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European scientists in colonial Australia

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Merewether Scholar, Mitchell Library, 2008

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The 2011 Ben Haneman Memorial Lecture[1]

Ben Haneman

First, let me say how privileged I am to have been invited to present the fifth biennial Ben Haneman Memorial Lecture, following in the footsteps of some distinguished international scholars. I thank the Australian and New Zealand Society of the History of Medicine and the Trustees of the State Library of New South Wales for giving me this opportunity.

Next, I must say how apposite that this lecture should be given in the Friends Room of the Mitchell Library, surrounded by this unrivalled collection of the works of Miguel Cervantes donated to the Library by Ben Haneman. This includes 1,100 editions of *Don Quixote* in fifty different languages, the oldest published in 1620. Ben was a passionate bibliophile, like David Scott Mitchell, the benefactor whose bequest paid for this building. If a day passed in which he had not purchased another book, new or old, Ben felt empty and deprived. His literary interests were much wider than Spanish classics, as he showed in a lecture to the medical staff at St. George Hospital the year before he died: "One of my publicly declared vices is book-collecting. I think I have collected nearly a hundred different hospital histories" (Haneman 2000).

Unlike David Scott Mitchell, Ben Haneman did not spend his later years at home with his books. At the time of his death, he was still practising as a consultant physician, and he was active in numerous organisations that fostered his interests — medical history, science, libraries, Spanish culture, and the Jewish Board of Deputies. He was President of the Australian Society of the History of Medicine when he died. Most of all, he was devoted to this Library, where he served as a volunteer, and became the first Honorary Life Member of the Library Society. It was in this building that he collapsed suddenly almost exactly ten years ago, succumbing the following day without regaining consciousness. He would not have wished for a better end to a full life.

Another of Ben's passions was support for the Australian indigenous community, and he spent ten years of his spare time in the Mitchell Library preparing a complete index of now-defunct Aboriginal newspapers and journals. In his memory, therefore, I acknowledge with respect the traditional owners of the land on which we are meeting — the Gadigal people of the Eora nation.

For those of you who did not know Ben, I should say a few words about his life. Born in Italy of Jewish parents in 1923, Benedetto Haneman migrated to Australia

1 This address is available at the State Library of NSW. (Search for "2011 Ben Haneman Memorial Lecture".) I have sought a copyright holder unsuccessfully. Please contact me if you have information — Editor.

with his family as a young boy. As the only foreigner at Carlton Public School in the 1920s, he was known as "the Dago kid" and had stones thrown at him by boys who later became his patients. Leaving Canterbury Boys' High School at the early age of 15, he began studying medicine at the University of Sydney, graduating in 1944 just after his 21st birthday. After residencies in Perth, Ben began practice as a general practitioner at Carlton in 1947, as well as becoming a Clinical Medical Assistant at St. George Hospital. He went on to become a Fellow of the Royal Australasian College of Physicians, as a specialist in gastroenterology. He also served on the Library Committee of that College. Throughout his career, Ben nurtured young medical students, first as Warden of Clinical Studies at St. George Hospital, and later as Warden of Warrane College at the University of NSW. An inveterate traveller, he became an honorary professor at the University of Navarre, and in 1984 King Juan Carlos of Spain decorated him with the Cross of a Knight of the Order of Civil Merit. He was created a Member of the Order of Australia in 1988.

As one of his obituary writers said, Ben Haneman was a man of "extraordinary energy, enthusiasm, erudition, generosity, compassion and good humour" (Wilson 2002).

Lastly, I should emphasise how necessary it is for us to commemorate such a person, and to remind ourselves at regular intervals of his contribution to our society. In these days of instant gratification and a loss of corporate memory within so many of our institutions, it is vitally important that the Mitchell Library can still provide us with centuries of knowledge and understanding that otherwise would be lost.

Colonial arts and sciences

A few historians have drawn attention to the relationship of the arts and sciences to the colonial enterprise in white settler societies such as Australia, and have concluded that they formed part of the larger thrust of imperialism that so engaged western powers from the sixteenth century to the end of the nineteenth century. These writers suggest that as provincial outposts, the colonies simply provided information and resources to the home country in furtherance of imperial ambitions. This interpretation does not allow much scope for local originality or creativity, and neglects the independence imposed by the "tyranny of distance." Fortunately, some historians have taken a more nuanced view, for example the late Ann Moyal (1993), who pointed out deficiencies in both the isolationism and intellectual imperialism theories, and Roy MacLeod (2004) in his magisterial biography of Sydney University Professor Archibald Liversidge.

Recent trends in imperial history have tended to emphasise a networked concept of empire, with complex relationships between colonies, and with the metropole, rather than seeing them as subservient dominions (see Lester 2006). I do not wish to engage in that discourse this evening, but instead draw attention to some colonial experiences that require an alternative explanation. In doing so, I hope to redress some of the Anglocentric bias we find in much Australian history, as well as the relative lack of interest that has been shown in the development of cultural and intellectual life of this nation (see Fairburn 2004).

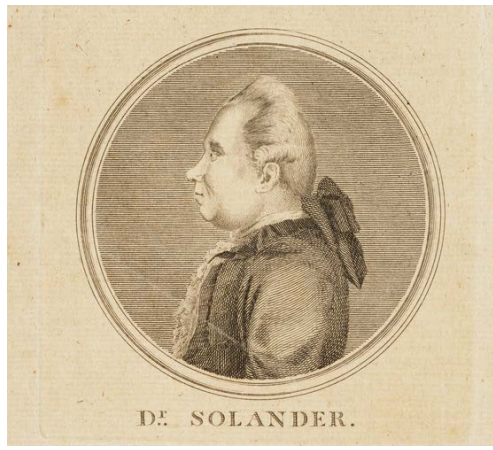
In particular, I want to connect with some areas of Ben Haneman's experience by describing — in roughly chronological

order — the sometimes overlooked role of scientists from Continental Europe in nineteenth century New South Wales and to depict in some detail a notable example from the field of medical science. The people I will speak about were born and educated in either France, Germany, Austria, Sweden, Poland, or Russia. Some were only transient visitors, while others remained here. It is by no means an exhaustive list; numerous other scientists from Continental Europe also visited. You must bear in mind that the nineteenth century was a period of intense nationalism as well as imperialism in Europe; small princely states were being amalgamated into larger entities, and national boundaries were shifting as a result of recurrent conflict. So the country of origin of these people will not always coincide with modern understandings of their birthplace.

French scientists in Australia

We know that European navigators had been exploring this region of the world for at least three centuries before a settlement was established in 1788. Partly they were driven by innate curiosity, partly to search for the fabled *Terra Australis Incognita* which they believed was necessary to balance the land masses of the northern hemisphere, but mainly by avarice. Uncharted territories promised unimagined riches. Many Dutch, British, and possibly Spanish, seamen had bumped into these shores but had not been impressed by what they had seen. They drew some charts but found little water or provisions for their crew, and few even bothered to take specimens of unfamiliar objects back home. Very few were like Dirk Hartog, who left behind a commemorative plate as tangible evidence of his visit to the western coast of New Holland in 1616.[2]

This all changed when Lieutenant James Cook sailed up the east coast of New Holland in His Majesty's Bark *Endeavour* in 1770. His expedition was overtly scientific, even if covertly political. We must remember that this was at the peak of the European Enlightenment, the Age of Reason when centuries of religious dogma were being challenged by rational explanations of the phenomena of nature. Funded by the Royal Society of London to observe the transit of Venus in Tahiti, Cook's vessel carried a small scientific party led by Sir Joseph Banks, the wealthy amateur botanist. Amongst his party was the Swedish naturalist **Daniel Solander** (1733–1782), a student of Carl Linnaeus, who when he stepped ashore in Botany Bay became the first university-educated scientist to set foot on Australian soil.



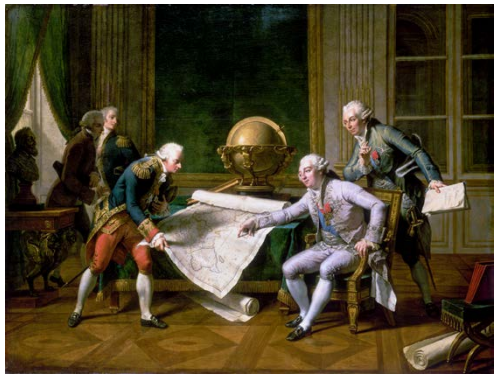
Botanist Daniel Solander, who accompanied Sir Joseph Banks and James Cook on their visit to Botany Bay in 1770. [SLNSW: PXA1028, item 9 (Album ID 824241)]

2 See https://www.migrationheritage.nsw.gov.au/exhibition/objectsthroughtime/hartog/index.html — [Ed.]

And here we immediately note an important distinction. In class-ridden England of that period, science, or natural philosophy as they called it, was the province of leisured gentlemen, who tended towards the observational rather than experimental modes of study. The professional scientist in this case was a foreigner. To the English, the fact that a person was paid to do research rather than for love of the subject implied that their conclusions would be compromised. To be a professional by definition excluded one from respectable society for much of the nineteenth century. Even the term "scientist" did not enter the English language until 1833.[3] It was very similar to the class-based distinction later made on the cricket field, when "players" and "gentlemen" in the same team occupied separate dressing rooms (Knight 1991: 42).

The situation was different in Continental Europe, where French governments both before and after the Revolution patronised science, and in the German universities, which provided systematic training in various scientific disciplines and a culture of experimental research. Because most educated Australians in the early nineteenth century brought with them British traditions, they came with a "pattern of scientific activity in which social distinctions were extremely important and social distances preserved." As Atkinson remarked, "The First Fleet sailed from England two years before the outbreak of revolution in Europe, and for many years in this remote corner of the globe the eighteenth century stood still." (Atkinson 1997: 7)

So it is hardly surprising that the next scientific expedition to touch these shores — and like Cook with a hidden imperialist agenda — was that of the French Count **Jean-François de Galaup de La Pérouse** (1741–1788), who arrived in Botany Bay just as Arthur Phillip and the First Fleet were preparing to move to Sydney Cove. You will recall that Arthur Phillip also had a European heritage: his father was German. La Pérouse and his two ships, *Buoussole* and *Astrolabe*, were well-equipped with scientific instruments and qualified personnel to use them, including a respected astronomer, **Joseph Lepaute Dagelet** (1751–1788), who immediately set up an observatory at Frenchman's Beach.



Louis XVI giving final instructions to the Comte de la Perouse, 1785, before his expedition to New Holland. Painted by Edouard Nuel. [SLNSW: ML39 (a128478)]

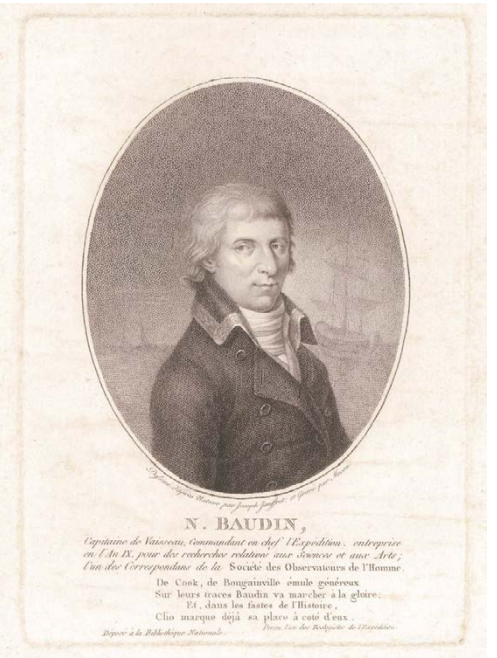
Dagelet was an Associate Member of the French Academy of Sciences, and was able to provide marine Lieutenant William Dawes with advice on setting up an observatory in Sydney Cove and establishing its precise location. Meanwhile, the other scientists in the French party were busy collecting and illustrating the unique flora and fauna they found here, as well as making

3 William Whewhell, of Trinity College, Cambridge, first used the term at a meeting of the British Association in 1833. (Hooker 2004: 10)

ethnographic studies of the indigenous population. Amongst them was Father **Claude Francois-Joseph Receveur** (1757–1788), who had been selected by the Académie des Sciences to serve as a naturalist and chaplain aboard the *Astrolabe*. A scientist, soldier and Franciscan priest, he was known as an "*insectologiste*," but he also made geological collections during the expedition (Duyker 2011a: 13). Unfortunately he was recovering from injuries received in Samoa and died soon after they arrived in Botany Bay, thus becoming the first scientist buried in Australia. His tomb can still be seen in the suburb of La Perouse, where it is currently undergoing restoration with French funding (Duyker 2011b: 24).

While the convict settlement at Sydney was still struggling for survival, another Frenchman, the **Chevalier Bruny D'Entrecasteaux** (1737–1793) led another well-equipped scientific party which explored and charted coastal van Diemen's Land in 1791–93, as well as making a number of landfalls on the mainland to collect specimens. In the words of Ann Moyal, when his botanist **Jacques-Julien Houtou de la Billardière** (1755–1834) published his findings in Paris, his work immediately "linked Australia directly to the European scientific enterprise, and provided a major early tool of Australian botany" (Moyal 1993: 24).

The pattern of under-resourced British and state-of-the art French expeditions was exemplified in 1802 when Matthew Flinders and **Nicolas Thomas Baudin** (1754–1803) unexpectedly encountered each other while charting the continental coastline from opposite directions. Nevertheless, despite the fact that their two nations were at war with each other, the commanders exchanged information civilly, true to the spirit of the notional "Republic of Letters" to they both subscribed. Baudin sailed on to Sydney for his crew to recuperate from illness, but although they were entertained cordially, Governor Philip Gidley King was suspicious of their motives in charting Van Diemen's Land, and immediately despatched Lieutenant Bowen to establish a settlement on the Derwent estuary (Blainey 2001: 78).



Nicolas Thomas Baudin, engraving by AJ Mecou, c.1804. [SLNSW: P2/467 (a128093)]

Baudin was conducting a purely scientific expedition in his appropriately-named ships *Le Geographe* and *Le Naturaliste*, with 23 distinguished scientists aboard, including the anthropologist **François Auguste Péron** (1775–1810) (Jones 1998: 2572). Some beautiful charts drawn by Baudin's naval colleague, the cartographer/naturalist **Louis-Claude Desaulses de Freycinet** (1779–1842) were recently displayed in the Dalgety Walkway

in Mitchell Library. This was a period of intense rivalry between England and France in the aftermath of the French Revolution and the expansionist dreams of Napoleon, for which Flinders afterwards suffered years of incarceration on Mauritius. Flinders had but one scientist aboard the decrepit *HMS Investigator*, the English botanist Robert Brown, plus the outstanding Austrian botanical artist **Ferdinand Lukas Bauer** (1760–1826) (Gilbert 1966). The difference in equipment is partly explained by the fact that the French received government sponsorship, while the British relied largely on private patronage (Liebersohn 2006: 97).

De Freycinet returned to Australia and the western Pacific as leader of his own expedition in 1818–19, and gathered a great deal of additional scientific material, much of which was lost when his ship *L'Uranie* was wrecked on the Falkland Islands on the return voyage. Although this procession of French scientists over a period of thirty years made many notable discoveries which were widely publicised throughout Europe, they did not attempt to usurp the British settlers who arrived here before them. Their visits are remembered now only by the taxonomy of some unique floral and faunal species, and the names of a few geographical features.

Macquarie and the Russians

After the turbulent early years of the Colony, Governor Lachlan Macquarie began to restore some semblance of civilisation to the nascent settlement at New South Wales. Macquarie was a visionary builder, but not an intellectual. He didn't share the current enthusiasm for collecting and classifying natural history specimens, but he did set up the beginnings of a botanical gardens in the Governor's Domain, and appointed Charles Fraser (or Frazer) as its superintendent around 1816. But Fraser was a gardener, not a botanist. At least Macquarie — or perhaps his wife Elizabeth — had the good sense to take back home to Scotland the two beautiful chests of natural history specimens that had been given to him, and which are now treasured artefacts of the Mitchell Library.

Residents of Sydney Town were surprised one morning in March 1820 to discover a strange Russian ship in their harbour, the *Blagonmerenny*. It turned out to be part of Admiral Bellingshausen's scientific exploratory expedition sponsored by Tsar Alexander I, and was soon joined by a naval sloop, the *Otkrytie* (Branagan 2010). These intruders fuelled Australian fears about invasions from the north that have persisted for more than two centuries. Several scientists were amongst the party, including astronomer **Pavel Tarkhanov** and surgeon naturalist **Fedor Ivanovich Stein** (d.1845). Governor Macquarie gave them a courteous if somewhat reserved welcome, allowing them to set up a temporary observatory on Kirribilli Point, and permitting them to make a geological excursion into the Blue Mountains, accompanied by botanist Allan Cunningham. Their findings were largely forgotten both here and in Russia, partly because they were not of great significance, or in some cases inaccurate. A later commentator remarked that Stein had "made much theory … out of little fact" (Aurouseau 1972). Even the names they gave to notable features in the landscape were later replaced by good English names by Sir Thomas Mitchell and others (Branagan 2010: 25).

The Philosophical Society of Australasia

Towards the end of Macquarie's term as Governor of New South Wales, a small group of educated officials and settlers established the Philosophical Society of Australasia. This became the first scientific body in the Colony, and some people regard it as a distant predecessor of the Royal Society of NSW, even though it was moribund for nearly thirty years after. When Major-General Sir Thomas Brisbane arrived in Sydney to become the new Governor in December 1821, his retinue included two astronomers to assist him with observations from his planned observatory at Parramatta. One of these was the German-born and educated **Christian Carl Ludwig Rümker** (1788–1862).

Governor Brisbane readily accepted an invitation to become the President of the Philosophical Society and actively participated in their gatherings, even hosting meetings at Government House.[4] His personal physician Dr Macleod and his private astronomer Carl Rümker also joined the Society, educated gentlemen both. Rümker, Brisbane and their technician colleague James Dunlop[5] began a rigorous program of celestial observations from the new observatory in the grounds of what we now know as Old Government House. They quickly made a number of significant discoveries, including the predicted return of Enke's comet. Sir Thomas Brisbane was awarded the Gold Medal of the Royal Society in London, and in turn he granted Carl Rümker 1,000 acres of land at Picton as a reward. To the intense annoyance of Brisbane, Rümker left his job at the observatory after twelve months to become a farmer, so the Governor tried to rescind the land grant (Bergman 1960).

When Brisbane was recalled to England in 1825, the government acquired his observatory. Rümker then returned to Parramatta, and discovered another new comet. Governor Ralph Darling appointed him to the position of Government Astronomer, the first person to hold this title, but Sir Thomas Brisbane still nursed a grudge, and used his influence to have Rümker dismissed from government service. Rümker returned to his native Hamburg and became director of the observatory there, while continuing to work on his Australian star catalogue. He received many international awards for his achievements, but is little recognised in this country (Bergman 1967).

But before this drama occurred, the members of the Philosophical Society subscribed to form a small collection of objects as the nucleus of a natural history museum which was housed in the office of the Colonial Secretary, who at this time was Frederick Goulburn, another member of the Philosophical Society. His successor as Colonial Secretary was Alexander Macleay, a noted amateur entomologist, who expanded the collection, much of which found its way into the Australian Museum that was established in 1836, although a lot also ended up in the Macleay family's private collection at Elizabeth Bay which eventually became the Macleay Museum at the University of Sydney.

The Poles

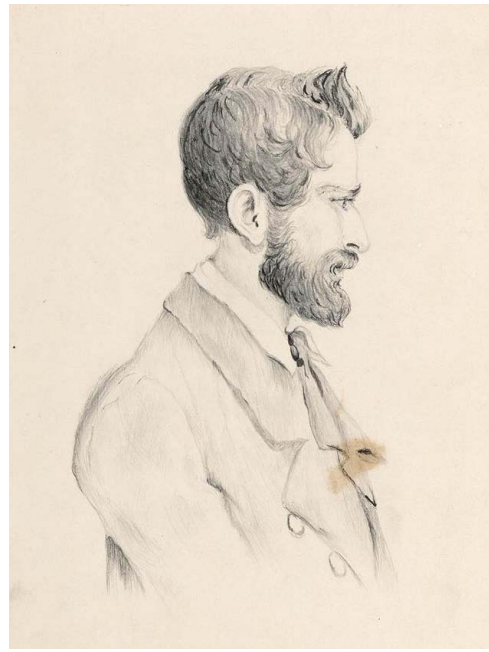
The Polish naturalist **Jan (John) Lhotsky** (1795–1866) received a grant from the

4 Minutes, Philosophical Society of Australasia, 21 November 1821.

5 See Rutledge (2009). [Ed.]

King of Bavaria to carry out botanical and zoological research in South America and Australia. He arrived in Sydney in 1832, but his application for appointment as zoologist at the museum was rejected. However, he did receive some government support for geological exploration in the Australian Alps and Snowy River region, discovering gold and other minerals. His specimens were exhibited and a report of the expedition was published in 1834–35. Nevertheless, he failed to obtain other employment despite representations by the Prussian ambassador in London, and was reduced to selling vegetables for a living. In disgust, he moved to Hobart in 1836 where again he found only intermittent scientific employment before returning to London after eighteen months (Whiteley 1967).

Another Polish scientist who faced difficulties in Australia was (Sir) **Paul Edmund de Strzelecki** (1797–1873). After a colourful early life and extensive travels, he arrived in Sydney in 1839 with letters of introduction to Governor Gipps. An inveterate explorer, he began a geological survey of the Colony, later extending this work to Victoria and Tasmania. He did not get on well with Gipps, and was deeply disappointed when Rev. WB Clarke was commissioned instead of him to survey for minerals in 1851. Nevertheless, he is still remembered in the Hunter Valley for his research of coal deposits and chemical analysis in that region. Strzelecki's *Physical Description of New South Wales and Van Diemen's Land* laid the basis of Australian palaeontology, for which he was awarded the founder's medal of the Royal Geographical Society in London, where he returned to live. He remained active in public life, and retained a special interest in fostering emigration to Australia. His contributions were recognised through a knighthood, Fellowship of the Royal Society of London, and an honorary Doctorate from Oxford University (Heney 1967).



Explorer naturalist Ludwig Leichhardt. Portrait by Isobel Fox, 1846. [SLNSW: DG P1/4 (a128456)]

The Germans

Friedrich Wilhelm Ludwig Leichhardt (1813–1848), like La Pérouse, is perhaps best known to us as an explorer whose final expedition disappeared, or as the name of a suburb in Sydney. We might even think of Leichhardt as the inspiration for Patrick White's 1957 novel *Voss*, but Ludwig Leichhardt would have preferred to be remembered as a naturalist. After studying philosophy and the natural sciences at the Universities of Berlin and Göttingen, but without graduating, he came to Sydney in 1842, where he gave lectures on the geology and botany of the region while lobbying

Governor Gipps to be appointed curator of a national museum or of the botanic gardens. Although the position at the botanic gardens was vacant, the selection committee wanted an Englishman rather than someone who was likely to send interesting specimens to Paris or Berlin (Bailey 2011: 87). Having failed to secure a scientific appointment, Leichhardt began exploring more widely, his privately-financed party reaching the site of present-day Darwin after an arduous overland journey that took 14 months and opened up much unfamiliar territory (Erdos 1967).

Sadly, we do not know what became of his third expedition, and presumably he perished somewhere in the central desert at the age of only thirty-five before he was able to contribute more of his scientific knowledge to this country. Leichhardt was probably the first person to express the notion that type specimens and other reference or unique materials ought to remain in or at least return after description to Australia, rather than being deposited in overseas collections (Home 1988). Before his disappearance, Leichhardt's work was valued highly for the accuracy and restraint of his reports, gaining the Patron's Medal of the Royal Geographical Society in London, as well as recognition by the King of Prussia and the Geographical Society of Paris. Yet in Australia, twenty years after his death he was vilified as being "careless, slovenly, wholly unfitted for leadership, and very lax in his religious opinion" (Erdos 1967: 103). Later writers continued to build on this negative assessment, culminating with the ornithologist AH Chisholm's opinion that Leichhardt was an incompetent psychopath. It is notable that adverse comments reached their zenith during both the First and Second World Wars, when anti-German sentiment was at its peak.

Only in recent years has there been a more balanced appraisal of his work. His most recent biographer remarked that "If he had lived, there is no doubt this intellectual powerhouse would have made enormous contributions to our knowledge of the natural world" (Bailey 2011: 348).

Leichhardt's rejection for a museum position was an early example of the prevailing British, or at least Scottish, xenophobia that existed in New South Wales. Leichhardt himself alleged that Alexander and William Macleay opposed his appointment (Gilbert 2000: 27). Governors Macquarie and Brisbane were both Scots, as were the Macleays, while the first four superintendents of the Botanic Gardens — Charles Fraser, Richard and Allan Cunningham, Charles Moore — all boasted of Scottish heritage. Malcolm Prentis (2008) has written about the influence of the Scots in Australia, and this should be a topic for another lecture. During the nineteenth-century, Australians with a Scottish legacy excelled in agriculture, commerce, medicine, education and the sciences — partly because of their legendary Presbyterian thriftiness, but more significantly because of the superior educational opportunities in Scotland at that time, where merit counted for more than pedigree, as in England. I am told that Robert Louis Stevenson wrote that "the greatest good fortune that any man can have in life is to be born a Scot" (Haneman 2000).

Nevertheless, the most notable of all Colonial botanists was **Baron Ferdinand von Müller** (1825–1896), who was appointed Colonial Botanist in Victoria in 1853, and

later Director of the Melbourne Botanical Gardens.[6] After training as a pharmacist, he completed a PhD in botany from the University of Kiel, becoming the only academically-qualified botanist in Australia during the nineteenth century. Most other people in the colonies termed botanists were more accurately described as botanical collectors. Von Müller travelled extensively outside Victoria as well, and — serving Ben Haneman's interest in the history of medicine with a combination of his pharmaceutical and botanical skills — von Müller reported on the possible medicinal value of certain plants in the treatment of consumption (TB), rheumatism and scurvy. Like Ludwig Leichhardt almost two decades before him, von Müller argued strongly for the description and classification of natural history specimens to be carried out in Australia, and not in England or Europe (Morris 1974). Unlike most of their local contemporaries who deferred to British authority, these men were true nationalistic Australians.

From the 1850s until the end of the nineteenth century Germans were the largest group of non-British migrants to Australia (Doust 2004: 159). A German Association (*Deutscher Kranken Verein*) met weekly in Sydney from 1853, and was soon followed by a German Glee Club which organised musical events.[7] These are forerunners of the present day Concordia Club, which started in 1883, and still has a choir and a folk-dancing group.

Indeed, despite the misgivings of the British-born colonial establishment, another German did become curator of the Australian Museum. **Johann Ludwig (Louis) Gerard Krefft** (1830–1881) was born in Prussia. At the age of twenty he migrated to the United States, but two years later moved to Australia, attracted by the Victorian gold rush.

Gerard Krefft came to Sydney in 1860 where he was appointed assistant curator of the Australian Museum, becoming curator in 1864 despite some dissent amongst the trustees. Krefft systematically enlarged the Museum's collections, while his broad knowledge of zoology and geology and extensive research earned him international respect in the scientific community. He corresponded with Charles Darwin and other notable scientists overseas. Gerard Krefft was particularly interested in snakes, and his book *The Snakes of Australia*, published in 1869 became the standard reference work for many years. In addition to his books, he published some 200 scientific articles as well as many more popular pieces for the Sydney newspapers.[8] Because he was a capable watercolour artist, he was able to illustrate these articles with appropriate images, although some of his works were also illustrated by the sisters Harriett Scott and Helena Forde, who were cousins of David Scott Mitchell (Chanin 2011: 107).

Gerard Krefft was anxious to make the Museum a popular attraction for disseminating scientific knowledge. He wrote to a friend that a collection "of all kinds of bugs, beetles, butterflies and cockroaches without explanation is about as good a vehicle to education [as] ... the window of any large grocery establishment." He told

6 See Müller (1876, 1879, 1880, 1881, 1883, 1886, 1886,1888, 1889). [Ed.]

7 *Sands' Sydney Directory for 1870.*

8 See Krefft (1863, 1865, 1867, 1868, 1873). Krefft was one of the first Councillors of the Royal Society of NSW, having been a member of its forerunner, the Philosophical Society of NSW (Whitley 1958: 24) [Ed.]

Premier Henry Parkes that he wanted displays that were better than "all the rotten fishes crammed into bottles and covered by a brown fluid."

Zoologist Gerard Krefft, curator at the Australian Museum 1864–74. Photograph by H Newman, 1871. SLNSW: P1/912 (a4219012)]

Ever since his appointment, Krefft's relationship with the Museum trustees had been tense. Some of the trustees, such as (Sir) William Macleay, were intent on building up their private natural history collections; often they were competing with the Museum in acquiring exhibits. In June 1874 the Museum trustees held a special meeting at which twelve charges were levied against Krefft, ranging from drunkenness to disobedience. He was accused of wilfully smashing a fossil jawbone, while in a dramatic scene just after the meeting started, one of the trustees rushed in with two policemen brandishing a number of indecent photographs which they had found on the premises. Krefft appealed to Henry Parkes to intervene. Parkes replied: "I have great respect for your undoubted ability & am truly sorry that you should be involved in such a disagreeable difficulty. ... But you must learn to keep a cool temper & a respectful bearing even to gentlemen who may be opposed to you."

Nevertheless, the trustees found Krefft unfit to be curator and dismissed him. He maintained that they did not have the power to do this, because he had been appointed by the Governor and Executive Council. Krefft locked himself inside his residential apartments at the Museum. He was then forcibly ejected by the trustees, although some of his property, including his medals, manuscripts and personal papers, was retained by them. Reports vary as to whether a single bailiff or two prize-fighters were involved, but historians agree that somebody was employed to break down the door into Krefft's quarters, and carry him, still seated in his armchair, into College Street where he was unceremoniously dumped. His small son and a visitor were ejected at the same time. Mrs Krefft was absent, but returned to find her husband and son in the street and their apartment barricaded. Krefft still refused to concede that he had lost his job. He rented premises around the corner in Stanley Street, and had a rubber stamp made with the wording: "Gerard Krefft. Curator of the Australian Museum. 73 Stanley St., Sydney." This he applied to all his extensive correspondence subsequently.

Protracted litigation then commenced between Krefft and the Museum trustees. He won two cases and was awarded some financial compensation.

To remove any doubt about his position, Krefft's dismissal was confirmed by the Governor and Executive Council in July 1878. Parliament voted him £1,000 for arrears of salary, but the government refused to pay this sum unless Krefft renounced all claims against the trustees or the government. He asked the Supreme Court to compel the Treasurer to pay the amount voted by Parliament, but this appeal was rejected, which is not surprising, because the Colonial Treasurer, the Chief Justice, and the Attorney-General were all trustees of the Australian Museum, his (former) employers. Krefft complained to the Crown Solicitor: "I think that after twenty years of faithful service in various Museums under Her Majesty's Government I would have been entitled to as much consideration as the notorious bushranger ... Gardiner received from some of the Trustees ... " The affair became a *cause célèbre* in Parliament and the Press, which lampooned the Trustees as "the finest extant specimens of the *Dilettanti* genus — *humbug* species" (Chanin 2011: 111).

Because the Museum trustees still held his medals and testimonials, Krefft could not get other employment despite a strong recommendation from (Sir) Henry Parkes. His private collections were damaged and many of his research papers could not be published. This left him in a precarious financial position that ended in bankruptcy in 1880. The newly-formed Zoological Society of New South Wales offered him a cottage and a small salary of £100 a year to be its secretary and curator, but these arrangements were never finalised because the disheartened, depressed and impoverished Krefft died early the following year from "congestion of the lungs" — probably pneumonia — aged fifty-one.

Australia lost a distinguished scientist who could have contributed much more to our understanding of the natural environment. Although his reputation was tarnished by his detractors in Australia, his achievements were recognised overseas, with a mountain named in his honour, and the award of a Knighthood by King Victor Emmanuel of Italy. In retrospect, he was badly treated by the Sydney Establishment, yet his own personality was unhelpful in resolving the conflict. His uncompromising, belligerent attitudes — perhaps a characteristic of his Teutonic upbringing — caused him to be ostracised in a close-knit, conservative community.

The age of the collector

The nineteenth century was the great age of the collector. *Magpies, Squirrels & Thieves* is the apt title of Jacqueline Yallop's 2011 book about this phenomenon. Wealthy enthusiasts paid high prices for unusual plants, birds, animals or geological curiosities from places like New South Wales, as well as Greek antiquities, Chinese ceramics or Italian renaissance art. This market was exploited by officials and even convicts, who could sell unique specimens to visiting ships' captains who in turn sold them for a handsome profit when they returned to their home ports in Britain or Europe. The activities of casual collectors were supplemented by more systematic efforts by people engaged by European patrons. The Mitchell Librarian, Richard Neville, has

pointed out that "European interest in natural history specimens created the earliest export market of Australian commodities to Europe" (Neville 2010).

It seems a little ironic that these hunters and gatherers were intruders in a society where the original inhabitants had survived by hunting and gathering for at least 40,000 years!

Although women could not take part in the discussions of the learned societies, they were able to participate in scientific activity as collectors and illustrators. Painting of botanical or faunal specimens was considered an appropriately lady-like activity at which numerous colonial women excelled. **Amalie Dietrich** (1821–1891) from Saxony was from the same social class, but very different inclination. She developed a passionate interest in natural history from her chemist husband. After their marriage broke up, in 1863 Mme. Dietrich was employed by the Hamburg merchant JC Godeffroy to collect material in Australia for his private museum. After spending eight years here (mainly in Queensland), she returned to work in Godeffroy's museum, and later was given a position in the Hamburg Botanical Museum.

Amalie Dietrich wrote that "I speedily forget the discomforts of heat and mosquitoes in the unbounded feeling of joy that animates me when, at every step, I light upon treasures that no one has secured before me" (Gilbert 1972). She even caught and dissected crocodiles nearly seven metres in length — a sort of early, female "Crocodile Dundee"![9] Historian Ann Moyal remarked that "In a colonial environment, her very foreignness and outsider status provided her strength" (Moyal 1993: 95). She did not feel obliged, nor did society expect her, to behave like a sheltered British lady.

Now let us return to the French influence in Australian science, this time with a particular orientation to one of Ben Haneman's abiding interests — medical history.

Rabbits and Pasteur

In an attempt to provide gentlemanly sport for his guests and neighbours, pastoralist Thomas Austin imported twelve pairs of field rabbits from England in 1859 to stock his property, "Barwon Park," near Geelong. With this act, he unwittingly almost destroyed the profitability of the very industry that had brought him wealth. By the end of the nineteenth century the "furry hordes" had spread throughout the temperate parts of mainland Australia, consuming valuable pastures and causing massive land degradation. The European wild rabbits (*Oryctolagus cunciculus*) colonised Australia very quickly, travelling up to 100 km a year in open country. The rabbits adapted quickly to the hotter, drier climate because their burrowing habit helps to insulate them from temperature extremes, and most Australian soils are particularly suited to digging. Unlike Europe, there were no predators that could follow them underground.

In desperation, the NSW government in August 1887 offered a prize of £25,000 to anyone who could devise a "method or process not previously known in the Colony for the effectual extermination of rabbits ... [but] not be injurious ... to horses, cattle, sheep, camels, goats, swine or dogs" (Colman 1999: 65). No mention was made of possible harmful effects on humans or

9 *Crocodile Dundee* is an iconic 1986 Australian film comedy starring Paul Hogan as a knockabout crocodile hunter from northern Australia.

wildlife. A Royal Commission (known as the Intercolonial Rabbit Commission) was formed to examine all claims for the prize. All the colonies were represented, with the chairman being Dr HN (later Sir Normand) MacLaurin, who would later become Chancellor of the University of Sydney.

The lavish prize — representing something over ten million dollars in today's money — attracted over 1,500 responses from all over the world, ranging from the plausible to the downright silly. One hundred and fifteen (including forty-two from Australia) proposed a biological attack on the pests, using diseases such as smallpox, syphilis or hydrophobia.

Louis Pasteur (1822–1895) in Paris was one of those attracted by the lucrative reward. He argued that an epidemic should be propagated amongst the rabbit population through the inoculation of chicken cholera (*Pasteurella septica*), which he had used successfully at the Pommery champagne vineyards in France. Although the technique seemed to promise an elegant solution to the problem, there was strong opposition from some quarters. Public health and quarantine officials were dubious. What if pastoral livestock became infected, or the native Australian animals? Even more seriously, was there a risk that the disease could spread to the human population, with unpredictable consequences?

Nevertheless, Pasteur's international reputation as the father of modern bacteriology ensured that his proposal was treated seriously. Pasteur had already accepted Honorary Membership of the Royal Society of NSW in 1883 for his contributions to scientific knowledge. After an exchange of correspondence with the Minister for Mines, his proposal was accepted and Pasteur sent a team to Sydney led by his nephew and research assistant, Dr **Adrien Loir** (1862–1942). Thus French science returned to Australia after a lapse of sixty-five years. Even before the Pasteur Institute team arrived, the NSW Board of Health, which — like the Rabbit Commission led by the autocratic and sceptical Scot Dr MacLaurin — was warning against the introduction of such a "loathsome and pathologically undefined" disease (Rolls 1984: 198). At his instigation, the Board of Health initially rejected Pasteur's request to introduce chicken cholera to Australia.[10] However, after testing the virulence of the organism in its own laboratory, the Board agreed to allow field trials on condition that no objections were received.

Faced with such opposition, the Pasteur team had to find an acceptable location to conduct their experiments. Eventually, Rodd Island in Iron Cove was selected as a safe site where the virus could be confined without spreading to the mainland. Domestic accommodation, a laboratory and artificial burrows were hastily erected on the island. The Rabbit Commission appointed the Viennese-born Dr **Oscar (Otto) Katz**, a protégé of Sir William Macleay, as Chief Expert Officer to supervise the experiments. Katz is a shadowy figure about whom little is known. He arrived in Sydney in 1886, claiming to have earned his PhD as a student of the great German microbiologist Robert Koch. There is no evidence that this was true (Dando-Collins 2008: 129–132). His intervention was guaranteed to antagonise the French team, because there was intense professional rivalry and personal dislike

10 NSW Board of Health, Minutes of proceedings, 18 April 1888.

between Robert Koch and Louis Pasteur, as well as their ingrained nationalistic hostility.

The results of the first trials were not encouraging. Although the rabbits inoculated with the disease soon died, it was not contagious to the other rabbits in the warren. To make matters worse, native birds became infected with the virus. In its final report in December 1889, the Rabbit Commission concluded "that no scheme has been propounded for the destruction of rabbits which complies with the terms of the proclamation." So the Government kept their £25,000 — and Australia kept the rabbits. Acrimonious discussions took place before Dr Loir and his men returned to France, although he did come back to Rodd Island the following year to prepare vaccines against anthrax and pleuro-pneumonia in cattle (Rountree 1987: 13). With increasing public opposition to the alienation of the island for a laboratory, Rodd Island was proclaimed a public recreation reserve in 1894, becoming a popular picnic venue (Davies 1984: 56). The Pasteur Institute then moved its operations to Double Bay.

The French historian of science Anne Marie Moulin (1992: 308) has pointed out that Louis Pasteur was engaged in his own program of scientific imperialism, setting up branches of his Institute throughout the world, and not only in the French colonies in Africa and Asia. She suggests that his acolytes functioned like a monastic order, with their own "saint" as founder, "spreading a new Gospel, the so-called 'Pasteurian methods'" of bacteriology.

Despite the negative report on the efficacy of chicken cholera, the Queensland Government bacteriologist, CJ Pound, was still distributing the microbes ten years later to anybody who requested them (Rountree 1988). He argued that the Rabbit Commission decision was erroneous, with the implication that professional rivalries or prejudice had prevented the Pasteur team from completing its experiments. That was certainly their view and that of the French Consul in New South Wales. Although derided in Australia, Loir's reputation in Europe was consolidated following the publication in 1892 of the earliest scientific treatise on microbiology in Australia[11] (Rountree 1987: 13).

I am now going to trespass a little beyond my nineteenth-century brief. In 1905, the Polish-born microbiologist Dr **Jean Danysz** (1860–1928) from the Pasteur Institute in Paris wrote to the NSW Government advising that a new organism was available for rabbit destruction. Danysz had already conducted a successful campaign against cattle plague in South Africa. However, after its earlier experience, the NSW government was not keen to become involved, until a group of pastoralists formed the Rabbit Destruction Fund Committee to bring Danysz to Sydney in 1906. The government reward offer had lapsed, but the Committee soon raised £10,000 from subscriptions. Danysz kept the new pathogen secret, but it was probably a bacterium of the *Pasteurella* species, not a virus (Coman 1999: 77). At the request of the Premier, the Board of Health reluctantly allowed its microbiologist, Dr Frank Tidswell to oversee these experiments, which took place on Broughton Island, off Port Stephens. He reported that the disease was potent among rabbits held in close cap-

11 See Loir (1891, 1891). [Ed.]

tivity, but ineffective when the animals had a free range (Rountree 1988: 36).

Because of the secrecy surrounding the precise nature of the disease, there was a lot of resistance to the Danysz experiments with his "filthy ... treacherous ... hell-broth" as the Melbourne *Age* described it.[12] The trade union movement urged the government to prevent dissemination of the organism, "in the interests of health and human life" (Coman 1999: 79). Their motives were probably mixed — rabbit was cheap meat for the working classes ("underground mutton"), and they were reluctant to see the squatters become even richer at their expense. Coming after their previous experience in Sydney, the French scientists accused the Australians of sabotage (Rountree 1988: 41). Danysz returned to Paris in 1907, leaving his assistant **A. Latapie** to continue the experiments in Australia. Danysz was later responsible for significant discoveries on the role of non-specific antigens in the treatment of chronic and anaphylactric disease.[13] So we lost another original thinker.

Despite the opposition, the pastoralists demanded a larger-scale trial in typical rabbit-infested country on the mainland. After much discussion, the States' public health and veterinary officers concluded there was no danger, but still refused permission (Rolls 1984: 206). Over-ruling this recommendation, in 1908 the NSW Premier GC Wade informed the Board of Health that he proposed to allow the "Danysz microbe" to be used. By this time, the President of the Board of Health was the formidable Dr John Ashburton Thompson, the first trained epidemiologist to work in Australia. The Board tartly replied that it "infers from the communication that as a body they are not called upon to express an opinion or to take any responsibility."[14] The Premier was not prepared to proceed in the face of this threat from the medical hierarchy, and so the rabbits remained until the introduction of other viral agents such as myxomatosis and the calicivirus half-a-century later.

The Russian

Nicholai Nicholaievich Mikluho-Maklai (1846–1888) was a scientific polymath: medico, anthropologist, linguist and marine biologist. Educated in Russia and Germany, he is usually known simply as Nicholas Maclay in Australian records. During the early 1870s he lived in New Guinea villages studying the local inhabitants, and part of that coast is named after him. After further travels, he arrived in Sydney in 1878 where he soon struck up a friendship with W.J. Macleay, who shared his interest in sharks, and provided some laboratory space at his home, Elizabeth Bay House.[15] The Russian joined the Linnean Society, which published 34 of his research papers, while he lobbied the government on the need for a proper laboratory of marine sciences in Sydney. He raised money through donations and obtained a grant of £300 from the colonial government. The new building at Camp Cove, near Watson's Bay was finished in 1882. The *Sydney Mail* remarked approvingly:

12 *The Age*, 22 May 1907, p.6 https://trove.nla.gov.au/newspaper/article/198614691 [Ed.]

13 Archives of the Institut Pasteur, Paris, Ref.FR IP DAN. Website: www.pasteur.fr/infosci/archives/dan1.html.

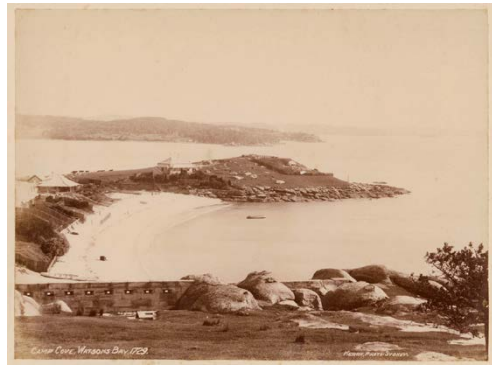
14 NSW Board of Health, Minutes, 21 January 1908.

15 See Jones (1986). [Ed.]

> The position of the station at Watson's Bay, upon the shallow basin of Port Jackson, and close to the deep water of the Pacific, with large fresh-water swamps and lagoons in the immediate neighbourhood, and a vast tract of forest country to the north … offer … a combination of opportunities for study as can hardly be met with elsewhere.[16]

Maclay then went to Russia, Berlin, Paris and London, lecturing about his collections in an effort to raise additional funds. This effort was not successful, although the Russian Geographical Society awarded him a gold medal and the Czar presented him with a certificate of honour. To add to his disappointment, when he returned to Sydney in 1883 he found that many of his collections and records had been lost in the Garden Palace fire.

Nevertheless he began work at the new marine laboratory and prepared several papers for publication, still managing time to marry the widowed daughter of Sir John Robertson, five times Premier of New South Wales. They had two sons[17], but on a trip to Europe with the family in 1888 Nicholas Maclay died unexpectedly (De-M Maclay 1974). He was a distinguished scientist who did not live long enough to fulfil his ambition to document the marine life of Sydney Harbour. He was fortunate to have the friendship of WJ Macleay, with a coincidentally similar surname. Although the research station closed, its activities have recently been revived as the Sydney Institute of Marine Science at Chowder Bay on the opposite side of the Harbour.



Marine Biological Station established at Camp Cove by Nicholas Maclay, 1881. Photograph by Kerry & Co., between 1885–95. [SLNSW: SPF/810 (a089810)]

A common thread?

So far we have looked at professional scientists from Sweden, France, Russia, Germany, Austria and Poland. Many of these European visitors were given a hard time in Australia, so it is not surprising that while some persevered, others gave up. Some had established international reputations when they arrived; usually they had specialised training in scientific disciplines which their local counterparts lacked. They tended to be experimenters rather than collectors.

So we are left with the question: is there a common thread linking all these experiences? They were working in a pioneering settler society where intellectual pursuits were not highly valued. They were coping rather well in a language that was not their own, and where few people could speak to them in their native tongue. Because they were usually better-educated than the people around them, they were regarded as outsiders, an elite whose difference made them stand out from the crowd. Prejudice

16 *Sydney Mail*, 14 May 1881, quoted in Sydney Harbour Federation Trust leaflet.

17 And a grandson, Paul Maclay (pron. Macl-eye), the ABC announcer and actor who died in 2002. [Ed.]

and jealousy surrounded them. Louis Pasteur accused the Australian authorities of "ignorance, blindness, prejudice, despicable tricks," and wrote to a friend that "my assistants will have seen the worst aspects of humanity and of men without honour."[18] It is notable than none of them worked in the academy. The University of Sydney opened in 1852 and science subjects were taught as part of the Arts degree from its inception. Academic staff were mostly Englishmen or Scots, who naturally brought their practices and "memorised culture"[19] of Britain with them. Who were the principal villains? The names of Sir William Macleay and Sir Normand MacLaurin recur in several of these episodes. In a biography of MacLaurin written by his granddaughter, he was described as "despotic … austere and formidable" (Mackerras 1991: 40–41). Both were Scots; both were Vice Chancellors of the University of Sydney. They were not unanimously against foreign scientists, but they certainly played favourites. And at least they didn't return "Home" to die like many of their compatriots from the respectable classes of Sydney.

Yet was it simply a matter of xenophobia, a distrust of the "other" — the foreigner? After all, those "transplanted Britons" were themselves strangers to the country. Or was it perhaps something in the personality of the Europeans, in their assertive way of doing business in a strange environment, that jarred with traditional British reserve? As one obituary notice remarked of Gerard Krefft: "If he had been as much as home with men as with animals, or could have charmed his trustees as cleverly as he did his snakes, his fate would have been a much fairer one."[20]

Were the men I have discussed simply paranoid? After all, we must not forget that a number of other European-born and educated scientific workers settled in Sydney, leading successful and rewarding lives. Amongst many others, one can cite the Italian Dr **Tomasso Fiaschi** (1853–1927), who pioneered new techniques of medicine and surgery; the German chemist Dr **Adolph (Carl) Leibius** (1833–1893),[21] who was senior assayer at the Royal Mint in Macquarie Street; and a French geographer living in Sydney, **Edmond Marin la Meslée** (1852–1893), who according to Russel Ward "was a propagandist for Australia in France and became more interested than many native or British-born colonists in the growth of Australian nationality" (Ward 1974).

Conclusion

Whatever their idiosyncrasies, most of the Europeans who remained here became members of the Royal Society of NSW, some even accepted imperial honours, but they were unlikely to have been attracted to the ideals of "Imperial Science under the Southern Cross," exemplified by such English scientific expatriates as Archibald Liversidge and Rev WB Clarke.[22] Was it just a career move for them, or were they, like

18 Letter to Mrs Priestley, 29 June 1888, held by Archives du Ministère des Relations Extérieures, Paris, quoted in Chaussivert & Blackman (1987), p.21.

19 The phrase is attributed to Donald Horne, cited in Macleod (2009: 11).

20 See Whitley (1958). [Ed.]

21 See Leibius (1864, 1869, 1872, 1872, 1884, 1891). Leibius was elected President of the Royal Society of NSW in 1890–91. [Ed.]

22 This is the title of a biography of Liversidge (MacLeod 2009).

Ben Haneman, true lovers of science, and of Australia?

Let us conclude with a few words by Ben. He was a proud Fabian socialist who believed that civilisation is gradually progressing, albeit with many setbacks along the way. He wrote:

> I believe that at present the Goths and Vandals are having a free kick at the fabric of our culture and civilization. It is my belief that it is the duty of every man and woman to be an activist ... to heal the world or make it a slightly better place.

But, like many of the other people we have looked at this evening, perhaps Ben Haneman was really just another Don Quixote, tilting at windmills.

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