Europe and Western Australian Gold Mining - 1885-1914

By ALAN LOUGHEED *
University of Queensland

Beginning in the 1880s a new phase began in the discovery and exploitation of gold deposits in several parts of the world which extended up to the outbreak of World War I: India, Queensland, Western Australia, the United States, the Witwatersrand, and Canada. Such discoveries highlighted problems which required immediate solutions, and intensified research led to several developments in the extraction of gold from its ores and related industrial fields, producing innovations which raised the productivity of the gold mining industry and improved its efficiency. Also, to exploit the newly unearthed gold deposits, vast quantities of investment capital, albeit venture capital, were required and large funds were squandered in unprofitable mining ventures. It was at this time that Continental Europeans were attracted to the industry. These aspects of gold mining and extraction from the mid-1880s to World War I form the basis of this study.

New horizons opened up for many Continentals who, by the closing years of the nineteenth century, had been able to earn enough income to satisfy their basic needs for survival, provide them with some comfort and a surplus for saving. It was at this time that seemingly golden opportunities presented themselves for such people to invest their savings in avenues that would pay much more than government bonds and other similar low-yielding assets. Not so much the discovery of gold in numerous parts of the world but also new and very profitable methods of raising the gold to the surface and of processing it were discovered and diffused among the mining companies. Then there was the formation of mining companies, especially in London, improved international communications - the ocean cables, telegrams and eventually the telephone, not to forget the large improvements in ocean and land transport with the steamers and railways, all helping to bring previously widely distanced centres of the world's population much closer to one another. In addition, the growth of financial markets and the ease of commuting with each of them facilitated the further development of stock exchanges and the growth in the numbers of brokers and other members of such markets. Moreover, the activities of company agents moving around the various population centres of each country, but especially Britain (including Ireland), France, Germany, Belgium and Holland, accelerated the growth of shareholdings and widespread interest in such mining developments. Other factors will be referred to below.

The attraction of Western Australian gold mining properties was initiated by the important discoveries there in the early 1890s. From 1894, the amounts of money raised in London to float gold mining companies to operate in this British colony rose rapidly from month to month and over 700 companies were formed to acquire and/or to mine properties there. As noted below, much speculative activity occurred in the stock exchanges in London, Australia, and elsewhere. This paper concentrates largely on a small group of companies operating on the 'Golden Mile' near Kalgoorlie, that were the most successful British companies operating in Western Australia before 1914 and which were among the largest dividend-paying companies in the world at the time.[1] The group comprised, in order of dividends paid to 1914, the Great Boulder Proprietary (£4.5 million), Ivanhoe (£3.3 million), Golden Horseshoe Estates (£3.1 million), Hannan's (later Oroya) Brownhill (£2.2 million), Lake View Consols (£1.6 million), Kalgurli (£1.5 million), Great Boulder Perseverance (£l.5 million), Associated Northern Blocks (£700,000), Associated (£700,000), and South Kalgurli (£100,000).[2] With the Great Boulder Proprietary these were the companies to attract substantial Continental interest. Some of the less successful Kalgoorlie companies, such as Chaffers and Great Boulder Main Reef, and a few others operating on other West Australian goldfields are also referred to. There are also several 'exploration' companies with continental affiliations, such as the Anglo-Continental and the Anglo-German companies.[3]

Financing of gold mining

Perhaps the greatest financing of gold mining on an international scale, following the major discoveries of the 1880s, occurred on behalf of the companies established in South Africa and Western Australia. The financing of mining activity in the latter being on a smaller scale than that on the Witwatersrand in the Transvaal around the same time.[4] It was also approached in a different way. While the financing of Western Australian shares also involved vendor and promoter shares these were invariably sold, generally on the London market, within a year or two of the promotion and registration of each company. There was no overall control of the mines although a company such as Bewick-Moreing managed the operations of several mines for the shareholders of such companies.

A Note on estimation

The annual shareholder returns held at Kew are not all-inclusive. In most cases, only every fifth return has survived and thus an annual review is impossible. Moreover, each return relates to the situation which existed on only one day of each year. There are some exceptions for the 1890s in which a record was made of share transfers from one return to the next, the record being made in the second return. Despite the shortcomings of the data, however, it was found that some important observations could still be made.

There are problems concerning the country of residence of some of the shareholders even though a large majority of shareholdings can be ascribed properly - between Britain, the Continental countries and Australia. Others, however, are more uncertain. First, many Continental shareholders allowed their shares to be held in London by the London branches of their banks,[5] their nominees,[6] or by the London brokers who arranged their exchange dealings.[7] Second, there is the problem of bearer shares ('share warrants to bearer'). The Articles of Agreement of most Western Australian mining companies allowed for the conversion of share certificates into 'bearer share warrants' or 'share warrants to bearer'. Of the 34 companies examined, only eight recorded such warrants in this period, although in each share register the total number of shares covered by warrants was given. Of these eight companies, only two, the Golden Horseshoe and the Ivanhoe, recorded large numbers of bearer warrants. The percentage of total issued capital of the Horseshoe's warrants increased from 46.5 in 1904 to 53.4 in 1915, while that of the Ivanhoe rose from six per cent in 1903 to twelve per cent in 1913.

Such bearer warrants formed part of French financing especially at the *coulisse.*[8] These two Kalgoorlie companies were favoured by French investors, who were encouraged to change their holdings of share certificates into bearer share warrants.[9] For the purposes of this paper, all share warrants are classified as Continental. To some extent, the estimates obtained are below the actual numbers, because they omit the shares held in London in the hands of brokers and those held by unidentified merchants in their London offices for convenience.[10] Thus, the estimates used herein include the information gleaned from shareholders returns adjusted upward for the holdings in London branches and the bearer shares.

Continental Investment in gold mining companies - the timing

Continental interest in non-European gold mining companies in the outside world was small until 1894 when a wide class of investors began to buy large parcels of South African mining shares.[11] Paris became attractive for some South African companies but there were also many German investors at this time.

During the last few months of 1895, a feature of Continental investments (and British) was the large increase in small purchases as individual investors bought up to twenty shares at a time and retained them, in many individual cases for up to at least two decades. While several British mining companies floated shares on Continental stock exchanges,[12] the major mechanism for transferring shares in Australian companies across the Channel was through orders to London brokers, some of whom concentrated their activities solely on the Continental business.[13]

Nevertheless, few of the Westralian companies formed in Britain in 1894 and 1895 attracted Continental speculators because of the appeal of the South African companies.[14] There were exceptions, of course, such as the ‘Anglo’ companies, for example, the Anglo-Continental Exploration Company (registered 18 January 1895) and the Anglo-German Exploration Company (1 May 1895).[15] Both these companies allotted over 50 per cent of their shares to Continental investors. It is interesting to note the connections between some of the companies in the mid-1890s. For example, two early companies (or syndicates of investors that eventually were registered as companies) formed for the process of exploring the Western Australian goldfields in search of properties for sale to investors in the United Kingdom and Europe were the London and Western Australian Exploration Company and the Anglo-Continental Gold Syndicate, The first, the brainchild of C.A. Moreing, F.A. Thompson, and A.H.P. Stoneham, was registered in September 1894 after having operated as a syndicate for some time. Over the next twelve months the initial shareholders sold off many of their shares and, by 21 November 1895, Continental investors held 32 per cent of the company's 67,500 shares, Germany accounting for 21 per cent and France for 10 per cent. It was this company that floated the Hannan's Brownhill on 15 October 1894, receiving some 55,000 shares for its efforts. These shares were quickly passed on to its shareholders who disposed of many of them. Four months later, some of them had crossed the Channel to France, Germany and other Continental countries. By the end of December 1900, 23 per cent of the Brownhill's 148,000 shares were held in Germany, mainly in Hamburg, and 32 per cent on the whole Continent.[16] The connections of this mining company with the Continentals will soon become apparent. The second, a closely associated organisation, was registered in January 1895, mainly with British and German founders. On 3 June 1895, Germany accounted for 55 per cent of the total 31,197 shares issued. Four years later, the Continent still held 52 per cent of the capital (£238,288), including some 17,700 bearer shares. In November 1895, the Company paid a 100 per cent dividend to its shareholders, no doubt a boost to the interests of German investors. This company was the vendor of the London and Hamburg Gold Recovery Company which developed the Diehl process of recovering gold from its difficult refractory ores. The latter company was registered in London on 15 March 1897 with capital of £95,000, with £93,493 in the hands of the Anglo-Continental. No doubt another sizeable dividend, even if in the form of shares was paid! By the end of 1902, Europe had acquired 88 per cent of the 129,128 ordinary shares on the books, almost all of which were to be found in Hamburg. Germany held well over half of the capital of the company until it was wound up in November 1921. Meanwhile, the Diehl process, to be discussed below, the efforts of Ludwig Diehl, the Company's chemist, was introduced into the Brownhill's works and was successfully used for several years. Partly, it was the efforts of such companies and their personnel, their operations, and their results which led many German investors to turn their attention towards the

Western Australian goldfields in 1894 and later years.

Several other reasons can be advanced for the development of continental interest in the early Westralian company ventures, including the highly exaggerated but favourable information emanating from the colony, the visits to the goldfields by the German experts, Drs Schmeisser and Vogelsang in 1895 to report on the Brownhill and a few other Kalgoorlie mines for German investors, as well as the Anglo-Continentals, Messrs Wichmann and Schmeisser early in 1896, and that of the French Professor Chemin in 1896 on behalf of the Venture group and the French government,[17] and the promotion of companies on the Continent by local and London brokers and their agents no doubt stimulated interest in the emerging colonial goldfields. From 1895 to the early 1900s the traffic in Westralian shares between London and the Continent increased rapidly, especially in three separate periods. The first occurred between October 1895 and the end of June 1896, a ‘boom’ period for Westralian shares on the London Stock Exchange, largely created by promoters of new Westralian companies. The boom in Rand shares peaked in September 1895 and speculative interest in London shifted from the Rand to Western Australia.[18] The *Investors’ Monthly Manual* for October 1895 noted that the German investors were buying Great Boulder Proprietary shares while by January 1896 thirteen per cent of the shares of the Great Boulder Main Reef Company were held on the Continent, most of them in Germany.

The second period of intense Continental interest occurred during October and November 1897. *The Economist* of 16 October of that year noted:

> ...it is rumoured that Continental operators are buying ... (Westralian shares) ... and that gradually enterprising British investors .... are transferring their capital from South Africa into Westralian companies.

Continental speculation in Western Australian companies was stimulated again in 1899 and it appears that in this year the greatest European acquisition of Westralian shares occurred. Such purchases were reported in mid-April, June, July, September and December.[19] What is particularly interesting is that, in each of these three periods, the prices of Western Australian shares (especially those of the companies noted above) were recording boom values. Continental investors could have paid as much as five to ten times (or even more in a few instances) the face value of the shares they purchased.[20]

Then there was the case of the French investors of the Golden Horseshoe holding one-third of all the shares in this company, who received a bonus in June 1899, when the company was reconstructed as the Golden Horseshoe Estates. Each shareholder in the old company was given three five-pound shares in the new company for each one-pound share held previously.

Given the fact that many Continental shareholders paid boom prices for the shares they acquired in the late 1890s, the money transferred across the Channel to London was much higher than the face values of the shares received, indeed higher in some cases than the total issued capital of the companies. During these years, the performances of the major mining companies provided further important stimuli. Their total dividends rose from £165,000 in 1896 to £450,500 in 1897, £487,000 in 1898, and £1,833,550 in 1899. In 1899, three companies paid over 100 per cent of issued capital, while three others paid over 50 per cent. The worsening political situation in the Transvaal and the eventual outbreak of the war there in October 1899 also favoured a transfer from South African companies to Westralians. On the other hand, late in 1899 and in 1900, the difficulties some Kalgoorlie companies were experiencing with the refining of the sulphide ores encountered at depth[21] and some evidence of mismanagement at a few mines ensured that another boom in share prices was highly unlikely in the immediate future.

Despite (or because of) the large increases in Continental holdings up to 1900, changes occurred in the holdings over the next decade or so. Some reductions were extensive, such as the Brownhill (from 31.7 per cent of the total share capital at the end of 1900 to 19.3 per cent in June 1909), the Ivanhoe (from 32 per cent in May 1903 to 20.7 per cent in May 1913), and the Horseshoe (from 34.7 per cent in June 1899 to 10.1 per cent in June 1915).[22] But there were some increases: in Kalgurli from 18 per cent in January 1901 to 26 per cent in December 1910), Associated Gold (from 8.3 per cent in December 1899 to 22 per cent in August 1915), and Northern Blocks (from six per cent in January 1901 to 13.5 per cent in February 1910).

Estimates of the importance of Continental shareholders

The author's estimates suggest that the Continental holdings of the total share issues of the major British Western Australian companies operating at Kalgoorlie in the early 1900s were as in Table 1 below.

By 1900, Continental shareholdings were firmly entrenched in almost all these companies. In addition, the British share had stabilised by the turn of the century and, generally ranged between 60 to 80 per cent of the total issued capital. Most of the results for Britain appear to be maxima rather than minima as the holdings of London brokers and merchants on behalf of Australian and Continental clients and relatives have been included in the British total. It is also clear that these companies, being the major gold producers in Western Australia, would have attracted more Continental interest than most other Westralian companies other than the ‘Anglos’. Of the Anglos, only the Anglo-Continental was large, with issued capital in excess of £250,000.[23] It generally recorded a minority British shareholding ranging from 41 to 49 per cent. Then, as noted above, there was the important London and Hamburg Gold Recovery Company, which recorded Continental shareholdings ranging from 69 to 80 per cent from the late 1890s to 1915. Note also that, after the turn of the century Continental shareholders remained committed on the whole to the companies they had invested in because of the large fall in the prices of the companies below their record prices of the late 1890s. Those who sold out would have done so at a considerable capital loss.

Other less successful Kalgoorlie companies appear to have been more 'British’ than their major counterparts, except perhaps the Central and West Boulder, Chaffers, Great Boulder Main Reef, North Kalgurli, and Paringa Mines. German investors, many from Hamburg, predominated in these ventures, except for Chaffers, which contained an abundance of French investors. Outside Kalgoorlie, most companies were mainly British and/or Australian owned, but some, for example, the Great Fingall Reefs, Consolidated Murchison, and Great Fingall Consolidated had many German shareholders.

Table 1: *Major Kalgoorlie companies: The relative importance of shareholdings*

Company	Date	Continental Share Holdings Total	% of Total	Total Issued Capital
Associated	01.05.95	292	0.1	292,274
	24.12.99	4,930	10.0	492,971
	26.07.05	131,766	26.6	495,364
	11.08.15	114,429	23.1	495,364
Assoc. North Blocks	04.01.00	19,000	7.6	250,000
	02.02.10	53,900	15.4	350,000
G'lden Horsesh. Est	21.06.99	186,600	62.2	300,000
Gt Boulder. Persev.	31.12.95	1,760	1.1	160,000
	23.06.15	190,500	63.5	300,000
	03.03.03	30,975	17.7	175,000
	27.04.13	200,123	14.3	1,399,459
Hannans Brownhill	28.02.95	938	1.4	67,000
	31.12.00	55,648	37.6	148,000
Oroya Brownhill	21.06.09	86,850	19.3	450,000
Ivanhoe	28.02.98	3,000	1.5	200,000
	11.05.03	82,800	41.4	200,000
	09.05.13	65,200	32.6	200,000
Kalgurli	24.10.95	2,500	2.5	100,000
	01.01.01	27,240	22.7	120,000
	27.12.10	30,720	25.6	120,000
Lake View Consols	24.08.76			250,000
	03.01.98	15,250	6.1	250,000
	27.12.01	66,750	26.7	250,000
	16.11.10	92,644	26.5	349,599
South Kalgurli	11.12.95	864	2.8	30,850
	14.04.05	14,400	7.2	200,000
	04.03.13	19,800	9.9	200,000

Types of shareholders

It is also useful to consider the types of people who invested in gold mining companies at the end of the nineteenth century. It is very clear from the shareholders' returns that the British-Westralian companies were not owned exclusively by rich British capitalists - the bloated obese examples of contemporary cartoonists! Indeed, while large shareholdings existed, there were also many thousands of 'small' British and Continental investors who came from a variety of occupations, many of whom held only a few shares as demonstrated in Tables 2 and 3.

Table 2: *Number of Continental shareholders in the various mining companies*

Company	Date	Total	Continental
Associated	26.07.05	4,831	1,048
Assoc. Northern Blocks	31.01.05	3,634	517
Oroya Brownhill	02.08.07	4,917	889
Ivanhoe *	11.08.08	2,685	566
Golden Horseshoe	10.05.10	1,142	418
Lake View Consols	25.10.06	3,586	890
Kalgurli	27.12.10	1,322	229
Gt Boulder Perseverance	13.05.08	4,019	894
South Kalgurli	14.04.05	1,100	125

Note: * Excludes bearer share warrants and Bank nominee holdings

Several facts concerning the owners of these British-Westralian companies are evident in Table 3. First, there were many small shareholdings in each company. Indeed, on the Continent, over 70 per cent of the shareholders held up to 50 shares and of these over 30 per cent held no more than 20. Second, the average size of shareholdings was below 100 in almost every case. Third, the average size was generally higher in Britain than on the Continent. Nevertheless, on this last point, it should be noted that the nominee holdings in Britain appear to have been higher and much more diverse than was the case on the Continent, favouring a higher average in Britain.

There were, of course, large individual holdings of shares in Britain, on the Continent and elsewhere. In Britain, the German banks and their nominees, other bankers, share brokers, solicitors, merchants, and operators of industrial concerns, especially in manufacturing, mining, and shipping. There were also other 'gentlemen' including brokers who held large portfolios, such as R.A. Pfingst, J. Polak, O. Oppenheim, F. Deutsche, and S. Goldsmid, most of whom had many Continental clients. On the geographical spread of shareholders on the Continent, large shareholdings accrued to many merchants and brokers in Hamburg, Bremen, Lubeck, Stuttgart, and Berlin. Each city tended to concentrate on a few companies, perhaps reflecting the efficacy of company agents or share brokers operating in these cities at the time. In Paris, Comte F.A.L. Pillet-Will and family members, V/cte L.M. de la Redorte, Michael Ephrussi (a banker), S. Propper (another banker), and the Reitlinger family of merchants, held the largest portfolios. In Belgium, Baron Leon Lambert was a major investor in several companies. One must not underestimate the importance of the large shareholdings even if they were few in number. To take one example, on 26 July 1905 the 495,364 shares on the Associated's books were held by 4,831 registered shareholders. Of these, 64 shareholdings of 1,000 or more shares accounted for 176,427 shares (35.6 per cent of the total held by 1.3 per cent of shareholders), while the other 4,767 shareholders held the remaining 316,937 shares (an average of 67 shares). Three of the 64 large portfolios (totalling 28,620 shares) were in the hands of German bankers in London. These holdings may have represented many small investors in Germany, but how many cannot be determined.

Table 3: *Distribution of shareholdings by size of Continental holdings (in France and Germany at specified dates)*

Company	Date	Percentage holdings in ranges					Total	Average size	
		1-5	1-10	1-20	1-50	>50	shares	Cont't	Brit.
Associated	26.07.05	10.4	23.8	34.0	69.7	31.2	86,241	99.6	109.8
Ass. Nthn Blocks	31.01.05	17.3	28.8	43.7	70.4	29.6	28,613	69.8	100.2
Gt Bldr Persever	03.03.03	20.9	44.3	59.8	78.4	21.6	19,189	69.3	41.5
	13.05.08	2.0	8.5	14.6	46.0	54.0	154,704	195.6	367.5
Golden Horsesh.	04.05.04	24.8	41.4	53.9	77.3	22.7	39,685	64.8	274.3
Ivanhoe	11.05.08	17.5	35.9	49.9	80.7	19.3	38,621	85.6	64.6
Kalgurli	26.12.05	18.4	38.7	53.6	78.5	21.5	11,786	45.0	88.9
Lake View Cons	25.10.06	15.4	30.8	43.8	75.2	24.8	45,327	58.2	109.2
Oroya Brownhill	02.08.07	12.2	28.3	42.4	72.3	27.7	44,159	65.0	92.6
South Kalgurli	14.04.05	14.3	21.4	31.2	70.5	29.5	9,906	88.4	215.4

Note: The second row of the Perseverance differs because of the eight-fold inflation of shares in 1903.

It is therefore evident that Continental ownership, like the British, was not limited to a small group of rich capitalists but was spread over a diverse body of people, most of whom had small holdings and came from a wide variety of social groups. But, as in the South African case, the interest of Continental investors and speculators remained a very important aspect of British-Westralian gold mining experience of the period leading up to 1914.

During World War I, under Britain's *Aliens' Properties Act*, all shares held by enemy nationals were surrendered and were administered by Sir William Plender.[24] He established the clear ownership and eventually sold all German and Austrian held shares (most by 1921). Not that the prices obtained were more than sacrificial in the 1920s as the dividends from Western Australia fell. In 1927 and 1928 only the South Kalgurli paid any dividend. It was not until the 1930s that recovery occurred. By then, Continental shareholdings were no more than a distant memory.

Other aspects of the Continental interests

In addition to the important role of finance, however, it is useful to note other aspects of the Continental connection. European interest in overseas gold mining companies was also aroused in mining techniques and the extraction of the gold from its often complicated ores. But first, the development in earlier decades of blasting compounds by Alfred Nobel of Sweden and the supply of such nitroglycerine explosive compounds coming from the United Kingdom and Germany, in reality from the international cartel of explosives, became essential to the efficient underground activities of mining ventures.[25] In addition, the 1890s were to experience a substantial change in European attitudes towards the manufacture of cyanides. Towards the end of the 1880s, only about 90 tonnes of potassium cyanide was manufactured in the world, almost exclusively in Germany. DEGUSSA of Frankfurt-am-Main was a producer and also acted as the selling agent for the other German producers.[26] The discovery and exploitation of the cyanide process by the Glaswegian Cassel Gold Extracting Company in the late 1880s for the extraction of gold from its ores and the demands of the gold mining industry in many parts of the world for such a cheap and effective method of gold extraction from refractory ores and tailings were not neglected by German industrial chemists. Their attention was channelled in two directions - to discover a cyanide method similar to that covered by the MacArthur-Forrest B and C patents of the Cassel Company and, second, to increase the manufacture of cyanide for sale in the foreign markets, especially in the very lucrative South African market.

At first, the appearance of the Siemen's patent of the German Siemen's-Halske Company, registered in London in February 1889, suggested the dissolving of gold using potassium cyanide followed by precipitation by electricity. This contrasts with cyanide dissolution of the gold from the ore (MacArthur-Forrest B patent) and the precipitation of the gold using zinc shavings (MacArthur-Forrest C). While an attempt by Cassel's to prevent its registration as a patent in Germany failed, a similar attempt in the Transvaal succeeded. In 1895 trials of the process were undertaken at the George Goch and the Metropolitan mines, however, its shortcomings were illustrated and the process was abandoned in favour of the MacArthur-Forrest process.[27]

The second approach on the Continent was more appropriate to the German chemical manufacturing companies. Until the discovery of the cyanide process Germany produced all the potassium cyanide required by other branches of industry, as noted above. At that time, it was made from potassium ferrocyanide (yellow prussiate of potash) which was processed from animal refuse (hides, horn clippings, old shoes, and blood solids) other refuse and iron filings. Naturally, the huge increase in the demand for cyanide emanating from the mines highlighted the shortcomings of this production method, given the growing scarcity of the raw materials. As in Scotland, industrial chemists in Germany set to work to discover a more appropriate method. By the early 1890s, a new approach was adopted in both countries, both based on ammonia. In Germany, however, other methods were developed and were based on the waste products of the beet sugar industry (*schlempe*), the waste products of gasworks, and coal gas itself. All methods were used in Germany. The setting up of an international cyanide cartel in 1897 restricted production in all factories to adjustable quotas.[28]

Following on from the Sulman-Teed patent for the manufacture and use of bromo-cyanide, Dr Ludwig Diehl and his London and Hamburg Gold Recovery Company were able to extract gold from the refractory Kalgoorlie ores at the Brownhill and later the Hannan’s Star mines using a ‘wet’ process. This involved the crushing and 'sliming' of the ore, the treatment of the slimes with potassium cyanide and bromocyanide, filter pressing the sludge and precipitating the gold. Diehl’s innovations included the use of tube (or ball) mills and filter presses, the discarding of amalgamation, the direct sliming of the ore, and the use of bromo-cyanide.[29] Other Continental innovations in this field included the Dehne filter press of the London and Hamburg Company.[30]

In addition, large industrial firms were able to take advantage of the miners' demands for mining equipment, especially when the extraction of gold became much more complicated. Examples include the Krupp ball mills used for the sliming of the gold-bearing material and, no doubt other, less known equipment and processes. Continental mining technologists were also attracted to the Australian colonies during this period. Among these was Ludwig Diehl.[31] In addition there were numerous miners attracted to the rich mining ventures in Western Australia, and at least one mining engineer, Modest Maryanski, of the Great Boulder Main Reef.[32]

Conclusions

For a brief period in the late 1890s and early 1900s, Europe contributed what appeared to be a sizeable amount of money, materials and techniques to the Western Australian gold mining industry. This was also true to some extent in terms of the technological advances emanating principally from Germany and to the increasing numbers of Continental workers adding to the mining work force.

But how much Western Australia benefited from the large amounts of money crossing to London is more difficult to gauge. Where such funds were used to invest directly into mining companies when they were being floated in London, the gain was apparent, but little of Continental money was used in that way. Most of it went into 'second-hand' shares, mostly at inflated prices, and this benefited the sellers, whether they were in Britain, on the Continent, or in Australia. The flows of funds across the Channel were undoubtedly used, at least partly, to finance new mining ventures including some in Australia.

When the boom ran its course, share prices tumbled and many Continental holders either had to sell out at a loss and thus lose their investments or hold on to them, awaiting another boom, which was not to occur, at least in the foreseeable future. In addition, while shareholders received large dividends from many companies in the late 1890s and the early 1900s, these returns began to decline. There were several reasons for this widespread decline. First, all Kalgoorlie companies had been confronted with the appearance of refractory ores at depth which were difficult to work upon and gold extraction involved much more expensive equipment. Indeed mining costs were on the rise, wages were rising, especially during the war years, and the difference between the average costs per tonne and the gold price, which remained constant, declined. By 1914 few companies still paid dividends and most of them disappeared, at least temporarily, in the 1920s.

Nevertheless, German and Austrian shareholders had their shares confiscated under the Wartime Aliens Act of the British Government and were placed in the hands of a custodian for disposal. Many of them were worthless at that time. This Western experience may have cured many Continental investors from sinking their hard-earned savings into speculative stock, at least for some time. But then, speculators are born optimists!

* This paper was presented by Alan Lougheed at the Australian Mining History Conference, Brisbane, July 2002, and is hereby published posthumously. Our grateful thanks to Alan's wife, Jill Lougheed, for granting the AMHA permission to print the paper.

Endnotes

[1] While the Witwatersrand companies were larger than those at Kalgoorlie, in the late 1890s, their appeal to investors was deteriorating with the approach of poorer political circumstances and the inevitability of the outbreak of war.

[2] The commonly used shortened names are used. South Kalgurli is included because it was a survivor and eventually paid around a million pounds in dividends. Only two other Western Australian mining companies, the Great Fingall Consolidated (£1.7 million) and the Sons of Gwalia (£900,000), located elsewhere, were able to match these companies in this period.

[3] The main data source consisted of the annual returns of shareholders which are housed in the Public Record Office at Kew.

[4] The appeal of South Africa was declining temporarily in the late 1890s with the approach of war and the poor political circumstances. There, financing was in the hands of the vendors who set out to develop the properties. The vendor houses, of which Wernher Beit (controlling 24 of the 120 mines in 1902), J.B. Robinson (16), Farrar and Anglo-French Company (16), Consolidated Goldfields (14), being the largest. By 1902, eight of these companies controlled most of the mines. (For an excellent account of the Transvaal case, see Robert Kubicek, 'Finance Capital and South African Goldmining', *Journal Imperial and Commonwealth History*, III, 1975, pp. 386-395). As the number of shares allowed to be held by the general public was relatively small, these controllers were able to bend the share market to suit their own interests.

[5] In particular for this study, the London branch of the Deutsche was established in 1873, of the Dresdner in 1895, and of the Discontogesellschaft in 1899. Among others the Swiss Bankverein played a similar role.

[6] The securities held in the London branches of predominantly German banks were registered in favour of certain bank managers until 1909 after which year the names of the banks alone were used for this purpose. Among the bank officers holding thousands of shares were Smart and Roese (Deutsche), Landsberger, Lindenberger, and Ellert of the Dresdner, and Karbe and Wahrendorf of the Disconto.

[7] These holdings and those held in the names of bank officers are classified as 'continental'. On these estimation problems see my Discussion Paper: 'Ownership of British-Westralian Mining Companies, 1895-1914', Department of Economics, University of Queensland, no. 76, January 1992.

[8] The second stock exchange in Paris at this time, second to the *bourse*.

[9] See the *Statist,* 10 November 1894, pp. 549-50. Some German investors also favoured the share warrants.

[10] Among the merchants, several of whom represented Continental interests, were Carl Loeffler, J. Haenke, P. Rottenburg, C. Andreae, and A. Reitlinger. In these cases, too, the line separating British from foreign ownership is very blurred but the holdings of these merchants were classified as British.

[11] *The Statist*, 4 January 1896, p. 4.

[12] Early Western Australian examples were the Chaffers company operating at Kalgoorlie and the Black Flag company (see *The Economist*, 24 August, 1895, p. 1114). There were also the Horseshoe, Ivanhoe, and the 'Anglo' group (see below).

[13] During the late 1890s, several European brokers opened offices in London, for example, Saemy Japeth, E. Sichel and E. Spiegel (the last two from Berlin). These and several other brokers dealt mainly with Continental investors. For example, see Saemy Japeth, *Recollections from my Business Life*, London, 1932.

[14] Note that a review of several leading British-Queensland companies operating in the mining boom there in 1885-1890 showed that very few shares were purchased by Continentals, nor it seems were they interested in the Indian gold mining boom of the early 1880s.

[15] There were other similar companies focusing upon specific countries such as the Anglo-French (30 per cent Continental), the Anglo-Netherlands (58 per cent Continental, mainly German and Dutch), and the Western Australian Venture Syndicate, which amalgamated with most of the Anglo companies in 1897 to form the Venture Corporation (with some 30 per cent Continental shareholdings).

[16] The London and Western Australian also floated Chaffers in November 1895, mainly to British investors, many in Cardiff. A year later, the Continent held 25 per cent - 18 per cent in France.

[17] See Annual Report of the Anglo-French Exploration Company of Western Australia, in *The Statist*, 5 December 1896, p. 883.

[18] See 'Commercial History of 1895', *The Economist*.

[19] See *The Statist* for 15 April, 3 and 24 June (noting German interest in the Golden Horseshoe), 2 September, 9 and 30 December, and *The Economist* for 22 and 29 July. It was at this time that the Continental holdings of Central and Western Boulder shares rose from 2.8 per cent of the total in November 1898 to 18.3 per cent in January 1901.

[20] I have compiled a weighted weekly index of the London quotations between 1895 and 1902 of the main ten companies and another which also includes five minor Kalgoorlie companies. See my 'The London Stock Exchange Boom in Kalgoorlie Shares, 1895-1901', *Australian Economic History Review,* XXXV, March 1995, pp. 83-102.

[21] The very favourable dividends to 1900 occurred because of the rich 'free' gold being mined up to that time. Below the water line problems soon arose with the changing nature of the ores and the future results were not expected to be so amazing.

[22] Much of the decrease in the Ivanhoe and, especially, the Horseshoe is attributable to the issue of share warrants covering many shares. In 1915, share warrants to bearer in the Golden Horseshoe accounted for 53.4 per cent of the total number of shares in the company; in the Ivanhoe in 1913 for eight per cent.

[23] The other Anglos had issued capital below £50,000. However, the Venture Corporation, which absorbed these small companies, recorded an issued capital of £470,000, around 70 per cent of which was held in Britain.

[24] See especially his second report on the 'Progress made in the Discharge of the Enemy Banks in London', Cd 8889, 13 December 1917.

[25] See Peter Richardson, 'Nobels and the Australian Mining Industry', *Business History*, xxvi, 1984, p. 161. The Germans supplied from 21.5 per cent to 35.6 per cent of all Australian annual imports of explosives between 1906 and 1914.

[26] See Anon, 'Deutsche Gold und Silber Scheideanstalt 1873-1923', *Die Chemische Industrie*, 46 (1923), pp. 99-104.

[27] It was later resurrected, modified, and used in the United States.

[28] An outline of these events can be obtained from my 'Technological advance in the manufacture of chemicals: the case of cyanide, 1888-1930', *History of Technology*, 18, 1996, pp. 81-94; and 'The anatomy of an international cartel: cyanide, 1897-1927', *Prometheus*, 19, 2001, pp. 1-9. Note also the production of sodium cyanide at Les Clarveaux in France by the Societe d'Electrochimie de Paris, using sodium from Martigny in Switzerland, and in Kolin in Bohemia (Austria-Hungary) by the Kaliwerke Aktiengesellschaft, both of which exported their products, but little to Australia.

[29] See R. Hartley's excellent account of mining technology in Western Australia at the time in his Ph.D. thesis: 'A History of Technological Change in Kalgoorlie Gold Metallurgy, 1895-1915', Murdoch University, 1998.

[30] See *The Mining Magazine*, July 1912, p. 42.

[31] In addition there was Ernst Winberg, who operated the plant of the Rothschild-sponsored Queensland Smelting Company at Aldershot, north of Maryborough, for many years, treating materials from many Australian mines.

[32] At least in 1896. See *The Mining Magazine*.