

## **Radical Reformers: The Role of Medical Men in Improving Working Conditions in the Bendigo Goldmines, 1890-1910**

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**T**he occupational health and safety movement of the early twentieth century went ahead with only minor support from the medical profession. It was a movement created and maintained by trade associations and workers, and to a large extent by the Friendly Societies that had had to bear the brunt of providing for sick and injured workers and their families. It rose despite resistance from owners and managers whose attitudes were sometimes reinforced by the medical profession who, in the quest for aetiology, could point to behaviour or constitution of workers, rather than to working conditions. Rarely were the occupational/industrial physicians of the early twentieth century seen in the workplace; rather, their role became increasingly one of treatment after the event, or colluding with management in screening out sick workers who might claim compensation. The Royal Commission of New South Wales, 1912, decried the ‘self-confessed ignorance and disinterest of the medical profession with regard to the occupation of patients as conceivably relevant to their disease’.<sup>1</sup>

In the opinion of Michael Quinlan, this rather pessimistic picture of the attitudes of the medical fraternity is compounded because labour historians have largely eschewed research on the relationship between disease and work.<sup>2</sup> It may be an outcome of this imbalance that the role of some medical men who did go to the workplace and who did recognise the relevance of occupation to disease and who were instrumental in bringing about change, has been largely unrecognised.

This paper addresses some of this imbalance through an examination of the roles of those Bendigo doctors who worked and lobbied for improved occupational health and safety for victims of an industrial disease that played a major role in the development of Occupational Health and Safety principles in Australia. The disease was silicosis – a condition suffered by metal miners and defined by the 1950 Sydney International Conference of Experts on Pneumoconiosis as ‘a diagnosable disease of the lungs produced by the inhalation of dust’.<sup>3</sup> The sharp particles of silica dust found in metal mines embedded into the lungs of miners and often led to long-term illness and early death. Silicosis is classified, with other lung conditions such as asbestosis, as a

pneumoconiosis, a generic name applied to diseases which cause scarring of lung tissue through inhaling contaminants such as silica, asbestos, beryllium, or aluminium. Silicosis is not usually in itself a life-threatening disease, but its presence predisposes miners to other lung diseases, particularly tuberculosis. The latter was rife in the regional goldmining city of Bendigo where miners were particularly prone to the disease which, in their case, manifested as a lethal combination of silicosis and tuberculosis, often complicated by various other lung conditions.

### **A hazardous occupation**

The hazards and risks to health of the mining occupation had long been recognised. The Greek historian, Herodotus, linked miners' sickness with inhalation of dust and the Romans identified poor ventilation as associated with similar disorders.<sup>4</sup> In spite of this, the effect of their occupation on miners' health had been largely ignored in the medical arena until the publication in 1700 of Ramazzini's *De Morbis Artificum*, which is held by many to be the genesis of modern occupational medicine. In 1770 a Dr Scheffler stated that '... the patient is a miner and he must die!'.<sup>5</sup> Whilst the existence of disease caused by mining was recognised, it was thus held at that time to be an inevitable outcome for those foolish or unlucky enough to choose mining as their occupation. In Bendigo in the 1880s there seems to have been a similar acceptance of the *status quo*, such as expressed by an anonymous local journalist who wrote of his boyhood in that period: 'First Tom's father grew very white and thin, then Dick's father and Sam's. It was miners' complaint they told us. We looked upon the disease as the necessary inheritance of miners, and so did everybody else for that matter'.<sup>6</sup>

The perceived importance of silicosis came later and was demonstrated through the establishment in the new Commonwealth Department of Health under the prime ministership of William Hughes, in 1921, of the Division of Industrial Hygiene. This was set up specifically to deal with silicosis, tuberculosis and lead poisoning. There were two likely reasons for the interest demonstrated in these particular conditions. One was that the 'Big Strike' in Broken Hill from May 1919 to November 1920 had won workers' compensation for lead poisoning and silicosis, and management of the condition was becoming both a health and an economic necessity. The other reason was that Hughes was the member for Bendigo from 1916 to 1922 and was concerned that Bendigo was suffering from epidemic rates of silicosis and tuberculosis amongst its

goldminers, a legacy of the deep reef mining that was the source of much of Australia's wealth.<sup>7</sup>

Prior to this, especially through to the 1880s, concerns about the health of Bendigo miners had still not emerged into the public realm. It is an interesting predilection of societies to pay significant attention to injury from accidents and to largely ignore sicknesses generated in the occupational milieu. In the metal mining industry, rockfalls or accidents with dynamite could kill a number of men quickly and would attract a large amount of publicity, whilst disease that killed many more workers slowly, passed unnoticed.

This seeming lack of concern changed, however, as the poor health and early death of the Bendigo miners began to attract the attention of the local doctors. It is to the story of a few outstanding doctors, working in Bendigo between 1890 and 1910, that we address in this paper. These were men who no longer took for granted that early death was a 'necessary inheritance', or that because a man was a miner 'he must die'. Unlike most of the medical profession at the time, they were able to see the relevance of work conditions to the disease. They participated in the progress of the medical understanding of silicosis and made significant contributions through research and political lobbying to bring it to public notice.

Information about chronic lung disease in miners, known variously as mining disease, miners' consumption, miners' phthisis or, quaintly, the disease of worn-out miners, did not appear in the Australian medical literature until the 1890s.<sup>8</sup> The nature of the disease was even then poorly understood. It was generally accepted as a type of consumption, phthisis or tuberculosis suffered particularly by miners. At the same time there was some recognition that it was exacerbated by dust in the mines, particularly after the introduction of the pneumatic drill in the 1850s, although this was only one of several views. Early theories about miners' disease also held that the strong smell of explosive fumes was responsible. Evidence was given at a mining conference held in June 1874, which tabled letters from two Bendigo doctors, Edwin Hinchcliffe and Oliver Penfold.<sup>9</sup> Hinchcliffe, general surgeon of the Bendigo Hospital, stated that he had seen no cases of disease caused by working with explosives. He added:

All persons working underground for any time had a deposit of black pigment in the lungs, chiefly derived from the smoke of candles and lamps being inspired which, if neglected or long continued acted as an irritant to lung tissue both as a predisposing and exciting cause of lung disease.<sup>10</sup>

The letter from Penfold took a different stance:

The effects of breathing air mixed with the products of the explosion of blasting substances are to produce headache, loss of appetite, nausea, a sense of weight in the chest ...

He went on to say that ‘... vigorous healthy men were not likely to suffer permanent injury from breathing the contaminated atmosphere’.<sup>11</sup> The remedy, Penfold concluded, was to ‘breathe as slowly as possible through the nostrils with the mouth shut and that whenever practicable plenty of fresh air should be supplied to the workings to dilute the noxious fumes’.<sup>12</sup>

In June 1881, a visit by the Explosives Enquiry Board to Eaglehawk, a borough some six miles [9-10 km] from Bendigo, largely inhabited by miners and their families, brought further attention to the possible effect on miners’ health of vapours from explosives. A sub-committee of delegates, including a number of medical men, was sent to the Enquiry Board by the Bendigo Friendly Societies which were ‘becoming alarmed at the excessive demands made upon the funds of the lodges by those members who are engaged in mining pursuits’.<sup>13</sup> One of these, Dr J.J. Thom, reported that sudden changes of temperature were probably mainly responsible for miners’ ill health, and that ‘if there was any tendency to disease in the constitution of the miners they would probably suffer severely by working with dynamite’. He added that ‘the sanitary condition and ventilation of the mines was usually well attended to’.<sup>14</sup>

Fumes and dust in the air fitted well with accepted medical wisdom at the time which held that miasma or ‘the putrid smell of contaminated and drying [sic] matter’<sup>15</sup> was the cause of sickness. Pasteur’s germ theory was not fully accepted until 1896, only gaining momentum with the discovery of the tuberculosis bacillus by Koch in 1882. Also implicit in the doctor’s statement to the Explosives Enquiry Board was the blame attached to the constitution of the worker rather than to the occupational environment.

Early legislation enacted to improve the lot of miners in Victoria concentrated on introducing safety regulations and these were successful in significantly reducing the deaths from accidents in the Bendigo mines. The earliest of these was the Mining Statute of 1865, a bill initiated by the local member for Bendigo, Thomas Carpenter. Basic safety regulations were enforced by Angus McKay’s *Regulation of Mines Act 1874*. Prior to the 1874 legislation, 90 of 46,512 (0.19 per cent) miners were killed in Bendigo and 245 (0.53 per cent) were injured. In 1888 the numbers had dropped to 36 of 25,142 (0.14 per cent) killed and 76 (0.3 per cent) injured.<sup>16</sup> In the meantime, by

1902, six times more men had died from miners' disease than from accidents; however, they had not received anything like attention proportionate to loss of life from accidents.<sup>17</sup>

Further local public comment of an official nature came from Dr James Eadie, a medical graduate of Glasgow University, who had arrived in Bendigo in 1854 and in his later years became the Bendigo City Health Officer. His first report as a health officer was presented at the Mayoral inauguration in 1889. In it, almost as an afterthought, he added after commenting on certain epidemiological matters:

In looking over my statistics, I am struck with the great number of deaths from phthisis or consumption, no less than thirty-four having died of this disease during the last twelve months. This large number is greatly accounted for by the fact that people suffering from this complaint move to Sandhurst from all parts with a view to recovery and moreover consumption is a disease common amongst miners owing to the nature of their employment.<sup>18</sup>

Eadie continued until his retirement in 1897, at age 78, to draw attention to the prevalence of phthisis and its connection with the mining industry.

### **Preventative measures**

One of the most vocal doctors seeking change was Dr Stewart Cowen. In 1897, Cowen, also a Glaswegian, came from practice in the small Victorian town of Charlton to set up in Eaglehawk where he was in the position of treating large numbers of sick miners. Following Eadie's report, Cowen read a paper before the local branch of the Australian Natives Association that was later published in the *Intercolonial Medical Journal*.<sup>19</sup> In this paper he labelled tuberculosis a scourge on the mining community of Eaglehawk. He had carried out some extensive research on the death registers, extrapolating Eaglehawk figures (Tables 1 and 2). In his own words, these showed 'in a remarkable manner the enormous death-rate among men (principally miners) after the age of 45 years, being at the rate of thirteen to one as compared with women'.<sup>20</sup> Cowen held that, thanks to Professor Robert Koch's discovery of the tuberculosis bacillus, the nature of the scourge was no longer a mystery, describing underground conditions as conducive to the propagation of the disease. We see here that in the early twentieth century the disease was still closely associated with tuberculosis. In spite of this view, Cowen also held tenaciously to the belief that the major contributing cause of miners' disease was the inhalation of silica-containing dust. He believed that preventative measures of using water to lay the dust and of improving ventilation in the mines were essential for

**Table 1:** *Eaglehawk: Deaths (adults) from tuberculosis 1882-1901.*

Age	Females	Males
16-30	40	27
31-45	<u>16</u>	<u>30</u>
	Sub total 56	Sub total 57
46-60	12	105
Over 60	<u>1</u>	<u>63</u>
	Sub total 13	Sub total 168*
	Total 69	Total 225

\*Shows influence of occupation, the large majority of men being miners; mortality seen especially after 45. Includes 5 blacksmiths, 7 publicans, 9 cabdrivers, 14 mining managers. Many of the publicans and cabdrivers had been miners.

Source: Stewart Cowen, 'Tuberculosis in a mining community', *Intercolonial Medical Journal*, 20, September 1902, p. 433.

**Table 2:** *Eaglehawk: Deaths (adults) from tuberculosis and accidents.*

Year	Males Tubercul.	Females Tubercul.	Accidents	Year	Males Tubercul.	Females Tubercul.	Accidents
1882	11	2	3	1892	7	2	4
1883	11	1	7	1893	10	3	2
1884	5	4	1	1894	11	3	3
1885	12	4	2	1895	15	6	3
1886	6	2	2	1896	13	3	5
1887	10	4	4	1897	13	1	0
1888	12	2	1	1898	16	10	1
1889	10	5	3	1899	20	2	4
1890	8	3	1	1900	12	5	2
1891	10	4	2	1901	13	3	1

First 10 years deaths: tuberculosis 95 males 31 females accidents 26

Second 10 years deaths: tuberculosis 130 males 38 females accidents 25

Total deaths: tuberculosis 225 males 69 females accidents 51

Source: Stewart Cowen, 'Tuberculosis in a mining community', *Intercolonial Medical Journal*, 20 September 1902, p. 433.

management of the condition. In 1904 this view was still contrary to much of most influential medical opinion. Many, including Professor David Orme Masson, late of the University of Melbourne, believed that ‘the effect of working in a hot atmosphere saturated by water vapour might be worse on the health of the miner than a hot, dry atmosphere laden with dust’.<sup>21</sup> Radiological evidence of lung changes produced by silicosis was not readily available at that time. X-rays had been discovered in 1895 but were still not an ordinary means of diagnosis.<sup>22</sup> Even when radiography became commonly used, the early stages of silicosis were not always easily diagnosed. The very early stages showed up on X-ray film as fibrosis, which could indicate any number of lung diseases, and the mottling effect on the film that was the first indication of silicosis could also indicate other diseases. Diagnosis was made even more precarious by the fact that the systemic symptoms of the disease often did not make an appearance for some years after the miner’s exposure to dust.<sup>23</sup>

Cowen maintained that treatment must be firstly preventative and then by ‘curing’ or ‘arresting’ the disease through ‘open air life’.<sup>24</sup> Adherence to this prescription for open air life is described poignantly by Fletcher Jones, the son and grandson of Cornish miners, who lived in Bendigo as a child. He remembered the sheeted verandas in ‘at least every third miner’s cottage’ where the sick miners lived their last days.<sup>25</sup> In the hot weather, when ‘summer fever’ added to the miners’ troubles, family members would wet the sheets if water were available, so that evaporation would cool the fevered men in the style of the old Australian Coolgardie safe.

Cowen used his lecture many times in his advocacy for reform, referring constantly to mining disease as ‘the scourge’.<sup>26</sup> His statistics appeared in the Annual Report of the Officers of the Australian Mining Association;<sup>27</sup> they were presented to the Executive Committee for the Prevention and Cure of Tuberculosis;<sup>28</sup> they were quoted in the *Australian Mining Standard*,<sup>29</sup> and they were reported in the *Argus*, which described him as a ‘medical enthusiast’.<sup>30</sup> His use of the term, ‘scourge’ became part of the vocabulary relating to the disease. As late as 1939 at a meeting of the Bendigo Trades Hall Council, the term ‘scourge’ was used to describe silicosis.<sup>31</sup> By this time the disease had become well understood in the community as an industrial condition caused primarily by exposure to silica-containing dust, and the term ‘silicosis’ had come into common usage, but the descriptive usage of the term, ‘scourge’ remained.

In July 1904, Cowen was part of a deputation to the Minister of Mines, Mr Donald McCleod that emphasised the ‘necessity for introducing provisions for

combating miners' complaint in the new Mines Bill'.<sup>32</sup> Cowen reiterated the importance of doing everything possible to improve ventilation and sanitation of the mines and the need to give mines inspectors full power to ensure standards were upheld.

The power given to mines' inspectors was a topic of ongoing dispute between advocates for improved conditions in the mines and the government. In 1887 a Ventilation of Mines Board was established and a report was issued in 1888. Legislation followed which stipulated that not less than 100 cubic feet of air [2.83 cubic metres] should be available to every man and boy working underground. However, by 1902, only two inspectors had been appointed and they had very little power to prosecute violations of the Act. Such enforcement had to be made through the Minister of Mines and consequently there was very little action taken.<sup>33</sup>

*The Bendigo Advertiser* picked up the issue of mining disease in a series of articles, later published in pamphlet form<sup>34</sup> that provides an overview of the various perceived medical causes and cures for the disease. These were divided between blaming the workplace and technology, and blaming the miner. Cowen reiterated his view that '... occupation - the conditions under which our men, our friends and our neighbours, work for their daily bread - is the most important factor here', but also expressed the opinion that the personal habits of the miners whilst underground were instrumental in spreading the disease.<sup>35</sup> Other medical opinions expressed varied in emphasis: Dr Harry Leigh Atkinson, described as 'one whose lengthy experience as a medical man and as an investor on this goldfield renders his opinion well worth quoting',<sup>36</sup> significantly and, it could be considered, cynically, prescribed fresh air and temperance and gave a clear impression that the miners should do more to help themselves.

But above all let the men take care of themselves. Let them get as much air and sunshine as they can, and let them be temperate, not only for their own sakes but for the sake of those that come after them.<sup>37</sup>

The other two doctors quoted in this instance were Drs Hugh Boyd and Charles Burke Gaffney. Both had been active in their advocacy for the improvement of mining conditions. Boyd (who claimed to have studied mining conditions) expressed the need for better mine ventilation and the use of water sprays to allay the dust and strongly supported the enlargement of shafts and the addition of crosscuts at different levels. He had not seen sprays in use but felt that they would assist in the settling of dust. Burke

Gaffney also identified the need for well ventilated mines. He had participated in the Mines Ventilation Board Inquiry by examining men who worked in the mines. In a lengthy medical account on the dangers of dust inhalation and its effects on the lungs he further reiterated his view that lack of oxygen in the mines caused such stress on the miners' hearts that they were permanently affected. He continued: 'I would like to see written in letters large and prominent in every mine two sentences, the watchword and the prayer of our miners – "Down with dust!" "Give us fresh air!"' .<sup>38</sup>

Thus, the one almost unanimous opinion was that improved ventilation of the mines was an essential preventative measure, whether the cause was held to be dust, bad air, lack of oxygen or high temperatures. This was becoming an issue that would not go away and in the last half of 1905 it was picked up by *The Argus*, a newspaper responsible for the distribution of a 28 year old trust from the Edward Wilson (The Argus) Estate. During that half-year the amount to be disbursed had been increased to £3,000. It was announced that a letter had been sent to the Bendigo Hospital Committee by Mr Robert Murray Smith, Chairman of the Edward Wilson Estate asking that inquiry into the causes of miners' disease be conducted through 'some prominent charitable institution in a great mining centre'. The proposal was that the estate would 'nominate a fully qualified young medical man to make a thorough investigation, associating him for this purpose with your institution'.<sup>39</sup> The letter mentioned the support given to their approach by Cowen of Eaglehawk, who 'was the first person to arouse interest in this question'. The hospital committee was only too happy to support this initiative, the only reservation coming from Burke Gaffney who questioned the stipulation that the appointed person should be a *young* medical man, for he felt that the services of the best qualified medical man should be obtained. The newspaper report says that Burke Gaffney 'knew very well what miners' disease was but, unfortunately, there were no known means of preventing it. That, in his opinion, lay in the ventilation of the mines.'<sup>40</sup>

The chosen young doctor was Dr Walter Summons, who was already showing promise of an illustrious career. Summons was born in Ballarat, Victoria, the second son of a school inspector, Samuel Summons and his wife, Elizabeth. He was educated at Camberwell Grammar School, Scotch College and the University of Melbourne and was the first recipient of a Diploma of Public Health in Victoria. At 24 years of age, when he was offered the appointment, his experience consisted of working as a Resident Medical Officer at Melbourne Hospital (later the Royal Melbourne Hospital), followed by a locum term in private practice and then a position as Honorary

Anaesthetist and tutor to students in anaesthetics. Even this early in his career he seems to have been given unusual responsibility:

Surely after graduating only one year previously I could not have been the last word in anaesthetics – the two then used were Chloroform mainly with Ether just coming into vogue. No one died under an anaesthetic.<sup>41</sup>

Considering the pay of £6 per week to be excellent, Summons, who described himself as ‘much of an opportunist’,<sup>42</sup> tackled this new challenge with relish, eventually producing a report which ended up in two sections. The first part was titled *Report on the Ventilation of the Bendigo Mines* and in the words of Summons ‘was brought out in a hurry because of the public interest and the political need for speed’.<sup>43</sup> This report documented visits to ‘many mines’ in which much data was collected, including measurements of temperature, water vapour and carbon dioxide. In later years Summons was heard to claim the ‘world record for the medical practitioner who had practised his profession nearest the centre of the earth’ before losing it to a South African colleague in the 1950s.<sup>44</sup> Comparison was made between an alluvial mine, the West Berry Consols mine at Allendale, and the Bendigo quartz mines. This allowed Summons to identify the different rock strata and the different issues in ventilating the deeper mines, an important distinction, which was not made by the then current Mines Act. He found that in Bendigo:

The reefs are ranged one above the other, so that in many mines there are 30 or more different plats from which levels have been carried. Thus from the exigencies of the work it is extremely difficult to secure good air for all the men at a reasonable expenditure.<sup>45</sup>

Thus, early in the report he acknowledged the practical and financial difficulties of improving ventilation. The study then thoroughly examined the temperature and air vitiation at different levels in the various mines, arguing that air quality was much more important than quantity and that the allowable standard for vitiation generally taken in cloth factories was 0.12 per cent. He conceded that this was asking rather too much of mines, but that in Western Australian mines 0.15 per cent was the standard adopted and he saw ‘no reason for adopting a lower standard for the mines of Bendigo’. As well as dust and the products of explosives in the air, he pinpointed the pollution from waste food and ‘sanitary conveniences’ as also playing a part in air vitiation. As evidence of the detrimental health effects of air vitiation, he proffered his assessments of the miners’ health. This was tested as part of the study, finding that most of them experienced raised

body temperature and increased pulse rate whilst underground. They also appeared tired, exhausted and uncomfortable. Summons placed the responsibility squarely on mine management:

I would like to state emphatically that it is not knowledge but performance that will rectify matters. More faults are due to wilful negligence than to ignorance. Many mines are insufficiently ventilated now, not because the directors and managers do not know what to do, but because they will not on account of the expense; not considering their employees' health sufficiently - a matter which does not concern them.<sup>46</sup>

His main recommendations from this first report were:

- More enforcement of existing legislation especially in relation to allaying of dust.
- Higher standards of ventilation and air quality so that carbon dioxide did not exceed 0.15 per cent.
- More rigorous inspection and monitoring of below-ground air quality and ventilation.
- Physical and engineering measures such as the simultaneous sinking of winzes with the shaft, no more than 100 feet [30.5 metres] vertically between crosscut levels, no working face being further than 250 feet [76.2 metres] by road from the natural air current, and installation of mechanical appliances where natural air courses were not available. The three compartment or 'box system' of 'rising' was the recommended system for ventilation and compressed air by itself was not sufficient but a useful aid.
- Suitable sanitary arrangements and penalties for not using the facilities provided.
- Appointment of a medical inspector who would report on the hygiene of the mines and examination of work conditions and health of miners. Miners found to be suffering from tuberculosis or other infectious diseases would be excluded from working underground.<sup>47</sup>

It is not surprising to note that such statements and recommendations were not well received. *The Australian Dictionary of Biography* records that owners 'feared further state intervention with higher costs [and miners] ... resented curbs on work habits'.<sup>48</sup> Fifty-four years later, Summons was unrepentant, saying of his report, 'It damned the mining industry and in that way did an excellent job - men's lives were more valuable than gold'.<sup>49</sup> It would be almost certainly true to say that this work saved men's lives. The 1907 *Mines Act* appended his recommendations and the fame of his report extended to South Africa in their own enquiries into miners' health.<sup>50</sup>

The second part of the commissioned report, entitled *Report of an Investigation at Bendigo into the Prevalence, Nature, Causes and Prevention of Miners' Phthisis*, was released in 1907.<sup>51</sup> For this investigation, Summons acknowledged his debt to Dr Stewart Cowen and Mr Edwin Tiptree Drake, the Government Statist. The statistics

confirmed Cowen's earlier findings. Summons examined 192 miners at various stages of the disease and a significant portion of the report was set aside for patient histories divided into tuberculous and non-tuberculous cases. Typical symptoms included chest and 'rheumatism' type pain, cough, breathlessness, poor appetite, weight loss. He concluded that 'the disease is most insidious in its onset and, as a rule, only after years of work do definite symptoms present themselves'.<sup>52</sup> Summons supplemented these investigations with postmortem examination of three miners' lungs. His work led him to conclude that there were two types of miners' phthisis. The non-tuberculous type was brought about purely and simply by the embedding of the quartz dust particles, illustrated in the paper, in the lung. The full blown miners' disease occurred, he said, when infection by the tubercle bacillus became superimposed on the original condition and it was this that was the cause of death in all cases bar for a few dying of pneumonia. The susceptibility of the miners to tuberculosis was deemed to be the result of their silica-damaged lungs and the underground environment, as well as the general presence of the disease in the community. Brian Gandevia maintains that Summons' 'unequivocal conclusions, accurate today, were a triumph for the clinicopathological method of research evolved in the preceding century'.<sup>53</sup>

Summons reiterated his earlier comments about the need for ventilation. The needed prophylactic measures should come firstly by controlling the dust, particularly through the use of water after blasting or water jets, then by improved ventilation and sanitation below ground. To his earlier recommendations, Summons added that insanitary habits such as spitting or 'carelessness in the destruction of tuberculous sputum' should be penalised; a home for advanced tuberculous patients and a sanatorium for early cases should be established; invalid miners should be provided for and miners should be able to receive medical supervision in their own homes.<sup>54</sup> The report emerged at a time when the Bendigo mines were deepening and, although there was reported to be large amounts of gold still underground, the costs of pumping water from them meant that their profitability gradually declined until the last mine closed in 1954. On the closure of the mines, Summons (1960) said:

The mining started to lose public interest. There is still abundance of gold in the earth, but the mines were becoming deeper and the cost of the gold production was increasing. My effort finished it off and the mines in that field are now all flooded - but the gold is still there. What's the use?<sup>55</sup>

Whilst the validity of Summons' claim that he 'finished off' the mining with his report can be disputed, there can be little question that his report was significant in bringing about change. In commenting on the report's recommendations in his memoirs, Summons says:

In the report were two recommendations worth noting - one was recommendation made for the payment of the sufferer 'til he got better or succumbed. That is the forerunner of Workers' Compensation claims – not passed by Parliament for years. The other was that the TB man should be excluded from work in the mines and possibly be compelled to enter a sanatorium. At that time there was only one for Victoria - not at Bendigo. Later I had the privilege of helping in the establishment of a TB Chalet at the Bendigo Hospital.<sup>56</sup>

### **Conclusion**

As in the rest of the Western world, the path to workers' compensation was a bumpy one, requiring increasing involvement of the medical profession as mediators in the process.<sup>57</sup> The first Victorian Acts and their amendments from 1914 onwards made no provision for the sick miners until the 1938 *Miners' Phthisis (Treasury Allowance) Act*, described as 'an Act to make provision for the relief of persons suffering from miners' phthisis and for other purposes'.<sup>58</sup> Further changes in the 1946 *Workers Compensation Act*<sup>59</sup> allowed miners to make claims, but the difficulties placed in their way were immense and many sick and dying miners continued to be uncompensated, right up to the 1970s when only a few remained alive in Bendigo. A major issue in the difficulties they experienced related to the problem of proving that the silicosis was the cause of their illness, especially when tuberculosis and other conditions were also present. Silicosis was obviously caused by working in dust and, therefore, compensable. Tuberculosis, on the other hand, was rife in the community and not compensable.<sup>60</sup>

Summons recommended removal of men with tuberculosis from the mines and their subsequent institutional care met with slightly more success. Tuberculosis and silicosis became notifiable diseases in Victoria in 1909 and 1923 respectively<sup>61</sup> and by the 1930s exclusion of tuberculous miners from working underground was a widespread practice. He continued to lobby for the establishment of an institution for the separation and care of the sick men. After carrying out his studies on miners' phthisis he left Bendigo but returned in 1909 after his marriage, to take up Cowen's practice for three years on that gentleman's retirement. Summons then went to England 'for postgraduate work and tourism'.<sup>62</sup> On his return he wrote a letter to *The Bendigo*

*Advertiser*, pronouncing himself most impressed by the results achieved in the sanatoria there and congratulating the Bendigo Committee for the Establishment of a Sanatorium on their progress.<sup>63</sup> In spite of these hopeful signs, the Chalet was not built until 1938, with Summons continuing to take an active interest whilst serving on the Victorian Public Health Commission up until 1968.

Between 1890 and 1910 in Bendigo, doctors such as Summons, Cowen, and Eadie, supported by others such as Burke Gaffney and Boyd refused to accept that occupational diseases were an inevitable outcome of an industrial society. With this vision, they were instrumental in initiating change in the dangerous occupational environments of the mining industry. They refused to cater to owners and shareholders whose interests lay in placing responsibility for occupational ill health squarely on the already over-burdened shoulders of the workers. Their insistence that working conditions in the mine had to improve and that responsibility should be handed back to the employers, slotted in with and accelerated the social change that was part of the twentieth century attention to rights and responsibilities for employers and workers.

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## Endnotes

<sup>1</sup> Bryan Gandevia, 'Occupation and Disease in Australia since 1788', *Medical Journal of Australia*, vol 2, November 1971, pp. 1105-12.

<sup>2</sup> Michael Quinlan, 'The Toll from Toil does matter: Occupational Health and Labour History', *Labour History*, vol 73, 1997, pp. 1-29.

<sup>3</sup> K. Outhred. 'The Pneumoconioses', *Proceedings*, First Australian Pneumoconiosis Conference, University of Sydney, 1968, pp. 1-6.

<sup>4</sup> G. Rosen, *The History of Miners' Diseases*, Schumans, New York, 1943, pp. 7, 34.

<sup>5</sup> Rosen, *History of Miners' Diseases*, p. 127.

<sup>6</sup> 'Miners' Complaint. The Primary Cause. How it may be combated', a reprint of articles published in *The Bendigo Advertiser* in February and March 1903. Hereafter referred to as *Bendigo Advertiser Reprint*.

<sup>7</sup> Richard Gillespie, 'The Limits of Industrial Hygiene, Commonwealth Government Initiatives in Occupational Health 1921-1948', in H. Atwood & G. Kenny (eds.), *Reflections on Medical History and Health in Australia*, Medical History Unit, University of Melbourne, Parkeville, 1987, pp 101-21.

<sup>8</sup> Bryan Gandevia, 'The Australian Contribution to the History of the Pneumoconioses', *Medical History*, vol. 17, 1973, pp. 368-379.

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