <i>Acacias</i> .
24 October 1897	From G. M. Elliot, Fernholm, Manly, Tendering thanks for work on wattles and wattle culture.
1 December 1897	From O. J. Rush, 68 Dowling Street Paddington, Asking for a copy of 'Wattles and Wattle Barks of New South Wales'.
14 December 1897	From the Under Secretary of Lands, Respecting the cultivation of wattle.
8 March 1898	From H. Andzey (chief editor, 'La Conceria', Turin), Asking for a collection of wattle barks for Turin Exhibition.
20 April 1898	From Director, Botanic & Domain Gardens, Melbourne, Asking for a few seeds of <i>Acacia baileyana</i> .
5 April 1898	From J. H. Barber Forestry Exch Station, Santa Monica, California, Inquiring where to obtain a copy of <i>Wattles and Wattle-barks</i> .
1 June 1898	Undersecretary of Forests Sydney, Respecting wattle-barks.
28 June 1898	From Walter Gill, Conservator of Forests Adelaide, Re: Exchange from local Wattle Factory.
4 July 1898	From Conservator of Forests, Western Australia, Asking for seeds of <i>Acacia baileyana</i> .
20 July 1898	From R. D. Hay (for H. S. Lando), Respecting collections of Wattle Barks for Turin Exhibition.
18 August 1898	From J. H. Barber, Forestry Experimental Station, Santa Monica, CA, USA, Ack: receipt of <i>Wattles and Wattle-barks</i> , & re offer of data on <i>Acacias</i> &c.
2 September 1898	R. D. Hay Forest Branch Lands Department Sydney, Re: Supplying of <i>Acacia maideni</i> seeds, and applying for seeds.
6 September 1898	Serle and Sons, 86 King Street, Sydney, Applying for seeds of <i>A. cyanophylla</i> .
27 September 1898	Director, Botanic Gardens, Melbourne, Asking for seeds of <i>Acacia baileyana</i> .
30 September 1898	A. G. Neale, Botanic Gardens, Melbourne, Asking for seeds of <i>Acacia vestita</i> .
3 October 1898	N. R. Chisholm, Prairie Plains, Prairie Queensland, Forwarding of <i>Acacia</i> specimens and pods.
1 December 1898	A. R. Crawford, Moona Plains, Respecting description of an <i>Acacia</i> .
5 December 1898	Undersecretary of Lands, New South Wales, Forwarding a packet of pods of <i>Acacia maideni</i> .

booklet was being circulated beyond the colonial borders.

Transoceanic Travel

Wattles, wattle material and wattle information were also being circulated transnationally. This may seem like a counter-intuitive activity, given Maiden's desire to see wattle developed from a New South Wales domestic market into an export crop. This was an era during which the full ramifications of the relocation of plants into foreign habitats had not yet been fully realised. The first Australian quarantine laws that

dealt with the national borders were introduced in 1908, but the first plants to be banned under those laws were prickly pears *Opuntia* sp. in 1912. Before this time, the philosophy of acclimatization guided the movement of various plant species. As far as botanists were concerned, it was a borderless world and collaboration between scientists operated alongside national concerns. Eucalypts travelled to India, Camphor Laurels to Australia and *Acacias* to South Africa. Of particular importance were plants that contributed to settler economies. This principle saw Maiden accept 153 packets of American grass and fodder plants

Table 3. South African Exchanges Extracted from the Sydney Botanic Gardens Letter Register, 1901–1902⁹³

Date	From whom and residence	Nature of application and representation
16 March 1900	Director Botanic Gardens, Durban	Forwarding list of seeds available for exchange
6 April 1900	Director of Botanic Gardens, Natal	Forwarding parcel of seeds
19 April 1900	Conservator of Forests, Capetown	Respecting best sand fixing grass
19 April 1900	Conservator of Forests, Capetown	Requesting supply of tree seeds
19 April 1900	Curator Botanic Gardens, Durban	Report for the year 1899
16 May 1900	Director Botanic Gardens, Durban	Forwarding packet of seeds
2 August 1900	Undersecretary of Agriculture, Capetown	Requesting further supply seeds
3 August 1900	Director of Botanic Gardens, Durban	Forwarding specimens for identification
13 August 1900	Undersecretary of Agriculture, Capetown	Acknowledging receipt of seeds
5 September 1900	Curator of Botanic Gardens, Natal	Forwarding seeds
30 November 1900	Undersecretary of Agriculture, Capetown	[register entry illegible]
28 December 1900	Superintendent [register entry illegible] Capetown	Acknowledging receipt of seeds
9 January 1901	Curator of Botanic Gardens, Natal	100 species of N S W forwarded
14 January 1901	The Hon. F. H. Moor, M.L.A. Natal, Minister for Native Affairs	3 packets of New South Wales seeds – Eucalyptus, etc.
29 January 1901	A. Smith	Asking for information re soil and climate
22 February 1901	Undersecretary of Agriculture, Capetown	Requesting a complete set of pamphlets
17 April 1901	Director of Botanic Gardens, Durban	Forwarding publications
6 May 1901	Conservator of Forests, Capetown	Forwarding list of desiderata
29 May 1901	Curator of Botanic Gardens, Natal	Offering loan of specimens
29 May 1901	Conservator of Forests, Cape Town	Requesting certain seeds
29 May 1901	Conservator of Forests, Cape Town	Re specimens of Eucalyptus asked for
2 June 1901	Undersecretary of Agriculture, Cape town	Acknowledging receipt of publications
15 June 1901	Undersecretary of Agriculture, Capetown	Acknowledging receipt of plants
15 June 1901	Conservator of Forests, Capetown	Requesting supply of seeds
22 July 1901	Prof. MacOwen	Forwarding herbarium specimens
9 August 1901	Undersecretary of Agriculture, Capetown	Forwarding publications asked for

from Professor Lamson-Scribner of the Department of Agriculture, Washington, in 1896–1897.³⁰ Maiden trialled these plants in seed pans at Centennial Park, checking them for drought-worthiness³¹ since this specific adaptability was important to the local pastoral industry.

The inclusion of *A. decurrens*, *A. pycnantha* and *A. mollissima* in transnational exchanges provided the possibility of

environmental change in both Australia and other settler locations throughout the world. This was an integral part of the operations of a botanical institution at the time. The register of letters for the Sydney Botanic Gardens shows the many different tendrils of these exchanges. Wattle represents only one small section of this trade. Bundles of wattle, wattle material and wattle information found their way to India,

Hawaii, California, Argentina and Canada. Interestingly, although not a settler location, one bundle of wattle found its way to the Sukham Section of the Institute of Applied Botany in Leningrad, where wattles were planted and cropped in the 1920s.³² Maiden had moved from the Technological Museum and his wattle expertise had moved with him. The circulation of *Wattles and Wattle-barks* became part of the work of his new institution; one with an international profile and higher degree of botanical authority.

One of these paths saw wattle, wattle material and wattle information shift from Australia to South Africa.³³ Maiden was by no means the first Australian to send wattles to South Africa. As Harold Witt points out, private tree enthusiasts were experimenting with *Acacias* and *Eucalyptus* in South Africa as early as 1846.³⁴ Of the introduction of the black wattle into Natal, the Conservator of Forests, T. R. Sim, noted: 'though it probably arrived first as an ornamental tree the writings of the late Baron von Mueller, particularly his "Select Extra-tropical Plants" drew attention to its value as a tannin-producer'.³⁵ *Acacia mollissima* was received at the Natal Botanic Gardens in 1878, with *Acacia dealbata* being made available for sale in 1880 by the curator Willam Keit.³⁶ The later curator John Medley Woods actively distributed wattle to various places and farms near Durban.³⁷ On 8 February 1890, well before Maiden became director, the Sydney Botanic Gardens sent New South Wales seeds to Peter MacOwan in Capetown and John Medley Woods in Durban.³⁸ When Maiden went on to contribute seeds, plant material and publications about wattle to South Africa, he was building on a range of pre-existing relationships.

Clearly, exchanges with South Africa were not restricted to wattle or indeed to the exchange of plant material such as seeds. These exchanges demonstrate the variability of information and plants that traversed the Indian Ocean. They also show

that exchanges were not restricted to a network of botanic gardens, but extended to forestry and agriculture departments, seedsmen, government botanists and interested individuals. The geographical centres receiving information were Durban, Capetown, Pretoria and Bloemfontein.³⁹ Each experimented with wattle with varying degrees of success, resulting in a complex set of exchange relations between South Africa and the Sydney Botanic Gardens.

Seeds made up one portion of these exchanges. The most effective way to transfer wattle was in its seed form, rather than as seedlings or cuttings. A common label for material sent within this network was 'New South Wales seeds'.⁴⁰ For example, in 1899, Durban Botanic Gardens received 214 packets of 'New South Wales seeds'.⁴¹ This trade in seeds continued in the twentieth century. On 4 April 1909 and again on 16 May 1914, the same institution was sent 64 packets of New South Wales seed.⁴² The letters that correspond to these register items have been destroyed, so it is not possible to identify the quantities of wattle that were included in parcels generically branded as 'New South Wales seeds'. However, the most common species sent at that time were eucalypts, casuarinas, araucarias and wattles.⁴³

In 1884, Charles Moore drew up a census of the plants of New South Wales.⁴⁴ Maiden reprinted this volume and sent it out into his botanical network so recipients could indicate their desiderata. How many he sent, or to whom he sent them, is unknown. However, eight returned volumes survive in the Sydney Botanic Gardens' collection and demonstrate how botanists at, for example, the Museo Nacional de Buenos Aires, Buitenzorg in Java and the University of California in the USA used the document. They marked the catalogue to show which species were desired and returned it to Maiden. Maiden then used the documents to prepare shipments of plant material to those places. As Ernst Betche

wrote to Dr L. Radlkofer of the Botanical Museum in Munich:

I have pleasure in sending you by this week's mail 100 species of NSW plants mostly your desiderata but as the parcel has been made up partly before we received your marked Census it contains some species already represented in your herbarium.⁴⁵

In the same vein, on 6 May 1901 the Conservator of Forests in Capetown forwarded his list of desiderata to Sydney.⁴⁶ In every surviving copy of this *Census* still held in the library of the Royal Botanic Gardens Sydney, the most heavily annotated pages deal with the eucalypts and the wattles.⁴⁷ In discussing wattle seed in *Wattles and Wattle-barks*, Maiden focused on the availability of *A. decurrens* seed 'of excellent quality [which] may be obtained within our own territory'.⁴⁸ A parcel of 'New South Wales seeds' sent from the Sydney Botanic Gardens to South Africa most likely included wattles. It is highly probable that when wattle was included in these parcels, it was *A. decurrens* seed.

In South Africa

In establishing a wattle industry, South African agriculturalists developed three factors that were missing in Australia. First, they created plantations of wattle, neatly rowed, thinned and pruned as required, mulched and tended until ready for harvest. The optimum time for this was ten years with 10% of the crop being harvested and then replaced each year. This was a method advocated in continental forestry and ensured sustainable income following the initial period of establishment of the trees. Natal provides a comparative example of the development of this industry in South Africa. By the 1890s many farmers in the Natal region had incorporated the scientific management of wattle into their agricultural

practices. Hence, rather than using *ad hoc* access to crown land as had their counterparts in Australia, wattle became a staple on some farms and an element of mixed farming on others in the manner recommended by Maiden in *Wattles and Wattle-barks*.

The second feature of the South African farming method was stable, cheap and readily available labour. From the 1850s until 1917, Natal used indentured Indians from Madras and Calcutta as coolie labour rather than using indigenous, Afrikaans or British labour. Primarily these people were indentured to the sugar industry, working in the fields and mills of this region. Indentured labourers were contracted for five-year terms with the option to re-contract, repatriate or stay on in Natal as free immigrants at the completion of the contract. As the scheme developed into the 1880s, Natal saw a mix of indentured and free Indians living in both urban and rural areas. While up to 80% of these workers were contracted to sugar, the remaining 20% dispersed into a range of other agricultural and small-business pursuits. Wattle plantations were one of the options for these workers at an indentured rate of two shillings per day.⁴⁹ The 1909 Indian Immigration Commission reported that without indentured Indian labour wattle growing, among other industries, was under threat of abandonment.⁵⁰ In addition to the indentured labour, native peoples also found work in the wattle industry. Witt argues that black tenant farmers, both male and female, laboured on wattle plantations during seasonal thinning and stripping.⁵¹ The extraction factory at Melmoth used a native workforce for the unskilled component of its operations and paid them in board and rations, rather than in meagre wages as paid to the Indians.⁵²

Additionally, South Africans experimented with different sorts of technology, including light rail, purpose-built drying sheds and a willingness to place extraction plants strategically, relatively close to the plantations themselves. All these features

had been recommended by various Australian botanists and foresters, including Maiden. The Natal Tanning Extract Co. was one of several organizations that used an integrated model in their approach to the production of tanning extract. They invested in land for plantations and set up factories close to the farms.⁵³ The Town Hill Wattle Co. incorporated tramways to transport bark to rail-heads, and additionally developed drying sheds that allowed farmers to protect the drying wattle from damaging mist and rain; concertina-like drying racks could be moved in and out of the sun as needed.⁵⁴ In their survey of the South African industry, A. J. O'Connor and I. J. Craib found that the large plantations, that is, those of between 2,000 and 6,500 acres, each 'constitute[d] a working circle, and support[ed] its own bark mill and plant for the sawing of mine props and firewood'.⁵⁵

Some of the bark produced was used in the local boot and shoe industry, but such was the success of these plantations that the bulk went overseas to meet a growing global demand. In 1886, the value of the export crop from Natal was £11, but by 1903 this had increased to £70,581.⁵⁶ Australia on the other hand only managed to export bark worth £63,732 in 1900.⁵⁷ In 1902, Fred Wright noted in the *Journal of Agriculture and Industry of South Australia* that in the six years between 1896 and 1901, 'South Africa had increased her export of wattle bark by 8,418 tons, while South Australia has decreased by 2,795 tons'.⁵⁸

South Africans created a new industry with the wattle based on plantation agriculture. By 1905 South Africans were able to export wattle bark back to Australia for use in its domestic industry. Jared Smith of the Hawaii Agricultural Research Station hailed South Africa as the country that 'produced the bulk of the world's supply'.⁵⁹ This caused some consternation in Australia, where one newspaper suggested that Australians should 'blush with shame' at this 'bad miss for New South Wales'.⁶⁰

Responding from Sydney

In 1904 the New South Wales Department of Lands prepared a circular about the relative situation concerning the New South Wales and Natal wattle bark industries. They sought information about whether there had been a downturn in production at the same time as prices for the raw product had risen. This concern for the local industry was stimulated by the success in Natal:

This inquiry, I may state is instituted, in consequence of an intimation received from a correspondent of Cape Town, South Africa, who alleges that inquiries have been made there by Australian tanners for wattle-bark grown in Natal by private enterprise from seed of the indigenous species *Acacia decurrens*, which was originally obtained from this State.⁶¹

By this time, the second edition of *Wattles and Wattle-barks* was twelve years old. Much had changed in that time with regard to the establishment of wattle for industrial purposes, in particular the success of South African ventures. Additionally, Maiden had been at the Sydney Botanic Gardens for eight years and this circular seems to have provided the opportunity for a revision of his early work.

Maiden's third edition of *Wattles and Wattle-barks* (1906) included his views on the growth of the Natal industry. In discussing this spectacular economic success, he argued that in Australia, 'attempts to place forestry matters on a sound basis are persistently resisted by outsiders', and that this 'augur[ed] badly for the future'.⁶² Rather than taking this situation at face value, however, he relayed his conversation with the visiting chairman of the Land Board in Natal. He argued that three factors enhanced the economic success of wattle in Natal: available labour in the form of Indian coolies and natives, plantation cropping, and the fact that these lands had been 'treeless' and therefore did not need clearing.⁶³

Contrary to other commentators about this state of affairs, Maiden was optimistic about the capacity to change the fortunes of the local industry:

What Natal has done, I do not doubt can be profitably repeated in New South Wales in another way ... the time will come when it will be realised that our national forests are not the sole property of the persons who exploit them, and the people immediately dependent on the industry, but belong to the people of the State at large.⁶⁴

His solution was to use scientific principles in dealing with forestry matters. For Maiden, the role of the state was to regulate the use of forests so that the supply of wattle bark could be maintained in the long-term. Plantation cropping was the parallel part of this process that the state should encourage. He advocated effective management that would help to protect forests from exploitation while enabling the development of the wattle bark industry.

The third edition of Maiden's booklet, like the versions produced at the Technological Museum, was circulated through his network of correspondents. On 3 October 1906 the Conservator of Forests at Capetown acknowledged receipt of a copy of the new edition. Later in the same month, on 29 October, Maiden was fielding an inquiry regarding this publication from the Conservator of Forests at Pretoria.⁶⁵ The new edition added more species to the list provided at the rear of the pamphlet. Maiden also rearranged the indexing to reflect a scientific standard, including a bibliography of scientific texts consulted. All of these additions reflect the standards expected from a scientific institution as opposed to a museum.

The release of this edition preceded Maiden's campaign to use wattle as a symbol of nationalism. Maiden's authority regarding wattles was now well established. He had been actively involved in promoting

wattle as an economic product, first at the Technological Museum and second at the Sydney Botanic Gardens. At the museum, he had translated and synthesised information for ease of access. At the Gardens, he used his knowledge and experience and his position in the broader botanical exchanges to comment on the international competition for sustainable economic growth through an indigenous tree. From both places he had sent wattle, wattle material and wattle information as part of transnational botanical exchanges. The next phase in Maiden's association with wattle built this authority into a completely different realm, bringing economic botany to bear in the creation of symbols of nationalism.

Wattle Nationalism at the Sydney Botanic Gardens

As general sentiment swelled around the cultural construction of nationhood from the 1880s up to federation, wattle became a symbolic vehicle for patriotism. The use of a particular natural item to represent Australia was part of the process of enunciating the nation. Libby Robin calls the use of *Acacia* as floral emblem 'wattle nationalism'.⁶⁶ Australians actively attached ideas of nationalism to the wattle. Robin points to the campaign for wattle as one of the first concerns of the Australian Natives' Association, initially formed in 1871. On 3 March 1890 they formed the 'Wattle Blossom League', specifically for the wives of members. The task of feminizing nature and nation fell to these women, who agreed to wear wattle 'either artificial or real' whenever the opportunity arose. On 18 March 1890, the first social event for the Wattle Blossom League was held at the Town Hall in Adelaide. Tables were set with sprays of wattle as centrepieces; a poem about Australia was read and followed by songs about wattle and Australia.⁶⁷ The Wattle Blossom League also succeeded in hoisting a wattle banner featuring the local South

Australian wattle *Acacia pycnantha* at the Foundation Day celebrations on 26 January 1891. Wattle was a symbolic vehicle for the transmission of these other goals.⁶⁸

The campaign for wattle as the national symbol was similarly taken up by Archibald Campbell, who started a private Wattle Club in Victoria. Campbell's interests in ornithology made him an enthusiastic bush-walker, and this club took members out from Melbourne into areas where wattle stands blossomed. Groups visited the Werribee Gorge, the You Yangs and Eltham in early spring to admire the wattle within its natural habitat.⁶⁹ Campbell, like Maiden, became a symbol of authority in promoting wattle in this way. As the movement gained momentum across Australia, various states developed local groups to formalize the promotion of wattle. One aspect of wattle nationalism was the formation of the New South Wales Wattle Day League. On 30 August 1909, the League was formed at a meeting of 'like minded enthusiasts'. Joseph Maiden, Agnes Clunies-Ross and June Kettlewell formed a committee devoted to 'the idea of embodying Australian National sentiment in a native flower'. This league's motto was 'wear wattle and plant wattle'.⁷⁰

Wattle nationalism was promoted by Maiden in his writings and lectures, helping to construct an everyday knowledge for Australians about the flora that was unique to the nation. For example, in 1908 he addressed the students of the Clergy Daughters' School about the floral emblems of different nations. He closed his address by pointing out that Australia was yet to adopt a floral emblem but that, in his opinion, a Eucalyptus or wattle blossom was the perfect choice: 'these occur abundantly in all the States, and it would never do to adopt as Australian emblem, a flower confined to one State and perhaps a small portion of it'.⁷¹ In the following year he abandoned the Eucalyptus in favour of the wattle when he joined the Wattle League. In the *Sydney*

Morning Herald in 1910, he went on to expound the virtues of the wattle flower as 'emblem of peace'. He implored readers to consider themselves good Australian citizens of the British Empire, thus using the plant to help distinguish national identity within the British 'family' of nations.⁷²

Familiarity with the plant helped British Australians shift from being strangers in a strange land to being 'settled' in a homeland. In order to achieve this, a shift had to occur; the plant had to be transformed into one that could metaphorically connect its attributes to attributes of the Australian character and national identity. Of this, Agnes Storrie of the Wattle Day League said 'to the native-born Australian the Wattle stands for home, country, sunshine and love – every instinct that the heart most deeply enshrines'.⁷³ An outward display of wattle, whether worn as a sprig, presented as cut flowers, or pressed into letters sent overseas, demonstrated an allegiance to this national identity. One way to develop the theme was to plant wattles as ornamental trees. This enabled gardeners and garden lovers to blend their sense of home with their identity as Australians.

Acknowledging that national 'belonging' was cultural work that required a commitment, Maiden explained: 'it is a pleasant way of studying a group of plants with which Australians are, as a rule, but superficially acquainted'.⁷⁴ The planting of wattle was an activity that would shift Australians into a deeper relationship with Australian environments. It was the repetition of the association of wattle with nationalism that reinforced such an association with the nation, Australia.⁷⁵ This was to know and own a sense of Australian-ness that could be attained through both home and public gardens. Nationalists, Wattle Day Leaguers, members of the Australian Natives' Association and the Director of the Sydney Botanic Gardens together actively used wattle to enable the nation to be experienced at the scale of the 'local'. For geographer Sarah

Whatmore such ‘everyday practices’ are ‘performative rather than cognitive’.⁷⁶ In planting wattle, the individual performed nationalism rather than having to explain what it meant to be a native Australian.

Maiden performed this brand of nationalism through planting wattle in two key places under his charge: in Centennial Park and in the Outer Domain. Rather than planting singular scientific examples, as he might have done in the Sydney Botanic Gardens, Maiden used these secondary spaces of his park group to present massed wattle. In planting groups of twenty-eight wattle shrubs together in Centennial Park in 1896–1897 ‘for their showy winter bloom’, he mimicked nature by replicating the floral stands that he saw on his collecting trips.⁷⁷ Of these trips Maiden wrote:

It is one of the joys of life to drive through wattle country, particularly on a dull spring morning, and feast the senses on the never-to-be-forgotten glories of the golden cascades, and to receive vigour and inspiration from the sweet, dainty perfume.⁷⁸

Presenting the massed Cootamundra wattle *Acacia baileyana* at Centennial Park brought the bush to the city, thereby conflating nature and nation.

In New South Wales, unlike other states, the notion of wattle as the national symbol was controversial. Here the wattle tussled with the waratah for this honour. Each plant had its champions and the waratah drew support from Richard T. Baker, the curator who had assisted Maiden and eventually succeeded him at the Technological Museum. Baker saw the waratah as ‘nature’s triumph in this quarter of the botanical world’ and wrote a series of articles in the *Technical Gazette of New South Wales* displaying the many ways in which the form of the waratah lent itself to the decorative arts of the industrial age.⁷⁹ Baker showed how the waratah had been translated

into architectural forms including wallpaper, light fittings, glazed products, ceramics and plasterwork that have subsequently been understood as part of the architectural style known as ‘federation’. Baker constantly stressed both the attributes of the waratah and its superiority over the wattle. The variation and extent of the designs left Baker remarking that ‘the Waratah [required] no aids to produce effects such as the Wattle demands’.⁸⁰ His attempt to show the geographical reach of the plant in Victoria, New South Wales and Tasmania responded to the wattle advocates’ claim that wattle was found all over Australia.

Wattle and waratah could also be categorized respectively as representing useful and ornamental botany. Wattle was a useful plant and waratah was an ornamental one. Articulating a plant as useful noted its commercial exchange and carried the weight and expectation of the colonial project found at the Sydney Botanic Gardens. A useful plant was one the qualities and attributes of which made it a viable product of industry. The bark of the wattle was an additive in the tanning process: wattle was valuable to settlement through systems of manufacture, extraction and manipulation of its natural properties. Ornamental plants on the other hand were understood as part of the nature of aesthetics and the aesthetics of nature. An ornamental plant had a function but did not meet a need and was therefore seen as of somewhat less importance in this era of settler colonialism.

Maiden, an expert in economic botany, drew the economic value of wattle into this debate. Arguing in the patriotic magazine *The Lone Hand* for its establishment as a national symbol, Maiden said:

Although Australia has passed through the stage when wattling was an essential part of a dwelling and a recognised colonial industry, the wattle still has utilitarian associations, for the barks of some species are valuable tanning

agents, and thousands of acres are conserved or planted for the yield of this product alone.⁸¹

E. S. Emerson, writing in the same magazine in 1910, also linked the profitability and potential of the wattle as a tanning bark to the Australian character.⁸² Maiden and others saw the wattle in relation to the idea of its being a resource for settlers, so that it could also stand for the resourcefulness and economic potential of settlers, an argument that had been around since the potential of wattle for tanning leather had been noted in 1802.⁸³

Ironically, the most important plants in the Australian economy at this time were non-indigenous. As Robert Burt and W. T. Williams have shown, this had been the case in Australia since the arrival of the First Fleet.⁸⁴ Cereals—wheat, oats, and maize—were the most important economic crops at the time of federation. In 1908, Australia had 5,383,911 acres of wheat under crop,⁸⁵ sugarcane was planted into 144,763 acres of land,⁸⁶ and orchards and other fruit gardens covered 170,448 acres.⁸⁷ However, the Commonwealth Statistician did not list the acreage employed in the cropping of wattle. Wattle and the contribution of tannin bark was a marginal economic exercise. In the blending of economic development and potential in Australia, the obvious choice was a cereal crop. An exotic foreigner could never, however, be considered as a national symbol, even if it more accurately symbolized the occupation of Australian land.

Maiden and others promoting wattle were well aware of the circulating visions of Australia as a nation increasingly independent of Britain both economically and politically, despite on-going rhetoric about 'British Australia'. Wattle fulfilled this combination of needs for symbolic representation. It was indigenous, distributed across the continent and economically useful. It was telling that, from the many varieties known to science at that

time, *Acacia pycnantha* was the preferred national emblem. This was one of the main wattles cropped in South Australia to supply tannin bark for the tanning and fellmongering industry between the 1860s and the First World War, and South Australia had been one of the earliest colonies to advocate its use as a national emblem. Wattle may not have been able to compete with wheat at an economic level, but it did provide an association with future prosperity in this layered representation. Maiden saw this as a distinguishing feature that added to the argument in favour of wattle's use as a national symbol. The same argument could not be made about the waratah.

In 1911, Edward Sorenson pointed out that South Africa had selected the wattle as their emblematic flower at the time of the coronation of King George V.⁸⁸ Sorenson raised this point in making an argument that wattle was an Australian national symbol and should not be usurped by South African claims. This international rivalry emerged at the same time as the Wattle League was sowing the seeds of the wattle for a crop of Australian patriotism and sentiment. Libby Robin and Jane Carruthers have detailed the events surrounding the embroidery of the coronation robes with symbols from the British Empire. They demonstrate that Lord Gladstone, South Africa's first governor-general, was outraged at the use of imagery that looked like Australian wattle, not indigenous South African *Acacia*. The robes were altered by the addition of thorns that brought them closer to representing an indigenous South African species, *Acacia horrida*. Sorenson was mistaken about the South African desire to claim wattle as their national flora. South Africa eventually adopted the King Protea, *Protea cynaroides*, in 1975.⁸⁹

Conclusion

In many ways Joseph Maiden was simply one agent among many engaged in

the dissemination of wattle. By tracing the relations between the work of one man and the broader forces of settler colonialism, this paper has demonstrated that wattle was not constrained to a single site but instead was found simultaneously in multiple global sites. Although much had been written about wattle by the time Maiden became interested, he was to play a key role in creating information that was easily accessible. He was an advocate for change in the way that farmers considered the use of their land through the application of scientific principles using Australian flora.

Importantly, once circulated, this information was not confined by the political boundaries created when Maiden produced his book for a New South Wales audience. Maiden's move to the Sydney Botanic Gardens both reinforced and enhanced his position in a global network of botanical exchange. This in turn enlarged the audience for his work. South Africans interested in wattle were able to solicit both wattle material, mostly in the form of seeds, and wattle information. While commentators like Sorenson saw this as undermining a national industry, Maiden took the opposite approach. Good-will, collaboration and intellectual generosity mark the easy exchanges of Maiden's wattle work with South African parties.

Authority built through scientific practice also created a platform for Maiden to move into the public sphere. This authority carried him gracefully into the realm of cultural nationalism. Here he advocated a nationalism built on an emotional attachment to Australia through the indigenous flora. These plants were thereby associated with the possibility of 'indigenizing' settlers and making them feel at home on this continent. Maiden's other spheres of professional scientific interest produced the possibility of this involvement in matters of cultural discourse. Joseph Maiden's work facilitated the criss-crossing of the national and transnational paths of the wattle.

The places in which he worked and the exchange networks he maintained show that what was national could also be transnational, and what was transnational was also global without ever losing the sense of wattle being an Australian tree. The multiple transnational networks that formed around wattle show, as Nigel Thrift suggests, that 'the "material" and the "social" intertwine and interact in all manner of promiscuous combinations'.⁹⁰ The wattle was neither national nor transnational but instead operated in multiple spheres.

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92. Compiled from 'Register of Letters received 1897–8'.
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