

PART I

PUBLIC HEALTH MANAGEMENT OF TUBERCULOSIS:

*Studies of Three Australian States: South Australia, Victoria and New
South Wales from 1882 – 1930.*

CHAPTER ONE

CRUSADING AGAINST THE WHITE PLAGUE: The Emergence of an Australian Campaign Against Tuberculosis, 1890-1910

In 1882 German bacteriologist, Robert Koch, discovered *Mycobacterium tuberculosis* and offered a new aetiology of the dreaded disease tuberculosis. In 1895 Dr J Sidney Hunt opened the Sixth Meeting of the Australasian Association for the Advancement of Science with the following remarks:

Since the discovery of the famous *tubercle bacillus* by Koch in 1882, there is probably no condition of disease which has been the subject of greater interest to the world at large, and to the scientific section of it in particular, than that to which this bacillus gives rise. This interest is necessitated by the vast importance of the wide incidence, the protean manifestations, and the intractable nature of those morbid processes which result from infection by the *tubercle bacillus*, and which, by the recognition of this organism, we are now able to group together under the common name of tuberculosis.¹

With a sense of optimism Hunt reported his attempts to develop a tuberculosis anti-toxin.² In Australia, as in other parts of the western world, doctors predicted the demise of tuberculosis, the greatest disease killer of the nineteenth century. The promise of bacteriology seduced many Australian physicians.³ But the profession confronted the implications of Koch's discovery with a mixture of scepticism, enthusiasm, cautious acceptance, adaptation and dogmatic rejection. By the turn of the twentieth century the medical profession in general accepted the veracity of

¹ J. Sidney Hunt, M.R.C.S., 'The Promise of Serum Therapeutics in Respect of Tuberculosis', Report of the Sixth Meeting of the Australasian Association for the Advancement of Science held at Brisbane, Queensland, January 1895, Published by the Association, John Shirley B.Sc., (ed.), Glebe, Sydney, NSW, p. 797, ML.

² An anti-toxin for diphtheria had been announced in December 1890. [Thomas D. Brock, *Robert Koch A Life in Medicine and Bacteriology*, Science Tech Publishers, Madison, WI, 1988, p. 197.

³ Nancy Tomes and John Warner note that medical historians must reflect on the complexities associated with this scientific shift. [Nancy J. Tomes and John Harley Warner, 'Introduction to Special Issue on Rethinking the Reception of the Germ Theory of Disease: Comparative Perspectives' *Journal of the History of Medicine and Allied Sciences*, Volume 52, Number 1, January 1997, pp. 7-9.

Koch's findings that the *tubercle bacillus* caused tuberculosis and that this fearful disease was contagious.⁴

This chapter explores the Australian medical debate that preceded the emergence of an anti-tuberculosis campaign at the turn of the twentieth century. It highlights contested opinion on germ theory, the relationship between the *tubercle bacillus* and the disease of tuberculosis, and the degree to which the disease was contagious. It also touches on the social and political concerns of medical practitioners that merged with medical understanding to produce the main themes of the Australian 'crusade' against tuberculosis. The form the movement took was shaped by social and political concerns of the late 1890s and early 1900s but also reflected longer standing public health concerns about contagion.⁵ By the turn of the twentieth century tuberculosis the contagious disease, as opposed to 'consumption' the hereditary disease,⁶ was viewed as a threat to society. Acknowledgement of the disease's contagious nature shifted the social and political space occupied by tuberculosis. Rather than a disease that befell ill-fated individuals, it moved to the realm of contagious diseases that threatened society as a whole thereby demanding

⁴ When Koch published his findings on the *tubercle bacillus*, he articulated the first version of his criteria for proving the causal link between a specific microorganism and a specific disease. These became known as Koch's Postulates. The Postulates were first, that' the parasite occur in every case of the disease; [second, that] the parasite does not occur in other diseases or nonpathogenically; [third, that] after being fully isolated and repeatedly grown in pure culture the parasite can induce the disease by being introduced into a healthy animal. [K. Codell Carter, 'Introduction', in K. Codell Carter, (translated by), *Essays of Robert Koch*, Greenwood Press, New York, 1987, p. Xviii.]

⁵ For an excellent summary of the English public health interventions and surrounding debates from the middle of the nineteenth century see Roy and Dorothy Porter, 'AIDS: Law, Liberty and Public Health', in Peter Byrne (ed.), *Health, Rights and Resources: King's College Studies 1987-8*, , King Edward's Hospital Fund for London, 1988, 76-99. Alfons Labish, 'History of Public Health – History in Public Health Looking Back and Looking Forward' *Social History of Medicine*, Volume 11, Number 1, April, 1998, p. 2.

⁶ Sheila Rothman, *Living in the Shadow of Death, tuberculosis and the Social Experience of Illness in American History*, The Johns Hopkins University Press, Baltimore and London, 1994, 181.

some form of collective action against it. As Alfons Labisch notes, public health action derives from a perception of threat.⁷

With the rise of the germ theory of disease came an increasing faith in science and confidence among doctors that they had the knowledge to control entrenched health problems such as tuberculosis. At the same time their professional status was rising and this enhanced their influence over how scientific knowledge could be used. In a social climate where fears that the 'British race' was in decline,⁸ tuberculosis, identified as a disease of the poor, was seen as symptomatic of such decline as well as a drain on Australia's much needed human resources.

Mortality rates across states, age, gender, occupation and time are discussed throughout this thesis. For the purposes of this chapter a broad contextual picture is presented here. At a national level Australia's overall mortality rate from tuberculosis compared favourably with other western nations with the exception of New Zealand.⁹ It was nonetheless a significant component of Australia's death rate

⁷ Labisch, *Social History of Medicine*, 1998, p. 2.

⁸ Australia shared the fears of racial degeneration common in Europe and Britain from the mid-nineteenth century but particularly in the latter decades. As Daniel Pick noted, such fears manifested within national contexts but the anxieties about and the language of degeneration was evident throughout Europe. [Daniel Pick, *Faces of Degeneration, A European Disorder, c. 1848 – 1918*, Cambridge University Press, 1989, Cambridge, pp. 2-10.] For Australia see Professor E.C. Stirling, 'President's Inaugural Address', *Transactions of the Australasian Medical Congress* (Formerly the Intercolonial Medical Congress), Seventh Session, Adelaide, September, 1905, Adelaide, 1907, pp. I-II. Social Questions Committee, 1912, Church of England Synod for Archdiocese of Melbourne, *Social Sins*, pp. 17-22, ML. Neville Hicks, *'This Sin and Scandal' Australia's Population Debate 1891 – 1911*, Australian National University Press, Canberra, 1978. C.L. Bacchi, 'The Nature-nurture Debate in Australia, 1900-1914', *Historical Studies*, Vol. 19, No. 75, October, 1980, pp. 199-212. Stephen Garton, 'Sound minds and healthy bodies: re-considering eugenics in Australia, 1914-1940', *Australian Historical Studies*, Volume 26, No. 103, October, 1994, pp. 163-181.

⁹ J.H.L. Cumpston, M.D., B.S., D.P.H., 'Statistical Review of Tuberculosis in Australia' in Section V - Preventive Medicine and Tropical Hygiene, *Australasian Medical Congress, Transactions of the First Session*, 12-17 November, 1923, Sydney, 1924, pp. 241, 242. Also Supplement to *Medical Journal of Australia (MJA)*, 19 April, 1924. J.H.L. Cumpston, 'Statistical Inquiry into Pulmonary Tuberculosis in Australia', in *Report of the Twelfth Meeting of the Australasian Association for the Advancement of Science*, Brisbane, 1909, 1910, pp. 553, 561. Robin Walker, 'The Struggle Against Pulmonary Tuberculosis in Australia, 1788-1950', *Historical Studies*,

and indeed some comparisons revealed a similar or less favourable situation than parts of the old world. For example, in 1885 Melbourne's death rate from pulmonary tuberculosis, generally referred to in contemporary literature as phthisis, was the same as Britain's city of Birmingham at 240 per 100,000 and more than London's at 210 per 100,000.¹⁰ Even worse than Melbourne was the gold mining town of Bendigo, which suffered a consistently higher death rate than other Australian towns and cities. Melbourne's rate between 1891 and 1900 was 167 per 100,000 while for the same period Bendigo's was 241 per 100,000¹¹. This was higher than some British cities.¹²

Australia's overall mortality rate from all forms of the disease peaked in 1885 at 175 per 100,000. Rates for pulmonary tuberculosis peaked in 1884 at 135 per 100,000,¹³ and this form of the disease was the major killer. Capital city rates were higher than regional areas with non-pulmonary forms of the disease comprising approximately 30% of the mortality based on 1885 rates. An important aspect of the impact of tuberculosis was the age profile of those who contracted the pulmonary form. Tuberculosis was a disease of young and middle aged adults.

20:80, April 1983, p. 440. It should be noted that New Zealand's low rate recorded in Cumpston's statistics would have excluded Maori deaths. [Linda Bryder, 'Tuberculosis in New Zealand', in A.J. Proust, (ed), *History of Tuberculosis in Australia New Zealand and Papua New Guinea*, Brolga Press, Canberra, 1991, pp. 82-83.]

¹⁰ Milton Lewis and Roy Macleod 'A Workingman's Paradise? Reflections on Urban Mortality in Colonial Australia 1860-1900', *Medical History*, 1987, 31: p. 391. Lewis and Macleod compared deaths from significant infectious diseases in Australian and English cities from 1860-1900 compiled from Report of Registrar General of England, 1860-1900, Report of Registrar General of N.S.W., 1860-1890, Report of Registrar General of Queensland, 1870-1900, Report of Registrar General of Victoria, 1860 and 1865, Statistical Register of Victoria, 1880, 1895, 1900.

¹¹ Australia, Department of Trade and Customs, Committee Concerning Causes of Death and Invalidity in the Commonwealth, *Report on Tuberculosis*, 19 September, 1916 (J. Mathews, M.P., Chairman), Albert J. Mullett, Government Printer for the State of Victoria, 1916, p. 7.

¹² Lewis and MacLeod, 'A Workingman's Paradise?' p. 391.

¹³ Cumpston, 'Statistical Review of Tuberculosis in Australia' *Australasian Medical Congress*, 1924, pp. 237, 243. See also Commonwealth Bureau of Census and Statistics, Professional Papers, G.H. Knibbs, *The International Nosological Classification, &c., Secular Progress of Pulmonary Tuberculosis and Cancer*, Reprinted from the Journal of the Australasian Medical Congress, Sydney, 1911, Sydney, 1913, p. 657. Walker, *Historical Studies*, 1983, p. 439. Robin F

Between the ages of 20 and 45, one in three deaths was attributed to phthisis¹⁴ and 75% of deaths from phthisis occurred within this age group. From the mid 1880s mortality from all forms of tuberculosis declined. By 1921-22 the mean death rate was only 39% of that for 1881-1890.¹⁵ In 1948, when a nationally co-ordinated campaign was inaugurated the rate was 28 per 100,000 and by the 1990s the death rate had fallen to less than 1 per 100,000.¹⁶

While the accuracy of national mortality statistics can be open to question for the common reasons of misclassification of cause of death, the omission of the aboriginal population¹⁷ and State differences in the types of diseases recorded,¹⁸ statistics on morbidity levels were even more problematic. From 1907 with the aid of diagnostic techniques and autopsies, rates of infection (not active disease) could be estimated and they proved to be extremely high.¹⁹ For example, in Britain in the early twentieth century, skin tests, biopsies and autopsies revealed that up to 90%

Haines, 'Therapeutic Emigration: some South Australian and Victorian Experiences', *Journal of Australian Studies*, Number 33, June 1992, 80, p. 88, 47n.

¹⁴ Conference on Consumption, *A digest of the Proceedings of the Conference of Representatives of Local Boards of Health in the Metropolitan Area of Adelaide*, 1909, SLSA, p. 6. Calculation from *Statistical Register of South Australia, 1885*, pp. 16-21. See also Robin Walker, 'The Struggle Against Pulmonary Tuberculosis in Australia', p. 439.

¹⁵ Cumpston, 'Statistical Review' p. 237.

¹⁶ A.J. Proust, 'The Waxing and Waning of Tuberculosis in Australia 1788-1988', in A.J. Proust (ed.), *History of Tuberculosis in Australia New Zealand and Papua New Guinea*, Brolga Press, Canberra, 1991, p. 228.

¹⁷ Andrew Jonathan Noymer, 'Studies in the Historical Demography and Epidemiology of Influenza and Tuberculosis Selective Mortality', PhD thesis, University of California, Berkeley, Fall 2006, pp. 70, 73.

¹⁸ Claudia Thame, 'Health and the State: The Development of Collective Responsibility for Health Care in Australia in the First Half of the Twentieth Century', PhD Thesis, ANU, 1974, pp. 365-367. Also see Phillip Roberts, 'Determining the Meaning behind Historical Disease Terminology through an Examination of Patterns of Terminology used in the Mortality Statistics of Victoria, 1853-1900', *Health and History*, Volume 10, Number 1, 2008, 63-87.

¹⁹ Commonwealth of Australia, Department of Trade and Customs, Committee concerning Causes of Death and Invalidity in the Commonwealth, *Report on Tuberculosis*, 1916, p. 23. States of Australia, *Consumption. Report of a Conference of Principal Medical Officers on uniform measures for the control of consumption in the States of Australia*, Government Printer, Melbourne, 1911, p. 7.

of the urban population was infected with the *tubercle bacillus*.²⁰ In Australia evidence presented to the 1923 Medical Congress suggested that the percentage of adults infected with the bacillus could be as high as 70%.²¹ The majority of people infected with the bacillus, however, did not develop active tuberculosis and while infection levels demonstrate the pervasive presence of the bacillus and the levels of vulnerability in times of stress, they do not provide a picture of morbidity. Opinion on morbidity rates varied widely. Beginning in December 1916 the American National Tuberculosis Association sponsored a community survey in Framingham, Massachusetts.²² The findings of this survey were regularly cited as evidence for rates of infection generally and among specific groups such as various ethnic groups, children, men and women. From the results of this survey the American National Tuberculosis Association suggested the morbidity ratio was nine to ten active cases plus nine to ten arrested cases for every death. Using the Framingham conclusions, Robin Walker extrapolated a case rate for Victorians of one in every 100 of the population in the 1880s and 1890s.²³ But estimates of infection rates differed, some suggesting a rate of ten times the number of deaths from the disease, others as low as only one case for every death.²⁴ Dr Ramsay Smith, Chairman of the South Australian Central Board of Health, for example, enlisted the assistance of a mathematician to conclude that in 1902 the number of live consumptives in the

²⁰ Linda Bryder, *Below the Magic Mountain, A Social History of Tuberculosis in Twentieth-Century Britain*, Clarendon Press, Oxford, 1988, pp 3-4.

²¹ W.J. Penfold, MB, BHY, 'Incidence of Tuberculosis in Australia', *Australasian Medical Congress Transactions*, Melbourne, November 112 to 17, 1923, in Supplement to *MJA*, February 16, 1924, p. 264. See also Proust, 'The Waxing and Waning of Tuberculosis', *History of Tuberculosis*, 1991, p. 229.

²² Georgina D. Feldberg, *Disease and Class, Tuberculosis and the Shaping of Modern North American Society*, Rutgers University Press, New Brunswick, New Jersey, 1995, p. 105.

²³ Robin Walker, *Historical Studies*, 1983, p. 445, 38n. The survey used was the Framingham (Massachusetts) survey in 1916 which found 9-10 active cases and 9-10 arrested cases for each death. Walker, multiplying Victorian deaths in 1881 and 1891 by 9 found 10,791 Victorians or 1.25 per cent in 1881 and 13,347 Victorians or 1.18 per cent in 1891 to be suffering from active disease]

²⁴ C. Reissman, Conference on Consumption, *A digest of Proceedings*, 1909, p. 9.

South Australia population was one for every death from pulmonary tuberculosis.²⁵ Smith's contemporary, C. Reissman, physician to South Australia's Kalyra Sanatorium, disagreed. He estimated the number to be three times the number of deaths.²⁶ These examples do not provide a definitive answer on morbidity levels but do offer a more complete picture than mortality rates alone can give. Because pulmonary tuberculosis was usually a lingering illness, its presence in Australian society was more extensive than death rates alone indicated.

AUSTRALIAN MEDICAL DEBATES ON TUBERCULOSIS

Before the isolation of the *tubercule bacillus* in 1882, Australian medical discussions about tuberculosis centred on cures for tuberculosis, specific patient cases, the value of Australia as a therapeutic destination for consumptives, and the question of contagion.²⁷ Jean-Antoine Villemin had demonstrated the

²⁵ W. Ramsay Smith, Bsc., MB, CM (Edin), 'A Mortality Curve for Phthisis', reprinted from *the Scottish Medical and Surgical Journal*, October, 1902, published as a pamphlet, SLSA, p. 297.

²⁶ C. Reissman, Conference on Consumption, *A digest of Proceedings*, 1909, p. 9.

²⁷ J.B. Motherwell, M.D., 'Case of Tuberculosis of the Lungs, with Dilation of the Aorta, and thickening of the Semiluna Valves', *Australian Medical Journal (AMJ)*, Vol. 11, October, 1857, pp. 266-267. James Robertson, A.M., M.D., L.R.C.S. Ed, 'Vital Statistics of the Benevolent Asylum, Melbourne, more particularly in relation to Phthisis', *AMJ*, Vol VI, July, 1861, pp. 203-206. H.H. Dearsley, 'General Correspondence' *AMJ*, October, 1861, pp. 307-309. S.D. Bird, M.D., L.R.C.P., 'On certain cases simulating early Phthisis, and their Diagnosis by the Laryngoscope', *AMJ*, Vol. VII, April, 1862, pp. 113-116. 'Review of S. Dougan Bird, On Australasian Climates and their Influence in the Prevention and Arrest of Pulmonary Consumption', *AMJ*, Vol. IX, January, 1864, p. 27. 'Local News' *The AMJ*, Vol. IX, February 1864, p. 63. F. Dowling, M.B., Lond., 'Two Cases of Phthisis, in which special symptoms were produced by the deposit of Tuberculous Matter in and around the Bronchial Glands', *AMJ*, Vol. IX, April 1864, p. 99-101. Bird, *AMJ*, Vol. X, September, 1865, pp. 276-283. S.D. Bird, 'On Chest Complaints in Australia, Their Special Causes, Characters, and Treatment' *The AMJ*, Vol. XII, February, 1867, pp. 33-50 and Vol. XII May, 1867, pp. 129-137. 'Review of S.D. Bird, The Modern Treatment of Pulmonary Consumption', *AMJ*, Vol. XIII, December, 1868, pp. 369-379. Medicus, 'Correspondence. Climate and Consumption', *AMJ*, Journal, Vol. XV, May, 1870, pp. 156-157. 'Review of William Thomson, L.R.C.S., Edin, Melbourne, On Phthisis and the Supposed Influence of Climate; being an analysis of Statistics of Consumption in this part of Australia, with remarks on the causes of the increase of that disease in Melbourne', *AMJ*, Vol. XV, November, 1870, pp. 344-349. John Singleton, M.D., 'On Phthisis in Victoria', *AMJ*, Vol. XVI, July, 1871, pp. 206-207. John Singleton, M.D., 'Phthisis in Victoria', *AMJ*, Vol. XXI, September, 1876, pp. 279-286. Colin Henderson, M.A., M.D., 'Cases of Phthisis Pulmonalis' *AMJ*, New Series, Vol. II, February 15, 1880, p. 63. 'Catarrhal Pneumonia and Tubercle', *The AMJ*, New Series, Vol. III, March, 15, 1881, pp. 139-140. H.B.A., 'Review of Frederick Treves, F.R.C.S., Eng., 'Scrofula and its Gland Diseases', *AMJ*, New Series, Vol. IV, April, 15, 1882, pp. 177-184. S. Maberly Smith, M.R.C.S., 'On a Case of Phthisis Treated by the Inhalation of Creasote', *The AMJ*, New Series, Vol. IV, July 15, 1882, pp. 293-295. Haines, 'Therapeutic

transmissibility of tuberculosis from humans to animals and between animals in 1865.²⁸ Work on isolating a microbe responsible for tuberculosis continued after Villemin's experiments but no medical consensus on the contagious nature of tuberculosis emerged as a result of Villemin's work. Instead physicians debated the relative influences of heredity, environment and microbes.²⁹ Doctors who did not believe in the dual aetiology of heredity and bacterial infection divided sharply between contagionists and anti-contagionists. In Australia the debate between these two groups centred largely on whether or not a range of climatic conditions could improve or cure the disease and whether or not the Australian climate had a curative impact. Climates believed to be curative included warm or mild regions, coastal areas or sea voyages, deserts and mountains. Prominent protagonists in the debate were Melbourne doctors William Thomson and S. Dougan Bird. Bird became an enthusiastic promoter of Australia as a curative destination for the tubercular and published a widely read book on the question in 1863.³⁰ In 1870 Thomson published a book length refutation of claims that the Australian climate benefited consumptives³¹ and in 1876 a pamphlet forcefully arguing the case for contagion.³² He strongly opposed encouraging tubercular immigration to Australia. In 1882 after Koch's announcement he went into print quickly with a book further expounding his belief in contagion and citing Koch's work as proof of his own beliefs. In typically immodest style he wrote that, had the Melbourne Hospital

emigration' 1987, pp. 23-43. Bryn Thomas and Bryan Gandevia, 'Dr Francis Workman, Emigrant and the History of Taking the Cure for Consumption in the Australian Colonies', *The Medical Journal of Australia*, July 4, 1959. Powell, J.M., 'Medical Promotion and the Consumptive Immigrant to Australia', *The Geographical Review*, volume LXIII, 1973.

²⁸ Rene and Jean Dubos, *The White Plague, Tuberculosis, Man, and Society*, [1952], Rutgers University Press, New Brunswick, 1996, p. 98.

²⁹ For the United States see Feldberg, *Disease and Class*, 1995, pp. 9-35.

³⁰ 'Review', *AMJ*, January, 1864, pp. 27-28. Robin Haines, 'Therapeutic Emigration' pp. 26-28.

³¹ Robin F. Haines, 'Therapeutic Emigration', p. 32.

³² William Thomson, FRCS, *The Germ Theory of Phthisis Verified And Illustrated by the Increase of Phthisis in Victoria*, Sands & McDougall, Melbourne, 1882, p. 5. See also Haines, 'Therapeutic

allowed him to work there as a pathologist it might well have been Victoria enjoying the kudos as the place where the bacillus was identified.³³

After 1882 the Australian medical profession had to consider the implications of Koch's announcement that tuberculosis was after all, a contagious disease. Doctors and the state now faced a contagious disease that was endemic and chronic, unlike other contagious diseases that were acute and episodic. Koch's findings presented a new aetiology but no cure.

The response to Koch's announcement in Australia's medical journals was muted and medical professionals dealt with Koch's findings in an eclectic manner. *The Australasian Medical Gazette*, despite its first editorial claim it would 'publish ... papers of interest, ... [and] generally tend to advance medical knowledge',³⁴ did not run a specific article on Koch's announcement in 1882, nor in 1883, the year in which Koch published his research. The *Australian Medical Journal*, published by the Medical Society of Victoria,³⁵ paid more attention to the discovery than the *Gazette* printing a transcript of Koch's announcement in September 1882 but did not lead or follow it with further articles. Nevertheless reaction can be gauged from proceedings of the Victorian Medical Society where the issue was raised in papers and discussions. Dr F.T. West Ford embraced the bacteriological explanation saying that Koch had demonstrated with certainty that the bacillus caused phthisis. Dr Allen, Professor of Anatomy and Pathology at the Melbourne University,³⁶ was less convinced saying "[it is] still necessary to hold a guarded opinion as to the

Emigration', 1987, p. 31. Haines wrote that Dr Thomson died in 1880, but this date is in error as he published a reiteration of his earlier work after Koch's discovery in 1882.

³³ Thomson, *The Germ Theory of Phthisis*, 1882, p.45.

³⁴ *The Australasian Medical Gazette*, (AMG), October, 1881, p. 7.

³⁵ 'Preface', *AMJ*, Vol 1, 1856, p. i.

³⁶ *AMJ*, 15 May, 1891.

share taken by bacilli in the production of phthisis”.³⁷ Without discounting the possibility that Koch was correct, other Medical Society members held similar doubts about the bacteriological explanation of tuberculosis adopting the view that firm conclusions were premature.³⁸ Georgina Feldberg has discussed a similarly ambivalent response to Koch’s discovery among American physicians³⁹ and in Britain the medical profession doubted the conclusion of transmissibility generally adhering to hereditary cause until the 1890s and even as late as 1905.⁴⁰

The question of transmission of bovine tuberculosis to humans was as contentious as that between humans. Responding to government concerns about the public health risk posed by bovine tuberculosis, the Veterinary Medical Association of Victoria considered the disease to be both contagious and hereditary. The resolution of the Association in November, 1883 read:

That it is the opinion of this meeting that tuberculosis in cattle is rapidly increasing throughout the colonies; that tuberculosis is communicable from cattle to their own and other species, as well as to man, by the ingestion of the flesh and milk of affected animals, and by inoculation and inhalation; and that in the ox tribe it is both hereditary and congenital.⁴¹

The Veterinary Association accepted the implications of Koch’s findings regarding contagion, yet did not discard the hereditary aetiology. This same compound approach also pervaded discussions on human tuberculosis, which was now assigned a more complex rather than a new aetiology.

³⁷ Dr Allen (in discussion) ‘Medical Society of Victoria Ordinary Monthly Meeting - Notes on the Antiseptic Treatment of Parasitic Diseases of the Air Passages and Lungs’, *AMJ*, Sept 15, 1882, p. 393.

³⁸ *AMJ*, 1882, pp. 388-396, 478. For a discussion of a similarly ambivalent response by American doctors see Georgina Feldberg, *Disease and Class*, 1995.

³⁹ Feldberg, *Disease and Class*, 1995, pp. 36-55.

⁴⁰ F.B. Smith, *The Retreat of Tuberculosis 1850-1950*, Croom Helm, London, 1988, pp.36-37.

⁴¹ *AMJ*, November 15, 1883, pp. 527.

Australian doctors continued to debate the aetiology of tuberculosis and its status as a contagious disease throughout the 1880s and 1890s. In 1886 the Victorian Medical Society heard two substantial papers on tuberculosis, the first by Bird. As a strong advocate of climate therapy and Australia's therapeutic advantages he was reluctant to accept an aetiology that put the efficacy of his favoured treatment in doubt. He questioned the veracity of claims that the *tubercle bacillus* caused tuberculosis supporting the demand for further investigation and more evidence of the relationship between the organism and the disease.⁴²

Dr James Robertson took the doubt a step further. Not only did he reject the pathological importance of the *tubercle bacillus* in causing disease, he suggested a conflicting alternative. Just as other microbes could break down decaying matter, so too the *tubercule bacillus* might attack tuberculous tissue and thus be an agent against the disease. 'It may yet be found', he said, 'that the bacilli of tuberculosis have been much maligned, that instead of being the actual causes of disease, they prove beneficent agents ...'⁴³ His doubts about the role of the bacillus centred on the seeming incompatibility of the bacteriological explanation with the nature of tuberculosis and its difference from other contagious diseases. Phthisis, he said, was chronic, endemic and the course of the disease not only inconsistent among different sufferers but symptoms and stages could be erratic for the individual sufferer. Further, *tubercule bacilli* were not found in great enough numbers to support Koch's assertion that transmission occurred through inhalation. Phthisis attacked mainly those with debilitated health and could be arrested under the right conditions but also re-occurred. 'The disease', Robertson said, 'cannot be said to

⁴² S.D. Bird, 'On some Phases in the History of the Treatment of Pulmonary Phthisis during the Last Twenty-five Years', *AMJ*, September 15, 1886, p. 403.

⁴³ *AMJ*, 1886, p 464.

run a certain definite course, in a more or less definite time, or at any time to prevail in an epidemic form'.⁴⁴ In contrast, contagious diseases like measles, scarlatina, whooping cough and typhoid were acute, febrile, ran a specific course, attacked the healthy and often took epidemic form. Despite this he accepted that a person could be infected if inoculated with tuberculous matter. The doubt arose over the role of the bacillus and communicability through inhalation.⁴⁵

Robertson's paper exemplified the struggle to understand science's challenge to perceived notions, personal observation and empirical medical practice. Robertson drew on his clinical experience to question Koch's laboratory findings but at the same time accepted Villemin's earlier conclusions relating to inoculation. He did not question the value of the laboratory, nor the research on micro-organisms, but was unconvinced by Koch's conclusions on the primary role of the *tubercle bacillus*.

So many able pathologists are now employed in investigating the life history of micro-organisms that it is to be hoped that the relations of those organisms to contagious and other diseases will yet be clearly determined, and that order will be evolved out of confusion.⁴⁶

He also cautioned pathologists not to overlook the 'natural history of the disease.'⁴⁷

Robertson could not reconcile the scientific conclusions in the laboratory with the random and mysterious nature of tuberculosis. The laboratory was inconclusive proof of contagion; the disease was too unlike known infections. He said:

Regarding phthisis as a virulent contagious disease, how we may be asked, ... is it not more generally prevalent than it now is? Without doubt it is too frequently met with, but it never assumes an epidemic form. The statement, that phthisis is propagated by contagion, rests on evidence so very dubious and inconclusive, that it cannot command assent. It appears to me that phthisis has nothing in common with contagious diseases, except the large mortality occurring at early ages.⁴⁸

⁴⁴ James Robertson, M.A., M.D., 'Is Phthisis Pulmonalis Contagious?', *AMJ*, October, 15, 1886, p. 453.

⁴⁵ *ibid.*, pp. 453-458.

⁴⁶ *ibid.*, p. 465.

⁴⁷ *ibid.*, p. 502.

⁴⁸ *ibid.*, p. 463.

Discussion of Robertson's paper at the subsequent meeting of the Society revealed similar doubt among most of Robertson's colleagues, with only one expressing confidence in Koch's findings. Professor Allen, said 'It may be stated that tuberculosis in all its varied forms is a specific infective disease, and that it is due to a specific micro-organism'.⁴⁹ John William Springthorpe, who later took a leading role in the anti-tuberculosis movement, tried to find a compromise between the two extremes suggesting that the bacillus caused tuberculosis, but not necessarily the characteristic lesion known as tubercle.⁵⁰ Tubercle, he suggested, could result from other irritants and the bacillus might develop independently of its human host. He claimed the microbe did not infect healthy people.⁵¹ Other contributors to the discussion doubted the veracity of bacteriological explanations for phthisis on the grounds that knowledge of germs was still obscure, current knowledge about the *tubercle bacillus* was too incomplete to provide definitive answers and phthisis did not follow the normal course of contagious diseases. Even among those willing to accept Koch's findings the belief in heredity and the tubercular diathesis was not dented. Doctors integrated hereditary aetiology with bacteriological knowledge as in the case of Dr Jamieson, the President of the Victorian Medical Society, who said,

The great difficulties in the way of accepting the bacillary theory of phthisis are found in two undisputed facts; firstly, a predisposition is necessary in almost all cases, and secondly, the disease seems to have a tendency to be hereditary.⁵²

⁴⁹ *AMJ*, 1886, p. 497.

⁵⁰ The use of the term tubercle here describes the specific lesion of tuberculosis, a small mass that forms as the starting point of the disease. [William A.R. Thomson, M.D., *Black's Medical Dictionary*, 34th edition, Adam & Charles Black, London, 1984, p. 910. Macdonald Critchely, (Editor-in-Chief), *Butterworths Medical Dictionary*, Butterworths, London, 1978, p. 1760.

⁵¹ *AMJ*, November 15, 1886, p. 499. The notion that the *tubercle bacillus* was not an *obligate* parasite continued to find favour.

⁵² *AMJ*, November, 15, 1886, p. 502

In 1887 the first Inter-colonial Medical Congress of Australian physicians was held in Adelaide where the two papers presented on tuberculosis further demonstrated the lack of consensus about Koch's position and the struggle to incorporate germ theory into existing medical knowledge of tuberculosis.⁵³ Dr Astles of Adelaide accepted the causal nature of the bacillus, but like his Victorian colleagues, also held fast to hereditary causes. He expressed concern that more was not done to persuade consumptives to refrain from marriage so that they might avoid handing down their 'dire disease'. Adapting climatology to bacteriology, he argued that a summer location by South Australia's seaside provided an antiseptic attack on the bacillus. On the question of consumptive migrants from Britain he stressed that it was cruel to send advanced cases to Australia, but that, despite a preference for healthy migrants, Australia welcomed migrants coming to Australia to improve their health.⁵⁴ In contrast, Dr Elsner of Victoria, agreed with Koch's conclusions that his discovery proved tuberculosis to be a contagious disease. This meant that tuberculosis was not hereditary and might be prevented through public health measures, notably the isolation of consumptives.⁵⁵ He disagreed with Dr Astles on the issue of immigration of tuberculosis sufferers arguing that immigration of such persons ought to be 'deprecated as useless to themselves and dangerous to the community at large.'⁵⁶

⁵³ David Barnes, in his study of tuberculosis in late nineteenth century France, also notes a similar 'confused discourse' among French doctors, describing it as 'the product of doctors and hygienists still working out the kinks of the new germ-theory paradigm'. [David Stepanek Barnes, 'The Making of a social disease: Tuberculosis in Nineteenth-Century France', PhD Dissertation, University of California at Berkley, pp. 66-77.]

⁵⁴ H. Eustace Astles, MD, FRCP, Ed, 'Some Remarks upon the South Australian Climates and their Influence upon Phthisis', *Transactions of the Intercolonial Medical Congress of Australasia*, First Session, Adelaide, South Australia, August-September, 1887, Adelaide, 1888, pp. 56-60. Katherine Ott commented of American doctors that 'they gradually integrated the theory into their medicine bags as an additional "exciting cause" of the disease, without adjusting their practice'. [Katherine Ott, 'The intellectual origins and cultural forms of tuberculosis in the United States, 1870-1925 (Volumes I and II)', PhD thesis, Temple University, 1991, p. 133.]

⁵⁵ F.W. Elsner, FRCSI, LMKQCPI, 'On Tuberculosis', *Transactions of the Intercolonial Medical Congress of Australasia*, First Session, 1887, pp. 95-98.

⁵⁶ F.W. Elsner, 'On Tuberculosis', *Transactions of the Intercolonial*, 1887, p. 98.

Even Koch was a little unclear on the point of heredity. Although he suggested that the slow rate of growth of the *tubercle bacillus* provided some explanations for the many puzzling aspects of the disease, he prefaced this with the comment:

Acquired and inherited dispositions undoubtedly play a significant role in the etiology of tuberculosis. However, it would be too speculative to discuss these conditions. More thorough studies are required before one can reach conclusions in this area.⁵⁷

During the first decade following Koch's pronouncements on tuberculosis, the Australian medical profession, much like their British and American counterparts, debated Koch's discovery but failed to reach a general consensus on the causal role of the bacillus or on the inference that the bacillus automatically made the disease contagious.

In August 1890 Robert Koch made another significant announcement. He had developed what he believed to be an effective treatment for tuberculosis, which was referred to as Koch's lymph and later called tuberculin. Tuberculin was an extract of the *tubercle bacillus* that induced an allergic response in infected individuals. The immune system response, later understood as *delayed-type hypersensitivity*,⁵⁸ was not understood at the time. Although Koch initially warned that more work was needed, his announcement was met with much enthusiasm, doctors and patients flocking to Berlin to learn about and to receive the treatment. Eminent physicians such as Joseph Lister from England⁵⁹ and Edward Trudeau from the United States went to Berlin and were immediately impressed by the new

⁵⁷ Robert Koch, 'The Etiology of Tuberculosis [1882]' in K. Codell Carter, (trans), *Essays of Robert Koch*, Greenwood Press, New York, p. 94.

⁵⁸ Delayed hypersensitivity is an excessive response in the host following a dose of pathogenic bacteria, or their products, (in this case tuberculin) when the host's tissues have already been sensitized from previous injection or infection. Hypersensitivity reactions are characterized by tissue damage. [Critchley, *Butterworths Medical Dictionary*, p. 848]

⁵⁹ Smith, *The Retreat of Tuberculosis, 1988*, p. 57.

treatment. Hope and enthusiasm soon died, however, as close scrutiny of treated cases revealed doubtful therapeutic results and sometimes death. The Berlin Medical Society's famous debate between December 1890 and February 1891 concluded that tuberculin could cure under certain circumstances, but that treatment involved risks.⁶⁰ It became evident, however, that tuberculin had great value as a diagnostic tool⁶¹ and it continued to be used this way. Some physicians retained their faith in tuberculin as a therapeutic agent particularly in the United States⁶² and a few in Australia adopted it as a treatment.⁶³

The enthusiasm and hope with which tuberculin was greeted is unsurprising. Recent scientific discoveries such as anti-toxins for diphtheria and tetanus, raised hope for cures of other diseases and Koch's reputation in the field of tuberculosis was without equal. As Robertson noted in the *Australian Medical Journal*:

...the well-known character of the discoverer, contributed to give rise to a paroxysm of abnormal feverish excitement.⁶⁴

Koch's announcement of his discovery of tuberculin held greater hope of resolving the intractable tuberculosis problem than had defining its cause.

⁶⁰ J.W. Springthorpe, M.A., M.D., Melb., M.R.C.P. Lond., 'Progress Report on Koch's Treatment of Tubercular Diseases', *AMJ*, June 15, 1891, p. 290.

⁶¹ Thomas D Brock, *Robert Koch A Life in Medicine and Bacteriology*, Science Tech Publishers, Madison, WI, 1988, pp. 195-213.

⁶² Feldberg, *Disease and Class*, 1995, p.56.

⁶³ See for example, Dr. Camac Wilkinson (Sydney), 'Tuberculin as a Specific Remedy for Pulmonary Tuberculosis' *Intercolonial Medical Congress 1902*, John Vail, Government Printer, Hobart, 1903, pp. Xxix and F.J. Drake, M.B. (Melb.), 'Sanatorium treatment of Pulmonary Tuberculosis, *Australasian Medical Congress, Transactions of the Eighth Session, October, 1908*, J. Kemp, Government Printer, Melbourne, 1909, p. 154., M.L. A.H. Gault, M.D., London, 'Notes on the Treatment of Pulmonary Tuberculosis by Tuberculin with the Aid of Opsonic Indices', *Australasian Medical Congress, 1908*, pp. 149-151. H.C. Mills, M.D., (Sydney), 'Value of Opsonic Estimates and the use of Tuberculin in Practice, *Australasian Medical Congress, 1908*, pp. 143-149. F.J. Drake, 'Sanatorium Treatment of Pulmonary Tuberculosis', *Australasian Medical Congress, 1908*, pp. 154. Dr McDonald Gill (Sydney), 'Treatment of Medical Tuberculosis in Infancy and Childhood', *Australasian Medical Congress, Transactions of the Tenth Session, Auckland, New Zealand, February, 1914*, John Mackay, Government Printer, Wellington, N.Z., 1916, pp. 246-250.

Some 12,000 miles from the seat of excitement and not party to the early experiments, Australian doctors reacted to Koch's lymph in a more subdued manner than their European colleagues. But the announcement provoked greater reaction in Australian journals than the announcement of the bacillus eight years earlier, although mainly after the efficacy of the treatment came into question. Australian doctors in the main eschewed the triumphal language of their European colleagues expressing hope in the effectiveness of the cure but warning against premature conclusions. Whereas Joseph Lister reported in *The Lancet* that the treatment was 'simply astounding' and comparable with Pasteur's work on anthrax,⁶⁵ the *AMJ*'s first article on tuberculin concluded: 'It is devoutly to be wished that the high hopes excited may be fully realised'.⁶⁶ And the *AMJ* later noted, '...the profession and public in the Australasian Colonies would not appear to have been so profoundly affected by "Kochism" as those nearer the scene of the action'.⁶⁷ This did not mean that Australian doctors failed to appreciate the critical importance of Koch's efforts. Dr M Crivelli wrote, '...it is a question of such importance for humanity that it is impossible for anyone, and more especially for the physician, to remain uninterested in such a scientific event...'.⁶⁸ But by early 1891 the problems with tuberculin were apparent and Crivelli concluded that Koch's pronouncements may have been premature and more scientific evidence was required.⁶⁹

⁶⁴ James Robertson, M.A., M.D., 'Koch's Treatment of Tuberculosis', *AMJ*, February 15, 1891, p. 68.

⁶⁵ Cited in Brock, *Robert Koch*, 1988, pp. 206, 207

⁶⁶ James Robertson, 'Dr Koch's Cure for Consumption', *AMJ*, Nov. 15, 1890, p. 495.

⁶⁷ 'Koch's Treatment of Tuberculosis', *AMJ*, Feb 15, 1891, p. 99.

⁶⁸ M. Crivelli, M.D., 'On the Bacillus of Koch and Tuberculosis', *AMJ*, Feb. 15, 1891, p. 59.

⁶⁹ Crivelli, 'On the Bacillus', *AMJ*, 1891, p.66.

Discussions, reports and opinions on tuberculin featured regularly in the pages of the *AMJ* in the early 1890s. Opinion can be divided into those who strongly doubted the benefits of tuberculin, those who were cautious but willing to see it used with various qualifications and those more strongly in favour of its continued therapeutic use. Strong advocates of tuberculin were a minority. By the time samples of tuberculin reached Australia in early March 1891,⁷⁰ early hopes that the substance would be a safe miracle cure had subsided. Despite its problems tuberculin continued to be used as a treatment by a few physicians. One who held strong beliefs on the treatment benefits of tuberculin was Camac Wilkinson. He had been a student of Koch in 1884 and was one of a number of leading physicians in New South Wales who joined the first incarnation of the New South Wales Association for the Prevention of Consumption. He was also a lecturer in Medicine at the Sydney University and an alderman of the Sydney City Council. In 1909 he left Sydney for London where he set up a dispensary for the poor using tuberculin as a treatment.⁷¹

Tuberculin had raised the possibility of an easy cure, but supporters of the cure did not generally discard other treatments such as open air, sunlight and a substantial diet. Instead it became just one more treatment whose effects were problematic and the failure of tuberculin to fulfil its early promise together with the dangers inherent in the treatment deflected ideas more firmly toward a preventive approach. This shift to a public health focus was evident by the mid-1890s when doctors proposed specific preventive measures. While the medical profession couched

⁷⁰ J.W. Springthorpe, 'A Report on Koch's Treatment of Tubercular Disease', *AMJ*, 15 March, 1891, p. 133.

⁷¹ *SMH*, 12 October, 1904, 13 October, 1904. Unidentified Newspaper, 24 May, 1906, Newspaper clippings, ML. Walker, *Historical Studies*, 1983, pp. 447-448. Obituary, Camac Wilkinson, *Medical Journal of Australia*, 1946, Vol. 1, pp. 488-489.

much of this in therapeutic as well as prophylactic terms, therapy was designed not only to improve the patient's chance of survival, but also to ensure the patient did not spread their infection. At the 1892 Intercolonial Medical Congress, Dr P Sydney Jones's presidential address illustrated the point:

I cannot conclude this part of my subject without a reference to the hopes that were raised two years ago that in tuberculine [*sic*] we had an agent destructive to the bacillus of tubercle, and a cure, therefore, for the greatest scourge of our time. Those hopes have been blighted; ... For the present, in Consumption we must rely on measures which owe their efficacy to the exclusion of the specific bacillus from the air which we breathe, and to the fortification of the system so that it shall be better able to resist their attacks.⁷²

Acceptance of the *tubercle bacillus* as the cause of tuberculosis widened and notions on prevention measures emerged as a central feature of the medical debate. But options for treatment remained much as they were before Koch's identification of the bacillus and tuberculin. Climate therapy continued as a treatment for most Australian physicians, as it did in other countries, particularly because of Australia's status as a therapeutic destination. Therapeutic migration though had its opponents and some reservations about tubercular immigrants surfaced during the 1880s and 1890s.

During the 1890s there was less disputation over the pivotal role of the bacillus in disease causation, although the question of transmission was still problematic for some. One example was C Candler⁷³ who disputed Koch's conclusions on the precise nature of the bacillus and also German research that identified dried sputum as the primary agent of transmission. In 1889 Georg Cornet, a German physician, found that dry sputa in dust produced tuberculosis when inoculated into guinea pigs but sputa contained in spittoons and kept moist did not induce the disease. Cornet's

⁷² Dr. P. Sydney Jones, 'The President's Inaugural Address', *Intercolonial Medical Congress of Australasia Transactions of the Third Session*, September, 1892, Sydney, Charles Potter, Government Printer, 1893, p. 36.

research prompted German authorities to issue regulations against spitting unless into water filled vessels. This research was largely ignored in Britain and its colonies until John Tyndall, Professor of the Royal Institute and a prolific writer on science, brought it to public attention in a magazine article.⁷⁴ Candler argued that Koch had assumed but not proved that the *tubercle bacillus* required an animal host. The bacillus, he insisted, lived in natural flora, spread through the air into human dwellings and ‘under certain (specified) conditions’⁷⁵ found a home on unnatural surfaces in human and animal homes.⁷⁶ Humans contracted phthisis by breathing the seeds of the growing ‘saprophytic vegetation’⁷⁷ rather than through inhaling bacilli from dried sputum. Candler supported his argument with reference to British and French experiments that had grown the bacillus on vegetable media below the temperature of 30 degrees centigrade the temperature at which Koch had found the bacillus could develop.⁷⁸ Professor Stuart of the University of Sydney agreed with Candler and reported this to the governments of New South Wales, South Australia and New Zealand. Despite Stuart’s endorsement, Candler drew little support from his Victorian colleagues who now generally believed that transmission through dried sputa was firmly established.

It is important to place views such as Candler’s in political perspective. Candler opposed the public health regulations that Koch’s transmission theory had

⁷³ C.Candler, *The Prevention of Consumption a Mode of Prevention Founded on a New Theory of the Nature of the Tubercle Bacillus*, Kegan Paul, Trench & Co., London, 1887, M.L.

⁷⁴ ‘The Spread of Tubercular Phthisis and Its Prevention’, *AMJ*, 15 May 1892, p. 234. J.O. Thorne, (ed.), *Chamber’s Biographical Dictionary*, new edition, W. & R. Chambers Ltd., London, 1968.

⁷⁵ C. Candler, ‘The Radical Error in Koch’s View of the Causation of Phthisis’, *AMJ*, August 15, 1892, 381.

⁷⁶ Allen also held this view that is that the bacillus was not an *obligate* parasite.

⁷⁷ Candler, ‘The Radical Error’, *AMJ*, p. 381. By saprophytic Candler referred to any vegetable that lived on rotten organic matter. [Critchley, *Butterworth’s Medical Dictionary*]

⁷⁸ Candler, ‘The Radical Error’, *AMJ*, pp. 366-382.

encouraged in Europe.⁷⁹ Commending England for not responding with harsh public health regulations, he said

Her social conditions are not to be lightly disturbed; and it was seen that this foreign mode of prophylaxis would so interfere with the liberty of the subject as to make it extremely doubtful if the measure would be tolerated by a people less amenable than most peoples to State-imposed regulations affecting their home life.⁸⁰

Although Australian doctors who had an interest in public health and tuberculosis were soon to condone some of these prophylactic measures, in 1892 they were reluctant to support coercive strategies. For example, when the Victorian Branch of the BMA considered the question of legislative measures in 1892, the majority opposed such action. In the main, though unequivocal about the nature of transmission, members preferred a public educational approach and questioned the practicality of legislation. A legally directed approach, they argued, could be effective only in public institutions and hospitals and in any case resources were not available to police existing public health provisions. Despite this general reluctance to legislate, ideas that would later be central to the anti-tuberculosis movement were emerging. The contagious nature of the disease and the fact that the *tubercle bacillus* was implicated in some way was largely accepted. Views such as Candler's were not dismissed but rather seen as consistent with the central fact that the disease could be transmitted by dried sputum. This understanding was grafted onto existing belief in the tubercular diathesis. An *AMJ* article of May 1892 typified the general position:

Admitting to the fullest the importance of the constitutional factor in tubercular phthisis, and of inflammatory processes as predisposing conditions, it must, ... be equally admitted, that the introduction of the *tubercle bacillus* is the really essential factor in the tubercular process. Whether the bacillus be purely an obligate parasite or not, an enormous number of bacilli are at present discharged from tubercular human beings and lower animals, and in all probability it is these bacilli that set up tubercular processes, re-entering susceptible subjects ...⁸¹

⁷⁹ *ibid.* Candler made his views public in *The Argus* in December, 1890.

⁸⁰ C. Candler, 'The Radical Error *AMJ*', p. 378.

⁸¹ *AMJ*, May 1892, p. 235.

Demands for public health intervention in tuberculosis began to grow. In 1896 the Medical Congress gave tuberculosis special attention. Speakers stressed the importance of alerting the public to the fact that the disease was contagious and importantly that this knowledge made the disease preventable. Suggested preventive measures included the use of special receptacles for sputum, public spittoons, disinfection and compulsory notification to health authorities.⁸² Prevention centred on inhibiting transmission of the bacillus, but the hereditary aetiology remained a constant for many physicians. Dr. O'Hara, for instance, combining the concepts of infection and heredity, informed Congress that environmental concerns were of secondary importance because physical resistance to the infection was the primary element in combating the disease. Resistance was not to be obtained through improved nutrition and living conditions but by addressing hereditary problems. 'So long as strumous children were born', he argued, 'they must expect tubercular disease to flourish'. He was shocked to hear of a large sheep farmer who had given his daughter a dowry to be united with 'a broken-down strumous subject'.⁸³

The Congress of 1896 unanimously adopted three resolutions. These resolutions were timid compared with the ideas put forward just three years later. The first, aimed at the British medical press, sought to limit the immigration of consumptives in the late stages of disease and threw doubt on climatology by expressing the view that it was cruel to suggest to such patients that the Australasian climate had

⁸² Although the subject of some disagreement among doctors, compulsory notification would be a major plank in the crusade and will be discussed in detail in chapter two.

restorative powers. But climate therapy was not completely abandoned. The resolution also suggested that early stage sufferers might still benefit from some colonial regions away from the coast. The second resolution was directed at the Australian medical profession and recommended the use of a printed table of advice that had been devised by the Australian Health Society. The Australian Health Society had been formed in August 1875 in Melbourne at the instigation of Margaret Turner, a Unitarian preacher.⁸⁴ The main goal of the Association was to educate the populace on hygienic living and to influence public health legislation.⁸⁵ The third Congress resolution, directed to governments, called attention to the necessity of preventive measures in the form of inspection of meat and milk, (the means by which bovine tuberculosis could be transmitted to humans) and the disinfection of public spittoons, conveyances and buildings where infection was suspected. Despite the substance of the resolutions the rationale offered for the third resolution showed that Australian physicians were still cautious on the question of contagion. Governmental action was called for because the disease was

⁸³ Dr O'Hara, 'General Discussion following addresses on 'Tuberculosis in Man and Animals, *Transactions of the Intercolonial Medical Congress of Australasia, Fourth Session, Dunedin, New Zealand, February 1896, Dunedin, 1897*, p. 46.

⁸⁴ Margaret Turner was joined by politician James Service and other notable Victorian citizens such as Dr Tharp Girdlestone, surgeon, politician and Health Officer of the City of Melbourne, Dr James Neild, pathologist, lecturer and co-founder of the Victorian Branch of the British Medical Association, and Dr James Jamieson, university lecturer and Girdlestone's successor as Melbourne's Health Officer. ['Australian Health Society', *AMJ*, August, 1875, pp. 284-285. *AMJ*, January, 1876, p. 31. Australian Health Society, 'Council for the Year 1876-77', *Publications of the Australian Health Society Melbourne, 1875*. David Dunstan, 'Jamieson, James (1840-1916)', *Australian Dictionary of Biography, (ADB)*, adb.anu.edu.au/biography/jamieson-james-13004, accessed 6 February, 2012. Bryan Gandevia, 'Neild, James Edward (1824-1906)', *ADB*, adb.anu.edu.au/biography/neild-james-edward-4288, accessed 6 February, 2012. Geoff Browne, 'Girdlestone, Tharp Mountain (1823-1899)', *ADB*, adb.anu.edu.au/biography/girdlestone-tharp-mountain-12939. Geoffrey Serle, 'Service, James (1823-1899)', *Australian Dictionary of Biography*, adb.anu.edu.au/biography/service-james-4561.

⁸⁵ Australian Health Society, *Report 1876-77*, p. 4, SLSA. Judith Raftery, 'The Social Meaning of Health: Disease, Medicine and Human Existence The Australian Experience', *Unpublished paper*, University of Adelaide, 1992, pp. 14-16. (With thanks to the author.)

contagious but the words to be presented to government were tempered by the phrase ‘the disease [was] *to some extent an infectious one* [my emphasis].⁸⁶

During the last two decades of the nineteenth century Australian doctors grappled with a new medical science that challenged long held assumptions about disease, and particularly about tuberculosis. Caution co-existed with a growing faith in science, but by the turn of the century few questioned the validity of Koch’s bacteriological explanation whether they had discarded earlier ideas or merely grafted bacteriology onto those ideas.

ANTI-TUBERCULOSIS CAMPAIGN

By the late 1890s the essential elements of a public health campaign had been articulated. In South Australia Dr Alan Campbell, a Member of the State’s Legislative Council, successfully argued for the inclusion of pulmonary tuberculosis as a notifiable disease in that colony’s 1898 Health Act.⁸⁷

Bacteriology, he argued, provided certainties about disease causation placing a new onus on the state in the realm of public health. He said,

...this certainty gave the reason to legislators to embody in law that amount of compulsion that the truths of science say is absolutely necessary for the safety of the public from disease.⁸⁸

Other colonies did not immediately follow South Australian legislation but medical practitioners urged preventive action bringing the essentials of an anti-tuberculosis movement to the attention of the state and the general public. In 1899, Dr Ashburton Thompson, Chief Medical Officer of New South Wales, presented to the

⁸⁶ Springthorpe, *Transactions of the Intercolonial Medical Congress of Australasia*, Fourth Session, 1896, p. 55.

⁸⁷ South Australia, Legislative Council, *Parliamentary Debates*, 1897, 1898. *Health Act*, 1898, (SA)

⁸⁸ South Australia, *Parliamentary Debates*, Legislative Council, 24 August 1897. *Health Bill* 1897 (SA).

Medical Congress of that year a comprehensive scheme to prevent tuberculosis. He urged the state, the medical profession and the general populace to act in concert to eradicate consumption, or at least “reduce [it] to sober limits”.⁸⁹ He called on the state to make pulmonary tuberculosis a notifiable disease, provide free bacteriological testing of sputum, enforce disinfection of dwellings, enact good building laws and instruct notified consumptives on preventive measures. Although Thompson mentioned the need to improve poor housing conditions he focussed on the consumptives themselves rather than their environment and saw systematic notification to public authorities as the basis of preventive measures. Some doctors opposed notification on the grounds that the state might misuse the information. Thompson dismissed this opposition saying that opposition to notification “seem[ed] to be sheer capriciousness or sentimentality”. In language that was to become typical of the campaign he commented:

Try to imagine ... police charged to control unruly characters, but entirely ignorant of their appearance, habits, haunts and journeyings. ...Yet that is the position of most States in relation to living consumptives among the population.⁹¹

Thompson also believed private organisations would be part of the campaign by providing hospital accommodation for consumptives who posed a danger to others and educating the public through printed material, verbal advice and demonstrations from ‘discreet visitors’. The central methods of his proposed scheme were first, notification and subsequent supervision of consumptives and second, segregation and education of consumptives on how to avoid spreading their disease.⁹² In Victoria, Dr James Jamieson, the Health Officer for the City of Melbourne, suggested similar measures.⁹³

⁸⁹ Thompson, ‘On the Guidance of Public Effort Towards the Further Prevention of Consumption’ *Intercolonial Medical Journal (IMJ)*, 20 October 20, 1899, p. 386.

⁹⁰ *ibid.*, p. 502.

⁹¹ *ibid.*, p. 501.]

⁹² *ibid.*, pp. 502-504.]

⁹³ James Jamieson, M.D., ‘Tuberculosis and its Prevention’, *IMJ*, 20 November, 1898, pp. 637-643.

Prominent physicians such as Sydney Jones in New South Wales and Joseph Verco in South Australia⁹⁴ tried to establish private organisations for the prevention of tuberculosis by enlisting the support of well known public figures.⁹⁵ Such organisations had been formed in a number of countries including Austria, Denmark, France and England.⁹⁶ In Australia only the New South Wales association formed first in 1901 for four or five years and then re-formed in 1909 survived as an active organisation. In 1901 on 30 September a public meeting on the problem of consumption was convened by the Mayor of Sydney at the request of medical staff from Sydney's leading hospitals. The *Sydney Daily Telegraph* reported the meeting under the heading 'Fighting Consumption...' 'The Greatest Enemy of the Human Race', A Special Hospital Needed, The Duty of the State.⁹⁷ This meeting decided to send a deputation to the Premier seeking the establishment of a hospital for advanced cases and to form an association for the prevention of tuberculosis. The meeting recognised that the poorer members of society who lived in unsanitary and overcrowded conditions, suffered most from this disease. But, as it was not possible, according Sydney Jones, to provide the appropriate sanitary

⁹⁴ *Sydney Daily Telegraph*, (DT), 1 October, 1901, Newspaper Cuttings on Tuberculosis, Vol 183, ML. Jos. C. Verco, M.R.C.S., 'Inaugural Meeting of the South Australian National Association for the Prevention of Consumption, 24 October, 1903, SLSA. Dr. Sydney Jones was appointed to the New South Wales Board of Health in 1873. He was an examiner in clinical medicine at the University of Sydney, a fellow of the University's senate from 1887-1918 and vice-chancellor from 1904 to 1906. He was knighted for his work in tuberculosis in 1905 having been a founder of the Queen Victoria Homes for Consumptives, president of the King's Tableland Sanatorium for Consumptives and appointed to the New South Wales Tuberculosis Advisory Board established in 1912. [John Garrett, 'Jones, Sir Philip Sydney (1836-1918)', *ADB*, adb.anu.edu.au/biography/jones-sir-philip-sydney-3870, accessed 8 February, 2012.] Joseph Verco was an honorary physician at the Adelaide Hospital and honorary Medical Officer at the Adelaide Children's Hospital. In 1885 he co-founded with Edward Stirling the medical school of the University of Adelaide, on the council of the University and president of the British Medical Association, South Australian Branch. [R.V. Southcott, 'Verco, Sir Joseph Cooke (1851-1933)', *ADB*, adb.anu.edu/biography/verco-sir-joseph-cooke-8914.

⁹⁵ B Burnett Ham, DPH, MD, MRCS, LRCP, 'The Spirit of Hygeia in Australia', *Transactions of the Intercolonial Medical Congress of Australasia*, Sixth Session, Hobart, 1902, Hobart, 1903, p. 429. Verco, Address to the Inaugural Meeting of the South Australian' p. 5, SLSA.

⁹⁶ Dubos, *The White Plague Tuberculosis*, p. 210-211.

⁹⁷ *D.T.*, 1 October, 1901, Newspaper Cuttings on Tuberculosis, Vol 183, ML.

living and working conditions at this time, the resolution of the problem was seen to rest with state provision of a hospital for the segregation of advanced cases who were ‘a source of danger to themselves and to all around them’.⁹⁸ It was another three years before the National Association for the Prevention of Consumption was formally established in New South Wales.⁹⁹ Its stated purpose was first, to educate public opinion and ‘stimulate individual initiative’ through pamphlets, public lectures and co-operation with other health bodies, and second, to influence government and other public authorities and press for the establishment of special hospitals and sanatoria.¹⁰⁰ By the time of the annual meeting in 1905 the Association had printed and distributed 100,000 leaflets, which the Minister for Public Instruction had ordered to be read in all public schools.¹⁰¹ Press references to this organisation end in 1906 but a new body was formed in 1910 called the National Association for the Prevention and Cure of Consumption,¹⁰² which survives today as the Australian Respiratory Council.¹⁰³ Other organisations also proffered advice to the public. The health journal of the Seventh Day Adventist Church for instance, which began publication early in 1898, alerted its readers to the contagious nature of tuberculosis and offered preventive advice.

Doctors and philanthropists initiated a campaign, or ‘crusade’, as they commonly referred to it, against tuberculosis. They called for anti-spitting legislation,

⁹⁸ .ibid..

⁹⁹ ‘Care of Consumptives’, *Sydney Morning Herald (SMH)*, 24 May 1906, p. 4.

¹⁰⁰ *D.T.*, 12 October, 1904, *Newspaper Cuttings on Tuberculosis*, Vol 183, ML

¹⁰¹ *D.T.*, 28 October, 1905, *Newspaper Cuttings on Tuberculosis*, Vol 183, ML

¹⁰² K.W.H. Harris and Roma Thomson, ‘The Community Health and Anti-Tuberculosis Association of New South Wales, a Great Voluntary Organisation’, in A.J. Proust (ed), *History of Tuberculosis in Australia*, 1991, pp. 54-57. *The Sydney Mail*, 22 January 1913, *Newspaper Cuttings on Tuberculosis*, Vol 183, ML.

¹⁰³ Peter J. Tyler, ‘Detecting Tuberculosis: Analysis of a National Campaign’, 40th Biennial Congress of the International Society of the History of Medicine, Budapest, August 2006, p. 1. (With thanks to the author). For an account of the Community Health and Anti-Tuberculosis Association see Peter J. Tyler, *No Charge, no undressing: fronting up for good health*, Community Health and Tuberculosis Australia, Sydney, 2003.

compulsory notification of the disease, state provision of institutions for the isolation of indigent consumptives and public education measures. The principal concern of the campaign was pulmonary tuberculosis the major killer of the various forms of the disease and the most prevalent among adults between the economically productive ages of 20 and 45.

Despite the often expressed view that Australia offered greater opportunities for a healthier life than Britain or Europe, doctors recognised the degree to which this expectation of health failed to meet the colonial reality. For example, James Jamieson who would become Health Officer for the City of Melbourne from 1885-1912,¹⁰⁴ in a lecture for the Australian Health Society in 1882 wrote of the prevalence of phthisis in Melbourne:

[its] ravages in this city are nothing less than a disgrace. That with our excellent climate, and the necessaries of life abundant and cheap, and in a city which dates almost from yesterday, there should be almost as many deaths from consumption, in proportion to population, as London, indicates a state of things redounding little to our credit.¹⁰⁵

Such fatalism, however, was not to survive the nineteenth century as tuberculosis increasingly came to be seen as a disease able to be conquered by public health measures and philanthropic interventions. This shift in attitude began cautiously after the discovery of the *tubercule bacillus* in 1882. By 1900 anti-tuberculosis campaigns were underway in most western countries.

SCIENCE AND THE STATUS OF THE MEDICAL PROFESSION

An important aspect of the shifting position of the medical profession was not only acceptance of Koch's evidence, but a growing faith in science generally and its

¹⁰⁴ Paul Hicks, '“Most Humble Houses”': some Notes on the Housing Investigations in Melbourne: 1913-17', *Labour History*, Number 52, May 1987, p. 54.

applicability to medical practice. Doctor Sydney Jones aptly expressed this developing scientific frame of mind, in his presidential address to the 1892 Medical Congress. He noted that the progress of medicine was intimately connected to the progress of all sciences because, he said, “it is one of the glories of our art that nearly all the sciences are tributary to it”¹⁰⁶ To forestall potential objections to his praise of science he said:

...Now, we must all admit that our treatment of disease is not always as precise and rational as we could desire; but that empiricism, ... has given place very largely and rapidly to treatment founded on sound scientific principles...¹⁰⁷

By 1896 the President of the Medical Congress was calling on medical men to be scientific in thought and practice ‘above all things’. For us he said, ‘science is light’.¹⁰⁸

Linked to the faith in science was increasing self confidence within the medical profession and the rising status of practitioners. Pensabene, in his study of the rise of the medical practitioner in Victoria, concluded that doctors’ status improved substantially only after 1900. However, he dates the beginning of the change in status from the 1870s and links their improved status with the scientific advances of the late nineteenth century.¹⁰⁹

¹⁰⁵ James Jamieson, MD, ‘Diseases which should be prevented’, a lecture delivered under the auspices of the Australian Health Society, April, 1882, p 16, in *Publications of the Australian Health Society*, Melbourne.

¹⁰⁶ P. Sydney Jones, ‘The President’s Inaugural Address’, *Transactions of the Intercolonial Medical Congress of Australasia*, Sydney, New South Wales, September, 1892, Sydney, 1893, p. 30.

¹⁰⁷ Jones, ‘The President’s Inaugural Address’, *Transactions of the Intercolonial*, 1892, p. 31. See also F.C. Batchelor, ‘The President’s Address’, *Transactions of the Intercolonial Medical Congress of Australasia, Fourth Session*, Dunedin, New Zealand, February 1896, Dunedin, 1897, pp. 25-29.

¹⁰⁸ Batchelor, ‘The President’s Address’, *Transactions of the Intercolonial*, 1897, p. 27.

¹⁰⁹ T.S. Pensabene, *The Rise of the Medical Practitioner in Victoria*, Australian National University, Health Research Project, Australian National University, Canberra, 1980, pp. 5, 33.

Pride, often hubris, in their profession and its knowledge, coupled with a clear view of their role as leaders in matters of public health, was evident in the forums of medical practitioners. In 1881, three years after the formation of the Victorian Branch of the British Medical Association, that branch's president pronounced:

[there is]...a better recognition of the grandeur of the calling, Because it is a means to live, it is not forgotten that is also a means whereby the world may be rendered physically a great deal happier, and by consequence morally better. ¹¹⁰

In 1892 Sydney Jones remarked that the profession had long since ceased to be open to Voltaire's charge that "the art of medicine consists in putting a number of drugs of which one knows little into a body of which one knows less".¹¹¹

The confidence of doctors in their knowledge and in particular the exclusivity of their knowledge was illustrated in the following comment by Wilton Love on why doctors alone must be responsible for notifying authorities of contagious diseases.

He said of the medical practitioner:

...He alone is qualified to diagnose the disease; he alone, bearing in mind the ignorance, poverty, and other disqualifications of large numbers of persons, is qualified by his education, his appreciation of the necessity of the case, his freedom from interest, prejudice, alarm, or confusion, to notify it¹¹²

Neville Hicks has suggested the rising status of the medical profession to be a key theme in understanding Australia's history of medicine and health.¹¹³ The identification of tuberculosis as a public health problem coincided with this rising status and also contributed to it. The discovery of the bacillus coupled with an

¹¹⁰ Dr Neild, 'Association Intelligence', (presidential address to the third annual meeting of the Victorian branch of the British Medical Association), *AMG*, August, 1882, p. 154.

¹¹¹ Jones, 'The President's Inaugural Address', *Transactions of the Intercolonial*, 1893, p. 31.

¹¹² Wilton Love, M.B., 'Compulsory Notification of Infectious Diseases', *Report of the Sixth Meeting of the Australasian Association for the Advancement of Science*, Brisbane, Queensland, January 1895, Australasian Association for the Advancement of Science, Sydney, NSW, p. 834, ML.

¹¹³ Neville Hicks, 'Medical History and History of Medicine', in G. Osborne & W.F. Mandle (eds), *New History Studying Australia today*, George Allen & Unwin, Sydney 1982, p. 78.

increasing faith in science enhanced the standing of medical practitioners.¹¹⁴ This in turn gave doctors the authority to direct how government and community ought to use this knowledge. As Thompson's 1899 programme for tuberculosis demonstrated, doctors tried to influence governments by calling on them to institute preventive legislation and provide public facilities for consumptives unable to afford their own treatment. The poor were seen as the greatest danger to the community. The campaign rhetoric was strong on prevention and isolation. State employed physicians and leaders of the medical profession used their new found scientific knowledge to press governments to help them control a disease for which they had no cure. Mark Caldwell noted of American doctors that they looked for a means of maintaining their authority as experts and healers in the face of incomplete knowledge about the processes of the disease. Understanding the aetiology did not lead directly to a cure, nor did it explain the often erratic nature of the disease which saw seemingly minor cases deteriorate quickly and more serious cases improve. American doctors, Caldwell argued, instituted the regimen of the sanatoria to fill a gap in their own scientific knowledge.¹¹⁵ Similar observations can be made of Australian doctors. The anti-tuberculosis movement resulted from both a faith in science and the failure of science. Science had provided the cause but not the cure. The best defence of the new medical science was to use it to promote preventive methods. As Joseph Verco put it in 1903 to that State's inaugural meeting of the National Association for the Prevention of Consumption, '...the crowning glory of our profession is Preventive Medicine'.¹¹⁶ By shifting the emphasis to preventive measures, which stressed the importance of appropriate

¹¹⁴ Sheila M Rothman, *Living in the Shadow of Death, tuberculosis and the social Experience of Illness in American History*, Basic Books, 1994, p. 180.

¹¹⁵ Mark Caldwell, *The Last Crusade, The War on Consumption 1862-1954*, Atheneum, New York, 1988, p. 96

individual behaviour, patients not doctors could take responsibility for their prognosis.

NATIONAL HEALTH

The anti-tuberculosis movement also coincided with a wider campaign to improve the health of Australians. The infant welfare movement emerged at the turn of the twentieth century. A number of historians have drawn attention to the climate of concern about national efficiency and population growth in which the Australian infant and child health movement arose. Decreasing the rate of infant mortality by establishing child welfare centres was viewed as a way to secure population growth and national prosperity.¹¹⁷ As the President of the 1896 Medical Congress put it, 'The joint prosperity and advancement of a nation depend upon its physical and moral health.'¹¹⁸ Tuberculosis was also included in these deliberations about health and economic prosperity. Of particular concern was the fact that consumption struck down young and middle aged adults, the period in life when their economic value was at its peak. A report to the Minister for Health in Victoria in 1909 put it this way,

...its victims are for the most part young adults, on whose up-bringing, education, and training much care, labor, and money have been expended, and who are just coming to their full productive stage, both vital and economic.¹¹⁹

¹¹⁶ Verco, MRCS, 'Address to the Inaugural Meeting of the South Australian Branch' of the 1903, p. 5, SLSA.

¹¹⁷ Philippa Mein Smith, 'Infant Welfare Services and Infant Mortality: A Historian's View', *The Australian Economic Review*, 1st Quarter, 1991, P. 23. Mein Smith argued that infant welfare centres were not a significant factor in the decline of infant mortality. See also, Judith Raftery, 'Mainly a Question of Motherhood': Professional Advice-giving and Infant Welfare', *Journal of Australian Studies*, No. 45 June, 1995, p. 67. Milton Lewis, 'The Problem of Maternal Mortality and Population Growth in Australia, 1880-1939: Some Ideological Considerations', *Community Health Studies*, Volume IV, Number 2, 1980, pp. 104-110.

¹¹⁸ Batchelor, 'President's Address, *Transactions of the Intercolonial* 1897, p.31.

¹¹⁹ cited in 'Chairman's Address', *Conference on Consumption, A Digest of the Proceedings of the Conference of Representatives of local Boards of Health in the Metropolitan Area of Adelaide*, 1909, p. 6.

The chronic nature of tuberculosis also made it a target for concern about its cost to the nation. Not only were people dying when they ought to be most economically productive, but their illness was a lingering one which created an additional economic burden. Joseph Verco said,

Could the political economist calculate the financial loss to the State inflicted by tuberculosis in the protracted illness and consequent inactivity of its victims, during which they are consumers and not producers; in the cost of their nursing, their delicacies and drugs; and in their comparatively early death, how strong an argument would be offered of an attempt to prevent its ravages?¹²⁰

Ramsay Smith, President of the South Australian Central Board of Health put the cost of consumption in South Australia in 1909 at £160,000.¹²¹ The State revenue of South Australia in 1908-1909 was £3,591,260.¹²² At a national level he suggested a cost of £40,445,240 from 1880 to 1907.¹²³

Allied to economic concerns was a fear that the 'British race' was in physical decline. In Australia where there was great concern about the declining birth rate, and in the political and social climate that led to the White Australia policy, the notion of race deterioration can be seen as a potent influence on public health crusades. While specific references to race decline were not particularly prevalent in Australian medical journals, the notion of constitutional weakness generally and inherited vulnerability to tuberculosis was a common theme. In his speech to the general meeting of the Medical Congress in 1896 which met to consider tuberculosis, J. W. Springthorpe stressed the importance of constitutional weakness (which he believed to be a disease in itself), and inherited vulnerability in the development of tuberculosis. In eugenicist language he noted that 'in-breeding

¹²⁰ Verco, MRCS, 'Address at the Inaugural Meeting of the South Australian Branch, 1903, p. 4.

¹²¹ W. Ramsay Smith, DSC, MB, FRS, *Report of the Control of Consumption in South Australia*, 1911, p. 7, SLSA.

¹²² Commonwealth Bureau of Census and Statistics, *Official Year Book of the Commonwealth of Australia*, 1901-1909, No. 3, 1901, G.H. Knibbs, Melbourne, 1910, p. 810.

[and] unhealthy ancestry' denied to many the birth right of a healthy constitution. Springthorpe pursued his theme on heredity and weakness in a further address entitled 'The Battle for Life'. Winning the battle depended on heredity and development with the greatest gift being healthy parents, but 'by thousands of thousands the inherited momentum continues towards weakness'.¹²⁴

The President of the 1905 Congress, Professor Stirling, spoke of 'unmistakable evidence of the physical deterioration of the race'.¹²⁵ Stirling praised the progress of science and medicine in recent times, but then expounded on what he called 'that [side of] the ledger of national life ...which is not so flattering to our pride of [sic] progress'.¹²⁶ This 'other side' included consumption still present not because medical science had failed, but because of ignorance, neglect or even genuine poverty. The degeneration of the race was manifest in increased levels of insanity, alcoholism, high infant mortality and the declining birth rate.¹²⁷ A pride in scientific and medical progress was tempered by the realities of illnesses like tuberculosis and cancer and the high infant mortality rate which fed the notion of physical decline. Tuberculosis was firmly placed in the category of social maladies indicative of race decline which could be ameliorated by changed behaviour.¹²⁸

¹²³ W. Ramsay Smith, Dsc., MB, FRSE, *On Consumption*, Melbourne, 1909, Reprinted from "The Australasian Traveller" for August and September 1909, p. 10.

¹²⁴ J.W. Springthorpe, 'The Battle for Life', *Transactions of the Intercolonial Medical Congress of Australasia*, Fourth Session, 1896, pp. 38 -43, 268.

¹²⁵ E.C. Stirling, 'President's Inaugural Address', *Transactions of the Australasian Medical Congress (Formerly the Intercolonial Medical Congress)*, Seventh Session, Adelaide, September, 1905, Adelaide, 1907, pp. L, Li.]

¹²⁶ *ibid.*, p. I.

¹²⁷ *ibid.*, pp. L, Li, Lii.]

¹²⁸ Claudia Thame noted that discussion about tuberculosis had moral overtones and "because tuberculosis was a disease of the poor in overcrowded cities, it was associated with drunkenness, irresponsibility and race degeneration".[Claudia Thame, 'Health and the State: The Development

Conclusion

Examination of the Australian evidence suggests that new scientific knowledge underpinned Australia's crusade against the 'white plague'. Doctors were moved by a growing acceptance and then outright enthusiasm for the new science of bacteriology and indeed an expectation that scientific knowledge would be the panacea for society's ills. In this case it was a belief that, armed with scientific knowledge of the aetiology of tuberculosis, doctors and governments could prevent the spread of the disease. Doctors spoke ardently of the curability of tuberculosis in light of the new science. There was, however, a strong emphasis on prevention in the campaign rhetoric, which reflected a realisation that despite the claims of curability, most understood that a real cure was beyond their reach. As James Jamieson, Lecturer on Medicine at the Melbourne University commented more modestly than others:

The unfeigned faith in the efficacy of medicine, as it exists in the popular mind, may sometimes serve as a consolation to the physician, when weighed down, as he often must be, with a sense of his own helplessness¹²⁹

The Australian movement reflected similar responses abroad. Doctors drove the campaign in a climate in which matters such as 'the survival of the race' and national efficiency were of public concern. The loss of economic productivity as a result of invalidism caused by tuberculosis was a consistent underlying concern of the campaign for the next five decades.

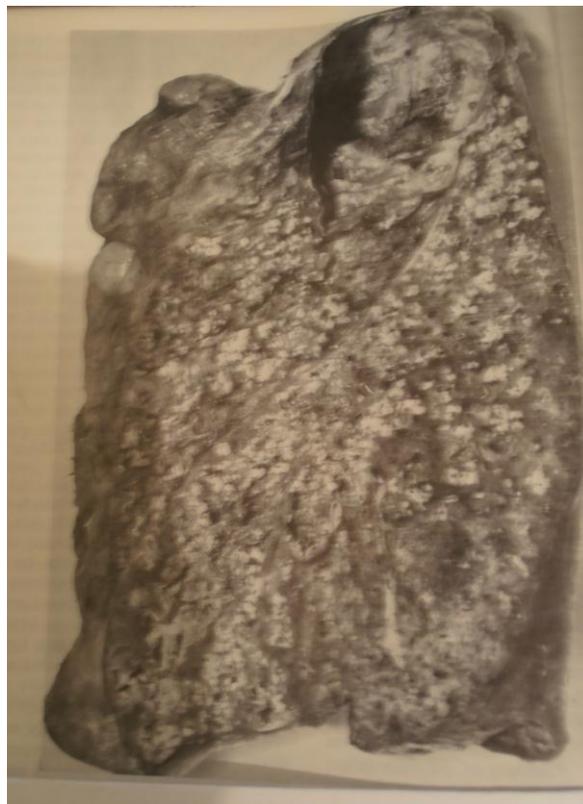
The medical profession set the tone of the anti-tuberculosis crusade, which was taken up by other health campaigners. Some of the advice was sensible and some

of Collective Responsibility for Health Care in Australia In the First Half of the Twentieth Century', PhD thesis, Australian National University, June 1974. p. 18.]

¹²⁹ James Jamieson, MD, 'On the significance of the term "cure" in medicine', *Transactions of the Intercolonial Medical Congress of Australasia*, Sixth Session, 1903, p. 115.

sympathetic but the language became more strident as did the moral overtones.¹³⁰ A placard displayed at the 1909 Anti-Tuberculosis Congress in Washington and reprinted in the Australian *Good Health* magazine read ‘Tuberculosis can be cured by cleanliness of mind, of body, of morals...’¹³¹ With language that described tuberculosis as ‘the great Juggernaut... [that] passes up and down our streets, mercilessly crushing its victims under its mammoth wheels...’¹³² it is hardly surprising that nineteenth century fatalism would give way to twentieth century tuberculophobia.¹³³

ILLUSTRATION 2



Pulmonary tuberculosis with large cavity at apex and metastasis throughout the rest of the lung.

Source: W.A.D. Anderson, Thomas M. Scotti, *Synopsis of Pathology*, The C.V. Mosby Company, St. Louis, 1980, p. 142.

¹³⁰ See also Thame, ‘Health and the State’, 1974, p. 18.

¹³¹ ‘The Anti-Consumption Crusade’, *Good Health*, 1 May, 1909, p. 90.

¹³² D.H. Kress, MD, ‘Consumption’, *Good Health*, May 1, 1902, p. 71. Also see *The Herald of Health*, August 1899, p. 115.

¹³³ Tuberculophobia is defined as ‘unreasoning fear of becoming infected with tuberculosis’. [Critchley, *Butterworths Medical Dictionary*, p. 1762.]