

**‘There is a game against us’: W.J. Loring’s Troubled Years as  
Bewick-Moreing Company’s General Manager and Partner  
in Western Australia, 1905-1912\***

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In April 1905, when William J. Loring sent that ‘strictly confidential’ message quoted in the title to Herbert Hoover, his boss in London, he had only been at his new job in Kalgoorlie for about a month. Earlier that year, in the aftermath of the embarrassing government probe of mismanagement at Great Boulder Perseverance, during which almost everyone associated with the mine’s management except Loring had been severely criticised, Hoover had promoted Loring to general manager over all Bewick-Moreing’s mining operations in Western Australia.<sup>1</sup> Within weeks of taking on these added responsibilities he was convinced that a plot existed by rivals to undermine Bewick Moreing’s influence, perhaps destroy it altogether.

Loring’s position as regional manager for a major British company was an awesome responsibility for an American practical engineer with limited education and experience. Despite the Daglish Labor government’s recent criticism and the humiliating loss of management contracts for Perseverance and the Golden Horseshoe, two of Kalgoorlie-Boulder’s greatest producers, Bewick-Moreing [BMC] in 1905 was still the most influential mining management company in Western Australia. According to Richard Hartley’s tabulation, BMC managed 18 West Australian operating companies that year, including six on the Golden Mile.<sup>2</sup> Although Bewick-Moreing had reached the limit of its expansion in Western Australia, for Loring that was only the beginning. Within a year, even before his on-site visits as regional manager had been completed, Loring was assigned even more responsibilities. In 1906 he moved to Melbourne as general manager over all BMC’s operations in Australasia. In memoirs a quarter-century later, Loring said he ‘had charge’ of ‘41 operating companies in Australia and New Zealand’, a diverse group involved in ‘gold mining and milling, silver lead and zinc mining and milling, copper mining and melting, tin mining and treatment, and coal mining’.<sup>3</sup>

The accuracy of Loring’s memory here is suspect, since he was looking for work at the time and probably exaggerated the number for effect. His mentor Hoover, in a promotional statement published in 1904, said BMC managed only 32 mines at that

time.<sup>4</sup> Some companies Loring remembered were promotional and existed in name only; others had ceased operations or were marginal at best.<sup>5</sup> Discounting the extent of BMC operations, however, still leaves Loring with a heavy workload and enormous responsibilities during a crucial decade in the history of West Australian mining.

Loring's role as BMC supervisor raises many questions, but this paper addresses two of the most obvious: out of all the engineers available to one of the most influential British mining and management companies of the day, why was Loring chosen? Second, and more important, to what extent does Loring share the blame for the decline of BMC after 1904 - the year, in Richard Hartley's words, 'which was also the watershed of Bewick Moreing's influence over the Western Australian gold mining industry'.<sup>6</sup>

### **Early years – triumphs and tribulations on the goldfields**

Some background is necessary before discussing Loring's connection with BMC. The emergence of Bewick-Moreing in the late 1890s as a leader in Western Australian mine management has been fully treated by Blainey, Nash, Hartley and others.<sup>7</sup> The rapid depletion of alluvial deposits after 1893 quickly transformed West Australian gold seekers from entrepreneurs into wage earners as lode mining came to dominate the industry.<sup>8</sup> With 99.2 per cent of gold production (as of 1935), the preponderance of lode mines is not surprising.<sup>9</sup> For the first few years, British capital investment turned southwestwardly after the fall of 'Kaffir' shares in the aftermath of the Jameson raid in South Africa. The easy money stimulated a speculative frenzy that generated hundreds of paper companies.<sup>10</sup> It also provided the economic incentive for prospecting the outback - a point Loring made in a promotional article for the *Mining and Scientific Press* in 1907.<sup>11</sup> By 1896 this first boom ended with the collapse of indiscriminate speculation and the liquidation of most paper companies. But the success of Great Boulder Proprietary in locating high-grade ore below the outcrops bridged the financial gap and helped rebuild investor confidence. Within two years, Western Australia, with '22 big producing mines', had overtaken Victoria as the continent's largest gold producer.<sup>12</sup>

Despite this upsurge, the future of West Australian mining remained in doubt at the turn of the century so long as the major mines lacked an adequate water supply for traditional gold milling, an efficient bulk transportation system, new metallurgies to treat refractory ores, more qualified workers, higher worker productivity, improved

financing and better management. One by one these problems were addressed, beginning with the construction of a railway to Kalgoorlie in 1897, and sped along by the completion of C.Y. O'Connor's visionary water supply pipeline in 1903.<sup>13</sup> Cyanide treatment expanded rapidly after 1897, and the filter press introduced the same year along with tube mills and bromo-cyanide, were incorporated into the Diehl process. After 1900 and before the introduction of flotation, it provided an effective technology for treating 'slimes', the micron-sized gold particulates that defied older gravity separation methods.<sup>14</sup>

Financial reform was crucial to the long-range success of the industry. The speculative excesses of the 1890s hurt investor confidence and dried up traditional sources of capital for new or unproven ventures. Even after the fiscal recovery of regional banks and businesses by 1902, Australian securities remained largely out of favour in London capital markets until World War I. For promising mining companies starved for capital both in Australia and abroad, efficient management, adaptive technology, vertical integration, economies of scale, fiscal reorganization and self-financing when possible, all operating in a competitive but also cooperative, sometimes overlapping, network of managing engineers and financiers, provided the basis for financial stability and long-term development.<sup>15</sup>

Along with these technical and financial innovations came administrative changes. Self-taught engineers and mine captains who lacked hard rock gold experience ran most of the early mines.<sup>16</sup> Before the turn of the century, regional schools like Otago in New Zealand and the Ballarat School of Mines could not turn out enough graduates to meet the demand for trained engineers and metallurgists.<sup>17</sup> Corporate directors in London often compounded the problem by sending out untrained, inexperienced, and sometimes unethical representatives who wasted money in dubious mining or milling practices, or who 'picked the eyes out' of mines by high-grading to boost productivity reports, or who conspired with unscrupulous directors to send out false or misleading information to shareholders, or who used insider information to manipulate the share market for speculative purposes.<sup>18</sup> Herbert Hoover deplored the 'bogus financiering and charlatan engineering' he found after a year in Western Australia.<sup>19</sup> In 1898 his friend J. H. Curle, after inspecting 43 Westralian mines as travelling correspondent for a London financial paper, concluded that 'the whole system of management is wrong'.<sup>20</sup> The wording is reminiscent of the work of Frederick Taylor and the 'systematic management' movement, fashionable in late nineteenth century among economic

reformers and policy makers both in the U.S and Germany, although Britain was less enthusiastic.<sup>21</sup> As field representative and later managing co-partner for Bewick-Moreing, however, Hoover helped launch a new era of systematic management in Western Australia. Promising better leadership, centralised operations, higher productivity, lower costs and increased profitability to individual companies with limited capital resources, BMC grew rapidly in the first years of the new century. In 1902 it added four management contracts, including Lake View Consols at Boulder, the property taken over by shareholders under London financier Francis A. Govett after it had been financially gutted during Whittaker Wright's era of freewheeling market manipulations.<sup>22</sup> Govett's patronage was an important milestone in Bewick Moreing's career, increasing its prestige and expanding its presence not only in the goldfields but also in base metals mining later. Four more mines were added to BMC's growing roster in 1903, and seven the following year. By 1904, the company employed over 3,000 workers and technical staff, and produced 40 per cent of West Australian gold output from the 18 mines under its control.<sup>23</sup>

### **Loring as general manager**

From these preliminaries, it is clear that Loring was promoted to general manager at the apex of BMC power and prestige in Western Australia. Let us now return to my first question: why was he selected over other mining engineers and managers, both within and outside the firm? It is tempting to respond that Loring, as an American, qualified under 'Hail Columbia', Hoover's brand of exuberant nationalism. Certainly Hoover's harsh criticism of British technical education and his brash comments about American domination of the mining industry lend themselves to this interpretation. But nationalism was not a criterion for employment under the doctrine of systematic management. In assessing Hoover's personnel policies, his excessive rhetoric is less relevant than the immediate problem of filling important positions with qualified personnel. Though he staffed some technical and managerial positions with Americans, as a rule he hired or retained managers and technicians who met his standards regardless of national origin. American influence was important in the early years but never dominant, and it declined as Australian universities turned out more graduates.<sup>24</sup> By 1908 Australia had a bounty crop of engineers, 'in considerable excess of the demand', as Gerard W. Williams reported from Melbourne to discourage more Americans from

seeking Australian jobs.<sup>25</sup> Hoover's own figures show that at its most expansive, less than a third of BMC's higher technical staff was from the United States.<sup>26</sup>

A better answer is that Loring met Hoover's pragmatic test of leadership: take a job and do it well. Like Hoover, he had risen to the top of his profession through hard work and proven ability. Starting his mining career at age 12 as a tool boy for 75 cents a day, by 1901 he was superintendent of a major gold mine on California's Mother Lode. Though lacking theoretical training, a requirement Hoover emphasised in championing the cause of professional engineering, Loring nevertheless had successfully managed important gold mining and milling operations. For Hoover in 1901, anxious to cut costs and improve the performance of BMC-managed gold mines in Western Australia, education was less important than practical experience. Hoover's brother Theodore, a Stanford graduate serving as recruiter for his younger brother, offered Loring a management job with Bewick-Moreing, and in 1902 this 33-year old Californian landed in Kalgoorlie.<sup>27</sup>

Though five years older than Hoover, Loring performed well under the pressure of high expectations. His younger boss, hardened by years of experience in China and the Australian outback, demanded high performance from his line officers. As Hoover earlier told his brother Tad,

... my California friends need not think they're coming to soft snaps. Moreover they need not think they have any special pull on me. [One tried, but] after he gazed into the abyss beneath him he fairly crawled .... It simply comes to this; men hate me more after they work for me than before. They don't need think they are coming to a snap. They're coming to a perfect hell and I am the devil.<sup>28</sup>

Placed in charge of the Sons of Gwalia at Leonora, Loring ran the mine with Hooverian efficiency - some might say ruthlessness - first as superintendent and then as joint general manager over it and 16 other mines in Western Australia. By reducing the workforce, demanding higher productivity from his employees, expanding ore reserves, upgrading the crushing capacity, improving the milling circuit and other measures, Loring after three years had significantly reduced working costs and increased profitability.<sup>29</sup> The British financial press complimented BMC's leadership in bringing 'higher class management' to the Westralian goldfields.<sup>30</sup> Mining men in Western Australia acknowledged Loring's rising importance by electing him an 'honorary vice-president' of the Chamber of Mines.<sup>31</sup> Even the James liberal government, after earlier chastising Bewick-Moreing for lowering wages and recruiting cheaper foreign labour,

by 1904 was singling out the Sons of Gwalia as a model mine.<sup>32</sup> For his part, Hoover was generous in his praise of Loring's work, and promoted him accordingly.<sup>33</sup>

The second question, to what extent was Loring responsible for Bewick-Moreing's decline after 1904, is of course much harder to answer. Before tackling that issue, some comments on Loring's management style are in order. It is important to recognise from the outset that Loring was a follower rather than an independent thinker. Grateful for his job and deferential to Hoover's superior education and recognised leadership, Loring adopted Hoover's management model and business standards. Just as Hoover had shifted Bewick-Moreing's emphasis from mine promotion to management, and later styled himself an 'industrial doctor' or a 'doctor of sick mines', Loring looked for 'second hand mines with good potential'.<sup>34</sup> He also adopted Hoover's pragmatic approach to mine management, seeking out the best men available regardless of origin or background with one difference: Loring didn't solicit Americans because he didn't need to. By 1905 there were plenty of highly qualified Australian engineers and managers to fill open positions. Besides, he distrusted some Americans, and helped expose the dubious practices of others. Robert Grant, Hoover's choice to manage the Cosmopolitan Proprietary in Kookynie, quit after Loring discovered that he had been receiving kickbacks from tributers contracted to advance the heading. He returned to the States and later became Director of the U.S. Mint in Denver.<sup>35</sup> George W. Borrowe, who replaced Loring as superintendent at the Sons of Gwalia, had a personal problem which Loring dutifully reported to Hoover: 'I am getting on fine with Borrow [sic] but he is a hard drinker and will go to the dogs. Please ask some one why he left South Africa ... I think that Borrowe is a fair man but you know what whisky will do'.<sup>36</sup>

Loring was also suspicious of potential American rivals. William Prichard, recruited from a Mother Lode mine by Hoover's brother Theodore, was BMC's co-manager with Loring in 1904 but resigned under a cloud in the aftermath of the Great Boulder Perseverance embarrassment. He had prepared a hasty report on suspect ore reserves, but did not dispute the figures, which Loring after careful onsite sampling found to be grossly inflated. Thereafter Loring regarded him as an 'enemy'.<sup>37</sup> Loring's work at Perseverance also brought down another American, Ralph Nichols, a competent engineer who had made significant technical contributions to West Australian mining and milling, but as general manager of Perseverance was caught up in the scandal and eventually lost his job.<sup>38</sup>

Loring took a natural liking to John Agnew, a New Zealand engineer and University of Otago graduate whom Hoover had brought to Australia in 1898 to be underground boss at the Sons of Gwalia. Gradually working his way up in management, Agnew remained with Bewick Moreing until 1912, when Hoover hired him away to London.<sup>39</sup> Loring's attitude toward Agnew stood in sharp contrast to his dim view of James Arthur Diggles, one of the first of Hoover's American friends to join Bewick-Moreing. After being promoted over Diggles, Loring grew openly hostile. Perhaps he felt that because Diggles held no technical degrees (unlike Hoover and Prichard, he dropped out before graduating in geology at Stanford) he was less worthy of respect. At any rate, in the opinion of the new general manager, Diggles could never do anything right. In 1905, for instance, after reviewing a monthly report Diggles had prepared while managing the Vivien mine, Loring drafted a blistering reply: 'If we were to send a statement like this to London showing a shortage of over 75 [tons?] which we couldn't account for, the Board would make noise enough to cause a revolution'.<sup>40</sup> Later, after Diggles had been promoted - without Loring's recommendation - to manage Broken Hill South Blocks, Loring accused him of lying, thought he was 'an absolute ass' and tried to force him out.<sup>41</sup> Instead, South Blocks Board chairman, F.A. Govett - to spite Loring and repudiate his general management - praised Diggles for helping solve the milling problems that had plagued the Broken Hill project for three years.<sup>42</sup>

The problems with Govett illustrate not only a structural flaw in Bewick Moreing's supervisory role over properties controlled by independent boards of directors - a matter we will return to later - but also a personal character flaw. For all his abilities as practical engineer and manager, Loring was insecure and defensive, a classic 'active-negative' personality, the Richard Nixon of mining. He lacked the self-assurance of his younger mentor, Herbert Hoover - perhaps because of Hoover's better training - and constantly drove himself to prove his worthiness to manage a great organisation. He also drove his men, and grew fearful either that his superiors would fire him or his inferiors were conspiring against him. Doubtless, a good part of this neurosis grew out of occupational stress, for he was constantly under fire, and the heat increased as BMC's economic assets and industrial status began to wane with the decline of gold production in Western Australia. His letters reflect his moods, and as the stress increased so did the paranoia. In 1905, for example, he wrote Govett:

I have been in such hot water the past year that I am at last getting hardened to it. A man in my place should not be troubled with a fear of his own position. Hoover cabled me the other day in a satisfactory manner but still nothing is said about what they intend to do.<sup>43</sup>

By 1906, after his move to Melbourne, he feared that Hoover was losing 'faith in me', largely because of company troubles at Great Fingall Consolidated at Day Dawn.<sup>44</sup> The year before, Loring had sweated out an independent inspection of Fingall to check BMC's estimate of ore reserves. The report had ultimately confirmed the mine superintendent's figures, but a few months later Hoover had been forced to admit to the Fingall board that recent assays showed ore samples running lower in grade than previously reported. As general manager, Loring was on the spot. For months he awaited the results of another independent inspection, growing ever more morose. To H.I. Nicholas, a West Australian friend, he agonised over the 'heavy load' he had to bear:

I have had this thing dished up to me once each week till I am d-- full of it all. I have never in my whole of my life had this torture that I have had since leaving Kalgoorlie ... I am held responsible for the acts of every one of the staffs in the West. If they make a bloomer, I fall in to the full extent of such mistake. If a mine goes bung WJL is sat upon till he is as flat as a Lobster.<sup>45</sup>

Unlike many bureaucrats who assume 'responsibility' without accepting blame, Loring took personally any matters within his jurisdiction. He confessed to Gerhard Lovell, Fingall's superintendent, that [I] 'would be sick if I thought [an independent inspection] ... would find things that we don't know anything about'.<sup>46</sup> The report, when it appeared that fall, showed a serious decline in value at depth. Loring was not fired as he had feared, but he was mortified by the negative publicity, particularly this comment in the *Engineering and Mining Journal*: 'The most interesting point in the report is the confession by the managers, Bewick, Moring [sic] & Co., that they cannot give a dependable estimate of the contents of the ore reserves, owing to the irregularity of the deposit and its contents'.<sup>47</sup> That was quite a reversal from Hoover's confident assessment in 1904 that the ore bodies at Great Fingall and Cosmopolitan were 'large and regular', and easy to work.<sup>48</sup>

Considering Fingall's fundamental problem of declining ore grade, Loring could not have made much difference had he been better informed and better trained. However, as Richard Hartley points out, though Bewick Moreing remained general manager, it offered little help to innovative local engineers who struggled to improve

recovery and cut costs in order to keep the mine afloat. It closed in 1922, long after Loring had left Australia.<sup>49</sup>

Despite his lack of self-assurance, Loring was a willing tool, the essential middleman who provided direct linkage between corporate headquarters and field operations. Bewick Moreing's London staff depended on Loring's 'on the spot ... supervision and experience,' as Moreing remarked to Hoover.<sup>50</sup> Moreing himself, the co-founder and senior partner, Australian-born but raised in the English aristocratic tradition, did little to cultivate staff relations. Both Hoover and Loring were put off by his overbearing attitude. For Loring, the senior boss was more to be feared than hated, but Hoover boiled in resentment. As he told Loring after Hoover had begun to branch out on his own, 'Moreing is apparently infuriated because, to use his own expression, he is going to be master or nothing, to which my retort is that I am prepared to work with him, but I am not prepared to be his servant'.<sup>51</sup>

After smouldering for years, Hoover's dispute with Moreing reached an open break in 1907, leading to Hoover's 'retirement' from the company and Loring's purchase of Hoover's share in the BMC partnership. Although the formalities were not completed until 1908, Hoover and Loring confidentially negotiated by mail for months prior to signing a contract.<sup>52</sup> For Loring, how to pay for Hoover's part of the business was not as worrisome as how to fill Hoover's shoes. After five years as Hoover's 'man in Australia', Loring considered his immediate boss not only a superior engineer and businessman but a great friend and benefactor.<sup>53</sup> 'I wont [sic] for one moment consider joining the firm if you are to retire', he wrote. 'This business I am afraid is hanging together on account of your good self, and further I dont [sic] want to be disassociated from you. You have been the best friend on earth to me and I am not going to cut lose [sic] from you of my own accord'.<sup>54</sup>

Loring's gratitude is understandable, for Hoover not only promoted Loring's career with Bewick Moreing but kept him afloat when times were rough. While Moreing remained aloof and avoided fraternising with his subordinates, Hoover was more considerate. He was generous with praise, and tried to shelter Loring from the blunt criticism of shareholders and board members whenever things went wrong in the field. Late in 1906, for example, during the Great Fingall crisis, Hoover wrote patronisingly:

Dont [sic] think for one minute that friendship based on many years of loyal and sucessful [sic] cooperation can be knocked out by any ballie ore reserve ... The real fact is that you have [had] a taste of boards of Directors these days in a very small way and I can plainly see that you dont [sic] like it. Nor more do I. I sit on 12 boards and have to deal with 22 more[.] The average board considers it their only function to criticise (except when things go well to take the credit) and I get *all* the hot shot. No business can be conducted without bumps and when one has fifty five businesses to look after one gets bumps x 55. Its much better that I *should* be a buffer and stop as much of the shot from reaching you and [John] Agnew [BMC representative in Kalgoorlie] as possible.<sup>55</sup>

Buying out Hoover in 1908 bolstered Loring's ego but also his worries. Now as partner and managing director with a one-third share in his firm's business, he was quick to assume the perks of high office - ordering the best cigars and changing the office letterhead even while aboard a ship on the return from signing a contract in London.<sup>56</sup> (Later he complained to Agnew about the high costs of partnership: 'You would be surprised to know what the daily expense is in this blooming *London* [sic]. They all smoke good cigars when furnished by BM&Co's partner').<sup>57</sup> But Hoover's departure now left Loring without protection from company critics and detractors, either in Australia or London. Neither could he count on Hoover's advice as consultant, a role Hoover had agreed to as part of the break up. Almost before the ink was signed on the new agreement, Moreing and Hoover fell out over what and how much independent business Hoover could perform without hurting his old firm, and Loring found himself caught between two rivals. Hoover tried to avoid an open break, warning Loring that Moreing's intransigence was threatening the company's future, especially if Hoover's new associate, F.A. Govett, cancelled BMC's contracts. As the rivalry increased, Loring had to chose between friendship and partnership. He chose partnership - a poor decision, as it turned out - and sided with Moreing. By the end of 1908, Loring was warning his senior partners in London of the 'double game Hoover appears to be trying'.<sup>58</sup> For his part, after failing to convince Loring that Moreing was at fault, Hoover gave up, confiding to Agnew: 'I do not think W.J.L. will be much of a success in London. He has no moral courage, and his partners will lead him into trouble in time. Moreover, as you say, loyalty is wholly foreign to his character. In fact he is steeped in Melbourne views of business honesty'.<sup>59</sup> Doubtless Hoover had in mind William Baillieu and William Clark's recent defection as backers to the struggling Zinc Corporation, although, as Peter Richardson has suggested, there are other interpretations for their action - and other candidates for Hoover's enmity.<sup>60</sup> Nevertheless, Hoover was

depressed, and disgusted with his one-time protégé, William Loring. The latter eventually joined Moreing and Wellsted in a suit to recover damages from Hoover for his alleged breach of contract. An out-of-court settlement in 1910 eased tension and led to a partial reconciliation between Hoover and Loring, but Moreing remained bitter and tried again later, without much success, to recover damages for loss of business.<sup>61</sup>

### **BMC's chief promoter**

Hoover's departure in 1908 left Loring as BMC's chief promoter in Australia as well as its main sounding board for complaints. In neither role was he very comfortable or successful. As company promoter, he kept an eye out for new business ventures for the firm, as well as for himself. Hoover had done the same - neither considered speculation unprofessional, as did some of their colleagues.<sup>62</sup> For example, with considerable naiveté Loring in 1905 had attempted to corner the market in gold mill tailings after BMC staff at East Murchison reported positive results with a new process for treating slimes, presumably by vacuum filters, although Loring's correspondence does not identify the process. 'If this thing is as good as it looks it will revolutionise the mining results all over the world', he exclaimed. Hoping to profit as both investor and partner, he set up a preliminary syndicate with four other investors, all but one in the Bewick-Moreing hierarchy, and secured options on 100,000 tons of tailings in Western Australia.<sup>63</sup> But vacuum filters, despite their cheaper cost, proved to be no panacea for recovery of gold from low-grade slimes. Neither was flotation, which BMC engineers tried at Lake View Consols, nor was concentration with modified Wilfley tables, which was attempted at Ivanhoe.<sup>64</sup> As Loring should have realised, regional differences in ore chemistry and deposition require different ore dressing and metallurgical processes. Though vacuum filtration was successfully used at several mines in Western Australia and elsewhere, it did not replace all other methods of slimes treatment, as Loring seemed to expect.<sup>65</sup> At any rate, his slimes syndicate ended with a large hole in his pocketbook.

There were other large holes, enough to thoroughly discourage a financial 'wannabe'. Envious of Hoover and other successful dealmakers, Loring lacked Hoover's business acumen, and invariably lost money in deals that went sour. At Lodden Valley in 1906, for instance, while Hoover and Moreing were enthused about deep leads development, Loring bought shares on his own, only to be told later by

Hoover to 'go slow' because Loddon would 'probably go smash'.<sup>66</sup> It did very soon afterward.

If higher company officials made their own investment decisions, site managers were more restricted, as Loring told Borrowe in 1905, when the latter tried to buy 2,000 shares of Sons of Gwalia. Although his London partners had no written policy on the subject, 'I doubt very much whether they will allow one of their Managers to hold shares in the property of which he is Superintendent', he explained. To do so was an open invitation to fraud, and looked bad to the public. 'So far as I am concerned,' he intoned, 'I have never dealt in a share since coming to this country'.<sup>67</sup> Considering his love of luxury, he should have added, 'But give me a chance!'

Loring's own record makes his advice to Borrowe seem crassly hypocritical on the surface. However, general managers were at least one level removed from mines under their control. Loring, like Hoover, seemed to think that was sufficient insulation to avoid the stigma of collusion. Yet both took advantage of insider information - as did other corporate executives of their day. It was standard operating procedure.

Initially Loring was eager to join Hoover and his associates as they converged to exploit the remaining wealth that lay on the ground at Broken Hill. The organisational details are too complex to go into here, but Bewick Moreing's role as general manager put Loring on the local boards of Zinc Corporation, Broken Hill South Blocks, and the Australian Smelting Corporation, all three formed late in 1905 and financed through various Anglo-Australian syndicates. He was also a board member of Great Fitzroy at Mt Chambers, another BMC-managed property financed by the Anglo-Australian group, which was experimenting with flotation to separate gold from copper. Bolstered by Hoover's own rosy predictions, Loring purchased a block of Zinc Corporation shares shortly after the new company was floated. He also put money into Great Fitzroy, but soon found himself stuck in a declining market. His financial frustrations are tellingly revealed in a 1907 letter to Hoover, who was by that time an independent financier with Govett in London:

[I want you to arrange with] both Fitzroy and Zinc [directors] to qualify me so that I can put my shares out of my name. [At present I am at a] disadvantage in being a registered shareholder and at the same time a director and genl mgr. If I wish to sell my shares at any time I cant [sic] do so without the fear that the public may find out that I am selling. [I don't want to sell because of declining property values, but] I want to collect some profit. I am going to take profits hereafter regardless of the high market that I have heretofore been looking for

but which in some cases has not come ... [Don't want to have to pay any more margin calls. May not get more than half the value per share, but] better than to pay calls. Will never buy another share in a tin pot local company again. It is a good lesson.<sup>68</sup>

A lesson he never learned very well, if his memoirs are accurate. Few if any investments paid off. He dumped his 'Zincs' too early to profit from the company's eventual success, and his Fitzroy investment disappeared when the company folded after nine years of constant losses. He couldn't even make money as an investor in the Sons of Gwalia, BMC's best property and one of the few it owned outright. In 1909, hearing of new ore bodies at lower levels from the new manager - Borrowe had evidently moved on by this time - Loring told his broker to buy 2,000 shares on margin.<sup>69</sup> No record of the investment has been found, but Loring apparently sold prematurely, or was forced to sell to pay debts. He said later that after he left the firm he 'lossed [sic] heavily in the N[ew] Y[ork] market', then went bankrupt in the 1920s when he 'fell heir' to several large bank loans he had negotiated for mining syndicates that eventually failed.<sup>70</sup> He never recovered financially after that, despite repeated efforts.

Besides personal shortcomings, as general manager Loring was powerless without the cooperation of independent boards of directors. Bewick Moreing and the mining companies they managed did not always share the same economic interests. Conflicts frequently arose over financial decisions that directly affected operations in the field. In part, these problems reflected conceptual differences between the long-term interests of managers and the short-term interests of investors. Directors and shareholders could understand systematic management, for example, if it meant cost cutting by lowering wages, as Loring tried to do at Sons of Gwalia in 1902.<sup>71</sup> However, many investors had difficulty accepting the need for reducing short-term dividends for the sake of long-term production and profitability. Even after West Australian gold production began a steady decline following its peak year in 1902, investors resisted management efforts to bring costs and profits into better balance. Bewick-Moreing's troubles with Golden Horseshoe and Perseverance directors in 1904 were in part due to differences in cost-benefit analysis, although there were contractual issues perhaps more compelling.<sup>72</sup>

More troublesome than resistance to efforts to rationalise mining operations were complaints against BMC management fees and services. As Hartley suggests, 'a

management company could easily be accused of operating a mine to maximise its own returns rather than for the benefit of the mining company's shareholders'.<sup>73</sup> Bewick Moreing's centralised accounting system and its bulk purchases from Perth and Fremantle wholesalers, for instance, saved about 10 per cent on mine working costs, but caused resentment among local merchants and managers.<sup>74</sup> Sometimes the best-laid plans could go awry, as Loring inferred in instructions to his staff just before he moved from Kalgoorlie to Melbourne:

One thing above all others is that goods must not be charged out to the Mines at a higher cost than they could purchase for themselves. This latter point should never be lost sight of as we have already been put in a bad light by one of these mistakes in charging out at a higher rate than the market price ... [Local managers] all think we get a 'divvy' out of the business anyway, so any unfortunate mistakes such as the one cited above only emphasizes their opinions. We have proved the value of the Stores and everyone fully realizes that big profits are a thing of the past.<sup>75</sup>

Mistakes were troublesome but controllable if structural safeguards such as staff accountability were built into the management system. As general manager, Loring had both the authority and the power to hire and fire BMC subordinates almost at will, and did. Following Hoover's model of 'tough manager', he grew increasingly critical of lower staff - perhaps because of increasing pressure on himself. During the Fingall scandal, he accused one man who was not on his staff of leaking information, and sacked another who was, though leaks continued after the firing.<sup>76</sup> Sometimes his reasons for staff changes had nothing to do with company policy. In 1908, for instance, just after his elevation to partner, he threatened to replace D.E. Bigelow, BMC's chief mechanical engineer, a Californian whom Loring considered ungrateful for being 'dissatisfied with his treatment'. His comment to Deane Mitchell was as much a warning to other subordinates as a justification for Bigelow's dismissal:

It is d- near disgusting to find that people who have been well treated turn about at the last moment. The wife kicks about contract, house and buggy etc. On the salary he receives they could furnish all the comforts of life. Less bad speculation and closer application to work should make that house more in line with others of his own set.<sup>77</sup>

### **Strained relationships**

Despite his controlling personality and authoritarian style, Loring suffered the fate of many micromanagers. Though he put in long hours - all the while complaining of being

overworked and understaffed<sup>78</sup> - he could not control everything. Business was too complex, and Australia too large, to keep track of all the details. Even if unintentional, lack of control added to the suspicions of company directors and managers. Unquestionably, the most difficult company director to work with was Francis A. Govett, a significant player in British mining finance and a dangerous adversary if crossed. An attorney and son of a London stockbroker, he took over his father's business in 1885 and, in Peter Richardson's words, 'acquired a reputation for honesty and probity in a market that was conspicuously lacking both'. His linkup with Bewick Moreing after befriending Hoover in 1902 not only helped propel BMC toward leadership in West Australian mine management, but, as Richardson says, represented the 'combination of financial and technical expertise' that was crucial to the 'long-term success of the Anglo-Australian' financial combination, later known as the Collins House group<sup>79</sup>.

Govett's relationship with Loring was cordial at first, but deteriorated rapidly as Loring tried to assert his managerial supervision over various Govett enterprises to which Bewick Moreing was linked either as general manager or financial collaborator. The structural flaw that gave BMC responsibility for mines over which it had no real control was made clear by Govett's insistence on direct control over mines he financed, at the same time holding Bewick Moreing accountable for management decisions.<sup>80</sup> During the tough years at Laverton, for example, when Lancefield millmen ran into refractory sulphides and were recovering only one-third of an ounce per ton from a large quartz vein that assayed much higher, Loring, as general manager, wilted under criticism from Govett, who had invested heavily in the mine and was on its board. He attacked Loring's technical competence. Humbly Loring accepted management responsibility for helping 'make the first report on the mine', and to demonstrate his faith he said if he 'had the cash' he would 'gladly' help underwrite the production costs himself.<sup>81</sup> Hoover, however - also a board member as BMC representative in London - protected Loring and accepted personal responsibility for management actions. Although Hoover has been credited - or blamed - for the controversial decision in 1905 to abandon wet milling at Lancefield and build an expensive new 'dry crushing and roasting' plant, that move had actually been recommended to him earlier by Loring, who was happy to let his boss take the blame.<sup>82</sup> Even after the new plant failed, producing barely enough to pay the costs of operation, Hoover absolved Loring, blaming Lancefield's 'ghastly' site managers instead.<sup>83</sup> Continual milling problems,

combined with labour trouble after 1909, eventually forced the mine into liquidation, a total failure and an expensive lesson for long suffering shareholders.<sup>84</sup>

Loring grew more assertive during the early years of frustration at Broken Hill. There he was placed in the difficult position of serving as the middle man between his management firm and the three operating companies, Broken Hill South Blocks, Australian Smelting Corporation, and Zinc Corporation - all financed by the emerging Anglo-Australian group of which Govett was a prominent part. Loring had no real power to make strategic decisions, although routine operations and technical details involving BMC staff were left in his hands. Late in 1905, for instance, he sent W.E. Simpson, a BMC manager at Lake View and then Lancefield, to manage the Zinc Corporation, then replaced him in the next year, both changes being supported - or perhaps ordered - by the Zinc board in London, though Hoover took ultimate responsibility.<sup>85</sup> Regardless of Loring's limited role, Govett held him accountable for technical developments at South Blocks even though Hoover assumed responsibility after the early failures.<sup>86</sup> In turn, Loring complained that Govett was constantly interfering with BMC management by requiring all communications to be sent directly to him. He told Hoover he was doing his best to avoid an open break with the unreasonable chairman, but 'am at the same time placing myself and the Firm in a position less useful than the office boy'.<sup>87</sup> Frustration grew to mistrust as the technical problems mounted. Hoover's fight with Moreing, coming during the crucial period between near disaster and ultimate success at Broken Hill, only made a difficult situation worse, and helps explain Govett's refusal to accept any long-term contracts with Bewick Moreing.<sup>88</sup> Unfortunately for the management company, Govett remained distrustful regardless of what Loring did, and Loring responded in kind. During the Hoover-Moreing break up, Loring suspected Govett of plotting to bring down the firm - a variation, perhaps, of his earlier theory of a regional conspiracy against Bewick Moreing. Hoover tried to disabuse Loring of these ideas, then passed them on to Govett, whose reply to Loring dripped with scorn:

[Having read your 'honourable' letter to Hoover and your] cabled explanation that our reasons for going back on that 'honourable' understanding were your suspicions of me and the necessity of working a cinch on Hoover in order to coerce me, I am unable to accept the coincident profuse protestations of gratitude, loyalty, etcetera which I continue to receive from you. I therefore send you this final letter, and in future any communications from me will be addressed ... to the firm.<sup>89</sup>

Govett eventually cooled down, and so did Loring, but relations remained strained for years, and flared up whenever management controversies arose. In 1909, for example, when Govett discovered that his Lake View accountant had embezzled a large sum over a period of months, Loring tried to reassure him that BMC was not at fault. He got a barrage of criticism in return:

[You speak of trust, but in managing companies] ... you have to act as if you distrust everyone. What is the use of an auditor except to check the man you trust. In practice we do not trust you, we do not trust the Secretary and the Secretary does not trust us. Every check is rigidly carried out. We check your stores, we check your accounts and it was only owing to the claimed efficiency of your system that we do not check your estimates of ore reserves ... you might recollect that the main argument advanced in favour of employing a firm like yours was the great safety gained, owing to the 'system' carried out in a large organisation like yours, so that fraud involved a combination or conspiracy between so large a number of people that the thing was practically impossible: while with the single manager you were absolutely at his mercy, and now we learn how far that claim was justified: there may have been a system but it was never carried out.<sup>90</sup>

Bewick Moreing's ties to the Govett-financed Burma Corporation also led to difficulties. Organised in 1906 to process the mineral-rich slag piles left behind by Chinese who had worked the ancient silver mines of central Burma, the new mining and milling company, controlled by Hoover and Govett, awarded Bewick Moreing the general management. Two years later, when Loring inspected the operation and recommended some changes without prior consultation with Govett, he was roundly criticised. 'You are a very nice fellow, but you are a most injudicious fellow', Govett's letter began. It ended with a clear message: Bewick Moreing cannot involve itself in company policy matters 'unless we expressly summon you ... when Hoover and I are managing there is not much room for interference'.<sup>91</sup> Loring wrote a panicky reply, apologising but claiming he was only doing his duty as general manager. To others he complained bitterly about Govett's attitude, which Loring thought wholly unreasonable and demoralising to BMC staff.<sup>92</sup> Hoover cooled the Burma tiff by dismissing the whole matter as a misunderstanding. He said he welcomed BMC's managerial supervision, but soon he was singing a different tune. By 1912 the Burma Corporation was heavily in debt, with no money coming in. The smelter had been built in the wrong place, the rail line was still incomplete, and the contractors and workers had not been paid for months. With financial disaster looming, Hoover blamed BMC staff for costly management errors. Loring's company could only watch from the sidelines as Hoover and Govett

arranged refinancing and placed the property under new management.<sup>93</sup> As Hoover had warned Loring earlier, his firm would suffer financially if it could not get along with Francis A. Govett.

### **Conclusion**

It was the stated object of this paper to answer two questions. The first that asked why Loring was chosen as BMC supervisor was disposed of earlier in the paper. The second really has two parts. Was BMC's declining role in Australasia after 1905 due to diminished mining opportunities or poor management decisions? And could another managing director and partner have done better?

Loring could not be called a failure, but neither could his years in Australia be considered a success, either for himself or for his company. He started well as superintendent of the Sons of Gwalia, but BMC-managed properties were already in decline when he moved to London in 1908, and by 1913, the last year he visited Western Australia, the end was in sight for the continent's second great gold rush. Loring left before gold mining crashed during World War I, but the handwriting was on the wall. Already by 1910 ore grade had fallen by more than half, and production was down by nearly three million from 1903 figures.<sup>94</sup>

His tenure in Australia coincided not only with the downward trend of West Australian gold production, but also with the diminishing impact of Bewick Moreing as a gold exploration and management company. By 1911 it managed 11 active mines in Western Australia, down from the 20 mines it had supervised at its height in 1904.<sup>95</sup> Loring felt the burden of business decline soon after buying out Hoover and taking a look at the company's books. In 1909 he wrote his field manager: 'What we want is new business and I hope that something will turn up soon that will bring about extended business'.<sup>96</sup> But the decline continued, despite Loring's efforts to promote BMC interests in Canada and California. By the time of Loring's last visit to Western Australia in 1913, BMC-managed properties were producing only 23 per cent of the State's total gold production, 17 per cent less than in 1904.<sup>97</sup>

In assessing Bewick Moreing's contributions to Australian mining, Geoffrey Blainey has taken Hoover to task for mythmaking about his role in particular and Americans in general.<sup>98</sup> It is a common human fault to exaggerate our successes and minimise or ignore our failures. Blainey's criticism is worth pondering not only for

what it tells us about Hoover, but also for its implications in evaluating the role of Hoover's protégé and successor.

To compare Loring's record with that of Herbert Hoover is unfair, since Hoover came to Western Australia during its early boom years and left before the decline set in, while Loring arrived at the apex of West Australian production and witnessed the decline firsthand. Moreover, Bewick Moreing's business was already falling off by the time Hoover formally ended his association with the company in 1908, leaving Loring with a heavy corporate as well as personal financial burden.

In a way, Bewick Moreing was a victim of its own success after 1904, regardless of Loring's personal role. In a society geared to rapid technology transfer, whatever advantage BMC may have gained initially through systematic management or technological innovation was lost as the rest of the industry swiftly caught up. As Walter Renton Ingalls, writing on Australian technological progress in 1907, pointed out:

Quick-witted inventions, which may have originated in other countries, appear to be more quickly put into practice with useful results there than elsewhere; and just as Australia has taken the lead and been pre-eminent in fine sliming and in circulating cyanide solutions through the mill, so now it seems to lead in slime treatment. Probably the emulation arising from the keen up-to-date methods of the leading firm of mining engineers on the one hand, and independent managers on the other hand, has tended to place Australia in the front in the matter of up-to-date methods, high extractions and low costs.<sup>99</sup>

The 'leading firm' he declined to mention by name was, of course, Bewick Moreing. Like Loring, BMC built its reputation in precious metals mining. However, Loring's tenure in Australia coincided with another major trend, the shift from precious metals to base metals mining. Big Power rivalry and the arms race added emphasis to the accelerating demand for copper, iron, lead, zinc, and other industrial metals as the forces of modernization swept across the developed world in the dozen or so years before the Sarajevo crisis. Limited by training and experience, Loring was slow to grasp the implications of this shift and inept in securing good base metal investment opportunities for his company or himself. As a market analyst he ranks far below his contemporaries, Hoover and Govett, both of whom proved much more adaptive and flexible in the face of changing market conditions.

Despite his personal shortcomings, many of Loring's managerial troubles were ex-officio rather than individual. Loring was inherently unpopular because Bewick

Moering was unpopular among many miners, merchants, rivals, and pro-labour officials. Although Loring lacked Hoover's optimism and his technical training, Hoover himself thought Loring an excellent manager of field operations, at least up to the open break in 1908. During the deep leads crisis in Victoria, for example, Loring's successful negotiations with the Australian government to subsidise continued development won Hoover's praise: 'You have done a very good deal I think for all, particularly Charlie [Moreing] if he only knew it', Hoover wrote. 'I hope it will start earning some profit at an early date'.<sup>100</sup> Even after the Lodden Valley mines failed and BMC's investment in Victorian copper came to nothing, Hoover absolved BMC's general manager and saw larger, impersonal forces at work. Promoters, he said, tried 'to create a little public interest in ... [Great Fitzroy], but it seems quite hopeless to get anything done. Not only are Copper Mines in bad repute, but all Australian mines are under a cloud ...' Furthermore, European politics 'has practically quelched out all speculation'.<sup>101</sup>

Though Loring knew gold better than base metals, the formative years of the gold industry in Australia were over before Loring's career reached its peak. Few new goldfields of consequence were discovered or developed after 1900, either in Australia or elsewhere. Loring and his company well understood the implications of F.S. Manse's sobering assessment in 1907 for the Australian Department of Mines: 'no new gold mines are coming to the front, and as the ore which is now being won on the principal fields is of much lower grade, the outlook, so far as this branch of the industry is concerned, is not a bright one'.<sup>102</sup> The lack of new prospects turned away sources of capital investment, leaving gold producers and their management companies with limited options after the existing mines shut down.<sup>103</sup>

The rising importance of base metals correlates with two other trends on the verge of World War I, the consolidation and vertical integration of leading companies and the reorganization of mining finance, with independent, 'free-standing' firms giving way to informal 'alliances' among diversified investment groups. As in manufacturing, transportation and other industries, cartelisation brought forth its antithesis in anti-monopoly legislation and other socio-political forms of resistance, but national borders limited enforceable opposition. By the 1920s individual exploration and management companies like Bewick Moreing were dropping away, as industrial leadership came into the hands of fully integrated, heavily capitalized, multinational corporations.<sup>104</sup>

Given these larger forces of change, personal leadership ability probably made little difference in the ultimate fate of Bewick Moreing and other independent managing

companies. The pre-war mining culture, which produced individual entrepreneurs like Hoover and Moreing, changed with the changing times. After 1900 there were fewer entrepreneurs and more bureaucrats like Loring, tied to an impersonal corporate structure they could not always understand or control. Though Loring lacked the foresight to predict his fate as he left Australia before the fighting started in 1914, he looked backward in later years with keen hindsight and more than a trace of bitterness:

There is nothing wrong with mining except three things. Lack of ore, men without practical experience in the economic laying out of a mine and plant, together with directors whose only thought is to do nothing constructive and make it as unpleasant for the poor devil who is left to find payroll and money for power, taxes and supplies and last but not least, fear to face realities. Mining is a most fascinating business, can be made happy and profitable or the most damnable and losing business on earth.<sup>105</sup>

\* Paper presented at the Australian Mining History Association Annual Conference, Kalgoorlie, 2001.

## Endnotes

<sup>1</sup> W.J. Loring, 8 April 1905, to Herbert Hoover, Loring Collection, Hoover Institution Archives, Stanford University [hereafter LC HIAS]; George H. Nash, *The Life of Herbert Hoover: The Engineer, 1874-1914*, Norton, New York, 1983, pp. 334-38.

<sup>2</sup> Richard Hartley, 'Bewick Moreing in Western Australian Gold Mining 1897-1904: Management Policies & Goldfields Responses', *Labour History* 65, November 1993, p. 18.

<sup>3</sup> W.J. Loring, 'A Short Record of My Mining Experience,' undated typescript, San Francisco, 1932, LC HIAS.

<sup>4</sup> Herbert Hoover, 'The Training of the Mining Engineer', *Science*, new series, XX, 25 November 1904, pp. 716-19.

<sup>5</sup> For example, West Australian Collieries and Fireclay Co. Ltd was defunct by the time Loring assumed continental responsibilities, although it was still listed as a BMC holding. Others were exploration companies outside his direct jurisdiction. See Skinner, *The Mining Manual*, London, 1905-1908.

<sup>6</sup> Hartley, 'Bewick Moreing', p. 1.

<sup>7</sup> Geoffrey Blainey, *The Rush That Never Ended*, Melbourne UP, Melbourne, 1963, pp. 201-07; Geoffrey Blainey, *The Golden Mile*, Allen & Unwin, St. Leonards, NSW, 1993, pp. 91-2; C. Harvey and J. Press, 'Overseas Investment and the Professional Advance of British Metal Mining Engineers, 1851-1914', *Economic History Review*, vol. 42, no. 1, 1989, pp. 69-74; Nash, *The Life of Herbert Hoover*, pp. 223-44; 286-93; Hartley, 'Bewick Moreing', pp. 1-13.

<sup>8</sup> C. R. Doran, 'An Historical Perspective on Mining and Economic Change', in L.H. Cook and M.G. Porter (eds), *The Minerals Sector and the Australian Economy*, Special Study no. 6, Centre of Policy Studies, Monash University, George Allen & Unwin, Sydney, Australia, 1984, pp. 39-42; Blainey, *The Rush That Never Ended*, pp. 179-85.

<sup>9</sup> William H. Emmons, *Gold Deposits of the World*, McGraw Hill, New York, 1937; reprint 1974, p. 475.

<sup>10</sup> D.T. Merrett, 'Capital Markets and Capital Formation in Australia, 1890-1945', *Australian Economic History Review*, vol. 37, no. 3, November 1997, p. 189; J.W. McCarty, 'British Investment in Western Australian Gold Mining, 1894-1914', *University Studies in History*, vol. IV, no. 1, 1961-62, p. 7; D. Mossenson, 'Mining Regulations and Alluvial Disputes, 1894-1904', *University Studies in History*, vol. II, September 1955, p. 6; Blainey, *The Rush That Never Ended*, pp. 185-86.

<sup>11</sup> *Mining and Scientific Press*, 19 October 1907, cited in McCarty, 'British Investment in Western Australian Gold Mining', p. 13. Two years earlier, Loring's boss, Herbert Hoover, in a Kalgoorlie newspaper interview, complained that new mining developments in Western Australian were severely handicapped because of restrictive government leasing policies. He advocated an American-style patenting system. See, 'The Western Australian Mining Industry,' *The West Australian*, 10 November

1905, clipping in Pre-Commerce Subject File, Box 56, Herbert Hoover Presidential Library, West Branch, Iowa [hereafter HHPL].

<sup>12</sup> McCarty, 'British Investment in Western Australian Gold Mining', pp. 9-13; Doran, 'An Historical Perspective on Mining', pp. 39-40.

<sup>13</sup> R.T. Appleyard, 'Western Australia: Economic and Demographic Growth, 1850-1914', in *A New History of Western Australia*, C. T. Stannage (ed.), University of Western Australia Press, Nedlands, 1981, pp. 222-26.

<sup>14</sup> Alan Loughheed, 'The Cyanide Process and Gold Extraction in Australia and New Zealand, 1888-1913,' *Australian Economic History Review*, vol. XXVII, no. 1, March, 1987, pp. 52-58; Richard G. Hartley, 'A History of Technological Change in Kalgoorlie Gold Metallurgy, 1895-1915,' Ph.D. thesis, Murdoch University, June 1998, pp. 113-14.

<sup>15</sup> A.R. Hall, *The London Capital Market and Australia 1870-1914*, Australian National University, Canberra, 1963, pp. 180-190; Christopher Schmitz, 'The Rise of Big Business in the World Copper Industry, 1870-1930', *The Economic History Review*, vol. 39, no.3, August 1986, pp. 392-410; Robert V. Turrell and Jean Jacques Van-Helten, 'The Investment Group: The Missing Link in British Overseas Expansion before 1914?', *Economic History Review*, vol. 40, no. 2, May 1987, pp. 267-74; Mira Wilkins, 'The Free-Standing Company, 1870-1914: An Important Type of British Foreign Direct Investment', *The Economic History Review*, vol. 41, no. 2, May 1988, pp. 259-82; Charles Harvey and Jon Press, 'The City and International Mining', *Business History*, vol. 32, no. 3, July 1990, pp. 98-119; Simon Katzenellenbogen, 'South African Mining Interests in Australia before 1939', *Business History*, vol. 32, no. 3, July 1990, pp. 120-32; D.T. Merrett, 'Capital Markets and Capital Formation in Australia, 1890-1945', *Australian Economic History Review*, vol. 37, no. 3, November 1997, pp. 182-90.

<sup>16</sup> Blainey, *Rush that Never Ended*, p. 252.

<sup>17</sup> Jan Todd, *Colonial Technology: Science and the Transfer of Innovation to Australia*, Cambridge UP, Cambridge, 1995, pp. 130-31.

<sup>18</sup> Alan Loughheed, 'The London Stock Exchange Boom in Kalgoorlie Shares, 1895-1901', *Australian Economic History Review*, vol. XXXV, no. 1, March 1995, pp. 98-101.

<sup>19</sup> Herbert Hoover, 2 April 1898, to R.A.F. Penrose, Jr., in *Life and Letters of R.A.F. Penrose, Jr.*, NY [private print?], 1952, copy in Pre-Commerce Correspondence, Box 12, HHPL. Almost exactly the same words were attributed to T. A. Rickard in comments published in the *Engineering and Mining Journal* two weeks later. Doubtless the two met while Rickard was traveling through Western Australia, a year after Hoover arrived. Whether the similarity of their statements was a case of coincidence or plagiarism will probably never be known. See McCarthy, 'An Historical Perspective on Mining', p. 12.

<sup>20</sup> J.H. Curle, *The Gold Mines of the World, Containing Concise and Practical Advice for Investors gathered from a Personal Inspection of the Mines of the Transvaal, India, West Australia, Queensland, New Zealand, British Columbia and Rhodesia*, Waterlow and Sons, London, 1899, p. 147.

<sup>21</sup> Joseph A. Litterer, 'Systematic Management: The Search for Order and Integration', *Business History Review*, vol. XXXV, Spring, 1961, pp. 461-76; Edward Eyre Hunt (ed.), *Scientific Management Since Taylor: A Collection of Authoritative Papers*, McGraw-Hill, New York, 1924, pp. 5-9, 189-96; Robert R. Locke, *The End of the Practical Man: Entrepreneurship and Higher Education in Germany, France, and Great Britain, 1880-1940*, JAI Press Inc., Greenwich & London, 1983, pp. 89-103.

<sup>22</sup> Hoover, *Years of Adventure*, pp. 78-79; Nash, *The Life of Herbert Hoover*, pp. 229-30.

<sup>23</sup> Hartley, 'A History of Technological Change', p. 221; Nash, *The Life of Herbert Hoover*, p. 283.

<sup>24</sup> Harvey and Press, 'Overseas Investment and the Professional Advance', pp. 79-81; R. H. Limbaugh, 'Pragmatic Professional: Herbert Hoover's Formative Years as a Mining Engineer, 1895-1908', paper presented at Hoover Symposium XIII, George Fox University, 13 October 2001; Roy Macleod, 'Colonial Engineers and the "Cult of Practicality": Themes and Dimensions in the History of Australian Engineering', *History and Technology*, vol. 12, 1995, pp. 149-51.

<sup>25</sup> G.W. Williams, 'Prospects for Mining Engineers in Australia', *Engineering and Mining Journal*, 86, 4 July 1908, p. 42 [hereafter *E&MJ*].

<sup>26</sup> Herbert Hoover, 'The Training of the Mining Engineer', *Science*, New Series, vol. XX, 25 November 1904, p. 716.

<sup>27</sup> For a short sketch of Loring's American career, see R.H. Limbaugh, 'Making the Most of Experience: The Career of William J. Loring, Nevada Mining Engineer', *Mining History Association 1994 Annual*, 1994, pp. 9-13.

<sup>28</sup> Herbert Hoover to T.J. Hoover, 15 February 1898, in HH-TJH Letters, Australia 1897-1898, Box 1, HHPL.

<sup>29</sup> Loring, 'A Short Record'; Nash, *The Life of Herbert Hoover*, p. 285.

<sup>30</sup> J.H. Curle, 'West Australian Mines', *E&MJ*, 77, 23 Jun 1904, p. 1005.

<sup>31</sup> Walter R. Skinner, *The Mining Manual for 1908*, p. 1205.

- <sup>32</sup> C.W.F. Turnbull (compiler), 'Gwalia-Leonora, W.A.: Random [Newspaper] Notes, 1895-1963', undated typescript, pp. 30, 35, HHPL; Hartley, 'Bewick Moreing', p. 5.
- <sup>33</sup> H.C. Hoover, 'Western Australian Gold Mining in 1905', *E&MJ*, 81, 20 January 1906, p. 136.
- <sup>34</sup> Hartley, 'Bewick Moreing', pp. 1, 13; Herbert Hoover, *The Memoirs of Herbert Hoover: Years of Adventure, 1874-1920*, New York: Macmillan, 1952, p. 110; W.J. Loring, 'A Chronological History of the Mining Experience of W.J. Loring', typescript, c.1938, LC HIAS.
- <sup>35</sup> W.J. Loring, 9 November 1905, to A. Sheard, H.C. Hoover, 18 November 1905, to R.J. Grant, LC HIAS; *Who's Who in Engineering*, 1937, p. 528.
- <sup>36</sup> W.J. Loring, 8 April 1905, to Herbert Hoover, LC HIAS; Richard Hartley, 'The 1904 Watershed in Bewick Moreing's Western Australian Gold Mining Activities', B.A. Hons thesis, Murdoch University, 1992, appendix C.
- <sup>37</sup> Nash, *The Life of Herbert Hoover*, pp. 334-38; W.J. Loring, 8 July 1905, to F.A. Govett, LC HIAS.
- <sup>38</sup> *E&MJ*, 79, 12 January 1905, p. 113; *Ibid.*, 79, 20 April 1905, p. 786; Hartley, 'A History of Technological Change', pp. 91-92, 158-59; Nash, *The Life of Herbert Hoover*, pp. 334-42.
- <sup>39</sup> W.J. Loring, 9 May 1906, to John A. Agnew; W.J. Loring, 21 May 1906, to C.H. Wray, LC HIAS; Theodore J. Hoover, 'Memoranda: Being a Statement by an Engineer', typescript, Stanford, 1939, p. 168; John A. Agnew, Obituary, *London Telegraph and Morning Post*, 4 August 1934.
- <sup>40</sup> W.J. Loring, 13 October 1905, to J.A. Diggles, LC HIAS.
- <sup>41</sup> W.J. Loring, 16 February 1908, to J.A. Mitchell, Loring papers, Wax collection [hereafter LP WC], Tuolumne County Historical Society, Sonora, California [hereafter TCHS]; W.J. Loring, 2 September 1908, to C.A. Moreing, W.J. Loring, 2 September 1908, to Herbert Hoover, LC HIAS.
- <sup>42</sup> F.A. Govett, 24 September 1908, to J.A. Diggles; H.C. Hoover, 8 October 1908, to W.J. Loring; W.J. Loring, 28 October 1908, to T.W. Wellsted; all in Bewick Moreing collection, HIAS [hereafter BMC, HIAS].
- <sup>43</sup> W.J. Loring, 6 May 1905, to F.A. Govett, LC HIAS.
- <sup>44</sup> W.J. Loring, 26 August 1906, to Herbert Hoover, LP WC, TCHS.
- <sup>45</sup> W.J. Loring, 6 May 1906, to H.I. Nicholas, LC HIAS.
- <sup>46</sup> W.J. Loring, 5 June 1906, to G. Lovell, LC HIAS.
- <sup>47</sup> *E&MJ*, 83, 18 May 1907, p. 972.
- <sup>48</sup> H.C. Hoover, 'Western Australia', *E&MJ*, 79, 5 January 1905, pp. 41-42.
- <sup>49</sup> Hartley, 'A History of Technological Change', p. 226.
- <sup>50</sup> C.A. Moreing, 24 August 1908, to H.C. Hoover, BMC, HIAS.
- <sup>51</sup> H.C. Hoover, 2 October 1906, to W.J. Loring, LC HIAS.
- <sup>52</sup> W.J. Loring, 5 September, 8 October, 13 November 1907, to Herbert Hoover, LP WC, TCHS; H.C. Hoover, c. September 1907, to W.J. Loring, LC HIAS.
- <sup>53</sup> W.J. Loring, 17 July 1907, 18 September 1907, to Herbert Hoover, LP WC, TCHS; H.C. Hoover, c. 15 October 1907, to W.J. Loring, LC HIAS.
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- <sup>55</sup> H.C. Hoover, 30 November 1906, to W.J. Loring, LC HIAS.
- <sup>56</sup> W.J. Loring, 28 June 1908, to T.W. Wellsted; W.J. Loring, 29 June 1908, to John Agnew; LP WC, TCHS.
- <sup>57</sup> W.J. Loring, 3 September 1909, to John Agnew, LC HIAS.
- <sup>58</sup> W.J. Loring, 25 November 1908, to T.W. Wellsted, BMC, HIAS.
- <sup>59</sup> H.C. Hoover to John Agnew, June 1909, NARS microfilm 70/454, HHPL.
- <sup>60</sup> Nash, *The Life of Herbert Hoover*, pp. 359-67; Peter Richardson, 'Collins House Financiers: W.L. Baillieu, Lionel Robinson and Francis Govett', in R.T. Appleyard and C.B. Schedvin (eds), *Australian Financiers: Biographical Essays*, Macmillan Australia, Melbourne, 1988, pp. 240-41.
- <sup>61</sup> Bewick Moreing, 27 August 1908, to H.C. Hoover; H.C. Hoover, 25 September 1908, to W.J. Loring; W.J. Loring, 26 September 1908, to H.C. Hoover; H.C. Hoover, 26 September 1908, to Bewick Moreing; H.C. Hoover, 8 October 1908, to W.J. Loring; W.J. Loring, 28 October 1908, 25 November 1908, to T.W. Wellsted; BMC HIAS; F.A. Govett, 12 February 1911, to W.J. Loring, LC HIAS; Nash, *The Life of Herbert Hoover*, pp. 453-62.
- <sup>62</sup> *Ibid.*, pp. 388-94. For example, acting on insider information, Hoover speculated in Zinc and Lancefield shares while he was director of both companies. H.C. Hoover, c.9 September 1907, to W.J. Loring, LC HIAS. On the controversy over the business ethics of mining engineers, see Clark C. Spence, *Mining Engineers & the American West: The Lace-Boot Brigade, 1849-1933*. Yale UP, New Haven, 1970, pp. 268-70.
- <sup>63</sup> W.J. Loring, 18 September 1905, to P. FitzGerald; 24 September 1905, to Thos. W. Wellsted; 22 November 1905, to C de Bernales; 4 December 1905, to N. Keenan, LC HIAS.

- <sup>64</sup> Alfred James, 'Progress in Gold-ore Treatment During 1907', in Walter Renton Ingalls (ed.), *The Mineral Industry: Its Statistics, Technology and Trade during 1907*, XVI, Hill Publ. Co., New York, 1908, p. 524; Hartley, 'A History of Technological Change', pp. 133-34, 141-43, 176-78.
- <sup>65</sup> *Ibid.*, pp. 32-52, 158-80, 228-33, where Hartley discusses various processes for slimes treatment.
- <sup>66</sup> H.C. Hoover, c.16 December 1907, to W.J. Loring, LC HIAS.
- <sup>67</sup> W.J. Loring, 22 May 1905, to G.W. Borrowe, LC HIAS.
- <sup>68</sup> W.J. Loring, 21 August 1907, to Herbert Hoover, LP WC, TCHS.
- <sup>69</sup> W.J. Loring, 1 September 1909, to Sheppard, LC HI; *Warden's Report on the Mount Margaret Goldfields for the year 1910*, W.A. Department of Mines, 1910, p. 36.
- <sup>70</sup> W.J. Loring, 'A Chronological History', pp. 5-6.
- <sup>71</sup> Turnbull, 'Gwalia-Leonora', p. 30; Hartley, 'Bewick Moreing', p. 5.
- <sup>72</sup> For fuller treatment of BMC's contractual problems with Golden Horseshoe Estates and Great Boulder Perseverance, see Hartley, 'Bewick Moreing', pp. 10-13; Nash, *The Life of Herbert Hoover*, pp. 334-45.
- <sup>73</sup> Hartley, 'A History of Technological Change', p. 223.
- <sup>74</sup> Hartley, 'Bewick Moreing', pp. 11-12.
- <sup>75</sup> W.J. Loring, 6 December 1905, to E.J. Wellsted, LC HIAS.
- <sup>76</sup> W.J. Loring, 24 April 1906, to J.A. Agnew; C.A. Moreing, 6 May 1906, to W.J. Loring, LC HIAS; W.J. Loring, 12 December 1906, 17 December 1906, to Herbert Hoover, LP WC, TCHS.
- <sup>77</sup> W.J. Loring, 16 February 1908, to Deane P. Mitchell, LP WC, TCHS.
- <sup>78</sup> See, for example, his letters, 16 October 1907, to Hoover, LP WC, TCHS; 8 July 1905, to F.A. Govett, LC HIAS.
- <sup>79</sup> Peter Richardson, 'Collins House Financiers', pp. 237, 239.
- <sup>80</sup> W.J. Loring, 18 September 1907, to Herbert Hoover, LP WC, TCHS; F.A. Govett, 11 June 1908, to W.J. Loring, LC HIAS.
- <sup>81</sup> W.J. Loring, 24 September 1905, to F.A. Govett, LC HIAS.
- <sup>82</sup> W.J. Loring, 24 September 1905, to F.A. Govett; W.J. Loring, 24 September 1905, to Thos W. Wellsted; LC HIAS; Chas. G. Gibson, 'The Laverton, Burtville, and Erlistoun Auriferous Belt, Mt. Margaret Goldfield', *Bulletin no. 24, Western Australia Geological Survey*, Perth, 1906, p. 19; Nash, *The Life of Herbert Hoover*, pp. 303-05.
- <sup>83</sup> *EM&J*, 84, 2 November 1907, p. 828; H.C. Hoover, 2 October 1908, to W.J. Loring, BMC, HIAS.
- <sup>84</sup> Nash, *The Life of Herbert Hoover*, pp. 305-07.
- <sup>85</sup> W.J. Loring, 8 April 1905, to H.C. Hoover; 24 September 1905, to F.A. Govett; 29 September 1905, 20 September 1906, to W.E. Simpson, LC HIAS; Nash, *The Life of Herbert Hoover*, p. 358.
- <sup>86</sup> F.A. Govett, 2 January 1908, to W.J. Loring, HIAS; Jeremy Mouat, 'The Development of the Flotation Process: Technological Change and the Genesis of Modern Mining, 1898-1911', *Australian Economic History Review*, vol. XXXVI, no. 1, March 1996, p. 19.
- <sup>87</sup> W.J. Loring, 2 July 1906, to Herbert Hoover, LP WC, TCHS.
- <sup>88</sup> F.A. Govett, 13 August 1908, to WJ Loring; C.A. Moreing, 24 August 1908, to HCH [marked 'not sent'], BMC HIAS.
- <sup>89</sup> F.A. Govett, 14 October 1908, to W.J. Loring, LC HIAS.
- <sup>90</sup> F.A. Govett, 22 April 1909, to Bewick Moreing Co., BMC HIAS.
- <sup>91</sup> F.A. Govett, 12 [21?] August 1908, to W.J. Loring, LC HIAS.
- <sup>92</sup> W.J. Loring, 2 September 1908, to C.A. Moreing; 26 September 1908, to HC Hoover, BMC, HIAS; W.J. Loring, 22 September 1908, to F.A. Govett; H.C. Hoover, 30 October 1908, to W.J. Loring, LC HIAS.
- <sup>93</sup> H.C. Hoover, 30 October 1908, to W.J. Loring; Gerhard Lovell, 19 Sep 1912, to W.J. Loring; T.W. Wellsted, 30 May 1913, to W.J. Loring; LC HIAS; Nash, *The Life of Herbert Hoover*, pp. 422-23.
- <sup>94</sup> *The Mineral Industry: Its Statistics, Technology and Trade*, 1911, p. 260; *Ibid.*, 1912, p. 301. For the War's impact on the Golden Mile, see Hartley, 'A History of Technological Change', p. 226.
- <sup>95</sup> Staff List, Western Australia, 31<sup>st</sup> March, 1911', Bewick Moreing Company Records, LP WC, TCHS; Hartley, 'Bewick Moreing', p. 1.
- <sup>96</sup> W.J. Loring, 17 September 1909, to D.W. Mitchell, LC HIAS.
- <sup>97</sup> W.A. Department of Mines, *Warden's Report*, 1913, p. 9.
- <sup>98</sup> Geoffrey Blainey, 'Herbert Hoover's Forgotten Years', *Business Archives and History*, vol. 3, 1963, pp. 53-70.
- <sup>99</sup> Walter Renton Ingalls, 'Progress in Gold-Ore Treatment During 1906', in Alfred James (ed.) *The Mineral Industry: Its Statistics, Technology and Trade during 1906*, XV, Hill Publishing, New York, 1907, p. 402.
- <sup>100</sup> H.C. Hoover, c.16 December 1907, to W.J. Loring, LC HIAS.
- <sup>101</sup> H.C. Hoover, 30 October 1908, to W.J. Loring, LC HIAS.

<sup>102</sup> F.S. Manse, 'Australian Mining Notes', quoted in *E&MJ*, 83, 29 June 1907, p. 1238.

<sup>103</sup> McCarty, 'British Investment in Western Australian Gold Mining', pp. 21-23.

<sup>104</sup> Hall, *The London Capital Market*, pp. 180-90; Schmitz, 'The Rise of Big Business', pp. 392-410; Turrell and Van-Helten, 'The Investment Group', pp. 267-74; Wilkins, 'The Free-Standing Company', pp. 259-82; Harvey and Press, 'The City and International Mining', pp. 98-119; Katzenellenbogen, 'South African Mining Interests in Australia' pp. 120-32; van Helten, 'Mining, Share Manias', pp. 176-77; Merrett, 'Capital Markets and Capital Formation', pp. 182-90.

<sup>105</sup> W.J. Loring, 'A Chronological History', p. 7.

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