

Tuberculosis, tuberculin and cultural collections

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In 2016–17 I was the recipient of the Redmond Barry Fellowship, which gives scholars and writers an opportunity to work on a topic related to the rich and varied collections of objects, pictures, books and documents held by the University of Melbourne and State Library Victoria. My time as the Redmond Barry Fellow allowed me to refocus on a project I had been considering for a decade or so—a project centred on tuberculosis.

Tuberculosis (also known as consumption and phthisis) is the Janus face of human civilisation. An infectious respiratory malady originally transferred to humans from animals, it almost certainly appeared in its human host in the early stages of agriculture and the domestication of animals.¹ In the 19th century, tuberculosis took on the mantle of the organism perfectly adapted to the close and unhygienic environment of the slums of newly industrialised cities. It therefore is woven into the history of human civilisation, from hunter-gatherer to agriculturist and, finally, urban dweller.

Thus tuberculosis, as embodied in the phial of tuberculin illustrated opposite, becomes an important topic of interest for museums, archives and cultural collections, as it is a conduit for so many different ways of

interpreting human relationships and how they are organised. It is a topic central to the humanities as well as to the sciences, existing on the borders between the disciplines. Tuberculosis has also been a chameleon in the Australian and, more locally, the Victorian environment. As Bashford, Anderson and other scholars have shown, it went from being portrayed as the white man's burden in the 19th century, to a danger associated with the coloured immigrant in the 20th century.²

In the 19th century, tubercular sufferers in England were urged by leading doctors and politicians from Victoria, particularly Dr S.D. Bird, to emigrate to enjoy the benefits of the curative environment that Melbourne and, more generally, Victoria provided. This created one of the earliest medical controversies in the colony, as such health claims for the environment were disputed by a rival group of doctors led by William Thomson.

Tuberculin, which it was initially thought could cure tuberculosis in humans (but was eventually found only to serve in its diagnosis, through a skin test), was first produced in a laboratory in 1890 by German scientist Robert Koch. Such was Koch's international reputation, and so rare were remedies for any

diseases, that Australian medical scientists who subscribed to the new germ theory of disease rushed to obtain tuberculin samples from Germany and the information needed to produce the substance at home. Their efforts and trips made front-page news.³ Among this group of enthusiasts were the dean of the Melbourne Medical School, Professor Harry Brookes Allen, and the lecturer in therapeutics and major public figure Dr John W. Springthorpe.⁴ Springthorpe was tuberculin's most enthusiastic advocate in Victoria; he famously conducted the colony's first tuberculin clinical trial, at the Melbourne Hospital on 19 March 1891, with the support of Allen, who had been present in Koch's laboratory in Germany when the breakthrough was achieved.⁵ Success was elusive, although Springthorpe never resiled from his certainty in the cure. But he became more and more alone in this belief. By 1891 the medical students could joke that:

By order of 'Springy', Koch's gravy
On the menu no longer appears;
But still he conspires with De Bavay
To discover *microbes* in our beers.⁶

The extremely disputatious nature of Melbourne's medical circles in the 19th century meant

Right: Phial of tuberculin, c. 1900–28, manufactured by Les Établissements Poulen Frères (Paris); contents, cardboard, paper and ink; 10.3 × 2.7 cm diameter. MHM03945, gift of the Australian Medical Association (Victorian Branch), Medical History Museum, University of Melbourne.

Below: 'A question of propriety', *Melbourne Punch*, 11 August 1887, p. 3. State Library Victoria.



that academic differences of opinion often could not be resolved because of intractable hatreds. The conflict over the effectiveness of tuberculin was exacerbated by the enmity

between Springthorpe, then lecturer in therapeutics at the university, and James Neild, lecturer in forensics, as illustrated in their dispute over Springthorpe's advertising his

credentials for a hospital election. *Melbourne Punch* celebrated the fight in verse and with a cartoon (see below and page 52).

It is important to understand the desperation with which any new therapy or cure was eagerly embraced by the university medical community at this time. Qualified and registered medical practitioners could do little to distinguish themselves from the numerous and popular quacks who competed for patients. As Springthorpe's clinical notes demonstrate, clinicians were searching for an adequate scientific way to understand disease (see page 53).

Furthermore, in the case of tuberculosis, 19th-century diagnoses are today extremely problematic, thus casting doubt on the statistics used by present-day historians to discuss the disease at that time. Leading clinicians of the period regularly bemoaned the great difficulty they experienced in distinguishing tuberculosis of the lung from cancer of the lung. The word 'tubercle' (the nodule produced by *Mycobacterium tuberculosis*) was used by clinicians for both tuberculosis and lung cancer.⁷ There is good reason to doubt the accuracy of contemporary case studies (as illustrated by Springthorpe's notes) due to the chronic under-reporting of lung cancer.⁸ In 1871,

A QUESTION OF PROPRIETY.
The Result of the Medical Society' Action.

' And those who came to scoff remained to pray.'

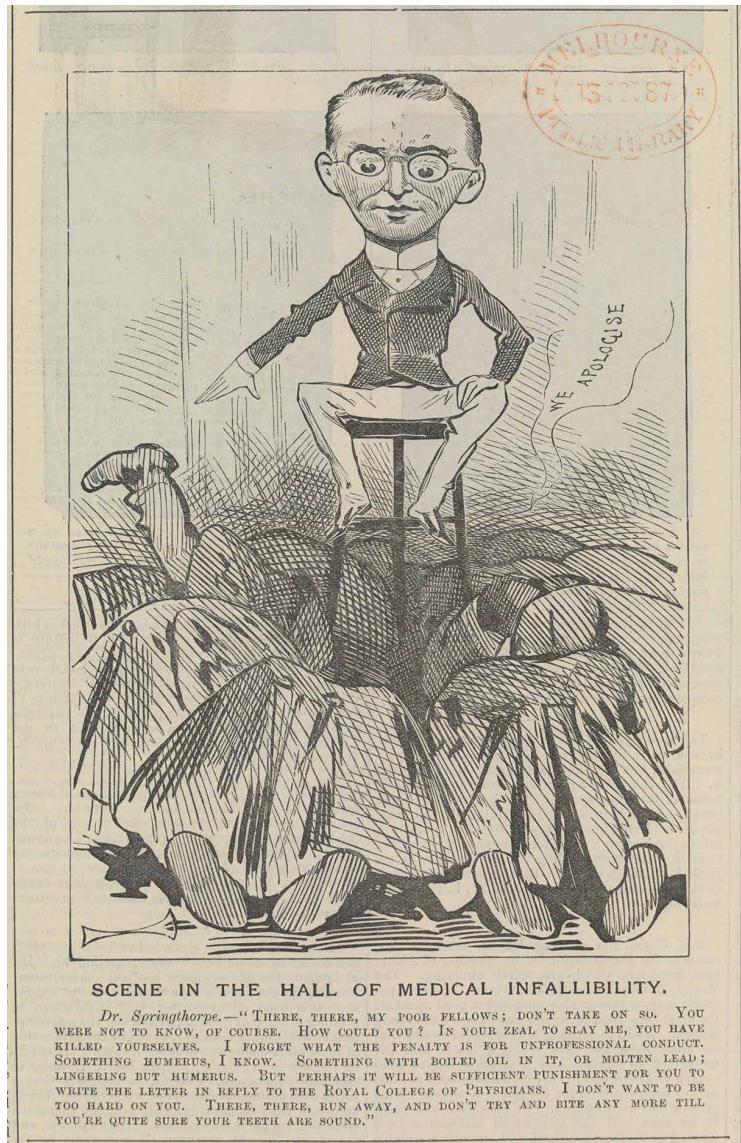
THE Medical Society
A stupid body seems to be,
And acts in ways surprising—
It gets into an awful pet
About a breach of etiquette,
Which it calls advertising.

Ryan and Springthorpe roused its ire
Because when they to posts aspire
Their claims they're not disguising,
And so they sent a circular
To every voting him and her,
And this is advertising.

Well may the public laugh and quiz—
The funny part of all this is
No plan of man's devising
Could so defeat the fogeys' aims,
For "Spring's" and "Charley's" honest
claims
Thus get grand advertising.

Below: 'Scene in the hall of medical infallibility', *Melbourne Punch*, 13 October 1887, p. 169. State Library Victoria.

Opposite: Extract from J.W. Springthorpe's clinical notes, in J.W. Springthorpe, *Tuberculin as a diagnostic agent*, Melbourne: Stilwell and Co. (printers), c. 1889. Special Collections, Medical Rare Books, University of Melbourne Library.



clinician W.H. Walshe pointed out that both diseases have the same appearance to the naked eye,⁹ leading M.A. Boyd to write in 1886 on lung cancer that 'from the marked similarity between it and phthisis ... in many of its symptoms, the existence of the disease [cancer] is, I am convinced, frequently overlooked'.¹⁰ Professor Harry Brookes Allen was confused as well, with the contemporary diagnosis of cancer of the lung and his labelled pathology specimens remaining in the eponymous museum at the University of Melbourne as important evidence of this uncertainty about the nature of this disease.¹¹

All of this brings me to the need to preserve the primary stuff of history: archives and artefacts. Interpretations and understandings of the tuberculin episode and tuberculosis in our society have changed radically since the 19th century. If future analysis is to be possible, preservation of primary sources is essential. The current reproducibility crisis in science reinforces the need to preserve primary data.¹² With such a rich atmosphere of uncertainty surrounding the objects and archives, as well as the changing nature of the historical analysis of tuberculosis in our society, it becomes even more important that cultural collections

Case	Age	Sex	Previous History.	Existing Conditions.	Number of Injections.	Doses.	Duration.	Results in Chest.	Weight	Sputum	General Condition.	Other Symptoms.	Bacilli.	Remarks.
1	42	M.	Wife and 3 children died of phthisis; nursed them.	Left pleuro-pneumonia, with slight effusion; (?) mischief at right apex; sputum profuse; slight sweats.	15	'001 to '04	March 19 April 10	Improvement both lungs.	in 7 lbs. more.	Much less.	Much improved.	Reactions always slight.	None found.	Has been at work for 7 months without relapse.
2	24	M.	Always asthmatic; influenza 18 months ago.	Left apex consolidated; membrane thickened. Lost 7 lbs. weight.	34	'003 to '01	June 27 to Dec. 14	Still few clicks, with indistinct bronchial breathing.	11 lbs. gain.	Nil.	Asthma better; generally much improved.	No sweats.	None first 3 trials; then many degenerated; now none.	Considerable general improvement.
3	21	M.	18 months' duration.	Both apices consolidated.	7	'001 C.B. '01 C.B.	3 weeks.	No change.	—	Nil.	Unchanged.	—	Many, unchanged.	Chronic nervousness; left for the country; treatment postponed.
4	21	F.	4 years anaemic and weak; haemoptysis.	Cough, sweating, no sputum; right apex consolidated.	10	'003 '02	April 2 May 21	Little, if any, mischief at apex.	Much increased.	Appeared.	Excellent.	None. Reactions typical.	Few bacilli on 4 occasions.	The tuberculin settled the diagnosis, and seems to have removed the disease. Returned after 5 weeks in the country; then normal; no reaction to '01; weight and health excellent.
5	23	M.	Family haemorrhagic phthisis.	Hæmorrhage 1 pint 4 months ago; right apex consolidated.	60 : the last 30 at weekly intervals	'0005 to '1 '05 C.B. '07 C.B.	March 26 to date	No signs till second attack of influenza.	Increasing, same again.	Slight to nil.	Much improved.	Able to walk; reactions slight.	Medium quantity; lessening.	Two attacks of influenza. With the second, on Oct. 21, some blood (2 nasal), and few crepitations behind.
6	35	M.	15 years ago bronchiectasis; foetid sputum.	Bronchiectasis; several haemorrhages; broncho-vascular at right apex. Injected for diagnostic purposes.	21	'01 '1	March 24	Less area implicated.	14 lbs. increase.	½ oz.	Better than for years.	Reactions typical, though slight.	None till after injection; many to few; then many.	Back to Queensland for 7 months; no news; expected to hear of relapse.

be seen as essential parts of the research project. Digitisation is not enough, as historians, archivists and librarians confront the problems that digitisation raises, including the inherent obsolescence of digital technologies.¹³ For instance, in 1986, during the early days of digital reproduction, British archives commissioned a very expensive laser-disc copy of the Domesday Book. It is now unreadable, as is a modern Domesday project intended to capture a slice of British life in the same way the original had done in the 11th century.¹⁴

This little tuberculin container, now held in the Medical History Museum of the University of Melbourne, raises multiple levels of ambiguity. It should continue to do so for some time to come.

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The Medical History Museum (medicalhistorymuseum.mdhhs.unimelb.edu.au) is located on level 2 of the Brownless Biomedical Library on the Parkville campus of the University of Melbourne. Researchers and other visitors are most welcome.

The Redmond Barry Fellowship (museumsandcollections.unimelb.edu.au/fellowships_and_awards/redmond_barry_fellowship) is awarded to scholars and writers to use the collections of State Library Victoria and the University of Melbourne. It was first awarded in 2004, to commemorate the 150th anniversary of Barry's laying of the foundation stones for both institutions.

- 1 Jared Diamond, 'Lethal gift of livestock: The evolution of germs', in *Guns, germs and steel: A short history of everybody for the last 13,000 years*, London: Vintage (1997), 2005, chapter 11.
- 2 Warwick Anderson, 'Ambiguities of race: Science on the reproductive frontier of Australia and the Pacific between the wars', *Australian Historical Studies*, vol. 40, no. 2, 2009, pp. 143–60; Marilyn Lake and Henry Reynolds, *Drawing the global colour line: White men's countries and the question of racial equality*, Melbourne University Press, 2008; Alison Bashford, *Imperial hygiene: A critical history of colonialism, nationalism and public health*, Basingstoke: Palgrave Macmillan, 2004.
- 3 'Dr Koch's cure for consumption: A notable discovery', *Argus*, 3 November 1890, p. 6.
- 4 'Dr Koch's cure: Dr Springthorpe's investigations and views', *Daily Telegraph*, 28 February 1891, p. 10.
- 5 'Retrospective', *Speculum*, no. 23, February 1891, p. 145; 'Notes and comments', *Speculum*, no. 24, April 1891, p. 4.
- 6 'Song by a Dr. A.W. Rinder', *Speculum*, no. 29, September 1892, p. 79. As well as being the bacteriologist at the university, August de Bavay was the brewer at Fosters Brewery in Melbourne from 1894 to 1904, and was credited with inventing the Australian style of lager.
- 7 Wilson I.B. Onuigbo, 'Some nineteenth century ideas on links between tuberculosis and cancerous diseases of the lung', *British Journal of Diseases of the Chest*, vol. 69, July 1975, pp. 207–10 (207).
- 8 Wilson I.B. Onuigbo, 'The diagnosis of lung cancer in the nineteenth century', *British Journal of Diseases of the Chest*, vol. 65, 1971, pp. 119–24.
- 9 Onuigbo, 'Some nineteenth century ideas', p. 208.
- 10 Onuigbo, 'Some nineteenth century ideas', p. 208; Onuigbo also cites other, similar examples: R. Virchow (1860): 'in the midst of cancerous masses also cheesy spots which look exactly like tubercle'; and J. Paget (1887): 'all degrees of transition from innocent tumours to the cancerous ... and all gradations from the typical tuberculosis'.
- 11 Ryan Jeffries, 'Preserving cancers for the doctors of tomorrow', in Jacqueline Healy (ed.), *The cancer puzzle: Patterns, paradoxes and personalities*, Medical History Museum, University of Melbourne, 2017, p. 82.
- 12 *Nature*, special issue: *Challenges in irreproducible research*, 2016, www.nature.com/news/reproducibility-1.17552.
- 13 Maev Kennedy, 'National Archive project to avert digital dark age', *Guardian*, 5 July 2007, www.theguardian.com/technology/2007/jul/04/news.uknews; Centre for History and Economics (Harvard University) and King's College (Cambridge), 'Recent events', Digitization of History project, www.fas.harvard.edu/~histechon/research/digitization/recent_events.html; Lena Roland and David Bawden, 'The future of history: Investigating the preservation of information in the digital age', *Library & Information History*, vol. 28, no. 3, 2013, pp. 220–36; Edward Hampshire and Valery Johnson, 'The digital world and the future of historical research', *Twentieth Century British History*, vol. 20, no. 3, 2009, pp. 396–414.
- 14 Robin McKie and Vanessa Thorpe, 'Digital Domesday Book lasts 15 years not 1000', *Guardian*, 3 March 2002, www.theguardian.com/uk/2002/mar/03/research.elearning.