

WITWATERSRAND GENESIS : A COMPARATIVE STUDY

OF SOME EARLY GOLD MINING COMPANIES

1886 - 1894

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Arthur C.M. Webb

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## PREFACE

For anyone standing on the ridge of the Witwatersrand on a spring day in September 1886 the sight immediately to the south represented a hive of activity and hope. Nearly a hundred years later ample evidence stretches away on both sides of the watershed to confirm the fulfilment of those early sentiments. It is, nevertheless, all too easy to ignore the struggles and failures which marked the beginnings of the world's greatest gold field in the light of its subsequent abundant success. Only when attention is turned to the individual companies formed to exploit the discovery does the true picture emerge of the lack of adequate technological and managerial knowledge amongst the early pioneers and of the financial frailty of their companies.

The object of this thesis is to shed light on these beginnings by reviewing the histories of four of the earliest companies established to work the main reef. The approach adopted is to scrutinize the material available with a view to determining the motivations and actions of the managements of the various companies with regard to their economic environment, whether within or without the individual company.

Clearly, the availability of information is a major determinant of the success of any such venture and this was particularly so in the case of the companies considered. With the exception of the Barlow Rand Limited holding of the H. Eckstein and Company Archives, which offers an integral coverage of that firm's dealings with the emerging industry, and which is certainly the most comprehensive source of information available to the researcher, little material relating to specific gold mining companies has survived. Under these circumstances it was necessary to rely heavily for information on the local press. These newspapers proved an invaluable source in this regard. As a mining camp with a limited capacity for generating newsworthy incidents, the newspapers of early Johannesburg found an eager readership for information about the industry which lay at the heart of the community. For their part, the managements of the various mining companies found in the pages of the local press an outlet for intelligence both true and false; the press was a useful vehicle for the publication of directors' and annual reports to meet a wider audience, but similarly it could be and was used to disseminate 'spectacular' reports calculated to influence the status of a company's stock on the local share market. As a research source the press has thus to be approached with caution but its value, if the warning is heeded, is in no way diminished. Beyond these two sources the next most valuable accumulation of data on the early industry is "The Gold Fields Collection" housed in the Cory Library for Historical Research at Rhodes University. As a collection it is far from complete and it is to be hoped that the donors will in future see fit to augment it with further material as this becomes available. It nevertheless proved an invaluable source for the investigation of at least one of the companies of the study and for a general background to the industry.

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I wish to express my gratitude and indebtedness for the kind supervision of Professor Frank Coleman, who proved an invaluable source of information on mining technology and who gave his mature judgement to the unfolding work.

To Barlow Rand Limited and especially to the Senior Archivist, Mrs Fraser, go my thanks for access to the material of the H. Eckstein and Company Archives.

My thanks are also due to Mr Berning and Mrs Fold of the Cory Library for Historical Research, Rhodes University, for unstinting assistance with access to material in the Gold Fields Collection.

Finally, to all those who have assisted in any way to make this work possible, and especially to Mrs Wells, my grateful thanks; to Melanie and Bronwyn more than gratitude for having lived with "It" for so long.

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## GLOSSARY OF MINING AND RELATED TERMS

- Adit** A shaft for mining or drainage driven horizontally into the face of a mountain or hillside to intersect the ore body.
- Amalgam** An alloy of gold and mercury usually obtained by allowing gold concentrates to come into contact with mercury. The mercury is driven off by heating to leave the gold.
- Amalgamation Process** A means by which the crushed gold ore in solution was allowed to flow over mercury covered copper plates to effect an amalgam.
- Assay** A scientific test to determine the amount of metal in a given quantity of ore.
- Bank** The built up area around a shaft, higher than the natural surrounding ground to prevent the inrush of storm water.
- Banket** The Dutch term for almond rock confectionery. Geologically a conglomerate composed of water worn pebbles cemented into a matrix, similar in appearance to coarse concrete. Correct term is conglomerate. (q.v.)
- Battery** A set of stamps (usually five) which fall into one mortar. The term was also loosely used to describe a mill.
- Bewaarplaatsen** An area set aside for the accommodation or storage of mining machinery, tailings, or for other purposes. The occupiers exercised surface rights only.
- Bezitsrecht** A right of possession which conferred upon the owner an indisputable title. The intention of the right was to obviate the risk of defeat of title through old irregularities or formal flaws engendered in the early days of the field with regard to machinery stands, water rights, etc.
- Borehole** A small-diameter hole drilled into the earth, usually by rotating diamond drill, to determine the underlying geological formation. The sinking of boreholes is widely used in modern gold prospecting.
- Chlorination** A process for the precipitation of gold from crushed ore by means of dissolving it in chlorine solution. Best adapted to high grade concentrates it was never very popular amongst Rand companies.

Claim	A portion of land on a gold field to which a miner is legally entitled. Quartz reef claims measured 150 feet across the reef and 400 feet in the direction of the reef or dip, about 1,44 acres in extent. Only white persons were allowed to hold claims in the South African Republic. No more than one claim could be pegged off in the name of one person unless in terms of special registration.
Conglomerate	Rock composed of pebbles cemented together. The gold of the Witwatersrand is found in this formation. Also locally known as Banket. (q.v.)
Country Rock	The general mass of barren rock adjacent to an ore body.
Cross-Cut	A horizontal underground tunnel driven through country rock usually in the general direction of the dip of the reef.
Cyanide Process	The process whereby gold is dissolved from crushed ore in a dilute solution of cyanide. The gold is later precipitated from the solution by the addition of zinc shavings or dust.
Development	Work done in opening up and proving an ore body preparatory to stoping. It includes tunnels driven in country rock as well as on the reef.
Diggers Licence	The licence issued for the systematic working of claims at varying rates, fifteen shillings per month in the case of claims which were not developed and from which ore was not being extracted, and twenty shillings for claims being actively exploited.
Dip	The direction and gradient of the slope of the reef.
Drill	A steel bar with a chisel-shaped lower end, used in mines for making a borehole into which is put an explosive charge.
Drive	A horizontal tunnel in a mine driven along or parallel to the plane of the reef. If used for transporting ore, it is termed 'haulage'.
DWT	See Pennyweight.
Dyke	Intruded igneous rock which fills up fissures and rents in stratified rocks. Igneous rock is formed by the solidification of molten rock matter which has risen from the depths of the earth.
Face	The place in any tunnel or stope at which work is proceeding.
Fault	In geology, a break in the continuity of a body of rock.

Footwall	Country rock or strata lying immediately below the ore body.
Free-Milling Ore	Ore which contains 'free gold' which can be readily saved by pulverizing and amalgamating in a stamp mill.
Frue Vanner	A slowly travelling rubber belt, to which a quick lateral reciprocating motion, or side shake, is imparted. The belt has a slight inclination in the direction opposite to that in which it travels. Crushed ore fed onto the belt is precipitated by vibration onto the rubber and adhering to it is carried back up the belt in the opposite direction to the flow of the liquid.
Gangue	Rock or strata surrounding the ore body. See also Country Rock.
Grade	The amount of rock in a ton of ore which is expressed as pennyweights per ton.
Hanging Wall	Country rock or strata lying immediately above the ore body.
Headgear	A structure erected at the mouth of a shaft to carry the hoisting rope and to guide the skip or cage in the shaft; also to clear it of the mouth of the shaft so that ore or waste rock may be landed at a height above the surface convenient for its disposal.
Lashing	Moving broken rock with a shovel.
Leader	A small lode running into a larger one.
Levels	Horizontal drives (or tunnels) in a mine. It is customary to work mines by levels at regular intervals in depth.
Lode	Any metalliferous vein, a cleft in the earth's crust filled with minerals.
Mill	Works for treating ores by means other than smelting.
Mynpacht (Mijnpacht)	A mining lease granted to the owner of a farm declared a public digging, or where the owner has leased the mineral rights on the property to another, then to the lessee of such mineral rights, with or without the option to purchase. Its extent did not exceed one-tenth of the area of the farm or piece of ground. Granted initially for not less than five and not more than twenty years, these leases were made indefinitely renewable in 1893. The rent payable to the State was ten shillings per morgen per annum, in advance. The State reserved the right to charge a commission of two and a half per cent on the value of gold recovered during the year rather than the fixed rent. If sub-let, in part or in whole, the lessee was liable to the State with the lessor for the amount due.

Ore	Rock containing minerals.
Ore Reserves	Ore bodies blocked out by development and ready for stoping; ore proved to be payable.
Outcrop	The occurrence on the surface of a rock formation.
Payable Ore	Ore which can be mined profitably.
Pay Limit	The lowest value of ore that can profitably be treated by the mine concerned. It is determined by the price of gold, working costs, and other inter-related factors.
Pennyweight (DWT)	One-twentieth of an ounce. A measure used to express the gold content of the ore.
Prospectors Licence	Such a licence enabled the owner to hold and examine ground while paying a small rental. The monthly charge for such a licence was five shillings.
Raise	Upward excavation on the reef body to connect drives on different levels.
Reef	A quartz lode or vein. The term 'reef' on the Witwatersrand usually refers to a conglomerate horizon.
Sampling	Process of obtaining specimens of ore for assay. (q.v.)
Shaft	A deep pit or opening sunk from the surface and by means of which a mine is worked or prospected.
Slimes	The very fine particles of talcose and clayey material mixed with very fine grains of quartz, iron oxides and sulphides, which form the moist residues of the crushed ore.
Sorting	Manually picking out waste rock from broken ore.
Special Registration of Claims	A provision by which up to twelve claims could be held and worked as a single unit, thus obviating the need to show occupation and signs of work on all the claims simultaneously. The regulation helped to reduce the threat of forfeiture. By the end of 1892 most claims on the Witwatersrand were specially registered.
Stamps	Heavy pestles for pulverizing quartz.
Stamp Mill	An ordinary stamp mill consists of an upright frame, heavy iron pestles or stamps - weighing from 400 to 950 pounds - mortars, screens, inclined tables, and other accessories; the motive power is steam or water. The weight of the stamps, the number of times they drop into the mortars per minute, and the amount of ore they crush per day, varies in different localities, according to the quality of ore required to be crushed. Most early Witwatersrand mills were equipped with stamps weighing 750 pounds but by the early 1890's

these were replaced with heavier ones of up to 950 pounds.

Stand	A town lot or general allocation for the erection of buildings, usually measuring 50 feet by 50 feet.
Stoping	A working underground, in which a section or block of reef which has as far as possible been opened up by levels and their connections, is being removed. Stopping includes all the methods and operations which result in breaking up the solid ore and placing it in a position ready to be trammed away.
Tailings	Refuse from workings after the ore has been extracted.
Ton	Long ton 2 240 pounds, short ton 2 000 pounds. Most Witwatersrand companies measured in short tons.
Tramming	The transport of rock from place to place in cars.
Tributors	A leasing arrangement in which the lessee agrees to pay a proportion of the profits, or of the ore mined, to the owner in addition to the agreed rental payments.
Waste	Barren rock.
Water Right	The grant of the use of a water source for mining purposes. A water right did not vest the ownership of the water in the holder of the right and it was required that when he had completed using it, it be returned to the stream or channel from which he took it.
Winze	Excavation of the reef made downwards to connect drives on different levels.
Workings	The development of a mine such as levels, stopes, cross cuts, etc.
Yield	Net recovery of gold from ore; gold recovered expressed as pennyweights per ton of ore treated.



Early trench mining following the example set by William Knight in 1886.

(Source: Rosenthal, E., *The Rand Rush, 1886-1911*, p.27.)

## CHAPTER I

THE PATTERN OF MINERAL DISCOVERY IN SOUTH AFRICA  
BEFORE 1886

The exposed ridges of the Witwatersrand did not impress early prospectors as a good site in their search for gold. One reason suggested for this oversight was that the road from Potchefstroom and Krugersdorp to Pretoria crossed the escarpment at a point where the conglomerate reef was not visible on the surface.<sup>1</sup> Perhaps of significance was that most of those in search of gold were looking for alluvial deposits which they could successfully exploit as individuals. It is thus ironical that the first recorded report made by Europeans of the discovery of gold in the area north of the Vaal River, which was later to become the South African Republic, came from the northern slopes of the Witwatersrand. There, in 1853, Pieter Jacob Marais found gold in pannings of sediment from the Jukskei and Crocodile Rivers. Marais was originally from Cape Town but prior to his arrival in the Transvaal he had worked on the alluvial fields of California and Australia, bringing back to Africa his experience and a desire to find here the riches which had eluded him on two continents.<sup>2</sup> Fate cheated him once more and the Witwatersrand retained its natural grandeur for another thirty years.

Between 1853 and 1886 gold was found in several places north of the Vaal River. The mineral wealth of the Transvaal was long recognised. The Voortrekkers and succeeding generations found ancient iron workings in the Lydenburg district, while coal, lead, salt, silver, copper and saltpetre were also discovered in small quantities.<sup>3</sup> Could their Republic have been the legendary kingdom of Monomotapa? The potential threat, real or imaginary, which such discoveries posed to the independence of these migrants, who cherished their recently conquered country for pastoral bounty rather than its mineral wealth, is reflected in the secrecy to which prospectors like Marais were sworn.<sup>4</sup> In 1859 it was

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1. Preller, G.S., Argonauts of the Rand, p.109.

2. Ibid., pp.26ff.

3. Walker, E.A., A History of Southern Africa, (3rd Ed.), pp.327-28.

4. Preller, G.S., op.cit., p.37.

finally resolved by the Volksraad to allow companies and individuals to mine on a royalty basis, while in 1866, when the pinch of depression had reduced State revenues to the merest trickle, the first mining ordinance was introduced.<sup>5</sup> Yet now, when the attitude of the Government of the South African Republic was warming to the beneficial influence that a revenue from mining royalties would have on empty state coffers, it was from the N'debele country beyond their northern border that news of a gold discovery came. Late in 1867 Henry Hartley, an elephant hunter from the Albany district of the eastern Cape, and his travelling companion, the geologist Carl Mauch, announced the discovery of gold at the Tati River. In consideration of the subsequent events on the Witwatersrand it is paradoxical that this, the first significant discovery of gold by Europeans in southern Africa was a quartz reef outcrop. Located so far into the interior of a continent poorly equipped with natural waterways or other means of communication, the "Victoria Gold Fields" soon lost their appeal despite the strenuous efforts of the London and Limpopo Mining and Trading Company, established to exploit the deposit.<sup>6</sup> A reef deposit required crushing machinery and capital if it was to be successfully exploited and the latter was sorely lacking amongst most of those drawn to southern Africa by the reports of the re-discovery of Monomotapa.

Fortunately for many of these fortune seekers the plaything of the Erasmus children of the farm "De Kalk" in the Hopetown district of the Cape Colony was recognised by a neighbour as being potentially valuable and later identified by Dr W.G. Atherstone of Grahamstown as a diamond. The search for diamonds extended first to the banks of the Vaal River and subsequently to the "dry diggings" of the future Griqualand West.<sup>7</sup> Such was the nature of the alluvial river diggings and the early workings on the diamondiferous pipes of the dry diggings, that they could be profitably mined by the individual digger with a minimum of equipment. Hence the capital needs of the fortune seeker were small and the diamond fields became a power-house which generated a high proportion of the residual capital which became available to meet the requirements of the infant Witwatersrand gold mining companies.

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5. Walker, E.A., *op.cit.*, p.328.

6. Baines, T., The Gold Regions of South Eastern Africa, pp.2ff.

7. Doughty, O., Early Diamond Days, *passim.*, and McNish, J.T., The Road to El Dorado, pp.15ff.

Further gold discoveries in the Transvaal were to follow. Prospectors spread out over a wide area of the South African Republic subsequent to Mauch's pronouncements that auriferous deposits existed in many places within that state.<sup>8</sup> In keeping with the changed attitude of the Government towards the State's potential mineral wealth, the Volksraad passed a resolution on 21 December 1870 empowering the authorities to grant reasonable rewards for the finding of precious stones and minerals.<sup>9</sup> The changed disposition of the State which the resolution confirmed, provoked an immediate response. Twelve days after the announcement, approximately the amount of time taken for word of it to reach the outlying areas, one Edward Button wrote to the Landdrost of Lydenburg informing him of his discovery, along with James Sutherland and Tom McLachlan, of gold some "five days ride from Lydenburg".<sup>10</sup> Button's announcement of a subsequent find at "Eersteling" resulted in the Volksraad granting him a concession for the mineral rights of the area, with which he floated the Transvaal Gold Mining Company with a capital of £50 000 in London. Like the Tati discovery, Button's Eersteling mine suffered from inaccessibility and a reef which was capricious in its yield. A further find was reported early in 1873 in the Lydenburg district. Christened "Macmac" by the visiting State President, T.F. Burgers, the field, together with that at Pilgrim's Rest, discovered in September of the same year, provided the first successful alluvial finds in the Transvaal. Soon a population of over a thousand diggers accumulated on these fields, and in response to their requests a gold commissioner, Major W. MacDonald, was appointed and a diggers' committee elected. In return for a claim licence fee of five shillings a month, diggers were guaranteed their security of tenure.<sup>11</sup>

As is the case with most alluvial deposits the rich "eyes" are soon worked out. Those of Macmac and Pilgrim's Rest were past their peak when hostilities broke out between the Bapedi tribe and the South African Republic in 1876. There were those diggers like Alois Nellmapius who had accumulated considerable wealth on the fields and who now proposed some form of consolidation as the next inevitable step

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8. Preller, G.S., *op.cit.*, pp.76ff.

9. Cartwright, A.P., Valley of Gold, p.43.

10. *Ibid.*, pp.43-44.

11. *Ibid.*, pp.44-47.

of the mining frontier.<sup>12</sup> The great need for the continued working of the fields, and particularly for the opening up of the reefs found in the area, was capital. It was estimated that the cost of bringing a five stamp battery to Lydenburg was £1 500, much more than most of those working the field could afford.<sup>13</sup> In turn the high cost of buying out each individual claimholder made the prospect of consolidation prohibitively expensive. The impasse could only be resolved by Government.

A new Gold Law was promulgated on 21 June 1875. It included a clause which allowed for the granting of blocks of claims to companies which would have the exclusive rights to the ground they owned. While the feelings of the diggers were mixed on this issue they unanimously rejected the provision which increased the claim licence fee from five shillings to ten shillings a month.<sup>14</sup> Resentment against the Government was taken a step further with the outbreak of hostilities against the Bapedi. Not only did the war result in a mass exodus of the diggers' black labourers but the Government did little to protect the fields.<sup>15</sup> Under these circumstances the diggers appealed to the Governors of Natal and the Cape Colony, suggesting the annexation of the Transvaal and the diggings as a solution to their difficulties. While at least one author warns against placing too strong an emphasis on these factors as a cause

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12. The concept of a mining frontier can be traced through four distinctive phases, the first of which is described as that of the individual prospectors and diggers working for their own account or in small partnerships. This phase is followed by the first of two consolidation periods in which individual ownership gives way to joint stock company formation as a means of raising the capital necessary for the more intensive development of the find. The third phase is characterised by some form of consolidation between the various joint stock enterprises, the extent of oligopoly or monopoly formation being a function of the peculiar circumstances prevailing on a particular field. The final stage is marked by backward integration and diversification of the large corporations seeking profitable reinvestment opportunities in other types of mining, different fields, the purchase of companies supplying mining equipment, or simply diversification out of mining sector completely, i.e. using capital generated within the mining industry for investment in either the general national or international economies.

13. Cartwright, A.P., *op.cit.*, pp.79-81.

14. *Ibid.*

15. Morrell, W.P., The Gold Rushes, (2nd Ed.), p.339.

of the annexation of the Transvaal in 1877, their contribution cannot be underrated.<sup>16</sup>

The significance of these events lies in their influence on the Government of the South African Republic which followed the restoration of self-rule in 1881. The Lydenburg fields had taught two valuable lessons, the first of which was that it was difficult for a State with limited resources to exercise any form of control over an alluvial field with hundreds of independent diggers, particularly with regard to the collection of licence and other monies due to the State. Secondly, as the vast majority of such diggers were foreigners, whose loyalty could not be relied upon in time of crisis, any step which reduced their numbers could only serve towards the preservation of the independence of the Republic. With these points in mind we find a shift in gold policy, no longer favouring the individual digger but rather making concessions to capitalists.<sup>17</sup> It was also recognised that such a concession policy would facilitate the establishment of industries in the country.<sup>18</sup> Thus in November 1881 David Benjamin was granted a concession for the exclusive right to mine for gold on the six farms in the Lydenburg district which covered the Pilgrim's Rest area, in return for the payment of £1 000 per annum. The Government reserved the right to convert this rental fee into a payment of two and a half per cent of the value of any minerals found on the farms. Armed with the concession Benjamin proceeded to float the Transvaal Gold Exploration Company and set about the serious business of buying out the remaining claimholders.<sup>19</sup>

The effective closure of the Pilgrim's Rest field to the individual digger proved the undoing of the Government's concession policy regarding mineral discovery as the diggers now spread out in search of substitute fields.<sup>20</sup> Alluvial gold was found at "De Kaap" in 1882, on a group of farms belonging to G.P. Moodie in 1883, and at the future Barberton gold bearing reefs were uncovered by Graham Barber in 1884.

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16. Ibid.

17. Ibid., p.340.

18. The first factory established in terms of the concession policy was one for distilling liquor, the Hatherley plant of Nellmapius and Samuel Marks.

19. Cartwright, A.P., op.cit., pp.16-17.

20. Morrell, W.P., op.cit., p.341.

"Bray's Golden Quarry" with its fabulous "Sheba Reef" followed in 1885.

Clearly a compromise was needed between the holder of the small claim and the concession policy fostered by the Government. By 1885 the method of granting concessions was dropped in favour of a more sophisticated system which would ultimately favour those in possession of capital. The new Gold Law of that year still reserved the right for the Government to grant further concessions in cases where mining proved unpayable to the individual digger, or where the ground, having been worked as claims by individuals, was abandoned.<sup>21</sup> In turn it was now possible for diggers to hold up to twelve adjoining claims upon special registration, whereupon the working of only one of them was sufficient to ensure protection against the loss of the others by "jumping".<sup>22</sup> A distinction was also drawn between prospectors' and diggers' claims, so that the individual holder need only convert the status of his claim or claims from the former to the latter once actual gold recovery commenced, ensuring a saving of half of the monthly licence monies.<sup>23</sup> In contrast, the owners of farms were entitled to a mining lease of one tenth of the surface area, which on the Witwatersrand allowed the capitalists who purchased the farm to exercise a priority right to claims and to gain many of the advantages of the concession policy.

If the Government of the South African Republic was forced to abandon its concession policy in regard to gold mining following the rash of new discoveries between 1881 and 1886, the nature of these finds did not entirely play into the hands of the independent diggers. The more significant discoveries were all in the form of quartz reefs which required capital for their development. In this regard the De Kaap fields were more fortunate in the provision of capital than was warranted by the value of their essentially untried reefs. The year 1886 saw a spate of company formations and a stock exchange boom in Barberton as capital flowed into the area from the rest of South Africa and abroad. In order to appreciate the good timing and fortune of the Barberton company promoters, it is first necessary to briefly consider the intervening events in the diamond mining industry between 1871 and 1885.

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21. The Gold Law of the South African Republic (Law No.5 of 1885), published by Celliers, J.F., Pretoria, 1887, Clause 50, p.11.

22. Ibid., Clauses 52 and 53, p.12.

23. Ibid., Clause 30, p.7.

The alluvial Vaal River diggings were destined for the short, meteoric rise of all alluvial fields. Some good finds were made but few escaped the clutches of their new-found mistress as wealthy men. Relief from the protracted termination characteristic of such affairs came with the discovery of the dry diggings at Dutoitspan and Colesberg Kopje in 1871. The four diamondiferous pipes of the area, together with that at Jagersfontein, represented a confined and concentrated deposit which could be systematically mined. Furthermore, they could be worked by individuals with limited capital resources. The various pipes of diamond bearing material were thus soon pegged out in individual claims of thirty feet square.<sup>24</sup> While the claims could be, and when rich enough, were further subdivided, the principle of one claim, with a maximum of two, per digger was upheld. Thus the dry diggings were destined to evolve through all the stages of the mining frontier.

Difficulties relating to the claims were to emerge in two independent directions. The first confronted by the diggers related to their security of tenure and the payment of royalties. The hunting-cum-prospecting party from the river diggings which stumbled upon the independent digger on Vooruitzicht farm belonging to De Beer agreed to the payment of a royalty of 25 per cent of the value of all stones found in return for the permission to dig. In the ensuing rush the Boer proprietor found it increasingly difficult to collect any form of revenue from the diggings and was persuaded to part with his title for the meagre sum of £6 000 to Dunell Ebdon and Company of Port Elizabeth.<sup>25</sup> While the payment of royalties was soon dropped in favour of a monthly licence fee, part of which would accrue to the farm owner, by 1873 the new owners of Vooruitzicht and the other farm proprietors were arguing for a raise in the licence fee from ten shillings to five pounds, and for the richer Kimberley mine to ten pounds per claim, monthly.<sup>26</sup> The unpopularity of these measures contributed significantly to the political unrest on the field and were only terminated in 1875 when the Governor of Griqualand West, Sir Henry Barkly, bought the farm Vooruitzicht on behalf of the Government of the Colony. The purchase

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24. Morrell, W.P., pp.313ff, Claims on Colesberg Kopje were initially 31 feet square.

25. Chilvers, H.A., The Story of De Beers, pp.19ff.

26. Morrell, W.P., op.cit., pp.328-31.

price of £100 000 was payable in debentures at six per cent.<sup>27</sup>

The second problem regarding the claims related directly to the evolving mining frontier. The principle of claim holding allowed each digger to remove the ground vertically downwards within the four sides of his claim in his own time. But not all men worked their claims at the same pace. Very early in the history of the dry diggings the Orange Free State authorities insisted on the preservation of roadways across the Kimberley mine, cutting seven and a half feet from the adjoining claims to create a passageway of fifteen feet in width. By 1872 the roadway system was doomed as some energetic diggers were already working at depths of 100 feet and ground falls between adjoining claims in the Kimberley mine became a dangerous and regular feature. The haulage scheme which replaced the roadways added to the capital outlay necessary for the individual digger to survive. Amalgamation was thus increasingly recognised as a solution to the rising working costs which came with increased depth of working. Compounding the problem for the individual digger was the fact that there was a sharp fall in the price of diamonds in 1872.<sup>28</sup> In 1874, as a consequence of the changing circumstances, the mining regulations were altered to allow the individual to own up to ten claims,<sup>29</sup> while in 1876 the Mining Board removed the restriction entirely.<sup>30</sup> Ownership of the blocks of claims thus passed increasingly into the hands of the capitalists.<sup>31</sup> Nevertheless, the transition was neither immediate nor swift and it was to be six years before Kimberley enjoyed its first stock exchange boom and twelve years before the final amalgamation of the industry was complete. Very often the first mining companies on the field, such as the British and the Central Diamond Mining Companies, were formed as a means of overcoming the various technical problems of deeper mining experienced by a group of claimholders. Thus the shares seldom passed out of the hands of the original claimholders. It was rather the bona fides success of such companies in dealing with these difficulties which prompted the subsequent rash of

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27. Chilvers, H.A., op.cit., pp.31-32.

28. Morrell, W.P., op.cit., p.328.

29. See Clause 18 of Ordinance 10, 1874 of Griqualand West.

30. Ordinance 12, 1876 of Griqualand West.

31. Morrell, W.P., op.cit., p.332.

joint stock enterprises.<sup>32</sup> Very little cash was thus actually involved in the formation of the first companies, the claimholders receiving vendors' shares in return for the transfer of their claims. Given the existing infrastructure and proven nature of such claims, what little working capital was required could easily be borrowed and rapidly repaid from the working of the new consolidated property. Nevertheless, an unfortunate precedent was thus created which was to feature prominently on the early Witwatersrand in the heavy emphasis on vendor shares,<sup>33</sup> while even within the Kimberley experience, the boom of 1881 revealed the difficulties generated from the too liberal interpretation of the value of vendor assets. It is worth quoting an intelligent observer on this point:<sup>34</sup>

"It is impossible to dispute the fact that claim property had risen enormously in value during the few years previous to the establishment of the first joint stock undertaking, and it is manifest that if claims were incorporated in a company at a price on which they could yield a fair dividend, that price was a perfectly fair one. The non-success of many of the subsequent undertakings was mainly due to the fact that the promoters were blind to this very simple truth, and had forgotten, or had never known the first principles which should govern joint stock undertakings. In fact people ... invested freely in shares in companies, the claims in which would have given an admirable return on a small capital, but a very poor one, if any at all, on the enormous sums at which they were put in."

The Witwatersrand mines with their heavy commitment to vendor shares were to suffer similar disadvantages. Another tendency which was borrowed from the early diamond companies by the Rand was the general influence of such company formation on the community. The newly created companies required managers and secretaries, and these were found from within the community as "... men who before had been content to work hard for five or six pounds a week secured positions as managers of companies with comparatively enormous salaries, [while] clerks and shopmen became secretaries, and assumed all the dignity of their new positions..."<sup>35</sup> The favoritism and nepotism of the directors of new companies, themselves inexperienced, caused inefficient men to be

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32. Matthews, J.W., Incwadi Yami, p.245.

33. See below, Chapter VI, pp.200ff and Appendix I.

34. Matthews, J.W., *op.cit.*, p.246.

35. *Ibid.*, p.251.

appointed to posts which the prevailing circumstances of the mines demanded should have the utmost practical experience and technical expertise. Few of the Kimberley boom companies were ever able to pay dividends and by June 1881, when the banks restricted the extension of credit, the collapse came. The young Witwatersrand was to borrow heavily on Kimberley's early experience.

The speculative mania of the early months of 1881 in Kimberley touched the far corners of South Africa and even attracted some capital from Europe. In six months the number of joint stock companies rose from twelve to seventy one and their nominal capital from a cumulative total of £2 500 000 to over £8 000 000.<sup>36</sup> For the first time the mining industry had united the capital resources of South Africa behind it. While the collapse which followed heralded the most severe depression South Africa had to endure during the nineteenth century,<sup>37</sup> the relatively unsophisticated nature of the agricultural foundation of the economies of the various states shielded the bulk of the population from the harshest effects of the situation. Rather the mania of 1881 introduced a new psychological element as an extension of the current views of the developing mining industries. The discovery of diamonds and gold had already served to quicken the pace of the various economies. Fortunes were being made, not only in the diggings, but also by some amongst those serving them. A speculative element was evincing itself as never before. Not only did the new mining industry suggest the possibility of undreamt of wealth for the few, but its novelty and the seeming ease with which fortunes were made, made it the dream of every enterprising man. While all could not succeed at digging, the joint stock mania of 1881 offered a participation for anyone with a few pounds to spare. The stock exchange became a new focus of attention and offered even greater possibilities in the pursuit of instant fortune. The collapse of 1881 was a set-back, but the novelty of the situation and the comparatively short duration of the mania left many potential participants unchastened. The speculative spirit of the society was hardly daunted as the following repetitions at Barberton and the Rand were to prove.

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36. Morrell, W.P., *op.cit.*, p.333.

37. Schumann, C.G.W., Structural Changes and Business Cycles in South Africa, 1806-1936, pp.81ff.

The collapse of the speculative market in 1881 and the subsequent depression played into the hands of the emerging Kimberley capitalists. A weakened diamond mining industry lent itself to an increased pace of consolidation. By 1885 the trend towards the eventual goal of Cecil John Rhodes's monopoly organisation seemed yet to have far to go. At the end of that year there were still ninety eight separate holdings in the various mines at Kimberley, but weighed against approximately 3 600 original claims the progress of the process of amalgamation can be appreciated.<sup>38</sup> The details of the climacteric years which resulted in the creation of the De Beers Consolidated Mines Limited in 1888 need not concern us here, other than to note the increasing involvement of foreign capital in the negotiations. Early in his drive to secure a monopoly, Rhodes came to rely on the acumen of Alfred Beit and the financial resources he represented on the fields, namely, the Paris diamond firm of Jules Porges and Company. When this source of funds no longer sufficed the Rothschilds were induced to finance him. In this way Rhodes's machinations in Kimberley received the blessing of financial respectability in the eyes of a capitalist world, while he, Beit, and their partners, received a credibility in those financial circles which was to allow them access to international capital resources for their further exploits on the Witwatersrand. Rhodes's consolidation of the diamond mines only occurred in 1888. By then, however, the Witwatersrand discovery was nearly two years old.

The relationship between the diamond and gold mining industries in South Africa has always been a close one. On the level of the individual digger and his labour, an ebb and flow between the respective fields was very much a feature of the 1870's and early 1880's.<sup>39</sup> Likewise the capital links were strong, not only in the flow of finance from Kimberley first to Barberton and then the Witwatersrand, but also in the personalities involved and the technology applied.

The Barberton field consisted of a scattering of gold bearing quartzite reefs, some of which, like Bray's Golden Quarry and its Sheba Reef, were fabulously rich, yielding over twelve ounces of gold to the ton of rock; others were less well endowed. By 1885, however, South

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38. Morrell, W.P., op.cit., pp.334-35.

39. Ibid., pp.337ff.

African gold mining companies had developed a poor reputation with overseas investors. Besides the London and Limpopo and the Transvaal Gold Mining Companies already mentioned, several Lydenburg properties were floated in London in 1883.<sup>40</sup> They too failed to come up to the expectations of their proprietors and further helped to alienate foreign capital from the fields. Thus when the announcement of the discovery of the Sheba Reef electrified the imagination of a South African population anxiously seeking instant wealth and new investment opportunities, foreign reaction remained guarded, as well it might. It was from within South Africa and particularly from Kimberley that the capital for the speculation in Barberton properties came. Smaller capitalists, squeezed out in the rush of the giants for the control of the diamond industry were looking elsewhere for investment opportunities. Most of the ventures floated at Barberton, with its two stock exchanges, were essentially untried, and when eventually worked proved unpayable. The 1886 boom, which saw companies floated with a nominal capital of over two million pounds and a rise in the speculative value of their shares to over five million pounds, was soon burst. Unlike the earlier diamond boom of 1881, which saw speculation and over valuation of properties which, by and large, were inherently valuable, the Barberton boom relied more heavily on pure speculation. Clearly, the lesson to be learnt was that the presence of gold was insufficient to guarantee its profitable working. Too few gained that insight and the stage was set for the discovery of the Witwatersrand and the speculation which marked its early years. It is perhaps not insignificant that the Johannesburg Stock Exchange commenced operations in June 1887, only ten months after the proclamation of the gold field and a mere two months after the first company commenced regular crushings.<sup>41</sup> From the outset of their formation, Rand shares were quoted on the Kimberley and Barberton exchanges.

Having stressed the early founding of the stock exchange in Johannesburg it is, however, also necessary to point out that the Witwatersrand gold field was unique in the nature of its geological formation and the consequent capital and labour intensive nature of its development. It has been repeatedly stressed that the Rand was

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40. Reunert, T., Diamonds and Gold in South Africa, p.83.

41. Hatch, F.H. & Chalmers, J.A., The Gold Mines of the Rand, p.2.

never a field for the individual digger.<sup>42</sup> The conglomerate nature of its "banket"<sup>43</sup> reefs required an investment in capital equipment if they were to be mined and reduced successfully. Unlike the Sheba and other more valuable reefs of the Barberton area, the Witwatersrand reefs were of a generally low gold content. The emphasis from the outset needed to rest on large scale production, that is, the crushing of large quantities of ore in order to gain a relatively low gold return per ton worked. Such conditions were not conducive to the individual digger. The capital required for the successful working of the Rand mines was drawn from throughout South Africa, with most of it coming from Kimberley and the developing mercantile centres. Rhodes's company The Gold Fields of South Africa Limited was the only early concern floated in London to work the Witwatersrand. The labour needs of the early mines were, in turn, met by a partial diverting of the flow of migrant African workers destined for the Kimberley diamond mines. Conveniently situated between the latter place and a major source of its labour supply in Portuguese East Africa and the northern Transvaal, the Witwatersrand was able to encourage some of these workers to alter their course.<sup>44</sup>

The sequence of events leading to the actual discovery of the main reef series on the Witwatersrand has generated a controversy the details of which need not concern us here. Suffice to say that it is probable that the main reef series was discovered by George Harrison in February or March of 1886.<sup>45</sup> By June samples of the ore were displayed and crushed in Sheasby's produce store in Kimberley<sup>46</sup> while in the following month similar tests were conducted in that of Mr Alexander.<sup>47</sup> At this point there were still those who believed that the new field might offer encouraging prospects for the independent digger. One report even incorrectly suggested that the material being taken from the site was

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42. See for example Neame, L.E., City Built on Gold, p.108.

43. See glossary for term "banket".

44. See below, Chapter VI, pp.224ff.

45. Gray, E.L., & J., The Discovery of the Witwatersrand Goldfields, passim.

46. The Eastern Star, (Grahamstown) 21 July 1886, quoting the Diamond Fields Advertiser, (Kimberley).

47. Sauer, H., Ex Africa, p.104.

alluvial.<sup>48</sup> Such misconceptions arose from the structure of the blanket reef which, with its content of white, water worn, quartz pebbles, reflected the ancient alluvial nature of the depositing of the sediments which went to form the reef. On the line of outcrop where weathering of the reef had taken place over many years, the reef was broken down with the result that the nature of some of the samples sent to the curious throughout South Africa would have elicited the type of mistaken comment which appeared in one journal:<sup>49</sup>

"The ground we saw washed was alluvium, composed of earth, sand, and gravel, and the process adopted was to place a small quantity of it into an iron basin, and then continue washing it until the dregs were left at the bottom."

Such words, printed first in the Kimberley press and subsequently in other newspapers, were surely music in the ears of the "old timers". A few days later it was reported from Barberton that "A big rush to Witwaters Rand" was on.<sup>50</sup> Any doubt or hesitation was further dispersed by the reports of the extraordinarily rich nature of the ore, which at least one account suggested would yield over four ounces of gold to the ton.<sup>51</sup> Again it was asserted that the reef would be traced for 50 or 60 miles. Against a background of such reports it is of little wonder that news of the discovery caught the imagination of so many.

One of the best known examples of the participation in the rush by the representatives of Kimberley capital is that of J.B. Robinson and Dr Hans Sauer, which culminated in the early purchase by Robinson of the portion of Langlaagte belonging to the widow Ooshuizen.<sup>52</sup> Subsequently the Rhodes, Rudd and Caldecott Syndicate, in which Sauer held a minor interest, acquired the properties of Klein Paardekraal and Roodepoort. Such purchases were, however, not synonymous with the acquisition of all the mining rights, but gave the new owners the right to a priority claim of mynpacht rights<sup>53</sup> on up to ten per cent of the surface area of the farm, for which the minimal fee of ten shillings

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48. The Eastern Star, 21 July 1886.

49. Ibid.

50. The Eastern Star, 23 July 1886.

51. The Eastern Star, 21 July 1886.

52. Sauer, H., op.cit., pp.108-9.

53. See glossary for the term "mynpacht".

per morgen per annum was payable to the State.<sup>54</sup> Further, as proprietors of the farms, they were entitled to receive half of the revenue collected by the State from the issue of prospectors' and diggers' claim licences gathered from those working the balance of the claims on the property.<sup>55</sup> All monies from the issue of stand licences for dwellings, machinery sites, and tailings dumps, accrued to the owners alone, while they also enjoyed direct representation on any diggers' committee.

There was soon a good representation of Kimberley capitalists on the Rand, with Alfred Beit making a personal appearance and lesser men like William Knight striving for success.<sup>56</sup> If we can speak of a general trend emerging in these confused times, it would seem that the Kimberley capitalists soon saw the merits in the system of acquiring control of the farms on which the reefs were discovered, or simply in the acquisition of leases on their mynpacht rights. Such action assured them a priority participation. On the second level, of the actual pegging and staking of claims, whether for mynpacht rights or not, the capitalists had to rub shoulders with the lesser mortals in the free-for-all of the rush. But here their own limited knowledge of geology and gold mining gave them no distinct advantages. If anything the pessimistic prognostications of an expert like Gardiner Williams did Rhodes's search for claims more harm than good.<sup>57</sup> It thus required the true spirit of the gambler in deciding which claims to buy; a trait Alfred Beit displayed with lasting benefit to himself and his associates. Even here, however, it would seem that with the exception of the future Robinson Company property, Beit contented himself in a broad spread of claims rather than the purchase of consolidated blocks. Criticism of the activities of the capitalists was soon forthcoming, as the following quotation indicates:<sup>58</sup>

"On all but two of these farms either the owners themselves, or others to whom they have leased their mining rights, have taken out Mijn Pacht Brieven, which means that they have reserved from all allocation to diggers some ten per cent of their holding. As this percentage is laid off along the line

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54. The Gold Law of the South African Republic (Law No.5 of 1885), Clauses 14, 18, 19, and 22.

55. Ibid., Clauses 8 and 15.

56. See below, Chapter II, pp.29-30.

57. Sauer, H., op.cit., pp.128-29.

58. The Eastern Star, 13 September 1886.

of discovered reefs, the arrangement has the practical effect, in many cases, of shutting up the farms as public diggings... Government is understood to favour this arrangement: ... It is not the ordinary Boer who wishes to prevent the influx of diggers. He is quite astute enough to perceive the advantage of having a good market for his produce; but the ruling element, chiefly Hollanders and Paarl Afrikaners, are shrewd likewise enough to see that the peaceful invasion of the country by thousands of working men would be their death knell. Their policy, therefore, is to throw the auriferous ground into the hands of mining companies, employing native labour for the most part, the natives not enjoying political rights."

This analysis of the intentions of the Transvaal Government was followed up by a clue to the sequence of events regarding the bulk of the remaining claims scattered out along the various Main Reef, Kimberley, Black and Bird Reef Series, which had been actively prospected and staked in the months since the initial discovery:<sup>59</sup>

"When claims are given out at Witwatersrand it will probably be found that nearly the whole are registered in the name of Transvaal Boers... They will amalgamate their claims up to the limit of amalgamation allowed by the law, which is 12 in number; risk nothing in development beyond what is necessary to prevent the claims being jumped, probably refuse to pay licence money, and await the issue of events, leaving such companies as that established by Mr. Knight to bear the brunt of the risks inseparable from mining upon unimproved ground. It is not to be expected, therefore, that there will be any speedy development of Witwatersrand."

The early participation by Transvaalers in the pegging of claims is borne out by Sauer's account and the esteem in which he held their prospecting abilities.<sup>60</sup> Undoubtedly, however, they were joined by numerous other fortune seekers who similarly lacked the capital necessary for development.

A distinguishing feature of the early Witwatersrand mining companies is the names which many of them bore and the financial links implied by such names as the Tarka Pioneer, Paarl Pretoria, Paarl Ophir, Cradock, Worcester, Grahamstown, and other place names. In turn, other companies did not express these ties so clearly, although they existed just as strongly, as for example, in the case of the Jubilee and City and Suburban Companies with Pietermaritzburg, the Primrose Company with

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59. Ibid.

60. Sauer, H., op.cit., pp.109-10.

Harrismith, the Spes Bona with Cape Town, and the George Goch and Wemmer Companies with Kimberley's mercantile capital. The early records of at least two of these companies suggest clues to the evolution of the early links between the various towns and the subsequent formation of the companies which bore their names. In pursuing the evidence we are also able to gain some insight into the system of syndicates which formed an important intermediary connection between the claimholders and company formation.

At least one of the Grahamstown newspapers, The Eastern Star, showed an early and lasting interest in the fate of the new Witwatersrand gold field.<sup>61</sup> Its function in awakening local interest in the Transvaal gold fields can only be guessed but in September 1886 a group of local Grahamstown business and professional men banded together to act on the news of the recently proclaimed field. On 17 September 1886 an advertisement appeared in The Eastern Star announcing the intended formation of the Grahamstown Gold Prospecting Company, which was to have a nominal capital of £2 000 in 400 shares of £5 each. The directors of the proposed organisation would be Henry R. Wood (chairman) of the famous mercantile house of Wood Brothers, Frederick Barr a local store keeper and municipal councillor, S.C. Cronwright a local farmer and perhaps better known as the husband of the authoress Olive Schreiner, Josiah Slater the proprietor of the Grahamstown Journal, and W.H.S. Bell a local lawyer. An editorial of the same date elaborated on the proposed functions of the Company, which was to send a suitable prospector to examine firstly "the line of the range of auriferous mountains which runs from De Kaap to Zeerust". The Witwatersrand was also to receive attention but events at Berberton then held the imagination of the public and it was no doubt politic to play to their interests. John Thornhill Cook, who was subsequently engaged as the Company's prospector, following the successful flotation of 25 September, proceeded straight to the Rand.<sup>62</sup> The editorial of 17 September also pointed out that a significant number of Transvaal farms were owned by Grahamstown residents

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61. Regular reports on the Witwatersrand began appearing from July onwards. At the end of March 1887, the junior partner in the concern, George Sheffield, moved permanently to Johannesburg to open a branch of the newspaper there, the entire concern making the move to the gold field in September of that year. The name of the publication was later shortened to "The Star".

62. The Eastern Star, 27 September 1886.

and public institutions, and that arrangements had been made for prospecting to be conducted on these properties for a fee. The Company would also acquire the right for working or developing any promising finds on a royalty basis. Beyond these prospecting functions the Company would also have power for acquiring leases of gold bearing properties and for floating mining companies.<sup>63</sup> Only a week was allowed for the application of shares, at the end of which the list was oversubscribed by 24 shares. No further details of the issue are known but it might safely be assumed that the bulk of the shares were taken up locally.

Earlier in September 1886, news of the Witwatersrand was having a similar effect on businessmen in Worcester in the western Cape. On 13 September an inaugural meeting of provisional directors was held under the chairmanship of Mr J.R. Hugo. A resolution was carried nem con that immediate steps be taken to send one of their number to the Transvaal "for the purpose of acquiring gold bearing property". The bellman paraded the town on 16 September advertising the holding of a public meeting of interested parties that evening in the town hall. At the meeting Hugo was delegated to proceed to the Transvaal to acquire claims on the part of a company yet to be formed. A meeting was duly held on 30 October at which the trust deed of the Worcester Exploration and Gold Mining Company was discussed. The meeting also heard a telegram from Hugo announcing his purchase of five main reef claims in close proximity to Ferreira's Camp for the sum of £1 250. The directors of the new company were Messrs Hugo, Meiring, Theron, Sharpe, Liebenberg, Bull, Bosman and Heatlie. By mid November Hugo reported the purchase of an additional three adjoining claims for £100 each.<sup>64</sup> Once again it may confidently be assumed that the capital of the company was raised locally.

The Grahamstown Gold Prospecting Company was also successful in its endeavours on the Witwatersrand, with Cook acquiring five and a half claims on the main reef adjoining those of the Jubilee Company.<sup>65</sup> The interests of the Prospecting Company were, however, more extensive and by September 1887 included participation in a wide range of ventures

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63. The Eastern Star, 17 September 1886.

64. Transvaal Archives, Inventory A755, Minute book of the Worcester Exploration and Gold Mining Company.

65. The Eastern Star, 15 April 1887.

and syndicates, only some of which were on the Witwatersrand. By the end of 1888 the Company had considered some 27 different ventures covering the Witwatersrand, Klerksdorp, Zoutpansberg, Malmani, Barberton and Albany districts. In 1887 twelve claims were held at Potchefstroom, with a further quarter share in the Marico Syndicate, both of these ventures being related to the discovery of gold in the western Transvaal. A number of stands were also owned in the town of Klerksdorp, while shares were held in a Vaal River Syndicate, presumably formed for the exploration of the coal deposits in the vicinity. On the Witwatersrand, besides the main reef claims already mentioned, sixteen Black Reef claims were held at Elsberg on the east Rand, later to be abandoned when proved unpayable. A further fifty claims were owned on the west Rand as part of the property of the Klipspruit Syndicate, which were subsequently sold.<sup>66</sup> The Company was also fairly heavily committed in the Barberton area, where in 1889 two of its ventures were successfully floated as the City of Grahamstown Gold Mining Company and the Great Scot Gold Mining Company.<sup>67</sup> While these successes lay in the future, it is nevertheless worth noting that the net profit for the first year of operations of the Company amounted to £4 041 17s.4d., of which £4 000 was distributed to the shareholders.<sup>68</sup>

The articles of association of the Prospecting Company specified the granting of powers for the formation of other companies.<sup>69</sup> The first opportunity in this regard came on the Witwatersrand. As already indicated, Cook was able to acquire the claims on an area of the main reef between Ferreira's Camp and the Natal Spruit. These claims formed part of those offered earlier to Hans Sauer at £40 each and which Rudd refused to buy because the reef was not visible, being covered with a layer of soil.<sup>70</sup> The Company itself was in no hurry to exploit the claims, preferring to wait until the adjoining Jubilee Company commenced operations. A further debate which delayed any commencement of serious

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66. Cory Library MS6951, Ventures of the Grahamstown Gold Prospecting Company.

67. Cory Library PR700, Directors Report for the Year Ending 30 August 1889 of the Grahamstown Gold Prospecting Company.

68. The Eastern Star, 14 September 1887.

69. Cory Library MS6965, Articles of Association of the Grahamstown Gold Prospecting Company.

70. Sauer, H., op.cit., pp.117-18.

mining activity was whether a new company should be formed to raise the necessary capital for developing the claims, or whether the Prospecting Company should itself raise the funds required by debentures or another share issue.<sup>71</sup> The initial reports from the Jubilee Company were extremely encouraging giving thirty ounces of gold from five tons of ore. Samples of their own claims also suggested that returns in excess of one ounce per ton of rock might be expected.<sup>72</sup> These results indicated that the claims might prove a viable entity on their own, and it was thus decided at a special general meeting in Grahamstown on Saturday 23 April 1887 to form a new company with a nominal capital of £7 000, to be called the Grahamstown Gold Mining Company Limited.<sup>73</sup> The five and a half claims were duly transferred to the new Company for the considerations of 5 000 of that Company's £1 shares, which were then distributed on a ratio of ten new shares for every share held in the Prospecting Company, the balance of 1 000 new shares being placed in the custody of the directors. The limited provision made for working capital for the new company was typical of so many of the early ventures and will be commented on throughout future chapters. The firm hold of the Prospecting Company on the new venture was thus assured, while considering that the new mining company was floated in Grahamstown it is likely that a considerable part of the 2 000 shares offered to the public were also taken up there. It is highly probable that a similar sequence of events was unfolded in many other South African towns.

The new Grahamstown Gold Mining Company decided to appoint Mr James Butler C.E., previously employed in the construction of the Grahamstown to Port Alfred Railway, as its engineer. The Company was indeed fortunate in that Butler had spent a little time at the Royal School of Mines. He was thus a man of some mining experience and was later to establish himself as one of the mining engineers of the Rand. In Johannesburg Butler found that the Company would gain considerably from an amalgamation of its claims and water rights with those of the Michael Brothers, who owned four and a half adjoining claims.<sup>74</sup> Their property was subsequently bought for £4 500, payable in £1 shares of the

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71. The Eastern Star, 15 April 1887.

72. Ibid.

73. The Eastern Star, 25 April 1887.

74. The Eastern Star, 11 June 1887.

Grahamstown Company, which accordingly increased its nominal capital to £11 000 and reduced its reserve to 500 shares.<sup>75</sup> Further details on the fate of the Company need not concern us, unless perhaps to point out that in December 1888 it was decided to accept an offer of £60 000, made on behalf of a Kimberley Syndicate, for the outright purchase of the property.<sup>76</sup> In this way Grahamstown capitalists severed their connections with what became the New Grahamstown Gold Mining Company, which was then dominated by the interests of Barnato Brothers. Subsequent evidence suggests that the Grahamstonians had not lost significantly on the deal!

The Worcester Exploration and Gold Mining Company received an offer for its claims acquired by Hugo at a much earlier date. At a special general meeting held on 12 January 1887 a letter was read from the prominent firm of Pretoria attorneys, Messrs Morkel and Du Toit, requesting an indication on whether the Company was prepared to sell its claims and, if so, what price it would consider reasonable.<sup>77</sup> The response arrived at after lengthy debate was to suggest that the Company would be willing to sell at a liberal price provided that the greater part of the deal consisted of shares in the new company to be formed. A further meeting on 27 January disclosed that the interested party was a certain Mr Barber.<sup>78</sup> No further details are provided, and it can only be assumed that the person involved was Graham H. Barber, who with his brother F.H. Barber, had acquired considerable wealth at Barberton and who also held an interest in the adjoining Ferreira claims. By early February it was decided that the offer of £2 500 in cash and 250 shares in the proposed company was unattractive and the decision was taken to work the claims on behalf of the Company. In addition to this direct involvement on the Witwatersrand, the Worcester Company in its exploration capacity, involved itself in the other Transvaal gold fields, showing a particular interest for the ill-fated Malmani field of the western Transvaal.<sup>79</sup>

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75. The Eastern Star, 13 June 1887.

76. The Eastern Star, 12 December 1888.

77. Transvaal Archives, Inventory A755, Minute Book of the Worcester Exploration and Gold Mining Company.

78. *Ibid.*

79. *Ibid.*

In many respects the two exploration or prospecting companies outlined above may be considered as a more sophisticated form of the syndicate established for the purpose of acquiring claims or merely "interests" in the various mining ventures then being developed in the Transvaal. With regard to the Witwatersrand their activities were perhaps more intense than elsewhere, given the timing of their formation and the nature of the discovery which left any organisation with available capital resources in a position to secure advantageous deals. As Emden has indicated, the big money on the Rand was not made by those who came first and found the gold, but by those who came at the fateful moment and exploited it industrially.<sup>80</sup> As is clear from the case of the Grahamstown Company, such syndicates and the companies they floated played a role in the entire consolidation process of the Rand claims.

In the interlude, while companies and syndicates awaited the machinery which would ultimately prove the value of the field, the process of consolidation and share sales continued unabated, with particular farms and blocks of claims suddenly taking on a popularity which was characterised by minor rushes. The broken nature of the various reef series west of Langlaagte made this area particularly prone to such events, such as that on the farm Leeupoort in the last week of October 1886.<sup>81</sup> The general popularity of the West Rand no doubt also influenced capitalists like Rhodes and Robinson in the ultimate choice of their spheres of influence. It is an interesting feature of the Witwatersrand gold field that many of the earliest writers describing it set the date for its beginnings as the early months of 1887. It was then that the first companies, such as the Wemmer and Jubilee, commenced crushing their ores with their own mills. In the year which elapsed since the discovery, the curious and unique nature of the reefs had ensured only the desultory fossicking on claims necessary to prevent them being jumped by others,<sup>82</sup> while the less fortunate and the eternal optimists continued the search for further and richer reefs. For some, such as William Knight on his Driefontein property, fossicking was

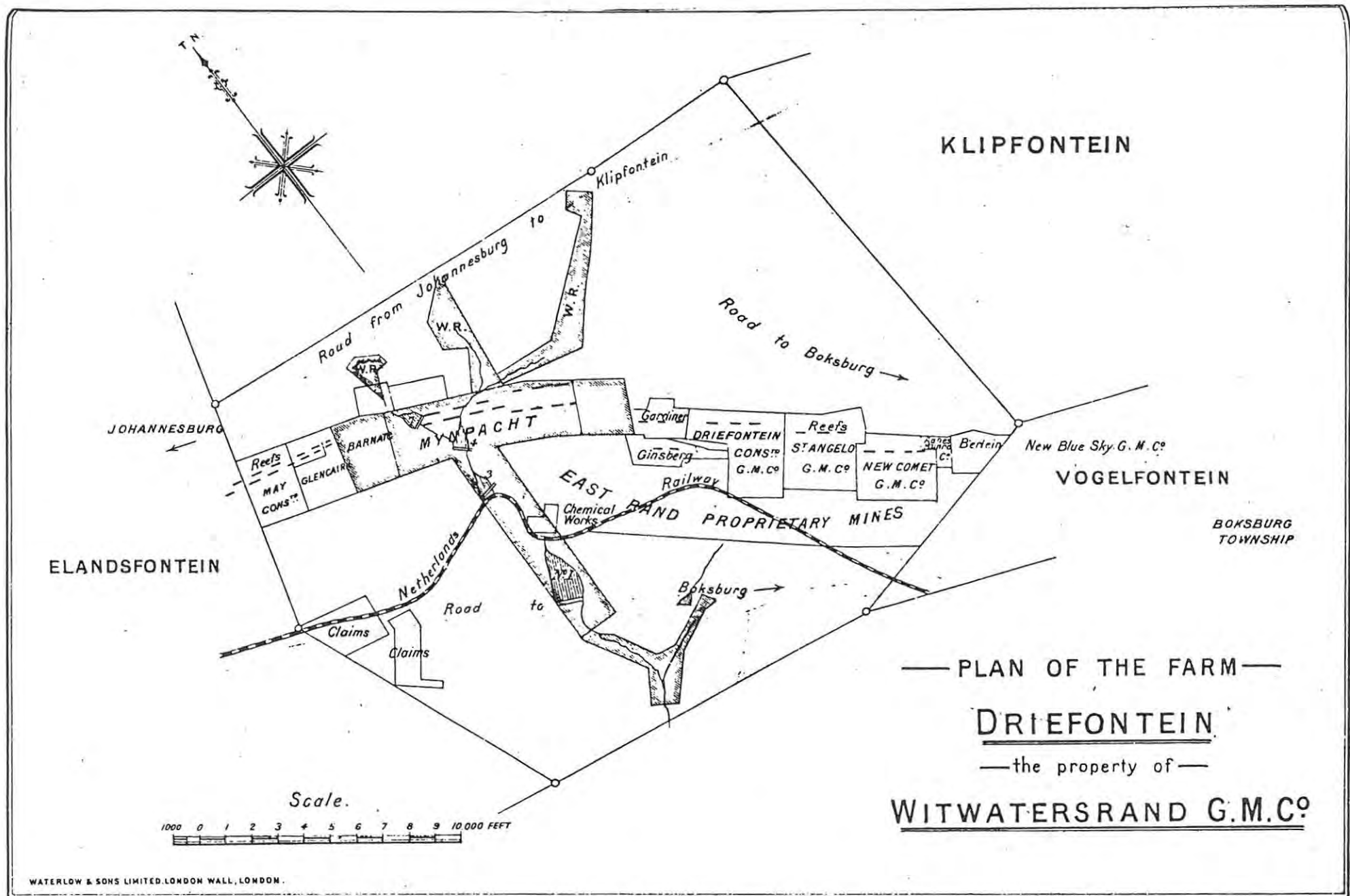
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80. Emden, P.H., op.cit., p.101.

81. The Eastern Star, 1 November 1886.

82. The Jumpers Gold Mining Company took its name from the fact that some of the claims which went to make up the property were unsuccessfully jumped three times prior to the formation of the Company.

extended to the systematic opening of the reef outcrop by a series of trenches, but such activity invariably only followed the formation of the mining companies, few of which were formed in 1886. The financial resources of the numerous syndicates were more than extended in the bids and counter-bids which went towards the ultimate goal of consolidation, and which raised the price of claims accordingly. It is also necessary to remember that during 1886 the capital resources of South Africa were considerably extended following the general recovery of the economy and the boom in Barberton shares, factors which assisted in keeping the Witwatersrand "on ice" until 1887. Much talk and numerous press reports on the progress being made in discovering, opening and sampling, of the various reefs belies the limited activity actually taking place. Rather, the rush of the initial claim stakers had given way to the protracted poker game of the claim buyers. That this second phase was dominated by Kimberley capital cannot be denied, but similarly it should not be over-emphasised. Kimberley's capital was in competition with that of the rest of South Africa, in which its expertise was a hindrance and its ultimate dominance followed only after the final consolidation of the diamond industry in 1888 and the willful self destruction of so much South African capital in the collapse of the first Johannesburg stock exchange boom in 1889. It was then that the strength of Kimberley's capitalists was revealed, not so much in their own resources but in their access to international finance.



KLIPFONTEIN

VOGELFONTEIN

BOKSBURG TOWNSHIP

ELANDSFONTEIN

JOHANNESBURG

Klipfontein

Road from Johannesburg to Klipfontein

Road to Boksburg

Road to Netherlands

Road to Boksburg

EAST RAND PROPRIETARY MINES

Railway

Chemical Works

New Blue Sky G.M.C.

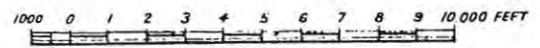
— PLAN OF THE FARM —

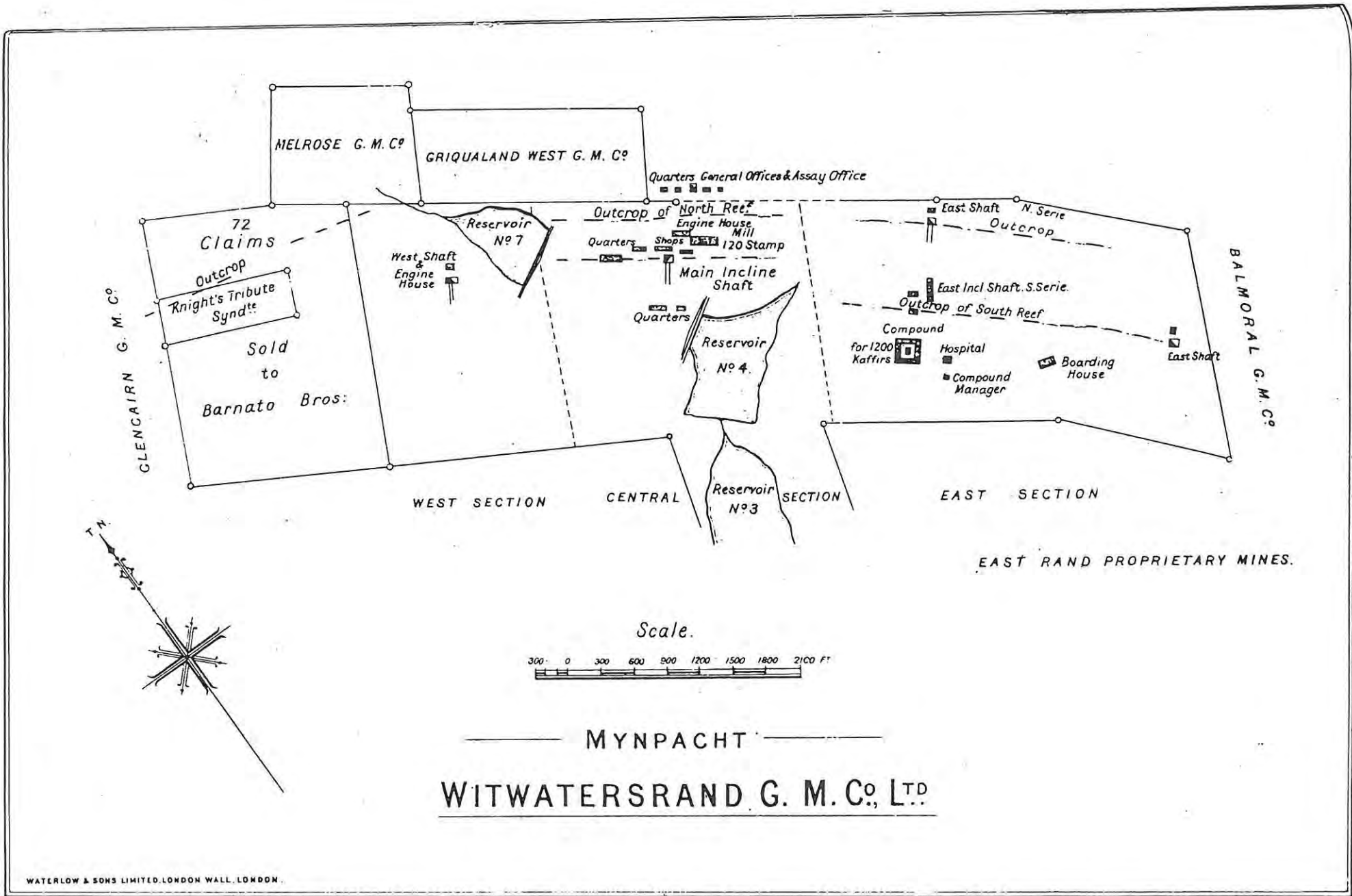
DRIEFONTEIN

— the property of —

WITWATERSRAND G.M.C.

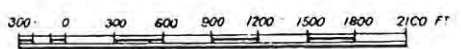
Scale.





EAST RAND PROPRIETARY MINES.

Scale.



MYNPACHT

WITWATERSRAND G. M. C. LTD.

## CHAPTER II

## THE WITWATERSRAND GOLD MINING COMPANY

The Witwatersrand Gold Mining Company was floated in Kimberley on 1 September 1886.<sup>1</sup> The Articles of Association are dated 4 September 1886, while the Company was registered at Kimberley on 29 November 1886, making it the earliest company formed to work the newly proclaimed goldfield.<sup>2</sup> The Company was established to undertake mining operations on the mynpacht of the farm "Driefontein" in the district of Heidelberg. The owner of the farm, Johannes Phillipus Kraft, took possession of the property on 27 January 1862, while on 23 June 1886, prior to the discovery of the Main Reef, Kraft agreed to lease 4892 morgen 322 square roods of the farm to Hendrik (Harry) Wilhelm Struben. At this stage gold had not yet been discovered on the property and Struben acquired the lease as a speculative prospecting proposition. He and his brother F.P.T. Struben took out several such leases while still concentrating their energies on their property at Wilgespruit.<sup>3</sup> The terms of the agreement with Kraft were for a five year lease, renewable for a total of twenty-five years, the rent for the first period being £100 per annum, thereafter £150. An additional provision was that if payable gold was found on the farm Kraft would receive three per cent of the net profit of any mines established to exploit it.<sup>4</sup>

On 19 August 1886 H.W. Struben ceded his lease on Driefontein to William Knight, a Kimberley entrepreneur, for £3 000.<sup>5</sup> In terms of the agreement F.P.T. Struben undertook the prospecting of the property and the subsequent opening of the reef with a pilot shaft which reached a depth of fifty feet before water became troublesome and caused the

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1. Diamond Fields Advertiser (Kimberley) 1 September 1886.
  2. The farm Driefontein, on which the Company held both the mynpacht and lease, was the first farm proclaimed as a public digging along the Main Reef on 20 September 1886.
  3. For a short Biographical sketch of H.W. Struben see Dictionary of South African Biography.
  4. Gray, E.L., & J., The Discovery of the Witwatersrand Goldfields, p.167.
  5. Ibid.

cessation of operations.<sup>6</sup> On 24 August 1886 Knight was granted the mynpacht for the property for a period of ten years, whereupon he set about the formation of the "Witwaters Randt Gold Mining Company" to work the mynpacht and control the rest of the estate as landlord. There seems to have been some misunderstanding as to exactly what the agreement between Kraft and Struben entailed. In the Prospectus of the Company it is stated that the property was "... Owned by Mr. Knight on a lease from the owner." A dispute arose between Kraft and the Company which was taken to court in 1887. The decision in this case<sup>7</sup> was that Kraft had not made over his owner's rights to Struben in the original contract and this meant that Kraft, rather than the Company, remained entitled to receive half the licence money paid to the Government for claims sold or let from the farm. It appears that up to this time an amount of £503 for the sale of licences to diggers and prospectors working on the leased property was paid to Knight by the Government. The court's decision prompted the calling of a special general meeting of shareholders at Kimberley on 1 September 1887, where a provisional agreement was ratified for the outright purchase of the property. Full ownership was recognised as essential for the successful exploitation of the estate and the farm was subsequently bought for £10 900.<sup>8</sup>

The Witwatersrand Company was incorporated under Act No.23 of 1861 of the Cape of Good Hope, and subsequently registered in the South African Republic.<sup>9</sup> The capital of the Company was £210 000 divided into £10 shares. Here the Company was something of a pathfinder with the issue of shares of this denomination and its lack of success with the placing of the stock convinced most of the companies subsequently formed to work the Witwatersrand of the greater desirability of the £1 share. British mining stock in the years leading up to 1886 was usually issued at between £1 and £10, but the speculative nature of much overseas

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6. Struben Papers. Gubbins Library, University of the Witwatersrand. Ref. A116, annexure F in copies of documents supporting Struben's claim to the discovery of the Witwatersrand goldfield.
  7. Gray, E.L., & J., op.cit., p.167. Case of Kraft vs Bok and the Witwatersrand Gold Mining Company.
  8. Barlow Rand Archives. Archives of H. Eckstein and Company (Reference code H.E.), Vol.5, File on the Witwatersrand Gold Mining Company Ltd.
  9. Ibid.

mining investment made the £1 share more popular with the British investor.<sup>10</sup> While the Witwatersrand Company's stock was initially exclusively taken up by local investors, there can be no doubt that the promoters later intended unloading some of the shares on the London market. If this was the case the valuation of the shares was too high, as is borne out by the later splitting of the shares into £1 units.<sup>11</sup> Here we must question the promoter's reasoning. Previous experience on the diamond fields suggested to Knight that companies had been successfully floated with £10 shares. The diamond fields were, however, different in the important respect that they had followed the traditional pattern of the mining frontier. The prospectors and discoverers were followed by single independent miners who, when conditions for individual initiative deteriorated, formed partnerships and small companies to raise the necessary funds to carry on. These small concerns subsequently underwent amalgamation into the listed companies which prevailed down to the final consolidation of the diamond industry in the late 1880's. The companies thus floated on the diamond fields were formed to work blocks of claims which were already proven. Knight's Witwatersrand claims lacked this surety and were thus unlikely to draw much popular support at £10 per share. It can only be presumed that Knight hoped to instil confidence in his venture through the choice of a larger denomination for shares, or to attract institutional investment.

The first board of directors were, George H. Goch, chairman, a Kimberley merchant, E.J. Earp representing Messrs Maxwell and Earp of Cape Town, William Knight, H.W. Struben, Alexander McGregor, the mayor of Kimberley, John A. Roger representing Messrs Wood and Company of Kimberley, and James Hay representing Messrs Irvine and Company, also of Kimberley. In keeping with so much of the early investment on the Witwatersrand, all were connected with the diamond mining industry.

It is possible that Knight and Struben were acquaintances in the early days of the Kimberley fields. Struben was not very successful there and left in 1871 or early 1872,<sup>12</sup> while George Goch moved from

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10. Jefferys, J.B., "The Denomination and Character of Shares, 1855-1885." in Carus Wilson, E.M. (ed.), Essays in Economic History, pp.344ff.

11. See below, p.38.

12. Struben, R., Taken at the Flood, p.136.

Swellendam to Kimberley in 1872 where he established himself as a general dealer. On receiving news of the gold discovery on the Witwatersrand, Goch was one of the early travellers to the new find. What he saw prompted him to move permanently to the Rand and to eventually relinquish all ties with Kimberley. Besides his interest in the Witwatersrand Company he also floated two of his own, the George Goch and the Wemmer Companies.<sup>13</sup>

The Prospectus indicated that four conglomerate, gold bearing reefs had been discovered on the property. While the thickness of these reefs varied from two to twelve feet, it was not recognised that the thick south reef was the least valuable of the four. The south reef declined in value the further east from Johannesburg it was found. It was subsequently not mined at all on the Witwatersrand property.<sup>14</sup> It was indeed impressive to suggest, as the prospectus did, that the combined average thickness of twenty three feet of reef extended over three and a half miles in length, all of it supposedly payable. At this early stage there was no knowing just how deep the reef extended and not a little speculation suggested that it would peter out at no great depth. On the basis of the pilot shafts it was estimated to extend for at least 130 feet down. The actual shape of the mynpacht taken out by Knight is a clear indication of the weight given to this factor in determining the importance of the property.<sup>15</sup> The narrow foot of the T shaped mynpacht was initially considered important only in that it followed the floor of the southward slope of the valley where several storage dams were constructed to ensure the water supply of the mine. The significance of the land to the south of the outcrop was only realised with the development of the deep level properties after 1889.<sup>16</sup> In 1886 the length of the property along the line of outcrop was considered more important.

Prior to publishing the prospectus, Knight entered into a contract with Messrs Robey and Company of London for the supply of two crushing mills of fifty stamps each, together with the necessary engines to operate them, amalgamators and other equipment, at a cost of £21 000.

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13. Ibid., p.15.

14. Hatch, F.H. & Chalmers, J.A., The Gold Mines of the Rand, pp.39,43.

15. See maps facing p.24.

16. Cartwright, A.P., The Corner House, pp.104ff.

It was estimated that when fully operational the crushing capacity of the battery would be 50 000 tons per annum. As it transpired this target was not reached within the first ten years of operation. Knight held himself responsible for the fulfilment of the contract and also undertook the management of the works, without remuneration, until 1 March 1887.

The Kimberley public was not given any great length of time in which to consider the merits of the prospectus published in the Diamond Fields Advertiser on 1 September 1886. All applications for shares had to be entered before four o'clock the following afternoon and only 1 100 shares were taken up by the public. Of the 21 000 shares the vendors took 15 000 fully paid up shares and £45 000 in cash as payment for the property. The lack of public enthusiasm forced Knight and his backers to buy up the balance of the shares in order to complete the list, thus giving the bulk of the shares to the directors and the interests they represented. Clearly Knight had seriously underestimated the Kimberley public's enthusiasm for the Witwatersrand, particularly the wealthier capitalist element of that society. It is well known that Rhodes remained sceptical of the discovery for some time, while those better informed, like Alfred Beit and J.B. Robinson, were concentrating their efforts on the richer central Rand. Few were willing to be rushed into participation while the denomination of the shares largely excluded the smaller investor, who found greater opportunity for investment in the Barberton boom.

The prospectus stipulated that £15 000 of working capital was necessary and of this amount, one third was to be held by the Company in shares, to be issued if and when required. The sale of this reserve was made sooner than the directors anticipated. In an interview with E.P. Mathers, Knight stated that already while the initial cost of machinery and equipment was set at £21 000, additional costs would raise the figure to at least £25 000.<sup>17</sup> In the same interview Knight estimated that by the time operations commenced some £43 000 would have been spent on land, machinery and preliminary works. Of this sum Knight was forced by the limited provision for working capital to spend £36 000 himself.

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17. Mathers, E.P., The Gold-Fields Revisited, pp.272ff.

Again, the cost of moving mining equipment, most of which was landed at Cape Town rather than Durban, besides delaying the date for the commencement of operations, also raised the transport costs to an estimated £10 000.<sup>18</sup> Underestimation of working capital requirements was one of the major problems facing all of the early Witwatersrand outcrop companies.<sup>19</sup> It was generally believed that sums of between £10 000 and £20 000 would suffice for the commencement of mining operations but such amounts proved totally inadequate as, besides the high costs of transport for heavy mining equipment by oxwagon from the coast, there were labour requirements and various capital costs. Given the shortage of working capital of the Witwatersrand Company, Knight made the added mistake of over investing in fixed assets.

Knight's action regarding the formation and size of the Witwatersrand Company suggests that he was a man consumed with the desire to achieve great wealth and success on the new gold field. Success had not eluded him in Kimberley but it had failed to place him amongst the names by which the early diamond fields are remembered. His was not a success of the magnitude of Rhodes, Beit or Barnato. Knight too commenced from humble beginnings when, at the age of seventeen, he arrived penniless at the Cape in 1860. He subsequently established himself as a master-builder in Natal before embarking for the diggings in 1872, where he built his reputation and fortune as a professional mine manager. Commenting on his success a Cape Times correspondent wrote, "There is not a failure attached to his name."<sup>20</sup> As manager of the French Company<sup>21</sup> he effected an efficient reorganisation of its working methods, while in the case of the Pullinger Company in the Bultfontein workings he saved the company from bankruptcy, stepping in when the £10 shares had fallen in value to 5s. each, he "... took the management into his own hands, purchased two-thirds of the shares, which now readily change hands at £6 17s. 6d. and the Company has been paying a dividend of two per cent for many months past." Likewise, he started the British Company which paid ninety three per cent on the capital as dividends in a period of two and a half years.<sup>21</sup> This Kimberley

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18. Ibid., p.273.

19. This statement is borne out in each of the company histories which follow.

20. The Eastern Star (Grahamstown), 6 September 1886, quoting the Cape Times.

21. Ibid.

success stemmed from a determination for deep digging when the blue ground was first struck, and from not placing any significance on the element of luck.<sup>22</sup> In this way his fortune and reputation had slowly grown.

Encouraged by friends in Pretoria to inspect the Rand he was so satisfied that he decided to commit himself heavily.<sup>23</sup> One suspects that, like J.B. Robinson, he looked to the Witwatersrand not only for the wealth but also the aura of greatness which eluded them at Kimberley. Hence the share capital of his Company was by far the largest of any organisation formed to work the early Witwatersrand.<sup>24</sup> An alternative viewpoint would be to suggest that he recognised the scale of operations required to work what was to prove essentially a low grade ore mining proposition. This approach would, however, provide no explanation for the limited provision for working capital and the heady predictions made by Knight regarding the quality of the ore. As it was, his 100 stamp battery, the largest of its kind on the field for some years, represented a gross over-investment in fixed assets in relation to the small working capital, an imbalance which cost the Company dearly. By contrast, the Wemmer Company of George Goch commenced regular production in May 1887 with only five stamps.<sup>25</sup> Similarly, the first battery erected on the field was a three stamp Sandycroft model on the Jubilee mine which commenced operations on 22 April 1887.<sup>26</sup>

By the end of 1887 conceptions of what was required for the successful exploitation of the Witwatersrand had changed. The promoters of Knight's Company would have had more success had they embarked on a less ambitious venture. The scale of operations was in many respects out of keeping with the hesitant beginnings of the Witwatersrand goldfield where the stigma of the earlier failures at Eersteling and De Kaap still

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22. Obituary of William Knight in South Africa, 19 February 1900, p.475.

23. The Eastern Star, 5 December 1888.

24. By 1891 the nominal capital of 19 companies exceeded this figure. In terms of size of property the Simmer and Jack G.M.Co., Rand Mines Ltd., and Randfontein Estates G.M. Co. were larger by 1900.

25. (W)itwatersrand (C)hamber of (M)ines, Seventh Annual Report, Appendix p.1, and see below Chapter IV, p.108.

26. Jeppe, C.B., Gold Mining on the Witwatersrand, Vol. I, p.21.

clouded the perspectives of many investors in Kimberley and abroad. Yet if success was to come capital was needed, not as vendors shares, but in the form of working capital.

On 13 November 1886 F.P.T. Struben began crushing ore from the Witwatersrand Company at his battery on the Wilgespruit.<sup>27</sup> This meant the conveyance of the ore over a considerable distance and it is doubtful if any large quantity was crushed at this site. Mathers indicates that, "... later the Company had a test crushing of 50 tons, which gave a return of 12,5 dwts.", which is probably a reference to the crushing at Wilgespruit. An interesting side light is that the first crushing of the Company also showed the presence of nearly twenty per cent silver in the retorted bullion. Henry indicates that the Standard Bank thus soon became a cautious buyer of bullion, preferring rather to only make partial advances against deliveries of retorted gold until it was smelted and sold.<sup>28</sup> One of the earliest criticisms of the prospectus suggested that ten samples taken from the three and a half miles of outcrop reef were hardly a true reflection of the property's worth.<sup>29</sup> Fifty tons would allay criticism and evince further the profitability of the mine but in this respect a return of only 12,5 dwts. compared unfavourably with the five ounces to the ton claimed in the prospectus, a discrepancy which could not be attributed to the high silver content. If the crushing was a veiled bid to raise the market quotation for the Company's shares and to create a market for them as a means of raising working capital, the return was a disaster.<sup>30</sup> It also prompted a far greater reticence on the part of Knight to make further predictions about the value of unmined ore.<sup>31</sup>

There was a long delay in the commencement of operations by the Company, the Witwatersrand Chamber of Mines giving August 1887 as the

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27. Gray, E.L. & J., op.cit., p.29.

28. Henry, J.A., The First Hundred Years of the Standard Bank, p.94.

29. Diamond Fields Advertiser, 7 September 1886. Review of the Company's prospects by "Censor".

30. The use of this technique to raise working capital was successfully practiced by the Wemmer Gold Mining Company. See below, Chapter IV, pp.119-20.

31. The Eastern Star, 21 November 1887, reported that Knight would make no further declaration until fully 5 000 tons of ore, drawn from every part of the mine, had been crushed so as to ensure a truly reliable return.

first date for an official return from the Knight's property. No indication is shown of the tonnage milled or of the number of stamps in operation and the figure of 311 ounces persisted for the remaining monthly returns of the year 1887, suggesting that the amount should rather be considered as an average monthly return. The Wemmer Company with its rich ore and five stamps offered a better record.

An August 1887 report states that the battery was erected on a solid foundation, although subsequent reports suggest otherwise. Each set of five stamps, with a crushing weight of 750 pounds per stamp was fed by a separate stone crusher, from where the ore was allowed to fall by gravity into the hoppers which automatically fed each stamp. The pulp from the stamps was first led into a Jordan's amalgamator and subsequently onto the amalgamation plates while the tailings were passed over Frue Vanner concentrators. The mill was run by two sixty horse power engines.<sup>32</sup> By October the automatic feeders were not yet in position, requiring that the stamps be fed manually by African labourers. It was also soon recognised that the Robey amalgam plates were less than perfect, while the Frue Vanners below them were generally considered to be of no practical value and were simply used as settling tanks.<sup>33</sup> Each set of 25 stamps had a European overseer "with native assistants to do all that is necessary." The two overseers in 1887 were Tom Halliday from Fort Beaufort in the eastern Cape, and "the son of the Hon. Colonel Schermbrucker", while Mr A.A. Stanton was manager of the mine. The credentials of these men are not given. It is possible that they might have known Knight in Kimberley but it is doubtful if their knowledge of gold mining or the amalgam process of gold recovery was at all substantial. No better clue of this needs be given than their rejection of the Frue Vanners as part of the reduction process, thus helping to establish the myth popular on the Rand before 1889 that all but an insignificant amount of gold was captured on the amalgam plates.

By January 1888 fifty stamps were in operation. Delays in the arrival and erection of the balance resulted in the full 100 stamps only coming into operation in July 1888,<sup>35</sup> while by September of that year

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32. The Eastern Star, 24 August 1887.

33. The Eastern Star, 19 October 1887.

34. *Ibid.*

35. W.C.M. Seventh Annual Report. Appendix, p.1.

only twenty stamps remained in working order.

The stamp battery proved to be the Achilles heel of the Company in the early years of operation. In addition to the over-investment already mentioned, technical problems arose. The stamp mill acquired was a Jordan model,<sup>36</sup> and from the accounts of other early companies it would seem that the Sandycroft and Fraser and Chalmers models were both sturdier and more efficient in operating on Rand conglomerate. A mining engineer also noted that the Jordan model was "the first effort of the makers in that direction."<sup>37</sup> The second mistake was made in the siting of the reduction works. Mathers indicated that they were situated a mile and a half from the outcrop itself. Knight's reason for doing this was to bring water to the mill by gravity rather than having to pump water to a site closer to the mine.<sup>38</sup> In this way the necessity for an additional pumping engine was overcome together with the expensive fuel required to run it. In the long run it would have been far cheaper to carry water to the ore than vice versa, particularly as electric power was introduced by certain mines at an early date.<sup>39</sup> As it was, a water race nearly 4 000 yards long was required to carry water to the machinery. A tramway was eventually built to carry the ore to the site, replacing the mule carts which operated initially for over nine months. The quality of the equipment supplied by Messrs Robey and Company was condemned by successive managements and by September 1888, or within three months of the full 100 stamps assuming operation, fifty of them had required major renovation or replacement by castings from the Sandycroft Company.<sup>40</sup> Despite this patching only twenty five stamps remained operational for a total of ninety days in 1890, producing 2 009 ounces 2 dwts. of gold.<sup>41</sup>

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36. Mathers, E.P., op.cit., p.272.

37. Report on the Property of the Witwatersrand Gold Mining Company. by Hennen Jennings, Johannesburg, 5 November 1893. (Jennings Report). See Nourse Family Papers, Gubbins Library, University of the Witwatersrand. Item Gc17.

38. Mathers, E.P., op.cit., p.272.

39. The first permanent plant on the fields for generating electric power commenced operations in May 1892 on the property of the Champ d'Or Gold Mining Company. See The Star, 12 May 1892.

40. H.E.5. Quoting Directors Report for the Half Year Ending 30 September 1888.

41. W.C.M. Seventh Annual Report. Appendix, p.i.

As the largest mining company operating on the Rand in the initial stages, the Witwatersrand Company held a certain aura of authority which lesser companies and their managements took as a guide for many of their own operations, particularly in view of Knight's own success at Kimberley. Nevertheless, the approach adopted by Knight in the early months of his management were not conducive to sound mining production. Commenting on this Mathers wrote,<sup>42</sup>

"Taking their cue from the Witwatersrand [Knight's] Company, nearly the whole of the main reef claimholders about Johannesburg are engaged purely and simply in surface mining. Cuttings or trenches are made in the ground, and the reefs are bared to make what the inexperienced investor is to consider as a grand mining demonstration."

The status of the Company as the leader of the Witwatersrand was further enhanced when the mine was chosen as the example of the industry to be displayed to the State President on his visit to Johannesburg in December 1888. It was hoped that the full 100 stamps could be brought into operation but in the end only fifty were prepared in time. The event passed without incident, the President being given "a few ounces of the month's production", while he reciprocated by lifting a bar of gold of over 400 ounces with one hand.<sup>43</sup>

With three and a half miles of outcrop Knight saw no urgency for determining the possible depth of the reef on the property. Four of the shafts were sunk to depths varying from fifty three feet to fifty eight feet into the reef. Water seepage then discouraged any further attempts to extend them and Knight was probably satisfied in the knowledge that the reef continued to that depth. This information confirmed the claims made in the prospectus and, as he pointed out to Mathers, his intention was to pursue open cast mining for as long as possible.<sup>44</sup> The mining technique bred at Kimberley died hard, even if the gold bearing reef was only a fraction of the width of the diamondiferous pipes. Mathers saw this "superficial banquet panorama" as yet another way in which scarce working capital was wasted and correctly predicted

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42. Mathers, E.P., op.cit., p.272.

43. The Eastern Star, 5 December 1888.

44. Mathers, E.P., op.cit., p.273.

that it was ultimately the shareholders who would bear the painful smart.<sup>45</sup> What was required was the rapid exposure of the reef by conventional shaft and stope mining practice. The confined width of the reef and the necessity for eventually adopting pit mining suggested that the sooner this was done the greater would be the chances for an early return to shareholders.

One can only speculate whether it was the intention of Knight to attempt open cast mining as a labour intensive, and hence cheaper, method of gaining an early profit from the venture. The funds raised in this way could then be used for the conventional exploitation of the property. Open cast mining, as he suggested to Mathers, overcame one of the problems confronting the early Rand capitalists. This was the shortage and subsequently higher cost of skilled labourers and miners. When depth became a problem, Knight suggested,<sup>46</sup>

"We simply require [skilled] miners then, and we can soon train enough natives to do that. We have very few white men mining at Kimberley; the natives soon get into the way of it."

There was also a shortage of black unskilled labourers. About 100 were employed on the mine in 1887, while Knight expressed the need for about 300 such workers. The following year Stanton sent to Basutoland and Zululand in search of 600 men to work for the Company but without any marked success.<sup>47</sup> Knight was obviously more confident of finding the additional Africans, who were also very much cheaper to employ.<sup>48</sup> Time and growing experience, Knight hoped, would overcome the lack of a large skilled white labour force. He nevertheless recognised the disadvantages of the early black labour force, namely its mobility. Every effort was made in the summer of 1887/88 to push development of the works to a point where there would be sufficient ore in reserve to keep the stamps operating in the winter months of 1888 when he correctly anticipated a black labour shortage.<sup>49</sup>

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45. Ibid., p.267.

46. Ibid., p.273.

47. The Eastern Star, 21 May 1888.

48. Johnstone, F.A., Class, Race and Gold, pp.20ff.

49. The Eastern Star, 4 April 1888.

In the early months of 1888 the first superficial attempt was made at pit mining when the level of over 2 000 feet was driven at a depth of ninety feet to link the various shafts which had been sunk to that depth. The intention was to use the level for upward stoping of the ore which lay between the surface excavations and that depth. One result of this practice was that most of the ore so mined reached the surface in a very sodden state. The surface excavations in the wet summer months of 1887/88 acted as reservoirs and much of the water percolated down into the underground workings. The effect of the water was to make even a superficial sorting of the ore from the barren casing rock impossible, so that it all had to pass through the mill. It would seem that Knight did not view the scene with too much trepidation. There is no mention of an ore reserve in the early references, so that it was probably necessary for him to feed all material coming from the mine into the mill simply to keep the average of twenty five stamps operating. Weighing against this was the fact that such indiscriminate crushing of rock resulted in a lower return of gold per ton crushed and a higher total working cost. These higher costs in turn meant a more rapid erosion of the financial reserves without the prospect of any significant profit margin. By April 1888 Knight was already speaking of the necessity for another capital infusion of £40 000.<sup>50</sup>

The failure of the mining operations to yield a satisfactory return, the lack of ready working capital, and the virtual collapse of the crushing plant, all contributed to the defeat of Knight's plans. By 1888, faced with seemingly insurmountable problems, Knight and his fellow directors began seeking the means to extricate their capital from the crippled Company. The first Johannesburg stock exchange boom of 1888/89 presented the opportunity they were seeking. By mid 1889 the Witwatersrand Company's shares had been boomed and Knight and Struben had rid themselves of their major shareholding in the Company.

The early days of the Witwatersrand goldfield reveal a period of general uncertainty in the financial state of most of the companies formed to work the outcrop reef. Rumour of the profitability of various ventures was rife and share prices fluctuated widely. Under these circumstances too much emphasis was placed by shareholders and management of the various mines on the speculative value of shares.

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50. Ibid.

Too little attention was given to the dividend earning capacity of the companies. Many properties were not yet proved; they awaited machinery, men and expertise to render their operations viable. Everyone "knew" the gold was there and that was sufficient to encourage the orgy of speculation. Most share prices rested on this speculative basis. Under these circumstances directors showed little inclination to keep shareholders properly informed of company progress. Not that there was any legal requirement that they should do so. Emden gives the example of the Jumpers Gold Mining Company, where in the London Stock Exchange Year Book for 1889 the authors could only print that they "believed" the capital of the company was £42 000.<sup>51</sup> By 1888 the situation was reached where share prices were out of all proportion to actual conditions. This presented a "golden" opportunity for mine directors and managements to raise necessary finance by speculating in shares of their own companies. In this way some of them overcame the initial shortcomings of limited working capital as provided by their promoters. It also often resulted in the foolish forcing of output and yield per ton by working selected rich ores in an attempt to influence the market. Emden suggests that in this way technical management also assisted in preparing the era "which without exaggeration may well be termed a swindle."<sup>52</sup> The industry early developed the habit of keeping a weather eye on the stock exchange lists. These were as important to many early companies as technical development or output and were often directly related. The seemingly insatiable need for additional capital insured this. Only for the very richest mines was the limited initial working capital sufficient to allow them the opportunity of declaring early dividends.<sup>53</sup> In low grade properties, like Knight's, additional capital for development was imperative. The Company needed the infusion in order to re-equip the battery and open the mine to a point where it could supply the capacity of the mill. Given the low gold content of the ore, even when sorted, large scale production was essential.<sup>54</sup>

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51. Emden, P.H., Randlords, pp.229ff.

52. *Ibid.*, p.231.

53. Within a month of the commencement of operations, the Jubilee Gold Mining Company on 20 May 1887 paid a dividend of 5 per cent. See Jeppe, C.B., *op.cit.*, p.22.

54. The average gold content of the ore worked on the Witwatersrand property in 1890/91 was 4,9 dwts. per ton. See Jennings Report, p.3.

The directorate became increasingly reluctant to undertake this investment and while the shares were boomed in the conventional manner, the intention was no longer to plough the profits into the mine.

The early press was a useful organ for the dissemination of information in regard to the mining companies and the directors of the Witwatersrand were not shy in using this facility. In the Diamond Fields Advertiser of 18 September 1886, it was reported that Harry Struben anticipated that working expenses on the Rand would not exceed five shillings per ton. In the first ten years a figure of thirty shillings was a more accurate average. Nevertheless on the basis of his calculations it was estimated that the Company would show an annual profit of £150 000.<sup>55</sup> At this stage there was very little evidence to indicate either working costs or ore qualities. When crushing on the property was delayed owing to the faulty battery, the press was resorted to as a means of keeping share prices up. The Daily Independent reported on 1 June 1887 that Knight estimated a grand return of twenty five per cent on the full capital of the Company "soon after the first crushing has taken place." All this was not lost on the speculating public and share prices stood at between £20 and £22 10s. The disappointing return for the first month of production, however, dropped the price to below par.<sup>56</sup> The balance sheet for the half year ending 31 March 1888 indicated that the Company was in debt to the extent of £23 000.<sup>57</sup>

The inglorious results from initial production came at an inauspicious time. The need for working capital had never been greater. In a desperate attempt again to encourage speculators a meeting of shareholders was held on 11 April 1888, when it was decided to subdivide the £10 shares into £1 units. It was also agreed to increase the capital of the Company to £250 000 by the creation of 40 000 £1 shares. The additional capital was ostensibly intended for the erection of another mill of 100 stamps. The new battery would replace the faulty works while these stamps were repaired. Knight informed the press that by the time the new battery was erected the water storage dams would be

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55. Daily Independent, (Kimberley) 31 August 1887.

56. H.E.5., p.5.

57. H.E.5, p.8

completed, locomotives in use on the tramway carrying ore to the mill, and certain unspecified shafts sunk to depths of between 300 and 500 feet. Hence the mine would be developed to a point where "with the minimum of labour" the 200 stamps could be regularly supplied with ore.<sup>58</sup> Only four shareholders were present at the meeting while seven others were represented by proxies, a good indication of the concentration of ownership of the Company at this stage. It is doubtful if it was ever intended to actually acquire the new battery. The wildness, or naivety, of Knight's pronouncements suggest otherwise. If, however, we accept the good intentions of the board of directors, then we can see that while in the long term it was hoped that the second mill would substantially help to reduce the marginal cost of each ton of ore crushed, the short term gain would be the reflection of continuing director confidence. Such confidence would hopefully help to raise share prices, a move which would assist the directors in their intentions, whatever these were. Stock market manipulation could be used to settle immediate debts and carry the Company over the rough patch before increased output reduced working costs; or it could be used for the wholesale unloading of the Company's shares onto the well prepared market. In the event, a special meeting held on 14 November 1888, some eight months later, decided to appropriate the additional capital to the liquidation of debts.<sup>59</sup> Little was said of the proposed development project.

The directors and major shareholders at this stage started actively seeking an alternative solution to the Company's problems. At the same November meeting the chairman, Mr J.A. Rogers, announced that the board had received "some very satisfactory offers for a portion of their mynpacht, the sale of which would place their Company in a highly satisfactory position." This news alone caused share prices to rise. Struben, who was in London at the time, decided that the fate of the Company was such that the sooner he parted with most of his large shareholding, the better. He later confessed to having a very unclear picture of the events taking place in Johannesburg.<sup>60</sup> This led him to unload a large block of his shares at prices between 27s. 6d. and 45s. to Wernher, Beit and Company, while at the same time this firm was buying

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58. The Eastern Star, 18 April 1888.

59. H.E.5., p.8 and The Eastern Star, 21 November 1888.

60. The Star, (Johannesburg) 16 March 1894.

Knight out in Johannesburg at 65s.<sup>61</sup> In a letter to G. Lys from London in November 1888, Struben wrote,<sup>62</sup>

"There was no movement in Knight's and I knew of nothing having been done in the way of milling or [mining] to warrant a rise so got taken on the hop by Jim Taylor and Beit who were better informed and sold them a big parcel at 27/6d. and 45/- and only got Langerman's cable after the business was done. Knight might have let us know of the business considering that he got the ground from us ..."

By 11 December 1888 it was decided to negotiate the sale of 204 claims of the Company's mynpacht. As indicated above, H. Eckstein and Company and their London principals, Wernher, Beit and Company, were kept very well informed on the affairs of the Company. In late October H. Eckstein communicated to London that E. Lippert was treating for 12 of the Company's claims for an amount of £75 000. Inquiries had shown that the extent of the Company's debt amounted to £50 000 to £60 000, so that little of this amount was expected to go to the shareholders.<sup>63</sup> On the other hand it was felt that news of the negotiations would cause a rise in share prices, and as already indicated, both the Johannesburg and London offices began buying into the Company in anticipation of these events.

At the special general meeting held in December it was decided to accept three of the four offers made for the purchase of parts of the mynpacht. The offer from E.A. Lippert for seventy two claims, twelve on the line of reef, for £75 000 was accepted and the ground, on the western boundary of the property, was subsequently included in the properties which went to constitute the May Consolidated Gold Mining Company. A second offer from Messrs Liddle, Fletcher and Forbes, for the seventy two claims adjoining those sold to Lippert also raised an amount of £75 000. These claims were subsequently floated as the Glencairn Gold Mining Company. The same firm, acting on behalf of different clients offered an amount of £75 000, £60 000 in cash and

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61. Ibid.

62. Struben Papers. Letters, H.W. Struben to G. Lys, 7 November 1888.

63. H.E.51. H. Eckstein & Co. to Jules Porges & Co., 26 October 1888, p.26. Wernher and Beit were partners in the firm of Jules Porges and Company, taking it over and altering the name to Wernher, Beit and Company on the retirement of Jules Porges in 1889. For convenience the partnership is referred to as Wernher, Beit and Company throughout the text.

15 000 shares in the company to be formed to work the ground, for the sixty most easterly claims of the mynpacht. This ground was subsequently floated as the Balmoral Gold Mining Company. A fourth offer, submitted by Mr Godfrey Lys, a nephew of H.W. Struben, of £125 000 for twenty claims on the line of reef and also extending the full width of the mynpacht, was rejected.<sup>64</sup> There seems little reason to doubt that H.W. Struben was involved in this offer, the refusal of which helped to colour his attitude towards the directors of the Company in subsequent years.<sup>65</sup> At least one director, Mr Shiels,<sup>66</sup> opposed the sales on the grounds that the Company should work the claims itself. In reply the chairman suggested that the existing property was too vast for any single company to work effectively. Given the low grade of the ore in the property, a point at least recognised in the need to increase the crushing capacity, there was little to justify the decision to sell other than as a means of raising fresh working capital.

The one point which was not specifically mentioned at the meeting but which intimately influenced the future prospects of the Company and made the retention of a sizable proportion of the income from the sales essential, was the nature of the land sold. While no systematic sampling of the property had taken place, it was generally recognised that the claims in the western portion were richer, although the reef was more fragmented, making mining more difficult. Another factor was that most of the mining and development work undertaken since the opening of the mine fell within the claims sold for the formation of the Balmoral Company.<sup>67</sup> The Witwatersrand Company was thus left to make what was virtually a fresh start at the end of 1888. It had the sum of £210 000 in cash with which to begin and required only the commitment of the directorate successfully to relaunch the Company.

On 7 February 1889 the chairman announced that the sale had been effected. On the strength of the cash inflow the board decided to bow to their own inclinations and the expectations of shareholders and

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64. The Eastern Star, 17 December 1888.

65. See below, pp.54ff.

66. Shiels also opposed the later sale of the tributor claims. He was, nevertheless, accused by Goch in 1894 of "grasping avarice" and complicity in the 1888 transactions.

67. The Star, 19 June 1889.

speculators and distribute the bulk of the proceeds as a special dividend. It was decided to pay out fifteen shillings per share or seventy five per cent on the issued capital, which absorbed an amount of £187 500. The Balmoral shares were also distributed as a scrip dividend. Needless to say the price of Witwatersrand shares rose to between £3 5s. and £3 10s. The decision to distribute this amount led to a belated protest from three Johannesburg directors namely, Goch, Hay and Page, not at the principle of the distribution but on the grounds that the £22 500 left was insufficient for the successful exploitation of the property. The motive for the action of the majority of the board is clear. They had little intention of retaining their control of the Company and wished to recoup their investment in the seemingly unprofitable venture. As early as November of the previous year Knight gave the refusal of the balance of his holdings at 55s. to H. Eckstein and Company.<sup>68</sup>

By 30 May 1889 Knight and Hay had resigned as directors. Knight's resignation was prompted by his sale of shares and by a report submitted to the Company by the consulting engineer H.G. Humby. In this report was revealed the "very unsatisfactory condition of affairs on the property"<sup>69</sup> and served as an indictment of Knight as managing director and Stanton as manager. Stanton duly resigned in June 1889, leaving the Company's service at the end of August when a Mr Osborne took over the management.<sup>70</sup> Humby suggested that the best portion of the property had been sold. Existing mining operations were condemned as being superficial, while the methods of haulage were considered primitive. The winding and pumping engines were erected on totally insufficient foundations of brushwood and rubble. No systematic plan of operation had been devised for the property. In part this reflects the haphazard methods of Stanton's management but one is also left to surmise whether the directors had any serious intention of seeing the property correctly and effectively mined following the initial setbacks. Humby was appointed on the instigation of Struben, which might help to cast light on Knight's failure to inform him of the share dealings.

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68. H.E.51. H. Eckstein & Co. to Jules Porges & Co., 16 November 1888, p.100.

69. H.E.5, p.13.

70. The Star, 3 September 1889.

The resignation of these directors and the large investment in the Company's stock by Wernher, Beit and Company meant that the opportunity existed for this firm to exert a growing influence on the activities of the Company. Not that the involvement of the firm did not fluctuate. The initial reason for the interest expressed in the Company was to cash in on the handsome gains to be made from the fore-knowledge of the impending land sales in 1888. But having made good profits on the rise in the value of the Company's shares and from the subsequent dividend payment, Wernher, Beit and Company still chose to retain an interest in the Company. The first evidence of their growing influence was the appointment of Mr H.A. Rogers, on the proposal of Alfred Beit, to the Company's board. On 6 July 1889 the firm's commitment was brought into the open with the appointment of Mr J.B. Taylor as an alternate director to Shiels.<sup>71</sup>

The modus operandi of Wernher, Beit and Company and their Johannesburg partners, is clearly stated in a letter written by J.B. Taylor to the London office on 16 August 1889 when the extent of their participation in the Witwatersrand Company was being reviewed. He lists the firm's interests in the Company at that date as follows:<sup>72</sup>

J.B. Taylor	1 000 shares
Charles Rube	2 250 shares
H. Eckstein	35 710 shares
F. Eckstein	4 650 shares
E. Bruch	5 512 shares
A. Beit	<u>4 577 shares</u>
	53 699 shares of the 250 000 issued

In this way, by parcelling out shares to various directors, the firm could always deny the full extent of its commitment while at the same time quickly rallying the voting power of the shares when needed.

Another outcome of the dividend debacle and the shift in control of the Company, was the decision in June 1889 to remove the head office from Kimberley to Johannesburg, where closer control of the activities of the mine could be monitored.

The philosophy of Wernher, Beit and Company and their Johannesburg partners is given in a letter written by J.B. Taylor to M. Rodolphe

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71. H.E.5, p.12.

72. H.E.5, p.15.

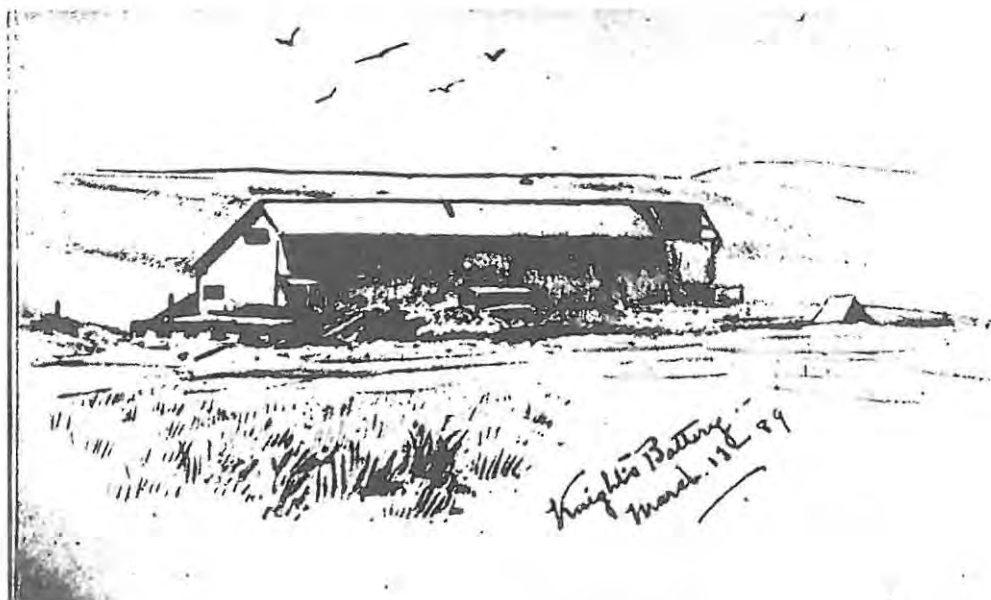
Kann in July 1888, to enlist his and the Paris Rothschilds' financial support for the activities of the group. Taylor pointed out that they had never undertaken to support any company indulging in surface mining. He felt that the older outcrop companies could show good returns if correctly worked. It was Wernher, Beit and Company policy to stand by ready to take over these companies as soon as trouble beset them in order that, "... we will be able to give them a new life with great profit to ourselves."<sup>73</sup> It was undoubtedly in this spirit that the group decided to retain an interest in the Witwatersrand Company. Beit also noted that the shares of the Company were a fair investment even without dividends, as the Company paid about six per cent on its capital from the income of the estate.<sup>74</sup> The group's position was further strengthened with the appointment of Lionel Phillips to the Company's board in January 1890.

The chances for making quick profits were to prove as elusive to the new board as they had been to the old. The reconstituted board was, however, that much more determined that the Company be given the opportunity to prove itself. There was not a great amount of working capital available but it was decided to use it judiciously in the interests of the Company. In the half yearly report for September 1889 a plan for the proper development of the property was placed before the shareholders. There were two parts to the scheme. It was recognised that the ore currently being crushed left no profit margin and that the state of development of the mine was such that it offered no continuity of ore supply for the mill. In turn, the mill required extensive modification. The first section of the programme therefore entailed the closing of the mill and its rectification while a serious effort was made to push forward the development of the mine to a point where a regular and profitable ore supply was assured. The second part of the plan concerned the estate and an improvement in its revenue earning capacity. Current revenue from the estate amounted to about £8 500 per annum and it was intended to increase this amount to at least £12 000 through the establishment of a plantation of trees to meet the timber needs of the mine and its neighbours, and a dam

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73. Cartwright, A.P., op.cit., p.76.

74. H.E.59. London Letters. A. Beit to L. Phillips, 3 March 1894, p.4.



A sketch by Ida Mae Stone showing the Witwatersrand Company's battery house still incomplete in 1889.

(Source: Leyds, G.A., A History of Johannesburg, p.55.)

construction programme for the sale of water to the surrounding mines.<sup>75</sup>

By the end of 1889 the financial state of the Company was such that only £8 250 19s. 6d. remained of the £22 500 retained from the sale of claims.<sup>76</sup> This amount was insufficient to meet all the capital requirements for the new programme. It was calculated that the cost of the eight dams envisaged in the plan could be met from the inflow of estate revenue. The total cost of the dam project was estimated at £7 400, while agreement was soon reached with the May Consolidated and Glencairn Companies for the supply of water early in 1890, which promised an income of £2 500 per annum. The first contract was therefore already providing a return of thirty four per cent per annum on the estimated expenditure. The signing of this contract for the sale of water was well timed for in the depressed conditions prevailing after the collapse of the 1889 boom, the estate revenue from stand and claim licences began falling off.<sup>77</sup>

The capital requirements for the development of the mine and renovation of the mill were greater than any possible surplus from estate revenue or Company reserves. The alternative options were not mutually exclusive, and the board decided to plunge the Company once more into debt, while cherishing the hope that Eduard Lippert could again be prevailed upon to purchase another block of the Company's claims.<sup>78</sup> Mention is made of an offer of £225 000 for half of the Company's remaining mynpacht but the details of this proposal, declined by the board, have not survived.<sup>79</sup> The lack of any suitable offers placed a strong emphasis on the cheapest possible development of the mine and a speedy resumption of milling operations.

To assist in the promotion of cheap mining Wernher, Beit and Company were responsible for importing a mine manager from America who boasted a reputation for working cheaply. He was Mr Henry Morris, late manager of the Caledonia Gold Mining Company in the Black Hills of Dakota, who

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75. The Diggers' News, (Johannesburg) 31 January 1890.

76. The Star, 21 June 1890.

77. Ibid.

78. H.E.149. H. Eckstein & Co. to Wernher, Beit & Co., 4 April 1890, p.175.

79. The Diggers' News, 31 January 1890.

replaced Osborne on 15 February 1890.<sup>80</sup> Phillips was sceptical of Morris's claims to make ore of less than ten pennyweights per ton pay, and the relationship between the two men remained strained down to October when Morris resigned.<sup>81</sup> His comment on Morris's resignation was, "He is an economical man but lacks grip of the concern. I hope we may get a better." The replacement was Mr B.W. Blaine, who was destined to see long service with the Company and its tributors. The resignation of Morris and appointment of Blaine without the post being advertised evoked strong criticism from the press, which commented on Morris's success in making six dwts. ore pay two shillings profit per ton while Blaine supposedly had very little mining experience.<sup>82</sup>

The development of the mine was pushed forward rapidly in 1890 under Morris so that by June some 16 650 tons of ore were in sight for stoping, a situation which prompted a decision by the board to restart crushing with 25 stamps in July.<sup>83</sup> Unfortunately, a breakdown in one of the pumps draining the mine soon afterwards caused extensive flooding in the mine and the loss of 84 working days. Thus the recommencement of milling was delayed until 2 September 1890. Some 820 tons of ore were crushed that month yielding 284 ozs. or an average of six dwts. to the ton. Working costs amounted to 18s. 8d. per ton, a significantly low figure which at a gold price of 72s. per ounce assured a profit in excess of two shillings per ton.<sup>84</sup> The chairman announced the intention of moving fifty of the stamps to the pit head as a means of saving on the cost of ore transported to the battery. The move would also allow a restructuring of the drive shaft of the mill. Its major weakness was that groups of twenty five stamps were all operated from the same drive shaft and pulley, so that if a fault developed in one stamp all twenty five were brought to a halt. Shut downs for the battery continued to be a regular feature in the life of the Company during 1891 and 1892.

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80. The Diggers' News, 22 February 1890.

81. H.E.149. H. Eckstein & Co. to Wernher, Beit & Co., 25 October 1890, p.412.

82. The Standard and Diggers' News, (Johannesburg) 22 January 1891, quoting the Financial Times of London.

83. The Diggers' News, 23 June 1890.

84. The Star, 27 November 1890.

Phillips was able to report favourably on the Company to London in December 1890. The November output had increased to 612 ozs. and with the assays of the reefs improving he hoped for an even better result in December.<sup>85</sup> In keeping with the firm's philosophy he wrote,<sup>86</sup> "Generally speaking I think a safe and profitable business [is] to be done by putting companies on their legs (where prospects warrant it) giving loans at 10-12% and getting options ...". The December output was disappointing, falling short of 200 ounces. Once more the battery and poor amalgamation were seen as the chief cause of the weak result. Efforts were now made to bring forty stamps into regular production and Phillips set the dead-line of February 1891, after which, if no profit was shown, the mill would be shut down. Alternatively, if a profit was made then Phillips suggested that serious attention be given to the prospect of reconstructing the Company.<sup>87</sup>

In correspondence Wernher, Beit and Company showed a growing anxiety in the poor performance of the Company<sup>88</sup> and it is probable that they would have cut their ties with it but for the news in February 1891 from Johannesburg that the junction for the Cape railway with the Netherlands Company's "tram-line" would be sited on the property.<sup>89</sup> Phillips hoped to have a large part of the farm de-proclaimed for the laying out of a township, following which he hoped to see a dramatic rise in estate revenue. It was therefore decided to allow the Company to continue operations for a little longer. The news proved false and the site for the terminus was finally located at Germiston on the estate of the Simmer and Jack Gold Mining Company.

During March 1891 fifty stamps were brought into operation and 3 018 tons of ore were crushed at an average cost of 15s. 3d. per ton, resulting in a profit of £543 4s. 3d. for the month. The total for the six months ending in March was 10 320 tons crushed at an average cost of 18s. 7d. per ton and yielding an average of 5 dwts.

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85. H.E.149. H. Eckstein & Co. to Wernher, Beit & Co., 6 December 1890, p.473.

86. Ibid., 13 December 1890, p.485.

87. Ibid., 31 January 1891, p.541.

88. H.E.56. Wernher, Beit & Co. to H. Eckstein & Co., 6 March 1891, pp.471-72.

89. H.E.149. H. Eckstein & Co. to Wernher, Beit & Co., 7 February 1891, p.552.

6 grs. per ton.<sup>90</sup> Assay results indicated that about fifty per cent of the gold in the ore was escaping as a result of poor amalgamation and a high concentration of pyritic ore. The need for concentration equipment to capture the pyritic gold was recognised. Serious attention was thus given by Phillips and the board to the raising of a loan for the Company. Already in debt to the extent of £3 500 it was estimated that some £10 000 was needed to relocate, restructure, and generally overhaul the mill,<sup>91</sup> which was considered the first priority. The loan was duly raised with the National Bank in July, coinciding with the shut down of the battery.<sup>92</sup>

The directors' report for the period ending 31 September 1891 gave as the reason for the decision to stop the mill the fall in the yield of gold which only averaged 4 dwts. 12 grs. in the months between April and July. Hence only the small profit of £381 13s. 6d. was shown for the six months under review. It was thus decided to confine operations once again to developing the lower levels of the mine in the hope of finding payable ore. Attention was also given to opening the old north reef workings on the suggestion of the former manager Stanton. Mr Stanton remarked at the May meeting that during his tenure ore yielding nine to twelve pennyweights to the ton was taken from the north reef. The directors expressed their incredulity, but subsequently confessed to the November meeting that Stanton's statement was verified in "... an old book [found] on top of a shelf in the office ..."<sup>93</sup>

An issue which was also brought to the attention of the shareholders for the first time in November 1891 was the action of the former Company's secretary, Robert Young, in pegging out certain houses belonging to the Company as prospectors' claims. An interdict was brought against Young in October but privately the board was not hopeful of winning the case.<sup>94</sup> The action arose out of the fact that the Company had built certain houses for its employees on ground proclaimed

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90. The Standard and Diggers' News, 27 May 1891.

91. H.E.149. H. Eckstein & Co. to Wernher, Beit & Co., 30 May 1891, p.679.

92. *Ibid.*, 18 July 1891, p.726.

93. The Star, 18 November 1891.

94. H.E.149. H. Eckstein & Co. to Wernher, Beit & Co., 24 October 1891, p.803.

as a goldfield but not actually lying on the Company's mynpacht. As the freehold owner of the farm Driefontein the Company had not doubted its rights in so acting. Nevertheless, as the farm was proclaimed, the houses stood on what was considered public ground on which individuals could peg and work claims on payment of the fees for the necessary prospectors' or diggers' licences. As it was, the Company's mynpacht exceeded the usual limit of size of ten per cent of the proclaimed farm, and there thus seemed little excuse for the siting of the houses off the mynpacht, other than that of convenience. As landlord of Driefontein the Company had considered its action as legal and secure but in terms of the Gold Law this was not the case, unless the Company itself paid the necessary licence fees on the claims on which the houses stood, or had taken the necessary action to have the area deproclaimed as a goldfield and instated as a township. As secretary, Robert Young saw the danger to the Company and urged the directors to take the necessary steps to secure a good title for the ground on which the buildings stood. In consequence applications were made to the Mining Commissioner at Boksburg to create a special reserve for the Company on the ground in question. The applications were rejected on the grounds that the mynpacht already exceeded that contemplated by the Gold Law. The Mining Commissioner did, however, offer the assurance that no licences would be issued for the claims and the Company allowed the matter to drop. Young subsequently cut his ties with the Company and proceeded to peg the claims for himself. An action in the Mining Commissioner's Court decided in favour of Young, whereupon the Company took the matter to the High Court in Pretoria. Here the decision of the lower court was reversed with costs amounting to £294 15s. 2d. to the Company.<sup>95</sup> It was held that Young's action was male fides, the object being to secure the buildings rather than the pursuit of mining operations. Further, the portion of ground in question was not open ground in that the plaintiffs occupied it with the knowledge and tacit consent of a Government official.<sup>96</sup>

The case was seen as a significant test of the rights and security of tenure of mining companies in their position as estate holders and,

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95. South African Mining Journal, Vol.II, 17., p.256. 21 January 1893.

96. Digest of Transvaal Law Reports 1877-99, in Reports of Cases Decided in the High Court of the South African Republic. Case of Witwatersrand Gold Mining Company vs Robert Young.

while the final victory went to the Company, the consensus of opinion was that it would only be when adequate provision was made for the amendment of the relevant section of the Gold Law that the position of these companies would be finally secured. The necessary changes were made in the subsequent amendment of the Gold Law in 1893.<sup>97</sup>

The mill which was closed down in July 1891 did not resume crushing until 1894. By March 1892 the Company had incurred a net liability of £9 091 5s., mainly due to the development work being undertaken in the mine. The belief that £10 000 would suffice for opening up a second level proved erroneous and it was thus decided not to incur any further debt by closing down the mine altogether. The estate and property were placed in charge of a caretaker and it was intended that the revenue from the estate would be used to gradually work off the debt.<sup>98</sup>

The decision to cease operations entirely prompted the board to search for an alternative source of revenue to assist that from the estate in reducing the liabilities of the Company as quickly as possible. Phillips, in announcing the decision to London noted that if the Glencairn Company, floated on a section of the mynpacht, continued its satisfactory progress, it might be possible to interest someone in purchasing the adjoining section of the Witwatersrand mynpacht.<sup>99</sup> In this way the capital for restarting the Company's operations could be acquired. In keeping with this view it was decided to lease the western section of the property adjoining the Glencairn Company to Messrs Lacey and Thomson in May 1892.<sup>100</sup>

The idea of leasing a portion of the Company's mynpacht on tribute was not new. As early as 1890 Phillips had entered into negotiations to lease a block of claims in this way.<sup>101</sup> He saw in the measure an additional source of income for the Company at a time when capital to increase the scope of its operations was desperately needed and difficult

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97. For a discussion on the Gold Law of the South African Republic see below, Chapter VII, pp.288ff.

98. The Star, 21 May 1892.

99. H.E.149. H. Eckstein & Co. to Wernher, Beit & Co., 2 April 1892, p.933.

100. The Star, 7 May 1892.

101. H.E.149. H. Eckstein & Co. to Wernher, Beit & Co., 27 June 1890, p.263. See glossary for term tributors.

to acquire. While the concept was familiar on the diamond fields, it has not yet been attempted on the Rand. It seems that Phillips's plan broke down as nothing more is heard of the concept as a solution to the Company's problems before 1892. The Company's own erratic results could have discouraged the potential tributors, or perhaps they had decided to await the further development of the Glencairn mine before coming forward with a definite proposal. The timing of the agreement with the shut down of all the Company's operations could also have resulted in more favourable terms for the tributors.

The agreement with the tributors was for a period of two and a half years. Walter Blaine, late manager of the Witwatersrand Company, was appointed manager and the tributors soon set about the rapid development of the sixty claims let by the Company. In terms of the agreement, the tributors would pay a monthly rental of £100 and ten per cent of the gross profits from the sale of gold over eight penny-weights per ton.<sup>102</sup> As a result of the contract the financial position of the Company improved rapidly. A year later on 31 March 1893 the debt had fallen to £802.<sup>103</sup> A large part of the debt repayment had, however, been financed from the sale of "all surplus machinery".<sup>104</sup> Once again when the decision was made to restart operations those doing so would suffer from this disadvantage.

The profitability of the tribute ground encouraged the syndicate to make a direct offer to acquire it in May 1893. Messrs Lace and Thomson, together with their partners in the syndicate, the Rely brothers, offered £50 000 for the sixty claims leased to them.<sup>106</sup> A counter bid was entered by Messrs Solomon and Thomson for £55 000. The Witwatersrand Company's board of directors decided that both the bids were too low, whereupon Lace and Thomson withdrew their offer while the other party's improved offer of £60 000 was accepted. Solomon and Thomson were acting for Messrs Stroyan and Barnato Brothers. The deal was not entirely fortuitous. Correspondence from London dated 6 May

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102. H.E.5. Quoting a letter from G. Rouliot to H. Eckstein, 25 February 1892, p.18.

103. Ibid., pp.18ff.

104. The Star, 14 November 1892.

105. South African Mining Journal, Vol.II, 9. p.123. 19 November 1892.

106. H.E.5., p.20. Quoting Minutes of Directors Meeting of 2 May 1893.

1893 indicates the prior knowledge of Wernher, Beit and Company of the deal. It was even suggested that Barnato "should make the offer".<sup>107</sup> Woolf Joel later confirmed this fact at a shareholders' meeting held in Johannesburg on 30 May 1893.<sup>108</sup> A letter from Wernher, Beit and Company to H. Eckstein and Company of 12 May 1893 states,<sup>109</sup>

"Mr. Barnato informs us that Mr Luce has a quarter share and consequently we have half the balance. We take it you will get the whole transaction confirmed in Johannesburg so that there is no doubt about our position in the business." In fact negotiations regarding the sale of the claims went back at least until November 1892, when, asked for his opinion on the extent to which the group should involve themselves in the deal, Phillips offered a cautious reply. He noted that while the tributors were getting eight and a half pennyweights per ton, the reefs were badly fractured and faulted and hence difficult to work. In summing up he wrote,<sup>110</sup> "... of course we have our large interest in the Knight's property to consider. In view of our extensive interest elsewhere and as far as I have thought over the matter since I got your cable this morning, I feel rather inclined to recommend selling out of the property than taking a larger interest just now."

On 26 May 1893, when a storm of protest against the deal was already brewing, a letter from the London office to H. Eckstein and Company stated, rather cryptically, "... we had overlooked that you are interested and on the board."<sup>111</sup> Many shareholders felt that the Company should have taken over the tributor's operations rather than selling them and strong protest was also made that the shareholders were not informed of the deal in advance. Here, however, there was no obligation on the directors to do so in terms of the Articles of Association. Finally, it was seen that the role of Wernher, Beit and Company and H. Eckstein and Company in the transaction suggested a conspiracy for the destruction of the Company and its property. What

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107. H.E.59. Letter from A. Beit to H. Eckstein & Co., 6 May 1893, p.19.

108. H.E.5, p.22.

109. H.E.59. Letter from A. Beit to H. Eckstein & Co., 12 May 1893, p.22.

110. H.E.151. Letter from L. Phillips to Wernher, Beit & Co., 19 November 1892, p.272.

111. H.E.59. Letter from A. Beit to H. Eckstein & Co., 26 May 1893, p.32.

the Standard and Diggers' News chose to call the "Battle for the Witwatersrand" had commenced.<sup>112</sup>

The first question to be asked concerning the deal is why feeling should have run so high among shareholders. The answer lies in the returns shown by the tribute workings. Between September 1890 and August 1891 the Company's own operations yielded 6 068 ozs. 13 dwts. from 24 672 tons of ore, or an average of 4,90 dwts. to the ton. By contrast between November 1892 and September 1893 the tribute syndicate returned 12 609 ozs. 30 dwts. from 27 218 tons of ore, or an average output of 9,26 dwts. per ton.<sup>113</sup> This latter return yielded a good profit to the tributors and a fair revenue to the Company. The Company's debts had largely been removed and, as the lease was for a short duration, shareholders looked forward to the time when the Company could resume operation of the mine for its own benefit. Their wrath at seeing this first glimmer of hope disappear can be appreciated. But why then did the supposed villains of the piece, Wernher, Beit & Company, limit themselves to a three-eighths interest in the seemingly prosperous venture? The answer lies in a letter from G. Rouliot to the principals on 29 April 1893, in which he, like Phillips before him, expressed a low opinion of the area. While the tributors had struck a very rich patch he felt sure that it covered only a limited area.<sup>114</sup>

H. Eckstein, as early as November 1892, stated he would "much sooner sell the claims for £60 000 than buy them for ourselves for less."<sup>115</sup> The reef was very broken in the area and it was known that the tributors' luck could run out. A three-eighths interest constituted a good hedge in case that luck held.

The immediate response of Wernher, Beit and Company in professing to have overlooked the connection between Rouliot as a director and their own interest in the Company is unconvincing. Throughout 1892 the letterbooks of the Johannesburg firm confirm their major interest in the Company and in the speculation and arbitrage deals in its shares.<sup>116</sup>

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112. The Standard and Diggers' News, 13 March 1894.

113. Jennings Report, pp.3ff.

114. H.E.5, p.20.

115. Ibid., p.18.

116. H.E.59, passim.

Once the storm of protest began, it was decided to give the Company the benefit of the option they had acquired from Barnato Brothers. The offer was duly turned down by the board. Meanwhile, private negotiations with the leading dissentient shareholders were opened with the intention of buying off their hostility to the deal. In a letter from London on 26 May 1893, Beit pointed out that the principal agitator was Shiels and that Barnato was prepared "to offer him a share and thus settle any further bother..."<sup>117</sup> Shiels was supported in his opposition by Messrs Struben, Slatter, Chisholm and Morrogh.<sup>118</sup> This group was prepared to bargain but wanted a half share in the Beit portion of the deal. Their legal counsel soon assured them of the legality of the actions of the directors in concluding the deal without the permission of the shareholders. In turn Beit stuck to his offer of returning the Wernher, Beit and Company portion of the deal back to the Company at cost. The only recourse open to the dissentients, short of backing down, was to work towards the removal of the board of directors. Towards this end they commenced the accumulation of shares and voting proxies. By late May 1893 they held 53 000 shares and in June Beit wrote that while Struben was still threatening legal action, there were also about 70 000 shares in the opposition camp.<sup>119</sup>

The refusal of the Beit group to bow to the demands of the dissentient shareholders encouraged him to believe the issue would soon blow over. As late as September Beit wrote, "We have nothing to fear and Struben and Company did not improve their position by entering into negotiations and bargaining."<sup>120</sup> By October, however, the continued meetings of the dissentients left him feeling uneasy and he commenced his own campaign to collect votes. Besides the handicap of a late start, "... our position in this matter is such a delicate one, that we can only ask proxies from friends... We shall send you by next mail a list of persons into whose names you can transfer shares for the sake of creating votes and we ask you to subdivide your holding as much as possible."<sup>121</sup>

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117. H.E.59. Letter from A. Beit to H. Eckstein & Co., 26 May 1893, p.32.

118. H.E.5, p.24.

119. H.E.59. Letter from A. Beit to H. Eckstein & Co., 17 June 1893, p.59.

120. Ibid., 8 September 1893, p.123.

121. Ibid., 28 October 1893, p.174.

Struben's role in the agitation deserves mention. As already indicated he reduced his holding in the Company in November 1888 along with Knight, but unlike the latter did not relinquish his interest entirely. He thus had a vested interest in seeing the Company again become profitable. As he later pointed out, the deal further limited the potential of the Company. Struben was also probably a partner in the Lys bid to acquire a portion of the property in 1889, while in 1891 Phillips reported a meeting with the two Struben brothers at which they attempted to secure his support for a move to oust George Goch from the chairmanship of the Company.<sup>122</sup> The Strubens had no confidence in Goch's direction of the Company. It is possible that Goch, as a director, was instrumental in blocking the Lys offer in 1889. Beit believed that his current opposition stemmed from the fact that he had been one of the participants in the bid made by Lace and Thomson for the tribute claims. As Lace held a quarter share in the Barnato deal, it is possible that Struben's intention was simply to enlarge his own holding.<sup>123</sup> It is possible that both factors prompted his strong opposition to the sale of Company land.

The furore stirred up by the deal had a sequel in the decision by the board on 16 May 1893 to appoint a competent mining engineer, "with a view to starting mining operations and ... to report on intended works."<sup>124</sup> It was decided to approach Mr Hennen Jennings for this purpose. Jennings was undoubtedly one of the great mining engineers of the early industry.<sup>125</sup> If he was at fault at all in this instance it was that he was already the consulting engineer and mining adviser of H. Eckstein and Company and their London principals. His competence was above question; it was the motive of the board in approaching him which is suspect. He was duly employed for a fee of 500 guineas.<sup>126</sup>

At the same meeting at which Jennings's letter of acceptance was read, the board resolved to lend £10 000 of the recently acquired

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122. H.E.149. H. Eckstein & Co. to Wernher, Beit & Co., 31 January 1891, pp.541ff.

123. H.E.59. Letter from A. Beit to H. Eckstein & Co., 1 July 1893, p.62.

124. H.E.5, pp.23-24. Quoting Minutes of Directors Meeting of 16 May 1893.

125. Cartwright, A.P., op.cit., p.98.

126. H.E.5, p.29. Quoting Minutes of Directors Meeting of 14 June 1893.

£60 000 for six months at six per cent interest to the Wemmer Gold Mining Company. The chairman of this Company was George Goch, who also occupied the chair of the Witwatersrand Company, while H. Eckstein and Company held a controlling interest.<sup>127</sup> Again, on 4 July, the board authorised a loan of £10 000 on the same terms to the George Goch Amalgamated Gold Mining Company, while in October a further £6 000 was lent to the Wemmer Company.<sup>128</sup> It can be and was argued that this money was lent to earn interest on the capital while the Company awaited the report being compiled by Jennings. At issue is why it was lent to these particular companies under the control of the chairman and without proper guarantee of repayment.

An investigation of the affairs of these companies reveals their own financial difficulties at the time. Commenting on these companies in 1891, Goldman reports that the liabilities of the George Goch Company at the commencement of the financial year amounted to £19 530 10s. The profit and loss account showed a deficit of £10 703.<sup>129</sup> In 1894 the company was "labouring under a load of debt".<sup>130</sup> To overcome this debt it was proposed to capitalize the entire amount by the issue of debentures to the extent of £60 000. Of the Wemmer Company Goldman notes, "The mine is one which has not been managed in the past as well as it might have been..." Under new management and the interest of H. Eckstein and Company it was "fast pushing on development", but for this capital was needed.<sup>131</sup> These could not be classified as financially healthy companies or investments which required no security on the part of the lender.

Further loans were made, or renewed, by the board before March 1894. In November 1893 a loan of £10 000 at seven per cent interest was made to the Johannesburg Estate Company, another Wernher, Beit and Company interest. It was only after E.A. Lippert, who bought into the Company at this time, had criticised the board on the issue and adverse

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127. Ibid.

128. Ibid., pp.29ff.

129. Goldman, C.S., The Financial, Statistical, and General History of the Gold and Other Companies of the Witwatersrand, South Africa, pp.70ff.

130. South African Financial Record, 29 September 1894, p.275.

131. Goldman, C.S., op.cit., p.265.

comment appeared in the South African Financial Record, that the interest rate was raised and the renewed loans to the Wemmer and Goch Companies secured by bonds.<sup>132</sup>

The Jennings Report was submitted to the board on 7 November 1893.<sup>133</sup> Shareholders received copies of it between 16 and 20 December, while the meeting to consider it was only held on 13 March 1894.<sup>134</sup> It would seem that Wernher, Beit and Company were honoured with a preview of the report prior to the shareholders.<sup>135</sup> At the meeting on 14 March 1894, E.A. Lippert raised the issue of the delay in publishing the report, noting that the board withheld it from the November meeting at which shareholders had severely criticised the directors. The board survived that meeting only because the shareholders agreed to wait for the report.<sup>136</sup>

At face value the Jennings Report is hardly controversial. As George Farrar suggested, it was largely a "record of past history".<sup>137</sup> If there is a weakness in it, it is that Jennings's investigation was fairly superficial. The mines were full of water and he did not consider it worth while to clear them for an in situ inspection, relying rather on the records of operations, managers' and directors' reports and various existing plans. He also followed the findings of a borehole sunk on the central section of the property.<sup>138</sup> In considering the financial position of the Company he revealed a total net working loss from its operation of £108 986.<sup>139</sup> Jennings discounted the existing development of the mine, suggesting that any further development be from scratch. Two alternatives for future policy were suggested. The Company could once more attempt to re-equip itself by

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132. H.E.5, pp.31ff, and South African Financial Record, 30 December 1893.

133. H.E.5, p.31.

134. The Star, 13 March 1894.

135. H.E.59. Letter from A. Beit to H. Eckstein & Co., 13 January 1894, p.265, reads: "Mr. Struben has not yet seen Jennings Report nor does he know we have it."

136. The Star, 14 March 1894.

137. *Ibid.*

138. Jennings Report, pp.1ff.

139. *Ibid.*, p.11.

its own devices, or it could let on tribute various sections of the property for a few years. The second alternative would also involve placing existing working capital "on gilt edge securities" pending the results of the tributors.<sup>140</sup>

After considering the pros and cons of the alternatives, Jennings concluded in favour of leasing the property on tribute. This conclusion dove-tailed admirably with the decisions and actions of the board of directors. From the outset at least one publication saw the report as "nothing more but a huge and elaborate apology for the said misdeeds of the nominee of his [Jenning's] employers."<sup>141</sup> More to the point was that the records of the management's past failures in mining, prospecting, milling and development were used as the basis of prognostication of future results, notwithstanding the encouraging results of the tribute ground and other adjoining properties.

The meeting to discuss the Jennings Report commenced on 13 March 1894. It represented a show-down between the opposing groups of shareholders, and when finally terminated on 20 March a new board of directors had been appointed. By then too, much of the history of the Company had been well laundered in the Johannesburg press.<sup>142</sup> In a circular following the calling of the meeting, the board gave notice of its intention to resign. Its resignation following the discussion of the report would have limited the acrimonious debate, but this its members refused to do. Struben was also unwilling, in responding to Jennings's statements, to limit discussion to the immediate report. He openly attacked the actions of the board in his reply. This led Goch, Carl Hanau and others to reply to these accusations, bringing much of the past history into the open. Goch also refused to put any motions to the vote before he and the other directors had had the opportunity of replying.

Struben was less critical of the Jennings Report than of the board whose actions, he suggested, limited its relevance. He saw Clause 72 of the Articles of Association, which gave unlimited power

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140. Ibid., p.12.

141. South African Financial Record, 30 December 1893.

142. See The Standard and Diggers' News and The Star for verbatim reports.

to the directors to act on behalf of the shareholders in all matters, as the chief reason for the Company's difficulties. The measure was introduced in 1889 following the moving of the Company's head office to Johannesburg. In their position of unbridled power the directors had manipulated the Company as they saw fit. Struben asked whether it had been sound financial policy to sell the tribute ground for less than the value of the gold the tributors had extracted from it in a mere fourteen months with a twenty stamp mill. In turn the interest on the money so acquired was little over £3 000 per annum, compared to the royalties of £7 266 7s. 6d. gained from these claims over the previous twelve months. It was also asked whether it would not have been better to have ordered an investigation by a mining engineer prior to the sale of the claims.

Goch, in his reply, levelled a personal attack against Struben, suggesting he had been largely responsible for the early failures of the Company. It was on Struben's advice that the original battery had been accepted. He too had offered no opposition to the 1889 dividend distribution. Turning to the sale of tribute land, Goch saw no need for the board to justify its actions, other than to suggest that the Company had received a fair bargain. The accusation that the claims were sold to help finance his other companies was met by the remark that it was a full forty days after the conclusion of the Barnato deal that the Wemmer Company received its loan. Little beyond this was offered in exoneration of the board's activities. In response to the suggested involvement of Wernher, Beit and Company, Phillips decided to bow out gracefully. He is reported as having stated that, "after the speeches which had been made, it would not befit their dignity [Wernher, Beit and Company and H. Eckstein and Company] to agree to serve on the board any longer."

On 20 March a resolution to postpone the meeting for three months was defeated by 14 740 votes to 12 260 votes, or 110 249 shares to 67 932 shares. A motion introduced by Struben that the policy to be followed in regard to the Jennings Report be left for the new board to decide, was unopposed. Goch, recognizing the hopelessness of his position, then submitted his board's resignation. None of the outgoing directors had been nominated for re-election, so that a completely new board came into office. Farrar and other shareholders expressed some reservations about the move, feeling that not all of the nominees were competent. The new members of the board were, H.W. Struben, H. Nourse,

E.W. Thomson, C.L. Redwood, James Hay, W. Ross and A.A. Stanton.

Under the new management the Company was slowly brought to a position of profitability and continued as a gold producer down to 1937. In one sense, however, the "Battle for the Witwatersrand" proved a hollow victory. To the Standard and Diggers' News the essence of the conflict had been the dispute between the shareholders and the board of directors over the authority of directors to act without constant responsibility to the shareholders. The newspaper applauded the resurgence of the shareholder who "is at last in earnest mood and means to find out whether he or the director is master."<sup>143</sup> In this respect the shareholders had won by ousting the board. At a deeper level the status quo remained. It was the South African Financial Record which hinted at the true situation:<sup>144</sup>

"It has become an article of faith here that a numerically small faction, backed up by the prestige imparted by wealth, was able to dominate every company in which it acquired a holding, regardless of the interests of the many. For so long has this despotic rule gone unquestioned that by popular verdict it has been enshrined as an article of the unwritten law of this land."

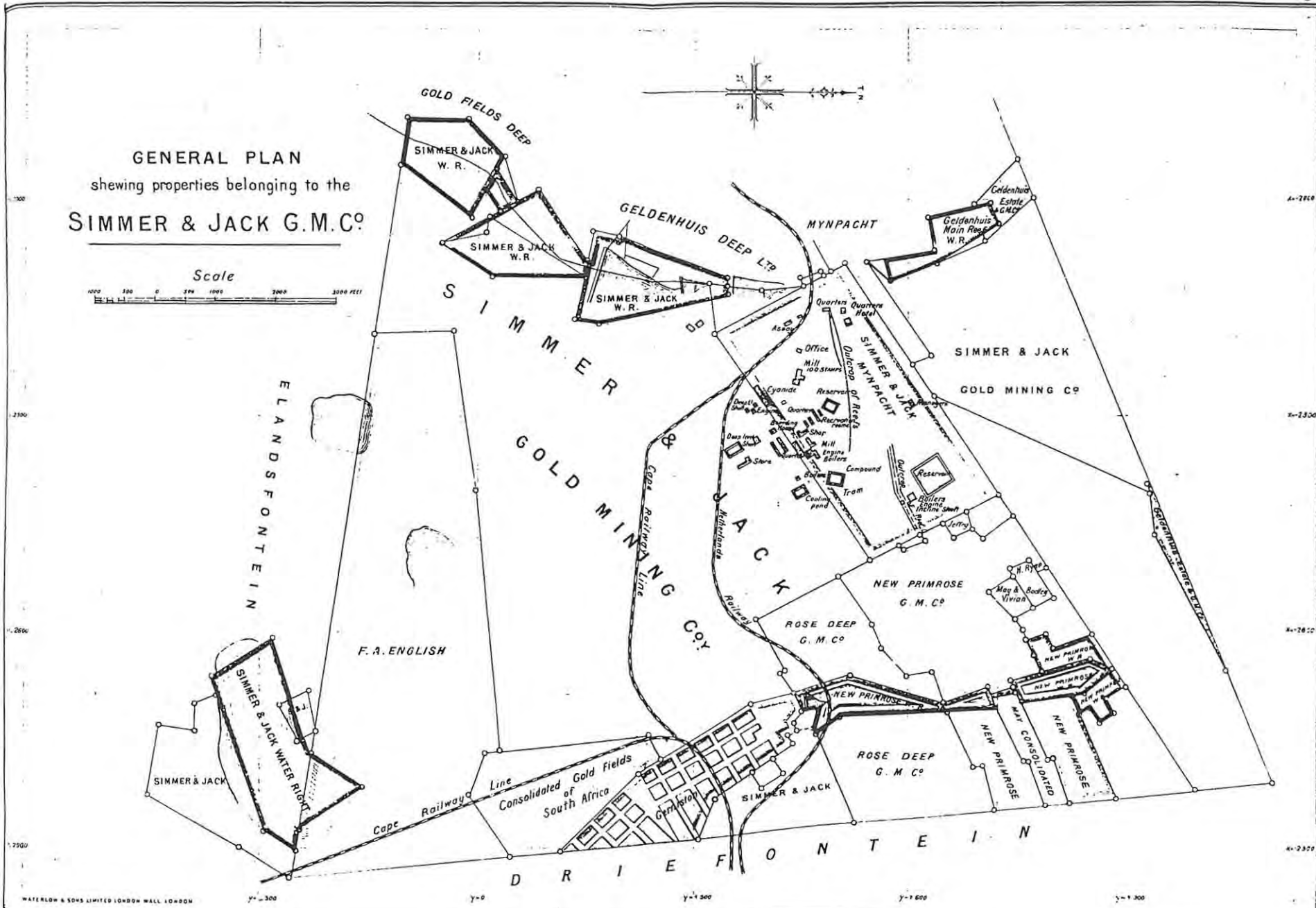
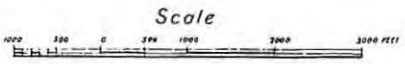
The ability of a firm like Wernher, Beit and Company through its financial resources to achieve a commanding presence on the Rand had been challenged. It is fairly obvious that this firm and its Johannesburg partners had decided the fate of the Witwatersrand Company should be its fragmentation into a number of smaller companies. Again, in this regard they were thwarted, but the heavy capital requirements of the industry and the growing reliance on sophisticated technology ensured that those who could command these vital factors would play a dominant role and exercise a pervading influence on the future growth of the industry.

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143. The Standard and Diggers' News, 21 March 1894.

144. South African Financial Record, 24 March 1894.

**GENERAL PLAN**  
 shewing properties belonging to the  
**SIMMER & JACK G.M.C<sup>o</sup>**



## CHAPTER III

## THE SIMMER AND JACK GOLD MINING COMPANY

On the plateau of the eastern Transvaal highveld, approximately 140 miles east of where Johannesburg arose as a mining camp, lies Lake Chrissie, a body of water subject to the vagaries of the summer storms. In a wet season the circumference can swell to over fourteen miles, while in a drought it all but disappears. In 1864 the lake formed the central focus in plans for a settlement submitted to the Government of the South African Republic by Alexander McCorkindale. In return for the provision of a loan and a "constant and cheap supply of ammunition", McCorkindale was given various concessions, the most important of which was the right to purchase a block of 200 farms, some one and a quarter million acres in extent, for £8 000. The farms would be used for the establishment of the settlement of 300 immigrants.<sup>1</sup> In January 1867 the first party of approximately fifty Scotsmen were located close to the lake on forty farms. While McCorkindale's scheme subsequently collapsed and many of the farms proved unsuitable for agriculture, some of the Scots remained in "New Scotland". One of these was John Jack, who together with a German immigrant, August Simmer, established a trading store at Lake Chrissie to service the needs of the surrounding farming community. In time the settlement found itself on the coach route from Natal to the Lydenberg, or Macnac, goldfields, to which place had gone many of its erstwhile settlers.

The partners, Simmer and Jack, conducted the usual business of small general dealers throughout South Africa, extending credit to their farming customers against the surety of the next season's crops. Schalk Willem Jacobus Meyer farmed near Lake Chrissie, where he had commercial dealings with the partners. Meyer also owned a portion of the farm Elandsfontein, situated on the Witwatersrand in the district of Heidelberg, where gold was discovered in 1886.<sup>2</sup> It seems probable

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1. Theal, G.M., History of South Africa From 1795 to 1872, Vol.IV, pp.469ff.

2. Gray, E.L. & J., The Discovery of the Witwatersrand, pp.179-80.

that Simmer and Jack were given an interest in the Elandsfontein property for the settlement of debts.<sup>3</sup> Nevertheless, on 2 January 1886 Meyer leased a portion of the farm to Pieter Cornelis van der Walt for a period of two years at a minimal rent, an amount which could possibly cover his outstanding debts over that time.<sup>4</sup>

An alternative interpretation of their subsequent interest in the Elandsfontein property suggests that this arose only through the partners' activity in serving as a post office for the Lake Chrissie district. Following the discovery of the Main Reef by George Harrison on Langlaagte, Elandsfontein No.1 was prospected by Henry Nourse without the owner's permission or knowledge. Under the Gold Law of the South African Republic the owner of a farm automatically became entitled to stake out an owner's claim, or mynpacht. Nourse's actions became known to H.B. Marshall who contacted Simmer and Jack as a means of negotiating with Schalk Meyer for the property. Jack duly secured the option to purchase the mynpacht rights from Meyer and then hurried to the new field to stake out the mynpacht on Meyer's behalf.<sup>5</sup>

A flaw in this interpretation is that Marshall did not feature prominently in the early history of the Company. He was neither a director of the subsequently formed Company, nor did he list as a major shareholder. The relationship of Henry Nourse to the Company is also unknown, although a T.M.C. Nourse did feature on the first list of major shareholders. From the early minute books of the Company it is clear that Simmer and Jack were co-owners of the property with Meyer and the only area for speculation is how they arrived at that position.

There was a certain amount of confusion surrounding the prospecting of the Elandsfontein farm. Mathers suggests that by July 1886 it was generally recognised and had been proved in places that the main reef ran through the property.<sup>6</sup> It is his contention that F.E. and D.C. Geldenhuis "were fortunate in their prospecting on Elandsfontein before July 6."<sup>7</sup> Nothing in these statements indicates

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3. Cartwright, A.P., The Gold Miners, p.87.

4. Gray, E.L. & J., *op.cit.*, p.180.

5. Rosenthal, E., Gold! Gold! Gold!, pp.163ff.

6. Mathers, E.P., The Gold Fields Revisited, p.262.

7. *Ibid.*, p.58.

that Mathers was specifically referring to the section of Elandsfontein owned by Schalk Meyer. What is known is that van der Walt, as lessee of the property, enquired of the Government on 19 July if he had the right to prospect on his leased portion of the farm without a licence. The next day he sublet one third of the property to Pieter Johannes du Preez and Company for seventeen months, the term of the unexpired lease, for £50. On 2 August, presumably in response to the Government's reply, van der Walt took out a prospecting licence for one month.<sup>8</sup> Another less reliable source suggests that Simmer and Jack also leased a portion of the farm.<sup>9</sup> As has already been stressed above, however, the Company subsequently formed treated with all three men as part owners. The prospecting activity of the lessees, who resided on the property or in close proximity, presumably was conducted prior to Meyer and his partners becoming aware of the mineral potential of the property, or of their rights regarding it. This awareness of the lessees would also discount the interpretation of Nourse having a free hand in the prospecting of the property. Simmer and Jack, in turn, would have heard of developments on the Witwatersrand soon enough from their connections with the eastern Transvaal goldfields and acted accordingly.

Elandsfontein, along with the neighbouring farm Driefontein, was declared a public digging on 20 December 1886. By this date Schalk Meyer and his partners had registered their mynpacht, the last to do so before the proclamation of the field.<sup>10</sup> Du Preez remained unaware of the granting of the mynpacht to Meyer and applied to the Mining Commissioner, Capt. von Brandis, for seventy five licences for claims in terms of the proclamation. These were granted and paid for on 23 September, before the error was recognised that the mynpacht covered the same area. Du Preez then resorted to legal action, basing his case on the unlawful acquisition of the mynpacht by Meyer and partners on 11 September. The Gold Law was not clear on whether an owner could exercise a mynpacht right on a property let to another. In submitting his application for the mynpacht Meyer declared that he had not given anyone permission to prospect the farm and neither had he disposed of

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8. Gray, E.L. & J., *op.cit.*, p.180.  
 9. The Eastern Star (Grahamstown), 22 September 1886.  
 10. Cartwright, A.P., Gold Paved the Way, pp.77-78.

the mineral rights. Du Preez's exparte application of October 1886 was to prevent Meyer or van der Walt from selling the mynpacht right to a third party pending the hearing of the case. It is clear from the timing of Du Preez's lease that the reason for he and his partners obtaining the sub-lease on a portion of the farm was the intention of gaining control over the mineral rights. The interdict was duly granted, on the grounds that their grazing rights might be interfered with by mining activity. It seems strange that the Court should have granted such an interdict, given that the farm had already been proclaimed as a public digging.

The legal wrangle extended into 1887 and delayed any progress being made in the formation of a Company to work the property before August of that year. The Court interdict against the sale or lease of the mynpacht did not prevent Meyer and the partners from having a proper survey made of the property. Two water rights were also acquired.<sup>12</sup> What had now become known as "Jack's Mynpacht" consisted of an area of 127 morgen 570 square roods, which together with a half claim on the continuation of the Main Reef on the eastern boundary of the mynpacht, previously registered in the name of A. Milne, became the mine property of the Simmer and Jack Gold Mining Company.<sup>13</sup> This block of ground contained 186 claims in all, being 31 claims or 4735 yards in width along the line of the Main Reef. On expiry of the grazing lease the claims and other landed property were made over to the Company on a ninety nine year lease. As the vendors and promoters of the Company, the three partners received in settlement an amount of £11 200 in cash and 40 800 shares of £1 value, fully paid up, or an amount equivalent to £52 000.<sup>14</sup> The nominal capital of the Company was set at £75 000 in £1 shares, 20 000 of which were offered to the public to provide working capital while 3 000 were held in reserve.

Amongst the largest of the initial shareholders, besides the partners, were Charles H. Pearse who held 6 087 shares, Charles Knox,

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11. Gray, E.L. & J., op.cit., p.180.

12. The Eastern Star, 13 June 1887.

13. Cory Library, Rhodes University, MS16 072, "Memorandum of Association of the Simmer and Jack Gold Mining Company."

14. Ibid.

who was appointed the first manager, had 3 395 shares, while T.M.C. Nourse held 2 602 shares and H.W. Struben 2 692 shares.<sup>15</sup> The first board of directors were H.W. Struben, who served as chairman, John Jack, William Ross, F.H. Barber, E.J. Wicke, E. Brayshaw and George Farrar. Messrs Meyer, Simmer and Jack, as the chief promoters were entitled, in terms of the Articles of Association, to nominate two directors yearly so long as they collectively or individually held not less than 14 000 of their vendor shares; and one director if not less than 7 000 shares.<sup>16</sup>

The outcrop of the Main Reef passed diagonally through the mynpacht. At the western end of the property this reef was 2 000 feet from the dip of the boundary. There was, however, an extensive fault in the reef series in the property which threw the western portion of the beds out of their true line by about 750 feet. The greater part of the property, some 3 200 feet of the outcrop line of 4 735 feet, fell to the west of the fault. To the east of the dyke the average distance between the Main Reef and the dip boundary was 900 feet. In the western section the dip of the beds averaged an angle of about fifteen degrees; in the east this angle varied between twenty five and thirty degrees.

The fault which ran through the property all but divided it into two separate mines which required their own individual shafts and underground facilities. During the early years of the Company several attempts were made to float the eastern section of the property as a separate company. While these attempts failed, the efforts of the directors in this regard reflect the thinking of management and shareholders alike towards the scale and financial requirements of their undertaking.<sup>17</sup> The position of the dyke in relation to the property is also an indication of the haste with which the mynpacht was pegged and the relative ignorance of the local geological structure by those who undertook the task.

It was perhaps inevitable that mining operations would commence in the western or larger portion of the property. Towards this end,

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15. Ibid.

16. Ibid.

17. See below, pp.69ff.

Knox used the interlude while waiting for the expiry of the grazing lease to acquire the necessary mining machinery for the future Company.<sup>18</sup> In keeping with so much early Witwatersrand mining activity, a trench was cut to expose the reef.<sup>19</sup> The usual "encouraging prospects" were reported in the press to maintain shareholders' interest and bolster share prices during the tedious wait for the arrival of all the necessary machinery and equipment. The shallow dip of the reef did, however, prevent the quarrying method from being used successfully. At an angle of only fifteen degrees the overburden soon became a problem and the expense involved in supporting the roof discounted any further use of the technique. Here it must be borne in mind that the Witwatersrand was far removed from an adequate supply of timber which could be used for mine props and supports. Timber of any description found a good price as firewood as well and the price subsequently rose to a level where its use was minimized.

In November 1887 a plan was drawn up for the more systematic exploitation of the property. The scheme involved driving an adit into the slope of the Witwatersrand from the western boundary, thus obtaining a stopping level of about ninety feet on the crown of the property and providing a natural drain from the mine at this level. Incline shafts from the outcrop were sunk at 200 foot intervals to a depth to meet the adit level as it was driven forward. To the south a vertical prospecting shaft of large enough dimensions to serve later as a hauling shaft, was sunk to strike the reef at a depth of about 160 feet. A vertical shaft was also sunk in the eastern section to test the reef at a similar depth.<sup>20</sup>

The adit was driven 315 feet before it encountered a clay dyke of about 150 feet in width. The loose pot clay would have required timbering throughout if a level were driven through it. Rather than incur such expense it was decided to commence a second adit. This adit no.2 was carried a distance of ninety six feet before the Main Reef was struck. Where the connection was made a drive was also pushed out to intersect the south reef. In all, five incline shafts were sunk

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18. The Eastern Star, 20 May 1887.

19. The Eastern Star, 14 September 1887.

20. The Eastern Star, 20 June 1888.

before the end of May 1888, and over 1 000 tons of ore extracted from the shafts and adits. Tramlines were laid out in the adits to connect the mine to the mill site while a branch line linked up the mouths of the five shafts.

The presence of H.W. Struben as chairman of the board of directors all but guaranteed the choice of a Sandycroft mill for the Company, as he was the local agent for that company. A twenty five stamp battery was duly ordered soon after the Company's formation and by March of the following year a large proportion of the various parts of it had arrived at the mine.<sup>21</sup> The appointment of Knox as manager for the new Company was confirmed in December 1887. He had supposedly had "a long mining experience in Australia."<sup>22</sup>

While the Company awaited the completion of the erection of the battery efforts were made to bring the other surface facilities to a point where production could commence. Quarters were erected for both black and white workers, while the usual blacksmith's shop, store rooms and stables were laid out. A house for the manager and cottages for the married white miners were in the course of erection by May 1888.<sup>23</sup>

The decision was taken early in 1888 to secure the tenure of the Company by purchasing the farm Elandsfontein from the partners for an amount of £10 000. Not only would this obviate the payment of a rental to them but it was recognised that the property could become a valuable source of revenue from the sale of claim licences, stand licences in the village of Germiston, and finally from any water rights established on it. It was initially estimated that the revenue could amount to £1 800 per annum.<sup>24</sup> Just how lucrative the estate became to the Company is borne out by the fact that for the half year ending 30 June 1889, revenue amounting to £2 391 6s. 8d. accrued from this source.<sup>25</sup> The greater part of this income was generated by the growing village of Germiston. Named after the farm outside Glasgow where John Jack grew up, the village was destined to become the

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21. The Eastern Star, 5 March 1888.

22. The Eastern Star, 7 December 1887.

23. The Eastern Star, 20 June 1888.

24. *Ibid.*

25. The Star (Johannesburg), 30 July 1889.

terminus between the "Rand Tram" line built by the Netherlands company as a light railway running along the line of the reef connecting Boksburg with Krugersdorp via Johannesburg, and the railway from the Cape which linked up with it in 1892.<sup>26</sup>

The twenty five stamp battery was erected by August 1888 and given its trials. It was powered by a twenty horse power compound engine which from the outset did not provide sufficient force to operate the stamps at maximum efficiency.<sup>27</sup> The Company also endeavoured to experiment with a new type of amalgam plate. One set of five stamps was equipped with electro-silvered plates as opposed to the usual copper plates. All the plates had fifteen foot "blanket strake" concentrating devices attached to them from the outset. It was clearly recognised that at least in its upper levels, the Simmer and Jack mine was not one of the richest on the field with regard to the value of its ore, and that every device possible was necessary if yields per ton were to be kept at a profitable level.

The evidence of early operations on the mine suggest that the Company was fortunate in the choice of its first managers, Charles Knox and William Pope. While Knox left the Company's service at the end of September 1888, the first month of production, his contribution to the proper and effective opening up of the mine was a positive one. It is difficult to isolate the reason for his dismissal from the post. As a large shareholder in the Company, he no doubt exercised considerable power and could have challenged the decision had he so desired. It seems probable that he recognised the ability and reputation of the man who was to succeed him and bowed out gracefully. William H. Pope, late manager of the Pigg's Peak Gold Mining Company in the eastern Transvaal, was duly appointed on a renewable six month contract. He was to remain as manager down to the restructuring of the Company by the Consolidated Gold Fields of South Africa Ltd. in 1894. From the date of his appointment the operation of the Company was conducted along efficient technical lines. Lacking spectacularly rich ore there was little temptation for the Company to embark on a

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26. Marais, J.S., The Fall of Kruger's Republic, pp.33ff and also, Van der Poel, J., Railways and Customs Policies in South Africa, p.69.

27. The Eastern Star, 8 October 1888.

ruinous course of mining purely with the intention of influencing share prices. Rather, the emphasis rested on reducing working costs and maximising profits for the benefit of the shareholders. This was perhaps an inevitable course for a Company without a large body of high yielding ore. A correspondent of a Natal newspaper visiting the mine in October 1888, was surprised to find the Company unwilling to publish an official statement regarding the yield of ore and the extracting power of the mill.<sup>28</sup> At a time when more and more Rand mining companies were publishing glowing reports with an eye to influencing their share prices on the growing bull market, such a reaction seemed strange indeed. It does, however, epitomize the attitude and approach of the management of the Company.

The speculative inclination of the Board was rather involved in using the rising stock market boom to float a subsidiary company on the eastern section of the mynpacht. The position of the Company with regard to the potential and requirements of its property very soon became evident to those in control. Perhaps the strongest realisation on the part of the board was the inadequacy of the existing mill and plant in coping with the vast ore reserves discovered to lie under the property. It is not clear whether at this stage the thinking of the board extended to evaluating the relationship between existing facilities and high working costs and the benefit of a lower marginal production cost which could result from an increased scale of operations. Reports indicate only that the twenty five stamp mill was recognised by January 1889 to be "totally inadequate" to crush the amount of ore on hand.<sup>29</sup> The mine was being developed at a far more rapid pace than the existing mill could cope with. The directors therefore decided to increase the crushing power dramatically by ordering a further fifty five stamps, together with an engine adequate to drive 100 stamps. The equipment would require an additional outlay of approximately £20 000. To open a second level, below that of the adits, also meant that for the first time the mine would have to face the expense of installing proper pumping and hauling equipment, so far obviated by the use of the adits. The opening of the second level

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28. Ibid.

29. The Eastern Star, 21 January 1889.

would also require an estimated £12 000. In all the directors anticipated an expenditure of approximately £50 000.<sup>30</sup>

The original working capital of the Company was £20 000. This amount was augmented by the sale of the 3 000 reserve shares in October 1888 for an amount of £5 754 7s. 6d., but from this sum was drawn £10 865 1s. 0d. for the purchase of the Elandsfontein estate. The balance of approximately £15 000 was long since invested in machinery and plant and the development of the property. A special general meeting was called for 22 January 1889 at which the directors proposed to increase the capital of the Company to £100 000 by the issue of a further 25 000 shares. At the same meeting the chairman, Mr R.R. Hollins, suggested that the property was too large and that even with a 100 stamp mill it was estimated that the ore in one level would take up to four years to deplete. The board therefore proposed to float a separate company to work the claims which lay to the east of the intrusive dyke. It was proposed that such a company would also have a nominal capital of £100 000, one share in the new company being allotted for each held in the existing Company, with the balance of £25 000 being raised by public issue for the purposes of working capital - and thus ensuring the new company the same sort of financial difficulties which had caused the Simmer and Jack board to dream up the scheme.<sup>31</sup>

It appears from reports of the meeting that the board attempted to offer the deal for the creation of the new company as part of the same package as the increase in capital for the mother Company. Led by Messrs Barnato and Wicke, a counter proposal was offered which suggested that the Company issue the shares itself and use the funds for the working of the whole property. It was eventually decided to increase the capital of the Simmer and Jack Company to £85 000 by the creation of a further 10 000 £1 shares, while the directors were instructed to invite tenders for the purchase of the eastern claims. A special general meeting would be called as soon as possible to consider the tenders offered.

As early as December 1888 Messrs H. Eckstein and Company were aware of the impending move to float a separate company. It was their

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30. Ibid.

31. The Eastern Star, 23 January 1889.

intention to take a share in such a scheme if it could be acquired at reasonable cost.<sup>32</sup> By early January it was reported to London that so many groups and individuals were "fighting for these things" that it would be impossible to acquire them on the terms which the London principals of the firm, namely Wernher, Beit and Company, had become accustomed in the past.<sup>33</sup> The Johannesburg partners, H. Eckstein and Company, had shown interest in the Simmer and Jack property for some time. It was a company which, due to its size, was seen to be of particular importance. While the Company straddled the dyke it was considered to be at a distinct disadvantage and the firm hoped to benefit from the split. The separation and acquisition of the eastern section was not contemplated as an end in itself by the Corner House,<sup>34</sup> but rather as a means for increasing the size of the promising adjoining property, the Primrose Gold Mining Company.<sup>35</sup>

The special general meeting to consider tenders was held on 14 March 1889 at the peak of the speculative boom in Johannesburg. Considerable interest was generated in the affair and the gathering was well attended. The tender of the syndicate of which H. Eckstein and Company were partners was submitted to the meeting by Julius G. Mosenthal. The offer for the ten and a half claims on the line of reef and a suitable water-right was for £120 000 in cash and 40 000 shares in the new company to be formed.<sup>36</sup> Cecil John Rhodes held a two-thirds share in the offer, the Corner House one tenth, while E.A. Lippert also had an interest. This is the first evidence of the interest of Rhodes in the Company, which was to reach fruition in the virtual take-over of the Simmer and Jack Company in 1894.

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32. Barlow Rand Archives. Archives of H. Eckstein and Company (Reference code H.E.), Vol. H.E.51, H. Eckstein and Company to Jules Porges and Company, p.229, 28 December 1888.

33. Ibid., p.270, 11 January 1889.

34. "The Corner House" was the popular name for the firm of H. Eckstein and Company in Johannesburg, being a reference to their business premises on the corner of Commissioner and Simmonds Streets. Given the dominance of the firm in the early affairs of the gold mining industry it is also possible that the name had a double meaning for Johannesburg investors.

35. H.E.51, H. Eckstein and Company to Jules Porges and Company, p.366, 1 March 1889.

36. Ibid.

In all six tenders for the claims were received. Besides the one already mentioned, there were others from C.P. Crewe, who offered the Simmer and Jack Company 125 000 £1 shares in the company to be formed together with £50 000 in cash. The capital of the proposed company would be £250 000, the balance being made up of £50 000 in working capital with 20 000 reserve shares and the remaining 25 000 shares going to the promoters. A third tender was from J.D. Celliers and Company on behalf of various principals, whereby the Simmer and Jack Company would receive 170 000 £1 shares in a company with a capital of £240 000. The balance of the capital would come from £50 000 in working capital, 10 000 reserve shares and 10 000 shares to the promoters. The fourth tender was an alternative offer from J.G. Mosenthal for a straight cash sale of the claims for £140 000. The fifth offer was from B.I. Barnato for £185 000, of which £35 000 would be in cash and the balance in the shares of the company to be formed. Finally J. Stroyan and Company offered £250 000, £50 000 in cash for working capital, 25 000 reserve shares, 150 000 shares to the Simmer and Jack Company, and 25 000 as a ten per cent commission to the promoters.<sup>37</sup>

From the correspondence of the firm of H. Eckstein and Company and the events at the meeting, it would appear that the directors had before the meeting broken silence on the subject and entered into written correspondence with J.G. Mosenthal regarding the provisional acceptance of the first tender.<sup>38</sup> The meeting was chaired by Dr C.W. Neebe who had recently taken a seat on the board and had immediately been given the chairmanship of the Company. At least one of the directors, the former chairman R.R. Hollins, expressed his contention that none of the offers be accepted. In expressing their combined opinion the rest of the board, through their spokesman George Farrar, proposed the acceptance of the J.G. Mosenthal first tender. Farrar pointed out that the redemption of the 40 000 shares at par after the stipulated period of four months would make this offer worth £160 000 in cash. Barney Barnato expressed his anger at the directors entering into correspondence with Mosenthal prior to the meeting to ask for a guarantee for the one tender. He felt that all participants in the call should have been asked for similar guarantees. A long debate ensued in which Hollins

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37. The Eastern Star, 15 March 1889.

38. H.E.51, H. Eckstein and Company to Jules Porges and Company, p.375, 8 March 1889.

condemned the action of the board in acting beyond the bounds of the resolution, which merely requested the board to call for the tenders. In his defence of their actions, Farrar suggested that the board had only "taken steps to find out" if a proper guarantee would be forthcoming. Farrar also pointed out that by comparison with the offer recently accepted by the Witwatersrand Gold Mining Company the Mosenthal offer was most favourable, being more than double the amount that company had received per claim.<sup>39</sup> Regarding suggestions for the formation of a subsidiary company, Farrar eloquently stressed the high costs such a move would entail. A subsidiary company would also involve a delay of at least eighteen months before any return would accrue to the parent Company's shareholders, while the high cost of transport prevailing as a result of the current drought conditions would make the cost of such a venture most expensive. Farrar felt that the Simmer and Jack Company still stood to retain the better portion of the mynpacht, the Elandsfontein estate and the growing township of Germiston. Acceptance of the Mosenthal tender could give shareholders one new share for every two already held, or, after payment of a bonus of thirty shillings per share, would leave their Company with about £45 000 in cash to augment the working capital.

The defection at the meeting of John Jack from the stand of the rest of the board to the views of Hollins and Barnato was a major blow for the directorate. Thus weakened, there seemed no alternative but to propose an adjournment of the meeting. Privately, Barnato removed his opposition to the Mosenthal tender in return for a £50 000 interest in the undertaking. Barnato also agreed not to oppose the proposed amalgamation of the claims into the Primrose Company.<sup>40</sup> Before the adjournment of the meeting Hollins put forward a counter-proposal that a subsidiary company be floated with a nominal capital of £200 000, in which the shareholders of the parent company would receive 150 000 shares, leaving 10 000 shares as a reserve while the balance of 40 000 were offered to the public for the raising of working capital, after first being offered to the shareholders of the parent company on a pro rata basis.

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39. See above, Chapter II, pp.40-41.

40. H.E.51, H. Eckstein and Company to Jules Porges and Company, p.386, 15 March 1889.

The meeting was duly adjourned to 18 March 1889. From the speech made by Hollins at the second meeting it would seem that his main objective was to see the establishment of a separate company on the claims. He even went so far as to suggest that he would rather support the adoption of Barnato's tender as an alternative if his own proposal was rejected, in that this tender also specified the establishment of a separate company. Hollins believed that the incorporation of the claims into the Primrose amalgamation would not serve in the best interests of the Simmer and Jack shareholders. Whether there was any personal antagonism between Hollins and the other members of the Mosenthal syndicate has not been established. There seems little reason to believe that the incorporation of the claims into the Primrose amalgamation would have resulted in any less benefit to the Simmer and Jack shareholders. In the short term there was the promise of a better cash reward and a shareholding in a venture which would yield a dividend return that much sooner than a company starting from scratch. Shares in the Primrose amalgamation were also likely to respond more rapidly on the market. As Farrar noted, in terms of Hollins's scheme, the new company would be expected to raise capital for both the old Simmer and Jack Company, as well as for its own requirements. It would seem that the only real opposition to the Mosenthal tender could lie in the nature of the cash to shares balance of the offer, in terms of which the Simmer and Jack Company was fobbed off with cash rather than being given an inside deal on the Primrose amalgamation which was considered as a very favourable prospect.

Hollins's proposal was eventually put to the vote and carried by 24 votes to 22, whereupon a ballot was demanded. The result of the ballot was 543 votes in favour of Hollins's proposal and 588 accepting Mosenthal's tender. As the total number of votes only represented 5518 shares, there were insufficient shares accounted for to carry either proposal and the meeting was adjourned for another week.<sup>41</sup> By now the writing was on the wall as far as H. Eckstein and Company were concerned and they withdrew from the Mosenthal syndicate.<sup>42</sup>

During the intervening week an additional offer was received from

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41. The Eastern Star, 18 March 1889.

42. H.E.51, H. Eckstein and Company to Jules Porges and Company, p.400, 22 March 1889.

Mr Abe Bailey and provisionally accepted by the directors. The Simmer and Jack Company shareholders would receive 140 000 shares and £35 000 in cash in an amalgamation deal involving their ten and a half claims and the property of the Primrose Gold Mining Company. The new company so formed would have a share capital of 500 000 £1 shares, with a working capital of £50 000 and a reserve of 15 000 shares. Bailey would, besides the usual rights, have the choice in the appointment of four of the seven directors of the new company. An amendment proposing the alteration of the structure of the offer to 150 000 shares and £25 000 in cash was accepted by the Simmer and Jack shareholders. It was then resolved that of the 150 000 shares, 131 250 would be divided amongst the shareholders and the balance left in the hands of the directors as working capital. Once again, however, there were insufficient shares represented to carry the motion.<sup>43</sup> Nevertheless from the tone of the meeting it is clear that the shareholders present were seeking a greater proportion of any offer for the claims in the form of company shares. With the stock exchange at the height of the boom this was inevitable. Such shares could hopefully be unloaded onto the market at considerably higher prices than their nominal value, thus making the offer worth far more than would initially seem the case.

The drive to part with the ten and a half claims did not end here and was again revived later in 1889. In the interim, however, the stock exchange collapsed and the Company had to face the financial implications of the debt incurred in the opening of the second level of the mine and in the purchase of additional stamps and equipment. Having intended to use the funds from the sale of the claims for this purpose, the board now found itself in financial straits. To add to their discomfort was the fact that the collapse of the share market rendered the sale of the 10 000 reserve shares an unprofitable way out of the problem. Simmer and Jack shares peaked in value in February 1889 when they were quoted in Johannesburg at 214 shillings.<sup>44</sup> Thereafter they slid back to around eighty shillings. As Dr Neebe pointed out to the half yearly meeting in July, the financial position

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43. The Eastern Star, 27 March 1889.

44. Goldman, C.S., The Financial, Statistical and General History of the Gold and Other Companies of Witwatersrand, South Africa, p.xxi.

of the Company would have been that much healthier but for the cancellation of the scheme to sell the claims. The directors were left in a position where they had personally to stand surety for the granting of loans to the Company. An amount of £30 000 was borrowed from the Transvaal Mortgage, Loan and Finance Company to pay for the new stamp battery and other equipment which arrived at the mine throughout the course of 1889. By 9 September 1889 the debt of the Company had again risen to £22 749 17s. 6d. and the directors were prompted to sell half of the reserve shares. Share prices had risen in the interim since April to over 160 shillings so that 4 000 were sold at £8 2s. 6d. and a further 1 000 at £8 3s. 6d. With the proceeds of these sales the debt was eliminated and a credit balance of £17 656 13s. 10d. restored.<sup>45</sup> A decision was also taken to increase the order for new stamps from fifty five to seventy five, in order to bring the milling strength up to 100 stamps. It was also resolved to acquire a rock drilling plant which necessitated a further outlay of £4 000. The overdraft at the loan company remained undiminished but the sale of the 5 000 reserve shares had at least allowed for the extra stamps and the drilling plant to be acquired without the need for a second bond on the property. Like many companies on the Witwatersrand, the collapse of the stock exchange in 1889 prompted the directorate of the Company seriously to consider increasing output as a means of ensuring regular profitability and the payment of dividends.

The sale of the shares prompted a query from shareholders as to why they were not offered by public tender. There was of course no compulsion on the board to offer them in this manner, the trust deed giving the board carte blanche in the matter. In reply to the question, Hollins pointed out that there was a well known technique used by speculators whenever a company offered shares in this way. The speculators invariably resorted to bearing operations on the price of a company's shares as soon as such tenders were called for. As it was, news of the impending sale resulted in the market price of Simmer and Jack shares being beared down by 7s. 6d., while the price rose by a further 10s. immediately it became known that the stock was placed.

W.P. Taylor's weekly financial report on the Witwatersrand published on 11 October 1889, noted the intention of the Simmer and

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45. The Star, 19 September 1889.

Jack board to attempt yet again to float the ten and a half claims as a subsidiary company. The total capital of the new company would be £180 000 in £1 shares, 127 500 of which would go to the parent company, 40 000 to be sold to raise working capital and the balance of 12 500 held in reserve.<sup>46</sup> Taylor's information proved accurate and the proposal was duly laid before the shareholders on 4 December for their approval. Despite the large turn out of shareholders, only 52 044 shares were represented, 4 622 short of the quorum number of 56 666, or two thirds of the total share in the Company. To pass the sale of claims a majority of three quarters was needed of the voters at a meeting with the required quorum.<sup>47</sup> Hence the meeting was once more adjourned to 13 January 1890. The necessary number of shares were represented at the January meeting and a resolution authorising the board to float a subsidiary company was duly passed.<sup>48</sup>

By July 1890 it was the board who had changed their minds regarding the floating of a subsidiary company. The growing awareness of the influence of pyritic ore in the second level of the mine and the increased costs which were unavoidable in its working, were given as the main cause for this change of heart. For the first time the considerable body of unworked, free milling, ore in the upper levels of the eastern section of the mine was recognised for the true asset it was. The realisation had dawned of "the considerable advantage to be derived from a large mining area of free milling ore ..."<sup>49</sup> As the chairman indicated, "Wider experience had brought home to the Directors of the various Companies on these fields that it was more advisable not to cut up a property as mining operations could be conducted more economically and advantageously [on a larger unit]." There was also a greater awareness that the costs of the reorganisation of the mine would not accumulate indefinitely. The existing twenty five stamp mill continued to show a small monthly profit throughout the period of the attempted sale and suggested the higher profits which could be earned with the larger mill and lower working costs. It was

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46. The Star, 11 October 1889, quoting W.P. Taylor's Report.

47. Cory Library, Rhodes University, MS16 072, Articles of Association of Simmer and Jack Company dated 9 November 1887, p.19.

48. The Diggers' News (Johannesburg), 14 January 1890.

49. The Star, 2 July 1890.

thus recognised that a debt in the region of £30 000 to £50 000 could easily be serviced and refunded out of the anticipated future earnings. While such a debt would limit dividend payments in the short term, it would make possible the payment of a more substantial dividend on the smaller nominal capital in the future. Evidence of this change in the thinking of the board was the decision to raise a further loan for £25 000 at ten per cent per annum for one year through the Transvaal Mortgage, Loan and Finance Company from 29 March 1890.<sup>50</sup>

The Simmer and Jack Company was from the outset considered one of the most economically worked mines on the field. At the first annual general meeting the low cost of mining was alluded to. The figure of 21 shillings per ton was indeed remarkable and a considerable period of time elapsed before costs were again reduced to such a low figure.<sup>51</sup> It is, however, doubtful if this figure was an accurate reflection of all the costs involved as no breakdown was given. Another unsubstantiated figure of 24s. 7d. was shown as the average cost for the first six months of 1889.<sup>52</sup> Nevertheless a factor which would contribute substantially to these low figures was the physical structure of the mine in this period. The presence of two adits significantly reduced the cost of draining the mine, as well as lowering the cost of haulage, both of which were done by gravity. The various incline shafts from the surface served as little more than winzes and all ore was drawn from the mine via the adits. For this purpose two mules were used, being found sufficient to draw up to 100 empty trucks into the mine daily, while the full vehicles were run out to the mill by gravity. Under these circumstances the mine was able to show a good profit from relatively poor ores. For the six months ending on 31 May 1889 5 548 ounces of gold were extracted from 8 790 tons of ore, or an average of 12,62 dwts. to the ton, which yielded a net profit of £8 620 17s. 2d. to the Company from the mine. With the revenue from the estate, the amount was increased to £11 012 3s. 10d.<sup>53</sup> It was with the assistance of such profits that the directors decided to undertake the improvement programme. By June 1891 an amount of £50 337 5s. 7d. from profits had

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50. Ibid.

51. The Eastern Star, 23 January 1889.

52. The Star, 30 July 1889.

53. Ibid.

been invested in re-equipping the mine.<sup>54</sup> The Company declared its first dividend of ten per cent in February 1889. Thereafter profits were channelled into the reconstruction and improvement programme so that the next dividend, again for ten per cent on the nominal capital, was only declared in April 1891.

The Company was also fortunate from the cost viewpoint in that the three payable reefs, namely, the north, main and main reef leader, were all contained within an area of width of between fifteen and twenty feet. The south reef lay 300 feet to the south and while it contained some gold, it was found unprofitable to work until 1895.<sup>55</sup>

In the period until 1895 the ore mined from the property had an average assay value of little over 13,5 dwts., while the mill yielded an average of about 8 dwts. The Company was, however, fortunate in possessing a shoot of higher grade ore in the central section of the western portion of the mine which averaged about 18 dwts. to the ton. It was probably to this body that the press report alluded when it mentioned the discovery of a "leader of extraordinary richness" in November 1888.<sup>56</sup> The rest of the mine contained ore of a much lower grade and the fairly uniform output from the mill was achieved by mixing ores from the various sections.

During the course of 1889 the Company experienced an increase in working costs, particularly in the second half of the year. The greater part of the increase was incurred in mining. During the year the decision was taken to extend the development of the mine to keep pace with the new mill when it commenced operations. It was also proposed to open the second level where ore of a better quality was known to exist. Unlike some other companies,<sup>57</sup> all development costs were immediately reflected in working costs for the month in which they were incurred, and hence the rise in these costs in the second half of 1889. In the half year ending 30 November 1889 the average in working costs had risen to 27s. 8,75d., while for the month of

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54. Goldman, C.S., op.cit., p.218.

55. Hatch, F.H. & Chalmers, J.A., The Gold Mines of the Rand, pp.82-3.

56. The Eastern Star, 23 November 1888.

57. See below, Chapter V, p.175.

November these costs had risen to 33s. 1,25d.<sup>58</sup>

Cost consciousness was very evident in the management of the Company. A good example of this awareness is found in the handling of the contracts for the supply of coal. A contract for the supply of coal to the mine was revised in September 1888. Previously coal had been supplied to the Company at a price of 7s. 6d. per bag (probably per hundredweight), while it would now cost thirty shillings per ton delivered.<sup>59</sup> Consumption of coal averaged about two tons per day. Another area in which cost consciousness was a regular feature of management was in the hiring of African labour. The recurrent difficulty experienced by the Company in the recruiting of black labour would also suggest that it was not prepared to pay as high a wage as offered by some of the other Rand companies. In October 1888 the Company employed fourteen whites and 100 blacks, the Africans being paid between ten shillings and twelve shillings a week and white miners £4 per week.<sup>60</sup> A saving was also effected in the accommodation for these black workers who were housed in wood and iron sheds, a factor which, in consideration of the harsh highveld winters, could not have enhanced the reputation of the Company as an employer. Nevertheless, the fact that such accommodation was provided could have acted against the Company in the eyes of its employees. Such a rudimentary compound system was not yet generally in operation on the Witwatersrand and would be recognised by black employees as a means for the Company to exert more stringent control over their lives. On mines where they were allowed to fend for themselves, Africans often lived off the company's premises which made desertion to a company offering higher wages that much easier. Attempts were made by Charles Knox, when he was manager, to recruit "Natal boys" for the Company, but the recurrence of the complaint of an insufficiency of black labour suggests that he was not very successful.<sup>61</sup>

Another cause of the increase in working costs experienced towards the end of 1889 and into 1890 was the severe drought which held the

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58. The Diggers' News, 24 December 1889.

59. The Eastern Star, 21 January 1889.

60. The Eastern Star, 8 October 1888.

61. The Eastern Star, 20 June 1888.

whole of the country in its grip. The lack of grass cut off the interior, and thus the Witwatersrand, from the coast for the only means of communication, the ox wagon. The price of all supplies soared as a result, black labour being no exception. Not only did the price of labour itself increase but also the cost of food to maintain those workers. The price of coal also rose steeply due to the scarcity of transport. It was estimated that in consequence of the drought the cost of supplies had risen by approximately 50 per cent, while the price for meal alone raised expenses for the Company by 3s. 6d. per ton of ore worked in November.<sup>62</sup>

The occurrence of drought during the summer of 1889-90 was abnormal. Every highveld winter was, however, a period of natural drought. In 1887 and 1888 many companies were forced to a stand-still for want of water for their batteries. The possession of a good water right was of the greatest importance to the success of any company. The Simmer and Jack Company acquired two water-rights at an early date, and they proved sufficient for the needs of the twenty five stamp mill. With the decision to enlarge the battery to 100 stamps it was recognised that this water supply would no longer suffice. It was thus decided to apply to the Mining Commissioner for a new water-right some 880 yards below the Company's dam built on the initial water-rights in 1887, where a larger reservoir could be erected. Considerable delay was experienced in the granting of the new water-right and this in turn prevented the erection of the new mill, as the granting of the water-right directly influenced the choice of a site for the mill. In July 1889 it was reported that the application, made originally to the Diggers' Committee, was transferred to the Department of Mines when the former body ceased to exist in 1888.<sup>63</sup> The application rested with the Mining Commissioner for six months before the Company was informed in May 1889 that the water-right applied for had already been granted to the syndicate which floated the Stanhope-Geldenhuis Deep Level Gold Mining Company, and that the Simmer and Jack application was therefore invalid. The directors immediately entered into an arrangement with the

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62. The Diggers' News, 14 January 1890.

63. The Diggers' Committee was a body formed amongst the diggers to exert some form of control on the early field. Its functions were subsequently recognised by the State.

Stanhope-Geldenhuis Company, in which the Simmer and Jack Company would bear the costs for the construction of the dam wall in return for the use of water from this source. When completed the dam had a capacity of 34 million gallons, which proved ample for the needs of both companies.<sup>64</sup>

The decision to delay the erection of the battery until negotiations on the water-right were completed proved fortuitous. A site was subsequently chosen and excavation work commenced on the foundations. The Company was then notified that this location lay astride the route surveyed for the Netherlands Company's "tram line". The choice of an alternative site was not painless for the Company and resulted in serious extra expenses. A more powerful pumping plant was required to raise water to the new site, while various alterations to the design of the battery house were needed.<sup>65</sup> Excavations on the new site commenced in August 1889 and tenders were called for the erection of the new mill, which it was hoped, would be completed within a year.<sup>66</sup> The continuing drought delayed the delivery of some of the machinery, particularly the altered pumping equipment. The mill was, nevertheless, essentially complete by August 1890 but delays in the delivery of the water mains prevented crushing from commencing for another month.<sup>67</sup>

In time the presence of the railway passing through the property of the Simmer and Jack Company was to prove financially advantageous. Not only was the price of coal significantly reduced but the choice of Germiston as the terminus between the railway line from the Cape and the "Rand tram" line in 1892 ensured the Company a significant boost in income from its freehold title on Elandsfontein. The opening of the Rand tram line brought an immediate gain to the Company from the sale of stands in the village of Germiston. Even prior to this the estate was responsible for generating in excess of five per cent of the Company's income.<sup>68</sup>

The presence of these railway lines on the property did, however, interrupt certain mining activities. As has already been mentioned

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64. The Star, 30 July 1889.

65. The Diggers' News, 14 January 1890.

66. The Star, 24 August 1889.

67. The Star, 2 July 1890.

68. The Diggers' News, 14 January 1890.

the advent of the railway disrupted the original plans for siting the battery. In 1890 the Railway Company took the Simmer and Jack Company to court. William Knox, as manager of the mine, was charged before the Landdrost with contravening Clause 3 of Executive Council Decision No.663, by laying a wooden aqueduct under the Rand tram line without the permission of the Netherlands Railway Company. In evidence the plaintiff suggested that the aqueduct was constructed the previous January, whereupon notice was served on the Company to remove it. Under cross-examination it was admitted by the Railway Company's spokesman that the aqueduct in no way threatened, weakened or interfered with the line, the Railway Company basing its case purely on the failure of the mining company to gain permission for its actions. Judgement was subsequently reserved.<sup>69</sup> The incident is not significant in reflecting the legal, but rather the physical problems encountered by the Company from the presence of the railway. Coming between the mill and its water supply, problems were inevitable.

A decision was taken in the second half of 1889 to establish a redemption fund, separate from the depreciation account, into which would be paid a set amount of 2s. 6d. per ton of quartz mined. The amount written off for the depreciation continued to be an arbitrary amount determined by the profitability of the Company in any period. The redemption payments, however, became an additional fixed cost contributing to the total of working expenses.<sup>70</sup> The redemption account was only maintained for a year before being dropped. Reporting to the half yearly general meeting in July 1890 the chairman stated that the board had rather decided to write off the whole of the outstanding debt.<sup>71</sup>

The appointment of William Pope as manager of the mine on 1 October 1888 reflected an interesting attitude by the board towards the position of mine manager. Knox was from the outset of his appointment given a permanent position and the opportunity to secure shares in the Company.<sup>72</sup> It is possible that the favourable terms granted to Knox were due to his

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69. The Star, 7 March 1890.

70. The Diggers' News, 14 January 1890.

71. The Star, 2 July 1890.

72. Cory Library, Rhodes University, MS16 072, Articles of Association of the Simmer and Jack Company dated 9 November 1887, p.5.

friendship with Jack. It also seems likely that Knox was another of the McCorkindale settlers. No such favoured status was given to Pope. His appointment was for six months with an extension of time conditional upon his performance. At the end of the probation period he was considered to have given "entire satisfaction, working economically in the best interests of the Company", and was thus engaged for a further year.<sup>73</sup> No further mention is made of a renewal of the annual contract, so that he was presumably given a permanent appointment. Pope continued to serve the Company for the duration of this study.

The year 1889 was marked in the history of the Simmer and Jack Company by a serious fraud scandal, involving the Company's Johannesburg secretary and the London agency. The Company became aware of the irregularities only after the disappearance of the secretary, Mr George P. Lofthouse, from Johannesburg in early September 1889. Lofthouse was secretary to various Rand gold mining companies, some of the better known of which were the Jumpers, Aurora, Aurora West, Stanhope-Geldenhuis and Leeupoort Companies, in addition to the Simmer and Jack Company. The forger's position became increasingly tenuous in 1889 when many of the Rand properties underwent major reorganisations and reconstructions. In addition to the recalling and reissuing of scrip which some of the reconstructions required, the banks also became large holders of scrip following the collapse of the Johannesburg Stock Exchange boom. The banks, in sifting through these share certificates encountered irregularities which were communicated to the several companies. A few weeks before an investigation of the share register of the Aurora West Gold Mining Company left over 1 000 shares unaccounted for. Lofthouse disappeared from Johannesburg on Sunday 1 September and all companies connected with him took possession of their books.<sup>74</sup> Rumour suggested that he was subsequently seen in Australia.

It immediately became known that there was "something wrong" with the issue of Simmer and Jack shares but the press suggested that it was "nothing of serious account".<sup>75</sup> The investigation was routinely extended to the checking of the London register as well, and once again

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73. The Star, 30 July 1889.

74. The Star, 6 September 1889.

75. Ibid.

the records were found wanting. By February 1890 the local board recognised that fraud had been perpetrated both in London and Johannesburg and that the situation called for immediate and drastic action. A member of the Company's board of directors, Mr W. Gilchrist had been despatched post haste to London in November to lead the investigation there. Gilchrist spent six months in London before matters were brought to a head with the conviction of the London secretary, Woodbine Cloete, and a clerk, McPherson, in the Guildhall Police Court. Two other clerks were said to have also left for Australia in a hurry. The investigation involved the Company in considerable expense. In the half year down to 30 November 1890 an amount of £469 2s. 6d. was spent on sending Gilchrist to London and on arranging for a proper audit of the Johannesburg share register.<sup>76</sup> In the following period a further amount of £1 847 7s. 3d. was spent on keeping Gilchrist in London and in payment for the services of Deloitte, Dever, Griffiths and Company for a proper audit of the Company's London books.<sup>77</sup> Gilchrist also immediately transferred the London agency to the offices of the Transvaal Mortgage, Loan and Finance Company. This move was probably made at the request of that company, which stood as the main creditor of the Simmer and Jack Company.

By February 1891 the full extent of the fraud was realised. Acting independently, the two parties were responsible for the fraudulent issue of 1 760 shares. Initially it was believed that Lofthouse only was responsible for the issue of 500 of these shares but time and careful investigation proved him to have issued 700 as against the 1 060 of the more skilled operators in London.<sup>78</sup> While no connection was traced to suggest a conspiracy between Lofthouse in Johannesburg and Cloete and McPherson in London, it seems likely that shares fraudulently issued in the one centre had found their way to the other, thus giving a clue to the other party that conditions in the Company were conducive to such activity.

Having assessed the extent of the damage it now remained for the board to decide what action to take. Fairly early in the investigation,

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76. The Star, 29 January 1891.

77. The Star, 20 February 1891.

78. South African Mining Journal, Vol. I, 3, p.40. 17 October 1891.

when it was recognised that those involved were all former employees of the Company, the decision was taken against seeking litigation, at least in Johannesburg. With Lofthouse in Australia it would have been extremely difficult to have achieved anything in this manner. At the half yearly meeting held in June 1891 the question was raised as to whether the reserve shares should be used to substitute good for bad scrip. In reply the chairman, R.R. Hollins, was not prepared to commit the board to any particular course of action, or at least until the investigation in London was complete. An extraordinary general meeting was then called for October 1891.

Another blow now befell the troubled directorate. The chairman R.R. Hollins, did not oppose a provisional order of sequestration brought against him in July 1891. In anticipation of these events he resigned his seat on the boards of all companies of which he was a director. It was suggested that he had failed to distinguish between the market and the industry itself.<sup>80</sup> Like many a lesser speculator he was taken short in the depressed market which followed the 1889 collapse. His resignation removed a key coordinator in the fraud investigation at a crucial time. Mr H. David was called to fill the breach and it was under his chairmanship that the extraordinary general meeting was held.

In addressing the extraordinary meeting David stressed the stand of the board against litigation and asked for the approval of the meeting for a proposal that the board undertake to simply substitute good scrip for bad, without having recourse to the sale of the reserve shares. Anticipating this course of action the board had slowly been buying up shares at favourable prices. It was felt that the reserve shares should be kept as a contingency against any possible future capital requirements of the Company. The meeting was well handled by David and the board was given the authority it sought.<sup>81</sup>

It is rather surprising that the board was so well treated by the shareholders at the meeting. As one member of the press was quick to point out, they were not even asked what the 1 760 good shares had

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79. The Standard and Diggers' News (Johannesburg), 26 June 1891.

80. The Star, 13 July 1891.

81. The Star, 14 October 1891.

cost the Company. An amount of £6 000 was guessed at, which would have brought the total cost, with investigation expenses, to nearly £9 000.<sup>82</sup> The directors hardly stood blameless in the affair. Had a proper audit been regularly made, and had the board exercised greater control over the secretary in Johannesburg, the opportunity for his malfeasance would have been greatly diminished.

Turning to the actual operation of the mine, it is evident that all aspects were brought into readiness for the starting of the new mill in August 1890. Commenting on the actual battery, Lionel Phillips of H. Eckstein and Company reported the rumour that the machinery had been badly assembled,<sup>83</sup> although his personal inspection only revealed "some defects", perhaps the worst of which, in Phillips's opinion, was that the stamps were made by Sandycroft.<sup>84</sup> The firm of H. Eckstein and Company were convinced of the merits of the Fraser and Chalmers mill. In the period down to the end of 30 November an average of 53 stamps of the new mill were in operation and some 26 078 tons of ore were milled at a cost of 8s. 5d. per ton, a substantial reduction compared to the past average of about 11s. 6d. per ton, even though the Company was confronted with the expense of operating two mills during the period.

Mining development was also pushed forward to meet the requirements of the new mill. A reserve of 149 879 tons of ore "in sight" was developed, sufficient for an eighteen month supply for the 100 stamp mill. The increased rate of mining was responsible for a considerable reduction of 45 per cent in the cost of mining per ton. Including depreciation and development costs, the total working costs were 24s.8d. per ton, a remarkably low figure given that the Company had two separate mills in operation. With profit per ton at 10s. 8d. the net profit for the year was brought to £21 841 0s. 11d., sufficient to allow the Company to repay the outstanding balance of the loan and look forward to the resumption of dividend payments, the first of which, for ten per cent, was declared in April 1891.<sup>85</sup>

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82. The Standard and Diggers' News, 15 October 1891, and The Star, 2 July 1892.

83. H.E.149, L. Phillips to Wernher, Beit and Company, p.307, 1 August 1890.

84. *Ibid.*, p.323, 23 August 1890.

85. The Standard and Diggers' News, 30 January 1891.

The increased stamping power and lower costs of production allowed the Company to consider increasing the overall ore reserve by lowering the quality of the ore worked. Thus the average yield declined from 16,98 dwts. per ton in the half year down to 31 May 1890, to 9,84 dwts. in the period down to 30 November 1890, a fall of 42,05 per cent.<sup>86</sup> At least part of the decline was due to the increased crushing capacity which resulted in a greater quantity of gangue and casing rock passing through the mill and the crushing of greater amounts of pyritic ore.

There was a concerted drive during 1891 to reduce the total working cost per month to below the figure of twenty shillings per ton. In the six months down to 31 May 1891 an average cost of 19s. 8,04d. was achieved, without the inclusion of an amount to cover depreciation. When such an amount was added the total was brought up to 22s. 6,05d. per ton, a reduction of two shillings on the previous period. It was estimated that half of this saving was due to ninety five stamps being in operation since 1 March under one roof. In considering individual months, the target was largely achieved. Hence the mine became one of the most efficiently worked on the field, and the advantages of the increased reduction facilities became clearly evident.

During the second half of 1891 preparation was made for the opening of the third level of the mine. Here again the Company was fortunate in the discovery that at the depth of the proposed level the reef dipped more steeply than in the area nearer the surface,<sup>87</sup> and so again increased the quantity of ore calculated to exist within the property.

The very fact that another level was being opened brought the prospect of working only pyritic ore so much closer. The attitude of management towards the inevitable problem was one of caution. It was stated that the board recognised the problem but due to the size of its ore reserves the Company would sit back and allow others to trouble over the search for an economic solution to the treatment of pyritic ore. Nevertheless, in keeping with its cautious approach, the board authorised Pope to experiment in a small way.

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86. Cory Library, Rhodes University, MS16 071(4), Sixth Annual Report of the Simmer and Jack Gold Mining Company, p.10.

87. The Standard and Diggers' News, 11 July 1891.

As in the case of the old twenty five stamp mill, the new battery made allowance for amalgamation on a series of apron plates, below which concentration was achieved by blanket strakes. The concentrates were reground and again subjected to the amalgam process.<sup>88</sup> This relatively crude method of concentrating was considered adequate to the needs of the Company. As it was the Company was showing a substantial profit on the basis of 9 dwts. to the ton. By mid 1891 it was recognised, however, that an amount of up to five pennyweights per ton was being lost in the tailings and that the quantity was likely to increase as the aggregate of ore passing through the mill increased. It was thus decided to experiment with a small concentration plant which would extract gold by means of the Plattner's Chlorination Process. The equipment consisted of a small furnace for oxidising the concentrates and a single vat in which chlorine leached the gold from the pulp. Such a unit was fairly inexpensive to erect and it was hoped that it would make some contribution to the total output of gold. The plant was taken into operation in June 1891.<sup>89</sup> For July, the first full month of operation, it contributed 163 ounces to the gold output.<sup>90</sup> In the first year of operation it averaged an extraction rate of about sixty per cent at a cost of 7s. per ton of pulp treated.

Within the year it was recognised that such a small crude plant could scarcely meet the expectations of the Company for a profit of between £600 and £700 a month from this source. It had, however, served a very useful purpose in giving the management of the Company a clear insight into the strengths and weaknesses of the chlorination process for the extraction of gold. The intervening period had also been instrumental in proving the superiority of the MacArthur-Forrest Cyanide Process. By mid-1892 Sidney H. Farrar, the Company's consultant engineer, and Carl Hanau, as a member of the board, strongly advocated the erection of a cyanide plant. As an amount in excess of £65 000 of working profits had already been invested in equipment and plant, Hanau advocated the sale of the reserve shares to raise the approximately £7 000 needed for the plant.<sup>91</sup> In addition to the 2 000 unissued

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88. South African Mining Journal, Vol. I, 20, p.372, 13 February 1891.

89. The Star, 10 June 1891.

90. The Star, 13 August 1891.

91. The Star, 2 July 1892.

reserve shares, the Company was also in possession of 260 shares remaining from those purchased in the open market to compensate the holders of the fraudulently issued scrip.

In November 1892 the Company entered into negotiations with the Rand Central Ore Reduction Company for the erection of a cyanide works on the property capable of treating 15 000 tons of tailings monthly.<sup>92</sup> The agreement was for the Reduction Company to undertake the erection of the cyanide plant on the Company's property and for it to treat tailings bought from the Simmer and Jack Company. The contract specified the sale of 100 000 tons at a set price of 10s. per ton. Tests on the tailings were carried out at the Reduction Company's Caledonia works in August 1892.<sup>93</sup> The Simmer and Jack Company had by now built up a considerable stockpile of approximately 150 000 tons of tailings and it was hoped that the treatment thereof would result in a further profit to the Company of £1 500 per month. The contract was due to expire on 31 July 1894.<sup>94</sup> The agreement left the reserve shares free and they were subsequently sold at seventy shillings each on 27 October 1892, the proceeds being invested in the acquisition of a new rock drilling plant of thirty drills.<sup>95</sup>

The construction of the cyanide plant only commenced in the second half of 1893 and was completed in December of that year. The reason for the delay in the erection of the plant was the difficulty experienced by the board in finding a suitable location for it. The problem emanated in large part from objections raised by the Netherlands Railway Company. It was finally sited to the south of the railway line.<sup>96</sup> Another possible reason for the delay could have been a certain reticence on the part of the Simmer and Jack directorate. In the directors' report for the half year ending 30 November 1893 it was admitted that the agreement had proved less favourable to the Company than was originally anticipated. In the light of subsequent knowledge it was recognised that a better deal could have given substantially larger profits to the

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92. South African Mining Journal, Vol. II, 10, p.133, 26 November 1892.

93. South African Mining Journal, Vol. I, 48, p.852, 27 August 1892.

94. Cory Library, Rhodes University, MS16 071(4), Sixth Annual Report of the Simmer and Jack Gold Mining Company.

95. The Star, 11 January 1893.

96. South African Mining Journal, Vol. II, 49, p.769, 2 September 1893.

Company. In mitigation the shareholders were reminded that the agreement dated back to December 1892, when the costs and full technicalities of the cyanide process were not generally known.<sup>97</sup> Nevertheless, the proceeds from the sale of tailings contributed substantially to the forty per cent dividend payment made in 1893. By mid-1894 the renewal or revision of the contract was undertaken on terms more favourable to the Company. Earlier intentions to purchase the plant outright had, however, to stand in abeyance pending a major reconstruction of the Company.

The year 1892 opened on an inauspicious note. The yield of gold fell drastically in December and January from an average of about 9 dwts. to less than 5 dwts. per ton. Commenting on this phenomenon the chairman admitted that the fall in output was caused by a mistake in the working of the mine. In the eastern section it was found that as the stopes were driven further into the ore the quality became indifferent. A large quantity of this ore was crushed as progress in the opening of an alternative area of the level was being hampered due to the poor ventilation. The board duly called for the entire area of the second level in the eastern section to be resampled and assayed and informed the manager in writing that "... he is expected to immediately communicate to the Board, in writing, in a direct and unequivocal manner, any change, affecting in any important way, the position or prospects of the mine and works."<sup>98</sup> The January yield was a slight improvement on that of December and with working costs as low as 16s. 11,25d. per ton, it was still possible to show a net profit for the month of £784 6s. 6d.<sup>99</sup> Thereafter conditions improved as is shown in the table below:<sup>100</sup>

<u>Month</u>	<u>Average Yield per Ton</u>		
	<u>Average Yield</u>	<u>Average Cost</u>	<u>Net Profit</u>
February 1892	7,74 dwts.	16s. 4,5d.	£2 267 4s. 9d.
April	6,76	19s. 5,5d.	1 680 18s. 4d.
May	9,15	19s. 6,75d.	3 403 11s. 9d.
June	8,22	19s. 5,25d.	2 912 15s. 4d.

97. South African Mining Journal, Vol. II, 17, p.259, 20 January 1893.

98. Cory Library, Rhodes University, MS16 007, Minutes of Meetings of the Board of Directors, p.42, 8 February 1892.

99. The Star, 6 February 1892.

100. Compiled from various monthly reports appearing in The Star.

The rise in working costs which averaged 21s. 10,27d. per ton for the six months ending 31 May 1892, including depreciation charges, reflected the additional expense involved in the opening of the third level. Nevertheless, the amount was considerably lower than the figure of 28s. 1,242d. of the previous period. The average cost of mining had, however, risen from 6s. 0,92d. in the former period to 6s. 5,99d. in that ending in May 1892, while the average yield was 7,899 dwts. per ton. Net profit for the half year amounted to £9 857 13s. 6d.<sup>101</sup>

During the next half year ending on 30 November 1892 the average yield increased to 8,21 dwts. and the net profit to £24 247, while mining costs again slipped back to 6s. 0,21d. per ton. The improved profitability of the Company in the second half of 1892 again encouraged the board to look to the expansion and improvement of the mine and its equipment. Whereas six months previously the chairman had again raised the prospect of working the eastern portion of the property as a joint venture with the Primrose Company, it was now decided that the shareholders would be asked to increase the capital to make provision for the improvements.<sup>102</sup> As early as the February meeting in 1892, Carl Hanau informed shareholders that the value of the deep levels were growing and that their Company could become involved in negotiations with other parties interested in the working of the first row of deep level claims. Already the Rothschild Exploration Company had formed a syndicate and bought up the deep levels below the Simmer and Jack property.<sup>103</sup> In keeping with this trend the Company entered into a contract with Messrs Reid Brothers to sink two boreholes on the property to ascertain the depth and value of the reefs.<sup>104</sup> A December report noted that one of the boreholes had struck the reef at a depth of 250 feet, some 1 000 yards to the south of the battery.<sup>105</sup> The reef struck measured six feet and one inch in width and assayed at 21 dwts. 14 grs.<sup>106</sup>

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101. The Star, 2 July 1892.

102. The Star, 11 January 1893.

103. The Star, 3 February 1892.

104. South African Mining Journal, Vol. II, 5, p.69, 29 October 1892.

105. The Star, 10 December 1892.

106. South African Mining Journal, Vol. II, 16, pp.249-50, 14 January 1893.

The amount of capital required for the expansion project, which would see the sinking of two new main shafts, fully equipped with hauling and pumping gear, the opening of the fourth and lower levels and the overhauling of the mill, was estimated to be between £30 000 and £40 000.<sup>107</sup> Coinciding with this decision was a move by the board to write off the substantial amount of £25 853 9s. 1d. on depreciation for the ostensible reason that now that the Cape railway had reached the terminus at Germiston, machinery and other necessities could be acquired at a much cheaper rate.<sup>108</sup> In the second half of 1893 a further amount of £10 240 1s. 10d. was written off.<sup>109</sup> There seems little reason to doubt that a secret fund existed which would now be used to assist in covering the costs of future development. Further justification for this statement is found in the fact that throughout 1893 no call was made on the shareholders for an increase in capital and neither were debentures issued or a bond raised. Nevertheless, during the course of 1893 the initial steps were taken in the new development programme. As has already been noted, the erection of the cyanide plant was left to the Rand Central Ore Reduction Company, while the sale of the reserve shares for £7 910 was used for the acquisition of the new drilling plant.<sup>110</sup>

The renovation plan involved two distinct stages. In the first attention was given to the sinking of the new vertical main shaft on the western portion and the conversion of the No.11 incline shaft into a main shaft on the eastern section of the mine. Consideration was also given to the erection of the necessary hauling and pumping equipment and the modification of the mill engine in anticipation of the second phase which, commencing in December 1893, involved the overhauling of the battery. The intention was to increase the crushing power of the mill by the substitution of heavier 950 pound stamps for the 750 pound ones then in operation. The frames of the battery also required modification and automatic feeders were installed. In order not to have too adverse an effect on output, only five stamps were hung up for

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107. Ibid.

108. The Star, 11 January 1893.

109. Cory Library, Rhodes University, MS16 071(4), Sixth Annual Report of the Simmer and Jack Gold Mining Company.

110. See above, p.90.

renovation at a time.<sup>111</sup> It was estimated that this modification to the mill would result in a fifteen per cent increase in the output of the battery.

Down to 1893 the concept of using large general purpose shafts was not practiced on the mine. There was rather a series of small incline shafts sunk on the outcrop, some of which were used for hauling, while others were utilised for pumping water or for ventilation. It was inevitable that under these conditions costs of maintenance and operation were higher than necessary. Besides the wear and tear on a number of small plants there were also wages paid to the staffs of each hauling and pumping plant to be considered. Finally, each shaft required some form of engine which resulted in a considerable outlay on coal. A rationalisation of these hauling and other functions was bound to result in savings.

The decision of the board to reorganise the property also extended as far as the management of the various factions. Despite the blunders surrounding the decline in yields in the early months of 1892, the board reconfirmed its faith in the manager, although one correspondent was surprised on visiting the mine, "... to notice the extent to which the manager, ... permits the general excellence of his management to be marred by want of proper attention to the conditions of the surface. It costs very little to be tidy ..."<sup>112</sup> Less fortunate was Mr S. Goff who had served as mine engineer for the past three years. He was replaced by Mr M.C. Moorhouse, "a mechanical engineer of considerable repute in Australia", and who had been responsible for the erection of several large stamp mills on the various fields of that continent. A new battery manager, Mr Abraham, was also appointed. His foreign experience extended to Mexico but he was also previously employed by the City and Suburban, New Chimes and Geldenhuis Main Reef Companies of the Witwatersrand.<sup>113</sup>

A decision was taken in December 1893 to institute a proper form of inventory control for stores as a way of overcoming theft and

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111. South African Mining Journal, Vol. III, 11, p.167, 16 December 1893.

112. South African Mining Journal, Vol. III, 17, p.214, 27 January 1894.

113. South African Mining Journal, Vol. III, 7, p.102, 18 November 1893.

recurrent shortages.<sup>114</sup> Unfortunately the details of the system are not supplied.

At the annual general meeting held to consider the affairs of the Company down to 30 November 1893, the directors again proposed increasing the capital of the Company. It was suggested that the nominal capital be increased to £110 000 by the issue of 20 000 shares on a pro rata basis to shareholders at a price to be agreed upon, while 5 000 shares would be kept in reserve.<sup>115</sup> A special general meeting was called for 12 March to sanction the increase in capital, but due to a lack of quorum, the meeting was postponed to 1 May 1894.<sup>116</sup> The announcement and subsequent delays resulted in a renewed interest in the Simmer and Jack Company by the large financial firms of Consolidated Gold Fields of South Africa, Barnato Brothers and H. Eckstein and Company.

By 1891 The Gold Fields of South Africa Ltd. had reached a low ebb in its financial affairs. With four fifths of its capital sunk in De Beers diamond stock and in the British South Africa Company, its fate was intimately linked to those organisations, neither of which were doing particularly well. Diamond shares slumped following the discovery of the Wesselton pipe early in 1891. Thus while De Beers shareholders feared the spectre of an unlimited discovery of further diamondiferous pipes to flood the market, the awaited golden stream from Mashonaland proved no more than a reluctant trickle. Under these circumstances, Charles Rudd, as a joint managing director of the firm commented, "... it is useless to pretend that we desire new business on the Rand because we have not the capital for it..."<sup>117</sup> The attention of the firm was concentrated on Mashonaland for the rest of 1891 until the success of the MacArthur-Forrest cyanide process and the speculation on the possibility of opening up the deep levels profitably again drew the attention of Rudd and C.J. Rhodes to the Witwatersrand.<sup>118</sup> The first borehole sunk on ground to the south of the outcrop companies struck the reef at 517 feet on the property of the Village Main Reef

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114. South African Mining Journal, Vol. III, 11, p.167, 16 December 1893.

115. South African Mining Journal, Vol. III, 16, p.241, 20 January 1894.

116. South African Mining Journal, Vol. III, 25, p.376, 24 March 1894.

117. Cartwright, A.P., Gold Paved the Way, pp.57ff.

118. *Ibid.*, p.61.

Company in 1890, confirming the continuation of the reef at that depth. Acting on this information H. Eckstein and Company, under the incentive of Lionel Phillips, began rapidly buying up the deep level properties with the approval of the London principals, Wernher, Beit and Company. Acting with virtually no competition, this firm came to monopolize the first and second rows of the deep levels of the central Rand. A large block of these claims was subsequently floated as Rand Mines Limited. Beit then offered The Gold Fields of South Africa Ltd. participation in the venture, the acceptance of which in 1892 marked the return of that firm into the sphere of the Witwatersrand. As Cartwright has suggested, however, Beit recognised in the person of Rhodes the opportunity for the re-establishment of the financial links between Johannesburg and London, broken after the collapse of the stock market in 1889.<sup>119</sup> Furthermore, the inclusion of The Gold Fields would also spread the financial risk of the deep level undertakings, as well as bringing Rhodes back into the Witwatersrand arena as a friend rather than as an outright competitor.

With rekindled enthusiasm for the Witwatersrand, and particularly the deep levels, the problem confronting The Gold Fields was a lack of cash with which to participate to a greater extent. Neither De Beers nor the Charter Company's shares were selling at good prices and it would be difficult to sell sufficient of them without further adversely affecting their prices. It was H.E.M. Davies, former secretary and currently a director of the firm, together with Percy Tarbutt, the firm's consultant mining engineer, and owner of various blocks of deep level claims which he wished to sell, who devised a scheme for the reorganisation of the firm. Their intention was to absorb three smaller companies, the African Estates Agency, the African Gold Share Investment Company, and the South African Gold Trust and Agency Company, which held either good portfolios of Rand shares or vital deep level claims or capital, into the reconstructed company. Through the connections of the promoters with the boards of these various companies they were induced to join the scheme. The proposals placed before the shareholders of The Gold Fields of South Africa in August 1892 were duly accepted. The new company, to be known as The Consolidated Gold Fields of South Africa Limited, had a capital of £1 250 000 divided as follows:<sup>120</sup>

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119. Ibid., p.65.

120. Ibid., p.69.

The Gold Fields of South Africa	£500 000
To the three companies absorbed (plus the right to take 61 625 shares at par)	308 125
To the Founders (Rhodes and Rudd)	80 000
To the Founders (to be subscribed at par)	25 000
In reserve	<u>336 875</u>
	<u>£1 250 000</u>

One of the blocks of claims which The Consolidated Gold Fields now acquired lay immediately to the south of the Simmer and Jack Company's property and was duly floated as the South Simmer and Jack Gold Mining Company in late 1892. The establishment of this company caught the Simmer and Jack's board napping, or at least most of it. One director, Mr Eric Brayshaw accepted the position of managing director of the South Company, a move which sufficiently incensed his fellow board members of the old Company to propose that he be excluded from the Simmer and Jack directorate.<sup>121</sup> The board would generally seem to have been very slow in understanding the value of the deep level claims to the south of their mynpacht. In part there was undoubtedly a great deal of complacency due to the size of their own property, whose reserves could be measured in millions of tons of ore and which included a substantial area of what might be termed the "first row" of the deep levels. A half-hearted attempt was made to acquire what became known as the Salmon Block of claims in terms of the Bezitsrecht.<sup>122</sup> The Company was advised to drop the case against the Salmon Prospecting Syndicate by its lawyer Charles Leonard in late 1892, when conditional transfer of the claims was made in favour of the syndicate. An appeal was subsequently made against the decision, which was finally granted in favour of the syndicate in March 1894.<sup>123</sup> These claims were then

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121. Cory Library, Rhodes University, MS16 007, Minutes of Meetings of the Board of Directors, pp.155-56, 19 December 1892.

122. Bezitsrecht was the law relating to ownership rights. As the owners of the freehold of the farm Elandsfontein, the Company directors felt that it had a prior right on the claims. In terms of the Gold Law there was no allowance made for such a claim on a farm proclaimed as a public digging.

123. Cory Library, Rhodes University, MS16 007, Minutes of Meetings of the Board of Directors, p.118, 12 September 1892, and p.313, 5 March 1894.

immediately acquired by Consolidated Gold Fields and amalgamated with the South Simmer Company.<sup>124</sup> The great virtue of these deep level blocks now being acquired by The Consolidated Gold Fields was that because of the comparatively gentle gradient of the reef they could be worked at a shallower depth from the surface than was the case with claims of a similar distance from the outcrop on other parts of the field. The reef was struck at 400 feet of depth on the South Simmer property, whereas on a small property like the Ferreira Company depths of 600 feet were reached within the property of the original outcrop company.<sup>125</sup> Hence fewer difficulties and lower development costs were anticipated. Problems were, however, inevitable, as in the case of the sinking of the main shaft of the South Simmer Company, where water seepage into the shaft was a constant threat.<sup>126</sup>

The next conquest for The Consolidated Gold Fields was the acquisition of the large block of 177 claims held by Fredrick Alexander English on the south east corner of the Elandsfontein property. These were bought on 17 April 1894 for £90 000.<sup>127</sup> The same month saw the conclusion in negotiations with P.W. Tracey and W.G. Beattie for 229 claims and two water rights known as the Rand Victoria Claims, for which it was agreed to pay £20 000 in cash and shares to the equivalent value of £30 000 in any company formed to work the property.<sup>128</sup> A borehole sunk on these claims in 1893 struck the main reef at a depth of approximately 2 500 feet.

The initial overtures of The Consolidated Gold Fields to the Simmer and Jack Company were also made in April 1894. It seems likely that these official overtures followed on some form of private negotiations between individuals representing the two companies, as no surprise was recorded at the directors' meeting and matters progressed remarkably quickly and smoothly.<sup>129</sup> By the end of the month The Consolidated

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124. South African Mining Journal, Vol. III, 20, p.298, 17 February 1894.

125. See below, Chapter V, p.185.

126. The Star, 2 June 1894.

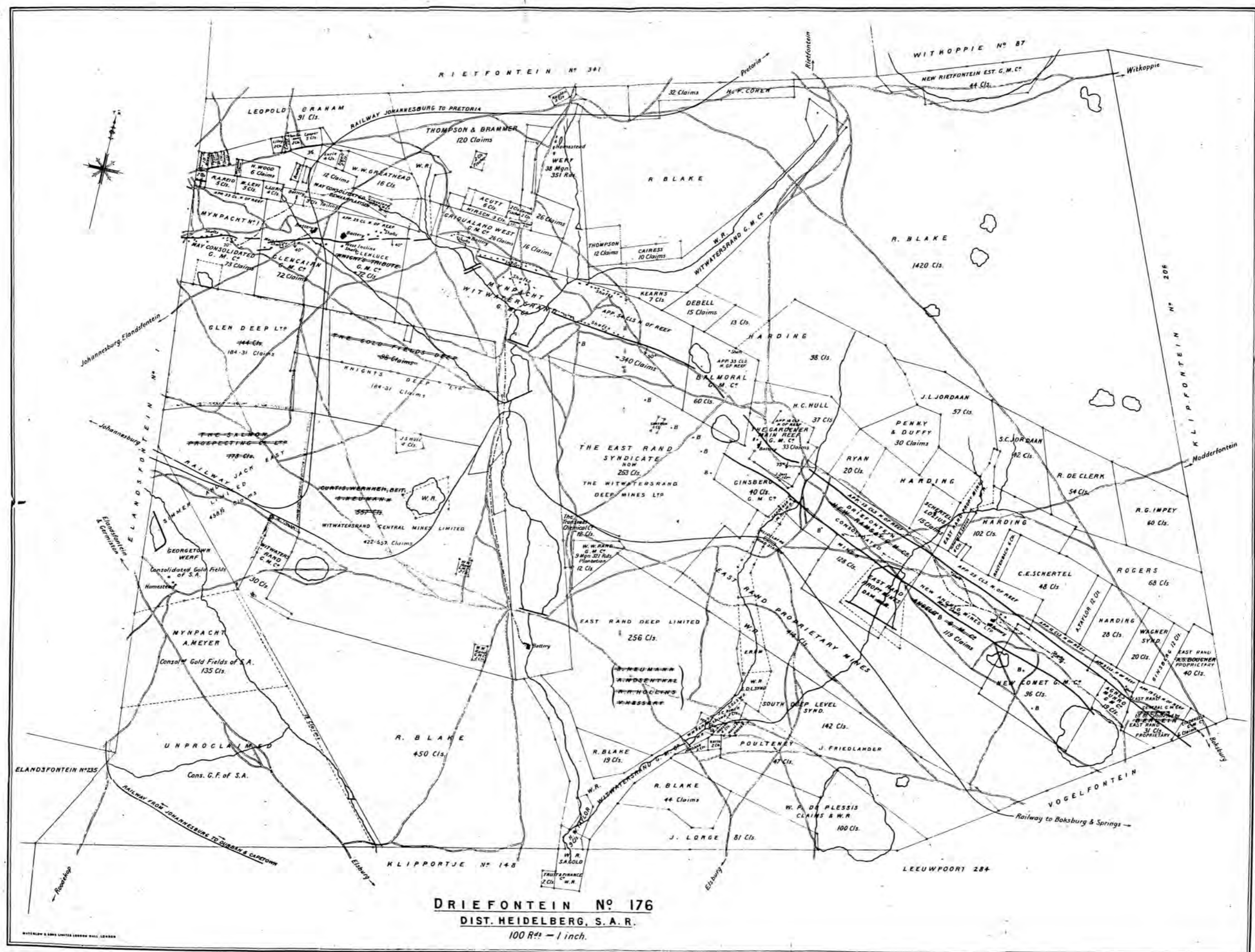
127. Cory Library, Rhodes University, MS14 944.

128. Cory Library, Rhodes University, MS14 947.

129. Cory Library, Rhodes University, MS16 007, Minutes of Meetings of the Board of Directors, pp.326ff, 9 April 1894.

Gold Fields representatives, namely, Ernest Rhodes, E.S. Birkenruth and C.J. Thomson, had met the directors of the Simmer and Jack Company and agreed that the basis of any amalgamation would rest on the absorption of the deep level blocks by the Simmer and Jack Company. There were various reasons for this concession by The Consolidated Gold Fields. The inclusion of the outcrop company, with its existing infrastructure, would greatly facilitate the opening and operation of the deep levels and would also allow the new company so formed the advantage of paying a regular dividend out of the working of the outcrop property in the short term. The importance of this latter feature cannot be too strongly emphasised. The British investing public had developed a healthy scepticism of Witwatersrand mining shares after the collapse of the 1889 boom, and if capital from this source was to be lured again it was essential that some return on the investment be shown as soon as possible. In the immediate case of The Consolidated Gold Fields, the poor showing of their investments in general and in the British South Africa Company in particular, made the payment of early dividends from their renewed departure into the Witwatersrand imperative.

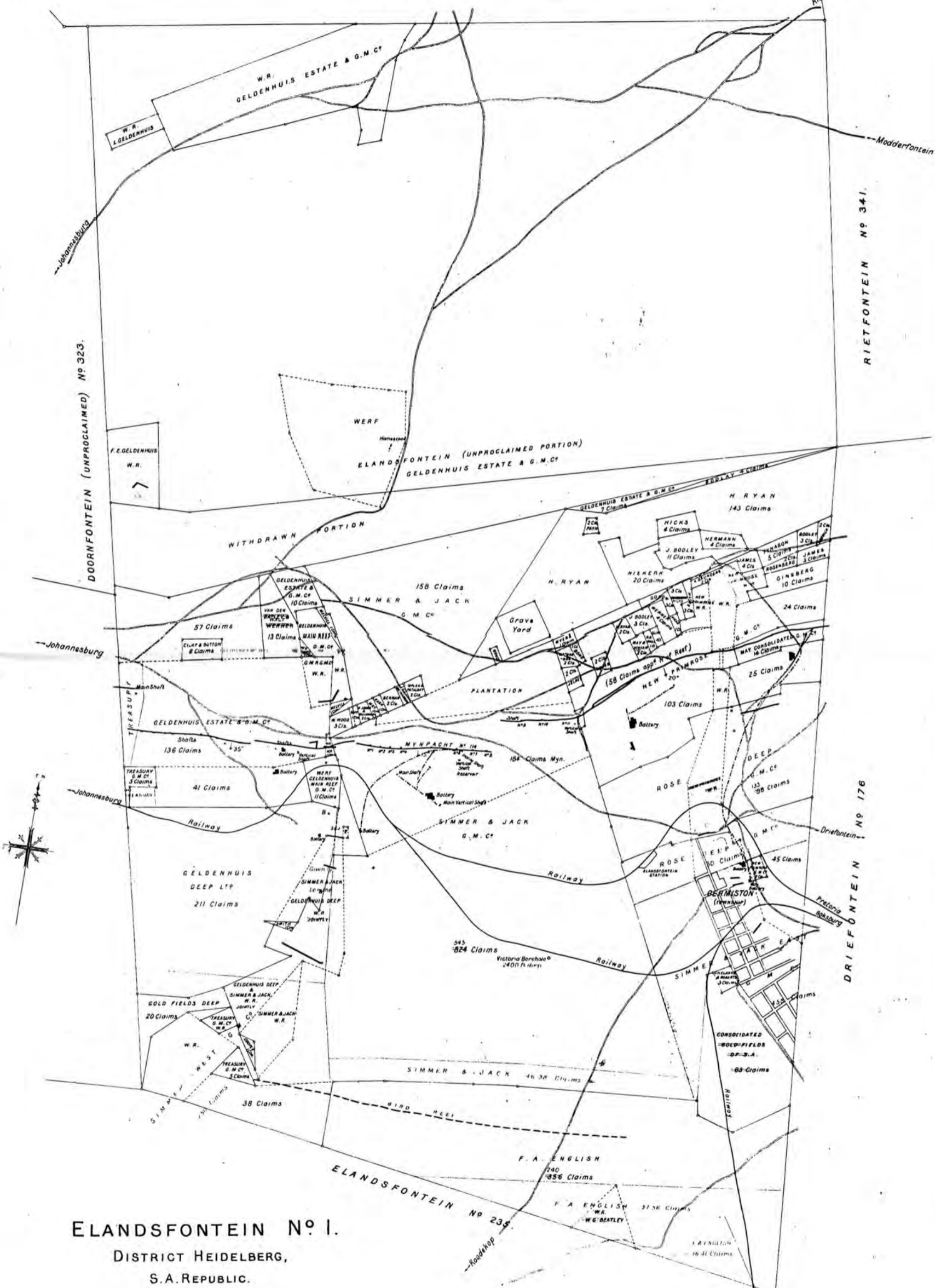
In keeping with the jaundiced views of the Simmer and Jack board towards the South Simmer Company, it was agreed that every asset of that company would be handed over to the new company. The Consolidated Gold Fields also guaranteed the consent of the South Simmer Company to these terms. Agreement was made even easier for the Simmer and Jack Company by the granting of an unconditional loan for £75 000 at the low interest rate of six per cent by Consolidated Gold Fields and the guarantee of the election of four of the seven seats on the board of the new company. As far as the working capital of the proposed company was concerned it was agreed that the shares be offered pro-rata to the shareholders in the existing companies at a price of £6 each. Regarding the future works of the companies, it was agreed that after the provisional acceptance of the scheme, the companies would consult each other on work to be undertaken, with the costs of such works being a first charge on the newly established company. The two consulting engineers of the Simmer and Jack Company and Consolidated Gold Fields, namely S.H. Farrar and John Hays Hammond, were also instructed to compile a report on the various properties. Finally, to cover the board and lend moral support, The Consolidated Gold Fields agreed that at the date of the special meeting called by the Simmer and Jack board for the discussion of the



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 DISTRICT HEIDELBERG,  
 S.A. REPUBLIC.  
 Scale, 100 Roads = 1 Inch.

WATERMAN & SONS LIMITED, JOHANNESBURG

proposals, they would hold a minimum of 24 000 Simmer and Jack shares.<sup>130</sup>

The Simmer and Jack board were not slow in making use of the loan and by mid-May sent notice to The Consolidated Gold Fields that a decision had been taken to invest £42 010 of the loan in improvements.<sup>131</sup> Even then not all members of the Simmer board were satisfied with the agreement. One director, Adolphe Wagner, was dissatisfied with the number of vendor shares The Consolidated Gold Fields would receive in return for their property contribution. In terms of the provisional agreement they were to receive 98 000 shares of the 250 000 to be issued in the new company. Wagner felt that an amount of 75 000 shares was sufficient, that is thirty per cent of the nominal capital rather than thirty nine per cent. Ernest Rhodes was adamant and Consolidated Gold Fields was not prepared to bargain on this matter as the 39,2 per cent holding, together with a proportionate share of the working capital stock, would guarantee them at least 115 640 shares or 46,256 per cent of the total number of shares, a position from which the acquisition of the majority interest was within easy reach. The matter was strenuously debated by the Simmer and Jack board in the hopes that the dissentients could be convinced and so allow the board to present a unanimous decision to the shareholders. Here again, there were more than the immediate interests of the Simmer and Jack Company at stake. Wagner was joined in his opposition by Woolf Joel, and together their actions in no small way represented the interests of Barnato Brothers, whose flagship, the New Primrose Gold Mining Company, adjoined the Simmer and Jack Company's property. Barnato Brothers were only given a small consideration in the proposed amalgamation, along with the Farrars, R.R. Hollins and others.<sup>132</sup> We know that the Farrars were given a £20 000 interest in the "Simmer scheme" on "ground floor terms",<sup>133</sup> and even if the Barnato's were given an interest twice as large it was relatively insignificant when measured against the estimated £830 000 invested in the project. Even the Corner House had to rest content

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130. Ibid., p.332, 30 April 1894.

131. Ibid., pp.339, 341, 15 May 1894.

132. H.E.59, Wernher, Beit and Company to H. Eckstein and Company, p.469, undated (November 1894).

133. Cory Library, Rhodes University, MS14 947.

with a share of £60 000.<sup>134</sup> The "Simmer scheme" was The Consolidated Gold Fields' grand re-entry to the Witwatersrand and like any poor relative it could not afford to be too liberal with its largesse.

The opposition of Wagner and Joel received some support from Carl Hanau, although in the final vote he threw in his lot with the majority. As a small independent operator he had to hunt with the hounds. It is interesting that these three members were absent from the second special board meeting held with The Consolidated Gold Fields representatives, and the chairman, George Farrar, was forced to delay the gathering and send messages to the three to "remind" them of the appointment.<sup>135</sup> The opposition of Wagner and Joel persisted and culminated in the resignation of Wagner from the board a month later. Hanau saw the chance that the Barnato's might be able to increase their share of the deal and it seemed worthwhile to support them with a similar intention in mind, but once the opposition hardened on the part of the majority of the board, Hanau went on to propose the motion for the adoption of the scheme.<sup>137</sup>

The provisional acceptance of the "Simmer scheme" by the majority of the directors of the Simmer and Jack Company on 19 May 1894 started a sequence of events which, by the time the proposal was ratified by the shareholders on 14 August, saw the internal operations of the Company already firmly in the grip of The Consolidated Gold Fields of South Africa. Rumours of the impending agreement immediately led to some anxiety on the part of the Simmer and Jack staff. A letter from the manager, Mr Pope, on 14 May sought assurance regarding his tenure and salary. He was guaranteed his salary and profits to a minimum of £2 100<sup>138</sup> per annum. Still not content he wrote again in June reminding the board of his past services to the Company. The same meeting which heard his second letter decided that as Mr Gilchrist had vacated his seat for more than three months (he was in London) Captain Ernest

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134. H.E.59, Wernher, Beit and Company to H. Eckstein and Company, p.469, undated (November 1894).

135. Cory Library, Rhodes University, MS16 007, Minutes of Meetings of the Board of Directors, p.336, 7 May 1894.

136. Ibid., p.355, 4 June 1894.

137. Ibid., p.342, 19 May 1894.

138. Ibid., p.340, 15 May 1894.

director of the new Company and who had been given a "ground floor" participation in the venture.<sup>144</sup> The price he asked for his shares was, however, considered too high at £7 each and the deal fell through.<sup>145</sup> The firm of H. Eckstein and Company also considered it an affront that they were not offered a seat on the board of the new Company. Wernher, Beit and Company suggested to Johannesburg that unless the oversight was rectified "I think we should not re-elect their representative on the Rand Mines Board."<sup>146</sup> The object of obtaining a directorate seat was explained in the good impression it would create for the stock amongst the Paris associates of Wernher, Beit and Company, thus facilitating their dealings in the shares in that market.<sup>147</sup> The issue of the seat was presumably amicably settled for it does not appear again in the Corner House correspondence. An unspoken and unwritten reason for wanting such a seat on the board was the access it presented to the firm regarding the internal operation and developments of the Company.

The object of acquiring the seat seems to have been at least partially met when The Consolidated Gold Fields agreed to give the Paris Syndicate an option on 10 000 shares at £12 each "in order to assist us in making a market in Paris."<sup>148</sup> The intention of Wernher, Beit and Company was, having created this market, to unload their entire holding of Simmer and Jack shares, amounting to about 16 000 shares, onto the market at a profit. The timing for the move was set as the last week of December 1894, at the end of which Johannesburg was informed of the sale of about 27 000 shares, 22 000 of which were sold in one day.<sup>149</sup> Having created the market, Wernher, Beit and Company began slowly unloading their own holding, the successful and profitable termination of which was reported at the end of May 1895.<sup>150</sup> The final agreement reached with The Consolidated Gold Fields and accepted at the

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144. Ibid., p.396, 7 September 1894.

145. H.E.60, Wernher, Beit and Company to H. Eckstein and Company, p.56, 7 September 1894 and p.72, 29 September 1894.

146. Ibid., p.78, 29 September 1894.

147. Ibid., p.160, 19 November 1894.

148. Ibid., p.191, 14 December 1894.

149. Ibid., p.211, 29 December 1894.

150. H.E.61, Wernher, Beit and Company to H. Eckstein and Company, p.236, 31 May 1895.

meeting of the Simmer and Jack shareholders on 14 August did not differ substantially from that agreed upon earlier. A total of 98 000 shares were issued to The Consolidated Gold Fields in return for the blocks of deep level claims, while 22 000 new fully paid up shares were issued pro rata to their holding, to existing Simmer and Jack shareholders. As Consolidated Gold Fields already owned nearly half of the stock of the Simmer and Jack Company, a large proportion of these shares found their way back into the Consolidated Gold Fields camp. The 45 000 working capital shares were offered to existing shareholders at £6 each with the subscription being guaranteed by Consolidated Gold Fields.

Thus with the directors empowered to increase the capital of the Simmer and Jack Company to £250 000 and with the acquisition of several blocks of claims on the deep levels to the south, the original Company passed squarely into the hands of Consolidated Gold Fields, to become the largest gold mine in the world in terms of the size of its property. While it was later surpassed in size, it is a fitting monument to its founders that the Company is still listed on the Johannesburg Stock Exchange nearly a century later.

The creation of the new Simmer and Jack Company seemed poised to create a political incident. Once more fears were expressed that the amalgamation of these properties could invoke a chain reaction which would result in the consolidation of the Witwatersrand field in the hands of a few large capitalists. There were even calls made for the specific intervention of Pretoria in the affair, with the purpose of imposing anti-trust legislation in the Transvaal along similar lines to that recently introduced in the United States of America. But as at least one journal pointed out, the analogy between the Simmer and Jack Company and the American trusts was a poor one. While gold mining companies faced a fixed price for their production, it would require international collusion to bring about a similar effect.<sup>151</sup> There were, however, certain rumblings in Pretoria and the rumours which emanated were sufficient to cause a temporary collapse in the price of Simmer and Jack shares in late September and October 1894.<sup>152</sup> As it

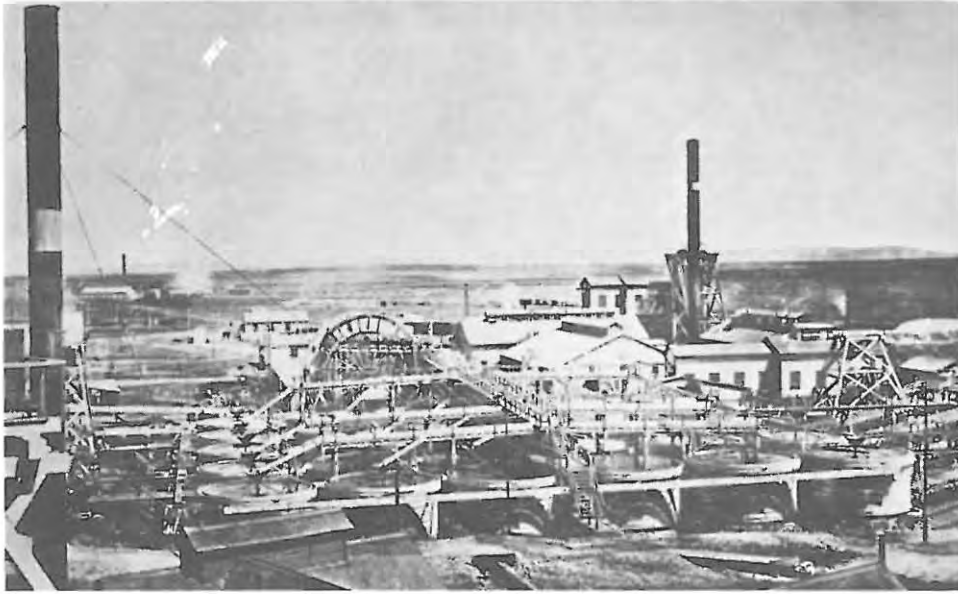
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151. South African Mining Journal, Vol. III, 46, pp.787-88, 18 August 1894.

152. H.E.60, Wernher, Beit and Company to H. Eckstein and Company, 9.90, 8 October 1894.

was, a large portion of the property was in isolated blocks and it was thus decided in 1895 to undertake the working of these various properties by means of subsidiary companies. In this way three companies were formed, the Simmer and Jack West, the Simmer and Jack East and the Rand Victoria Mines.

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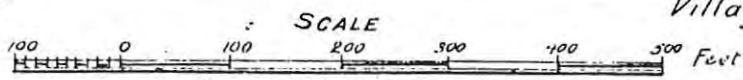
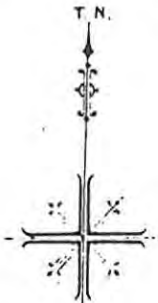
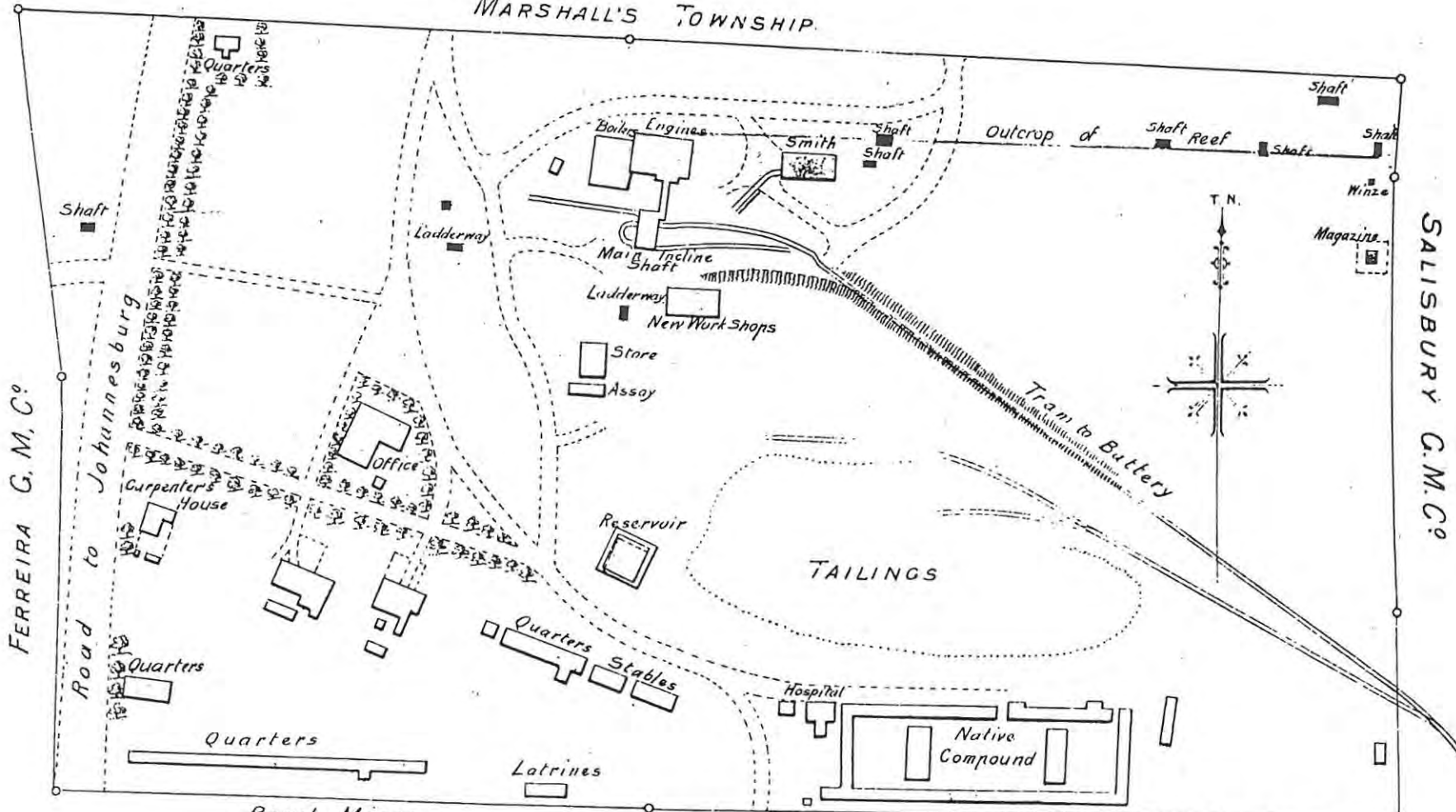


Two views of the property of the Simmer and Jack Gold Mining Company showing the cyanide plant (above) and the battery house in 1895 (below).

(Source: Cory Library, Gold Fields Photograph Collection.)

THE WEMMER G. M. CO<sup>Y</sup> LTD  
 PLAN OF PROPERTY

MARSHALL'S TOWNSHIP

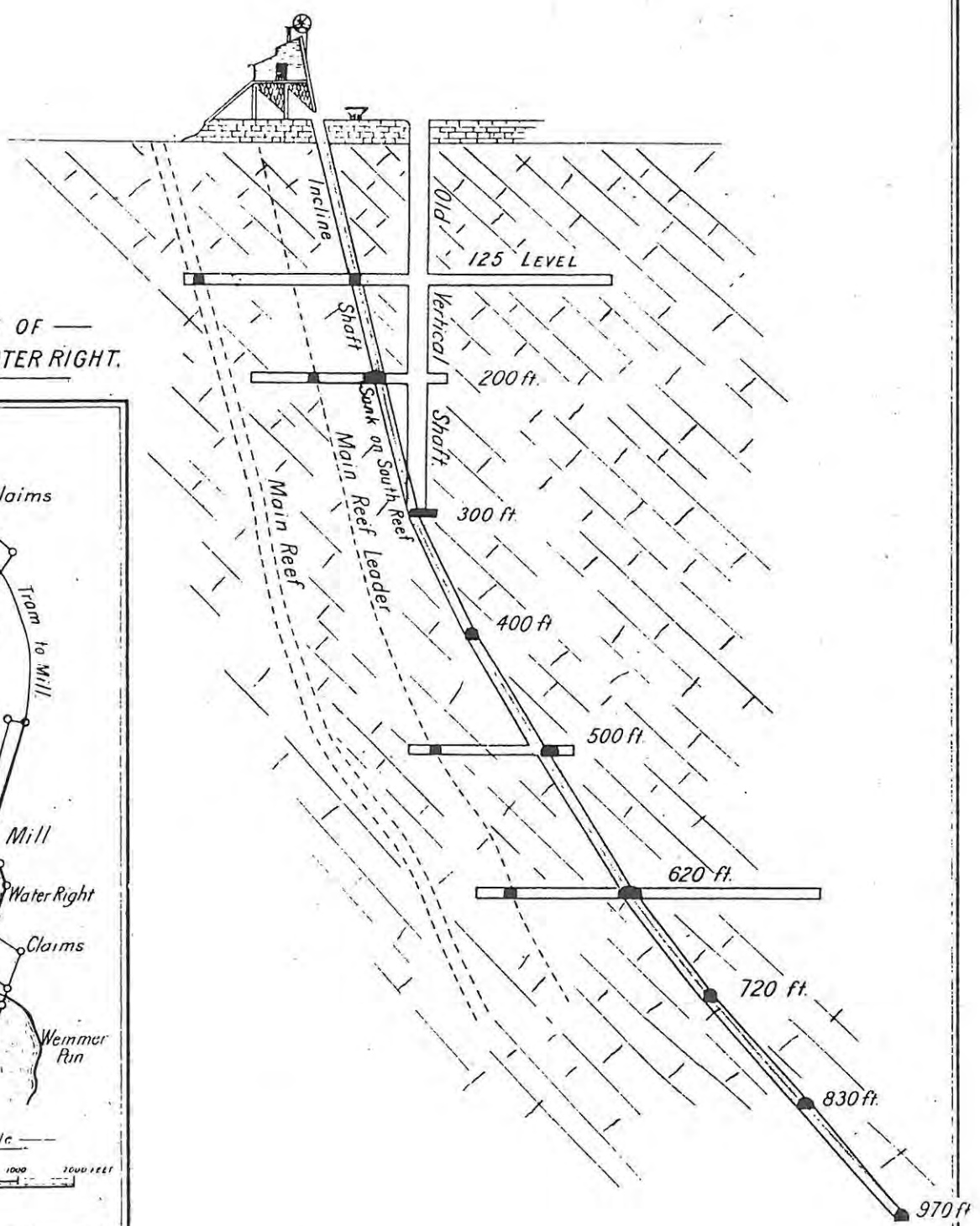
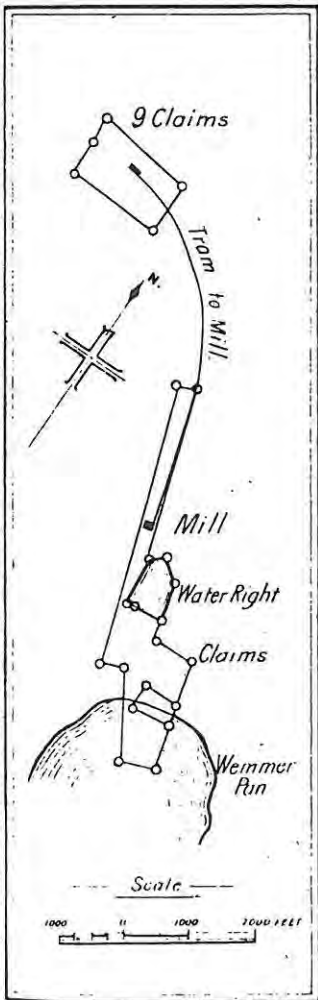


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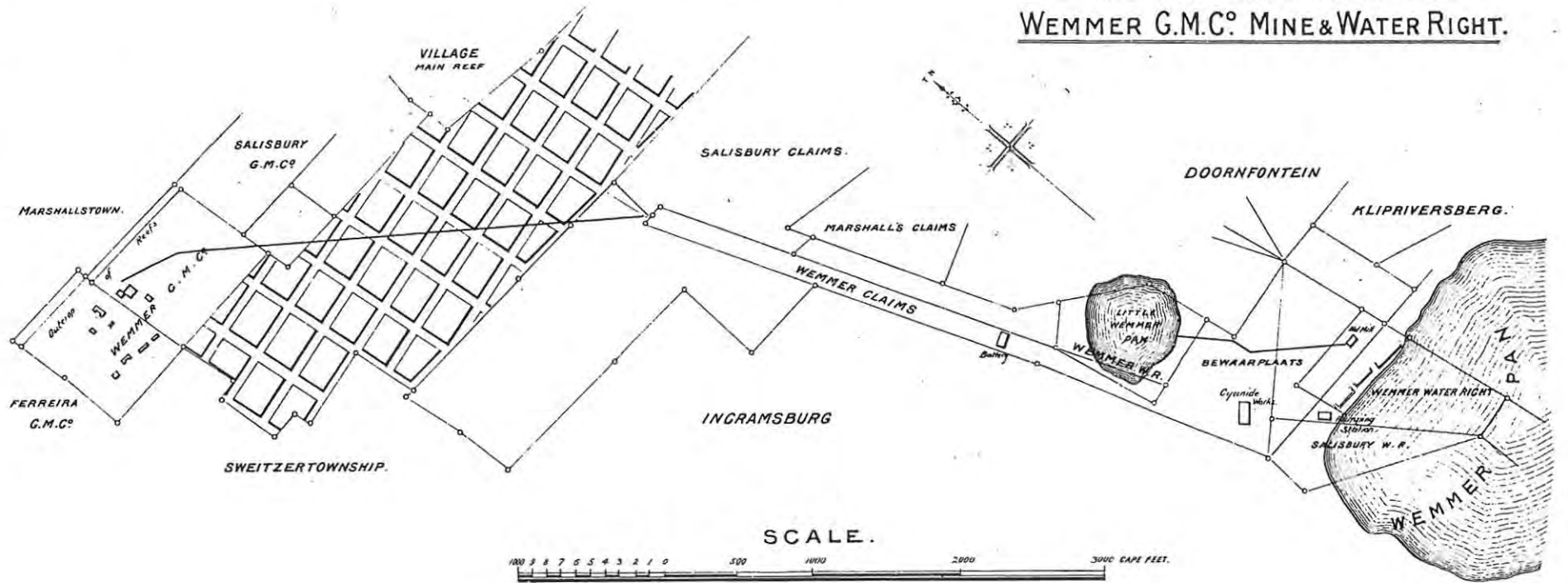
# WEMMER G. M. COY

## CROSS SECTION THROUGH MAIN SHAFT.

— PLAN OF —  
CLAIMS & WATER RIGHT.



**GENERAL PLAN**  
 — SHEWING THE PROPERTIES OF THE —  
**WEMMER G.M.C. MINE & WATER RIGHT.**



P 501

## CHAPTER IV

## THE WEMMER GOLD MINING COMPANY

The Wemmer Gold Mining Company was floated early in 1887 to work twenty claims on the Main Reef, ten of which were on the outcrop and ten on the first line of the dip to the south. The comparative narrowness of the property, running along the line of the outcrop, rather than with the dip, was a common feature of the early Witwatersrand companies, where the depth and value of the reef were as yet unknown. The property was named after Samuel Christian George Wemmer, one of the early pioneers of the Rand who, with his friend, Colonel Ignatius Ferreira, pegged out claims following the proclamation of the farm Turffontein in September 1886. Born at Cradock in the Cape Colony in 1846, Wemmer met Ferreira on the Kimberley diamond field in the early 1870's. He subsequently moved to Middelburg in the South African Republic where he established himself as a merchant. Here he was joined by Ferreira, who farmed in the district. Both men found their way to the Low-veld gold fields and thereafter to the Rand.<sup>1</sup> It has been suggested that Wemmer, together with George Goch, the Kimberley merchant and Rand speculator, were responsible as the principal partners in the floating of the Wemmer Company.<sup>2</sup> If this was the case, then Wemmer would appear to have been a dormant partner, as his name is not listed amongst the original board of directors.<sup>3</sup> His income from the mine is stated to have been £20 000 a year.<sup>4</sup> Given the early history of the Company this was more likely to have been generated from share deals and speculation which would also help to explain the poverty to which he was reduced at his death in Johannesburg in 1903.<sup>5</sup> It seems rather doubtful that Wemmer was involved with the Company at all, and that he merely gave his name to it. The inauguration ceremony of the

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1. Macdonald, W., The Romance of the Golden Rand, p.161.
  2. Shorten, J.R., The Johannesburg Saga, pp.65-66.
  3. Goldman, C.S., The Financial, Statistical and General History of the Gold and Other Companies of Witwatersrand, South Africa, p.253.
  4. Standard Encyclopaedia of Southern Africa, Vol. II, p.396.
  5. Obituary notice in The Star, 24 October 1903.

Company's battery was performed by Miss Wemmer and a toast was drunk to Mr Sam Wemmer at the subsequent festivities but beyond this there is little to indicate that the Wemmers had much to do with the Company.<sup>6</sup>

As early as 9 March 1887 reports reached newspapers in the Cape Colony of the richness of the quartz found on the Wemmer claims.<sup>7</sup> In the same copy of the Eastern Star was published the prospectus of the new Company. The capital of the proposed Company was to be £12 000 in £1 shares, 2 000 of which were "especially reserved for the Johannesburg public." Whether this was the case or not, 2 000 shares were held in reserve to be distributed later, in October 1887 amongst the shareholders at the rate of one reserve share for every five already held.<sup>8</sup> Also in October 1887 the amalgamation of the Wemmer Company with the Wemmer Extension Company took place. The capital of the Wemmer Company was increased to £28 000 in order to absorb the 16 000 £1 shares of the Extension Company, in return for which the Wemmer Company received the assets of £1 100 in cash and a ten stamp mill, in addition to the claims and fixed property of the defunct company.<sup>9</sup>

While early claims to the richness of the Wemmer ores were undoubtedly partially motivated by the desire for a successful flotation of the Company, these reports very soon received sound confirmation. An early visitor to the mine was E.P. Mathers who gave a good description of the property in its formative months.<sup>10</sup> He tells us that four tons of rich ore yielded thirty eight ounces of gold, or an average of nine and a half ounces to the ton. It was "magnificent stuff, soft friable conglomerate, heavy and visibly impregnated with gold." The Company at the time was taking twenty tons a day from the rich south reef and hoped to increase the figure to fifty tons. Like so many early Winwatersrand companies, much of the initial work took the form of exposing the outcrop by means of open trenches. Initially this would appear surprising as the first manager, Mr E. Hancock, supposedly came "straight from Brazil".<sup>11</sup> The extent of his experience was of course unknown

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6. Diamond Fields Advertiser (Kimberley), 25 May 1887.

7. The Eastern Star (Grahamstown), 9 March 1887.

8. Goldman, C.S., op.cit., p.253.

9. Ibid.

10. Mathers, E.P., The Gold Fields Revisited, pp.283-85.

11. The Eastern Star, 11 April 1887.

and many a manager was appointed on even slimmer credentials. Nevertheless, shaft sinking also commenced early as only one reef, the south reef, was being worked in its richer places, which caused the rapid sinking of mining operations to a depth where the quarrying technique became dangerous.

By mid-April 1887 the reduction machinery had arrived, while water rights were taken out on a vlei some one and a half miles to the south of the mine.<sup>12</sup> The vlei has subsequently been known as "Wemmer Pan". The mill was situated here for its easy access to water, albeit a great distance from the mine. Again, this was a common feature of many of the early companies. When Mathers visited the site the five stamp Sandycroft mill was already erected while an additional five stamps were in the course of being assembled. It was these five stamps which Miss Wemmer set in motion on the afternoon of 18 May.<sup>13</sup> The mill was driven by a sixteen horse power Hornsby steam engine, which also provided the motive force for a pump drawing ninety gallons of water a minute from the Pan for the mill. The ore was free milling and no consideration was given to reduction processes other than mercury amalgamation tables. The first wash-up of the amalgamation plates yielded 294 ozs. 9 dwts. of gold from 35 tons of ore - an astonishing result.<sup>14</sup> In May the Company produced 887 ozs. and stood virtually alone as a producer on the Rand until the following July.<sup>15</sup> By the end of 1887, 5 230 ozs. 18 dwts., valued at £18 309, had been won from 2 001,25 tons of ore, or an average of approximately 2,6 ounces of gold per ton.<sup>16</sup> The first dividend was declared on 23 July 1887, paying eight shillings per share, or forty per cent on the issued capital of £10 000.

These production figures and the publicity given them caused Wemmer shares to rise in price on the various South African stock exchanges. In April 1887 when production commenced, Wemmer shares traded at between £1 and £1 2s. 6d., while reports of the yield of nine

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12. Mathers, E.P., op.cit., pp.283-85.

13. Diamond Fields Advertiser, 25 May 1887.

14. Mathers, E.P., op.cit., pp.283-85.

15. Spencer, F., "Gold Mining at Witwatersrand", in Noble, J. (ed.), Illustrated Official Handbook of the Cape and South Africa, 1893, p.497.

16. Goldman, C.S., op.cit., Appendix, p.55B.

ounces to the ton in July caused share prices to rise to between £3 10s. and £3 12s. 6d.<sup>17</sup> Talk of the proposed amalgamation with the Extension Company also caused share prices to rise and by August the announcement of the payment of an early and substantial dividend caused a minor boom with the price of the shares rising from £6 to £10 in a single morning and peaking around £12.<sup>18</sup> A great deal of uncertainty surrounded this short-lived boom and within a week prices were down again to around £5. There were two reasons for the hesitancy expressed in these fluctuations. Firstly, although shafts had proved the depth of the reef to between fifty and eighty feet, popular wisdom still favoured the view that the reef would pinch out at no great distance from the surface. These views were well cultivated by Barberton men whose own companies were experiencing the aftermath of a speculative boom in 1887 and who had no desire to see the limelight captured by the upstart Rand. Secondly, as a correspondent visiting the mine at the end of July queried,<sup>19</sup>

"Is it fair to crush rich leader<sup>20</sup> week after week, and leave other large stacks of stone waiting, which, I venture to say, will not yield near half what is now being obtained from the leader mentioned? Any observer can see that it is impossible much longer to continue crushing this leader without great inconvenience and unnecessary expense to the Company."

Just how prophetic these words were is borne out in the subsequent history of the Company. The deviation of the Company's management from sound mining principles was thus recognised and already there seemed to be an ulterior motive in the determination of mining activities, namely the manipulation of the stock exchanges. The same correspondent noted, "I have heard many remarks passed on this proceeding by the knowing ones, some of whom hold scrip in the Company. They say that when shares reach a certain figure, they intend selling."

The year 1888 saw the Company mining on a more realistic basis. Production figures for the year indicate a yield of 6 266 ounces, valued

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17. The Eastern Star, 13 July 1887.

18. The Eastern Star, 1 August 1887.

19. The Eastern Star, 10 August 1887.

20. This refers to the south reef, considered as a "leader reef" of the main reef.

at £21 934, from 5 437 tons of ore, or an average of 1,15 ounces per ton. The fall in output is at least partly attributable to the lower value of the ore once that in close proximity to the surface was worked out.<sup>21</sup> From September onwards Goldman indicates that the Company commenced crushing a small proportion of main reef ore in addition to that from the south reef,<sup>22</sup> suggesting another reason for the fall in value. With a monthly yield of between 400 and 500 ounces and a high rate of working expenses the net profit return was considered unsatisfactory.<sup>23</sup> In the last quarter of 1888 1 709 tons of reef were crushed giving 2 496 ounces of gold or 1,47 ounces to the ton on average. This output suggests that despite the introduction of main reef ore into the mill, yield per ton actually increased. The first quarter of 1889, however, reflects a fall in output per ton to 0,91 ounces per ton, more accurately accounting for the lower value of the main reef ore. Considered monthly, yields per ton of ore began falling the previous September. This situation is reflected in the table below:<sup>24</sup>

Gold Production from September 1888 to April 1889

<u>Date</u>	<u>Tons Crushed</u>	<u>No. of Stamps</u>	<u>Yield of Gold</u>			<u>Value of Gold</u>	
			<u>Ozs.</u>	<u>dwts.</u>	<u>Av. per ton</u>	<u>Total</u>	<u>Av. per ton</u>
1888							
Sept.	281	10	512	10	36,48 dwts.	£1794	£6. 7. 9.
Oct.	386	10	579	10	30,03	2030	5. 5. 1.
Nov.	421	10	640	10	30,42	2241	5. 6. 5.
Dec.	616	30	763	12	24,79	2673	4. 6. 9.
1889							
Jan.	1447	30	1637	00	22,63	5730	3.19. 3.
Feb.	1543	30	1620	00	16,34	4410	2.17. 1.
March	1735	30	1457	00	16,79	5100	2.18. 0.
April	1312	30	1150	00	17,53	4026	3. 1. 4.

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21. The presence of rich ore on the surface is a geological feature common to most outcrop situations where, due to weathering down of the exposed reef over time, ore in proximity to the surface has a higher concentration of metal.
22. Goldman, C.S., op.cit., Appendix, p.55B.
23. Barlow Rand Archives, Archives of H. Eckstein and Company (reference code H.E.), Vol. H.E.51, H. Eckstein and Company to Jules Porges and Company, p.8, 18 October 1888.
24. Compiled from data in Goldman, C.S., op.cit., Appendix, p.55B.

The disturbing position reflected in these figures caused the management to take action to reduce working costs. It would, however, be wrong to attribute the declining yield entirely to the main reef ore now being crushed. The increase in the size of the mill to thirty stamps from December 1888 onwards would, by virtue of the increased demand for ore have resulted in more casing and barren rock being fed into the mill. By February 1889 the board reported that the steps taken to reduce working costs had resulted in these being reduced to about £1. 17s. 9d. per ton; but for the whole period since the opening of the mine they had averaged £2 10s. 0d. per ton.<sup>25</sup> These amounts can only refer to mining and milling costs alone with no consideration of development and redemption costs. The inference which can be drawn here is that the mine was by early 1889 no longer returning a regular monthly profit. The cost mentioned was still considered by management to be excessive and in May 1889 the Company took the drastic step of cutting back on its production and seeking an alternative solution to its lack of profitability and poor mining technique. The number of stamps in operation was reduced again to ten in a bid to stem the declining yield per ton and to allow the mine to catch up with the ore requirements of the mill.

On 28 March 1888 management saw fit to increase the share capital of the Company from £28 000 to £33 000 by the creation of 5 000 new shares. A reserve of £5 per share was initially placed on the issue, but this being unobtainable, the shares were disposed of in three lots during the course of 1888. The average prices for the sales were £2 0s. 4d., £2 8s. 10d. and £7 0s. 0d., reflecting the increasing buoyancy of share prices generally in the Johannesburg stock exchange boom of 1888-89. In all an amount of £20 906 was raised in this way for an increase in liability of only £5 000 to the Company.<sup>26</sup> Wemmer shares peaked in January 1889 when they reached £16 each, giving a market valuation to the 33 000 issued shares of £608 000. Management was certainly more astute in raising capital than in its determination of mining activities. At least part of the additional capital was earmarked for the purchase of an additional ten stamps for the battery.

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25. The Diggers' News (Johannesburg), 16 May 1889.

26. Goldman, C.S., *op.cit.*, pp.253-54.

As already indicated the twenty new stamps were taken into operation on 21 December 1888 with the management's confident expectation that the extra crushing power would reduce working expenses sufficiently to render the operations of the Company that much more profitable. A dividend payment of ten per cent per month from January 1889 was anticipated.<sup>27</sup> Hermann Eckstein had grave doubts as to the Company's ability to live up to this expectation following an inspection of the property,<sup>28</sup> and the subsequent suspension of twenty of the stamps in May confirms his judgement. H. Eckstein and Company nevertheless continued to maintain interest in the Company as it was seen as the key mine in the line south of Johannesburg.<sup>29</sup> Dividends were duly forthcoming in January and February 1889 of five and ten per cent respectively but no further payments were made until September of that year.<sup>30</sup>

The directors' report issued on 19 April 1889 gave the capital in hand as £6 357 17s. 9d. Total receipts from the sale of gold since the inception of the Company amounted to £51 255 13s. 0d., while total dividends, including payments down to March 1889, accounted for £18 310 0s. 0d. As total profit and depreciation figures are not given, it is impossible to determine the state of liquidity of the Company at this point. It can only be assumed that the figure for capital of £6 357 17s. 9d. is a residual figure left after capital gains and profits had been transferred into a depreciation account, or used to pay off the debts of the Company. Like most Witwatersrand companies, little provision was made for working capital, and we can therefore anticipate that a considerable amount of profit was ploughed into rectifying this deficiency in addition to the specific provision made for the increase in the issued capital.

With the intention of reducing working costs and enhancing future profits in the face of declining yields and the collapse of the 1889 boom, the board of directors saw fit to call in the services of a mining engineer. He was Mr A. Woodhouse F.G.S., who with the newly

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27. H.E.51, H. Eckstein and Company to Jules Porges and Company, p.192, 14 December 1888, and p.206, 21 December 1888.

28. Ibid., p.206, 21 December 1888.

29. Ibid., p.238, 4 January 1889.

30. Goldman, C.S., op.cit., Appendix, p.26A.

appointed manager, Mr S.C. Williamson, set about a major reorganisation of the property. Little is known about Woodhouse but Williamson, who assumed the management in May 1889, had previously served as manager at Moodies and the Pilgrims' Rest gold fields in the eastern transvaal. He was thus a man of some practical experience. We can only assume that the previous manager, Bainbridge, had fallen foul of the board following the unspectacular results which came with the enlargement of the battery. It is possible that Williamson was recruited for the Company by H. Eckstein and Company, who in a letter to the London principals, Wernher, Beit and Company in February 1889, suggested this course of action not only for its immediate merits but also as a means of gaining better information about the Company.<sup>31</sup> If this was the case then it might also account for the stipulation by Williamson in accepting the position that he be given a completely free hand in the management of the mine. In either case, this stipulation is a clear indication of the reputation gained by the directorate of the Company for instructing the manager to mine to the dictates of the stock exchange.

A report by Woodhouse was duly submitted to the board, the essence of which was the suggestion to shut down the mill for a period of approximately twelve months while a major reorganisation took place of the entire property. Amongst the priority suggestions was the need effectively to open the mine so that an ore reserve could be built up and a larger, more efficient, mill supplied on a regular basis. The shortcomings of the existing battery were clearly recognised. It would seem that at least some of the thirty stamps were second hand. A fifty stamp battery was envisaged which would be constructed as close as possible to the main shaft of the mine. In March 1889, the former manager, Mr Bainbridge, stressed the necessity for moving the mill as he saw that the accumulation of tailings at the Wemmer Pan site was restricting the ability to operate efficiently.<sup>32</sup> Unlike other companies who dumped their tailings into the streams and water courses in the hopes that they would be washed away in the summer storms, this

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31. H.E.51, H. Eckstein and Company to Jules Porges and Company, p.317, 15 February 1889, Quotes, "Will probably engage a new manager who will be debted to us so that in future we shall be well informed as to what is going on."

32. Ibid., p.383, 15 March 1889.

expedient was impossible at the Pan without damaging the interests of the Company. It was calculated that the resiting of the battery at the mine would result in a reduction of thirty per cent in milling costs, while a more extensive development of the mine would lower mining costs to between five shillings and seven shillings per ton of ore raised to the surface. A large part of the saving in milling costs would result from the reduced outlay on labour in handling quartz between mine and mill. The original motivation for locating the mill at the Pan, namely the scarcity of fuel for the engines and the capital outlay on a second engine,<sup>33</sup> would be overcome by pumping from there any water requirements which could not be met from the drainage of the mine itself. Many of the mines were experiencing problems with subterranean water and if this could be turned to useful effect it could help to reduce mining expenses. In order to reduce the initial capital outlay for a pumping plant at the Pan, the directors entered into a provisional agreement with the Ferreira Company for the erection of a joint pumping plant. The scheme was taken a step nearer fruition in 1890 when the machinery was ordered. By the end of 1890, however, the plan was dropped as the Wemmer Company, then drawing sufficient water from the mine to meet its immediate requirements, withdrew from the agreement.<sup>34</sup> With the mill located near the mine it was planned to dump the tailings, after treatment, into the spent stopes of the mine.<sup>35</sup> This step was considered necessary on account of the small surface area of the property.

The report estimated that the cost of replanning and renovating the Company's mine and equipment would be about £31 000. Of this amount a new forty stamp mill, already a reduction on that envisaged in the report, would cost £12 000, the Company's share of the joint pumping project, £7 000, new buildings would absorb a further £2 000, while the balance of £10 000 would go towards the development and proper

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33. See below, Chapter VI, pp.233ff.

34. See below, Chapter V, p.164.

35. While this was never done at the time, it is perhaps ironic that nearly a century later the Company which subsequently absorbed the Wemmer Company, the Village Main Reef Gold Mining Company, is currently occupied in reworking the tailings of many of the nineteenth century companies, and is pumping the reprocessed material into the stopes of the old mines.

opening of the mine to meet the requirements of the enlarged mill. A far larger amount would have been necessary for a thorough organisation of the mine workings, which required sinking more or improving existing shafts, erecting more efficient hauling gear and the laying of underground tramlines to expedite the movement of ore. The required capital was raised by the creation of 7 000 new shares, increasing the nominal capital of the Company to £40 000. Two thousand of the new shares remained unissued at the end of 1889, while the balance raised an amount of £20 000 for the Company.<sup>36</sup> The sale of the 5 000 shares at a price of £4 each in the steadily worsening economic conditions of 1889 suggested the inherent strength and faith of the investor in the Company.

The sale of the shares had a sequel at the subsequent half yearly general meeting of shareholders held in Kimberley in October 1889. Discord arose amongst those attending "in regard to the disposal by the directors of the reserve shares", and "personalities were freely indulged in".<sup>37</sup> No further clues are provided by the press, other than that the directors had sufficient support to carry the day. What probably transpired was that the shares were sold as a block, on tender, rather than being offered to the shareholders on a pro rata basis. Such a sale was not illegal in terms of the trust deeds of most of the early companies. The system did, however, lend itself to abuse as "friendly" directors could, and did, advise those submitting tenders of the offers of competitors. It was also an effective way for the large firms like H. Eckstein and Company to use the situation to manipulate the market and gain control relatively cheaply of any company in which they were interested. The Wemmer Company was one in which H. Eckstein and Company showed a lasting interest, and it is likely that this firm would have a share in any such deal. While the price of £4 per share was undoubtedly above the ruling market price, it was, nevertheless, a sum which a firm with substantial financial resources and backing could afford, particularly if it gave that organisation a controlling interest in the Company.

The new battery was never ordered. The Company availed itself of the opportunity of acquiring locally a "practically new" ten stamp mill and a forty horse power Marshall engine.<sup>38</sup> These were re-erected

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36. Goldman, C.S., op.cit., pp.253-54.

37. The Diggers' News, 26 October 1889.

38. The Star, 24 September 1890.

along with the twenty best stamps from the Company's old Pan mill at the mine. The Company commissioned Mr Judd Coppach, a mechanical engineer previously employed by Fraser and Chalmers of Chicago, and now in the employ of H. Eckstein and Company,<sup>39</sup> as an agent to buy the pumping equipment in America.<sup>40</sup>

It is interesting that in September 1889 an advertisement appeared in The Diggers' News in which the Wemmer Company, in terms of its original reorganisation plan, offered for sale twenty of the stamps of the old Pan mill.<sup>41</sup> The proposed sale was never executed and it would be interesting to know how the amount of £12 000 for the purchase of the new battery was reallocated. The most likely reason for the decision to retain the old mill was an under-estimation of the cost of a new battery and of the reorganisation of the mine in general. The failure to increase the capacity of the mill also negated a major portion of the benefits to be derived from the reorganisation and can thus be seen as one of the major errors of management in the period. The new battery layout was nevertheless viewed as a model for emulation by other companies, which prompted the press to ask why the plan had not been thought of before on the Rand.<sup>42</sup> A major feature of the new mill was the site, which allowed for the movement of the ore through major functions in the mill by gravity. In this way the amount of labour required for handling the ore between the various operations was reduced to a minimum. There remained, however, the fundamental weakness of machinery which had already seen a good deal of wear and tear.

As part of the centralisation programme the Company decided to subcontract for the treatment of the tailings lying at the Wemmer Pan site. By 1889 there was a growing awareness of the value of gold which was allowed to escape in the tailings which, if recovered, would prove a valuable additional source of revenue. Previously it was generally accepted that all but a small residual of gold was extracted from the ore by careful use of the amalgam process. There was a certain inevitability that some gold would be lost, the amount depending on the

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39. Taylor, J.B., A Pioneer Looks Back, p.133.

40. The Diggers' News, 8 June 1889.

41. The Diggers' News, 21 September 1889.

42. The Diggers' News, 24 May 1890.

skill of the amalgamators; a consideration which placed skilled amalgamators at a premium. Attitudes changed with the more careful sampling and assaying of all ore which passed through the mill. The realisation dawned from such results that even in supposedly efficiently operated reduction works, up to twenty five per cent and sometimes more, of the gold remained in the tailings. Awareness was, however, slow in encouraging the application of additional extraction processes due to the expense involved and the inefficiency of most of them.

By 1889 several Witwatersrand companies were operating their mines at depths where they encountered pyritic ores. This situation brought the problem of the gold residual in the tailings into more urgent perspective, as the pyritic covering of the gold particles prevented even greater amounts of gold from amalgamating with the mercury coating of the amalgam plates. Given the existing high cost structures of most of the mines, the potential fall in yield per ton of ore threatened the profitability of the whole industry. The reaction on the Witwatersrand was twofold, attempting to reduce costs as much and as quickly as possible in the short term, while a keener search was made for an efficient method for the treatment of tailings.<sup>43</sup>

In this regard the Wemmer management undertook to allow the trial of a process developed locally in Johannesburg on the Wemmer Pan site. Again, we can only speculate whether this experiment was encouraged by H. Eckstein and Company, whose access to superior technical knowledge involved them at an early stage in the search for an efficient system for the treatment of tailings. It was hoped by Wemmer management that, if successful, the application of the "Julian Process" would yield sufficient profit from the tailings to enable the board to maintain the payment of dividends during the period of inactivity of the mill. This was certainly a grand hope, or an admission of the failures of amalgamation in the past. By early September 1889 the machinery of the patentees was erected and a tramway laid to facilitate the movement of tailing sands to the plant.<sup>44</sup> The Julian Process involved the treatment of tailings through a combination of two known methods,

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43. See below, Chapter VI, pp.264ff.

44. The Star, 4 September 1889.

namely, the dissolving of gold by a chlorine solution, followed by the introduction of mercury with the purpose of amalgamating the gold in solution. The process of amalgamation was assisted by the introduction of electric current to the mercury bath, which acted as a cathode; an idea borrowed from the use of electricity in copper refining. The unique feature of the process was that the ore did not have to first be roasted in a furnace, as was common to most of the processes involving the use of chlorine. Eissler, who describes the process, was dubious of its ability to support the claims made for it, commenting,<sup>45</sup>

"It is very doubtful if any of the above reactions will take place in practical working, except the amalgamation of the bright [non-pyritic] gold ... and perhaps a decomposition of the gold chloride while passing through the cells."

The operation of the plant commenced on 9 December 1889 with three machines at work, each capable of treating twenty five hundredweights every three hours, or so the patentees claimed.<sup>46</sup> In February the press declared the experiment an "unqualified success", reporting that only traces of gold remained in the tailings after treatment.<sup>47</sup> Despite these encouraging initial reports the Wemmer Company soon discontinued its support. By April 1891 the Company had entered into a new contract with the Adair-Cruickshank Company for the treatment of the tailings at the old battery site.<sup>48</sup>

In August 1890 the annual report of the Electro-Chemical Extracting Company, the patentees of the Julian Process, reported on the trials at Wemmer Pan. The chairman, F.F. Lazard declared that he felt the machines had not received a fair trial, while the Wemmer Company had broken its agreement with them by not publishing the results of the tests and not intimating its intentions whether or not it would take over the machines.<sup>49</sup> In response to these statements Williamson, as manager, replied that two major factors were responsible for his Company's rejection of the process. Firstly, the system, while being fairly effective in the treatment of free gold, seemed to have no impact on

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45. Eissler, M., The Metallurgy of Gold, p.374.

46. The Star, 11 December 1889.

47. The Star, 6 February 1890.

48. The Standard and Diggers' News (Johannesburg), 10 April 1891.

49. The Star, 5 August 1890.

the pyritic gold which was left in the tailings. Secondly, the costs of operating the process were excessive at between 10s. and 13s. per ton treated.<sup>50</sup> In turn, the early results from the Adair-Cruikshank process were less than expected.<sup>51</sup>

It was not until 5 May 1890 that the newly located mill began its trial runs.<sup>52</sup> In the interim the energies of the staff of the Company were directed towards the proper development of the mine in terms of the Woodhouse plan.<sup>53</sup> The object was to open up a new first level at 125 feet underground before the recommencement of milling, while also beginning work on a 200 foot level. The old first level, at 45 feet, was largely worked out by 1889, much of it being excavated from the surface. This fact delayed stoping upwards from the 125 foot level until the empty spaces above the 45 foot level were filled in. The mine was to operate from three shafts, a vertical main shaft and an incline shaft on the eastern section, and an incline shaft following the reef from the 45 foot level, put down by a former manager when quarrying ore from the surface became too dangerous. The 125 foot level was completely opened up between the boundaries on the south reef by January 1890. Far less work was done in opening the main reef, only 300 feet being driven by that date, with stoping just commencing. The angle of the dip of the reef remained about eighty degrees from the horizontal at the 200 foot level, which meant that it would continue to a considerable depth within the Company's property. Also of significance was that pyritic ore was encountered at about 150 feet.

Without a complete set of financial records it is difficult even to estimate the amount of capital involved in the reorganisation of the mine. What is known is that early in 1890 a further 300 reserve shares were sold for £1 500, while in September of that year the nominal capital of the Company was again increased from £40 000 to £55 000 by the creation of 15 000 new shares which were placed under the control of the directors. By this time the debts of the Company amounted to £23 730 13s. 2d., which would explain the need for a further increase in capital. The needed capital was not raised against

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50. The Star, 13 August 1890.

51. The Standard and Diggers' News, 29 September 1891.

52. The Diggers' News, 7 May 1890.

53. See above, pp.112-115.

the sale of the existing 1 700 reserve shares, as 1 300 were placed as collateral with the Transvaal Mortgage, Loan and Finance Company against the loan of £7 327 13s. 0d., and the balance of 400 shares with Messrs Hirsh, Birch and Company against a further loan of £1 978 10s. 6d.<sup>54</sup> In any event, at the ruling market price of £3, the 1 700 shares would only raise an amount of £5 100, far short of the Company's cash requirements.

Early in 1891 eight thousand of the new shares were sold at £2.10s. each, raising an amount of £20 000, which reduced the debt to manageable proportions.<sup>55</sup> Thus between October 1887, when the Extension Company was absorbed, and April 1891, an amount of £62 406 was raised on share issues against an increase in liability of £18 300. This is a fine example of the use of the share market to raise working capital, and can be offered as exoneration for the early bad mining practice. The early plundering of the mine had earned the Wemmer Company a reputation as a good financial proposition which enabled the management successfully to raise capital in this way. Despite this infusion of capital, the Company had also to raise loans, the most important of which, besides those already mentioned, was one from the Heidelberg Gold Mining Company.<sup>56</sup> At a later date loans were also raised from the Witwatersrand Gold Mining Company which caused a great deal of dissention amongst the shareholders of that Company.<sup>57</sup> It is likely that the debts accumulated down to 1891 were liquidated by the fresh infusion of capital. The bulk of the new money was now absorbed in the procurement of capital equipment, development and the settlement of outstanding debts. Nothing in the statements studied suggests undue extravagance in the reorganisation on the mine. As we know, the mill was not replaced. The obvious conclusion to be drawn is that management's estimation of the costs of reorganisation were grossly inaccurate.

There is evidence to suggest that the objective of cost reductions was being partially met despite the failure fully to implement the reorganisation plan, and that small profits were being shown on operations. In a statement to the half yearly meeting of shareholders in

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54. The Star, 24 September 1890.

55. Goldman, C.S., op.cit., p.254.

56. Ibid.

57. See above, Chapter II, pp.55-56.

April 1891, the directors pointed out that working costs had been reduced from 36s. to 32s. 9,25d. per ton of ore. Mine development costs were reduced from £6 to an average of £3 13s. 11d. per foot, or £4 4s. 0d. where rock drilling machines were used and £2 15s. 0d. where hand drilling was employed.<sup>58</sup> Likewise, in the next six month period ending on 30 September 1891, average development costs rose to £4 0s. 2d. while rock drilling costs fell to £3 19s. 0,5d. and hand drilling rose to £4 3. 0d.<sup>59</sup> The discrepancy between hand and machine drilling costs was in large part a function of the type of rock being worked by the respective processes. What it also suggests, however, is that the superiority of the machine drill was not yet absolute. In April the statement also noted that a small profit was recorded on milling operations, suggesting either an improved ore yield or a greater level of efficiency from the relocated battery, or a combination of both.<sup>60</sup> On total operations, however, a loss of £5 368 1s. 11d. was recorded.

The April 1891 statement indicated a fairly equal balance between the quantities of main and south reef ore developed for reserves; 3 480 tons of south reef and 3 700 tons of main reef, sufficient for 11,5 months of milling at current rates. By September 1891 the ore "in sight" amounted to 7 126 tons of south reef and only 874 tons of main reef, due to the intrusion of a 100 foot thick dyke which displaced the main reef down to a depth of about 600 feet. This information provides a useful clue to the milling position. By April only ten stamps were operating despite the capital infusion from the sale of the 8 000 reserve shares. Clearly, the mine had not been developed to a point where it could adequately supply the ore requirements of the new mill, while it is also possible that some difficulty was experienced with the "new" mill itself. The drastic fall in tonnage resulted in a loss being incurred on total operations. Only 3 197 tons were crushed in the six months ending on 31 March 1891, yielding 4 719 ounces 13 dwts., or 1 oz. 4,5 dwts. of gold per ton. The average assay of tailings was 1 oz. 12,25 dwts., so that 72,25 per cent of the gold was recovered by amalgamation. By contrast, the

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58. The Standard and Diggers' News, 10 April 1891.

59. The Standard and Diggers' News, 29 September 1891.

60. The Standard and Diggers' News, 10 April 1891.

figures for the six months ending on 30 September 1891 indicate that 6 543 tons of ore were crushed yielding 6 264 ounces 14 dwts., or an average of 19,3 dwts. of gold per ton. The average assay of tailings was 19 dwts. 18,5 grs. so that only 66,5 per cent of the gold was recovered. Two points emerge from these figures. Firstly, there was a decline in gold yield per ton of ore resulting from the increasing proportion of pyritic ore crushed. Secondly, the decline in the extraction efficiency of the mill reflects the failure of management to institute an additional recovery process to assist that of amalgamation, and which thus offset some of the gains achieved from the reduction in milling costs. Despite this situation, a small profit of £4 404 8s. 1d. was recorded for the period ending September 1891, after an allowance for depreciation of £1 924 was deducted from gross profits. On the strength of this profit management announced a ten per cent dividend, the first since February 1889. It is also worth noting that down to October 1891 the Company had not yet been able to bring the full complement of thirty stamps into operation.<sup>61</sup>

Thus the experiment to rationalize the operations of the mine had not yet met with any marked success by September 1891. The reduction in working costs achieved by the reorganisation of operations and the introduction of machinery like rock drills was not sufficient to offset the reduced revenue from working larger quantities of poorer or pyritic ore. Nevertheless, the returns indicate clearly that the scale of operations, currently retarded by the slow development of the mine and the faulty mill would be the major factors in determining future profitability. Here the failure of management to carry through its original intentions of increasing the size and efficiency of the battery was a serious mistake, matched only by the inability of the mine manager to create a sufficiently large ore reserve to guarantee the uninterrupted operation of the full mill.

Early in 1890 reports of rich finds of ore in the mine were noted in the press. In January a reef was struck at the 200 foot level which, while full of pyrites, showed visible gold.<sup>62</sup> It can be speculated

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61. The Star, 10 October 1891.

62. The Diggers' News, 17 January 1890, and H.E.149, L. Phillips to Wernher, Beit and Company, p.77, 30 January 1890.

that this discovery, the publicity given to it and a subsequent find in February,<sup>63</sup> together with the financial straits in which the Company found itself, all rekindled the waning interest of H. Eckstein and Company in the Wemmer Company. This firm and its London principals had shown an interest in the Company since 1888 related, no doubt, to their growing investment in the neighbouring Ferreira Gold Mining Company.<sup>64</sup> In March 1891 Lionel Phillips reported to London that Wemmer shares "could be the cheapest thing on the Rand", and a good proposition if the mine could be made to pay.<sup>65</sup> Closer investigation during the year revealed the Company's debt and that it was "in a mess from a working standpoint."<sup>66</sup> The major attraction of the Wemmer Company to the Corner House was its low issued capital of £38 000. With share prices fluctuating between 40s. and 50s., it seemed possible that a good deal of money could be made if the Company was properly reorganised. There was also the lingering possibility of being able to arrange an amalgamation of the Company with the neighbouring Ferreira and Worcester Companies.<sup>67</sup>

In January 1891 the first positive steps were taken towards a serious commitment in the Wemmer Company by H. Eckstein and Company when Phillips arranged to be allowed to inspect the mine. Accompanied by the firm's mining engineer, Hennen Jennings,<sup>68</sup> Phillips visited the property on 10 January 1891.<sup>69</sup> The first impressions gained by Phillips were mixed. The mill was described as "an awful poor ramshackle affair" but the mine foreman was seen as "an intelligent, active man". A less favourable opinion was held of the former manager. Williamson would seem to have recognised what was coming to him and resigned in November 1890 to take up a position on a Natal colliery.<sup>70</sup>

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63. The Diggers' News, 18 February 1890.

64. See below, Chapter V, pp.149-51.

65. H.E.149, L. Phillips to Wernher, Beit and Company, pp.149-50, 22 March 1890.

66. *Ibid.*, p.306, 1 August 1890.

67. *Ibid.*, pp.493ff, 26 December 1890, and see below, Chapter V, pp.157, 163-4, 186ff.

68. See above, Chapter II, pp.55ff for other activities of Jennings.

69. H.E.149, L. Phillips to Wernher, Beit and Company, p.521, 10 January 1890.

70. The Star, 10 November 1890.

While he had improved the surface conditions of the mine, particularly by providing proper quarters for the men, it would seem that his mining activity was less successful. Phillips commented, "Judging by mere observation, I think the late manager did miss the south reef and in fact worked in a most ill considered manner."

Phillips's overall impression was such that H. Eckstein and Company took up the 8 000 reserve shares in 1891 and the refusal on the balance of 8 700 shares.<sup>71</sup> H. Eckstein and Company thus became eligible to appoint a director to the board and Phillips duly took up the seat.<sup>72</sup> At the April 1891 general meeting of shareholders, George Goch as chairman welcomed Phillips, stating that the connection with the firm of H. Eckstein and Company would be of great benefit to the Wemmer Company. He also expressed the hope that they would exercise the option on the balance of the reserve shares. As it was, they failed to do so despite the movement of the market in their favour.<sup>73</sup> This would suggest that the firm was prepared to forego the profit it could have made, possibly as an act of appeasement to other shareholders, despite the firmer grip on the Company which the manipulation of the 8 700 shares would have given them. The inference to be drawn here is that their position in the Company was already secure enough. Wernher, Beit and Company had also been active in the London market buying up Wemmer shares for some time before the Johannesburg deal.<sup>74</sup> As always, a member of the firm on the board of a company served as a useful source of exclusive and timely information in the lucrative arbitrage business between Johannesburg and London.

While the report which Jennings compiled after visiting the mine remained the private property of H. Eckstein and Company, Phillips agreed to give the Wemmer Company an abridged version, being essentially a set of suggestions for placing the property in a profitable position. These ideas were submitted to the board by Phillips in May 1891.<sup>75</sup> The

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71. See above, p.120.

72. H.E.146, L. Phillips to Secretary of Wemmer Gold Mining Company, p.561, 17 January 1891.

73. The Standard and Diggers' News, 10 April 1891.

74. H.E.56, Wernher, Beit and Company to H. Eckstein and Company, p.402, 23 January 1891.

75. H.E.146, L. Phillips to Chairman and Directors of Wemmer Gold Mining Company, pp.674ff, 6 May 1891.

report concentrated on three main areas for improvement, namely, access to the ore, that is shafts, the actual mill, and finally the location of the mill. Regarding the shafts, Phillips was in favour of a new inclined main shaft on the main reef which would replace the existing vertical shaft below the third level. Given the financial state of the Company a new main shaft was seen as being of less importance than the generally recognised need for a new mill. The supply of free milling ore was sufficient to offset any further sharp fall in the yield per ton for another six months, after which there would be a drastic need for concentrating equipment to separate as much of the pyritic gold from the tailings as possible. It was therefore suggested that a twenty stamp Fraser and Chalmers mill be procured together with twelve Frue Vanners for concentrating. Tests recently conducted at the Robinson Gold Mining Company indicated that three Frue Vanners per five stamps was the optimal ratio. Various other suggestions were made regarding the positioning of rock breaking equipment at the pit head and the procurement of more efficient multi-tubular boilers. While Phillips professed not to have given any serious consideration to the exact location of the mill, a site between the mine and the water right was suggested. No specific advantages for such a location were mentioned and it seems likely that Phillips's motivation here was governed by the longer term plans of H. Eckstein and Company. A mill in this area would be very conveniently situated for any amalgamation between the three small outcrop mines, namely, the Wemmer, Ferreira and Worcester and the Village Main Reef Company to the south.

The estimated cost of implementing the proposals was £25 000 excluding any amount raised from the sale of the old boilers and parts of the mill. The Company's cash assets amounted to £9 000 with the balance of 8 700 reserve shares which could also be realised. In the event of the reserve shares not being sold, or unable to be sold, then Phillips was in favour of the Company incurring a debt of between £10 000 and £15 000, rather than not effecting the improvements. He stressed that no anxiety need be felt about the Company's ability to sell the reserve shares or to pay off any debts out of future profits. The warning was also given, however, that operations since July 1887 had cost the high amount of £4 per ton and that the Company had spent about £18 000 more than its receipts from gold in its operational life. In conclusion, he strongly urged that any attempts to patch up present appliances would be useless; a clean sweep was necessary.

The tone of Phillips's report indicated the overall strategy of H. Eckstein and Company and the London principals towards the Wemmer Company. In March 1891, in correspondence to London, Phillips expressed the following stand,<sup>76</sup>

"So far I am simply the indifferent observer of the bad work being done there. If you favour amalgamation with the Ferreira I will not push any improvements, if not I will do everything possible to bring this mine to the fore as a producer.... Unless good terms could be got from the Ferreira it would suit me better to demonstrate the value of the Wemmer before any amalgamation takes place."

The renewed interest shown by H. Eckstein and Company was largely due to Phillips's insistence and he no doubt saw it as a project which, if financially successful, would promote his own interests within the firm. As the climate for amalgamation with the Ferreira Company seemed unfavourable, Phillips was given the necessary encouragement to push forward the development of the Wemmer Company. Phillips seemed confident that following the sale of the reserve shares, on which his firm held the refusal at 52s. 6d., an amount of approximately £33 000 would be available for the second major reorganisation of the Company. He was, however, early to express fears that if the reserve shares were not taken up, the Wemmer board would be unlikely to raise the necessary funds by means of a loan. It was recognised that the board and shareholders were more anxious over the early resumption of dividend payments than any long term consideration for the future of the Company.<sup>77</sup>

The board's initial reaction to Phillips's plan was to reject it out of hand. No doubt there were several reasons for this. The Company had only recently undergone a reorganisation which many shareholders considered sufficient. Outright agreement with the plan would only serve to compromise the directors' own position regarding the recent past events. Nevertheless, the directors were not entirely opposed to the idea, as is borne out in the evidence of a court case about this time, when an applicant for the post of manager was required to submit a report on the mine recommending changes and improvements he would make if appointed to the position.<sup>78</sup> Likewise, the board was being

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76. H.E.149, L. Phillips to Wernher, Beit and Company, p.610, 10 March 1891.

77. Ibid., p.673, 7 May 1891.

78. A full report on the case appears below on pp.130-31.

asked to act on an abridged version of a report they had not seen and on the recommendations of the interests of a new major shareholder with whose longer term objectives they were not familiar. They had also learnt the lesson of how costly such reorganisations were and there was nothing in what Phillips had suggested to guarantee that the figure of £25 000 would be any more accurate than those compiled by Woodhouse earlier. If anything, Phillips proposed a great deal should be done with very little more than Woodhouse's original estimate.

In order to preserve his own position Phillips persuaded the board to stay its decision,<sup>79</sup> and then to compromise by accepting the report in principle but deferring the implementing of its suggestions. This also allowed Phillips to save face within his own firm and keep his seat on the Wemmer board. Phillips had badly misjudged the mind of the Wemmer directorate. The presence of the Corner House on the board was welcomed, its interference was not. Such rebuffs were usually overcome by the mere threat of resignation from the board by the firm's representatives<sup>80</sup> and the company's ostracization in technical and other matters. Such a ploy was here impossible given Phillips's own delicate position in the matter and the fact that he firmly believed in the future prospects of the Company. Alternative methods were clearly called for.

It was considered necessary by Phillips that the Company be shown indirectly the advantage of close association with the Corner House. The first step in this direction was to abandon the option held on the reserve shares. This in itself was insufficient to move the board and Wernher, Beit and Company were asked to let the market know indirectly that they had declined to buy the reserve shares at 52s. 6d. In this way the market for Wemmer shares would be kept below that figure. The market was also informed that the Company was basically insecure and spent its money and resources patching up defective machinery. Phillips, as a director, intended to arrange to have the reserve shares put into the name of a trustee and would then attempt to obtain the voting power over them. The final link in the strategy would be for

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79. H.E.149, L. Phillips to Wernher, Beit and Company, p.661, 10 May 1891.

80. See below, Chapter V, p.164 for Phillips's handling of the Worcester Gold Mining Company.

the two firms in Johannesburg and London to begin slowly buying up the shares in the Company at the lowest possible prices. In this way the present board could be eased out of office.<sup>81</sup> At least one press attack, albeit as late as October 1891, has been found, and is perhaps worth quoting at some length in view of the aforesaid strategy,<sup>82</sup>

"The dilapidated mill of this Company is still kept working. Why do not the directors consider the advisability of either amalgamating their interests with the Ferreira, as the Worcester has done,<sup>83</sup> or with their neighbour the Salisbury? Their present policy seems to be that of patching up, which is nearly always the most costly in the long run."

These words could as well have been dictated by Phillips for they express his sentiment exactly. Amalgamation or some form of working arrangement with the Ferrira Company became even more attractive to the eyes of H. Eckstein and Company as it was known that the Ferreira mine would strike a diorite dyke in the Bijou Claims below the fourth level.<sup>84</sup> The fault ran into these claims from the eastern boundary, leaving the ground behind it essentially cut off from the rest of the Ferreira property. It was too small an area to warrant a separate shaft but Phillips's proposed new Wemmer shaft would be conveniently situated to work both properties east of the dyke.<sup>85</sup>

The Company's decision, in September 1891, to declare a ten per cent dividend drew an immediate and legitimate response from Phillips. In a carefully detailed letter he indicated his objections to the move. By now Phillips was only attending sufficient board meetings of the Wemmer Company to enable him to retain his seat. He was not at the meeting at which it was decided to declare the dividend and objected strongly to his name being attached to the particular report.<sup>86</sup> His strongest objection was nevertheless reserved for the declaration of the dividend, as he recognised that not all the funds which were to be distributed could be legitimately attributed to Company profits but came partly

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81. H.E.149, L. Phillips to Wernher, Beit and Company, pp.666ff, 23 May 1891.

82. South African Mining Journal, Vol. I, 3, p.41, 17 October 1891.

83. See below, Chapter V, p.164 for a discussion on the joint milling project between the Ferreira and Worcester Gold Mining Companies.

84. See below, Chapter V, p.189.

85. H.E.149, L. Phillips to Wernher, Beit and Company, p.721, 18 July 1891.

86. Ibid., p.781, 3 October 1891.

from a bookkeeping appreciation of the assets and from the profit made on the sale of reserve shares. This was tantamount to paying the dividend, at least partly, out of the capital of the Company.<sup>87</sup> There was, however, also a second side to Phillips's indignation. The declaration of a dividend by a Company which his firm was attempting to portray on the share markets of the world as a poor proposition had effectively turned the tables on such careful scheming. Coinciding with the declaration of the dividend was the news that the manager, Flemming, had discovered better ore with a resultant improvement in yields. Phillips was forced to admit that with the resultant surge in Wemmer share prices to over 70s., the prospects for amalgamation on his terms looked poor.<sup>88</sup>

It would, however, be incorrect to suggest that the activities of the Company progressed smoothly without the involvement of H. Eckstein and Company in its affairs. The strategy and planning of the board remained short sighted in the extreme with the inevitable resultant costs to the Company. By December 1891 an amount of over £10 000 had been spent on patching up existing machinery, and in the acquisition of a new boiler for the mill. Earlier mistakes were also coming home to roost. The mill was experiencing a severe shortage of water and was depending on a provisional supply from the Salisbury Company.<sup>89</sup> In October it was admitted that the mill had operated for five of the preceding six months, with an average of only twenty of its thirty stamps.<sup>90</sup> Flemming did his utmost to place the machinery on an efficient footing<sup>91</sup> but by January 1892, considering the task hopeless, he resigned. The inherent strengths of the Phillips plan were by now clear to the board and an accommodation with the Corner House was sought. A request was made to H. Eckstein and Company for Mr J.H. Johns to serve as consulting engineer to the Company.<sup>92</sup> Thus Harry Johns, already general manager of the Ferrira Company and consulting engineer

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87. H.E.146, "Remarks on the Wemmer Balance Sheet, August 31, 1891", pp.915ff.

88. H.E.149, L. Phillips to Wernher, Beit and Company, p.769, 19 September 1891.

89. Ibid., pp.854ff, 12 December 1891.

90. The Star, 10 October 1891.

91. South African Mining Journal, Vol. I, 5, p.77, 31 October 1891.

92. H.E.149, L. Phillips to Wernher, Beit and Company, p.889, 21 January 1892.

to the Worcester Company, received the additional position of consulting engineer to the Wemmer Company, to which he was also to act as general manager until a successor was appointed.<sup>93</sup> In late 1894 he was still serving in this capacity. The superior technical resources of H. Eckstein and Company had again proved their effectiveness in bringing a recalcitrant company's board into line. It was the combined strengths of financial and technical control which assisted this firm in its dominance of the field.

The events occurring between the resignation of Williamson as manager in November 1890 and the appointment of John Flemming as his successor give us an interesting insight into the approach of the Wemmer board in the hiring of managers. The press reported an interesting court case between H. Ainsworth and the Wemmer Company in January 1891. Ainsworth, in evidence, stated that he was approached the previous October by the Company's secretary, George Hesse, with a request from the directors that he submit an application for the position of manager following the resignation of Williamson. In all between 70 and 100 applications were received, the great majority unsolicited by the Company. As part of the application Ainsworth was required to submit a report on the feasibility of closing down the mine for further reorganisation.<sup>94</sup> In his report Ainsworth proposed that the mill be closed down for a short time while the mine was further developed. Within the existing mode of operations he saw two areas for improvement and consequent savings. The mine then had fifteen stamps operating by day and the same number at night. By running all thirty stamps simultaneously for a single twelve hour shift a considerable saving of labour and wages could be effected. Likewise, he found that the low pressure cylinder of the compound steam engine was shut off, so that only the high pressure one was used. Use of the whole engine could result in a saving of forty per cent in the amount of fuel used in terms of power output. Despite these suggestions, Ainsworth's application was unsuccessful and he subsequently claimed £100 for services rendered to the Company in the form of his report.<sup>95</sup> The evidence gives interesting clues for the departure of Williamson. Mr A. Webner was appointed

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93. The Standard and Diggers' News, 14 January 1892.

94. See above, p.126.

95. The Standard and Diggers' News, 14 January 1892.

the new manager but fell ill so that his services were terminated after a week and John Flemming was appointed in his place.

The practice of inviting individuals to submit reports in the recruiting of management was commented on at the trial as an innovation. It was certainly an effective way of assessing the potential of any applicant. Ainsworth, for instance, would seem to have overlooked the important consideration of whether the engine at full power was capable of operating the full thirty stamps, and he also mentioned little on the poor state of the mill. Events subsequent to the Phillips report do, however, make it difficult to determine whether such information was what the board actually wanted to hear. Ainsworth's willingness to submit a report suggests that the Company enjoyed a fair reputation as an employer, a fact also borne out by the over seventy applications received for the job. In retrospect, the board seems to have gone to considerable lengths in the appointment of a successor to Williamson, which suggests their awareness of the need for a sound man to manage the interests of the Company. That they needed to resort to the specific methods adopted reflects the fact that H. Eckstein and Company were unwilling to assist with the provision of a technically competent man. Flemming appears to have been a capable man and the lack-lustre performance of the property during his tenure must in large part be attributed to the "ramshackle" equipment.

In considering the failure of the reorganisation attempt between 1889 and 1891, it is not surprising to discover that in the years 1892-93 the mine and plant once again underwent major modification. As the new manager, Mr Johns was immediately required to make an exhaustive report on the property. In March 1892 Phillips was able to write that the board had altered their views regarding future policy and were now willing to spend the amount of £35 000 on improvements. They were also considering approaching the Wemmer, Ferreira and Worcester Deep Level Gold Mining Company with a view to acquiring more dip claims, and the Grahamstown Gold Mining Company with a take-over bid.<sup>96</sup> Little came of the latter two projects but the nature of them suggested a belated attempt by the Barnato group to secure an interest in the Wemmer Company. As early as 1888 they had secured an interest in the Grahamstown Company

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96. H.E.149, L. Phillips to Wernher, Beit and Company, p.925, 25 March 1892.

which was subsequently floated as the New Grahamstown Gold Mining Company.<sup>97</sup> This bid again fueled a steady share buying campaign. In May, Wernher Beit and Company reported holding as few as 3 000 shares in the Wemmer Company but by August the number had trebled to over 9 000, or a sixth of the shares in the Company, thus once again securing the firm's interest.<sup>98</sup>

It was inevitable that the Johns report would closely mirror the earlier one of Phillips. Once again Johns stressed the need for a new main incline shaft, emphasising the saving in cost and time which would result from the elimination of cross cuts. It was estimated that in sinking to the 1 200 foot level an incline shaft would cost £25 668 less than a vertical shaft with the cross cuts needed to reach the reef. He also stressed the need for a new 30 stamp mill, preferably of the Fraser and Chalmers make, which would be erected in an unspecified position and supplied with water from Wemmer Pan. The total cost of improvements was estimated at £36 000. The annual general meeting of shareholders held on 7 April 1892 was informed that the directors concurred with the plan which would be implemented as speedily as possible.<sup>99</sup> In order to finance the reorganisation, the reserve shares were offered to shareholders pro rata at 50s. each in May 1892, thus raising an amount of £21 750. The decision to offer the shares at this price was poorly judged as the current market price was 70s. The result was a sudden fall in the price of shares in the market as shareholders unloaded their newly acquired holdings.<sup>100</sup> As a major shareholder H. Eckstein and Company must have made a good profit.

The increasing drain on the Company's finances in the upkeep of its machinery proved conclusively the need for the reorganisation. Shareholders were informed that in the half year down to April 1892 a working profit of £9 228 was incurred, enough to warrant the payment of another dividend. Unfortunately, however, an amount of £5 720 had to be spent on the machinery, only £1 300 of which was for new equipment. The rest

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97. H.E.51, H. Eckstein and Company to Jules Porges and Company, p.162, 7 November 1888, and see above, Chapter I, p.21.

98. H.E.58, Wernher, Beit and Company to H. Eckstein and Company, p.32, 28 May 1892, and p.169, 6 August 1892.

99. The Star, 7 April 1892.

100. The Star, 1 June 1892.

was absorbed in maintenance and patching up the old plant. The intention was to run the existing mill until the new one was operational. In this way the shortfall on capital requirements for the new plant, after the sale of the reserve shares, would be made up from working profits.

Johns used the intervening period before the arrival of the new plant to extend the development of the mine as rapidly as possible. By October 1892 the ore reserves were increased to 24 776 tons from the 8 700 tons available in April that year, despite 11 583 tons being crushed during the period. The decision by the directors to finance a large part of the reorganisation programme from profits required that Johns work the existing plant at the greatest possible efficiency. In this regard he was very successful, but high working costs continued to eat away at the gains being made. Revenue for the six months ending 31 September 1892 was £32 050 but as costs remained at the high rate of 35s. 6d. per ton, or £26 559 in total, only £5 491 was left to help finance the improvement programme.<sup>101</sup>

It was also announced in September 1892 that the Company would erect an electric pumping plant to raise water from the Wemmer Pan to the mill, thus obviating the need for a separate pumping engine station.<sup>102</sup> The intention was to attach a dynamo to the drive shaft of the mill engine which would generate the electric current needed for the pumps situated at the Pan. This plan was subsequently dropped in favour of joining the Salisbury and Jubilee Companies in a joint pumping scheme. In December the Wemmer Company received permission to connect their main pipe line to the service reservoir of the other companies, thereafter receiving water on a rotational basis with special provision being made for the recycling of as much of the water as possible.<sup>103</sup>

The new site chosen for the mill was on a narrow corridor of claims linking the mine and Wemmer Pan water rights. The location was half a mile from the Pan and roughly two miles from the mine. It was long suggested that the Company consider linking its battery to that

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101. South African Mining Journal, Vol. II, 2, p.24, 8 October 1892.

102. Ibid., Vol. I, 49, p.871, 3 September 1892.

103. H.E.147, Report of Joint Pumping Scheme to Directors of the Wemmer Gold Mining Company, p.475, 14 December 1892.

of another company, as had been done in the case of the Ferreira and Worcester Companies.<sup>104</sup> As was pointed out by the South African Mining Journal, close co-operation with neighbouring mines could only result in considerable cost savings. Among those savings envisaged by this publication were the possible connection of the levels of various mines, which would, amongst other things, greatly assist in the matter of ventilation. It was recognised that any revision of mining regulations would more than likely call for all mines to be in possession of at least two shafts linking all the levels of the mine. Both the Wemmer and the Worcester Companies would, in terms of such regulations, be forced to sink a second shaft. The connection of levels between various mines would overcome this requirement and could also reduce hoisting costs if a company assisted its neighbour in the raising of the ore.

Amalgamation between the Wemmer and Ferreira Companies was once more given serious attention by Wernher, Beit and Company and the Johannesburg office towards the end of 1892. By now these firms had a large holding of Wemmer shares and hardly any in the Ferreira Company.<sup>105</sup> Their sentiments towards the Ferreira Company verged on hostility and Wernher's comment, "I would give a great deal to make the latter [Ferreira Company] disappear from the lists", expresses that feeling very well.<sup>106</sup> A great deal of the fluctuation in the attitudes of H. Eckstein and Company and their London principals was the result of the short term, and thus often conflicting, information received about particular mining properties. We have already commented on the promise of high yields which rekindled their interest in the Wemmer Company. In contrast, calculations made by the manager Johns in November 1892 poured chill into the capitalists' hearts. Only 200 000 tons of payable ore remained in the mine and given the quality of that ore, the ruling market price of the Company's shares at £5 was given as being too high. The advice was to sell.<sup>107</sup>

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104. See below, Chapter V, p.164, and South African Mining Journal, Vol. I, 26, p.461, 26 March 1892.

105. See below, Chapter V, pp.188ff.

106. H.E.58, Wernher, Beit and Company to H. Eckstein and Company, p.492, 24 December 1892.

107. H.E.151, L. Phillips to Wernher, Beit and Company, p.264, 19 November 1892.

Amalgamation now had the added incentive of an attempt to prolong the lives of both mines while also serving to lower their working costs. By May 1894 the main reef was proving payable in the lower levels, so much so that a further life of seventeen years was confidently predicted for the mine.<sup>108</sup> But as London complained, "The news about this mine changes every few weeks,..."<sup>109</sup> making it difficult to attempt any broad strategy towards the Company, and perhaps more important, successfully to undertake lucrative arbitrage deals in its shares. Thus London was frequently caught on the wrong foot. For example, in January 1895 it had mournfully to report, "We are not prepared for such results of course. We have no shares to sell. We could not hold any with your news."<sup>110</sup>

The interesting and important point which emerges from the above is to query the cause of such conflicting information. It is inevitable that in any mining venture the value of unopened reef or ground remains unknown. In these circumstances it is necessary to open up considerably more reef than is required for immediate crushing, in order that selective mining can take place to meet or maintain a relatively constant yield.<sup>111</sup> The controlling firm in the group, namely, Wernher, Beit and Company would appear to have been only indirectly interested in actual mining activity. Their chief concern was in the manipulation of the financial environment of Johannesburg and thus they attempted to apply the same criteria for judging information from the mines as that from the stock exchange. Short term fluctuations are the essence of stock exchange speculation, but the same cannot be said for mining activity. The result was evident in the sometimes violent shifts in the approach and attitude of London, and hence of the local Johannesburg office, towards particular mining ventures. While these shifts were not always immediately felt by the mining companies involved, some influence on their development was inevitable. This point will again

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108. H.E.59, Wernher, Beit and Company to H. Eckstein and Company, p.455, 26 May 1894.

109. H.E.60, Wernher, Beit and Company to H. Eckstein and Company, p.49, 31 August 1894.

110. H.E.61, Wernher, Beit and Company to H. Eckstein and Company, p.38, 10 January 1895.

111. See above, Chapter III, pp.91 - 92 for an example where insufficient opening up of the reef resulted in difficulties for the Simmer and Jack Gold Mining Company.

be considered in a later chapter.<sup>112</sup>

An immediate example of the influence of such actions in London on a Rand company is that of the ebb and flow of attempts to amalgamate the Wemmer with other companies. In 1892 Wernher, Beit and Company were anxious to be rid of their commitments in the Ferreira Company, not because of any immediate or inherent weakness in the mine, but because they had grown apprehensive regarding the size of their investment in the venture. The short-sighted reaction was to reduce their shareholding in the Company to a minimum and to encourage their financial connections in Europe to follow suit.<sup>113</sup> The liquidation of the Ferreira Company and its merger with the Wemmer, while on one level having very definite economic advantages, would also salve the consciences of the London principals who remained convinced that the Ferreira mine was over-capitalised and that they had given the lie to their financial "friends" regarding the venture. It is interesting to note that despite the near hysteria of the London firm, friends like Rodolphe Kann and the Rothschilds saw fit to retain a significant interest in the Ferreira Company.<sup>114</sup> Once more the proposals for amalgamation between the two companies came to naught, largely because Wernher, Beit and Company had relinquished their shareholding in the Ferreira Company.<sup>115</sup>

The extent of the reorganisation of the Wemmer mine can be gauged from the expenditure over the period of 1892-93 which, while incomplete, had already absorbed £79 530 by August 1893. An amount of £23 592 was spent on the development of the mine, including in the sum the cost of sinking a new main incline shaft on the south reef; £25 675 on machinery and plant, in addition to the £11 811 spent towards acquiring a new forty stamp Fraser and Chalmers mill; £4 672 on buildings; £2 943 on a concentration plant of thirty Frue Vanners; £1 897 on underground and surface tramways and trucks; and finally £2 047 on "general improvements".<sup>116</sup> Nor was the expenditure complete. By

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112. See below, Chapter VI, p.204.

113. See below, Chapter V, pp.166ff.

114. See below, Chapter V, pp.168-69.

115. H.E.58, Wernher, Beit and Company to H. Eckstein and Company, p.449, 17 January 1893.

116. South African Mining Journal, Vol. III, 3, p.42, 21 October 1893.

April 1894 it was decided, that given the failure of the amalgamation negotiations with the Ferreira Company, the Wemmer should have its own cyanide plant,<sup>117</sup> for which a further amount of £30 000 was allocated.<sup>118</sup> The new working plan and the bulk of the equipment recommended by Johns in February 1892 were in operation by April 1894, work at full capacity with the new forty stamp mill only beginning in December 1893. The general efficiency of the new battery is indicated in its increased crushing capacity of 3,79 tons per stamp per day, as compared to the 2,53 tons with the old battery.<sup>119</sup>

What distinguishes Johns's reorganisation of the mine from those which went before was that with the exception of the amount of £21 750 raised from the sale of the 8 700 reserve shares, the rest of the capital requirements were generated from the working profits of the Company. Thus the capital of the Company remained at £55 000 throughout the period. By 1895 the Wemmer Company was able to boast the third lowest nominal capital of any main reef company, which also meant that substantial dividend payments were possible once the reorganisation was completed. The first of these payments since 1891, for 20s. a share or 100 per cent on the issued capital was paid on 30 June 1895.<sup>120</sup>

Amongst the improvements instituted by Johns perhaps none was more significant than the system for the regular sorting of the ore, whereby a large percentage of the barren rock, mixed into the ore in blasting and mining operations, was removed from the ore before crushing. The result of this operation was a reduction in milling costs, as less ore was crushed for a given return of gold, and the yield per ton was raised proportionately. In April 1894 it was calculated that sorting raised the yield per ton crushed by 4,356 dwts. per ton. In the half year ending February 1895 some 37,57 per cent of the rock brought to the surface was thrown out. Johns confidently predicted that this figure could be raised to nearly 50 per cent.<sup>121</sup> Sorting was introduced as

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117. H.E.59, Wernher, Beit and Company to H. Eckstein and Company, p.394, 13 April 1894.

118. South African Mining Journal, Vol. III, 29, pp.449-50, 13 April 1894.

119. Goldman, C.S., South African Mines: Their Position, Results and Development, Vol. I, p.454. (1895-96),

120. Ibid.

121. Ibid., p.448.

early as September 1892 and alone would have contributed significantly to the profitability which allowed for the more rigorous and complete reconstruction to take place.

Ore sorting presupposed a proportionate increase in the scale of mining operations if the mine was to keep pace with the enhanced size of the mill and the fact that a considerable quantity of rock was now rejected. To a certain extent Johns was fortunate here in inheriting the work of his predecessor. The demand for increased efficiency in the mine was also prompted by the 66,75 per cent increase in the stamping capacity of the mill. The increased output of the mine is reflected in the table below, which also indicates the lower ore quality which could be worked at this scale of operations:<sup>122</sup>

Increased Scale of Operations 1890-95

Half year ending	Tons mined	Tons milled	% sorted out	Total yield ozs.	Total per ton milled dwts.	Total per ton mined dwts.
Feb. 1890	2989	2989	0	2451	16,40	16,40
Aug. 1890	4020	4020	0	3051,80	15,18	15,18
Feb. 1891	4431	4431	0	4719,60	21,30	21,30
Aug. 1891	6803	6803	0	6274,75	18,45	18,45
Feb. 1893	12347	10822	16,00	9648,30	17,80	15,63
Aug. 1893	15344	12913	16,66	11506,96	17,82	15,00
Feb. 1894	25103	18891	27,80	12029,95	11,03	9,58
Aug. 1894	42673	27640	35,14	16659,60	12,05	7,81
Feb. 1895	49573	29535	37,57	19110,21	12,94	7,71

Another indication of the increased scale of operations is reflected in mine development. By the end of 1891, or some 57 months after the commencement of mining, development of the 300 foot level was just beginning. By June 1895, or 40 months later, an entire new shaft had been sunk to a depth of 950 feet while the 300, 400 and 500 foot levels were completely opened up and the 620, 720 and 830 foot levels had experienced considerable development. By the latter date 108 017 tons of ore were

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122. Ibid., pp.448, 453, and Goldman, C.S., op.cit. (1892), Appendix, p.55B.

developed, equal to 68 000 tons of clean reef for the mill once sorting had taken place.<sup>123</sup>

Also contributing to an increase in the returns per ton milled were the systems introduced to further process the tailings. The first to be instituted in 1893 was a set of Frue Vanners, which concentrated the heavier solid particles from the sludge of the tailings after these had passed over the amalgamation plates. The amount and value of the concentrates caught by these vanners is reflected in the table below:

Return of Concentrates

Half year ending	Total ore crushed tons	Concentrates caught tons	Concentrates			Conc. as % of total ore crushed
			ozs.	dwts.	grs.	
Feb. 1893	10822	180,15	7	13	8,17	1,665
Aug. 1893	12913	255,75	8	10	9,30	1,748
Feb. 1894	18891	422,37	5	9	19,2	2,236
Aug. 1894	27640	618,00	5	3	1,76	2,236
Feb. 1895	29535	800,00	6	3	0	2,709

A better reflection of the value of the vanner can be gathered from a consideration of the contribution made to total revenue:<sup>124</sup>

Contribution of Concentrates to Total Revenue

Half year ending	Value of Gold Amalgamation	Value of Gold Concentrates	Total Revenue	Conc. as % of Amalg.	Conc. as % of Revenue
	£.s.d.	£.s.d.			
Feb. 1893	35174. 1.3	4136.18.0	41925. 1. 0	11,76	9,87
Aug. 1893	42309.19.6	6427.18.4	55736. 7.10	15,19	11,53
Feb. 1894	43773. 3.1	6639. 6.0	52829.19. 1	15,17	12,57
Aug. 1894	60453.19.6	9185. 7.1	69724. 6. 7	15,19	13,17
Feb. 1895	69813.19.7	16090.19.4	99269. 0. 6	23,05	16,21

From these figures it can be seen that the efficiency of the Frue Vanners was steadily improving throughout the period, not only in the total amount of concentrates caught as a function of the total ore milled, but also in the value of these concentrates to revenue. Subsequently, in September 1894 a cyanide plant, capable of processing 4 000 tons of

123. Goldman, C.S., op.cit. (1895-96), pp.447-48.

124. Ibid., p.452.

tailings per month, was taken into operation.<sup>125</sup> The plant incorporated the latest technology in the field, and the result of this additional process for the winning of gold is reflected in the steady improvement in the yield from the ore:<sup>126</sup>

Yield of Gold per Ton of Ore

Date	Yield in dwts. per ton
Sept. 1894	9,99
Oct. 1894	10,80
Nov. 1894	12,17
Dec. 1894	15,89
Jan. 1895	13,93
Feb. 1895	14,13
Mar. 1895	16,09
Apr. 1895	15,31

The increased scale of operations in mining and milling as reflected above, together with the improved yield as a result of sorting, concentrating and finally, cyaniding, all contributed towards the successful operation of the Company in the period after 1892. The importance of these factors becomes even clearer when an analysis of costs is made. Commenting in April 1894, the South African Mining Journal still found costs to be unacceptably high,<sup>127</sup> despite the reflection of a profit of £11 26s. 9d., or of 40,96 per cent on the nominal capital per annum for the half year ending 28 February 1894. The Journal quoted working costs per ton for the period as amounting to 38s. 7,59d., down from 47s. 9d. for the previous half year, figures drawn from the half yearly report. It was felt that a figure of 35s. per ton was a more reasonable cost level, given the state of the equipment on the mine. The Journal also, however, criticised the method used for calculating costs suggesting that these should be determined upon the amount of ore put through the mill rather than on the quantity raised to the surface. Calculated in this way costs were nearer 44s.

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125. South African Mining Journal, Vol. III, 51, p.899, 22 September 1894.

126. Goldman, C.S., op.cit. (1895-96), p.449.

127. South African Mining Journal, Vol. III, 29, p.449, 21 April 1894.

per ton. The profit of £11 264 15s. 9d. is also significant when reflected against the report that the yield per ton had fallen by 28,56 per cent compared to the previous half year.<sup>128</sup> At a gold price of 72s. 6d. this meant a return of 46s. 1,75d. per ton, so that profit per ton fell to somewhere between 7s. and 2s. per ton depending on how the costs are calculated.

Using the figures quoted by Goldman for costs, less the amount allowed for depreciation, and the figures given for the tonnage of ore mined and milled, some idea of the cost structure for the period between February 1893 and February 1895 can be gained:<sup>129</sup>

Production Costs per Ton

Half year ending	Tons mined	Tons milled	Total Costs less deprec.	Costs/ton mined	Costs/ton milled
Feb. 1893	12347	10822	£ 27634 12.11	44,76s.	51,07s.
Aug. 1893	15344	12913	33942 12.10	44,24s.	52,57s.
Feb. 1894	25103	18891	40626.12.00	32,37s.	43,01s.
Aug. 1894	42673	27640	52572 6.11	24,69s.	38,11s.
Feb. 1895	49573	29535	60405 4. 3	24,37s.	40,90s.

These figures, like any for this period of mining history, are not necessarily accurate, as no pressure was exerted on companies to publish correct statistics. They do, however, give us some idea of the magnitude of working costs over the period.

By August 1894 the directors instructed Johns to report on the possible remaining life-span of the mine. The rate of development and the relatively small size of the property raised this as a pertinent issue. In his report, Johns noted that the south reef and the main reef leader remained payable throughout the depth of the property, the south reef actually improving in quality with depth. On the basis of a stamping capacity of forty stamps, and a rejection rate of forty five per

128. The figures quoted by the South African Mining Journal are 17,82 dwts. and 12,03 dwts. for the half-years ending August 1893 and February 1894 respectively. These do not correspond with the figures printed in Goldman (1895-96) and used elsewhere in the Chapter. Using Goldman's figures the decline is 38,10 per cent.

129. Goldman, C.S., op.cit. (1895-96), pp.442-43.

cent of the ore mined, Johns estimated a further life of eight years for the mine. The critical factor for an extension beyond that time was the value of the main reef. Johns estimated that the intrusive dyke would clear below the 650 foot level, when if the main reef proved to be about four feet thick and payable, the life of the mine could be increased to about fifteen years.<sup>130</sup> These calculations did not take into account the 34 claims which the Company held in connection with its water right and bewaarplaatsen, but did include the 1,3 claims acquired from the liquidators of the Salisbury Extension Gold Mining Company, for an amount of £1 499 5s. 1d. in the half year ending 28 February 1894.<sup>131</sup> By February 1895 the only debt outstanding was an amount of £20 274 for claims, which would suggest that the Company was purchasing property and that Johns' calculations were made for a property somewhat larger than that with which the Company was formed. As we know, the Company owned a narrow line of claims linking its water right to the main property, while the 23 claims of the water right and the eleven bewaarplaatsen claims had by 1895 become a valuable deep level interest.

Thus by 1895 the successful development of the mine under the management of Johns had turned the Company from an organisation struggling for its existence, into one which was capable of producing substantial profits and which now sought to maximize its productive capacity through the expansion of the size of the property.

What distinguishes Johns' management from that of his predecessors is the shift in emphasis away from direct cost minimization to the maximization of output. Johns clearly appreciated the advantages to be gained from this approach and spared no costs in re-equipping the mine in order to achieve it. With regard to the mine itself, his attitude and approach are clearly exemplified in the rapid development of the lower levels to build up a substantial ore reserve, and in the sinking of an entirely new main shaft to expedite the attainment of his objective. In milling, his acquisition of the new forty stamp battery, the concentrating, and subsequently the cyanide plant, were all geared towards obtaining a maximum yield of gold per ton of rock worked.

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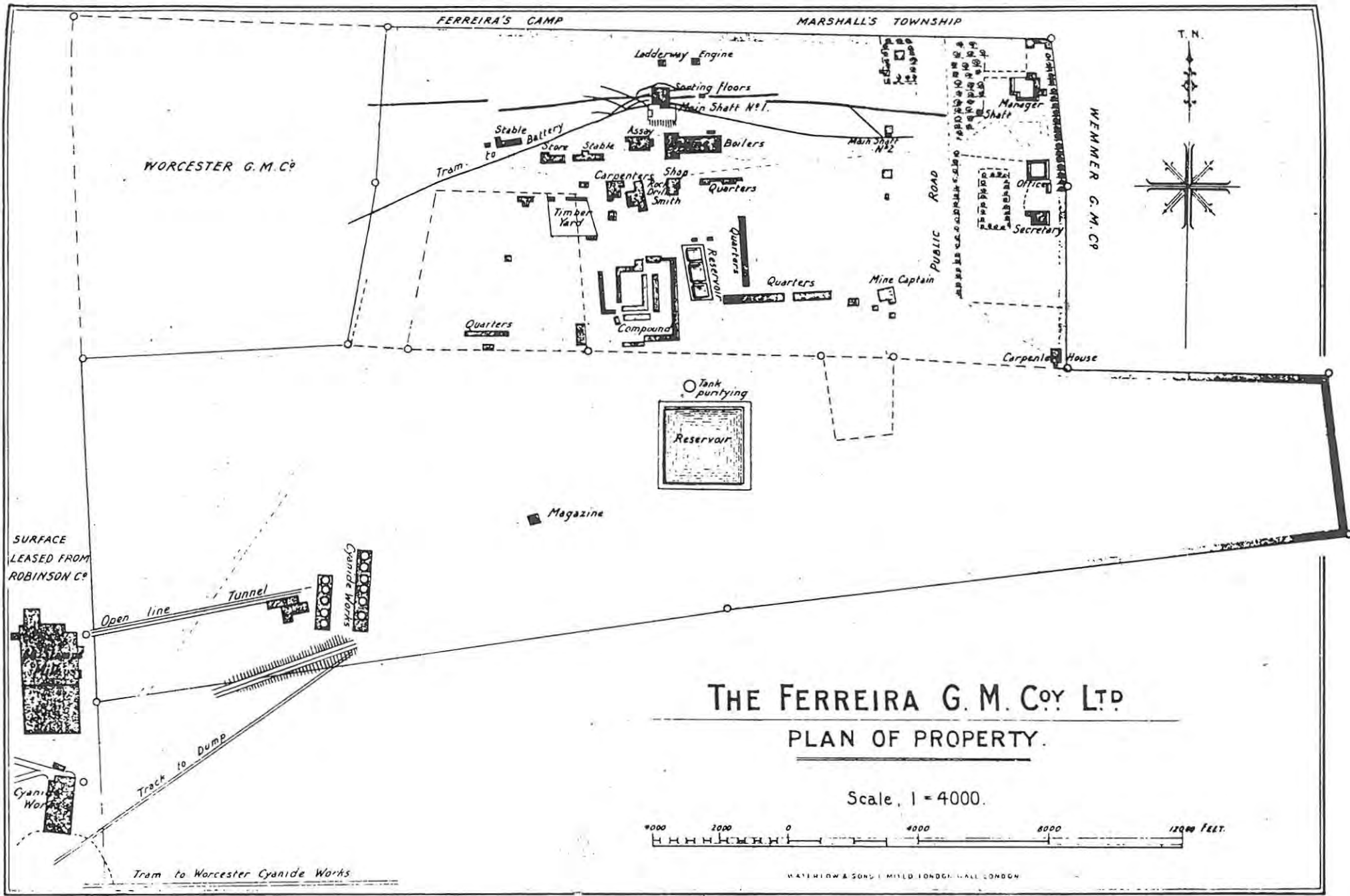
130. Ibid., pp.453-54.

131. South African Mining Journal, Vol. III, 29, pp.448-50, 21 April 1894.

The most effective innovation for the reduction of costs, and one which cannot be too strongly emphasised, was the system for the sorting of ore. The rejection of thirty per cent or more of the ore which would otherwise have passed through the mill was not only an effective means for reducing milling costs but also contributed significantly to the viability of the concentrating plant and cyanide works. A more dilute form of concentrates and tailings, in the sense of containing less gold, would have raised the costs of operating these processes significantly. On the other hand, the system of sorting can also be viewed as a means of maximizing output per ton of ore milled. Seen in this way the process raised not only the cost per ton of ore milled but also the cost per ton mined, as up to thirty or forty per cent more ore and rock had to be mined to maintain crushing rates in the mill. For the system to have been adopted the saving in milling, concentrating and cyaniding costs, must have outweighed the additional mining expenses.

The fact that total costs remained high throughout Johns' management suggests that any analysis of gold mining history which concentrates on cost structures only is likely to be misleading. The single pursuit of output maximization and the resultant profitability as a result of lower marginal costs, suggests that a more cautious, balanced, approach is needed.

By 1895 the Wemmer Company had emerged as a potentially prosperous company, capable of returning its shareholders' capital as dividend payments many times over.



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FERREIRA'S CAMP

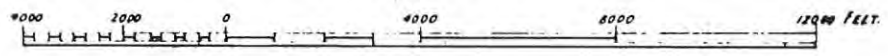
MARSHALL'S TOWNSHIP

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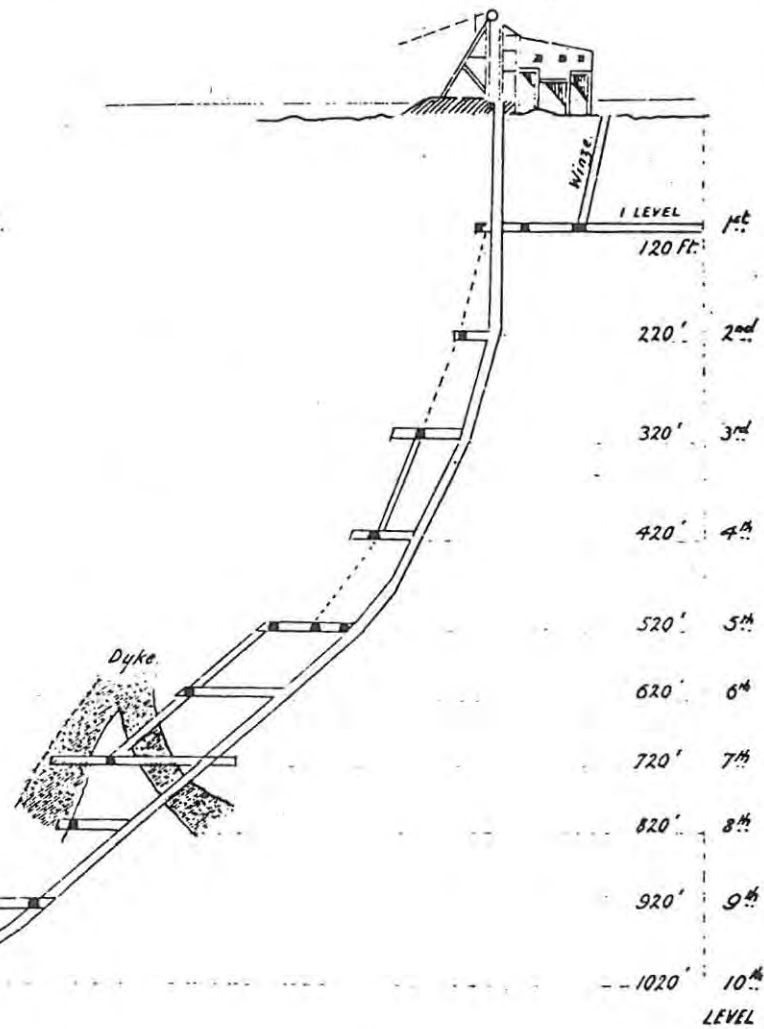
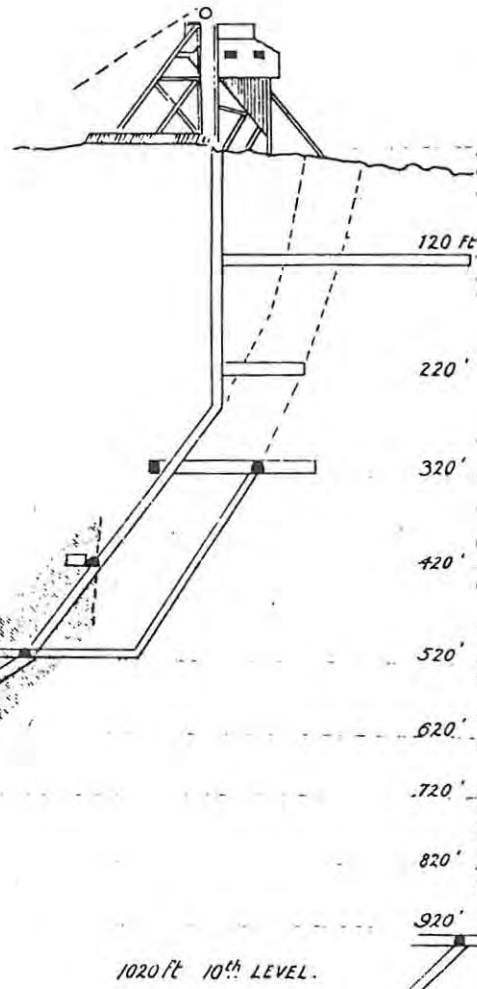
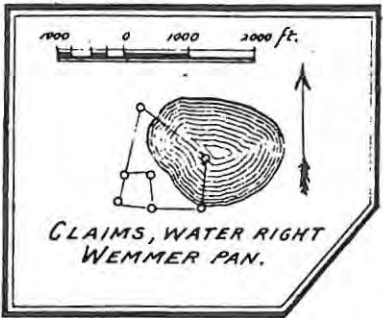
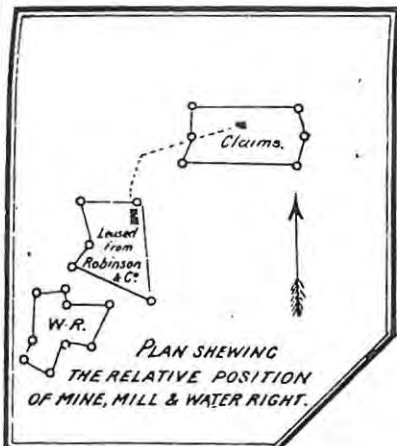
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## CHAPTER V

## THE FERREIRA GOLD MINING COMPANY

In June 1886 Colonel Ignatius Ferreira outspanned his wagon near the outcrop of the main reef on the farm Turffontein. In time the settlement which grew up around his camp site became known first, as the "Pretoria Camp" and subsequently as "Ferreira's Camp". Following the proclamation of the farm as a public diggings on 8 September 1886, Ferreira pegged out certain claims which were destined to become part of the property of the Ferreira Gold Mining Company, one of the best dividend-paying outcrop companies. Jeppe writes that as early as mid-July a start was made on opening up the outcrop on what were later the Ferreira and Wemmer mines.<sup>1</sup> The extent to which this "opening up" went beyond the accurate determination of the position of the main reef and its leader reefs is difficult to establish. J.B. Taylor suggests that as late as the early months of 1887 the reef on the Ferreira claims had only been penetrated to a depth of ten feet.<sup>2</sup> In terms of the Gold Law of the South African Republic it was essential to show evidence of mining operations on at least one of any block of claims, if claim-jumping was to be forestalled. It would thus seem that only the necessary minimal activity was undertaken in advance of the earlier exploratory digs on the claims between September 1886 and May 1887.

Like most of the initial claimholders, Ferreira lacked the necessary capital and number of claims to promote a gold mining company on his own. The pattern which was reproduced so often on the Witwatersrand field thus followed, with the creation of a promotion syndicate. The members of the syndicate were, Colonel Ferreira, Carl Hanau and the two brothers G.H. and F.H. Barber.<sup>3</sup> The exact ownership and financial apportionment of the syndicate are not known. Early in 1887 Cecil John Rhodes and Alfred Beit held the option to purchase the syndicate's claims. The purchase price was £30 000. J.B. Taylor recalls that Rhodes, Beit, Gardiner Williams and himself journeyed from Pretoria to inspect the

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1. Jeppe, C.B., Gold Mining on the Witwatersrand, Vol. I, p.20.
  2. Taylor, J.B., A Pioneer Looks Back, pp.112ff.
  3. Cartwright, A.P., The Corner House, pp.59ff.

claims. Taylor was responsible for taking samples which, on being assayed, were found to contain between one and one and a half ounces of gold to the ton of ore, presumably from the leader reefs, as the main reef was very poor on this property. Rhodes remained sceptical and asked for Williams's opinion. Williams accurately predicted that at a depth of between one hundred and two hundred feet the nature of the ore would change from its oxidized, free milling state to a sulphide condition. Mining would then require more sophisticated reduction machinery which would substantially raise working costs. The increase in costs could well render operations on such a small property unprofitable. In addition, Williams noted the lack of an adequate water supply.<sup>4</sup> As a result of this prognosis Rhodes again hesitated<sup>5</sup> and the option was allowed to lapse.

Having found no suitable offers, the syndicate decided to undertake the establishment of a mining company to work the property themselves. The Ferreira Gold Mining Company was duly formed in May 1887 with a modest nominal capital of £12 000.<sup>6</sup> The vendor syndicate took 6 000 of the £1 shares as payment for the property, the balance of 6 000 shares being fully subscribed by the local Witwatersrand and Pretoria populations. The extent of the property at this stage was nine claims on the line of the main reef, each being 150 feet in length and 400 feet in width. The reef on the property dipped down at an angle near the surface close to ninety degrees to the horizontal. Under these circumstances the promoters saw little reason for involving themselves with claimholders to the south of their property, and there was, as yet, no knowing how far down the reef extended. The purchase of the greater part of the share issue in the Transvaal was favourably commented on by the Grahamstown newspaper, The Eastern Star, which suggested that the local population were in a good position to know and judge the value of a property.<sup>7</sup>

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4. Taylor, J.B., op.cit., pp.112ff.

5. For further evidence of Rhodes's hesitant approach to gold mining see Sauer, H., Ex Africa, pp.104ff.

6. Goldman, C.S., The Financial, Statistical, and General History of the Gold and Other Companies of Witwatersrand, South Africa, p.viii (1892).

Taylor, J.B., op.cit., incorrectly states that the capital of the Company was £33 000 of which the vendors took £30 000 in shares, "which left £3 000 for proving the mine."

7. The Eastern Star (Grahamstown), 18 April 1887.

The commencement of full mining and milling operations was delayed due to the non-arrival of the mill. Thus while newspapers reported the early and spectacular progress of mines like the Wemmer and the Jubilee, the Ferreira simply continued to "take out the reef".<sup>8</sup> In part the delay was inevitable. The formation of the Company in the autumn month of May meant that by the time its orders reached Europe and were responded to, the South African winter had set in, reducing the grazing for the oxen which powered the only form of transportation from the railway terminals or the coast. The arrival of some machinery was reported in July but crushing with a five stamp battery, bought locally to placate shareholders, only commenced on 2 September 1887.<sup>9</sup>

The delay in the arrival of the ten stamp Sandycroft mill ordered from overseas proved fortuitous. The site chosen for the erection of the five stamp battery in the winter and spring of 1887 seemed firm enough but following the good spring rains, which also flooded the open workings and generally retarded mining operations, it was found that the site chosen was on unstable, marshy ground. By 7 November the foundations were no longer sufficiently firm to ensure the continued safe operation of the mill. The decision was thus taken to relocate these stamps a short distance of twenty yards from the original site on higher ground where a solid rock foundation existed.<sup>10</sup> It was generally considered a sound practice on the Witwatersrand to locate mills at a lower level than the pit head or quarry lip in order to facilitate the transport of ore. Likewise the early mills were nearly always located in close proximity to the water supply. In both respects the Ferreira's management seems to have been too ambitious. Cartwright points out that the Company did not wait for the water to come to it and erected the mill on the Sans Souci water right on the farm Braamfontein, some two and a half miles from the mine.<sup>11</sup> As Braamfontein lies to the north-west of the position of the mine it is difficult to imagine a route between the two points which did not involve an inclined slope from the mine to the water right, which lay on the opposite side of the Witwatersrand ridge. The choice of a water right so far from the mine could only have been

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8. The Eastern Star, 3 June 1887.

9. The Eastern Star, 5 September 1887.

10. The Eastern Star, 7 November 1887.

11. Cartwright, A.P., op.cit., pp.59ff.

motivated by the known permanence of the flow of the Braamfontein Spruit.

Prior to the arrival of the machinery and the commencement of operations with their own mill, a test crushing of 113 tons of the Company's ore was made at the Struben's Wilgespruit battery. The Struben mill was the only existing one in close proximity to the Witwatersrand following the discovery of gold there, and it was thus involved in test crushings for many of the early companies.<sup>12</sup> A yield of 109 ounces was received from material reputed to be a mixture from the various reefs on the property.<sup>13</sup> Johnstone, the first mine manager, was a conscientious worker, if not a good miner. By the time the first five stamps came into operation in September 1887 a vertical shaft had been sunk to a depth of 63 feet from the surface and drives were being cut to meet the reef,<sup>14</sup> Nevertheless, most of the work was still being done by quarrying the ore from along the line of reef. In this way a considerable reserve of some 100 loads or more of ore was built up at the mill site.<sup>15</sup> A battery shed was completed during September which allowed for day and night crushing virtually from the commencement of operations until the mill closed down in November 1887. Illumination for the night work was supplied by means of oil lamps. Concentrators were also used, although exactly which type was not specified, the press report stating only that they were of "an American patent so perfect in its operation that the possibility of loss [of gold] in the tailings was reduced to a minimum."<sup>16</sup>

The relocated battery, together with the ten new stamps, started crushing operations on the afternoon of 29 December 1887, the premises not yet being quite complete.<sup>17</sup> The mill ran for only three weeks before again closing down. The reason given for this decision was that the results were not sufficiently encouraging to justify the continued operation of the mill. With ore which supposedly assayed at over one ounce to the ton, the decision must have come as a great surprise to early Johannesburg. The board also decided to "make a clean sweep of

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12. See above, Chapter II, p.31. ,

13. Mathers, E.P., The Gold Fields Revisited, p.287.

14. The Eastern Star, 24 August 1887, and 5 September 1887.

15. Mathers, E.P., op.cit., p.287.

16. The Eastern Star, 17 October 1887.

17. The Eastern Star, 30 December 1887.

its battery employees."<sup>18</sup>

A more probable explanation for the board's action was that they had exhausted their limited working capital. The reason offered by the board was short-sighted in the light of the influence any such statement must have had on the price of Ferreira shares at a time when the manipulation of the local stock exchange was as important to directors as was the mining of gold.<sup>19</sup> A more detailed explanation subsequently followed at a special general meeting of shareholders held on 24 February 1888.<sup>20</sup> The chairman, Mr W.J. Quin, elaborated that the yield from the mill in no way corresponded with assays taken from the ore awaiting crushing. An inspection of the battery after the dismissal of the battery manager and his staff revealed leakages from the mortar boxes. An assay of the material returned an average value of 16 dwts. 9 grs. per ton, an amount in excess of that being caught by the amalgam plates. On the strength of this evidence the directors decided to appoint a mining engineer, Mr T.W. Farrell, to investigate the condition of the mill. His report confirmed that the leakages were due to "the defective manner in which the plates were fixed", and suggested considerable repairs and additions before the mill could again be taken into use.

In response to these allegations the former manager, Johnstone, retorted that there were two classes of ore stacked at the mill and claimed that samples of the rich ore were taken for the directors' assay, while he was occupied in crushing the poorer material. Again, he alleged, the tailings mentioned by the chairman were taken from stamps then being used by a Mr Easterbrook for experiments with a "float-gold machine". These counter-charges were not denied by the directors and the subsequent delays in the recommencement of crushing operations suggests a motive other than managerial incompetence as the true cause for the shut down. A regular check on the operations of the mill would have very soon shown up such a leakage and resulted in a call for repairs or readjustment. The alternative inference, of the manager being involved in pilfering, would surely have resulted in prosecution. Also, any truth in the directors' allegations is certainly an indictment of them in the execution of their functions and responsibilities to the share-

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18. The Eastern Star, 1 February 1888.

19. See above, Chapter II, pp.36ff.

20. The Eastern Star, 27 February 1887.

holders. J.B. Taylor suggests that the staff were fired as part of a restructuring of the Company under the guidance of H. Eckstein and Company.<sup>21</sup>

More telling as to the true cause of the closure of the mill were the statements of the chairman to the special meeting, stressing the bleak financial position in which the Company found itself. It was made quite clear that without an infusion of fresh working capital it would be impossible to undertake any further operations on the property. The dismissal of the manager and staff of the mill obviously reduced the expenses of some of the highest paid employees from the Company until the finances necessary for continued operations could be found. Johannesburg at this time enjoyed a surplus of people claiming to have experience as managers and amalgamators, so that the task of filling their positions, when circumstances required, would be relatively simple.

The disproportionate cost of salaries and wages is borne out in the financial report for the year ending 31 March 1888. This component constituted an amount of £2 185 16s. 3d. out of a total expenditure of £3 923 16s. 8d. Income from gold sales and transfer fees amounted to £1 683 12s. 7d., leaving a deficit on the profit and loss account of £2 044 9s. 1d. It was Johnstone's misfortune to have run his mine in such a manner that he was able to present his employers with an excuse to fire him. Likewise, the directors undoubtedly felt that little good would come of allowing the Company to slip deeper into debt before a thorough investigation was made of the future potential of the property. It would seem that Johnstone was given reasonable opportunity to produce the good results which would have raised Ferreira share prices and allowed the directors to manipulate the market in order to raise fresh working capital. His failure to work only the richest ore, as was general practice on mines such as the Wemmer,<sup>22</sup> and his inability to work poor ore well, resulted in his downfall. A sense of integrity and a lack of amalgamating skill made a poor combination for management on the early Witwatersrand.

Another factor which must be considered as a possible influence on the decision to suspend operations, is the shift in the shareholding and

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21. Taylor, J.B., op.cit., pp.112ff.

22. See above, Chapter IV, pp.109ff.

consequent change of directorships which occurred about this time. In October 1887 three of the directors, Messrs Neumann, Wolhuter and Bennett, resigned in favour of Messrs C. Hanau, J.B. Taylor and W.J. Quin, while Quin also succeeded Bennett as the managing director.<sup>23</sup> The appointment of J.B. Taylor to the board heralds the beginning of the long association between the Ferreira Company and the firm of H. Eckstein and Company.

Taylor was not happy with Beit's decision to drop the option on the Ferreira claims which he and Rhodes had exercised earlier in 1887. Taylor felt the mine could become a profitable venture and with Beit's approval began buying up shares in the Company. By October he held sufficient to ensure himself a seat on the board.<sup>24</sup> In his autobiography Taylor asserts that upon gaining control of the Company, H. Eckstein and Company dispensed with the services of the manager and restructured the board,<sup>25</sup> which would account for the election of C. Hanau and W.J. Quin, two men frequently given minor interests in the ventures of H. Eckstein and Company. The turnover in directorships during the first year of the Company's existence was high, some seven men serving on the board of five in this time. Ferreira was the only member of the original board to survive the first year, being disqualified on 3 July 1888,<sup>26</sup> when he sold the majority of his shares in the Company.

The domination of the shareholding of the Ferreira Company by H. Eckstein and Company was soon followed by rumours of a proposed amalgamation between the Wemmer and Ferreira Companies.<sup>27</sup> The advantages of such a move were obvious and offered a solution to many of the problems

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23. The Eastern Star, 17 October 1887.

24. Cartwright, A.P., op.cit., is misled by an error of Taylor's at this point. Taylor (op.cit., p.114) mentions the purchase of some 25 000 shares in the Ferreira Company at between 30s. and 35s., causing Cartwright to comment, "He had to pay some £40 000 for the 25 000 shares ... but it was one of the most profitable transactions that Eckstein's ever made." There were only 12 000 shares in the Company at the time. The relationship between the Corner House and the Company is considered in detail below.

25. Taylor, J.B., op.cit., gives Gutman as the name of the manager at the take over and suggests that J.H. Johns replaced him. This is incorrect.

26. Goldman, C.S., (1892) op.cit., p.57.

27. The Eastern Star, 21 November 1887.

faced by these mines which, following such a step, would be able to reduce management costs and achieve other economies of scale in this way. The amalgamation of two or more of the small companies which occupied the central portion of the reef immediately to the south of the developing settlement of Johannesburg remained an objective of H. Eckstein and Company for many years, but it was only with the development of the deep level properties that this goal was reached. The rumour had little chance of being substantiated at this point as H. Eckstein and Company was not yet the majority shareholder in the Wemmer Company.<sup>28</sup> There was also the fact that while the Wemmer Company now reported spectacular results, the recent poor performance of the Ferreira Company was unlikely to encourage the interest of Wemmer shareholders to such a move. The Wemmer Company was, however, also in need of fresh working capital but was able to raise this by means of an increase in nominal capital.

One of the early moves to consolidate its hold on the Ferreira Company by H. Eckstein and Company was through the alteration of the trust deed. It was towards this end that a special general meeting was called for 17 February 1888. The number of shares represented at the meeting fell short of the three quarters of the total shareholding required for the purpose of altering the deed, an ironical situation when it is considered that the purpose of the meeting was to reduce this very figure to two thirds.<sup>29</sup> The lower figure would have given the firm a stronger hold on the Company without having to substantially increase its shareholding. The meeting was duly postponed to 24 February, when the poor financial state of the Company was used as a lever against reticent shareholders. In his speech W.J. Quin stated that before any proposition to increase the capital of the Company could be considered by the directors, they would have to be assured of shareholder loyalty, "And as one step towards the attainment of such objects the shareholders would be asked to sanction the amendments to the trust deed..."<sup>30</sup> The proposal to alter the trust deed was then carried unanimously.

The firing of the manager and 'closing of the mill at the end of 1887 marks the termination of the first phase in the history of the

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28. See above, Chapter IV, pp.112ff.

29. The Eastern Star, 20 February 1888.

30. The Eastern Star, 27 February 1888.

Ferreira Company. No production figures are available to indicate the efficiency or otherwise of the mine and mill. Likewise, the extent of development in the mine is not known. It seems probable, however, that the decision to assume a controlling interest in the Company on the part of H. Eckstein and Company would not have been based on sheer speculation of the future potential of the Company. Undoubtedly, an element of risk was a factor in gauging all mining investment but one would like to believe that the members of H. Eckstein and Company must have given some consideration to the early results of the Company, as well as those of adjoining properties, in deciding on the investment. If so, then the results could not have been uniformly bad for the potential of the property to be recognised, and the failure of the Company to establish itself can be largely attributed to the initial lack of working capital.

An important consideration which would substantiate this viewpoint is the fact that for the greater part of the development during the first ten years of the mine's existence, it was only the south reef and small portions of the main reef leader which proved payable. There was thus a far greater need on this property for rapid development of the mine to ascertain a continuity in the supply of ore, and for large scale operations to ensure a greater marginal revenue from each ton of ore mined. The required scale of operations could never be achieved with the limited capital resources available to the first management of the Company. It was this capital which the firm of H. Eckstein and Company, through its principals in London, Wernher, Beit and Company, and their Paris associates, could supply.

Confident in the prospects of the mine, the step to increase the capital of the Ferreira Company was undertaken in spectacular fashion at a meeting held on 16 April 1888, when the nominal capital of the Company was raised from £12 000 to £28 000. A small part of the increased capital, namely 4 000 £1 shares, was set aside for payment of four claims to be acquired from the Bijou Syndicate. The balance of 12 000 shares were offered to Ferreira shareholders at par.<sup>31</sup> The capital raised in this way was used for the development of the property. In the discussion on these proposals at the special general meeting, it was pointed out by Abe Bailey and others that the Bijou claims were untried and that there was no guarantee that the reef would be found

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31. The Eastern Star, 16 April 1888;

to pass through them, despite their location in line with the main reef. Disappointment in this regard had already been met with in the case of the Grahamstown and Metropolitan Companies. The offer to the Bijou Syndicate was thus altered to an outright payment of 3 500 shares, the balance of 500 being kept as a reserve. The amended proposal was carried and subsequently accepted by the Syndicate. Only 11 000 of the shares offered to shareholders were subscribed, so the reserve was increased to 1 500 shares.<sup>32</sup>

The removal of the manager and battery staff in February 1888 was soon followed by speculation and rumours as to a replacement for the manager. The Eastern Star incorrectly announced the appointment of an amalgamator at the Witwatersrand Company's mill, Mr Thomas Halliday as the new manager.<sup>33</sup> This statement was subsequently denied by the board of the Ferreira Company, and it was only in April that Mr Wells, previously employed by the Wemmer Company and supposedly "one of the most capable managers on the Randt", was appointed. It seems possible that his appointment was arranged by H. Eckstein and Company. The tenure of Mr Wells as manager was dominated by the development of the mine. The first great difficulty to be overcome was that of clearing the mine works of water. Like all the outcrop mines, the Ferreira Company had indulged in a good deal of quarrying of the outcrop ore along the line of reef. In the wet summer of 1887-88 these open workings became reservoirs, hindering further mining by this technique and causing water to percolate down into what underground workings there were. The problem persisted well into June 1888, as only a horse-whim was used to operate a system of buckets for the raising of water from the underground workings. Suitable hauling and pumping equipment was amongst the machinery ordered after the fresh infusion of capital but delivery was delayed when Johannesburg was virtually cut off from the coast during the winter of 1888.

Horse-whims were also used on the four shafts being sunk on the property. The sinking of at least two of these shafts, including the proposed main vertical shaft, was given out on contract. The contract price for the incline shaft was 28s. 6d. per foot, so the expense of the main shaft, which was also to be timbered, must have been considerably

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32. The Eastern Star, 11 July 1888;

33. The Eastern Star, 1 February 1888, and see above, Chapter II, p.32.

more.<sup>34</sup> Shaft sinking and general mining both suffered from a lack of African labour in the winter of 1888, a problem which dogged all Witwatersrand mines. Black workers, coming mainly from the Transvaal low veld and Portuguese East Africa were unaccustomed to the cold high veld winters, a feature made so much worse by the damp conditions prevailing underground.<sup>35</sup>

Much of the mine development work done during 1887 was condemned by Mr Butler, of the partnership of Jones and Butler, who was now employed as a consulting engineer. A great deal of the earlier work was undertaken without any reference to planning so that considerable expense was met with in rectifying it. The greatest expense in this regard was incurred in filling in the open workings, which in many places were over fifty feet deep. By the end of August, when Mr Wells resigned as manager, the battery while still idle, had been brought into a state of readiness. The main feature of Wells's tenure was the shaft sinking, some five shafts being opened in this time to between 23 feet and 100 feet. Development underground was limited to the opening of two winzes and by the end of July only 1 130 tons of ore were on hand.<sup>36</sup> In a letter to Rodolphe Kann in the same month, J.B. Taylor intimated that the mine had 9 450 tons of ore worth one and a half ounces to the ton, and 18 400 tons worth about half an ounce per ton, in sight.<sup>37</sup>

The slow development of the mine can be attributed to several factors. There was the labour shortage already referred to, while a second factor was the lack of adequate technology and equipment. Horse whims were no substitute for pumps and hauling engines. Likewise the development of the mine as envisaged by the consultant engineer, Butler, required substantial modification of existing workings, particularly the filling in of the trenches, which diverted labour and resources from the ultimate objective of exposing greater quantities of the ore.

As regards the departure of the manager Wells, no substantial clues exist to suggest a reason for his going. His tenure of less than five months suggests incompetence. Certainly his stay with the Wemmer Company was not sufficiently long for it to be noted in the reports of

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34. The Eastern Star, 4 April 1888.

35. See below, Chapter VI, p.229.

36. The Eastern Star, 3 August 1888.

37. Cartwright, A.P., op.cit., p.75.

any of the half yearly meetings. If it is considered that he was probably drawn away from the Wemmer Company by the offer of higher wages, there is no reason to believe that he might not once again have succumbed to the lure of a higher salary. Staff poaching was a recognised malaise as far as black labour was concerned and there seems little reason why it did not apply to skilled white labour as well, particularly where the man had a good reputation as being a competent manager.

The new manager appointed to replace Wells was Mr Iles, who had previously been a manager on the De Kaap gold field in the eastern Transvaal. He was reputed to have "considerable experience in underground mining operations"<sup>38</sup> possibly reflecting an area of weakness in his predecessor. It is quite possible that Wells was appointed in the first place for his skill as an amalgamator, considering the supposed weakness of the first manager, Johnstone, in this regard. If this was the rationale behind the appointment of Wells, it was most unfortunately timed. Wells was appointed in early April and following strenuous efforts on his part the mill stood ready to commence operations by the end of that month.<sup>39</sup> It did not run, however, for the entire duration of his tenure. The high cost of fuel due to increased transportation costs during the winter, the scarcity of labour, and the decision by the board to concentrate on the opening up of the mine, could all have left Wells in control of a situation for which he was largely inexperienced. In either case, the major consideration was the slow progress made in the opening up of the mine during his tenure, and his replacement was a man with a reputation for underground work. The Ferreira Company was not alone in experiencing the difficulties of finding a suitable manager.<sup>40</sup> Likewise it would seem to have been a problem to find one who was equally good in his control of both the mill and the mine.

One of the features which marked the development period of the Ferreira Company was the attention devoted to the surface of the property. If all was not well below ground at least the appearance of the property's surface works could be made to look respectable in the eyes of potential shareholders. By October 1888 the six monthly statement of the board announced that for the first time the property was enclosed with a

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38. The Eastern Star, 3 August 1888.

39. The Eastern Star, 27 April 1888.

40. See above, Chapter IV, pp.112,130, and Chapter II, pp.42, 45-46.

substantial fence and that all squatters had been removed. Likewise, the erection of a "Kaffir barracks" was nearing completion, so that sufficient accommodation would be provided on the mine for both blacks and whites. The provision of accommodation for whites was more than adequate, one house being converted into a blacksmith's shop. A possible reason for this situation was the close proximity of the mine to the growing settlement of Johannesburg, which could account for white employees wishing to live in the town rather than on the mine. The provision of accommodation for black workers was probably a step towards exerting greater control over their movement. It is interesting to note that, as in the case of shaft construction, the erection of the living quarters for black labourers was undertaken by a contractor. At this time the staff complement of the mine consisted of the manager, secretary, two carpenters, one blacksmith, one overseer, four white miners and fifty two black labourers.<sup>41</sup> Assuming the carpenters and blacksmith had one or two black assistants, this would give a ratio of roughly 1:12 of whites to black workers underground. An interesting insight into the extent of the development undertaken in the period following October 1888 is that by May 1890 staff numbers had increased to 35 whites, including the manager, secretary and foreman, and 250 blacks.<sup>42</sup>

In October 1888 H. Eckstein and Company informed their London principals that there was sufficient capital to continue the development of the mine for no more than another four months.<sup>43</sup> As yet, however, the opening up or development of the mine had not reached the satisfactory stage where it could continuously supply the contemplated 25 stamp mill. The requirement of the rapid development of the south reef caused the Ferreira mine to sink its workings more rapidly than most other properties on the Rand who could draw ore from more than one reef which did not slope so steeply. While the Ferreira reef sank at an

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41. The Eastern Star, 26 October 1888.

42. The Diggers' News (Johannesburg), 7 May 1890.

43. Barlow Rand Archives. Archives of H. Eckstein and Company (H.E.), Vol. 51, H. Eckstein and Company to Jules Porges and Company, p.8, 19 October 1888. The firm of Jules Porges and Company became Wernher, Beit and Company on the retirement of Porges from the partnership in 1889. For purposes of convenience the firm is referred to as Wernher, Beit and Company throughout the text.

almost perpendicular angle from the surface, at depth the angle began to decrease. This information prompted the firm to cast eyes to the area south of the Ferreira property into which mining operations could extend in the foreseeable future. In November two and a half claims were bought on joint account with C. Hanau for £1 450.<sup>44</sup> Similarly negotiations were opened for the purchase of a large water right adjoining that of the Wemmer Company on Wemmer Pan. The size and reliability of a water right was considered the determining criterion for the eventual size of the mill to be erected. Negotiations were also opened for the purchase of more south dip claims. Clearly, if it was impossible to achieve a larger scale of production through the amalgamation of the Ferreira with some other company, then it was recognised as essential to expand the scope of its own operations. Not that attempts at amalgamation were altogether abandoned.

Private negotiations behind the scenes between the Ferreira directors and the boards of the neighbouring Wemmer and Worcester Companies continued and eventually resulted in some joint activity and co-operation.<sup>45</sup> The press, ever sensitive to rumours regarding amalgamations between companies, even when not fully informed, announced in December 1888 that a scheme for the amalgamation of all properties between the Worcester and Jubilee Companies was once more under consideration by "the wealthy capitalists".<sup>46</sup> Such an amalgamation would have involved the Worcester, Ferreira, Wemmer, Salisbury, Grahamstown, Royal and Jubilee Companies. The move, if successful, would have resulted in the richest gold mining company on the Rand. The prospect alone was sufficient to send these companies' shares soaring, the price of Ferreira shares reaching £25 each on the Johannesburg Stock Exchange. It is doubtful if there was much substance to the rumour, given the financial strain the move would have placed on any initiator wishing to acquire the properties through the market, while agreement to amalgamation amongst the various companies would have faced insurmountable difficulties. It is difficult to divorce the disclosure from the prevailing boom on the stock exchange. While

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44. H.E.51, H. Eckstein and Company to Jules Porges and Company, p.147, 20 November 1888.

45. See above, Chapter IV, pp.114, 129-30.

46. The Eastern Star, 3 December 1888.

there certainly were low key negotiations in progress between various companies, the scope of the scheme published seems more akin to a blatant attempt to fuel an already bullish market. As far as the Ferreira Company was concerned, the growing co-operation with the Wemmer Company, under the watchful eyes of H. Eckstein and Company, bore fruit in a joint management scheme, while a joint milling venture was agreed upon with the Worcester Company on the Robinson Company's mynpacht.

The limited success of the co-operation schemes convinced H. Eckstein and Company of the need to expand the scope of the Ferreira Company's operations. At the beginning of 1889 the Johannesburg office was still calculating the Ferreira's operations on the basis of a 15 or 25 stamp mill.<sup>47</sup> Thereafter the scale envisaged expanded rapidly. The hint of success in negotiations for additional claims and a larger water right, together with the general confidence inspired by the rising share market of late 1888 and early 1889, swung the Ferreira board in favour of a more ambitious venture, as it did the boards of H. Eckstein and Company and their London principals. A mill of forty to fifty stamps was now considered possible. There was also the consideration of the arrival of a technically competent manager from Europe. The resignation of Mr Iles coincided with the arrival of Mr J.H. Johns on the Rand.<sup>48</sup> Johns, previously manager of the Niri Reefs Company in India, was referred to Jules Porges and Company in London who in turn offered him to H. Eckstein and Company in Johannesburg as a "very suitable person", who "understood everything about mining and milling". The Johannesburg office readily agreed to pay his passage out and his salary of £500 for the first year.<sup>49</sup> In turn he was offered to the Ferreira Company where he commenced his long and distinguished career as manager at the beginning of April 1889. Johns was a product of the Royal School of Mines and brought to South Africa twenty years of practical experience gained in the mines of Cornwall and India.<sup>50</sup> With a manager of his calibre the risks of an enlarged venture were considerably reduced. The necessity for sound

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47. H.E.51, H. Eckstein and Company to Jules Porges and Company, p.278, 18 January 1889.

48. Ibid., p.383, 15 March 1889.

49. H.E.49, Jules Porges and Company to H. Eckstein and Company, 8 February 1889.

50. The Diggers' News, 27 January 1890.

mining and technical expertise in managers was increasingly recognised by the leading financiers even before the collapse of the first Johannesburg stock exchange boom in 1889 and the following recession disciplined the industry into concentrating on mining rather than financial manipulation. The firm of H. Eckstein and Company was to play a major role in the supply of such competent men.

By the time Johns arrived on the Rand the previous managers had successfully whittled away the Company's financial resources in development which did little to prepare the mine for large-scale production. On 19 March 1889 a special general meeting of the Ferreira shareholders was called to consider the raising of the finances necessary for the envisaged expansion project. It was estimated that an amount of between £40 000 and £50 000 was needed to place the Company in a position to acquire several south dip claims and the water right on Wemmer Pan, to lay down a connecting tramway between the mine and the mill, and to erect a fifty stamp mill, besides leaving an amount sufficient to develop the mine to a point where it could effectively supply the new battery.<sup>51</sup> The meeting duly authorised the issue of a further 5 000 shares, thus increasing the nominal capital of the Company to £33 000. The funds were to be apportioned as follows: 500 shares to be given to W.J. Quin for the water right, 1 750 shares as payment for the seven south dip claims acquired, while 2 000 shares were allocated to mine development and machinery, with the remaining 750 shares held in reserve.<sup>52</sup> The claims and water right were purchased directly but it was decided to hold back the sale of the shares until more auspicious times. The collapse of the boom in 1889 was followed by a financial crisis both in South Africa and Europe, with the result that ruling share prices made such a move unwise. It was only in August 1889 that a tender for a block of 1 500 shares at £17 each was accepted from F. Mosenthal and Company, raising an amount of £25 500.<sup>53</sup> As the need for capital was pressing when the special meeting was called in March, H. Eckstein and Company offered to furnish a loan for £55 000 for the Company at eight per cent interest, with the entire property as security

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51. H.E.51, H. Eckstein and Company to Jules Porges and Company, p.383, 15 March 1889.

52. Goldman, C.S., *op.cit.*, p.61.

53. *Ibid.*, pp.57-58, and H.E.49, Jules Porges and Company to H. Eckstein and Company, 30 August 1889.

and the right of calling the reserve shares at £17 10s. at any time before repayment.<sup>54</sup> It was left to the London principals, Wernher, Beit and Company, to raise the money for the loan, H. Eckstein and Company being quite content that it would be a relatively easy task. After a personal inspection of the property in March both Messrs Porges and Kann<sup>55</sup> had expressed interest,<sup>56</sup> Rodolphe Kann stating his willingness to commit himself to a loan of £30 000.<sup>57</sup> It was, however, necessary to call a meeting of the Company to empower the board to raise the loan as the trust deed made no provision for borrowing by the Company. The bond was passed at a shareholders meeting held in June.<sup>58</sup> In the interim the London principals set about raising the amount of the loan, which was duly accumulated with the involvement of the "Paris friends", namely, Messrs Kann and Rothschild, and the Rand associate S. Neumann, erstwhile director of the Company and a man with financial links to the German banks.<sup>59</sup>

When Harry Johns assumed the management of the Ferreira Company in April 1889, he found that despite the efforts of his predecessors, little had been achieved in the development of the mine. The main vertical shaft was sunk and timbered to a depth of 120 feet, while of the four smaller shafts three were so positioned that they missed the reef. These were all subsequently turned into winzes following on the incline of the reef. In addition only 246 feet were driven on the south reef at the 120 foot level. By January 1890 Johns extended these developments by sinking an additional vertical shaft on the Bijou claims which struck the south reef at 120 feet, whereupon it became inclined to follow the reef. Likewise, a further two winzes were sunk on the original property and 1 555 feet of drives extended

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54. H.E.49, Jules Porges and Company to H. Eckstein and Company, 18 April 1889.
55. Porges, by now resident in London had undertaken a visit to Johannesburg with Kann with the intention of encouraging the French financier to invest in various Rand undertakings.
56. H.E.51, H. Eckstein and Company to Jules Porges and Company, p.374, 8 March 1889.
57. Ibid., p.436, 27 March 1889.
58. H.E.52, H. Eckstein and Company to Jules Porges and Company, p.122, 20 June 1889.
59. H.E.56, Wernher, Beit and Company to H. Eckstein and Company, p.236, 2 October 1890.

along the south reef and 265 feet on the main reef. The main shaft was also lowered 92 feet below the 120 foot level at the greater size of 14 feet by 5 feet, as opposed to the 12 feet by 4,5 feet above that level. The number two shaft was lowered to a depth of 178 feet with similar dimensions. Both shafts were timbered throughout and were intended eventually to follow the incline of the reef.

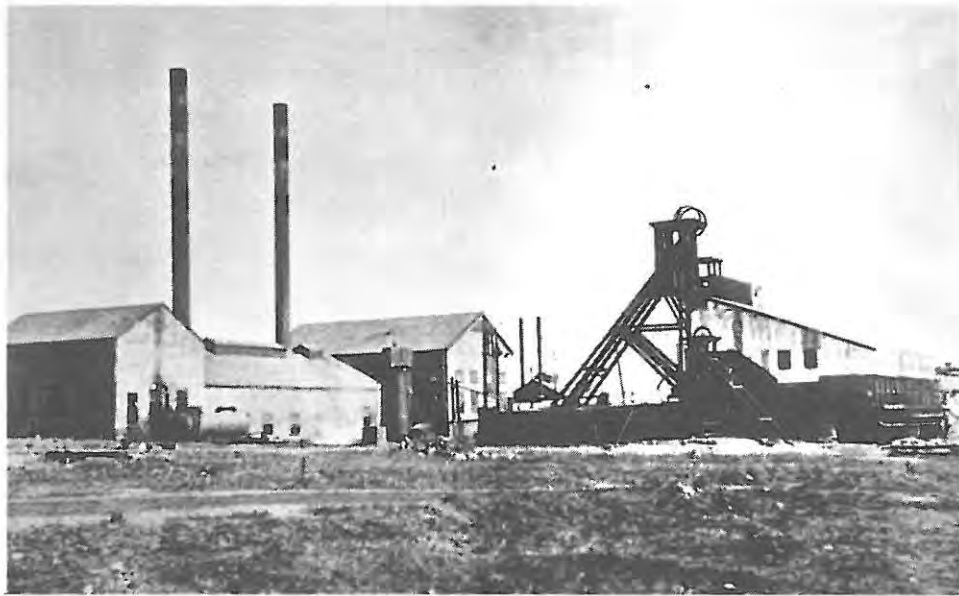
One of the major technical problems encountered by Johns in the underground workings was the faulting which occurred in the reef. The south reef was discovered to be faulted in at least seven places in the area exposed by January 1890. Five of these were ordinary faults but the remaining two were overlap or reverse faults, caused by an intrusive dyke which cut the reef obliquely and threw the reef 35 feet to the south and 25 feet to the north respectively, while causing an overlap of 69 feet and 50 feet at the ends. The reef was successfully relocated with a minimum of profitless driving by the careful measurement of the dip and direction of both reef and fault at each point of fracture. This type of problem caused weeks of delay to previous managers. As it was, the extent of operations undertaken in the first few months of Johns's tenure was staggering by comparison with those of his predecessors. Nor were surface activities ignored. By January 1890 the site for the new battery had been chosen and prepared for the arrival of machinery. This work, however, was put out on contract, but the tramline linking the two main shafts and the mill had also been laid.

The unsuitability of the old battery location and water right were recognised at an early date. Planning for the new developments included the resiting of the 15 stamps and their augmentation with varying numbers of new stamps. It was ultimately decided by the engineers that a forty stamp mill would be the optimum number for the size of the property and Mr Judd Coppach was despatched to the Fraser and Chalmers works in Chicago to procure the latest equipment for the Company.<sup>60</sup> In November 1889 Jules Porges and Company reported that they had paid the sum of £7 437 to the American company for the mill on behalf of the Ferreira Company.<sup>61</sup>

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60. See Taylor, J.B., *op.cit.*, pp.122ff, for some biographical detail on Judd Coppach.

61. H.E.49, Jules Porges and Company to H. Eckstein and Company, 28 November 1889.



Vertical shaft headgear and engine house of the Ferreira Gold Mining Company. Note the old incline shaft headgear in the foreground. (1895)

(Source: Hatch, F.H. and Chalmers, J.A., The Gold Mines of the Rand, facing p.141.)

The first trial crushings with the new mill were only made in December 1890. Some of the causes for the delay are to be found in the search for an ideal location for the mill and the desire to develop the mine as far as possible before the commencement of full scale crushing operations. The intention in acquiring the water right on Wemmer Pan in March 1889 was to site the mill here on ground hired from the Wemmer Company. Pumping water would then not constitute a problem and the engines used to run the mill could double in the capacity for driving the pumps. This thinking was very much in keeping with the time, when it was accepted as necessary to convey ore over great distances to the source of water. The idea was soon dropped in favour of locating the mill in close proximity to the main shafts, and pumping water to this site. An agreement was accordingly entered into with the Wemmer Company for a joint pumping project and the necessary pumping equipment acquired.<sup>62</sup> This plan, in turn, was shelved during the course of 1890 in favour of a steeper, and thus more suitable site for the gravitational feeding of the mill and clearing of the tailings, situated on the Robinson Company's mynpacht. The choice of this location was also prompted "with a view to the future fusion" of the Ferreira and Worcester Companies with the Robinson.<sup>63</sup> The Johannesburg office suggested that an amalgamation of the Robinson and Crown properties could be followed by the inclusion of the Ferreira, Worcester, and subsequently the deep levels, into one large concern.<sup>64</sup> The choice of the site had a sequel for which H. Eckstein and Company had not anticipated. The owner of the farm, Langlaagte, on which the Robinson mynpacht was situated, Mr Bezuitenhout, took exception to the agreement between the Robinson and Ferreira Companies to erect the mill on the Robinson mynpacht. Although the Robinson Company held a perpetual lease on the property, Bezuitenhout and his legal advisers saw the erection of the mill as an infringement of the lease agreement. While the action against the Robinson Company was duly quashed, the incident caused not a little consternation in London and Europe as to the insecurity of the

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62. H.E.51, H. Eckstein and Company to Jules Porges and Company, p.285, 25 January 1889, and pp.296-97, 6 February 1889.

63. H.E.56, Wernher, Beit and Company to H. Eckstein and Company, p.85, 16 May 1890.

64. H.E.149, H. Eckstein and Company to Wernher, Beit and Company, p.211, 9 May 1890.

land holding agreement of many of the Rand companies and share prices slumped even further.<sup>65</sup>

The choice of the site would not have altered the existing plan for a joint pumping project on the Wemmer Pan but for the drought of late 1889 and the winter months of 1890 which cast doubt on the Pan as a permanent source of water supply. In May 1890 it was reported that the Pan was lower than anyone could remember. Prompted by this news H. Eckstein and Company encouraged the Ferreira Company to buy a water right next to that of the Worcester Company on the Turffontein Spruit.<sup>66</sup> The water right was duly acquired for 400 reserve shares or approximately £2 000. The new water right necessitated the erection of a dam wall at a cost of £2 500, which was constructed as a joint venture with the Worcester Company. Another reason for dropping the joint pumping venture with the Wemmer Company was that this Company had also cooled to the idea, intending to meet most of its requirements from water pumped from the mine.<sup>67</sup> Lionel Phillips, as one of the directors of H. Eckstein and Company, on behalf of the Ferreira Company, then carefully endeavoured to buy the Wemmer Company's half share in the equipment through an agent for between £3 500 and £4 000. The plant originally cost £10 150, and in this way Phillips hoped to procure it for the Ferreira Company for a total cost to that Company of £8 500.<sup>68</sup> There was also a saving of £5 000 made from the sale of unnecessary piping, so that Phillips could announce to the half yearly meeting of the Ferreira Company on 21 January 1891 that a satisfactory profit had been made on the deal.<sup>69</sup>

The erection of the new mill was supervised by John F. Walsh, engaged for H. Eckstein and Company by Judd Coppach during his visit to Chicago to acquire the equipment. The Corner House then offered to cede Walsh's services to the Ferreira Company as a mill superintendent. Walsh agreed to serve for a period of two years from the date of his

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65. The Star (Johannesburg), 11 August 1891.

66. H.E.149, H. Eckstein and Company to Wernher, Beit and Company, p.217, 6 May 1890.

67. See above, Chapter IV, p.114.

68. H.E.149, H. Eckstein and Company to Wernher, Beit and Company, pp.278ff, 11 July 1890.

69. The Standard and Diggers' News (Johannesburg), 22 January 1891.

departure from New York (12 February 1890) at a salary of £50 in gold per month. First class travelling expenses and an allowance of £25 per month from the date of his appointment until his arrival in Johannesburg were also provided. His expenses prior to joining the Ferreira Company amounted to £273 14s. 0d. and were duly paid by the Company.<sup>70</sup>

The failure of negotiations for the amalgamation of the Ferreira and Wemmer Companies and the subsequent collapse of the joint pumping project were to some extent paralleled by similar negotiations with the Worcester Company. H. Eckstein and Company attempted to purchase a major shareholding in the Worcester Company with a view to effecting an amalgamation with the Ferreira, but by May 1890 had admitted defeat.<sup>71</sup> The Worcester Company, named after the town in the Cape Colony which had supplied most of its early capital, still remained firmly in the grip of these shareholders. A desultory plan was suggested later to use a share issue for the exchange of new Ferreira stock for Worcester shares in a bid to gain control of the company but nothing came of the scheme.<sup>72</sup> The rapidly burgeoning debt of the Ferreira Company caused a great deal of hesitation on the part of the Worcester board of directors to enter into any kind of agreement with the Company. Under the auspices of H. Eckstein and Company a joint milling agreement was finally hammered out,<sup>73</sup> but it required the threat of resignation on the part of Lionel Phillips from the Worcester board to coerce his fellow members into agreement. The project was one drawn up by Johns and Phillips, whereby the Worcester Company, rather than establishing its own separate mill, combined their twenty stamps with those of the Ferreira Company, to create a single large unit of sixty stamps.<sup>74</sup> The combined effort resulted in substantial savings in the operating cost, as only one battery staff and source of power were required. Each company kept its gold separate while the Worcester Company paid one third of the total costs of running the mill. Part of the assurance given the Worcester

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70. H.E.146, H. Eckstein and Company to Wernher, Beit and Company, pp.270-71, 7 June 1890.

71. H.E.56, Wernher, Beit and Company to H. Eckstein and Company, p.80, 9 May 1890.

72. H.E.149, H. Eckstein and Company to Wernher, Beit and Company, p.369, 27 September 1890.

73. Ibid., p.378, 4 October 1890.

74. Fraser, M. and Jeeves, A., All that Glittered, pp.42ff.

Company by Phillips was, that the Ferreira would soon increase its share capital to £45 000 in order to reduce the debt. The issue of new shares was made in December 1890.<sup>75</sup>

The rapid and thorough development of the mine instituted by Johns was greedy of funds. Vast sums of money were spent on developing the mine and re-equipping the surface works, while throughout 1890 no revenue accrued to the Company. During the course of 1890 the realisation gradually dawned of the serious under-estimation of capital requirements made by Johns and the Ferreira board. A good example of this situation was the costing of the mill. Originally budgeted at £13 000 it had absorbed £19 000 by July 1890, while a further expenditure of £20 000 was anticipated for its completion.<sup>76</sup> The additional amounts were now requested as loans from H. Eckstein and Company, and a second bond for £15 000, for six months at twelve per cent per annum, was granted in June.<sup>77</sup> By now the capitalisation cost of the reorganisation of the property had risen to £100 000 or double the original estimate.<sup>78</sup> In January 1891 the Company's indebtedness amounted to £91 331 12s. 10d., while by April of that year the burden had increased to £111 157 3s. 9d.<sup>79</sup> Against this mounting debt the only assurances offered were the results of perfunctory operations undertaken during the early stages of the Company's development and the assay results taken from ore samples as the mine was opened up.

Neither did these assays present a uniformly rosy picture. Initially results were good with reports in early 1889 of reef panning up to five ounces of gold per ton.<sup>80</sup> It was the promise of returns of such magnitude which prompted the London principals and their Paris associates to keep their shares in the Company and to arrange loans for it. Disquieting reports began to appear in 1890. In a private report

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75. The Star, 3 December 1890.

76. H.E.149, H. Eckstein and Company to Wernher, Beit and Company, pp.278ff, 11 July 1890.

77. H.E.146, H. Eckstein and Company to Wernher, Beit and Company, p.258, 3 June 1890.

78. H.E.56, Wernher, Beit and Company to H. Eckstein and Company, p.80, 9 May 1890.

79. Goldman, C.S., op.cit. (1892), p.61.

80. H.E.51, H. Eckstein and Company to Jules Porges and Company, p.265, 11 January 1889.

prepared by the manager, Johns suggested that an average return of one ounce per ton was a more realistic assessment of the value of the property. Even before this, the early optimistic prediction gave way to what was considered a conservative figure of one and a half ounces per ton. By now the principals, rather than hoarding their Ferreira shares, were trading small parcels of them in the market, but with the intention of keeping sufficient shares to be in for the killing when the above average gold yield was expected to commence. The impact of yet a lower assay value on both the share price and the dividend paying capacity of the Company was clearly recognised. Commenting on the Johns report, the London principals wrote,<sup>81</sup>

"This makes a tremendous difference in the value of the property, and we cannot understand that you with these facts advise us to cover our previous sales. If shares were worth on the basis of 1,5 ounces £14, they are surely not worth more than £7 on the basis of 1 oz. ... If Mr. Johns's last estimate is correct, we expect a severe fall in Ferreira shares."

Up to the issuing of the report in April 1890, the overall strategy of Wernher, Beit and Company and its associates regarding the Ferreira Company was to minimize the size of the issued share capital, and to keep as many of these shares as possible in "friendly hands". In this way the anticipated high dividends could be kept amongst the right people. Thus the Ferreira Company, while retaining its joint stock identity, had become something of a "fiefdom" of the firm and its associates. A fair amount of dealing in shares was certainly done for the sake of maintaining prices and public interest, but never sufficient to threaten the majority interest of these firms.

Following the Johns report the attitude and approach of Wernher, Beit and Company towards the Ferreira Company began to change. Doubts about the yield from the property and the seemingly inexhaustible demand for new capital suggested a running down of their interests. The lower levels of the mine failed to prove the main reef and main reef leader payable and thus the working life of the mine was recognised to be far shorter than for its contemporaries. A higher yield was then essential to cover the ever growing capital investment in the property. Now that Johns had questioned the seemingly only remaining reason for continued

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81. H.E.56, Wernher, Beit and Company to H. Eckstein and Company, pp.65-66, 25 April 1890.

involvement, the only option was to cut their losses and get out of what in London was termed a "bad business". The Ferreira Company was now tying down what seemed an inordinate proportion of capital for a single company. The golden swan had become an ugly duckling. The urgent cash requirements of the Company about the time of the report left the principals with little choice but to follow their previous practice of raising a loan for the Company. When in July a fresh call was made, the response from Wernher, Beit and Company was to advocate increasing the share capital.<sup>82</sup> By then the Company already owed £70 000 and a further £20 000 was called for. A pro rata issue to shareholders was suggested which would raise about £90 000 to meet immediate capital needs and substantially reduce the debt. Shares, both old and new, could always be fed into the market once Johns had organised a "good result" from the first month's crushing. The "friends", however, were still of the opinion "that shares should not be issued at present".<sup>83</sup> The Baring Crisis had, after July 1890 weakened the financial market and left no option but to raise the urgently needed funds for the Company against a third bond. The stalwarts, Kann, Mosenthal and Neumann were again amongst those approached to raise the £35 000 needed.<sup>84</sup>

The growing anxiety and loss of confidence shown by Wernher, Beit and Company in the fate of the Ferreira Company is clearly shown in the correspondence to Johannesburg. When reminded in August that H. Eckstein and Company had the refusal of the remaining 850 reserve shares at £5 4s. 0d., the response was definite, "we do not wish to avail ourselves of any advantages which at some later time may be used against us."<sup>85</sup> The Johannesburg office was also reminded that, "our understanding with those friends who contributed towards the advances made by us is that they participated pro rata in a first mortgage bond, or rather that they stand exactly on same footing with us and that in case of loss we have no preferences - this must be strictly adhered to."<sup>86</sup> The Ferreira Company was now "bad business" and attention

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82. Ibid., p.160, 1 August 1890.

83. Ibid., p.201, 28 August 1890.

84. Ibid., pp.210-11, 11 September 1890.

85. Ibid., p.201, 28 August 1890.

86. Ibid., p.230, 26 September 1890.

turned in London towards preparing the shareholders for a share issue which would relieve the direct burden of accumulated debt from the shoulders of H. Eckstein and Company and its principals. A first step in this direction was to exercise the option on the 850 reserve shares, so recently rejected, at £10 each, an amount sufficient to show H. Eckstein and Company in charitable light,<sup>87</sup> but aimed at removing the remaining stumbling block in the way of a new issue of shares. A letter was then addressed to the Ferreira board from the principal shareholders in Paris and London, calling on them to make a new issue and suggesting an amount of 11 000 shares which could be offered at £7 each.<sup>88</sup>

An announcement from Johannesburg that trial crushings would begin in December was greeted with relief in London as it would leave no doubt in shareholders' minds to take up the new issue. It was now considered vital to ensure that the first crushing of ore provided "satisfactory results ... it does not so much matter how many tons are crushed, so long as the average yield does not come below 1 oz."<sup>89</sup> To ensure such a result it was suggested that the Corner House's mining engineer, Hennen Jennings, supervise the starting of the mill. It was similarly agreed that an additional capital outlay on a set of Frue Vanners be made to ensure the maximum recovery of gold.<sup>90</sup> Johns was duly instructed to produce above average results for the first few months.<sup>91</sup>

With Johannesburg standing ready and the Ferreira directors ordered to call a special general meeting to authorise the share issue as soon

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87. Ibid., p.236, 2 October 1890, and H.E.146, L. Phillips to the Secretary of the Ferreira Gold Mining Company, p.449, 26 September 1890, Phillips wrote, "In view of the higher prices ruling for shares and my desire to do everything to advance the interests of your Company, I have decided to credit you with £10 per share instead of £5 as per option." Earlier, he had suggested to London appropriating them as a commission on the third bond. See H.E.149, pp.291ff, 18 July 1890.
88. H.E.56, Wernher, Beit and Company to H. Eckstein and Company, p.236, 2 October 1890.
89. Ibid., p.244, 9 October 1890.
90. Ibid., p.294, 13 November 1890, and H.E.149, H. Eckstein and Company to Wernher, Beit and Company, pp.399ff, 18 October 1890.
91. H.E.149, H. Eckstein and Company to Wernher, Beit and Company, p.491, 26 December 1890.

as possible, Paris balked. It was ascertained through Kann that the Rothschilds were prepared to take up their allocation of shares at £7 each, but they were generally disinclined to move before the new year. Kann likewise expressed the feeling that the meeting, or at least the issue of shares, should be delayed until after the news of the first trial crushing. Wernher was thus dispatched post haste to Paris to effect a compromise.<sup>92</sup> Meanwhile a special general meeting authorising the increase in capital was held in Johannesburg.<sup>93</sup> The Paris friends were loath to compromise, feeling that the issue of new shares within weeks before the first crushing result was due would only serve to show the Company in bad light. London could only comment, "Would have preferred the issue before [crushing results], but the position has been so extremely critical that we could not venture doing so."<sup>94</sup> The weakened state of the financial market in the aftermath of the Baring Crisis was no doubt also a sound reason for such a delay. Another reason given by London for the unwillingness of Paris to move was the compromised position of M. Gustave de Rothschild,<sup>95</sup> the largest single shareholder in the Ferreira Company who, as a result of spectacular losses incurred in various ventures was "sent ... away to Algiers" by his relatives.<sup>96</sup> If anything is to be proved by the whole issue in the months leading up to the first trial crushings in December 1890, it is the extent to which Wernher, Beit and Company had lost their nerve in the handling of the finances of the Ferreira Company.

The new issue of 11 000 shares at £7 each was duly made on 15 January 1891, before the results of the first complete working month were known, but after the returns from trial crushings had been made public. Wernher, Beit and Company, "to help matters along", assisted the market at £9,<sup>97</sup> a not too painful operation as the shares were

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92. H.E.56, Wernher, Beit and Company to H. Eckstein and Company, p.330, 5 December 1890, and p.350, 19 December 1890.
93. The Star, 3 December 1890.
94. H.E.56, Wernher, Beit and Company to H. Eckstein and Company, p.350, 19 December 1890.
95. Presumably Gustave Solomon Rothschild, second son of James Mayer de Rothschild, born 17 December 1829, died 28 November 1911. See Morton, F., The Rothschilds.
96. H.E.56, Wernher, Beit and Company to H. Eckstein and Company, p.375, 2 January 1891.
97. *Ibid.*, p.385, 15 January 1891.

later unloaded at £9 10s.<sup>98</sup> The new issue was well received and by the end of January the London firm had received applications for 9 623 shares.<sup>99</sup> Of the 11 000 new shares 1 000 were kept in reserve while the balance were offered to shareholders on a pro rata basis of one new share for every three already held. In due course 10 292 of these were taken up. The amount so raised was used to reduce the liability of the Company. London was anxious to be paid out and as early as 23 January cabled the Ferreira Company's secretary in Johannesburg to begin making payments to them. These funds were then used to repay the participants in the bonds, while Wernher, Beit and Company also slowly began unloading their Ferreira shares on to the market. In March they reported that they had reduced their holding to about 1 000 shares.<sup>100</sup> By the end of April 1891 the Company's debt was reduced to £34 157 3s.9d. which it was considered could be met from gold production now that regular crushing had commenced.<sup>101</sup>

H. Eckstein and Company were equally anxious to be paid back the money lent to the Ferreira Company. By January 1891 the prospects for the Witwatersrand gold mining industry seemed brighter than at any time in the past. The lean months of 1889 and 1890 following the first boom, and the doubts they had cast in the minds of everyone connected with the mines, were now behind. The Rand was beginning to reveal its inherent value under the guidance of more responsible management in the form of a steady increase in total monthly output. More and more of the mines were undergoing the necessary reorganisation to place them on a sound production footing. All this activity required capital investment and H. Eckstein and Company and their London principals felt keenly the seemingly disproportionately large investment made in the Ferreira Company. In Johannesburg the virtues of the involvement with the Ferreira Company were not doubted to the same extent as in London, but H. Eckstein and Company also wanted its hands free to involve itself in new ventures, particularly the acquisition of deep level claims and properties.

Anything which might adversely influence the first month's crushing result of the new mill received immediate attention. An engine driver

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98. Ibid., p.445, 20 February 1891.

99. Ibid., p.413, 30 January 1891.

100. Ibid., p.471, 6 March 1891.

101. Goldman, C.S., op.cit. (1892), p.58.

was summarily dismissed when an engine's bearings failed causing a sixteen hour delay.<sup>102</sup> It is important to understand the position of H. Eckstein and Company and their London principals in the matter. They had invested what was considered for the times a very large amount of money in a company in the form of loans and direct share capital. These loans were used to equip the mine with the very latest and best mining equipment. The reputation of the firms, especially that of H. Eckstein and Company, as the leaders on the field in the areas of expertise, technology and good mining practice, were thus at stake. The Ferreira had to succeed spectacularly if the status of the firms on the fields was to be maintained in the critical year of new opportunities, 1891. Success was even more essential if the two firms were to stand as the major conduits for British and European capital into the fields. European financiers like Kann and the Rothschilds in France and the Neumann contacts in Germany had been brought in on this "good thing". Failure would have questioned the abilities of these firms to assess investment opportunities, with the result that the supply of capital, so essential to the extent and scope of their operations, could have been jeopardised. It is important to remember that the trial of the two firms Wernher, Beit and Company and H. Eckstein and Company as the major channels for investment in the capital hungry deep level ventures was made on the outcrop mines.

There was sufficient ore on the surface to keep the mill running throughout January 1891, the first full month of production. The need was, however, to ensure a steady future supply. Johns had used the interim to expose a large body of ore for working. This development consisted of shaft sinking and the opening of levels contiguous to the reef, together with the sinking or raising of winzes through the ore itself. In other words the ore was prepared for mining or stoping but remained to be actually removed from the mine. In order to perform this operation a large increase in the labour force was required, a figure of 300 "boys" being mentioned. Difficulty was experienced in acquiring the additional labourers at a time when all mines were anxious to increase their staff complement. It became essential to try to outbid competitors in the labour market as, in the words of Phillips as

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102. H.E.149, H. Eckstein and Company to Wernher, Beit and Company, p.500, 3 January 1891.

chairman of the Ferreira Company, "it would never do to run the mill for six weeks and then have to shut down for want of labour." European shareholders might attribute such a stoppage to other causes.

By mid-January 1891 it was estimated that the production figure for the first month would be between 3 800 and 4 000 ounces. A figure of 4 000 ounces was duly announced although it was admitted in private that a proper clean up of the plates could have yielded 300 to 400 ounces more.<sup>103</sup> The decision was taken rather to establish a reserve of gold to meet any future shortfalls. In the same letter to London, notice was taken of the recently promulgated Government regulation requiring sworn returns of monthly output from the mining companies. The inability of the State to determine an accurate figure for any mine was clearly recognised!

The slow inflow of additional black labourers and the general shortage being experienced by the whole industry in 1891 caused grave concern. In an attempt to overcome the problem various companies began to recognise the advantages of minimizing the competition between them in the labour market. It was largely on the instigation of Lionel Phillips that the first steps were taken to alter the prevailing employment practice.<sup>104</sup> In addressing the March 1891 half yearly general meeting of the Ferreira Company, he referred also to the increasing competition for labour from the various railway companies then involved in the scramble to link the Witwatersrand to the coast. To counter this challenge and in order to minimize the competition between themselves, the Chamber of Mines, on Phillips's initiative, encouraged the adoption of a system of monthly payment for black employees, as a means of ensuring some stability in the otherwise free-floating black population. Before this the practice of weekly employment was generally accepted, so that no mine manager could be sure of his next weeks labour complement. Phillips saw the weekly employment system as "pernicious", as labour did not stay long enough to become efficient at underground work.<sup>105</sup> The validity of the statement is questionable, as given the nature of their allotted tasks, unskilled work on one mine was unlikely

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103. Ibid., p.537, 31 January 1891.

104. Fraser, M. and Jeeves, A., op.cit., pp.37ff.

105. The Standard and Diggers' News, 13 May 1891, and see below, Chapter VI, pp.257ff.

to differ radically from that on another. A more likely objective sought by Phillips was to reduce the competition between companies for labour, which was currently raising the price of the commodity in mining accounts at a time when high costs were already jeopardising the recovery of the industry as a whole. The problem which the Chamber of Mines faced was to keep the various mines who accepted any proposal from breaking rank and thus enjoying the short term advantages of doing so. News that day of such an incident caused Phillips to lash out at the short sightedness of the management of the company concerned.

If, alternatively, we accept that the argument expounded by Phillips, namely, "Any system which kept the native longer at work in one particular mine must be of benefit to the whole industry", then a more fundamental change in the current interpretation of employment practice presents itself. The high cost of white labour on the Witwatersrand was already a recognised problem in 1891. Labour disputes involving white workers had recently resulted in a strike of artisans not directly connected with the mines.<sup>106</sup> The threat of a spill over of white workers' discontent into the mining industry was widely feared and debated. A more stable black mine worker population would undoubtedly be that much easier to train as replacements for white miners, or merely as a threat with which to bargain with these white miners. Possibly Phillips hoped that in this way a more docile and cheaper labour force could ultimately be established. Thus it might be suggested that it was rather a combination of generally rising labour costs and the threat of militancy amongst white workers which prompted the singling out of black labour for greater coercion. The year 1891 was obviously a turning point in labour relations. Had trade unionism not emerged amongst the white workers, the continuing shortage of black labourers might well have encouraged a move towards greater labour efficiency and the employment of more whites. The temporary success of Phillips's monthly payment scheme for blacks showed the employers what co-operation could do to reduce labour costs. It was also firmly believed by many employers that in the longer term blacks would be more readily available as a source of labour. While the drive towards the "ultra-exploitability" of black labour lay in the future, the first tentative steps in that direction were taken in 1891 under the guidance of Lionel

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106. See below, Chapter VI, pp.249ff.

Phillips. The reaction of black workers towards these measures is discussed elsewhere.<sup>107</sup> More significant in the immediate context of this chapter is that it was the critical stage in the development of the Ferreira and other mines at the time which prompted the reaction by Phillips.

The January 1891 production figure of 4 000 ounces seems to have brought little joy to the hearts of European shareholders. Much more was expected of the "good thing" they had been invited to participate in. An irate Phillips estimated that production could be pushed to about 5 000 tons or 5 000 ounces a month but this would result in an increasing loss of gold over the amalgam plates. He icily requested London to, "Please let me know what will content shareholders..."<sup>108</sup> Phillips was surely justified, for the monetary value of the month's production at 72s. an ounce was £14 400 or 32 per cent of the issued capital of £45 000. Shareholders had, however, been promised a yield of an ounce of gold per ton and this was not forthcoming. Furthermore, as the figures below indicate, working costs remained very high.

In the period down to the end of March 1891, representing little over three months activity, 13 891 tons of ore were crushed, comprising 1 481 tons of main reef and 12 410 tons of south reef, at a cost of 18s. 8,79d. per ton. With the addition of an amount of 15s. per ton for development redemption on the 12 972 tons mined in the period, the total cost was increased to £22 741 13s. 11d. or 32s. 8,91d. per ton. The 13 891 tons crushed yielded 12 155,25 ounces of gold, or 17,65 dwts. per ton. The gold was valued at £44 425 5s. 6d., leaving a profit on operations for the period of £21 683 11s. 3d.<sup>109</sup> In the following half year period ending on 30 September 1891, 28 163 tons of ore were crushed at a total cost of 34s. 10,62d. per ton. The increase in costs compared to the previous period was attributed to the increasing hardness of the rock being worked in the second level. Weighing against this was the fact that the Worcester Company's twenty stamps were taken into operation on 1 August, resulting in a considerable reduction in milling expenses, and that the new pumping engines for the supply of water to the mill

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107. See below, Chapter VI, pp.262ff.

108. H.E.149, L. Phillips to Wernher, Beit and Company, p.547, 7 February 1891.

109. The Standard and Diggers' News, 13 May 1891.

started on 1 June with a resultant saving of 47,5 per cent in the fuel expenses. Total costs for the period were £49 094 17s. 1d., while the gold yield was 22 461,76 ounces representing a decline on the previous period to an average of 15,95 dwts. per ton. The gold was valued at £80 850 4s. 0d., leaving a profit on operations for the six months of £31 755 6s. 11d.<sup>110</sup>

The mine development and redemption account was a principle introduced by Phillips with the commencement of operations, whereby the expenses incurred in opening of developing a particular level, including tunnel driving and the sinking of winzes, were charged. The balance so incurred was redeemed as extraction of ore from that level took place. On the basis of assays taken in the newly opened drive, was determined the amount and quality of the ore in a given level. The total cost of the development of the level was then divided by the number of tons of ore the level was anticipated to yield, to give an average development cost per ton. The total development cost was credited to a "development account" and debited to the "redemption account" as each level was exhausted, thereafter becoming a direct charge to mining expenditure. The object was that, in the case of the board deciding to develop the mine at a greater speed than the rate at which extraction took place, there would be a separate account which reflected this development in excess of extraction, and which would not disproportionately raise working costs in any period. Development costs were thus apportioned to the specific body of ore, irrespective of when it was crushed, rather than to the general working costs of the month in which the development took place.

In the first period of operations considered above it will be noted that 1 481 tons of the total of 13 891 tons crushed were from the main reef. The decision to dilute the ore from the south reef with this rock was taken in February.<sup>111</sup> The high value of the south reef ore meant that it could not be crushed too rapidly if the amalgam plates were to pick up a significant percentage of the total gold content. Weakening of the gold concentration of the ore passing over the plates meant that the actual tonnage crushed per stamp per day could be

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110. The Standard and Diggers' News, 25 November 1891.

111. H.E.149, L. Phillips to Wernher, Beit and Company, p.563, 11 February 1891.

significantly increased. The main reef ore in itself contributed about five pennyweights of gold. The rationale for the exercise in economic terms was the reduced marginal cost incurred from putting more ore through the mill. As mining and hauling costs were no more for poorer ores it was discovered that, "very low grade rock may pay worked with richer, which by itself would leave a loss."<sup>112</sup> As Phillips suggested, the ratio of rich to poor ore would have to be considered carefully, so that marginal costs per ton did not exceed average cost. Careful assays of the ore were also necessary which would keep the Company's assayer, Dr Simon, busy once the necessary laboratory was complete.<sup>113</sup>

The Ferreira Company was the first to establish its own laboratory for carrying out analyses of the gold content of the ore as it passed through the various processing stages. Automatic sampling devices were also installed. The need and emphasis placed on regular sampling and accurate assaying of the ore emerged mainly as a result of the known incidence of pyritic ore in the lower levels of the mine. The high crushing rate of the forty stamp mill ensured that the free milling ores of the first level were soon exhausted and the stage reached where the intractable pyritic ore was confronted. The laboratory was only one aspect of the more sophisticated technology required to confront the problem. Within the mill itself new machinery was essential if these ores with their high iron sulphide content were to be captured before passing out with the tailings. As the gold particles tended to be coated with a layer of pyritic material the reaction between the gold and the mercury of the amalgam plates was prevented. It was thus necessary to institute another process to catch these particles. In September 1891 the Company acquired a set of Frue Vanners to coincide with the crushing of pyritic ores. Even then the results of this, the most sophisticated of the "concentrating" devices known at the time, was less than satisfactory and a high proportion of the gold continued to escape in the tailings. The Vanners succeeded only in preventing the situation from deteriorating further, as can be seen from the figures below:<sup>114</sup>

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112. Ibid.

113. Ibid., p.547, 7 February 1891.

114. Compiled from monthly reports published in The Standard and Diggers' News and The Star newspapers.

Influence of Frue Vanners on Gold Production

Date	Percentage gold caught in amalg.	Percentage gold caught as concen.	Percentage gold left in tailings
April 1891	69,10	2,90	28,00
May 1891	66,72	3,47	29,81
June 1891	68,16	2,80	29,03
September 1891	67,11	1,72	31,17
October 1891	66,48	4,02	29,50

The concentrates gathered by the Frue Vanners represented a saleable commodity. The treatment of the concentrates involved a process of first roasting them in a furnace, after which the gold was leached from the oxidized material by a chlorine solution, from which the gold was subsequently precipitated. The erection of such a plant with the necessary furnaces was a costly outlay and companies like the Ferreira chose rather to sell the concentrates at a discount to those mines, like the Robinson, which opened the first viable chlorine plant on the field in 1890. Concentrates served for a few years as a valuable source of revenue to the Company. For example in the financial year ending 31 March 1893, out of a total gold revenue of £198 469 14s. 7d., concentrates accounted for £32 997 0s. 0d., or 16,63 per cent of total gold revenue.<sup>115</sup> The continued loss of close to thirty per cent of the gold was cause for serious concern. The extent of this sentiment is reflected in the search for an alternative process which would retain a significant part of this gold.

As early as January 1891 steps were taken by Lionel Phillips to induce the African Gold Recovery Company, holders of the MacArthur-Forrest cyanide patent, to establish a small plant on the property for the treatment of the concentrates.<sup>116</sup> The Ferreira Company would pay 5s. per ounce royalty for 80 per cent or less of gold recovery and 6s. for each per cent over 80 per cent extracted.<sup>117</sup> The fate of these

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115. Goldman, C.S., South African Mines: Their Position, Results and Development (1895-96), Vol. I, p.90.

116. The use of the process for the treatment of concentrates is unusual, the process being developed originally for the treating of tailings. It is possible that Phillips was in error on the point.

117. H.E.149, L. Phillips to Wernher, Beit and Company, pp.500ff, 3 January 1891.

negotiations is not known but in May Phillips reported that the patentees had declined to treat the Company's tailings as being of too low a grade for them.<sup>118</sup> Nevertheless, by September the Company embarked on the erection of its own cyanide plant under licence.<sup>119</sup> The plant, capable of treating 4 000 tons of tailings a month, was completed in November 1891 at an approximate cost of £5 000. The Company also secured the right to treat the Worcester Company's tailings, while the royalty payable to the MacArthur-Forrest patentees was set at 9 per cent of the value of the gold recovered.<sup>120</sup> The introduction of the cyanide plant also made a significant contribution to the amount of gold won and hence to mine revenues. On average an amount of 80 per cent of the gold in the tailings was recovered. In the financial year ending 31 March 1893, the cyanide works contributed £40 556 12s. 10d. of the total gold revenue, or 20,44 per cent. In 1895 the decision was taken to remove the plant to a new site in order to make room for the tailings dumps.<sup>121</sup>

As will be noticed from the above, expenditure on capital account continued throughout 1891, much to the disgust of the major French shareholders. Phillips was driven to comment, "It is quite useless for Mr Kann to cry out about capital expenditure, for without the appliances we cannot get the profits..."<sup>122</sup> In March alone an amount of £3 743 was spent on capital improvements in the mine,<sup>123</sup> but in addition to the amounts expended on Frue Vanners and the cyanide plant, a rock drilling plant comprising twelve drills and their compressors were ordered in April.<sup>124</sup> An amount of £12 000 was mentioned as the cost of these and other sundry items. In part, this expenditure was inevitable. It is inconceivable that shareholders with any insight into the industry could believe that their Company could successfully operate without some form of concentrating plant, particularly once pyritic ores were worked. A cyanide plant became a necessity after it

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118. *Ibid.*, p.658, 16 May 1891.

119. *The Standard and Diggers' News*, 25 November 1891.

120. H.E.149, p.751, 22 August 1891.

121. Goldman, C.S., *op.cit.* (1895-96), Vol. I, p.110.

122. H.E.149, L. Phillips to Wernher, Beit and Company, pp.744ff, 15 August 1891.

123. *Ibid.*, p.598, 7 March 1891.

124. *Ibid.*, p.632, 11 April 1891.

was clear that the Frue Vanners on their own were unlikely to significantly reduce the amount of gold escaping in the tailings. Possibly shareholders were misled into believing that the large amounts of money raised in the loans of 1889-90 would be sufficient to the task.<sup>125</sup> Phillips pointed out that perhaps the greatest mistake was made in trying to keep the nominal capital of the Company as low as possible. The result was that part of the profits needed to be diverted into capital expenditure, besides servicing debts.<sup>126</sup>

During the six months down to 31 March 1891 the Company still carried a considerable loan repayment burden, so that the working profit of £21 683 11s. 7d. was eliminated against repayments on capital account. Thus despite the sale of most of the 11 000 reserve shares to offset the debt, an amount of £30 228 11s. 0d. was carried forward into the next six-month period as a deficit against the second instalment of payment for the reserve shares. Subsequently, an amount of £39 563 7s.0d. was received in final settlement for the reserve shares, together with the nominal amount of £708 for previously unsold shares, to complete the issue. Thus by the end of April 1891 the Company's debts were removed and a credit balance of £10 042 16s. 0d. carried forward to be added to the working profit for the next period.

In the directors' report for the period ending 31 September 1891 the average yield per month fell below the 4 000 ounces promised by Phillips. There were two main reasons for the decline. Increasing quantities of ore from the second level, which was pyritic, were crushed, while the ore from this level also showed a decline in gold content.<sup>127</sup> In July the announcement of a reduction in the total June crushing brought down share prices from £9,75 to £10, to £6,75.<sup>128</sup> Nevertheless, despite the poorer than anticipated production, a healthy operating profit of £31 750 6s. 11d. was shown, and a dividend of 50 per cent on the issued capital of £44 000 declared in anticipation of future results.

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125. H.E.57, Wernher, Beit and Company to H. Eckstein and Company, p.97, 24 July 1891.

126. H.E.149, L. Phillips to Wernher, Beit and Company, pp.744ff, 15 August 1891.

127. H.E.57, Wernher, Beit and Company to H. Eckstein and Company, p.144, 12 September 1891.

128. Ibid., p.92, 18 July 1891.

Subsequent to the publication of the September report, agreement was reached for the sale of the remaining 1 000 reserve shares. They were sold at £9 10s. each in November, bringing the issued in line with the nominal capital at £45 000.<sup>129</sup>

The general dissatisfaction of the European shareholders and connections with the progress of the Ferreira Company continued into 1892. In December 1891 the disquieting news that Rodolphe Kann was gradually running down his shareholding in the Company was passed on from London.<sup>130</sup> The ruling market price of between £9 10s. and £10 was now considered too high for the results forthcoming from the Company. Again, the high expenditure on capital account, which for the period ending 31 March 1892 amounted to £28 000, was viewed as excessive.<sup>131</sup> The Company was evaluated as being over capitalized for the unspectacular results shown and for its limited working life. Only the small amount of £7 169 10s. was written off for depreciation in September 1891, an amount of less than five per cent on the estimated investment of nearly £150 000. In March 1891 nothing was written off.

An immediate remedy seemed to suggest itself in the payment of substantial dividends. Thus in January 1892 a dividend of 75 per cent was announced amounting to £33 750.<sup>132</sup> At the May meeting it was announced that current shareholders would no longer be expected to "suffer for permanent works which are being carried out for the benefit of future operations of the Company."<sup>133</sup> The policy, which had merit in principle, could become reckless. The declaration of 125 per cent in dividends in the first financial year of operation of the reorganised Company certainly marked it out for historical note, and did much to bolster the entire Witwatersrand's image amongst small European investors. But for those with insight, the action was indeed reckless. It would have been far wiser to have declared a smaller dividend which could be maintained on a monthly basis while capital redemption reserves were accumulated to reduce the balance sheet liabilities on capital account. Phillips, as chairman of the Company, with the backing of

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129. Ibid., p.229, 5 November 1891.

130. Ibid., p.275, 5 December 1891.

131. South African Mining Journal, Vol. I, 32, pp.576-77, 14 May 1892.

132. Ibid., Vol. I, 15, p.248, 9 January 1892.

133. Ibid., Vol. I, 32, pp.576-77, 14 May 1892.

H. Eckstein and Company, chose rather to gamble on the prospect of amalgamation extending the life of the Company and hence the period over which the capital investment could be depreciated. But even if such a policy succeeded, the expectations of shareholders would demand the continued payment of such substantial dividends.

The pressures on the Company to maintain high dividend payments very soon led to trouble. In May Phillips again estimated the payment of a dividend of between 50 and 75 per cent in August,<sup>134</sup> while Wernher, Beit and Company urged an amount of 50 per cent.<sup>135</sup> The amount of the dividend seems to have by now become largely divorced in the minds of Phillips and his principals from the realities of the situation. As far as the mine was concerned the position was deteriorating. In June it was reported that the reef being worked was so small that a significant proportion of casing rock was being crushed. While Johns prepared to institute a process for the sorting of ore prior to its crushing, assays from the recently opened fifth level showed the usually rich south reef yielding only 4 dwts. to the ton.<sup>136</sup> Again, Johns's scheme for ore sorting, while raising the yield per ton of ore crushed, also meant exhausting the mine more rapidly as the pace of mining increased to keep up with milling demands. Meanwhile the gold yield per ton of ore continued to decline, averaging 14,17 dwts. for the financial year ending on 31 March 1893.<sup>137</sup> Phillips estimated that the average assay value for the third and fourth levels was 10 dwts.<sup>138</sup>

Despite all the evidence which suggested caution, the only compromise offered by Phillips was to reduce the amount of the proposed dividend from 50 to 30 per cent. It was necessary for Phillips to "speak to members of the Board privately" to win their support for the proposal, while H. Eckstein and Company promised to guarantee the necessary funds for the payment should the Company not have these by the payment date.<sup>139</sup>

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134. H.E.150, L. Phillips to Wernher, Beit and Company, p.15, 21 May 1892.

135. Ibid., p.78, 18 June 1892.

136. Ibid., pp.99ff, 25 June 1892.

137. Goldman, C.S., op.cit. (1895-96), Vol. I, p.104.

138. H.E.150, L. Phillips to Wernher, Beit and Company, pp.99ff, 25 June 1892.

139. H.E.151, L. Phillips to Wernher, Beit and Company, p.4, 9 July 1892.

The dividend was duly declared on 1 July. By the end of that month the value of cash and stores in hand amounted to only £6 150. All capital expenditure was stopped while the board sat back to anxiously watch for the tedious trickling of profits into the Company's coffers. By September profits still stood £6 500 short of the amount required for the dividend. A repentant and worried Phillips wrote, "I am sorry we declared the Dividend. It is the greatest mistake to anticipate results, which are always worst when they should be best."<sup>140</sup>

As one untruth begets another, it now became necessary to disguise the miscalculation of the premature announcement of so large a dividend. One option was to sell the nearly 50 000 tons of tailings which the Company had accumulated since the commencement of operations. Such a sale, by virtue of its magnitude, was bound to invoke press and subsequently shareholder comment. The easier and less conspicuous way out of the dilemma was to raise a loan from H. Eckstein and Company on the capital account.<sup>141</sup> Even the adoption of this option left Phillips feeling uneasy as such a loan could also raise comment at a shareholder meeting. The perfect solution was found in the trust deed. Phillips, on close scrutiny of the document discovered that under Clause 39, if no quorum was present either at the first or an adjourned meeting of shareholders, then that meeting stood over indefinitely.<sup>142</sup> It logically followed that if there was no meeting there would be no need to publish a financial statement.

The six monthly general meeting was duly called for 10 November 1892. In the interim both London and Johannesburg busied themselves collecting proxy votes which were duly withheld from this and the subsequently adjourned meeting on 12 November.<sup>143</sup> The ever constant The Star could be relied upon for the mild reprimand which kept the general public unenlightened as to the real cause of the stay away. It wrote, "It was very much to be regretted that in an important Company such as the Ferreira, the shareholders could not be got to turn up, a fact due to their position being so wonderfully good."<sup>144</sup>

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140. Ibid., pp.99ff, 4 September 1892.

141. Ibid., p.124, 16 September 1892.

142. Ibid., p.147, 24 September 1892.

143. The Star, 12 November 1892.

144. The Star, 15 November 1892.

Fortunately for Phillips, the prospects for the Company again began to brighten towards the end of the year, a factor which no doubt sweetened the large European shareholders towards the machinations in Johannesburg; that is if any of them ever discovered the truth. The September results reflected the benefits of the sorting process for ore, with a profit for the month of over £9 000. Thus the deficit on the half year ending 30 September was reduced to £7 800 after the payment of the dividend.<sup>145</sup> This happier turn of events continued through October, and in fact down to the end of the financial year, encouraging Phillips to once more raise the issue of dividend payments with London. He considered it essential that a further substantial dividend be paid, once more suggesting an amount of 50 per cent of the issued capital in early October.<sup>146</sup> Such a payment, which would already represent a reduction on the previous years total payment of 125 per cent, was seen as necessary if the image of the Company was to be preserved. The earliest that a payment could be made was February 1893. There was also the point that another substantial dividend in that financial year might win over any dissentient shareholders and prevent too many embarrassing questions being asked about the lack of a quorum at the May meeting. But it was again unlikely that even given the improved results, a sufficiently large surplus would be built up in time to back a dividend of the required magnitude. Phillips hoped that the payment, when the final amount was decided, could at least be covered by the cash holding and supported by the value of stores if necessary.<sup>147</sup>

Assay results from the lower levels of the mine which were opened during the course of 1892 and 1893 suggested that the south reef again improved in gold content with depth. It would seem that the fall in ore quality was restricted to the third, fourth and fifth levels. The problem in 1892 was to get development undertaken quickly enough below these levels, for once this was done, it was then again possible to blend richer and poorer ores from the various levels. The sixth level, at 620 feet, was started towards the end of 1892 and promised better prospects,<sup>148</sup> assaying up to 18 ozs. 6 dwts. to the ton and being some

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145. H.E.151, L. Phillips to Wernher, Beit and Company, pp.176-77, 8 October 1892.

146. Ibid., p.189, 10 October 1892.

147. Ibid., p.376, 31 December 1892.

148. Ibid., p.433, 28 January 1893.

3 feet 6 inches wide.<sup>149</sup> In January 1893 Phillips, mindful of past mistakes, suggested it would be impossible to declare a dividend of more than 25 per cent.<sup>150</sup> The news of the sixth level altered attitudes in both London and Johannesburg and a dividend of 55 per cent was duly declared in March 1893, bringing the dividend payment for the financial year up to 85 per cent of the issued capital. The meeting of shareholders passed smoothly, so much so that the directors were voted a bonus of 500 guineas for their troubles.<sup>151</sup> No one bothered to ask where such a sum might come from.

The process of ore sorting, by which as much as possible of the barren casing rock was removed from the ore prior to crushing, meant that an even larger quantity of rock and ore had to be mined in relation to each ton crushed. The process was developed on the Ferreira mine to a high level of sophistication, with a special series of sorting floors and tables being patented by Johns. For the additional cost of these facilities and the labour of about eight workers, some forty to fifty per cent of the rock coming from the mine was sorted out and rejected as waste, with the resultant saving in milling costs.<sup>152</sup>

Of immediate significance to the directors of the Ferreira Company, H. Eckstein and Company and their London principals, was the effect such sorting had on shortening the life of the existing Company. Capital expenditure had meanwhile continued unabated and largely undepreciated. The directors' report submitted to shareholders in May 1893 again announced that an amount of £31 500, equal to 70 per cent of issued capital had been spent on capital account since the commencement of operations.<sup>153</sup> The decision which was to exercise the minds of all the parties involved in the management of the Ferreira Company was, whether or not to attempt to extend the life of the mine by amalgamation. As already indicated, it was not a new problem, but the events of 1892 again brought it into clear focus. There were also events beyond the

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149. The Star, 3 February 1893, and H.E.151, L. Phillips to Wernher, Beit and Company, p.458, 4 February 1893.

150. H.E.151, L. Phillips to Wernher, Beit and Company, p.398, 9 January 1891.

151. South African Mining Journal, Vol.II, 33, pp.519-20, 13 May 1893.

152. Hatch, F.H. and Chalmers, J.A., The Gold Mines of the Rand, pp.153ff.

153. South African Mining Journal, Vol.II, 33, pp.519-20, 13 May 1893.

Company which were brought into the equation. Those dealing with the Wemmer Company have been covered in the previous chapter. But beyond the concept of linkages between various outcrop companies, the high capital outlay required by the first deep level development, the Stanhope Geldenhuis Deep Level Gold Mining Company,<sup>154</sup> brought home the virtues of amalgamation between outcrop and deep level companies. Joining the fates of the deep level properties to those on the outcrop might prove a way of obviating the necessity for the deep level companies to start from scratch in their development. In turn, as in the case of the Ferreira Company, it offered the outcrop companies an opportunity of depreciating their capital equipment over a longer period of time.<sup>155</sup>

Another factor which had to be taken into consideration in determining the life of the Company was the angle of the slope of the reef. The angle of the reef near the surface varied between  $72^{\circ}$  and  $76^{\circ}$  to the horizontal. As greater depths were reached the reef was found to flatten, so that at the 420 foot level it varied between  $67^{\circ}$  and  $52^{\circ}$  and at the 620 foot level between  $49^{\circ}$  and  $36^{\circ}$ . In this respect the Ferreira Company was fortunate. The angle of the reef near the surface of the Simmer and Jack property was only  $15^{\circ}$  to  $20^{\circ}$ . On the other hand the dip of the outcrop on the Salisbury property was  $85^{\circ}$ .<sup>156</sup> The closer to vertical the reef was, the more ore any claim contained. Nevertheless, all properties on the Witwatersrand at some point experienced a flattening out of the reef. For all companies then, the extent of this flattening had a direct bearing on the amount of ore in their properties, and hence on the life of the company which owned the claims.

The rich south reef ore from the first and parts of the second levels allowed Johns to dilute this material with poorer stuff from the main reef. This allowed these levels to be worked out at a relatively slower rate than would otherwise have been the case. The fall in gold content in the third and fourth levels meant that the policy of dilution was no longer desirable and all crushing of the main reef ceased for the greater part of 1891 and 1892. While dilution, or ore mixing, again became possible at the sixth level, and parts of the main reef leader

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154. Goldman, C.S., op.cit. (1892), pp.229ff.

155. See above, Chapter III, pp.98ff, for the example of the Simmer and Jack Company.

156. Hatch, F.H. and Chalmers, J.A., op.cit., p.91n.

also became payable below that depth, the rapid working of the poorer levels caused attention to focus on the life span of the mine.

The amalgamation of the Ferreira and Wemmer Companies was contemplated by Phillips from 1891 onwards when he took an interest in the affairs of the Wemmer Company. His interest, and that of the firm H. Eckstein and Company, in such an amalgamation was then principally motivated by two considerations. On the one hand such an amalgamation would result in economic rationalisation. Staff and costly machinery could be saved in this way. Popular prejudice was, however, very strong against any amalgamation. The Standard and Diggers' News placed themselves at the helm of the movement to prevent any such consolidation. The reason for the strength of popular opinion on the issue must be traced back to the similar movement on the diamond fields, where amalgamation finally resulted in the creation of De Beers Consolidated Mines in 1888. The consolidation of the diamond mining industry saw the exclusion of the small South African capitalist from direct participation. The small gold mining companies south of Johannesburg, as some of their names imply, were initially dominated by local South African capital. With time this holding invariably became diluted but as late as 1891 some of these companies' boards still sat in towns like Worcester and Pietermaritzburg and preserved their local background.<sup>157</sup>

For these local shareholders the second motivation for amalgamation by the large firms like H. Eckstein and Company, and one clearly recognised, was the profit or controlling interest such amalgamations would give to the vendors. The earlier rebuff of H. Eckstein and Company from the Wemmer board<sup>158</sup> is a clear indication of the attitude encountered. The technical and financial expertise offered to these small companies was welcomed; any threat, real or imagined, to their independence was not. In this regard H. Eckstein and Company, as the leading financial concern on the field, was regarded with the greatest suspicion. The relationship between this firm and its London principals was never hidden in Johannesburg, and the role of Wernher, Beit and Company's predecessor, Jules Porges and Company, in securing the amalgamation of the Kimberley fields was well known. As Phillips

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157. Fraser, M. and Jeeves, A., op.cit., p.49.

158. See above, Chapter IV, pp.126ff.

commented, "People are afraid we are going to gain control of everything worth having."<sup>159</sup> He incorrectly attributed this sentiment to jealousy. Little men too can be greedy.

For its part, events on the Rand moved too rapidly for a firm like H. Eckstein and Company to establish a strong bridgehead from which to operate towards amalgamation, even had it seriously wanted to. From what has been written above and in subsequent chapters, it is clear that the firm's and its principals' interests always tended to the financial manipulation, rather than the control and operation of any particular company. In a letter as late as 1892, Phillips again raised the issue of whether it would not be more profitable to work the companies, particularly the deep level properties, rather than speculating in their shares.<sup>160</sup> It is also doubtful if their capital resources would have been equal to the task of wholesale amalgamation. After the 1889 collapse of the stock market, when the need for a more balanced approach to mining and finance became clear, the vista of the deep levels dawned and the resources available for the outcrop amalgamations remained limited. The resultant popular compromise manifested itself in joint milling and pumping projects; schemes which went some way towards achieving the economic advantages of amalgamation without the unpopular loss of independence.

But equally, the years 1891-92 brought the issue of the limited life-span of all outcrop mines clearly into focus. In this regard, the Ferreira Company, working only one reef was amongst the first to recognise the problem. Below the sixth level the reef ran against the southern boundary of the property. Given the comparative newness of the machinery and the limited provision made for depreciation, any form of amalgamation was clearly in the Company's interest. To the immediate south of the Company's land lay a block of claims known as the "South Ferreira Claims", owned by H. Eckstein and Company. The debate which exercised the minds of the men of the firm in 1892 was, whether greater advantage lay in amalgamating these claims with the Ferreira Company or throwing them in with the Wemmer, Ferreira and Worcester Deep Level Gold Mining Company. The deep level company was floated in May 1889

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159. H.E.149, L. Phillips to Wernher, Beit and Company, pp.709-10, 11 July 1891.

160. Fraser, M. and Jeeves, A., *op.cit.*, p.60.

by a syndicate including C.W. Neebe and J. Charlton on 37 claims situated on the dip of the abovementioned properties. H. Eckstein and Company had been caught napping but the possession of the South Ferreira Claims, lying between that Company and the deep level property gave them a good bargaining tool. Despite what seemed a reasonable nominal capital of £100 000, the vendors took £55 000 in payment for the deep level property, leaving only £15 000 for working capital.<sup>161</sup> This situation guaranteed the company a still birth. A reconstruction offer was made in 1890 but came to nothing. On 18 June 1891, however, a successful reconstruction bid was made by Carl Hanau,<sup>162</sup> which again brought the property within the financial orbit of H. Eckstein and Company. The inclusion of the South Ferreira Claims in the Ferreira Company would, Phillips estimated, extend the life of that Company by about three and a half years if crushing continued with the 40 stamps.<sup>163</sup> Thus the addition of these claims would not significantly extend the life of the Ferreira Company, unless more of the main reef leader proved payable in this section. The profitability of working more main reef leader largely depended on a reduction of the working costs. Johns was firmly convinced that the only way in which the marginal working cost per ton could be reduced was by extending the scope and scale of operations. To achieve this amalgamation was essential. In turn, as Phillips pointed out, were the mine to close within a year or two, the machinery, while it might fetch a reasonable price, would never cover the full capital outlay. Once more the directors would find themselves in trouble if shareholders anticipated a return of their capital on liquidation. For this reason it was decided to give these claims to the Ferreira. They cost the Company £25 000, payable in instalments over a period of 27 months with interest.<sup>164</sup>

In the interim, negotiations continued behind the scenes for closer amalgamation between the Wemmer and Ferreira Companies. But as Phillips recognised, the best chance for such a step was lost in July 1891. Then, with the first regular monthly production figures from the

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161. Goldman, C.S., op.cit. (1892), p.256.

162. Ibid., p.257.

163. H.E.151, L. Phillips to Wernher, Beit and Company, p.263, 19 November 1892.

164. South African Mining Journal, Vol.III, 7, 18 November 1893.

Ferreira coinciding with the fresh purchase of 8 000 Wemmer shares by H. Eckstein and Company in April 1891, the conditions seemed ideal for a share swapping agreement with the Wemmer shareholders.<sup>165</sup> The chance had, however, been lost due to the lack of any Ferreira shares being available and the nature of the holding of the Ferreira stock. The lack of confidence felt by the large European shareholders in Phillips's performance severely limited his ability to act quickly in the exchange of shares. The enlarged holding of Wemmer stock would have given the Corner House sufficient power in both companies to effect an amalgamation.<sup>166</sup> The rapid running down of their shares in the Ferreira Company by both H. Eckstein and Company and Wernher, Beit and Company at the beginning of 1891 had cost them the possibility of amalgamating the two companies. The opportunity again arose in 1893, when the Wemmer Company's second reorganisation created a fresh need for working capital. Another H. Eckstein and Company partner, G. Rouliot, was instructed to begin planning the amalgamation bid.<sup>167</sup> The progress of these negotiations might also have prompted the Ferreira board to declare the 55 per cent dividend in March 1893. A major consideration of such amalgamation was the economic rationalisation which could be effected. Both companies, already under the management of Johns, were struggling to reduce their working costs. Johns calculated that administratively a saving of £1 327 12s. could result annually, achieved in a reduction of directors' fees and general office expenses. Similarly, an amount of £4 718 1s. 5d. could be saved on mine operations, nearly half of which, or £2 236, resulting from a reduction in the salaries and wages of key personnel like the extra mine manager, engineers, carpenters, drivers and stokers. The largest single saving of £2 482 9s. 5d. would accrue from removing the need for the Ferreira Company to sink another shaft on the Bijou claims.<sup>168</sup>

Once more the planned amalgamation never reached fruition. The main reason for this was that the focus of amalgamation had by 1893

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165. See above, Chapter IV, pp.124ff.

166. H.E.149, L. Phillips to Wernher, Beit and Company, pp.744ff, 15 August 1891.

167. H.E.151, L. Phillips to Wernher, Beit and Company, p.433, 28 January 1893.

168. Ibid., p.475, 11 February 1893.

turned towards the south. Amalgamation with an established mine like the Wemmer Company, while resulting in cost savings, would involve large amounts of capital and minimal profit margins for the vendors.<sup>169</sup> Even more important was that while the Wemmer, with its three workable reefs had a longer life than the Ferreira, it was not calculated to be significantly longer, and therefore did not offer an ideal solution to the Ferreira Company's problems.

The large amounts of capital required for the development of the deep level mines suggested an even greater rationalization if the shafts of the outcrop properties could be extended to work the deep level claims. Here the relative geographic and financial positions of the Ferreira and the Wemmer, Ferreira and Worcester Deep Level Company made amalgamation the ideal solution. The Ferreira lay to the immediate north of the deep level company and roughly in line with the central part of it. Hence it was in the best position of the outcrop properties to extend operations into the claims of this company. Again, while the Ferreira was heavily over capitalised in terms of the working life of the mine, the deep level company would need a major capital infusion if it was to develop the necessary infrastructure for exploiting its property. An amount of at least £150 000 was mentioned at the meeting considering the amalgamation.<sup>170</sup> An additional advantage was that Wernher, Beit and Company had become the dominant shareholders in the deep level company.<sup>171</sup>

The growing involvement and strategic planning by H. Eckstein and Company and their London principals in the deep levels is borne out in their correspondence, and ultimately reached fruition in the formation of Rand Mines Limited in 1893. Referring to the Ferreira Company, Johannesburg was reminded that in any amalgamation this Company was not to bargain away any claims or water rights which might prove useful to what was known before its flotation as the "Rand Deep Level Company".<sup>172</sup>

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169. Ibid., p.458, 4 February 1893.

170. South African Mining Journal, Vol. III, 47, pp.819-20, 25 August 1894.

171. H.E.59, Wernher, Beit and Company to H. Eckstein and Company, p.146, 29 September 1893.

172. Fraser, M. and Jeeves, A., op.cit., p.76.

It was only a year later in August 1894 that the long struggle to effect some form of amalgamation for the Ferreira's survival was ratified by shareholders. Agreement between the two boards as to the details of the consolidation were reached in March,<sup>173</sup> although an official report drafted by Johns, on which the amalgamation purported to be based, was only published in May<sup>174</sup> and divulged to the press in July.<sup>175</sup> In this statement it was admitted that the remaining life of the Ferreira mine was very short, about four years. Optimistic estimates, which included the milling of main reef leader, only extended this span by one year. Against this backdrop there was the large capital investment; over £30 000 on the two main shafts alone, which could not all be redeemed in the event of the closing of the mine. Alternatively, the extended scale of operations envisaged in the proposed amalgamation could well result in lower working costs which would bring a larger proportion of the Ferreira's main reef leader within payable limits: the very act of amalgamation could thus ultimately extend the working life of the existing mine.

The terms of the amalgamation were for the Ferreira Company to double its nominal capital to £90 000 by the creation of a further 45 000 £1 shares. Of these 44 000 would be issued to the shareholders of the Wemmer, Ferreira and Worcester Deep Level Company as payment for the property owned by that Company. The balance of the shares would be held in reserve. The respective cash assets of the two companies were not included in the deal. Those of the deep level company were distributed to shareholders in the ordinary course of liquidation and that company then ceased to exist. At the special ratification meeting of the deep level company held on 14 August 1894, the following advantages for the shareholders were mentioned. Firstly, the company's shareholders were not called upon to provide any money in the deal, as the Ferreira Company's plant and equipment, subject to further additions, was equal to the requirements of both properties. The deep level shareholders would also be eligible to participate immediately in any further dividend payments by the Ferreira Company made from the working of the

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173. South African Mining Journal, Vol. III, 47, pp.819ff, 25 August 1894.

174. H.E.59, Wernher, Beit and Company to H. Eckstein and Company, p.413, 28 March 1894.

175. South African Mining Journal, Vol. III, 42, p.711, 21 July 1894.

outcrop property. Here indeed was a good incentive for agreement. Regular dividends were paid by the Ferreira amounting to 100 per cent in the financial year ending on 31 March 1894 to give existing shareholders the benefit of accumulated reserves prior to the amalgamation.<sup>176</sup> The acquisition of the services of Harry Johns as manager of the new company was also considered as a distinct advantage. Finally, the acceptance of the proposals would leave the cash assets of the deep level company available for distribution.<sup>177</sup> The acceptance of these proposals was in large part a foregone conclusion, as Rand Mines Limited, or more strictly speaking, Wernher, Beit and Company were "very large shareholders" in the deep level company.<sup>178</sup>

At the same time that the negotiations were in progress with the deep level company, the Ferreira Company entered into an agreement with Rand Mines Limited in which a certain six claims, known as the "water right claims" held on the Turffontein Spruit, were exchanged for £3 000 in cash and a single claim owned by Rand Mines Limited. The claim lay between those being negotiated for with the deep level company. The nature of the deal reflects the long term planning being undertaken by the principals, and is also an example of the slow process of tidying up of the patchwork of ownerships of claims dating from the earliest proclamation of the field. The immediate details of the deal leave no doubt as to where the bargaining power lay, when it is remembered that the Ferreira Company had to pay £35 000 for the South Ferreira Claims.

It is now necessary to turn our attention to the working costs of the mine in the period leading up to the amalgamation. In his report published in May 1894, Johns noted that parts of the main reef leader could well become payable should the working costs of the mine be lowered. In turn, any increase in the amount of ore available for crushing would lengthen the life of the mine. Given this consideration an investigation of the cost structure becomes enlightening. Unfortunately, the nature of the information available is not sufficiently detailed for more than a superficial analysis. Below is a table of the comparative working costs for the period between 1890 and 1894:<sup>179</sup>

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176. Goldman, C.S., op.cit. (1895-96), p.108.

177. South African Mining Journal, Vol. III, 47, pp.819-20, 25 August 1894.

178. Ibid.

179. Goldman, C.S., op.cit. (1895-96), p.103.

Working Costs 1890-1894

Half year ending	Tonnage mined	% change	Tonnage milled	% change	Total cost less deprec.	Cost	
						per ton mined	per ton milled
March 1891	13891		13891		£22741.13.11	32,74s.	32,74s.
Sept. 1891	28163	50,68	28163	50,68	41930. 7. 0	29,78	29,78
March 1892	24567	-12,77	24567	-12,77	41070. 1.11	33,44	33,44
Year ending		14,34		- 0,73			
March 1893	57360		48777		106993.16. 3	37,31	43,87
Sept. 1893	35953	20,23	24736	1,41	53401.16. 3	29,71	43,18
March 1894	34259	- 4,71	22477	- 9,13	50531. 6. 1	29,50	44,96
Dec. 1894	44724	23,40	25100	10,45	54783.16. 0	24,50	43,65

It is interesting that the costs calculated on the basis of the total amount of ore mined show a definite downward trend with the increase in the quantity of ore mined with the major exception of the year ending in March 1893. In contrast, the cost per ton of ore milled rose, reflecting simply the distribution of total cost over the fairly constant amount of ore being crushed. More interesting is the rise in total costs and the percentage increase or decrease in costs between periods, shown in the table below:

Percentage Changes in Working Costs

Total cost less deprec.	% change	Cost per ton mined	% change	Cost per ton milled	% change
£22741.13.11		32,74s.		32,74s.	
41930. 7. 0	45,76	29,78	- 9,04	29,78	- 9,04
41070. 1.11	- 2,05	33,44	10,95	33,44	10,95
106993.16. 3	23,23	37,31	10,37	43,87	23,78
50531. 6. 1	- 5,54	29,50	-20,93	44,96	2,42
54783.16. 0	7,76	24,50	-16,95	43,65	- 2,91

While no definite trend emerges, it is clear that the percentage decreases in the average cost per ton mined are significantly greater than the increases, while the opposite is true in the case of milling figures, and in the case of total costs which generally reflect an upward trend. From the above it will be noted that working costs remained generally high in comparison with those of other companies, such as the Simmer and Jack, or for the average of the industry.<sup>180</sup>

180. See below, Chapter VI, pp.242ff.

The high average cost per ton milled continued to be a problem. In November 1893 the high working costs of the Company were singled out for comment in the press. It was suggested that the usual reasons for high working costs did not apply in the case of the Ferreira Company, which was in possession of the very latest equipment and machinery. It was accepted that the hardness of the rock worked increased with depth but weighing against this were the facts that the reef was not particularly narrow or faulted. Milling too seemed to be carried on at or near the maximum potential of the mill. Nevertheless, in the half year down to the end of September 1893, total costs amounted to £62 606 as against the tonnage milled of 24 736 tons, giving the high average cost of £2 11s. 6d. per ton, of which mining and milling accounted for £2 5s. 10d., a figure considered excessive.<sup>181</sup> The total cost figure quoted did, however, include an amount for depreciation which might otherwise be excluded. Unfortunately, no specific breakdown of mining costs was presented in the financial statements of the Company so that it is difficult to isolate any particular item which was disproportionately high. What statements are available do suggest that general charges and maintenance costs, which were not directly related to mining and milling were partly dispersed into those accounts, and tended to be unusually high for a mining company. For the quarter ending 31 December 1894 general charges amounted to £2 874 6s. 10d. and maintenance to £2 759 14s. 11d. or £5 634 1s. 9d. out of a total cost of £24 557 12s. 10d., an amount of 22,94 per cent.<sup>182</sup> We are left in the dark as to what exactly was charged to such accounts but if a calculated guess may be made, then general charges normally covered the operation of the mine office, administrative salaries, stationery, licence fees and the likes, while maintenance referred to the general upkeep of machinery and equipment both on the surface and underground, as well as to estate management. An expenditure of over twenty per cent on such items on a mine with virtually new equipment was excessive and one can only speculate whether these accounts were used as a conduit for the establishment of a secret reserve.

No figures are indicated for the cost of labour, which usually constituted the largest single factor in mining costs. That these were

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181. South African Mining Journal, Vol. III, 8, p.116, 25 November 1893.

182. Goldman, C.S., op.cit. (1895-96), p.106.

considered excessive is borne out in the campaign by Lionel Phillips to see them reduced. That little specific mention was made to either high labour costs or other expenses generally in the reports and statements of the directors, suggests that at least to these individuals, the cost structure was not considered excessive. Given that the Company only worked one, narrow reef it can be argued that a high level of average costs was inevitable and as already indicated, Johns aimed for profit maximization through output maximization rather than cost minimization.

One of the items which raised the cost of mining was the ore sorting process. As Hatch and Chalmers have suggested, the real cost per ton of rock mined was about 14s.<sup>183</sup> While the actual expense of sorting only amounted to about 5d. per ton, the cost of mining the additional rock, which averaged 45,9 per cent of that mined in May 1894, was not considered in calculating milling costs.<sup>184</sup> Given the fairly narrow width of the south reef, which only averaged 10 inches, the process did result in substantial gains, probably a saving of 10s. per ton on the quantity of rock mined,<sup>185</sup> although this saving tended only to be reflected in lower milling costs as can be seen below:<sup>186</sup>

Advantages of Ore Sorting

Period ending	Ore mined tons	Ore milled tons	% Rock removed	Value of ore mined dwts.	Value of ore milled dwts.	Value of addn gold won £. s. d.	Direct saving £.
March 1893	57794	48777	15,6	19,38	22,69	28899.17.4,8	6825
Sept. 1893	35953	24736	31,19	19,70	27,95	36526.14.9,6	9360
March 1894	34259	22477	34,36	22,49	33,50	52559.17.9,4	10282
Dec. 1894	66543	36784	44,72	19,33	33,76	109547. 4.5,4	14657

The significance of maintaining a high milling rate and hence a lower marginal cost was clearly recognised by Johns. The mill was kept at maximum production even though this meant a certain loss of gold over the

183. Hatch, F.H. and Chalmers, J.A., op.cit., pp.264-65.

184. Goldman, C.S., op.cit. (1895-96), p.107, and South African Mining Journal, Vol. III, 40, p.668, 7 July 1894.

185. Goldman, C.S., op.cit. (1895-96), p.107.

186. Ibid.

amalgam plates. Already a portent of future developments in the industry, by 1894 Johns was increasingly using the cyanide process as a "back stop" in gold recovery. The South African Mining Journal commented on this, asking why a sixteen per cent difference in the recovery rates of the Ferreira and adjoining Wemmer Companies could be justified.<sup>187</sup> The Wemmer Company was recovering over 70 per cent of the gold yield by the amalgam plates, the Ferreira only 54 per cent. The answer lay in the fact that the Wemmer cyanide plant only came into production in September 1894.<sup>188</sup> But while the journal sought a reason in the scientific experimentation between the ores of the two adjoining properties, the real explanation lay rather in the field of costs. The skilled amalgamator was an individual commanding a salary second only to that of the mine manager. The amalgam plates had to be carefully dressed and closely watched. Such was the task of a skilled craftsman which was easily defeated by refractory ores. Similarly, there was a limit to the amount of ore which could be passed over the plates in a given period before their effectiveness in retaining gold was impaired. While Johns sought the maximum output possible from the mill, it was inevitable that the proportion of gold caught on the plates would diminish. The technology of the cyanide process was soon to see the demise of another of the skills associated with the early mining industry, while the low cost and efficiency of the cyanide process ensured the undermining of both the amalgamating and concentrating processes.

Another cost factor which became increasingly important to the Ferreira Company was the expenditure on dynamite. The hardness of the rock in the lower levels of the mine necessitated the use of more powerful explosives. As Blainey has already suggested, this situation brought about a growing conflict between the mining companies and their representatives and the Government monopoly holders.<sup>189</sup> At least one incident relating to the Ferreira and Wemmer Companies was reported in the press in 1894.<sup>190</sup> The system of quotas which the Government

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187. South African Mining Journal, Vol.III, 39, p.644, 30 June 1894.

188. See above, Chapter IV, p.139.

189. Blainey, G., "Lost Causes of the Jameson Raid", Economic History Review, ss, XVIII, 2, (1965), pp.350-366.

190. South African Mining Journal, Vol.III, 15, p.222, 13 January 1894.

resorted to following the cancellation of the Lippert monopoly at the end of 1892, resulted in recurring shortages of dynamite throughout 1893 and 1894.<sup>191</sup> These companies were amongst the many who experienced shortages with the resultant effect on production. Also the high cost of explosives, which varied over time from £6 10s. 0d. a case before the opening of the local "factory" in 1889 to £4 10s. 0d. in 1894,<sup>192</sup> considerably increased mining costs.

Once again, in May 1894, an unsuccessful attempt was made to hold the half yearly meeting. This time, however, there was nothing more sinister in the lack of a quorum than the fact that too few shares or proxies were represented in Johannesburg. South African gold mining stocks became very popular with European investors during the course of 1894, and while Wernher, Beit and Company and H. Eckstein and Company had bought shares in the Company for the purposes of moving the amalgamation, most of these shares were unloaded soon afterwards.<sup>193</sup> Some of their holding was, however, passed on to Rand Mines Limited.<sup>194</sup> Hence the reason for a lack of quorum lay largely in the hands of the European investors. The South African Mining Journal commented on this fact, suggesting that local investors should replace the loss by a greater investment in the deep level properties.<sup>195</sup> On this occasion the Company did not overlook the publication of a financial statement. A working profit of £66 359 for the half year suggested a good reason for doing so. A similar glowing financial report was published in August 1894, the last before the amalgamation with the deep level company. Gold recovery from all sources was equal to 1oz. 12,848 dwts., the highest in the Company's history. Working profits amounted to £56 970 18s. 6d., or equal to 253 per cent on the capital of the Company. In addition to the completion of the purchase of the South Ferreira Claims, the past year had seen the payment of £67 500 or 150 per cent of the capital of the Company in dividends.<sup>196</sup>

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191. Etheredge, D.A., *The Early History of the Chamber of Mines, Johannesburg, 1887-1897*, (M.A. Thesis), pp.56ff.

192. *Ibid.*

193. H.E.60, Wernher, Beit and Company to H. Eckstein and Company, p.67, 21 September 1894.

194. *Ibid.*, pp.41-42, 17 August 1894.

195. South African Mining Journal, Vol.III, 33, p.514, 19 May 1894.

196. *Ibid.*, Vol. III, 46, pp.798-99, 18 August 1894.

Thus by the time the Ferreira Company became a deep level property in August 1894 its dividend paying ability had assured it a place in the history of the Witwatersrand as one of the more successful companies. From its inception down to the beginning of 1895 nine dividend payments were made, amounting to £287 000, equal to 525 per cent of the nominal capital of the Company in that period. It was, however, only with the coming of the amalgamation in 1894 that the true prosperity of the Company might be said to have commenced.

## CHAPTER VI

A COMPARATIVE ANALYSIS OF THE INTERNAL INTEGRATION  
OF THE MANAGEMENT FUNCTIONS OF THE SAMPLE COMPANIES

In analysing the attitudes and actions of the managements of the mining companies of the study a specific framework is adopted which can be applied indiscriminately to the various histories of the companies. The framework implies two categories of involvement by management, namely, an internal and external integration<sup>1</sup> involving that management in the internal decision making processes of the company as discussed in this chapter, and in its broader external relations, considered in the following chapter.

This chapter considers the attitudes and actions of the respective company managements in the day to day internal operation of their companies. Within the context of the late nineteenth century much of the decision making by company managers, irrespective of the nature of the particular company, was dominated by the pursuit of profits. The awareness and conception of the functions of management as recognised today were still in their infancy in the closing decades of that century and the rationale for the existence of the joint stock enterprise was measured entirely in terms of the winning and distribution of profits to shareholders. For a company operating in the mining industry, always considered a high risk enterprise, these imperatives were felt that much more keenly. Hence it is accurate to state that the internal integration of the companies of the study was dominated by a productivity approach which aimed at profit maximization through the incentives to minimize costs and maximise output. An analysis of the Witwatersrand gold mining industry in this respect is made considerably easier because the mining companies faced a seemingly infinitely elastic demand curve for their product and were thus spared any competition in the market place for the sale of their product. Each company was in a position to increase its output indefinitely within the restraints of its own

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1. "Integration" in the context of this work denotes the multiplicity of inter-relationships which exist between the management of the company and its environment, both within and without the firm.

property without facing any constraints from other companies operating in the same field or beyond it. The major considerations for determining the profitability of a particular mining company came to rest on how management dealt with the issues of reducing the costs of operation and at the same time maximizing output.

Within the analysis of the internal integration of the various companies, whether considering the maximization of output or the minimization of costs, attention must be given to the various functions of mining which elicited differing forms and approaches of management. Within the Witwatersrand gold mining industry two distinct forms of activity were pursued in the winning of the metal, namely, mining, with all the various activities thereby implied from the sinking of shafts to the actual removal of the ore, and reduction, or those processes related to the extraction of the metal from the ore. Within each of these two main categories management functions included decision making which had a direct bearing upon the activities and processes of men and machines and their interaction. It is thus possible to sub-categorize separate sections for labour and technology, always recognising the need and capacity for interaction between them.

In order to facilitate the analysis, this chapter is divided into two sections, the first covering the years between the discovery of gold on the Witwatersrand in 1886 and the collapse of the Johannesburg Stock Exchange boom in the early months of 1889, while the second deals with the period of recovery down to 1895.

#### Period I: 1886-1889

In turning our attention to the four mining companies it is necessary to bear in mind some of the physical distinctions between them. The Witwatersrand and Simmer and Jack Companies both came to own the farms on which they operated, while their establishment to work the mynpacht rights of those farms ensured them a scale of operations considerably larger than those of the two smaller central Rand companies. In contrast, the Wemmer and Ferreira Companies were blessed with certain reefs which were far richer than those of the two bigger organisations. These differences inevitably influenced the management policies of the respective companies.

The most striking feature of all four of the companies was the limited provision made for working capital in their original prospectuses.

It seems unlikely that much emphasis was placed on the capital requirements of any of the early Witwatersrand companies prior to their formation. Knowledge of the essential prerequisites for successful reef gold mining appears to have been remarkably limited on the Witwatersrand in mid-1886. It is possible that this lack of understanding was at least partly attributable to the boom conditions prevailing in Barberton at the time and the similar spate of company promotions which only occurred on the Rand in the second half of 1887, which kept most men with the necessary technical competence away from the Witwatersrand. Similarly, the novelty of the discovery in terms of its size and the nature of its reefs, together with the initially misleading reports of the rich nature of the deposits, left the company promoters with the mistaken impressions that, once started, mining operations could be self-financing in terms of the larger capital outlays required. Information on the ore requirements per stamp of a mill per day, as a determinant of mine development, and calculations of the total cost of equipment and initial mining development, were either completely absent or disregarded. There is no other way in which the minimal provision for working capital can be explained, unless it is to suggest that unbridled optimism led those floating the companies to believe that such was the wealth of the discovery that initial profits would more than offset the capital requirements of the companies as they arose. Nevertheless, such a view seems hardly justifiable when it is considered that most of the companies formed to work the deposit were floated more than a year after the initial discovery of the reef, that is, after March 1887. By then the Barberton boom was a thing of the past and presented a fresh lesson for any Rand company promoter ready to learn; such was the nature of the times, however, that all too few were so willing.<sup>2</sup> The spectacular results of the earliest companies brought into operation, such as the Jubilee and Wemmer Companies, while essentially superficial in the evidence they presented<sup>3</sup> were, nevertheless, looked upon by too many as an example of what the entire Witwatersrand was capable of achieving.

An investigation of thirty seven Witwatersrand gold mining companies formed between September 1886 and September 1887 reveals an average total

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2. See above, Chapter I, pp.9ff.

3. See above, Chapter I, p.20 and Chapter IV, pp.107ff.

capital of £43 216, and an average working capital of £10 470, or a mere 24,23 per cent of the total capital. Of the four companies under consideration, the Witwatersrand Company with a working capital of £15 000 out of a total of £210 000, or 7,14 per cent, presented the lowest ratio of working to total capital of any company in the survey.<sup>4</sup> Formed a year later, in September 1887, the Simmer and Jack Company made only slightly better provision with an amount of £20 000 for working capital of a significantly smaller total capital of £75 000, or 26,67 per cent of total capital. While the amount of £20 000 remained small in terms of the necessary working capital requirements of the company, such a sum measured against the survey of other companies indicates that it was the second largest provision for any company floated during the first year. The largest amount allocated for working capital was £35 000 in the case of the Paarl Pretoria Gold Mining Company.<sup>5</sup> In turn, it was the Wemmer Company which devoted the largest proportion of its total nominal capital for working capital, allocating £10 000 of its £12 000 of total capital for this purpose, or some 83,33 per cent. Finally, the Ferreira Company spent half of its original nominal capital of £12 000 in the initial vain attempt to bring the property into production. It is perhaps worth noting that two companies, the Empire and Moss Rose Companies started their existence with as limited a working capital as £3 000.<sup>6</sup>

The statistics referred to above are drawn from the prospectuses of the various companies and it is thus possible that discrepancies arose between what provision was made for working capital and the final amount so allocated. In the case of the Witwatersrand Company it is important to bear in mind Knight's personal investment in equipment for the Company. He claimed to have spent an amount in excess of £21 000, which, while probably reclaimed from vendor stock, is not revealed in the above calculations.<sup>7</sup> Added to the £15 000 made provision for in the prospectus, a working capital of £36 000 reflects the Company in a better light with working capital making up 17,14 per cent of total capital. While similar details of other companies' expenditure prior

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4. See Appendix I below.

5. Ibid.

6. Ibid.

7. See above, Chapter II, p.28.

to flotation are not available it is difficult to gauge more than a general impression.

If a generalization can be made, it is to suggest that all these companies suffered from an over capitalization on vendor stock and a paucity of working capital. This statement is borne out by the fact that by 1888 all four of the companies under consideration were forced to increase their total nominal capital as a way of finding fresh working capital. That they resorted to the issue of fresh stock as the means by which to raise this capital was simply a reflection of the buoyant state of the local share market. Had this situation not prevailed it is possible that the future history of the Witwatersrand gold mining industry would have taken an entirely different course with numerous bankruptcies of mining companies and a move to amalgamation similar to that then drawing to a conclusion in the diamond mining industry. Similarly, while banking institutions were willing enough to grant loans to companies against minimal security between 1886 and 1888, the tide turned in 1889 and loan capital became increasingly expensive and difficult to raise.<sup>8</sup>

The weak financial position of the companies by 1888 resulted in two distinct trends, depending on the size of the company concerned. For the companies in possession of larger properties, the options for raising fresh working capital were wider in that it was considered a rational alternative to acquire the necessary funds by the sale of parts of their properties. The evidence suggests that the managements of both the Witwatersrand and Simmer and Jack Companies seriously considered the optimum size of a mining property to be considerably smaller than those under their supervision and thus took steps to sell off as many claims as was considered necessary.<sup>9</sup> An opposite trend is indicated amongst the smaller companies, where the same high ore to capital ratios saw a drive towards closer co-operation, if not amalgamation, between companies. In both the Wemmer and Ferreira Companies, attempts were made to seek closer amalgamation but with only limited success, suggesting the greater difficulties confronting the nature of this option as a solution to financial embarrassment.<sup>10</sup>

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8. Henry, J.A., The First Hundred Years of the Standard Bank, pp.94ff.

9. See above, Chapter II, p.39, and Chapter III, pp.69ff.

10. See above, Chapter IV, pp.114,134 and Chapter V, pp.186ff.

An interesting feature of both the movements towards seeking closer amalgamation and the sale of claims, was the involvement of H. Eckstein and Company, notably their active participation in the attempts to amalgamate the small companies of the central Rand, and their interest in the attempt to split the Simmer and Jack Company's property. On one level these actions would suggest that the firm wished to see a rationalization of the industry into medium sized concerns. How valid such a conclusion is, is debatable in so far as the participation of the firm in the affairs of individual companies ever represented a permanent commitment. There is a strong case to be made out of the strength of the evidence presented in this work, that the activities of H. Eckstein and Company and their London principals, Wernher, Beit and Company, were essentially speculatively motivated and that their involvement in any venture was usually determined by a search for quick speculative profits. It was only after 1889, when the London principals found the source of funds for arbitrage operations drying up, that the firm decided on a more substantial approach in the encouragement of sound mining practices. Yet even then, by judiciously supplying the chosen companies with technical expertise, which remained loyal to the firm, it was possible to maintain an excellent intelligence service on which to continue its speculative activities while gathering a steady income from a selected "stable" of mines.

Viewed from the angle of the mining companies under consideration it is clear that each company reflects the overriding concern of profit maximization in their activities prior to the collapse of the share market in 1889. Besides the endogenous considerations which such maximization held out for the raising of scarce working capital, there was also the exogenous factor of profit as the single most important rationale for the existence of a capitalist joint-stock organisation. On one level the exogenous and endogenous considerations overlapped, in that a profitable, dividend paying company stood a better chance of attracting additional funds by further share issues. In keeping with nineteenth century capitalism, there was a need to reflect a profit and handsome dividends for an expectant shareholding. Writers at the time suggested that a minimum return on gold mining investment should be in the order of twenty five per cent on paid up capital, thus providing adequate cover for the high risk factor involved.<sup>11</sup> Such

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11. Glanville, E., The South African Goldfields, p.33, quoting W. St. John Carr.

views were particularly true of the early years of the Witwatersrand, and as late as 1895 Goldman had to point out the relatively secure nature of Rand mining investment with its regular reef structure as a reason for accepting a lower return.<sup>12</sup> Any investment in an untried gold field required a commitment on the part of the investor which included a large speculative risk. Fortunately for the successful launching of the Witwatersrand industry such a speculative atmosphere had already been created in South Africa with the earlier mineral discoveries.<sup>13</sup> The proclamation of the field in September 1886 coincided with a boom in the market for Barberton gold shares, while in Kimberley a market for diamond and gold mining shares was already well established. It is thus important to remember that the Witwatersrand had to compete for its capital requirements against these alternative counters.

Knowledgeable Kimberley investors like Alfred Beit were aware of the inherent weaknesses of the Barberton fields and were thus rather prepared to risk investment on the Witwatersrand.<sup>14</sup> But as Emden has suggested, there was little enough information here on which to base their investment decisions.<sup>15</sup> For the general investment public there was even less to guide their investment patterns. Kimberley and Barberton in 1886 were at least productive, while the Rand sought their commitment on the strength of promises. Undoubtedly, the wild reports and novelty of the discovery encouraged some to risk their savings on the possibility of great wealth, but as an untried field there was a limit to the capital which the Witwatersrand could draw. It is quite possible that this situation contributed to the limited extent to which the early companies called upon the public for funds and the limited provision made for working capital in their prospectuses. Such a view suggests a tremendous, and possibly inevitable, gamble on the part of the company promoters. It also placed a greater emphasis on the need for quick and spectacular returns if shareholders were not to withdraw their support. The concern of the smaller companies in this regard was that much greater. Not only were their initial investments that

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12. Goldman, C.S., South African Mines: Their Position, Results and Development (1895-96), Vol. I, p.xiv.

13. Schumann, C.G.W., Structural Changes and Business Cycles in South Africa, 1806-1936, pp.33-34.

14. Cartwright, A.P., The Corner House, pp.29-30.

15. Emden, P.H., Randlords, p.347, note 10.

much smaller but they also tended to rely on a more critical shareholding. While the Wemmer and Ferreira Companies were fortunate in drawing a great deal of their support locally, other small companies like the Worcester, Grahamstown, Cradock and Tarka Companies, drew their capital from distant localized sources who, while prepared to take the initial risks, knew the limits of their resources.<sup>16</sup> The early demise of many of these companies bears testimony to this fact. Thus while specific information was limited on how much capital was needed, so was the possibility of acquiring excessive amounts. The Witwatersrand Company pioneered the way by offering 6 000 shares of £10 each to the Kimberley public.<sup>17</sup> That only 1 100 were applied for suggested the need for a major scaling down in the aspirations of those company promoters who followed; if not in their own expectations, at least insofar as the capacity and willingness of the general investing public was concerned.

Consideration of the internal integration of the companies reflects the early preoccupation of management at all levels with profit maximization. Here a major consideration in the case of the Wemmer Company was the choice of reef mined. By working the rich south reef exclusively the Company's management was certainly indulging in profit maximization, although here a second element in the exogenous factor clearly surfaces. Besides the considerations already discussed, namely, profit maximization for the reimbursement of shareholders and to make good the shortfall on the provision of original working capital, the prevailing circumstances also allowed for a considerable speculative element. Hence the announcement of spectacular results had a direct bearing on share prices, which in addition to enriching shareholders, allowed a fringe of directors and associates to directly manipulate output for the benefit of such speculative activity. A similar trend is clearly visible in the early utterances of Knight and others regarding the value of the Witwatersrand Company's ore as a means of keeping share prices up.<sup>18</sup>

The extent to which the rise in share prices was used as a means of overcoming the shortfall of working capital differed between companies.

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16. See above, Chapter I, pp.16ff.

17. See above, Chapter II, pp.25ff.

18. See above, Chapter II, pp.31, 38.

In the case of the Witwatersrand Company it seems unlikely that the share market was used directly for raising additional funds for the Company. It seems more probable that the rise in share prices was required by William Knight and his fellow directors so that they could profit by unloading their inflated holdings of vendors' shares and for reimbursing Knight for his outlay on equipment. The Simmer and Jack Company<sup>19</sup> used the rise of the market for the sale of reserve shares but had no reason beyond that for specifically engineering higher share prices before 1890. The slow start shown by the Ferreira Company and its closing down soon afterwards at the end of 1887 suggests that its working capital was exhausted too soon for it even to attempt to use the market as a means of raising fresh working capital. Thereafter its capital requirements were largely met by a series of loans from H. Eckstein and Company. High share prices clearly operated in favour of the Wemmer Company's search for additional working capital, the fresh issue of 5 000 shares in early 1888 resulting in a profit of £15 906 which was used in the elimination of a deficit on capital account.<sup>19</sup>

The early exploitative mining practiced by the Wemmer Company can be considered from two perspectives. On one level it could be, and probably was, justified by management as being legitimate in terms of the overall profit maximization criterion. Beyond this there is also the consideration that the initial spectacular assays from the reef on this property might have influenced management in the decision to provide only a limited working capital, given the external constraints on its availability, and anticipating that future capital requirements could be generated from mining or speculative profits. Discounting such a view with regard to any of the companies, however, was the need for all companies to show early dividends, and the alacrity with which these were paid by companies irrespective of the need for working capital or the establishment of substantial reserve funds. The positive influence of an early payment of dividends on share prices was clearly recognised. The Jubilee Company paid its first dividend of five per cent on 20 May 1887, within five months of the formation of the Company and at the end of its first month of production, while the Wemmer Company

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19. See above, Chapter IV, p.111.

paid a spectacular forty per cent on 23 July 1887, only three months after the commencement of operations.<sup>20</sup> Whatever the perspective, however, there remains the overall judgement that as a decision made by a management group participating in a reef mining venture, the exploitation of only the richest reef in a mine was shortsighted and bound to generate difficulties in the future. Similarly, the payment of an early dividend before reserve funds could be established reflected the general inexperience of the management.

Another feature of the longer term output, and hence profit maximization goal of internal integration, is the size of the mining property and the machinery used by the various companies. No doubt the length of a property along the line of the reef outcrop can be seen as a function of the competition generated between the initial claim peggers, the syndicates and individuals who bought them out, and ultimately between the companies formed to work the claims. For the Witwatersrand and Simmer and Jack Companies, formed as they were to exploit the mynpachts of the farms Driefontein and Elandsfontein No.1 respectively, their large size reflects the lack of competition due to the Government policy of granting such rights on proclaimed farms. As is seen in the case of the Simmer and Jack Company, the late pegging of the owner's claims or mynpacht brought the peggers into dispute with those lessees who had preceded them. Nevertheless, while the grazing rights of the lessees were upheld, it was the holders of the mynpacht rights who eventually triumphed in the dispute, gaining a considerable proportion of the outcrop claims in the process.<sup>21</sup> As an early mover in the pegging of the Driefontein mynpacht, William Knight was able to gain a spectacular length of claims along the outcrop which represented the head of the T-shaped property, while only laying claim beyond these to the valley floor to the south as a source of water supply.<sup>22</sup> In contrast, the Wemmer and Ferreira Companies, lying close to the initial discovery on Langlaagte, were floated to work a relatively small number of claims, reflecting the jostling and claim jumping which characterized the competition for every square inch of ground along the

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20. Goldman, C.S., The Financial, Statistical, and General History of the Gold and other Companies of Witwatersrand, South Africa (1892), pp.12A, 26A.

21. See above, Map facing p.61.

22. See above, Map facing p.24.

outcrops of the central Rand.<sup>23</sup> Similarly, the location of their water rights at a greater distance from the claims again reflects the competition which fragmented the area and represented the true Witwatersrand "rush". The large properties of the Witwatersrand and Simmer and Jack Companies ensured them a considerable lifespan and hence profit maximization. If anything, this consideration was subjugated to the more pressing demands equated in the eyes of management with success, namely, early payments of dividends and the raising of working capital for the development of smaller companies. In contrast, the limited size of the two smaller companies threatened them with an early curtailment of operations and necessitated the purchase of additional claims for the attainment of longer term profit maximization through a reduction of total marginal cost.

The takeover of the Wemmer Extension Company by the Wemmer Company on mutually advantageous terms was certainly an early example of cooperation and suggests a reasoned attempt by management to establish a more viable proposition for output and hence profit maximization. In taking this step directorate management revealed a remarkable astuteness, closely motivated by the longer term considerations of length of working life and operating costs. Yet in another direction this longer term planning was absent, namely in the expansion of the property in a southward direction once the reef had been proved to extend below a few hundred feet. Here several considerations must be borne in mind. During the period 1889 to 1894 the Wemmer Company found itself in financial straits which demanded the concentration of any surplus revenue on the development of the existing property and plant. It could simply not afford such an expansionist policy. Also during this period the affairs of the Company became increasingly interwoven with those of H. Eckstein and Company, the leading firm in the development of the first row of deep level mines, so that Wemmer management probably did not see its function, once controlled by H. Eckstein and Company, as extending to the indefinite perpetuation of the Company, but rather as centering on profit maximization from the existing property.

In the case of the Simmer and Jack and Witwatersrand Companies, the very large size of their properties, rather than giving rise to

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23. See above, Map facing p.106 and facing p.144.

expansionist policies on the part of management, encouraged the opposite trend and both Companies sought to shed blocks of claims in the years down to 1889. As already indicated the sale of such blocks of claims was recognised as a means of realizing a profit for shareholders and raising necessary working capital. Clearly the emphasis for the Witwatersrand management lay with profit distribution rather than capital accumulation, reflecting the capitulation by them of ever profitably operating the Company. The sale of three blocks of a total of 204 claims for an amount of £210 000 and 15 000 company shares, represented the only profit won by the Witwatersrand Company in the period, while the inability of the Simmer and Jack Company to separate the eastern portion of the mynpacht was viewed by the directorate as a distressing failure.

The early Ferreira management seems to have given little consideration to a possible expansion of the Company's property, and with good reason, for the limited working of the mine left some doubt in the minds of management about the viability of the existing claims. It required the forethought and capital of H. Eckstein and Company's participation in its affairs to plunge the Company into the capital investment necessary for proper development of the mine and to give consideration to the expansion of the property through the acquisition of the Bijou Claims and subsequently the South Ferreira Block. It is, however, worth noting that even in the case of H. Eckstein and Company the decision to expand the Company southward coincided with the failure of the first round of amalgamation plans which intended the unification of the Ferreira with its neighbouring companies. It was then decided, probably on the strength of assay results of the south reef, to expand the scale of operations of the Company and to look southwards for the ore reserves which would render the proposition viable and help to reduce the marginal cost per ton of ore milled.

A facility which the Witwatersrand and Simmer and Jack Companies exploited for both profit maximization and cost reduction was the ownership of the farms on which they operated. In terms of the Gold Law of the South African Republic, the freehold owner of a farm proclaimed a public digging was entitled to receive half of the licence revenue paid to the state for prospectors and diggers licences and all of that accruing from the sale or lease of stands for building purposes.<sup>24</sup>

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24. See above, Chapter I, pp.14-15.

For the Witwatersrand Company the loss of a court action against the freehold owner resulted in the closing off of all future licence revenue from the farm Driefontein, from which Knight had come to expect a steady income. The only solution lay in the purchase of the freehold and this was duly done. Thereafter the Company settled back to enjoy a steady income from its estate which played a significant part in the affairs of the Company.<sup>25</sup> In the subsequent period it also decided to capitalize on its ability to supply water to the surrounding mines from the water rights held on the foot of the T-shaped mynpacht. Here then was an income source, which, beyond the initial purchase price of the farm, involved a minimal outlay while guaranteeing a steady income from the various mines and individual prospectors who operated on the property. Likewise, the Company's own expenditure in this regard was significantly reduced.

The Simmer and Jack Company was far more ambitious in the exploitation of its estate than was the Witwatersrand Company. Like the latter Company, the decision was taken early to acquire the freehold of the farm Elandsfontein No.1 from its owners, Messrs Meyer, Simmer and Jack. Unlike the Witwatersrand Company, which was content to rest with the receipt of licence revenue from its estate down to 1889, the Simmer and Jack Company set about the active exploitation of its freehold. The necessary permission was acquired from the Government for the establishment of the village of Germiston in which stands were surveyed and beacons off prior to their lease to the general public. Plantations of trees to meet the future timber needs of the mine were soon planted and every effort made to maximize the revenue from the estate. The village of Germiston continued to thrive under the close watch of the Company's board with shops and a hotel being added to the collection of private dwellings. Such was the success of the venture that the village was chosen as the terminus of the Cape and Netherlands Company's railway systems in 1892.<sup>26</sup>

The lack of any detailed plans for the systematic exploitation of their properties by three of the Companies, namely, the Wemmer, Ferreira and Witwatersrand, indicates that in their haste to win returns from the

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25. See above, Chapter II, pp.44ff.

26. See above, Chapter III, pp.67ff.

ore, such considerations were ignored or brushed aside in the short term. The ultimate cost of their actions is borne out in the subsequent capital shortages faced by them. In the case of all three companies their early mining development was subsequently condemned by competent authorities as being wasteful and of little future value in the systematic exploitation of their mines. It is clear that in the case of them all, this shortsightedness resulted in higher working costs than would otherwise have prevailed and so assisted in bringing about the difficulties so soon experienced by them. It is true that William Knight did have a definite plan of action, namely, the quarrying of as much ore as possible from the length of outcrop for as long as possible. He saw in this method a means of saving on the wages of skilled miners, which he considered a substantial cost reduction. Nevertheless, the shortsightedness of such a policy does not require much elaboration, as sooner or later capital intensive pit mining would be required along with the necessary skilled expertise.

In contrast to the other three companies, the Simmer and Jack Company was quick to adopt a fairly comprehensive and successful plan for the opening up of the property. That it would have followed the prevalent example of open cast mining had suitable conditions prevailed is undoubted, but the shallowness of the slope of the reef soon terminated this practice and called for more sophisticated techniques. A factor which might also have swayed management in this decision was that commencing operations a year after the initial activities of the Witwatersrand and Jubilee Companies, a clearer idea was held regarding the depth of the reef, which allayed fears of it pinching out at no considerable depth. The local topography also catered for the mining of a substantial body of ore by means of driving an adit level into the hillside. A shaft of this nature was considerably cheaper to drive, as well as being quicker, so that the results gained from it were enjoyed that much sooner. Water could be drained from the mine and the ore trammed out by gravity, both significantly reducing the cost of mining the ore between the adit and the surface. Hence it is clear that the adoption of sound mining principles in the case of the Simmer and Jack Company bore certain clearly identifiable short term cost advantages, and it was for this reason that they were adopted so early in the history of the Company. The planned development also reflects the responsible and experienced management the Company enjoyed in the person of Mr William Pope.

Of the specific measures adopted by the companies which resulted in cost reductions, those concerning labour are perhaps the most significant. In considering labour as a factor influencing the internal integration of a company it is necessary to bear in mind that many moves in this regard also had a bearing on the external integration of the company as an employer of labour competing in a relatively open labour market. It is also essential to view the joint stock company as an employer of both management and labour.

In considering the role of the company in the employment of a management group it is significant to note that only one of the four companies of the study retained the same mine or general manager throughout the period down to 1889, namely, the Witwatersrand Company, whose manager Mr A.A. Stanton resigned following the partition of the mine property in that year. For the other three companies the problem of finding either competent or compatible managers proved an enduring one and this dismal record seems to have been duplicated in a considerable number of the early Rand mining companies. The failure of early Witwatersrand management to meet the demands of the situation were often reflected upon by the Johannesburg press, particularly in the aftermath of the 1889 stock exchange boom, when it was clearly recognised by all that the future of the industry rested in the hands of this group of men. The reasons for the poor performance of the Rand industry down to that time were seen to lie in two separate, if related, quarters. The incompetence of many early mine managers was recognised but it was also seen that the directors were at fault. As The Diggers' News noted, "...no improvement will be manifest until directors look to dividends instead of how best to encourage share speculation."<sup>27</sup> The emphasis on crushing rich ore as a means of influencing share prices was recognised for the evil it was, but even The Diggers' News was only so bold as to make the necessary recriminations after the collapse of the boom. The effect of this policy of bleeding the mines of their rich ore was evident in the affairs of companies like the Wemmer and the Robinson, who in the aftermath of the boom struggled to reduce working costs and maintain output of gold at reasonably constant levels. What was now required of directorate management was a commitment to conduct the mining of their properties on ordinary business principles.

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27. The Diggers' News (Johannesburg), 6 April 1889.

It is clear that the incumbents of managerial posts demanded and received high salaries from the outset. That such salaries showed little distinction regarding qualification or competence encouraged a lethargy only partly attributable to personality. Many mine managers seem to have been mere overseers who acted according to the speculative dictates of their boards of directors. As The Diggers' News suggested, while the emphasis lay with share speculation rather than production, it mattered little to a company's shareholders and directors alike whether the manager was competent in his field.<sup>28</sup>

It is interesting to reflect on the influence of Kimberley mining practice on the early days of the Witwatersrand and the lack of initiative for innovation in early Rand management. At Kimberley, mining practice centred on the open cast mining of the diamondiferous pipes from where the material was transported over considerable distances to the weathering and processing floors.<sup>29</sup> While by the second half of the 1880's such methods of open cast mining were giving way to shaft or pit mining in the face of an increasing incidence of ground slides in the open mines, the more sophisticated method was also recognised as being more capital intensive.<sup>30</sup> The close resemblance to early Witwatersrand mining practice is striking but while open cast operations were suitable for deposits extending over several square acres, the method was hardly applicable to a body of conglomerate reef whose width was generally measured in inches, even if it did extend over several hundred yards on some of the properties. No doubt those who initiated the open trenches which characterised the early Rand also had ulterior motives. Not only was it considered a means of "proving" the reef, but William Knight saw in the method a means for minimizing the need for and cost of skilled miners.<sup>31</sup> Quarrying was a technique which could be undertaken by unskilled black labourers under the supervision of billiard room attendants. Clearly the level of Kimberley mine management before 1886 was low and not trained in the skills required for mining the reef. A curious sidelight is the fact that many Kimberley managers tended to become Rand capitalists, as was certainly the case with W. Knight, H. Eckstein and L. Phillips.

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28. The Diggers' News, 25 May 1889.

29. Reunert, T., Diamonds and Gold in South Africa, pp.23-36.

30. See above, Chapter I, pp. 8ff.

31. See above, Chapter II, p.35.

The failure of the Witwatersrand to recruit an effective management strata can perhaps be attributed to the nature of the discovery. The Rand was not a gold field which evolved through the usual phases of a mining frontier, where a rush of individual diggers operated until circumstances forced them to sell out to, or form, companies with the necessary working capital to continue deeper mining. Under these circumstances the experience necessary for the successful management of the peculiarities of a particular deposit can be gathered locally and a management group evolves as a function of time and circumstances. The Witwatersrand was rushed in the conventional manner by the usual collection of fortune seekers, but as one newspaper correspondent commented in July 1886,<sup>32</sup>

"By this time it is presumed that every inch of gold bearing ground has been marked out into claims by those who rushed the place ... but the diggings not being alluvial, it is difficult to discover what the majority will do with their claims, which are unworkable without capital..."

These independent claims, like those of Ignatius Ferreira, were soon bought out by syndicates of capitalists operating from the larger commercial centres of South Africa, who then set about floating the gold mining companies.<sup>33</sup> The original claimholders now either stood back in anticipation of employment on the mines or returned to their homes or prospecting that much richer or poorer for the experience, while the company promoters scouted about in search of individuals with good enough credentials or plausible enough tales to manage the new operations. A knowledge of reef mining was at a premium,<sup>34</sup> as were the other skills necessary to ensure the success of the field. As late as November 1887 a press editorial called for "gold experts, chemists and engineers, mechanics, etc. to have some evidence of their experience."<sup>35</sup> It is surprising that while companies were prepared to invest considerable sums of money in acquiring modern machinery from the United States and Europe to work the ore, there was such a singular lack in the importing of skilled mining management expertise. Undoubtedly, the seeming expense of such labour against the relatively cheaper "colonial" man was one

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32. The Daily Independent (Kimberley), 19 July 1886.

33. See above, Chapter I, pp.15ff.

34. Reunert, T., op.cit., p.196.

35. The Eastern Star (Grahamstown and Johannesburg), 11 November 1887.

consideration but even these demanded, and received, high wages on the Rand. Two reasons for this shortcoming are suggested. Firstly, given the competitive nature of the capital market prevailing in South Africa, not only for the whole new industry, but also between companies in the Rand industry, the haste to show quick returns, already exacerbated in the long lead times for the delivery of mining and milling equipment, prompted a fairly haphazard selection of men for management positions from those available in situ in order to prepare sites for machinery and the commencement of mining activities. Secondly, the Witwatersrand was the first major non-alluvial gold discovery which demanded the application of skilled mining techniques from the outset. These skills were, however, virtually impossible to attract before the field had been proved as a workable and profitable proposition. The only technically competent mining engineer in South Africa at the time, Gardiner Williams, gave the field a bleak prognosis and accepted what was considered a more stable position in the diamond mining industry.<sup>36</sup>

The Wemmer Company's first manager came from Brazil and was probably like so much of the human flotsam which the improved transportation of the nineteenth century carried from one rush to the next. His successors down to the appointment of J.H. Johns seem to have suffered a similar lack of competence and in the years down to 1889 to have been dominated in their activities by the speculative dictates of the board of directors. The early managers displayed a singular lack of ability to deal with the important consideration of cost reduction as a function of overall profit maximization.

The relatively short tenure of Knox as manager of the Simmer and Jack Company proves the lie in the assumption of competence as the inevitable corollary of experience from another gold field. Knox's Australian mining experience did not assure him a continuing position with the Company once the services of a more competent man were available in Mr William Pope. The new manager, Pope, served in this capacity down to the take-over of the Simmer and Jack Company by The Consolidated Gold Fields of South Africa Limited in 1894. All we know about Pope's background is that he had previously served as the manager of the Pigg's Peak Gold Mining Company in the eastern Transvaal and

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36. Taylor, J.B., A Pioneer Looks Back, p.132. Williams became manager of the De Beers mine.

that soon after joining the Simmer and Jack, the Company assisted with the expenses of bringing out his wife and family from England to join him.<sup>37</sup> That the Company should have gone to such expense suggests a strong desire on the part of the board of directors to retain the services of a man whom they considered justified the additional expense. In contrast, the nature of Pope's initial contract with the Company was for an annually renewable term. Such a contract was probably considered to be in the best interests of both parties. It might be inferred from his background that Pope had probably gained some experience in reef mining, either in Cornwall or elsewhere, prior to his arrival in South Africa, where he had "made good" his reputation on the De Kaap field. An interesting sidelight on his appointment was that on being confirmed to the position, the board of directors gave him an allowance of fifteen guineas with which "to make himself conversant with Witwatersrand mining",<sup>38</sup> a clear indication of the positive approach towards their responsibilities by the board and also reflecting an awareness of the unique nature of the Rand conglomerate which required a certain amount of adjustment on the part of the new manager.

The activities of the Simmer and Jack Company are also likely to have benefited from the presence of George Farrar, who served both as managing director and chairman over a considerable period of time. Farrar was a qualified engineer who first arrived in South Africa in 1879 to assess the potential of the local market for agricultural machinery. Finding the sale of mining equipment more lucrative he soon became involved in mining promotion and management.<sup>39</sup> His expertise and that of his brother, Sidney, who subsequently served the Company as consulting engineer, were bound to be of substantial benefit to its operations at a time when engineering knowledge of any description was at a premium.

It is difficult to decide on the degree to which George Farrar's involvement with the Simmer and Jack Company was directly related to the operations of the family firm of Howard, Farrar and Company. There is evidence to suggest that lucrative contracts were given to the firm

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37. Cory Library, MS16 007, Minutes of Directors Meetings of the Simmer and Jack Gold Mining Company, 4 December 1888.

38. Ibid., 17 September 1888.

39. Kubicek, R.V., Economic Imperialism in Theory and Practice, p.133.

which might otherwise have been placed elsewhere, and as already mentioned, his brother was appointed to the position of consulting engineer. At least one author was moved to comment on the prevalence of such activities on the field when he wrote,<sup>40</sup>

"Directors get elected to seats upon Boards in order to secure for themselves or friends fat contracts to supply mining materials to the several companies they are deputed to watch over."

It seems unnecessary to add that the standard of business ethics was never very high on the Witwatersrand during the period under review.

As a Company with a large mining area and estate to operate, the Simmer and Jack Company soon recognised the advantages of a management structure. As early as January 1889 the board asked for sweeping powers in order that it might better manage the affairs of the estate. Created solely as a mining company, the board were not initially given the necessary powers for the sale or leasing of parts of the property. These powers were now called for and granted in order that the board might generally conduct the affairs of the estate without the necessity of constant recourse to shareholders.<sup>41</sup>

The position of managing director was created in the Simmer and Jack Company virtually from the outset of operations in 1887. The functions of the incumbent were to liaise directly with the mine manager and to authorise and settle minor issues regarding the mine without the necessity of having first to consult the board. All his decisions had, however, to be ratified by the board. George Farrar was the first appointed to the position. In July 1889 the question of the remuneration of the managing director was raised. In view of the amount of time involved by the incumbent in pursuing the affairs of the Company, it was felt that the managing director should receive some compensation over and above the usual directors' fees. The precedent had already been established in some of the smaller companies which had voted their managing directors monthly salaries of between £20 and £30. Farrar relinquished the position at the beginning of 1889 and the mid-year meeting decided to reward him with a bonus of £600 for past services, payable when the board felt the financial position of the Company

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40. Glanville, E., op.cit., pp.120-21.

41. The Eastern Star, 23 January 1889.

could afford it.<sup>42</sup> R.R. Hollins was appointed to succeed Farrar but received no salary.<sup>43</sup> The financially embarrassed position in which the Company found itself in 1889 precluded the luxury of a paid managing director and it was only towards the end of 1890 that the issue of the payment for the services of this official was again raised.<sup>44</sup>

It is difficult to assess the contribution of Mr A.A. Stanton as manager of the Witwatersrand Company on the limited information available. Inheriting the position from William Knight who managed the mine in its formative months, and who remained the largest single shareholder down to 1888, it is highly probable that Stanton's initiative was strictly curtailed by Knight who retained the position of managing director down to late 1888. As already indicated, Knight held certain fixed ideas regarding the early development of the property,<sup>45</sup> and it is unlikely that Stanton was given much opportunity to alter the pattern of operations established by Knight. The cost effectiveness of Stanton's management must thus be closely related to the overall objectives of Knight's own views and approach to mining. Against this background Stanton's contribution, no matter how effective, was negated by the long term disadvantages of the policy adopted by William Knight. The extensive quarrying of the ore along the outcrop left a trench which had to be filled in before proper stoping of the reef in proximity to it could be undertaken. The belated commencement of shaft mining also represented a delay in the training of personnel to undertake that work, or at least necessitated the poaching of such staff from other mines at considerable cost.

The poor grade of ore mined on the Witwatersrand Company property, despite early utterances in this regard,<sup>46</sup> made the type of mining pursued, namely, the open cast operations, cost effective only in the very short term. The depletion of working capital on this form of mining without the possibility of substantial short term returns guaranteed the Company financial problems in the medium to long term. Open cast mining

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42. The Diggers' News, 30 July 1889.

43. The Star (Johannesburg), 24 August 1889.

44. Cory Library, MS 16007, op.cit., 17 December 1890.

45. See above, Chapter II, p.35.

46. See above, Chapter II, p.31.

could only have been justified on the Witwatersrand in the case of properties with very rich ore and a shortage of working capital for shaft sinking and stope mining, when the capital deficiency could be eliminated by the short term cost advantages of using this method. The Wemmer Company can be categorised in this group of companies, but it lost any advantage gained by the use of this method in the declaration of early and ill-considered dividend payments. It is doubtful if the Witwatersrand Company even reflected a small profit from the pursuit of this method. Like the management of the Wemmer Company, that of the Witwatersrand Company indicates very little consideration in the early years for cost saving. Knight clearly recognised the advantages to be gained from large scale operation and from the employment of cheap black labour, but did not know how best to apply them to his benefit within the Witwatersrand context. An extensive assaying and development of the various reefs, followed by the choice of a mill and machinery best suited to cater for the progress made in opening the mine, would have saved Knight his reputation and enhanced his fortune.

The early management of the Ferreira mine reflects the extent to which William Knight's methods set the standard for the early Witwatersrand field. Open cast mining predominated here too. While Knight could at least justify his actions on the strength of the extent of the outcrop, some 3,5 miles, on his property, a similar technique on one the size of the Ferreira mine was clearly inappropriate, unless spectacular results were forthcoming to make up for capital shortfalls in the short term. While information on the early operations of the manager Johnstone is scant, it seems probable that he employed the quarrying technique for as long as possible before resorting to shaft mining. It is quite possible, however, that this activity was not restricted to the rich south reef, so that scarce capital was expended on the futile opening up of unpayable reef. No early dividends were declared and it is possible, given the results of the trial crushing at Struben's mill,<sup>47</sup> that some limited profit accumulation took place to assist the scant provision of working capital. Nevertheless, a dilution of the south reef with other material would have raised both the average and total working costs, making for a reduction in total profits. High working costs, attributable to the payability of only

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47. See above, Chapter V, p.147.

the south reef in the upper levels of the mine, were a persistent feature of the early history of the Company. It is thus unlikely that results as spectacular as those of the neighbouring Wemmer Company were forthcoming. The closing down of the mill at the end of 1887 and dismissal of Johnstone, while on one level reflecting his incompetence, must also be considered in the light of the growing influence of H. Eckstein and Company on the affairs of the Ferreira Company. Although high handed, the termination of the manager's services formed part of a major restructuring of the Company's operations and was probably only weighed in terms of an immediate cost saving. The failure of the two succeeding managers suggests the poverty of the class of man available on the Rand and the inability of even a firm of the stature of H. Eckstein and Company to deal effectively with the difficulty. It was only with the appointment of Harry Johns in early 1889 that the problem was overcome, and even then Johns was to establish the reputation of being an expensive, if effective, manager.<sup>48</sup>

In considering the employment of labour as a factor in cost minimization, several points must be stressed at the outset. The first is the close link between the early Rand industry and Kimberley. In this regard the new industry unhesitatingly adopted not only the mode of capitalist production, as has already been stressed, but also the employment practice developed at Kimberley. The new industry had also to compete with the diamond fields for the supply of labour.

As Siebörger has suggested, many of the diggers who congregated on the early diamond fields were white farmers who brought their African or Coloured labourers with them. While not explicitly outlining the initial stages of the developing employment practice, he goes on to describe the supercession of these farm labourers by tribesmen who saw in the diamond fields the opportunity for accumulating the necessary funds for the purchase of firearms and other status symbols within their tribal societies. The actions of Richard Southey, Lieutenant Governor of Griqualand West between January 1873 and August 1875, and private individuals like John Edwards in the recruitment of this labour are well documented. The success of their endeavours and the popularity of the diamond mines as a mode of temporary employment for African

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48. See above, Chapters IV and V, for evidence of high working costs under Johns's management.

tribesmen from throughout southern Africa was well established by the time of the discovery of gold on the Witwatersrand in 1886.<sup>49</sup>

In comparison to the diamond fields the Witwatersrand mines required a considerable labour complement from the outset of both skilled miners and unskilled labourers. For both these types of labour the new gold field had to compete with existing employers in South Africa and abroad. The discovery of the Sheba Reef at Barberton in 1885 and the opening of many of the surrounding quartz reefs by new mining companies in 1886, together with the development of shaft mining at Kimberley from 1883 onwards, necessitated the increasing use of skilled white miners. Undoubtedly, some of these men were attracted to the Rand as part of the "rush" along with other skilled miners and artisans from beyond South Africa, but the high wages which had to be offered to this class of European workmen suggests their relative scarcity, as does the ease with which only relatively competent miners found employment on the Rand as managers. Once again the unique nature of the Witwatersrand discovery, which required their skills from the outset, weighed against their voluntary arrival prior to the "proving" of the field. The relative inaccessibility of the Witwatersrand was also a deterrent to any skilled artisan from the industrializing nations who had come to expect a standard of living which the Witwatersrand in its early stages was incapable of offering. The remarkably rapid metamorphosis of Johannesburg from mining camp to a centre offering a wide range of facilities to the public reflects the recognition and pace with which the problem was rectified.<sup>50</sup>

Within the South African context, crude as Barberton and Kimberley might have appeared in the eyes of outsiders, they nevertheless represented an advance on the tent and corrugated iron town of Johannesburg in 1886 and 1887. While fever soon eliminated the De Kaap fields as serious contenders, Kimberley continued to offer an attractive alternative venue of employment for both skilled and unskilled labourers throughout the remaining years of the nineteenth century. Likewise,

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49. Siebörger, R.F., The Recruitment and Organisation of African Labour for the Kimberley Diamond Mines, 1871-1888, Unpublished M.A. thesis, Rhodes University, 1975, Chapters I to III.

50. Neame, L.E., City Built on Gold, pp.8-22.

both these centres were to a greater or lesser extent seeking the same type of skilled miners and artisans required by the early Witwatersrand companies. Added to the dilemma was the high cost of living which prevailed in the South African Republic due to the long distances from the coast, its relative underdevelopment which necessitated the importation of even basic necessities of life, and the high tariff structure erected by the Government as a means of raising revenue.<sup>51</sup> It was thus inevitable that wages would be considerably higher than in the rest of South Africa, but there was the additional factor of the need to offer even more than a compensatingly higher wage simply to compete for skilled workers. It was only with the closing of the Dutoitspan and Bultfontein diamond mines at Kimberley at the end of 1892 that the competition for skilled labour from that place can be said to have diminished.<sup>52</sup> As Doxey has suggested, the eastern Transvaal gold fields also felt the pressure of competition from Kimberley for miners.<sup>53</sup> It is doubtful if the creation of the De Beers Consolidated Mines Limited in March 1888 resulted in the redundancy of many skilled workers, as with the rapid development of shaft mining which followed the amalgamation the need for this type of labour is likely to have grown. Siebörger nevertheless points out that following this event, the number of African unskilled labourers contracted from 85 180 in 1888 to only 45 624 in 1890, a reduction also stimulated by the general economic recession.<sup>54</sup> In any event the Witwatersrand had by March 1888 seen the initial development of many of the properties and the enthusiasm with which open cast mining was embraced suggests the general paucity of skilled miners.

Turning to the situation governing the supply of African unskilled labour, Doxey has suggested three main considerations. Firstly, that the huge demand for unskilled labour created by the early Witwatersrand came at a time when there were competing demands for that labour. Secondly, the African had not yet reached a stage where his material wants were sufficiently strong to induce him to enter the labour market

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51. Van der Poel, J., Railways and Customs Policies in South Africa, 1885-1910, pp. 17, 55.

52. Reunert, T., *op.cit.*, p.62.

53. Doxey, G.V., The Industrial Colour Bar in South Africa, pp.40-41.

54. Siebörger, R.F., *op.cit.*, pp.149-50.

readily, and finally, that the Rand early developed a bad reputation as a place of employment.<sup>55</sup> It is worth adding that the disproportionate demand for such unskilled workers arose out of the scarcity of skilled miners. The shortage and difficulty in procuring skilled miners and artisans, and the resultant high wages they commanded, resulted in greater emphasis being placed on the procurement and use of unskilled black workers. Assisting this tendency was the shortage of working capital which encouraged early management to seek a cost effective way of winning gold from their properties. The shortage of black labour was therefore immediate and became the chief criterion determining the amount of ore mined from the open trenches. The statement of William Knight that, "... the natives soon get into the way of it", and the shortage of African labourers experienced by him bear re-emphasis.<sup>56</sup> The shortage of unskilled labour was clearly recognised as an easier problem to resolve than was the scarcity of skilled workers. The Simmer and Jack Company experienced a similar shortage of unskilled labourers and Knox sent to Natal for a contingent of Zulu workers, which as Siebörger has noted, were considered the best and most honest of the workers on the diamond fields.<sup>57</sup> The Witwatersrand had thus to break into the market for migratory unskilled labourers already established by and for the supply of the Kimberley diamond industry. After 1888 the task was made lighter by the consolidation of the diamond industry and the consequent falling off in the number of black unskilled workers required, but by then some sort of precedent had already been established regarding employment on the Witwatersrand.

The scarcity of African workers in the initial stages of the Witwatersrand industry was probably met by direct attempts to divert the stream of workers passing to Kimberley from the northern and eastern Transvaal. By 1886-87 the Kimberley field had been offering employment to black labourers for some fifteen years. It does not seem too much to suggest that by then a fairly accurate idea of wages and employment conditions prevailing at Kimberley were reasonably widespread in the areas from which the mines drew their labour. Potential Witwatersrand employers could thus only have succeeded in winning these workers by

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55. Doxey, G.V., *op.cit.*, pp.45ff.

56. See above, Chapter II, p.35.

57. Siebörger, R.F., *op.cit.*, pp.16-17.

the offer of higher wages. For their part, Africans journeying from the northern Transvaal and Portuguese East Africa would have seriously considered the advantage gained from an employment opportunity that was much closer to their homes. Nevertheless, Siebörger asserts that the discovery of the Witwatersrand did not initially result in a serious decline in the labour supply for the diamond fields,<sup>58</sup> and contemporary evidence suggests that many Africans used the Witwatersrand as a temporary sojourn where money could be earned to help them acquire food and provisions for the remainder of the journey to Kimberley.<sup>59</sup> If this was the case then it would seem that the Rand was indeed fortunate in that greater numbers of blacks must have been coming on to the labour market in 1886-87, and that at least a certain proportion of these workers were prepared to offer their labour on the new gold field. Alternatively, the new Witwatersrand managers were themselves successful in their recruiting bids beyond what might initially have been expected.

The extent to which African workers were brought to the Rand by prospective employers is, however, difficult to determine. It seems possible that men like William Knight, J.B. Robinson and the members of the Eckstein group, could have arranged for the diversion of workers to the new field. Their standing in Kimberley and an intimate knowledge of the recruitment system applied there, could well have resulted in such a move. Such a step would, undoubtedly, have been executed clandestinely so as not to provoke public comment in Kimberley. It would also, of necessity, have had to be finely attuned to the needs of both Kimberley and the Rand, so as not to have caused any embarrassing labour shortages in Kimberley.

The greatest concern of Witwatersrand management in the years down to 1889, with regard to labour, was the question of supply rather than cost. The awareness of a dire need for cost minimization as a means of achieving profit seems largely to have been ignored. It was anticipated that the returns of gold from most mines would be more than sufficient to offset working costs and result in substantial profits. Similarly, while larger profits were being made by companies on their share operations such a view was perhaps inevitable, and the directors of most companies seem to have taken only a belated interest in this factor, as

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58. Ibid.

59. The Eastern Star, 14 May 1888.

for example in the case of the Wemmer Company.<sup>60</sup> Initially, while expectations of fabulous returns in excess of one ounce of gold per ton of ore were general, the relatively low cost at which Africans could be hired, even if at higher rates than prevailed elsewhere, probably concealed the total cost of this vital factor of production. Far greater quantities of the limited working capital were being channelled into equipment and machinery and the emphasis rested rather with the need for a quick return on this outlay. Most managers therefore probably considered that they could well afford the internecine labour poaching and the slowly spiralling cost of increased wages which inevitably resulted. In the words of an editorial of the local press in 1888,<sup>61</sup>

"The best managed company cannot satisfactorily prosecute its work unless the supply of labour at command is, if not practically unlimited, at least reliable, and sufficiently to be depended upon to keep work both at the mine and at the mill constantly going. That, however, is unfortunately far from being the case at present."

It is here that the second point raised by Doxey becomes relevant, if not strictly in the context in which it was originally stated, namely, that the African had not yet reached a stage where his material wants were sufficiently strong to induce him readily to enter the labour market. Considering the broad structure of the total black population of southern Africa at the time, Doxey's assertion is undoubtedly correct, but it would seem that a significant group did recognise the potential of the labour market and came increasingly to exploit it for their own benefit. As Siebörger has suggested, the Kimberley fields had by the mid 1880's developed not only a permanent African population, which the compound system subsequently acted against, but had also developed to a point where black mine workers were regularly returning to the fields to seek further terms of employment.<sup>62</sup> The extent to which this latter phenomenon was the result of coercion or choice is not fully explored, but Siebörger tends to favour an interpretation based on choice. By early 1888 the complaint regarding the supply of African labour to the Witwatersrand was not that it was unobtainable, but rather

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60. See above, Chapter IV, p.111.

61. The Eastern Star, 14 May 1888.

62. Siebörger, R.F., op.cit., pp.159ff.

that it was unreliable. Once more in the words of the local press,<sup>63</sup>

"The supply of labour is most unreliable. One week hands are plentiful; next week, without any apparent cause, the mine and battery is left with hardly sufficient hands to keep it going, and stoppages at night, with attendant heavy losses, are unfortunately too frequent of late."

The immediate inference to be drawn from this statement is that the situation was caused by labour poaching, which in turn suggests a shortage of labour in the overall. There can be no denying that this was partly the case, but it is interesting that the editorial attributed the broader shortages to the prevailing working conditions. The chief source of labour was seen to come from the northern Transvaal, and while such workers were considered to be of "poor stamina" and unable to cope with the constant changes of temperature, especially the cold and wet underground conditions,<sup>64</sup> "sudden and extensive migrations of labourers will continue".<sup>65</sup> The migrations referred to were to Kimberley, where it was generally recognised that these workers preferred the dry underground conditions. As already indicated, for many Africans the Witwatersrand was merely a stepping stone, where they were prepared to work until they had earned sufficient to "carry them on their way to Kimberley."<sup>66</sup> It is doubtful, however, if the migration to Kimberley was the only aspect in the unreliability of the Rand African labour force. The emphasis on weekly fluctuations rather reflects the extent to which this labour force were willing and carefully attuned to the competition and labour poaching which characterised the early Rand. Prevailing conditions and the offer of temporary employment on the journey to Kimberley tell only part of the story. Clearly there were those Africans on the Rand who were there because of the offer of higher wages and the realization that a strong bargaining tool existed in the system of weekly employment for raising those wages by playing off one employer against another.

Undoubtedly the problem which the choice of working on the Rand or Kimberley fields offered potential work seekers was partially obviated

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63. The Eastern Star, 14 May 1888.

64. Probably one of the earliest references to the pneumonia which killed thousands of work seekers from north of latitude 22 degrees south before a ban was imposed on the importation of these Africans in 1913.

65. The Eastern Star, 14 May 1888.

66. *Ibid.*

by the consolidation of the diamond mining industry in 1888, but the fact that the situation was exploited by African labourers, gave to these workers a far freer labour market than has been recognised by many commentators on labour matters in South Africa. Not only were a significant group of Africans by the mid 1880's aware of the increasing employment opportunities being offered but they were also willing to seek employment in the mining industry. Undoubtedly the situation altered in the 1890's when, as a result of the rapid expansion of the gold mining industry, the demand for labour outstripped the supply of those Africans willing to offer their labour in this field, but for the initial years of the Witwatersrand industry it is incorrect to assert that the shortfall in supply at any one time was entirely due to a lack of material wants or sufficiently strong inducements on the part of the potential labour force. African workers for the Witwatersrand mines were forthcoming but in the prevailing free market conditions they were prepared to play off one employer against the next and the whole Rand industry against its counterpart in Kimberley. The initial difficulty for Witwatersrand employers lay rather in breaking into the existing labour market and employment patterns established for the supply of labour to the Kimberley mines. Having achieved this breakthrough however, a situation was created which simply widened the employment opportunities which could be exploited by the African labour force.

The factor which enhanced the difficulties for Rand employers was that the industry soon developed a bad reputation as an employer, thus playing into the hands of their Kimberley competitors. Conditions in 1886 and early 1887 on the Rand were very similar to those prevailing in Kimberley. The oxidized upper reaches of the reef near the surface were relatively easy to work and the methods employed were very similar to those prevailing in the open Kimberley workings. It would seem that the African labourers generally shared an aversion for underground work and this could well have been a further factor prompting the general adoption of open cast mining operations on the Rand. Hence it is probably accurate to say that the Rand in 1886 and early 1887 had fewer underground workings than the Kimberley field where shaft mining was becoming regularly employed in the Kimberley mine. By 1888, however, shaft mining was becoming standard practice on the Rand, while Kimberley still operated the Dutoitspan and Bultfontein mines as open workings. Thus the initial open trenches of the Rand were a familiar sight to those passing to seek employment in Kimberley and could have served as an

inducement for these workers to linger or stay on at the Witwatersrand.

The shaft mining increasingly adopted on the Rand in 1888 inherited a damp legacy from the open cast operations. In the wet summers of 1887 and 1888 the open trenches soon filled with water making their draining and working a more tiresome and costly business than was originally anticipated. The inducement was to begin underground operations but even then the trenches above served as reservoirs from which water percolated down into the workings. Thus it was not the harshness of the highveld winter which deterred potential workers, for similar conditions prevailed in Kimberley, but rather the damp underground conditions. At the comparatively shallow depths of the Rand pits in 1888-89, with few workings going below 300 feet, the surrounding rock temperature differed little from the surface<sup>67</sup> and was probably made cooler by the proximity of the water. Another factor was that very few companies had made adequate provision for the draining of their mines. It is not surprising therefore that the winter of 1888 brought on the first major exodus of workers from the Rand. Without the provision of adequate protective clothing and accommodation, working conditions were terrible. Commenting on these conditions the local press wrote,<sup>68</sup>

"Last week the cold was so intense that work at the shafts was quite impossible. Water froze on the platforms at the Ferreira and Wemmer shafts as it was emptied from the buckets. With some little attention to the comfort of the natives, there will, we are sure, be less difficulty experienced in keeping them."

To add to the discomfort of these workers was the fact that during this severe winter Johannesburg was all but cut off from the coast and near famine conditions came to prevail. Under these circumstances the African workers were underfed, where the feeding of their staff was practiced by any of the companies at all. By mid June a considerable number of companies had ceased to operate or had curtailed their activities, "in consequence of the scarcity of labour, and the high cost of what is obtainable, as well as for fuel."<sup>69</sup> The shortage of labour

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67. Truscott, S.J., The Witwatersrand Goldfield: Banket and Mining Practice, pp.388ff, estimated the increase in rock temperature for the Rand as 1 degree rise for every 250 feet of depth.

68. The Eastern Star, 30 May 1888.

69. The Eastern Star, 11 June 1888.

was so acute that mine managers were offering premiums ranging between 5s. and 20s. to touts for every labourer brought in and many Europeans found employment in this way. As the press wryly commented, the provision of better accommodation and working conditions would have, to a large extent, obviated the need for the practice.<sup>70</sup> The Rand thus early gained a bad reputation as a place of employment, to which the later use of coercion can be seen as a logical progression in the drive by mine managers to rehabilitate their companies.

As far as the specific companies of this study are concerned, with the exception of the Ferreira and Simmer and Jack Companies which by May 1888 had quarters of some description for their African workers, no mention is made of any such provision. Even in the case of the Simmer and Jack Company, the facility took the form of a wood and iron shed which, while providing some form of shelter, was far from ideal.<sup>71</sup> The Wemmer Company records make no mention of labour and it is accordingly difficult to draw conclusions. A fall in monthly tonnage crushed did, however, occur from May 1888, which suggests that the Company also experienced a labour shortage.<sup>72</sup> A press report in June 1888 suggested that the Witwatersrand Company's battery had shut down for want of labour.<sup>73</sup> While the report was later denied by the manager,<sup>74</sup> it is obvious that any company as labour intensive in operation as the Witwatersrand Company was from the outset, was bound to feel the pinch. The Ferreira Company also suffered a severe shortage of labour in the winter months of 1888, no doubt mainly because water in the mine constituted a serious problem.<sup>75</sup> The Simmer and Jack Company, given the scale of its operations, was bound to suffer, and the increase in working costs was duly commented upon.<sup>76</sup>

The lack of adequate facilities for the housing of African workers must also be viewed against the background of the minimal working capital with which the companies were initially provided. With the

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70. The Eastern Star, 30 May 1888.

71. See above, Chapter III, p.80.

72. Goldman, C.S., op.cit. (1892), p.55B.

73. The Eastern Star, 14 June 1888.

74. The Eastern Star, 15 June 1888.

75. See above, Chapter V, p.154.

76. See above, Chapter III, pp.80-81.

bulk of these limited funds expended on the provision of often inadequate machinery, little remained for the establishment of proper surface facilities for staff. Here too, in terms of an overtly racist society, and because of their greater scarcity and bargaining power, provision of suitable accommodation for white employees received more immediate attention. In any event, it is quite possible that following the early Kimberley trend, African employees were expected to provide their own shelter and accommodation. The nature of such accommodation was likely to be flimsy, given the transient nature of the work force and the lack of adequate natural building material such as saplings and thatching grass in the vicinity. It is doubtful whether these dwellings were built on mine property as this would have restricted the movement of the owner in seeking employment on different mines. Even this statement presupposes that the worker would receive adequate time for the construction of such accommodation, which does not necessarily follow given that most companies operated a seven day working week.

In summary it can be said that while many of the problems and trends which later came to dominate the employment pattern for black labour saw their origins in this early period before 1889, it is unlikely that the employers of that labour clearly recognised or foresaw the course which events would take. The total cost of this labour in relation to overall costs was not yet clearly understood and the emphasis rested on the procurement of sufficient workers rather than their total or individual cost. The workers themselves had to weigh up the advantages of the Witwatersrand in terms of closer proximity to their homes and the possibly slightly higher wages than those paid at Kimberley, as against the poor and insalubrious working conditions of the Rand by comparison to Kimberley.

The type and positioning of machinery was also a factor used by management to minimize costs. This was crucial to the thinking of William Knight in determining the equipment to be installed by the Witwatersrand Company. Knight ordered the machinery for the mine very soon after he gained the lease on the title of the farm Driefontein's mynpacht. Obviously the choice of the 100 stamp mill for the purpose of working an essentially unproved property represented a gamble of the first order. The choice of Messrs Robey, Jordan and Company as the suppliers of the plant could only have been motivated by the usual considerations of price, lead time, reputation for meeting contracts,

and quality of craftsmanship. Nevertheless, we have the statement by Hennen Jennings that the mill was a new departure for the Company and the subsequent history of the plant suggests that it was not a happy one.<sup>77</sup> What then decided Knight in his choice? We shall never know; possibly it was the price at which the equipment could be obtained; it is equally possible that Knight might have had previous dealings with this company in the supply of machinery for the diamond mines he managed. To suggest, however, that Knight was buying plant without any knowledge of mining requirements is obviously incorrect, and he no doubt sought the best material available, at least in so far as he assessed the situation. Provision was made for automatic feeders for the stamps, although they were only installed some four months after the commencement of milling operations. Likewise, Frue Vanners were acquired for the gathering of concentrates and thus the completion of the amalgamation process as it was known at the time. The emphasis thus seems to have lain in an attempt to maximize output rather than the minimization of the cost of operations; a logical choice given the unproved nature of the property at the time of ordering. But having made the purchase, which absorbed considerably more funds than Knight had originally intended, cost consciousness seems to have overtaken the enterprise. The change in attitude was notably due to the poor results from the first trial crushings, as rather than yielding in excess of one ounce of gold per ton of ore, the first crushing from Struben's mill yielded only 12,5 dwts.<sup>78</sup>

The equipment purchased by Knight was for the reduction of ore only. No mention in his early account to Mathers suggests the procurement of hauling gear or pumping equipment for working the mine.<sup>79</sup> With regard to the battery, however, no expense was spared and there is even the suggestion that the items bought included a dynamo for the generation of electricity to allow for night work in the mill.<sup>80</sup> The imbalance between mine and mill was not rectified in the early years of operation, and while the comparative neglect of the mine represented a saving on capital expenditure, it could only have helped to raise working costs

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77. See above, Chapter II, p.33.

78. See above, Chapter II, p.31.

79. Mathers, E.P., The Goldfields Revisited, Chapter 29.

80. *Ibid.*, p.274.

in the long term. It is highly improbable, owing to the mining technique used and the lack of sufficient labour that the mine could ever have supplied enough ore to keep the full 100 stamp mill working continuously, presuming always that it had been capable of doing so.

Cost consciousness was displayed in the choice of a mill site, as well as in the inadequate preparation of its foundations. Some controversy surrounds the merits of the foundations prepared for the mill. Mathers wrote, "there is a fine solid foundation for the batteries made of first rate stone",<sup>81</sup> yet successive mining engineers condemned the work, suggesting that it was a major cause of the recurrent breakdowns of the mill.<sup>82</sup> The stone was quarried locally and it is likely that considerations of cost and a haste to bring the mill into operation led to its weakness.

Knight also established a trend with the positioning of the mill. Situated a considerable distance from the "mine", it was mistakenly believed that it would be cheaper to run the ore over the distance to the mill than to pump water in the opposite direction. The ore was initially transported by ox-cart although these were later replaced by a tramline. The Diggers' News indicates that by 1891 the transport of ore over considerable distances between mine and mill was costing some companies between £100 and £300 a week.<sup>83</sup> Knight's intention was that by positioning the mill low in the valley to the south of the outcrop workings, gravity could be used to run both ore and the necessary water to the site. Undoubtedly the plan of carrying ore to the water was in part a perpetuation of the Kimberley mining practice of tramping ore to the weathering and sorting floors, but it also had an element of merit in it which might equally have been a legacy of Knight's Kimberley experience. The lower cost of pumping water to a mill located near the pit head, or quarry in this case, seems a logical approach until the fuel situation is considered. In terms of such a plan two separate engines are required to run the mill and water pumps in their separate locations. By positioning the mill at, or in close proximity to, the water supply, both functions can be performed by a single engine, as was the case in all four of the companies studied. Not only did this

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81. *Ibid.*, p.274.

82. See above, Chapter II, pp.42, 44.

83. The Diggers' News, 10 April 1891.

save the additional capital expenditure on a second steam engine, but it also reduced fuel bills at a time when the supply of fuel was at best precarious on the treeless highveld. The outlay on such a pumping engine would also have had to be considerable given the gradients and distances of seldom less than a mile over which water had to be raised and the enormous quantities required in the reduction process. The amount of water needed was estimated at 2 000 gallons per ton of ore crushed.<sup>84</sup>

The discovery of coal deposits in close proximity to the Vaal River was made in 1879 by George William Stow. With the financial support of Samuel Marks an organisation was established to work the find while in 1891 the first coal from the site was transported the 300 miles to Kimberley by ox wagon. The deposit was worked more regularly after the discovery of the Rand in 1886 but it was not until 1892 that "De Suid Afrikaansche en Oranje Vrystaatsche Kolen en Mineralen Vereeniging" was established to exploit the find systematically. Prior to this the quantity and supply of coal from the find was erratic, although a press report in mid-1888 suggested that coal from this source was being supplied to Johannesburg at 13s. a bag.<sup>85</sup> In 1886 the situation was less stable and William Knight hoped to reduce the cost of his fuel bills by substituting peat found on Driefontein for the coal supplied from "Steen Coal Spruit", which was costing between 40s. and 50s. a ton. He also hoped that the arrival of summer would see a considerable reduction in the price.<sup>86</sup> The Venter and Vogelstruis collieries were situated in the Middelburg district some 48 miles east of Johannesburg and besides supplying the Witwatersrand Company also met orders from the Wemmer and Stanhope Companies.<sup>87</sup> It was only following the discovery of substantial coal deposits at Boksburg in December 1887 that a marked improvement in the supply and price of coal swung the situation in favour of locating mills close to the mine pit heads. By then many companies, including those considered in this study with the exception of the Simmer and Jack Company, were already committed to established

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84. "The Gold Mining Companies on the Witwatersrand", p.9, a booklet to accompany Bacon's Map of the Goldfields, 1895.

85. The Eastern Star, 1 June 1888.

86. Mathers, E.P., op.cit., p.274.

87. The Eastern Star, 17 October 1887.

mill locations up to two miles away from their mines. But even then transport continued to be the Achilles heel of the coal supply to the Witwatersrand until the opening of the Rand tram line between Boksburg and Krugersdorp in early 1891 allowed for the regular supply of coal throughout the year. The winter of 1888 saw a tremendous escalation in the price of coal as it became virtually unobtainable on the Rand. Wood too increased rapidly in price from the same cause of a lack of transport, rising from between £3 and £4 a wagon load to between £6 and £7 a load. As a press editorial pointed out,<sup>88</sup>

"It is not that there is not an abundance of good coal close at hand. There are numerous mines within easy reach capable of furnishing an almost inexhaustable supply, but ... unless carriage is at hand and always to be relied upon, any serious stoppage of traffic must jeopardise the work at the batteries."

In August 1889 the Coal Trust Company came into existence with the specific intention of buying up coal mines and working them "on the most approved and economical system". This monopoly, while controlled by the Ecksteins and other Rand financiers, did make a positive contribution in regularising both the supply and price of coal supplied to the gold mines. A substantial net profit of £3 000 a month was recorded in 1891, yet no serious complaint was raised about the price of coal from Witwatersrand managers.<sup>89</sup> A further serious interruption in the supply of coal occurred in early 1893 when heavy rains caused wash-aways on the Rand tram line. Several of the Boksburg coal mines were also flooded. Eyes were turned to Messrs Lewis and Marks' Vereeniging mines to come to the rescue. Unfortunately these mines were already involved in the major contract of supplying the Cape Government Railways requirements and the shortage on the Rand thus persisted throughout February of that year.<sup>90</sup> By the end of February the Ferreira Company had been forced to close down its rock drilling plant as a result of the shortage.<sup>91</sup>

In future years company managers were exhorted to build up stocks of coal prior to the onset of winter and they continued to count them-

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88. The Eastern Star, 14 May 1888.

89. The Star, 12 July 1891.

90. The Star, 14 February 1893.

91. The Star, 27 February 1893.

selves fortunate the fewer boiler fires they had to keep burning. With the improvement in the supply situation a gauge of successful management lay in the speed with which the mining companies adapted to the new circumstances and relocated their batteries to achieve a greater cost effectiveness in the operation of the plant.

Period II: 1889 to 1894

The highlight of this period is the reconstruction of many of the Witwatersrand companies in the aftermath of the stock exchange boom and the growing awareness on the part of mining companies' senior management of the need to concentrate on winning profits from their mines rather than the stock exchange. The collapse of the share market initially heralded a period when the more optimistic and dissolute sought signs, no matter how weak, in the recovery of their beloved share market. By the end of 1889 hope was fading for a quick recovery of the market amongst even the hardest of the speculators and the realization spread that it would only be through the dividend paying capacity of the mining companies that any recovery of the share market would come. By the end of 1894 this position had been reached.

In the light of these changed circumstances profit maximization took on a new meaning. Profits would in future have to be won from the mines and in order to achieve these the companies had to make the necessary adjustments. Most companies along the main reef had by 1889 proved their ability to produce gold: what was now required was that they did so profitably. Faced with a fixed price for their commodity the potential to show a surplus rested entirely on the costs involved in winning the gold. A new cost consciousness beset the industry which has remained with it to the present. A clearer understanding also dawned on the relationship between the scale of production and costs. In turn, the fall in yields per ton, occasioned by the working of larger quantities of pyritic ore, necessitated a further emphasis on cost effectiveness, at least until such time as a process for extracting a greater proportion of the gold contained in the ore was adopted.

The speculative bubble of 1888-89 burst amid the growing realization amongst investors that prevailing conditions in the Witwatersrand industry were far from healthy. The immediate cause of the collapse is often attributed to the "pyritic ore" scare, namely, that as the oxidized ores in proximity to the surface were worked out, those containing a

greater proportion of refractive sulphites were encountered which rendered up less gold by the traditional amalagamation process of reduction. Such ore required new and costly techniques to work the gold.<sup>92</sup> The situation on the Rand can be compared to a similar crisis which occurred on the diamond fields upon the encountering of the "blue ground". There, many diggers sold up their claims in the belief that no more diamonds would be found once the oxidized "yellow ground" was worked out. It is not to belittle the psychological impact of the news that pyritic ore had been encountered in 1889, to suggest that it was not the only cause. The speculative mania which reached its peak in early 1889 drew much of its sustenance from the issuing of stock in companies floated to work the "outside" reefs, namely, the Kimberley, Bird and Livingstone reef series. We should not under-rate the role of the main reef series companies in the speculation, but must remember that most of the companies formed to work the main reef were floated by the end of 1887. Nevertheless, such concerns as the Wemmer Company effectively used the boom for further share issues. There was, however, a growing realization that these "secondary" reef companies were never likely to pay under the prevailing conditions, and as The Star commented,<sup>93</sup>

"To a very large extent the recent flotation of new Companies, and the underwriting of nearly all their capital here, is answerable for it [the crisis]."

There was also the awareness that the exhaustion of the outcrop would require deeper mining with the increased risks and capital outlay which such mining necessitated. It was the combination of these factors which helped to sober the market in the face of the poor past performance of most companies.

The course of the year 1889 saw the commencement of a new trend of serious and committed mining along the main reef. In the weeks following March there were, no doubt, many companies who simply paid lip service to the concept of proper mining in the hopes of breathing life into the falling share market, but as The Star noted at the beginning of April, the malaise now besetting the Rand was of the same genre

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92. Fraser, M. and Jeeves, A., All That Glittered, p.27, and Morrell, W.P., The Gold Rushes, p.349.

93. The Star, 5 April 1889.

as that which had systematically reduced both Kimberley and Barberton to a sense of realism in the past. The crisis would continue until "...all the Companies are fairly at work and paying regular dividends."<sup>94</sup> The proper development and opening of the mines was considered one of the most vital steps. Up to now few mines were worked on such a scale that their batteries did not soon outstrip their production, causing the mills to lapse into periodic idleness.<sup>95</sup> Regular production would not only ensure the maximum utilization of all resources, thus ensuring maximum output, but would also serve to reduce working costs.

The emphasis placed on improvement was in keeping with the new trend towards greater profitability. All four of the companies considered in this study underwent improvement and reorganisation of some description in these years, along with numerous other companies. Coming at a time when the share market was deteriorating rapidly and when local and international banking institutions were shy of further involvement in the Rand industry, the means by which the necessary finances for this capital investment were raised is an interesting aspect of the trend. The collapse of the stock exchange left many of the local banks seriously embarrassed and forced some, including the Cape of Good Hope Bank, to close their doors. Cut off from any direct links with Johannesburg, other than the telegraph, Cape and other Colonial banks were unable directly to influence the activities of their Johannesburg branch managers. There followed a general over-extension of credit for share speculation, followed by a too vigorous retraction of these facilities. Similarly, in Europe the Baring crisis ensured a termination of funds for an industry as speculative as gold mining. The downward trend in share prices continued to about March of 1890. The market value of thirty "best known" shares, with a nominal value of £7 174 000, dropped from £24 813 000 on 15 February 1889 to £9 421 000 on 4 March 1890.<sup>96</sup> Thus the speculative crisis of 1889 can be said to have given rise to the banking crisis of 1890 and the ensuing economic recession.<sup>97</sup> The Rand mining companies, cut off from their traditional sources of funds, turned increasingly to

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94. Ibid.

95. The Star, 15 May 1889.

96. Schumann, C.G.W., op.cit., p.88.

97. Ibid.

private loan companies or the firms of the emerging "group" structure, such as H. Eckstein and Company, who had either excess funds or access to these, as a means of raising the resources for improvements. Most of these funds originated in Britain where, for example, the Transvaal Mortgage, Loan and Finance Company and Wernher, Beit and Company, were situated. Interest rates on such loans varied according to the conditions and circumstances of the loan but most varied between six and twelve to twenty per cent.

For the Ferreira Company a series of loans were arranged through the auspices of H. Eckstein and Company and their London principals at various rates. The initial loan was for £55 000 at 8 per cent, while the second bond, given the Company's tardiness in repaying the first, was issued at 12 per cent.<sup>98</sup> Similarly, the Simmer and Jack Company paid rates of between ten and twelve per cent for its loans from the Transvaal Mortgage, Loan and Finance Company.<sup>99</sup> The amounts raised by the various companies are also worth noting. In all the Ferreira Company borrowed approximately £105 000 in addition to the amount of £25 500 raised from the sale of reserve shares; the Simmer and Jack Company borrowed £55 000 besides reinvesting an amount of over £50 000 from profits in the period down to June 1891 alone. The Witwatersrand Company borrowed £10 000 from the National Bank in July 1891, when the banking sector again felt confident of the Rand's future, and in addition ploughed £22 500 of windfall profit from the sale of claims into development and improvements. That these amounts were inadequate to the task required of the Witwatersrand Company's management is borne out in the closure first of the mill and subsequently of the mine for the remainder of the period down to 1894.<sup>100</sup> The Wemmer Company was fortunate in that its good reputation as a gold producer allowed it to raise an amount of £20 000 by means of a share issue in 1889.<sup>101</sup> As already indicated, the likely buyer of this scrip was H. Eckstein and Company, one of the few organisations with the funds and faith to take up a block of 5 000 shares at £4 each. The Wemmer's nominal capital was again raised from £40 000 to £55 000 in September 1890 but it was not

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98. See above, Chapter V, pp.159-60, 165, 167.

99. See above, Chapter III, pp.76, 78.

100. See above, Chapter II, p.48.

101. See above, Chapter IV, p.111.

before 1891 that the Company was able to sell 8 000 of these shares to reduce the burgeoning debt of nearly £24 000. Despite these increases in nominal capital and the sale of the shares at substantial profits, the Wemmer Company was forced to resort to loans, with significant amounts being borrowed from the Heidelberg and Witwatersrand Companies.<sup>102</sup>

In all four of the companies considered, the funds so raised were poured into improvements and the proper development of their mines. In the case of the Wemmer and Witwatersrand Companies too little was actually accomplished to result in any marked improvement in the overall prospects of these concerns in 1891. Thereafter the Witwatersrand Company closed down until 1894, deciding rather to let a portion of its ground on tribute to raise capital and test an area of its property. For the Wemmer Company the year 1891 saw it still burdened with an unprofitable operation which forced it into the acceptance of domination by H. Eckstein and Company in a bid to achieve profitability.<sup>103</sup> It is also true that all the companies of the study seriously underestimated the costs of the exercise they were embarked upon. In the case of the Wemmer Company the shortage of funds resulted in the decision to compromise on the improvements initially envisaged in the Woodhouse plan, rather than make any sacrifice of the financial independence of the Company. For the Witwatersrand Company, its past history and faulty battery deterred its directors from incurring any greater indebtedness in the attempt to rescue the Company.

In no other company was the under-estimation of capital requirements so marked as in the case of the Ferreira Company. The initial estimates in March 1889 put the amount needed for the expansion project at between £40 000 and £50 000. An amount of £25 500 was raised from the sale of reserve shares, but being insufficient to meet requirements, the first loan of £55 000 was raised from H. Eckstein and Company. Despite these infusions of funds, by April 1891 the Company's debts amounted to £111 000.<sup>104</sup> It was the voracious appetite of the Company for funds which severely strained its relationship with the firm of H. Eckstein and Company, and gave the latter some idea of what financial commitments

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102. See above, Chapter IV, p.120 and Chapter II, pp.55-56.

103. See above, Chapter IV, pp.129-30.

104. See above, Chapter V, p.165.

lay ahead in the development of the deep level companies. When completed the improvement scheme left the Ferriera Company with a property fully equipped and second to none on the field in terms of its sophistication and technical excellence. These factors had now to be weighed against the limited life of the existing property and the remaining relatively high cost structure.

The Simmer and Jack Company recognised in its improvement programme that maximizing output would assist to reduce working costs per ton and thus maximize profit. The intention was to raise the crushing capacity of the mill from 25 to 80 stamps and to develop the mine proportionately. It was initially anticipated that the necessary equipment would involve an outlay of approximately £20 000 and a total expenditure of £49 000 with mine development. The funds were to be raised from the sale of 10 000 newly issued shares and the floating of ten and a half claims of the eastern portion of the property as a separate company. The collapse of the share market rendered the first alternative unviable while squabbling amongst the shareholders regarding the nature and composition of the second option, forced the Company into taking a loan of £30 000 from the Transvaal Mortgage, Loan and Finance Company. The continued profitability of the 25 stamp mill encouraged the board to be more venturesome and it was subsequently decided to add a further twenty stamps to those on order, as well as increasing the outlay on other equipment. A further loan of £25 000 at ten per cent was arranged through the same loan company in March 1890 to cover the additional expenditure and shortfalls on initial estimates. Even then expenditure on equipment was far from complete and the Company went on to add a cyanide plant, erected by the Rand Central Ore Reduction Company, to its capital outlay before the end of 1894. The success of the initial improvement scheme in the increased profits it won for the Company decided the board by 1892 to embark on a further venture which would see the more extensive development of the eastern portion of the property.<sup>105</sup> It was the delay in implementing these ideas which created the opening for the take-over negotiations by The Consolidated Gold Fields of South Africa Limited.<sup>106</sup>

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105. See above, Chapter III, pp.92ff.

106. See above, Chapter III, pp.95ff.

The improvements and reorganisation which took place in the years after 1889 rendered the companies of the Rand increasingly vulnerable and heightened their commitment to success. Faced with high finance charges and the mortgaging of their properties, the inducement to restart their mills and show satisfactory profits was great. In the examples given above this sentiment is clearest in the case of the Ferreira Company. The commitment to success was, however, governed by a predominant sentiment that the development of the mines should be undertaken along thorough lines. The management of the Wemmer Company was an exception amongst the four companies of this thinking and its attitude and willingness to compromise cost it dearly; while the management of the Witwatersrand Company was never so seriously committed to the successful mining of the property and always viewed the value of the estate before that of the mineral wealth. As The Diggers' News noted in August 1889,<sup>107</sup>

"It is pleasing to note the vast improvements that are being carried out in regard to mining and battery work. In the early days a cheese paring policy was pursued that has long since borne its fruit... Anyone taking the trouble to visit any newly erected batteries will at once perceive the improvements. Instead of temporary sheds, and make-shift arrangements, everything is being done solidly and well."

Thus while development costs soared beyond the expectations of the managements of most companies, the imperative for genuine working profits grew stronger. It is possible that much of this initial improvement was undertaken by some companies essentially as "window dressing", which would ensure them a better reputation when share prices again lifted and "mining" centred on the stock exchange. The boom never materialised and all companies alike had soon to settle down to the serious business of working their mines effectively and efficiently to overcome their indebtedness and to yield dividends to a critical shareholding. The imperative of genuine working profits was increasingly recognised to rest on cost reduction and output maximization. In the words of The Diggers' News,<sup>108</sup>

"The fact is gradually intruding itself that there is a greater necessity for economy in mining in this district. The expenses

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107. The Diggers' News, 1 August 1889.

108. The Diggers' News, 17 October 1889.

are far too high and a reduction is necessary if dividends are to be more generally paid..."

It was perhaps inevitable that not all company managements were equally aware of the necessity for cost reduction, just as not all of them were equally well equipped successfully to reduce their cost structures. Amongst the four companies, it is possibly significant that the larger properties with poorer quality ores were more successful in reducing their costs than the smaller, richer companies operating on a smaller scale and with thinner reefs. In both the Simmer and Jack and the Witwatersrand Companies there was some measure of success in the years down to the end of 1894 in reducing their working costs to below 20 shillings per ton, although in both cases the calculation of these costs usually excluded the development costs of the mine. The effectiveness of such action is clear in the case of the Simmer and Jack Company, where the low cost structure resulted in a steady flow of profit which assisted with the expense of development and expansion and helped to place the Company on a sound financial footing. For the Witwatersrand Company, the profit from low working costs, which were as low as 15s. 3d. per ton for March 1891, were nevertheless outweighed by the erratic nature of the deposits and the high development costs. Under these circumstances the Company was unable to raise itself by its own bootstraps and was forced to close down when H. Eckstein and Company proved unwilling to risk further capital involvement in its affairs.

Unfortunately, the exact factors contributing to the successful reduction of working costs by the two companies are not clear from what little information we have of their activities. We know that in the case of the Witwatersrand Company an American manager, Henry Morris, was specifically appointed because of his reputation for reducing working costs, and that he subsequently succeeded in working the mine at a profit of two shillings per ton. How he achieved this position is, however, unknown. In the case of the Simmer and Jack Company more evidence has survived. We know that the close proximity of the payable reefs to each other reduced the amount of cross-cutting and dead work in the mine, so reducing mining costs. Railways for moving ore underground were introduced at an early stage. The mill was well positioned to allow for a gravitational flow of the tailings away from the site. The recurrent labour shortages experienced suggest an unwillingness to offer highly competitive wages. The exact weighting of the significance

of these several factors is impossible to determine but their combined contribution in reducing working costs is clear, even before the introduction of the additional stamping power of the new battery further lowered marginal costs and allowed for an effective reduction in the quality of the ore crushed.<sup>109</sup>

A similar awareness of the necessity to reduce working costs undoubtedly prevailed in the Wemmer and Ferreira Companies but the richer quality of their ore and the smaller scale of their operations allowed, and resulted, in higher cost structures. Working single or thin reefs significantly reduced the quantity of ore crushed, resulting in higher marginal costs per ton of ore treated. Between January 1889 and July 1890 the Simmer and Jack Company crushed an average of 1 436,40 tons of ore per month, with the lowest monthly figure of 1 211 tons and the highest 1 700 tons.<sup>110</sup> In contrast, the Wemmer Company over a similar nineteen month period between October 1889 and April 1891 crushed a monthly average of 697,82 tons with a range between 300 and 1 109 tons per month.<sup>111</sup> Under these circumstances it is comprehensible that working costs would be lower in the former case as a result of the scale of production. Similarly, while the average monthly yield per ton of ore was 15,37 dwts. in the case of the Simmer and Jack Company, it was 18,87 dwts. for the Wemmer Company over the same nineteen month periods.

In the Wemmer Company management recognised the need to reduce working costs in the period down to March 1889, which motivated the decision to call for the reorganisation of the property. Similarly, it was the unexpectedly high cost of implementing the improvements in the second period which resulted in the cut-backs, thus sacrificing a good deal of the potential advantage of the envisaged alterations. Some cost saving was nevertheless achieved. The repositioning of the mill at the mine must have saved considerably on transportation costs. The use of rock drills would eventually have reduced the labour cost of hand drillers, as fewer staff were required to operate the machines. The net result of these and other unspecified savings was a reduction of working costs from 36s. per ton to 32s. 9,25d. per ton by April 1891. While costs were some 10s. per ton lower for the Simmer and Jack Company, at

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109. See above, Chapter III, pp.87ff.

110. Goldman, C.S., op.cit. (1892), p.48B.

111. Ibid., p.55B.

a price of roughly 3s. 6d. per dwt. for gold, the 3,5 dwts. difference in the average yield for the Wemmer Company more than compensated for the higher cost structure.

The decision by the Wemmer Company management to forego the purchase of the new mill may also be interpreted as a cost saving device in that a considerable proportion of capital expenditure was drawn from working profits. The effectiveness of the savings is highly questionable whichever way it is viewed. The decision certainly served to curtail the maximization of output envisaged in the plans and is reflected in the problems subsequently experienced in reducing milling costs. The failure to maximize reduction output resulted in higher marginal costs of production, as is reflected in a limited way by the comparison of the six month periods ending in April and September 1891.<sup>112</sup> Viewed from the perspective of the Wemmer management, however, the "new" mill fulfilled many of their aspirations. Its location and structure were admirably commented on in the press and some cost saving from its operation was inevitable.<sup>113</sup> The failure to grasp the fuller economic implications of their decision is clear from the subsequent behaviour of the board. It required the practical demonstration of their shortsightedness in continued high costs and breakdowns of the mill to convince them of their error.<sup>114</sup> Under the control of J.H. Johns the Company was again subjected to a major reorganisation, the emphasis of which was the maximization of production. Under this strategy the Company finally achieved a high level of profitability despite a relatively high cost structure.<sup>115</sup>

It is no exaggeration to suggest that cost consciousness in the case of the Ferreira Company revolved essentially on the level of marginal costs. The failure of the early amalgamation schemes decided H. Eckstein and Company on a medium sized production unit which would be capable of returning 4 000 ounces of gold per month from a crushing of 4 000 tons of ore. No expense was spared in preparing the mine to meet this commitment, which was undertaken by J.H. Johns, certainly

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112. See above, Chapter IV, pp.120ff.

113. See above, Chapter IV, pp.115-16.

114. See above, Chapter IV, pp.126ff.

115. See above, Chapter IV, p.133.

one of the most competent of the early Rand managers. When brought into production in 1891, working costs averaged 34s. 10,62d. per ton for the first period of production. While considered excessive by the press, any consideration of the cost structure of the Company must take into account the fact that only the thin south reef was supplying the greater part of the ore being crushed. Dilution with material from the main reef and main reef leader was experimented with and was subsequently found to assist considerably in facilitating the reduction process and reducing the marginal cost per ton of ore worked.<sup>116</sup> The Ferreira Company continued to operate down to 1894 with what was considered a high cost structure. Undoubtedly, the level of profits produced could have been higher were these costs reduced but the Company did operate profitably and J.H. Johns turned rather to the maximization of output through the installation of an ore sorting process and the erection of a cyanide plant, to achieve this goal.<sup>117</sup>

The high working costs of the Ferreira and Wemmer Companies were considered excessive for the period in which they occurred, but in 1889 a figure of about 36s. per ton was considered a good average for the field,<sup>118</sup> and excessive only in so far as it rendered the working of ore of less than 10 to 12 dwts. per ton unprofitable; a situation which affected a good deal of the Rand companies. Of the 180 gold mining companies listed on the Johannesburg Stock Exchange in October 1889, only 34 contributed to the output for that month. Furthermore, only seven of the 34 companies contributed 23 226 ounces or 72,50 per cent of the total monthly output of 32 035 ounces. Compared to the figures for the previous October's output, only the minimal increase of 8 000 ounces had occurred, despite a considerable increase in stamping power.<sup>119</sup> Under these circumstances the payment of dividends was minimal.

The serious imbalance between producing and non-producing mines at the end of 1889 was closely related to the cost structures of these companies. While a good deal of the blame for this poor state of affairs could be laid at the doors of the companies and their managements, there were also certain exogenous factors which contributed to the rise in

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116. See above, Chapter V, p.176.

117. See above, Chapter V, pp.184ff.

118. The Diggers' News, 9 November 1889.

119. The Star, 14 November 1889.

costs. Not least of these influences was the serious drought which affected most of the interior in the spring of 1889. Still deprived of rail links with the coast owing to the political machinations of the Transvaal Government,<sup>120</sup> the ever-growing population of the Witwatersrand relied entirely on the ox-wagon for the import of equipment and provisions. Unable to find grass for the trek-oxen, the supply of transport riders fell off to a point where the Chamber of Mines undertook the payment of a bonus to the owners of all wagons which reached Johannesburg with supplies. Down to 10 November 1889 the Chamber paid out £1 426 in this way.<sup>121</sup> Good rains in December ended the problem and it was noted in the local press that the cost of living was again receding. The price of good board and lodging was now 32s. 6d. a week, down from about 50s. a week at the height of the drought.<sup>122</sup> Morrell has suggested that the drought was magnified by the mining magnates and storekeepers in an endeavour to force the Government into agreeing to the building of rail links with the outside world.<sup>123</sup> President Kruger nevertheless refused to allow the construction of the southern rail link in March 1890, but concessions were made to the Witwatersrand by the lowering of customs duties on many articles of food in daily use, while the grand "ad valorem" rate was reduced to five per cent.<sup>124</sup> Several duties were retained on produce which could be produced locally, while the usual duties had also to be paid on goods imported through the Cape and Natal ports. Only Orange Free State produce entered the Transvaal free of duty. The reduction in customs duties was clearly a sop to detract from the rejection by Kruger of the southern rail link, but any lowering of rates inevitably had a beneficial effect on the prices paid for goods on the Rand.<sup>125</sup>

Of the four companies of the study it is only the Simmer and Jack Company which makes specific reference in its reports to the influence

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120. Van der Poel, J., *op.cit.*, pp.25ff.

121. The Diggers' News, 14 November 1889.

122. The Diggers' News, 28 December 1889.

123. Morrell, W.P., *op.cit.*, p.349.

124. Van der Poel, J., *op.cit.*, p.55.

125. For a detailed analysis of the intricate relationship between political and economic development in the South African Republic, see Van der Poel, J., *op.cit.*, *passim*, and Marais, J.S., The Fall of Kruger's Republic, *passim*.

of the drought on working costs. It is possible that the reason for this was that the other companies were not too severely affected by it. The Ferreira Company was not operating at the time and while the drought would have resulted in delays in the delivery of equipment and a lack of labour for development, besides a retarding influence the drought would have had little effect on its cost structure. Likewise, the Wemmer Company experienced water shortages and was forced to delay the commencement of crushing with the relocated battery. The Witwatersrand Company was virtually unaffected in so far as it had all but curtailed its mining activities while the new management planned its future development. Nevertheless, besides water shortages there was a general decampment of African workers and an inadequate supply of food and other provisions with which to feed and maintain the labour force. As the Simmer and Jack report suggested, working costs were adversely affected for any Company in full operation.<sup>126</sup>

The drought and resultant rise in prices which directly influenced the working costs of the Rand mining industry invoked a lively awareness of cost consciousness along the outcrop. In November a comparison was made in The Diggers' News between working costs in America and on the Witwatersrand which suggested the scope for improvement in the latter:<sup>127</sup>

	<u>Witwatersrand</u>	<u>America</u>
	per ton	per ton
Cost of mining	18s. 8d.	7s. 1d.
Transport costs	1s. 9d.	1s. 0,5d.
Reduction costs	8s. 10d.	2s. 6d.
General costs	<u>7s. 2d.</u>	<u>3s. 2d.</u>
	£1 16s. 5d.	13s. 9,5d.

The Witwatersrand figures, drawn from the Crown Reef Gold Mining Company, were seen as a good reflection of the costs on most mines. Considering reduction costs, it was suggested that little could be done to improve on the discrepancy as most American mills were water powered. Nevertheless, it was anticipated that the completion of the Boksburg tramway would result in a decrease in the price of coal and subsequently

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126. See above, Chapter III, pp.80-81.

127. The Diggers' News, 9 November 1889.

in reduction costs for the Rand industry. It was also hoped that the improvement in agriculture, stimulated by the demands of the industry, would see a reduction in food prices.<sup>128</sup> The article went on to single out the cost of labour as the most important contributing factor to the high cost structure of the Rand industry. In keeping with an earlier article on the same subject, the newspaper condemned any direct comparison in cost structures between countries or continents, suggesting that the essential criterion was the relationship between working costs and ore values.<sup>129</sup> To The Diggers' News, it was essential that profits be made and dividends paid. A high cost structure was preventing the payment of such dividends and it therefore followed that the knife be applied where best it would achieve results, namely, in a reduction of wages, irrespective of the colour of the wage earner. It was also suggested that the salaries of managers might be cut and regulated according to their ability to produce profits. Writing in an editorial the paper noted,<sup>130</sup>

"Kafir labour costs a large sum, but it is extremely doubtful whether the men earn the wages they receive. White labour also presents many difficulties. If the white men at work in a mine are not in receipt of what may be called in comparison with other gold fields abnormal wages, they make up the difference by shirking work ..."

At the same time it was recognised that the scarcity of white miners and the high cost of living for them would make "the practice of economy in this direction almost an impossibility at present." What The Diggers' News failed to emphasise was that attempts to reduce the level of white workers' wages had already resulted in a drive towards combination amongst the artisans of particular trades.

The actions of the white engine drivers in August and September of 1889, while ultimately only indirectly affecting the mines, serves as a reasonably well documented example of early Witwatersrand trade unionism. A meeting of interested engine drivers was called at the Queen's Hotel on 2 August to consider the establishment of a combination for higher wages and shorter working hours. The chairman, George Greenfield, considered a twelve hour working day too long, suggesting

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128. Ibid.

129. The Diggers' News, 17 October 1889.

130. The Diggers' News, 3 October 1889.

that one of the objectives of the body to be formed should be the introduction of an eight hour day. He mentioned the recent success of the carpenters and masons who, through combination, had achieved a wage increase to 30s. a day. It was also made clear that the intention was to involve the engine drivers on the mines in the combination, it being pointed out that Chilean miners refused to go underground under an engine driver who worked longer than eight hours a day.<sup>131</sup> It was decided to call a mass meeting of engine drivers later in the month and a gathering of fifty of them was held on 24 August. The objectives of the intended combination were again spelled out with an elaboration absent at the former meeting. It was suggested that the eight hour day would create employment for three men where previously only two had worked, thus creating jobs for the currently unemployed. The question of unemployed white engine drivers was considered serious, especially in the light of the hiring of Africans in this occupation. As the chairman, Bird, pointed out,<sup>132</sup>

"He regretted to say that niggers were being employed as engine drivers at some mines, and he need only point out the folly of entrusting the lives of Europeans to the tender mercies of natives to show the need for hearty support from all sections of mechanics."

This attitude was reiterated by another speaker who stated that, "There were dozens of men out of work, and yet they might walk from Roodepoort to Boksburg and then find that these suckers had been before them." Clearly the substitution of cheap black for expensive white labour has a long history on the Witwatersrand. Despite this position, the meeting also saw as an objective an increase in the wages of European engine drivers to £1 a day.

The agitation amongst engine drivers for improved conditions of service struck a chord of sympathy amongst white skilled artisans. Faced with the closure of many of the marginal mines in the wake of the stock market collapse and with the rising price of provisions as a result of the drought, which also closed some mills for want of water, conditions were ripe for worker unrest. By early September the engine drivers had been joined by blacksmiths, wagon makers "and men engaged

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131. The Star, 3 August 1889.

132. The Star, 25 August 1889.

in kindred trades", who had common cause in opposing the move by employers to increase the working week from 51 to 54 hours, supposedly as a result of the onset of summer and longer daylight hours. The real cause for the action of the employers seems more likely to fall within the orbit of the increased demands being made on the manufacturers of small goods in the engineering trades for the mining industry. Given the state of reorganisation of many of the mines, with the temporary closure of mills while new equipment was installed and mining development undertaken, it is clear that many men like engine drivers were facing a period of unemployment and that the bargaining position of those still at work was weakened. Thus it was in the engineering trades, enjoying a temporary boom as a result of the major mining reorganisation, that the strike developed, opposing the proposed longer working week and demanding an increase of 25 per cent in wages.

Commenting on the situation, The Star conceded the legitimacy of engine drivers working excessive hours but suggested that the call for higher wages "can only be set down as mere bravado, and need not be seriously entertained." The newspaper saw as the cause for the demands for higher wages the recent increases in those paid to masons and joiners due to the current building boom, and thus warned the engineers against striking, suggesting that the employers were supported in their stand by the mining companies. It was also suggested, although no evidence for this appears, that certain of the mining companies, when faced with similar demands, had chosen to shut down their batteries "until they could import men", supposedly on contract at favourable prices to the mining companies.<sup>133</sup>

On 9 September 1889 white employees in the engineering trades in Johannesburg went on strike, following the rejection by employers of their pay demands and call for shorter working hours. In addition there was a rejection of the employers' intention of reducing the overtime rate from time and a half to time and a quarter. The strike did not survive the month and the employees had to accept the conditions specified by their masters. Their action had not gained the strikers popular support beyond the immediate engineering trades. The Diggers' News, while pointing out that the employers had largely brought about the

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133. The Star, 7 September 1889.

problem of high wages themselves,<sup>134</sup> nevertheless also felt that the strikers were unreasonable in their demands.<sup>135</sup> It was pointed out that working hours had already been reduced from the previous summer's average. Likewise it was felt that, as wages had risen by twenty per cent in the course of 1889, the wage demands were unreasonable and that a reduction in overtime pay on the first two hours of additional work was reasonable. It was suggested that the employers had met the men in a fair spirit and that,<sup>136</sup>

"...the men cannot be praised for having gone on strike, when a little thought would have shown them there was a disposition to treat them fairly... Our sympathies are not with the capitalists by any means, but they are not always to blame... Wages were abnormal owing to the demand for all kinds of building and mining material, machinery, etc., but the day will come, by the influx of people on the one hand, and a slackening of demand on the other, when wages will find their level. Why hasten this day by striking and causing capitalists to introduce more men than can ultimately find work..."

For their part, the engineering workers, along with all wage-earners had had to face the rapid escalation in the cost of living which struck the Witwatersrand in the winter and spring of 1889, and they thus saw the strike as an attempt to achieve compensation. In general, however, it was clear that the sentiment of the press and capitalists alike was that some sacrifice would have to be made by workers if the Witwatersrand mining industry was to be saved from disaster. While the majority of mining companies remained unprofitable the security of everyone on the Rand was threatened.

The strike gave rise to the calling of a meeting of the representatives of the mining companies to consider the situation. The companies clearly saw that their position was vulnerable despite the weakened state of certain groups of artisans. Many mines operated twelve hour shifts with mechanics coming on between 7 a.m. and 7 p.m. and engine drivers operating from 6 a.m. to 6 p.m., with the usual intervals for meals. The initial reaction of the meeting was to black-list all strikers and members of associations, but such a provocative step was not taken and a committee was rather appointed, under the chairmanship

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134. The Diggers' News, 10 September 1889.

135. The Diggers' News, 12 September 1889.

136. Ibid.

of George Goch, to investigate the employment structure on the mines and see if any uniformity of employment practice could be achieved.<sup>137</sup> The united stand presented by the mining companies probably prevented any possibility of the strike spreading to certain mines, but it also clearly indicated to the early Rand capitalists that African workers' wages was an area in which cost reduction would be more easily achieved.

Attempts were made, nevertheless, to achieve savings in the wages of white workers. Such activity required united action on the part of the various companies and an element of stealth now that the threat of strike action by the workers was a recognised possibility. Meantime, H. Eckstein and Company were becoming increasingly involved in the drive to reduce all workers' wages,<sup>138</sup>

"The wages paid to miners and artisans is enormous. I have convened a private meeting of managers to take place next Sunday and I shall insist on heavy reductions being made at once. I think a saving of £150 000 a year can be easily effected on this head alone. To avoid a possible strike, I shall advise managers in informing their men of the reduction, to say that they not only have definite orders to reduce pay, but to reduce the staff. The fact of a few men being dismissed from each company simultaneously (even though the staff be reduced for the moment to a trifle below requirements) will have a good moral effect on those kept on..."

Just how effective the "moral suasion" tactic was, is difficult to gauge. There was a lowering in white miners' wages along the main reef but it was not always taken lying down. On 2 June 1890 the white miners of the Angle Tharsis Gold Mining Company, unhappy about the wage reduction, blew up the manager's house with dynamite before decamping.<sup>139</sup> Similar desertions followed the wage reductions on other mines, but as the press reported, with some satisfaction, "their posts were filled within hours."<sup>140</sup> The general discontent over the lowering of wages continued into 1891, when The Standard and Diggers' News commented that the mining companies might well soon face "a combined demand from their white employees for an increase in wages." Once more the press was far from sympathetic, pointing out that the prevailing wages of between

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137. The Star, 13 September 1889.

138. Fraser, M. and Jeeves, A., op.cit., p.37.

139. The Star, 2 June 1890.

140. The Star, 3 June 1890.

£4 10s. and £5 10s. a week was one which the miner "not so very unwillingly accepted and lived on in times when living was more expensive and his lot generally harder."<sup>141</sup> The reason why this discontent did not well into strike action was the high prevailing level of unemployment. The mining companies were employing as many whites as they needed, and as shown, this figure was already artificially reduced by deliberate policy. In turn, as the press suggested, "coloured labour cuts them out of that field of humble usefulness [physical labour], and they are compelled to continue in idleness."<sup>142</sup> The same report went on to question the productivity of black labour, stating,

"There can be no doubt that in our mines at this moment seven or eleven Kafirs are employed to do at considerable cost what a couple of white men could as easily undertake and perform at the same or even smaller cost."

A similar sentiment against the productivity of black labour was expressed in a letter which appeared in The Star earlier that year, requesting the greater employment of white miners on the field.<sup>143</sup> The writer claimed to have approached several of the mining companies offering the services of white miners to work parts of their mines on a contractual basis for a price equal to the cost of black labour, but was told that white miners were not required. At one mine where black workers had recently deserted en masse, the offer to contract with white labour had been refused by the manager who indicated that he would rather wait until the Africans returned than accept white workers.<sup>144</sup> Discontent amongst white mine workers remained endemic throughout the remainder of the period down to 1894 and the Witwatersrand Employees and Mechanics Union steadily gained support and membership.<sup>145</sup> While no direct confrontation marked the period down to 1894, the foundations for such strife had clearly been laid in the years under review.

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141. The Standard and Diggers' News (Johannesburg), 3 April 1891.

142. The Standard and Diggers' News, 24 July 1891.

143. The Star, 21 May 1891.

144. Truscott, S.J., op.cit., pp.362ff, indicates that the practice of letting out the stopes on contract was fairly common on the Rand. The unit in use for measuring the work was the square fathom. Materials and labour were usually supplied by the mining company and charged to the contractor. The advantage for the company lay in the relatively low cost and high productivity of such a working arrangement.

145. The Star, 16 January 1893.

The preference for African labour must be considered in terms of the initial reasons for this sentiment. The most obvious area for examination is that of the cost of labour in general. In an attempt to indicate the costs involved in mining and milling per month for the average company, The Diggers' News published the following table, indicating the labour costs,<sup>146</sup>

<u>Milling Expenses</u>		<u>Mine and General Expenses</u>	
1 head amalgamator	£30	Manager	£80
3 amalgamators at £20	60	Clerk	25
3 engine drivers at £18	54	Storekeeper	25
1 engineer	30	Carpenter	30
30 Kafirs at 16/- a week	100 (sic)	1 assistant	20
Meat and meal for do.	<u>30</u>	Blacksmith	30
	304	1 assistant	20
		1 Kafir overseer	25
		30 miners at £20	600
		250 Kafirs at 15/- a week	750
		Meat and meal for do.	<u>250</u>
			1 855
			<u>304</u>
		<u>Total labour cost:</u>	<u>£2 159</u>

From the above it will be seen that African labour and its maintenance constituted 42,76 per cent of the labour cost of milling and 53,90 per cent of that of mining and general charges, or 52,34 per cent of the total cost of labour. While other information to support the inference drawn from these figures is lacking, they must of necessity be treated with some scepticism. Nevertheless, it is interesting to note that in terms of value, the total amount of salaries and wages paid to Europeans roughly approximated that of African wages and provisions. In evidence to the Industrial Commission in 1896, Hennen Jennings stated that for the six principal companies on the Rand the cost of black wages and food constituted 27,87 per cent and white labour 30,18 per cent of total working costs.<sup>147</sup> Thus even at what were then considered excessive rates, the wages of African labourers did not actually constitute the

146. The Diggers' News, 22 March 1890.

147. Truscott, S.J., op.cit., p.448.

single largest component of mining costs. It is evident from the above table that six African workers could be hired for the cost of the lowest paid white worker, namely, the engine drivers, whom, as we have already seen, were being threatened with such substitution. Thus it would seem that the lower unit cost per African worker, together with the lack of any legislative protection or effective trade unionism on the part of white workers, inclined the mining companies in favour of increased African employment. Likewise, the complete absence of any militancy or form of combination on their part, made the African a more desirable work force.

Counting against the African labourer, however, was the unreliability of supply. As Siebörger has suggested with regard to the diamond fields, the supply of black workers was a function of several factors, ranging from climatic conditions and the whims of a tribal chief, to the immediate requirements of the individual worker.<sup>148</sup> The ebb and flow of workers to and from the Witwatersrand was, given the open competition between the managers of the various mines, a major determinant of the cost of that labour. Any factor which diminished the numbers of workers arriving was thus of the greatest significance. One such crisis occurred in July 1889 when, in the space of a fortnight, over 5 000 Africans left the Witwatersrand. The main reason for their departure was not specified but at least two suggestions were offered by the press, namely, that a rumour had spread about that farmers on their migration routes to Johannesburg intended stopping their exit from that place for six months, while the second view was that a war was about to break out in the Transvaal.<sup>149</sup> A more plausible explanation seems to lie within the broader events of 1889. The collapse of the stock exchange and the closure of many of the small "outside" companies rendered up a fair number of workers, who, given the reorganisation programmes of many of the remaining companies, remained unemployed. There is also the consideration that many Africans would have desired to return home for the spring planting of crops, while, as indicated, the winter months were already unpopular with black labourers.

Mr Arnold, the Government Registrar of Natives for the Witwatersrand, blamed the recruiting agents for the trouble. The concept of the agent

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148. Siebörger, R.F., op.cit., pp.25ff.

149. The Star, 17 and 24 July 1889.

or tout developed on the Kimberley fields where individual Europeans would pounce on the Africans before they arrived at the fields, offering to find them employment and clearing the necessary legal documentation of registration and the issuing of a pass in return for a fee. In an attempt to curb the practice Arnold issued a notice requiring all agents to register with his office and pay a licence fee. The licences were promptly taken out and the practice continued unabated, whereupon Arnold took the step of banning these agents from his office. He felt that the agents had subsequently spread the war rumour with the intention of creating the prevailing labour scarcity and knowing full well that it would raise the premiums offered by the mine managers for any labour they brought in. One agent reported having supplied twenty Africans to a Krugersdorp mine at £1 per head, while the average premium was between 5s. and 6s. per worker.<sup>150</sup> Exactly how influential the agents were amongst the Africans working on the mines is difficult to determine. It does, however, seem unlikely that an unsubstantiated rumour could send over 5 000 Africans away in so limited a period of time, unless other circumstances made such a move desirable to them. For their part the agents, far from being eliminated, continued to flourish as a Rand institution throughout the period down to 1894, The Standard and Diggers' News devoting an editorial in 1892 to the hidden costs of the system which were not always taken into consideration when the costs of black labour were calculated.<sup>151</sup>

Commenting on the unreliability of the African labour force, The Diggers' News saw the formation of the Witwatersrand Chamber of Mines in 1889 as a direct result of the problem. At the first meeting of that body, an attempt was made to persuade the Government to institute a system of compulsory monthly labour agreements for Africans and the issue of passes to those employed.<sup>152</sup> A system of monthly employment, it was believed, would help to stabilize the floating African labour force. A lack of consensus in the Chamber wrecked this first attempt at greater labour control but the idea was not allowed to lie dormant indefinitely. By the end of that year, as a first step towards assessing the African labour situation, the Chamber of Mines issued a

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150. The Star, 24 July 1889.

151. The Standard and Diggers' News, 18 February 1892.

152. The Diggers' News, 25 July 1889.

questionnaire to all mine managers. The response of management was duly published as follows:<sup>153</sup>

	<u>Yes</u>	<u>No</u>
Could native wages be lowered?	60	7
Would monthly payments be more satisfactory?	57	9
Are you troubled by desertion?	45	21
Could the compound system be advantageously adopted?	20	32
Would it be advisable to let Kafirs feed themselves if the compound system were adopted?	8	56
Compared to white wages are black wages too high?	23	63

Certainly the most interesting figures on the table are those relating to the consideration of black wages being too high. It was generally recognised that they were not but at the same time it was accepted that black wages was an area in which substantial cost savings could be achieved. The statistics relating to the rate of desertion are also important, the high number of companies suggesting that they had no problem in this regard indicating that while the problem was still prevalent, some managements had found a way of overcoming it. Like the situation at Kimberley, it was found that some companies were developing a permanent or semi-permanent labour force of Africans who returned regularly to the same mine.<sup>154</sup> It was probably this situation which also accounted for the unwillingness of the majority of the sample to advocate the compound system, although here the expense of administering it was also a consideration. Beyond this, the questionnaire gave the Chamber a clear mandate to pursue the implementation of a monthly employment system.

An anonymous letter in The Star in February 1890 spelled out the requirements which, it was hoped, the adoption of a monthly system of employment would ensure. "An abundance of native labour, however, is not our only requirement, we need quality as well." The growing need for skilled and semi-skilled Africans to fill positions like "drilling boys" and engine drivers was clearly recognised, as was the fact that

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153. The Diggers' News, 13 January 1890; an amended table, excluding the final question, can be found in the First Annual Report of the Witwatersrand Chamber of Mines, p.9.

154. The Diggers' News, 23 January 1890.

the investment in training would only show a return if the labour force was made more permanent. It was seen as a "misfortune" that the black workers were not permanently resident on the Rand, as this would have assisted immeasurably in the creation of a more skilled labour force.<sup>155</sup>

The deepening recession of 1890 in the mining industry, as more and more of the weaker companies closed down and others continued with their reorganisation, proved an ideal time for an experiment with the prevailing labour system. The temporary surplus of black workers meant that some leeway existed before companies would feel the pinch of any boycott of the mines by these workers. The surplus had also resulted in African labourers accepting lower wages and by April 1890 they were receiving between 10s. and 12s. 6d. where previously rates as high as 20s. a week were common.<sup>156</sup> The prevailing economic climate also saw a reduction in employment opportunities for whites and it was estimated that skilled artisans were leaving the Rand at a rate of 200 to 300 a week. Nevertheless, the situation was recognised as being temporary and that wage rates would again rise unless consensus was reached between the companies on maintaining them at that level. Given the falling rate of wages, the more immediate problem was seen as the introduction of a monthly employment system for blacks, which, by creating a more stable black population, would help in the longer term substitution of black for white skilled workers.

The success of a radical change in employment practice hinged on the level of participation of the interested parties. Not only would this include the mining companies but also the Netherlands Railway Company and its contractors. The lack of unanimous support for the system of monthly payments is borne out in the discussions at a meeting called by the Chamber of Mines in May 1890.<sup>157</sup> The two main issues of contention regarding the proposed scheme related to the heavy penalty of £500 for any breach of the agreement, and the uniform introduction of the scheme. Hermann Eckstein, as chairman of the Chamber, proposed that the monthly wages only be paid after five weeks, thus giving the employers an even stronger hand in guaranteeing the continued employment of the worker. The idea did not receive much support, the employers

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155. The Star, 25 February 1890.

156. The Star, 15 April 1890.

157. The Standard and Diggers' News, 9 May 1890.

recognising the abuses which could arise and the unnecessary further damage such a step would cause to the reputation of the Witwatersrand as a place of employment. In 1892 the press strongly condemned the system of withholding wages from black workers, then fairly prevalent amongst the contractors, as it was recognised that it would lose the industry the confidence of these workers.<sup>158</sup> The reserve expressed at the May 1890 meeting decided those attending to give the system a trial period beginning on 1 July 1890 and running for six months. At the end of the year a further extension of six months was agreed to.

By mid-1891 the system of monthly employment for blacks was in ruins. Not all the companies had joined and many of those who had gave only grudging support. Large companies like the Langlaagte Estate Gold Mining Company held aloof, while resistance from the African workers themselves was such that it was reported that "... the kafir has fallen off in quantity and quality." While it was agreed that the system gave two or three weeks of more-or-less trained work from a labourer, it was also found that they saved more of their earnings in this way, "...enabling them to return home sooner."<sup>159</sup> As this report suggested, the "problem" of black labour would continue until some form of "proper organisation" was instituted. Until then, "Only one thing can, since slavery is abolished, keep the dark gentleman at his work, and that is good pay - or the prospect of it."

The successful launching of the monthly payment system in July 1890 encouraged the Chamber of Mines, under the instigation of H. Eckstein and Company, to seek a further reduction in African workers' wages. In July 1890 Lionel Phillips was appointed chairman of a sub-committee to investigate a general reduction in workers' wages. Explaining his strategy to the London office in August, he indicated that the best way of operating was to get the individual companies to submit copies of their monthly pay sheets to the Chamber.<sup>160</sup> Phillips recognised the weakness of the black workers, writing,

"It may be as well to avoid sending in copies of pay to White men, as it would look like [we are] intending combined action against them and might lead to the men forming a

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158. The Star, 24 May 1892.

159. The Standard and Diggers' News, 21 July 1891.

160. Fraser, M. and Jeeves, A., op.cit., pp.37-38.

Union against their employers. The real saving is to be made by reducing the Kaffirs."

Phillips's intention was to institute a general reduction in African wages to 40s. a month, including the cost of food, believing also in a backward sloping supply curve for these workers. "The less we pay the longer they will stay each time and the more efficient they will become..."

A meeting of mine managers was called for 25 September 1890. The pattern of wages which emerged from the sheets submitted to Phillips indicates the dissention which existed in the industry at the time. Sixty three companies forwarded their pay sheets, from which it was deduced that between them they employed 9 617 Africans at rates varying between 43s. 9d. and 78s. 8d. per month. These figures were further broken down as follows:<sup>161</sup>

Number of Companies	Number of Africans employed	Average number per mine	Rates of Wages
4	464	116	43s.9d. - 50s.
25	3 069	122,76	50s. - 60s.
18	2 000	111,11	60s. - 65s.
11	4 084	255,25	65s. - 70s.
5			70s. - 78s.8d.

The most important inference to be drawn from these statistics is that it was the larger employers, hiring over 200 workers each who also paid the highest wages. Clearly, they would not allow their position to be jeopardized by an agreement and would only go along with the scheme so long as it benefited them. Phillips's scheme thus rested on an unstable foundation. A strong feeling was expressed at the meeting that black workers should not be seen as an amorphous mass and that any scheme, rather than being a simple percentage reduction, or the establishment of an average maximum, should cater for the reward of skills. After a fair deal of haggling, it was decided that the maximum wage for unskilled labour be fixed at 40s. per month, a full 10s. higher than that initially proposed by Phillips. Further, on the instigation of Mr Richards, the manager of the Laanglaagte Estate Company, one of the

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161. The Star, 25 September 1890.

largest employers of labour, it was decided to implement a three-tier system of wages. Fifty per cent of the African labour force would be employed at a maximum of 40s. per month, while the next thirty per cent would receive a maximum of 50s. per month, and the remaining twenty per cent would be paid at the discretion of the company.<sup>162</sup> If this twenty per cent received an average of 70s. a month, Phillips calculated that the average pay would be 49s., or a saving of 13s. a month on the previous average, or an approximate saving to the industry of £100 000 a year.<sup>163</sup>

In passing Phillips remarked, "How the Kaffirs will take it is of course another matter, but I think being a general combined movement they will bow to the inevitable..."<sup>163</sup> His complacency was a little premature. In October a case was reported of African workers burning down the house of the secretary and paymaster of the Meyer and Charlton Gold Mining Company in protest against the reduction.<sup>164</sup> By December 1890 most companies were experiencing difficulty in procuring an adequate labour supply, while at least one company was forced to close down its mill as a result.<sup>165</sup>

In early January a case was brought before the local magistrate of Johannesburg regarding the strike of 159 African workers of the Jumpers Gold Mining Company. These black workers, in what was probably the earliest strike by African employees on the Rand, protested against being made to work on Sundays without extra pay. The three workers' representatives were duly fined 10s., with the option of a week's imprisonment.<sup>166</sup> Likewise, mass desertions occurred from the Central Langlaagte Gold Mining Company's property when black workers refused to accept a reduction in wages from £3 per month to between £2 10s. and £2 12s. in terms of the new system. Reporting this incident The Star in an editorial tried to pass much of the blame for the labour shortage onto the Netherlands Railway Company and its concessionnaires, suggesting that workers from the east coast were being stopped and forced either

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162. The Star, 26 September 1890.

163. Fraser, M. and Jeeves, A., op.cit., p.41.

164. The Star, 21 October 1890.

165. The Star, 23 December 1890, interview with W.H. Rogers on labour matters.

166. The Star, 12 January 1891.

to work on the railways or return home. There was undoubtedly a great demand for labour from the railway company but it is doubtful if it and its agents, or even the Government could have exerted sufficient pressure to prevent workers making their way to Johannesburg had the lure been strong enough.<sup>167</sup> Strikes by black workers continued even after the collapse of Phillips's scheme. One such strike was that by 600 workers at the Unified Gold Mining Company who struck against a proposed reduction of wages in 1892. Commenting on this strike The Star noted, "Curiously enough - and what may ultimately become a very serious matter along the Rand - the various tribes more or less amalgamated, and sank their own little differences to unite in common action against their employers."<sup>168</sup>

By December 1890 the impression was growing that an increasing number of companies were not strictly adhering to the terms of the agreement, thus making the situation more difficult for those who did.<sup>169</sup> In January the secretary of the Simmer and Jack Company was instructed to report to the Chamber of Mines a breach of the regulations on the part of the New Primrose Gold Mining Company.<sup>170</sup> With the onset of winter, always a period of seasonal labour shortage, many companies were confronted with critical deficits of workers and chose to abandon the scheme. One such company was the Simmer and Jack. By 15 June 1891 the manager reported to the board that the total African staff amounted to 753 workers, comprising 274 in the 40s. maximum category, 233 at 50s. and 256 at 60s. and over. The chairman reported that it was impossible to continue working under the Chamber's regulations and the secretary was duly instructed to inform that body that the Company must reluctantly retire from the scheme until labour in general became cheaper or accepted rates of pay were increased.<sup>171</sup>

Thus the first attempt at a general wage reduction ended in failure, not so much because of disagreement between employers as because of the actions of the black employees. Phillips's belief in the backward

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167. The Star, 10 January 1891.

168. The Star, 19 July 1891.

169. The Star, 22 December 1890.

170. Cory Library MS16 007, op.cit., 19 January 1891.

171. *Ibid*, 15 June 1891.

sloping supply curve for African labour had been severely tried, for as one correspondent noted, "What takes off the large gang of boys almost daily seen winding their way to Kimberley? - simply the high rate of pay there."<sup>172</sup> Similarly, the entire exercise for reducing the wages of both black and white workers, in an endeavour to reduce the cost structure of the industry, had met with only limited success by the end of 1894.

At the same time the companies of the study and the industry in general were endeavouring to increase their profits by maximizing output. The drive to optimize production depended on several factors, such as the size and crushing capacity of the mill, the actual yield of gold per ton, and the amount of gold lost in the tailings, on the reduction side. As far as mining was concerned output maximization depended on the state of development of the underground workings, the quality of ore in different parts of the mine, and the ability and regularity with which the ore requirements of the mill could be met.

The major threat facing the maximization of output in the years after 1889 was the pyritic ore crisis. As already indicated, there has been an attempt to shift too large a portion of the problems which beset the industry in 1889 on to the first contact with pyritic ore. It should not be forgotten that Gardiner Williams, in 1886, declared that at a depth of over 200 feet the appearance of sulphides in the reef formation was likely to give rise to problems. That so many companies reached the critical level in the development of their mines in late 1888 or 1889 is as much a further reflection of their slow rate of development, as an indication of the cause of the stock exchange collapse. Undoubtedly, such news, disquieting as it was to speculators, was likely to influence trends on the stock exchange, but a healthy industry would have faced the collapse of the market and the challenge of pyritic ore with equanimity. Even then the boom in the stock exchange had reached unrealistic heights and if it had not been the rumour of pyritic ore, some other factor would have led to a similar conclusion. Assisting in the collapse of the market, and making its appearance at a time when the sickly industry was in dire need of working capital, the presence of pyritic ore exacerbated the crisis. The refractory nature of such ore meant a lower return on every ton of ore crushed as less

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172. The Standard and Diggers' News, 17 July 1891.

gold was captured by the conventional reduction processes, thus emphasising the need for an immediate reduction in working costs to render the reduced output profitable. The alternative was to search for a process which would recover more of the gold now being lost in the tailings.

That the industry was unprepared to cope with the new difficulty as it arose is again a reflection on the directoral management of the respective companies. Clearly, Williams's warning went unheeded in the prevailing mood of "mining for the share market" which prevailed before 1889. Likewise, there seems to have been a widespread and naive belief down to 1889 that all but a minute amount of the gold was captured by the existing amalgamation processes. The Witwatersrand Company, supplied with Frue Vanners from the outset for concentrating the heavier particles from the tailings, chose to abandon these appliances as unnecessary.<sup>173</sup> In turn, as late as May 1889, Mr Eloff, the Mining Commissioner for Witwatersrand, was compelled to issue a notice warning companies and others who allowed their tailings to run into the spruits and other water courses, that they were liable to lose their water rights.<sup>174</sup> The harshness of the warning was clearly a reflection of the frequency of the transgression and of the innocence of knowledge of the value of such material or of a practical process for its treatment.

An awareness of the value of tailings for the gold they still contained was slow in coming to the Witwatersrand. Extraction by amalgamation only resulted in the capture of between 55 and 70 per cent of the gold content of the ore put through the mill.<sup>175</sup> An editorial comment in the press in August 1889 suggested that even at this late date amalgamation was far from perfectly carried out on many mines and the need was stressed for conscientious amalgamators.<sup>176</sup> With basic amalgamation poorly carried out on many of the properties it is not surprising that little attention was paid to the tailings in which up to half of the gold content of the ore was allowed to escape. The years 1889 and 1890 were thus marked by a campaign in the press and elsewhere to create an awareness of the value of tailings, which was

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173. See above, Chapter II, p.32.

174. The Diggers' News, 7 May 1889.

175. Hatch, F.H. and Chalmers, J.A., The Gold Mines of the Rand, p.199.

176. The Diggers' News, 1 August 1889.

in turn closely related to the pyritic ore problem. A leader article in January 1890 emphasised the value of tailings accumulated on the mines, suggesting that those of the Wemmer Company still contained half an ounce of gold to the ton, which could be of great value once a process for treating them efficiently and cost effectively was discovered.<sup>177</sup>

The management of the Rand industry failed dismally in determining and planning for the longer term requirements of the reduction process. The MacArthur-Forrest cyanide process, which proved the salvation of the industry, was patented in 1887. It is doubtful if the majority of Rand mine managers and directors had heard of the process before 1890. The process was actually introduced into South Africa at the instigation of Barberton entrepreneurs, of whom John Jack was one, in 1889, while it was not before 1891 that it was generally adopted on the Witwatersrand. The process accounted for the recovery of some 35 000 ounces of gold that year. The following table reflects the rapid and effective adoption of the cyanide process after 1891:<sup>178</sup>

Year	Gold won by Amalgamation	Gold won by Cyanide	Cyanide Reduction as percentage of total
1891	694 372 ozs.	34 862 ozs.	4,78
1892	1 005 421	178 688	15,09
1893	1 147 960	330 510	22,36

The search for an effective means for the treatment of pyritic ore only commenced in earnest towards the end of 1889 on the Rand. Once more the press felt incumbent to warn companies that if they were not to burn their fingers financially, a good deal of systematic evaluation of the various patents being offered in this regard was essential.<sup>179</sup> The search for an economical and practical solution to the problem of falling yields ended with the adoption of the cyanide process, but it began with a host of patents, the efficacy of most of which was doubtful. A good example of such a process was the Julian Amalgamating Machine tried on the Wemmer Company's property.<sup>180</sup>

177. The Diggers' News, 16 January 1890.

178. The Moon Annual 1894, "The McArthur (sic)-Forrest Process. What it has done for the Rand."

179. The Diggers' News, 31 December 1889.

180. See above, Chapter IV, pp.117-19.

The problem was not a very complex one. Witwatersrand ores were of a relatively simple composition and thus not too difficult to treat. The ore contained relatively small quantities of the oxides and sulphides of copper, arsenic, antimony and bismuth, which plagued the reduction processes of some American mines. The composition was, in many respects, ideal for the cyanide process and also lent itself to the more complex technique of the Plattner's chlorination process.

The loss of increasing quantities of gold over the amalgamation plates encouraged most mines to adopt some form of concentrating device which would capture the heavier particles of the escaping tailings. The most effective means in this regard were the percussion tables of the Frue Vanner or Scoular variety, although cheaper substitutes down to coarse corduroy blanketing was also fairly effective. These concentrates had then to be subjected to some additional treatment. A fair proportion of the gold in the tailings continued to escape and it was considered practical by several companies both to concentrate their tailings and use the cyanide process, after the introduction of the latter method. The value of the concentrates was dependent on the value of gold in the original ore. The Frue Vanner and Scoular tables gave concentrates of from two to three per cent of the ore-bulk passed through the mill, such concentrates varying in value from four ounces to eight ounces of gold per ton.<sup>181</sup> Given the prevailing economic climate and the financial position of most of the companies, they were not in a position to work these concentrates themselves. Under these circumstances the concentrates were sold to those mining companies, like the Robinson Company, who established their own chlorination plants, or to independent operators. One such independent operator was the South African Metallurgical Company, established to use the Newbury-Vautin chlorination patent.<sup>182</sup> The process was not altogether successful and the company collapsed in 1891 after the disappearance of Mr Vautin from Johannesburg.<sup>183</sup> The Robinson Company's plant, which used the Plattner process, was certainly the largest and most successful of these plants on the Rand. It was also highly effective, with less than

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181. Wilson Moore, C., "Development of the Mining Industry of Witwatersrand", p.6, in The Moon Annual 1893.

182. The Star, 25 November 1889.

183. The Standard and Diggers' News, 1 May 1891.

0,5 dwts. of gold remaining per ton of concentrate after treatment.<sup>184</sup>  
 The plant was under the supervision of Mr Charles Butters, especially  
 introduced from America by H. Eckstein and Company.<sup>185</sup>

The chlorination process brought temporary respite to the Rand industry, with profits of up to 14s. per ton of ore originally milled on 8 ounce concentrate. When borne in mind that milling costs on some mines did not exceed 3s. 6d., the value of the concentrating process becomes apparent.<sup>186</sup> But while considerable quantities of gold continued to escape in the tailings, a process which could win back this gold was desirable. The elaboration and perfection of the process introduced to Barberton by the African Gold Recovery Company was undertaken by the Rand Central Ore Reduction Company. By November 1890 the demonstration experiments on the Salisbury Gold Mining Company's property were completed. The commercial applicability of the process for Rand ores was still at stake and it was thus decided that the Gold Recovery Syndicate erect a pilot plant on the Robinson Company's property, an agreement being signed with that company for the treatment of 10 000 tons of tailings. Over 8 000 ounces of bullion were recovered and the success of the venture was such that the Robinson Company agreed to take over the plant on completion of the contract.<sup>187</sup> The expense of treating a ton of tailings by cyanide was calculated at about 5s. 6d. in 1893. While this placed the very poorest tailings beyond the pale, at an average extraction rate in excess of 70 per cent, tailings of three to four pennyweights, if treated in bulk, yield a profit.<sup>188</sup>

Thus the cyanide process allowed for a further maximization of output. While the additional processes of chlorination and cyaniding were bound to raise working costs, their disproportionate contribution to total output assured them a place in the reduction processes of most mines, whether undertaken by the individual mines or not. In the long run, the complex and more dangerous nature of the chlorination process, which first required the roasting of the concentrates prior to their leaching with chlorine solution or gas, and its resultant higher cost,

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184. The Star, 2 December 1891.

185. The Star, 6 October 1891.

186. Wilson Moore, C., *op.cit.*, p.6.

187. Letcher, O., The Gold Mines of Southern Africa, pp.100-101.

188. Wilson Moore, C., *op.cit.*, p.6.

ensured the lasting success of the cyanide process. The weaker solutions of cyanide required and the reduced handling of the material not only made for a safer process but its effectiveness rendered the use of the concentrating, and ultimately the amalgamating, processes unnecessary.

Another area in which certain companies sought output maximization in the years down to 1894 was in the ore sorting process. Not only did this method reduce the amount of ore fed through the mill for a given output of gold, hence enhancing the efficiency of the mill, but it also required a proportionate increase in the output of the mine in order to compensate for the material rejected in sorting. The method was ideally suited to those mines with narrow reefs and well developed underground workings. In working such mines it was inevitable that a fairly large proportion of the casing rock surrounding the ore reef was broken up and mixed with the ore in mining operations. This dilution of the ore resulted in lower yields and higher working costs. The successful implementation of the system, however, rested on the extent to which the mine was developed, as it placed an increased strain on the underground workings. The idea of ore sorting is attributed to J.H. Johns, and it is a reflection of his emphasis on the proper development of the underground works that the system was successfully implemented on both the Wemmer and Ferreira mines.<sup>189</sup>

The influence of J.H. Johns on both the Wemmer and Ferreira Companies after 1891 was so great that for all practical purposes the analysis of their activities down to 1894 can be considered simultaneously. On both properties Johns recognised that in dealing with the narrow, rich reefs, a substantial reduction in working costs was of secondary importance and would flow as a natural result of a reduction in marginal costs with the maximization of output. Hence his management in both cases was marked by the rapid development of the respective Companies' mines and the introduction of all the necessary appliances which would ensure the attainment of his goal. His success in this venture was assured but it hastened the emergence of yet another problem for the directoral management of these Companies, namely, that of how best to cope with the limited lifespans of the mines at current rates of exploitation. For the Wemmer Company the problem of a limited lifespan was less pressing, in that a large proportion of the capital investment in Johns's

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189. See above, Chapter IV, pp.137ff, and Chapter V, pp.184ff.

reorganisation plan, an amount of over £80 000, was generated internally.<sup>190</sup> Nevertheless, by 1894 the decision had been taken to undergo further expansion of the property. For the Ferreira Company the situation differed in that much of the investment in improvements was undertaken with borrowed funds. The anxiety of the creditors for the repayment of these loans necessitated output optimization in the short term for the refunding of this money and the payment of substantial dividends for certain favoured clients and friends of Wernher, Beit and Company. The situation rapidly reduced the ore reserve of the mine and again raised the question of the lifespan of the property.<sup>191</sup> Long term output maximization was again assured with the amalgamation of the Ferreira Company with the deep level claims to the south.

Output maximization is also reflected in the decision of three of the four companies to increase the size and crushing capacity of their batteries. The Witwatersrand Company was the exception in that it did not do so. The reason for this is that its crushing capacity was already greatly in excess of the mine's ability to supply it. Rather, the situation developed where after July 1891, the mill was closed down entirely while all efforts were concentrated on the development of the mine. Thus the uneven balance between mine and mill, following the sale of virtually all the mine development work with the claims which went to form the Balmoral Company, left the Witwatersrand Company down to 1894 in a poor position to attempt output maximization.<sup>192</sup> Attention rather turned to the leasing of a portion of the property on tribute as a means of gaining some income for the failing company.

The Simmer and Jack Company shows an interesting trend in management thought in the years after 1891. In 1889 the directorate were still keen to split the property in an attempt to maximize profits and gain working capital for the retained portion of the ground. By July 1890 the board had changed its mind, recognising the long term advantages to be gained from maximizing production as a factor in cost reduction and for its own sake. Clearly in keeping with this trend was the decision, once cost reductions had been achieved through the use of an enlarged mill, to

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190. See above, Chapter IV, p.136.

191. See above, Chapter V, pp.187-91.

192. See above, Chapter II, p.41.

reduce the ore grade worked. Immediate profit maximization, once a regular inflow of profit was established, was clearly sacrificed in return for longer term output maximization in the extension of the life of the mine. The sophistication of management thought which this move represented cannot be too strongly stressed. Beyond this, the Company's management showed an awareness of the benefits to be gained from a more advanced system of reduction. Cautious, however, in the face of the veritable barrage of new patented processes being offered, management chose to remain essentially aloof until one of these processes had proved its superiority. It was thus not until 1892 that the Company decided in favour of the cyanide process.<sup>193</sup>

It is clear that the attitude of the management group in the Witwatersrand mining industry underwent a transition towards the responsibilities and prospects for that industry in the years after 1889. It was in the period between 1889 and 1894 that the true foundations of the Rand gold mining industry were laid. Prior to this very little serious mining was undertaken and the crisis of 1889 awakened those connected with the industry to the technological and financial requirements for successful reef gold mining.

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193. See above, Chapter III, pp.89-90.

## CHAPTER VII

A COMPARATIVE ANALYSIS OF THE EXTERNAL INTEGRATION OF  
THE MANAGEMENT FUNCTIONS OF THE SAMPLE COMPANIES

In the previous chapter the functions of management in the immediate operation of the various companies were reviewed in order to evaluate the extent to which they succeeded in attaining their ultimate objective, namely, the winning of profits for their shareholders and to analyse the errors and successes of judgement in decision making. Now the focus shifts from the internal organisation to the interaction of the various companies with their broader environment, whether this was with other companies operating within the same industry or in the wider sense with the economy and society within which the whole industry operated.<sup>1</sup>

The activities of the various companies and their representatives with the broader environment may be viewed in terms of either co-operation or conflict. Within the cognisant aspirations of nineteenth century industrial capitalism and the over-riding motivation of the pursuit of profits, it was inevitable that this situation would encourage either co-operation or conflict in a competitive environment. Circumstances dictated whether the goal of the maximization of profits was best achieved by co-operation or competition. Thus the early years of the Witwatersrand industry were marked by fierce competition between the mining companies for labour, the extent and detrimental influence of which on the cost structure of the companies ultimately led to agreements for wage reductions. Another example of co-operation within the industry was the formation of the Witwatersrand Chamber of Mines

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1. For the purposes of this study the analysis in relation to the economy and society is confined to those of the South African Republic although it is recognised that the development of the Witwatersrand was destined to interact with and leave its mark on the economy and society of Southern Africa and beyond in the longer term.

See Kubicek, R.V., Economic Imperialism in Theory and Practice, passim, as a good example of a study of the industry encompassing a broader view.

to serve as a united mouthpiece for the industry. Even here, however, there were some companies which chose to hold aloof of the organisation while in 1896-97 an Association of Mines was established in opposition to the Chamber.<sup>2</sup>

The analysis of the external integration of the companies involves two broad categories relating to the relationships between the companies of the study and the rest of the Witwatersrand mining industry - the endogenous integration - and those relating to the rest of the economy and society - the exogenous integration. Thus, for example, the competition for labour can be seen in two perspectives, firstly between the various mining companies of the Witwatersrand, the endogenous situation, and beyond that between these mines and those at Kimberley or the railway companies involved in constructing the links between the coastal ports and the Rand. Similarly in the exogenous sphere, the relationship is between the companies and their representative organisation, the Chamber of Mines, and the Government of the South African Republic.

Our investigation of the external integration of the companies considered in this study starts with an analysis of the schemes to achieve endogenous co-operation, that is, those attempts to attain amalgamation and co-operation within the industry, whether in the form of the merging of separate companies, their individual functions, or in the broader sphere with led to the formation of the Witwatersrand Chamber of Mines. This amalgamation aspect of co-operation within the industry involves three distinct levels. Attempts were made from the outset to strive for the overall amalgamation of the numerous small syndicates and companies which occupied the claims along the main reef. Jacobsson claims that in 1886 and early 1887 Cecil Rhodes, inspired by his success in amalgamating the various companies operating in the De Beers Mine at Kimberley, and sensing the ultimate climax of his ideals for the consolidation of the diamond fields, put forward similar proposals for the Witwatersrand.<sup>3</sup> While agreement could not be reached and the scheme was soon abandoned, it may be that the formation of The Gold Fields of South Africa Limited, with its large

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2. Etheredge, D.A., The Early History of the Chamber of Mines, Johannesburg: 1887-1897, Chapter Seven.

3. Jacobsson, D., Fifty Golden Years of the Rand, 1886-1936, p.49.

capital and broad trust deed, was intended as an organisation which could affect such consolidation.<sup>4</sup> Superficially this appears to contradict the hesitancy of Rhodes in committing himself to large scale investment on the new gold field reported by Sauer.<sup>5</sup> It is, however, possible to reconcile the creation of Rhodes's company with his reticence, in that if the whole Witwatersrand was consigned to one or several large companies, then irrespective of the doubts raised with regard to the extent of the reef or the problem of pyritic ore, such a company or ventures could surely succeed on the strength of the known assets of the reef.

The issue of amalgamation was again raised in the difficult period of 1889 and early 1890. By now, however, the idea of an overall consolidation was becoming increasingly tenuous as the extent of capital investment in the industry ensured that it would be a virtually impossible goal for any single organisation to achieve. Furthermore, the poor performance of the Rand companies made it likely that any body seeking consolidation in 1890 would be highly selective in its choice of properties. The form of amalgamation now sought after aimed rather at achieving an economic rationalisation and reduction in working costs. In the words of an 1890 press editorial,<sup>6</sup>

"...the only amalgamation which honest men will attempt, or wise men will sanction, are those which may be obviously calculated to increase the output of the precious metal, while decreasing the cost of producing it."

The attempts to achieve greater economies of scale did not begin with the collapse of the 1889 stock exchange boom. Clear evidence of this is found in the amalgamation of the Wemmer and Wemmer Extension Companies in 1887.<sup>7</sup> Similarly, the increased interest shown in the Ferreira Company by H. Eckstein and Company after October 1887 immediately gave rise to rumours of a proposed amalgamation between the Wemmer and Ferreira Companies.<sup>8</sup> Another possible massive amalgamation of the small central Rand companies was reported in the press

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4. Ibid.

5. Sauer, H., Ex Africa, Chapter VI.

6. The Star (Johannesburg), 19 March 1890.

7. See above, Chapter IV, p.107.

8. See above, Chapter V, p.150.

in December 1888.<sup>9</sup> While nothing came of these rumours it is likely that they rested on substantial evidence given the attitudes of Rhodes and the Wernher, Beit group towards these small companies. After 1889 several further attempts were made to amalgamate the Wemmer and Ferreira Companies without success.<sup>10</sup> Moves to link the Ferreira with the Worcester, Robinson and Langlaagte Companies also proved futile.<sup>11</sup> It cannot be doubted, however, that similar attempts at amalgamation met with greater success in the case of other companies, such as the creation of the May Consolidated Gold Mining Company.<sup>12</sup> The reasons for the failure of the amalgamation attempts between the Wemmer and Ferreira Companies are that such consolidation was never considered vital to survival by the boards of the respective companies and that it never occupied a position of primary importance in the approach of H. Eckstein and Company and their London principals, Wernher, Beit and Company, towards the companies. These firms were more interested in the immediate or potential profitability of the companies and were thus prepared to sacrifice such long term objectives as amalgamation in favour of early gains. The extent to which this policy on the part of these firms curtailed their opportunities for achieving a more far-reaching consolidation of the Rand industry is clear.

The events in the case of the Ferreira Company which ultimately led to a change in priorities on the part of Wernher, Beit and Company was the rapid rate at which the Ferreira Company worked its payable south reef after 1891. The demand for a quick return of the capital loaned to the Company and the emphasis placed on the payment of spectacular dividends, deprived the Company of the opportunity of establishing any form of depreciation reserve account. Circumstances thus left the Company with a limited life span and a large accumulation of undepreciated and relatively new equipment on its hands. Under these circumstances, and given Wernher, Beit and Company's previous involvement in the Company, it was clearly in the best interests of

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9. See above, Chapter V, p.157.

10. See above, Chapter V, p.162.

11. Ibid.

12. Goldman, C.S., The Financial, Statistical, and General History of the Gold and other Companies of Witwatersrand South Africa, (1892), p.138.

all to prolong the life of the Ferreira mine by seeking an amalgamation with the company owning the deep level claims to the south.<sup>13</sup>

A further amalgamation was that between the Simmer and Jack Company and the large blocks of claims owned by The Consolidated Gold Fields of South Africa Limited in 1894.<sup>14</sup> For The Consolidated Gold Fields the move represented the first large acquisition in a significant return of interest in the Witwatersrand, while for the Simmer and Jack Company the move stood for an assured future as a deep level company. The steps taken by the Simmer and Jack Board were the first move by the representatives of any of the sample companies to prolong the life of their company for its own sake. Once again, as in the case of the Ferreira Company's situation, the outcrop mine gained a substantial increase in life expectancy while the deep level claims were spared a fair proportion of the capital investment required for opening up their ground. As early as 1890 Lionel Phillips had hinted at such a course of action for the industry suggesting,<sup>15</sup>

"... I do not think that deep levels will be worked by themselves. It takes an immense working capital to open properties on the reefs and the probable end of all deep levels will be absorption by the parent companies."

A similar course of action was advocated by the press in 1892,<sup>16</sup> and judging from the evidence already given this policy was not infrequently adopted by the outcrop companies. Thus the period between 1892 and 1895 represented a transition in the industry, for while certain deep level properties were opened as separate ventures in these years, the evidence also suggests that a fair number of outcrop companies were linked to deep-level claims to the south in such a way that with time they became deep-level propositions. With this evidence in mind it is essential that any future debate on the Blainey thesis should specifically define the term "deep-level".<sup>17</sup>

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13. See above, Chapter V, pp.189ff.

14. See above, Chapter III, pp.95ff.

15. Fraser, M. and Jeeves, A., All That Glittered, p.45.

16. The Standard and Diggers' News (Johannesburg), 21 April 1892.

17. Blainey, C., "Lost Causes of the Jameson Raid" in Economic History Review, ss, XVIII, 2 (1965), pp.350-366.

The third form of amalgamation or co-operation was a partial arrangement between companies with the intention of achieving certain set objectives. Perhaps the clearest example of such amalgamation was the establishment of the joint milling project between the Ferreira and Worcester Companies<sup>18</sup> and the siting of this mill on the property of the Robinson Company.<sup>19</sup> A similar venture for a joint pumping scheme between the Ferreira and Wemmer Companies finally collapsed when the Wemmer Company withdrew from the agreement after finding that an adequate water supply was forthcoming from its mine.<sup>20</sup> The short-sightedness of this decision is borne out in that the Wemmer Company was ultimately forced to join the pumping scheme inaugurated by the Salisbury and Jubilee Companies in December 1892.<sup>21</sup> A similar example of co-operation between companies occurred when the Simmer and Jack Company decided to increase the size of its mill to 100 stamps in 1889. The increased water requirements led to a search for an additional water right. Because the water right so sought had already been granted to the Stanhope Geldenhuis Deep Level Company, the Simmer and Jack Board was obliged to treat with that company for some sort of equitable arrangement, with the result that the Simmer and Jack Company erected the necessary dam wall in return for the right to use the water.<sup>22</sup>

It is evident from the examples presented above that the level of co-operation varied. The joint milling project of the Ferreira and Worcester Companies was clearly a far greater commitment on the part of those companies than was the joint water right agreement of the Simmer and Jack and Stanhope Geldenhuis companies, in that the former agreement was integral to the cost structures of those companies. Undoubtedly, the convenience and accessibility of the Stanhope Geldenhuis water right decided the Simmer and Jack board that the costs of the erection of a dam wall were outweighed by the proximity and availability of the potential water supply, but had the Stanhope Geldenhuis Company only decided to sell the water at a given price per unit, then the situation would have altered. As it was, the Simmer and Jack Company faced only the fixed costs of construction and the

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18. See above, Chapter V, p.164.

19. See above, Chapter V, p.162.

20. See above, Chapter IV, p.114 and Chapter V, p.162.

21. See above, Chapter IV, p.133.

22. See above, Chapter III, pp.81-82.

pumping plant, and the subsequent minimal maintenance costs. The joint milling arrangement, however, resulted in a lowering of the marginal costs of all factors related to the reduction processes of both companies and was thus vital to the success of these organisations given the relationship of these costs to the total cost structure of any company. Such reciprocity between companies was essential in relation to the reduction of total working costs and also to the lowering of the total capital investment faced by these small outcrop companies. The extent to which such co-operation was achieved in the industry in the 1890's is difficult to establish, but Curle, writing at the end of the decade, felt it sufficiently important to renew the plea for closer co-operation in the sharing of shaft facilities, cyanide plants, mills, technology, and in any other way likely to result in substantial savings.<sup>23</sup>

With the passing of the age of the outcrop mines, however, the need for such reciprocity between companies was largely elevated from the level of equipment and plant to that of technology and finance. As Denny examined in some detail, the viability of the deep level ventures required increasing economies of scale in size of plant, property, and general facilities.<sup>24</sup> Under these circumstances the opportunities for co-operation between companies became less relevant outside the spheres of technology and finance as the economies of scale for plant and equipment became subject to diminishing returns. It was here that the "group system" came into its own, growing out of the various partnerships established for financial and property speculation in the early days of the field. Wernher, Beit and Company was undoubtedly the most important of the emerging groups down to 1912, but there were others such as Barnato Brothers, which subsequently became Johannesburg Consolidated Investments, The Consolidated Gold Fields of South Africa Limited, S. Neumann and Company, J.B. Robinson, A. Hoerz and Company, which later became Union Corporation, and various others.<sup>25</sup> The relationship between Wernher, Beit and Company and the various companies of this study in terms of the provision of finance and the supply of

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23. Curle, J.H., The Gold Mines of the World, pp.36-77.

24. Denny, G.A., The Deep Level Mines of the Rand and their Future Development: Considered from a Commercial Point of View, passim.

25. Emden, P.H., Randlords, pp.206ff.

men of technical competence does not require repetition and it was from such beginnings that the group system of control arose.

In discussing the group system, Letcher points out that it renders the subsidiary companies those technical services which would not otherwise be available to them except at a far greater cost. The consultant experts in engineering, metallurgy and other fields are provided by the holding firms.<sup>26</sup> It is thus clear that the origins of the group system in the provision of technical services can be traced back to the operations of organisations like Wernher, Beit and Company and their Johannesburg representatives from virtually the outset of the industry.

Another of the main reasons advanced for the adoption of the group system was the growing requirement for funds and the timelags involved in the opening up of the deep level mines.<sup>27</sup> Once again the experience gained by Wernher, Beit and Company when financing the Ferreira Company down to the recommencement of production in 1891 served the firm in good stead. While the extent of the commitment required by the Ferreira Company was a major cause of concern in 1891, it nevertheless served as a portent of the capital requirements of the deep levels. The Ferreira Company also provides a useful example of yet another feature of the future financial arrangements which distinguish the group system, namely, the joint participation of the various groups in new ventures. The funds necessary for the extensive development and improvement of the plant of the Ferreira Company were raised by Wernher, Beit and Company, and besides their own commitment included loans from the Rothschilds, Kann and Neumann.<sup>28</sup> In this way the financial risk was spread between the participants. While it is probably incorrect to speak of S. Neumann as representing a "group" in 1890, and the involvement of the others was purely in financial terms, the principle of risk spreading is clearly evident in the capitalisation of the Ferreira loan.

Turning to the evidence of the Witwatersrand Company, another feature of the emerging group system is revealed. Commenting on the events which resulted in the resignation of the board of directors on

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26. Letcher, O., The Gold Mines of South Africa, p.412.

27. Emden, P.H. op.cit., p.205.

28. See above, Chapter V, pp.160, 167.

20 March 1894, the South African Mining Journal noted that the principle of certain firms' involvement in the affairs of various companies, based on prestige rather than financial holding, was a well established principle on the Rand.<sup>29</sup> In reviewing the activities of Wernher, Beit and Company and H. Eckstein and Company in their dealings with the various companies of the study the significance of the statement becomes clear.<sup>30</sup> Virtually from the outset of the industry these firms, through the careful distribution of technical and financial support, were able to gain information on and influence in the affairs of a large number of companies. The rebuff by the shareholders of the Witwatersrand Company in 1894 was, however, of limited effect as the requirements of the industry ensured a continuing and expanding role for such expertise. The further requirements of risk spreading and a wide involvement for the achievement of economies of scale ensured that "control" in terms of the group system did not always require a majority shareholding. Rather, in the words of Owen Letcher,<sup>31</sup>

"... it is rarely the case that a dominating preponderance of shares is held by the House concerned... The word 'controlling' must not, therefore, be accepted as meaning actual domination of financial interest, but rather a system of administration which has been evolved and is maintained whereby financial assistance is available in case of need, and all the departmental services of the corporation are at the disposal of the component and subsidiary enterprises."

The evidence drawn from the examples of the Witwatersrand and Ferreira Companies suggests the early beginnings of what was subsequently to emerge as the "group system".

Another area in which endogenous co-operation is revealed in the companies of the study is in the Witwatersrand Company's decision in May 1892 to lease a portion of the property on tribute.<sup>32</sup> The concept of leasing areas for mining purposes in this way was not new and had been practiced previously in South Africa at Kimberley in the aftermath of the 1881 boom, when several unprofitable companies were let in this way.<sup>33</sup> The lease was usually for a considerable duration with a set

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29. See above, Chapter II, p.60.

30. See above, Chapter II, p.60, and Chapter IV, pp.126ff.

31. Letcher, O., op.cit., p.411.

32. See above, Chapter II, p.50.

33. Reunert, T., Diamonds and Gold in South Africa, p.40.

rental and some form of profit-sharing arrangement between the parent company and the tributor when such profits exceeded a certain amount. The tributor was always ensured the majority of the profits. In this way, depending on its faith in the inherent wealth of the property, the parent company could reach an agreement which would ensure a higher revenue from the leased ground than was likely to accrue from a normal lease or from its own operations. The tributors were usually hard working men or partnerships who recognised the potential value of the property and relied on its profitable exploitation for their survival. Their success in Kimberley enabled large monthly payments to be made to the parent companies who, in certain cases, were then able to resume dividend payments.<sup>34</sup> A similar scheme was suggested for the Witwatersrand in 1890 when many companies found that high mining costs and poor management were depriving them of their profitability.<sup>35</sup> Lionel Phillips first advocated such a system for the Witwatersrand Company in 1890 although nothing came of these negotiations.<sup>36</sup> As is clear from the example of the Witwatersrand Company, the tributors were successful in making their portion of the property yield a profit and in this way ensured a considerable income for the parent company.

Beyond the level of amalgamation and co-operation indicated in the examples given above, certainly the greatest area of successful co-operation within the industry was in the formation of the Witwatersrand Chamber of Mines. Although originally founded towards the end of 1887, it was, however, the reconstituted body formed in October 1889 which survived to become the powerful mouthpiece of the mining industry in South Africa.<sup>37</sup> The success of the organisation formed in October 1889 rested on the fact that it was truly representative of the mining industry. The "Old Chamber", as its predecessor became known, tended to admit the financier rather than practical mining men while mine managers "...were debarred or, at least, discouraged from membership."<sup>38</sup> Membership was individual rather than on the basis of representation of mining companies, although the Old Chamber was probably largely financed

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34. The Star, 21 July 1890, Letter to the editor from H. Stevens.

35. *Ibid.*

36. See above, Chapter II, p.50.

37. Etheredge, D.A., *op.cit.*, p.1.

38. *Ibid.*, p.4.

by contributions from these organisations. As in the case of the later reconstituted Chamber, the activities of the old body were many and varied, ranging from the collection of monthly statistics on the industry to the encouragement of the reading of scientific papers. Its relationship with the State as a mouthpiece for the industry was limited because the Government never recognised the Chamber officially. Despite this lack of recognition, various memorials were sent to Pretoria by the Old Chamber on behalf of the industry, ranging from appeals for a revision of the Gold Law to protests against the granting of patents which it was felt might have a detrimental effect on the cost structure of the industry.<sup>39</sup> The Old Chamber was, nevertheless, seldom a really effective body and was essentially moribund for much of the year prior to its reconstitution in 1889.<sup>40</sup> Etheredge attributes the failure of this organisation to its membership structure and the failure of the leading emerging groups of Wernher, Beit and Company and J.B. Robinson to support it.<sup>41</sup>

In June 1889 an unsuccessful attempt was made to reconstitute the Chamber. The failure of this move did, however, concentrate the attention of some of the leading personalities of the industry, including Hermann Eckstein, on the necessity for such a move and on 5 October 1889 the second reconstituted Chamber held its first meeting. Some 35 members were present representing 21 different mining companies.<sup>42</sup> It was from such hesitant origins that the future powerful mouthpiece of the industry developed. By the end of 1894 the Chamber had grown to 109 members representing 71 companies which produced 96 per cent of the total gold output of the Witwatersrand for that year.<sup>43</sup>

The new Chamber listed amongst its functions and objectives the promotion and protection of the mining industry of the Witwatersrand and the consideration of public discussion on questions arising therefrom; the promotion of legislative and other measures affecting the industry; the collection and circulation of statistics pertaining to the industry; co-operation with the Department of Mines on the exchange

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39. Ibid., pp.5-9.

40. Ibid., p.9.

41. Ibid., p.13.

42. The Diggers' News (Johannesburg), 8 October 1889.

43. Etheredge, D.A., op.cit., p.24.

of information; the procurement of information relating to specific mines and companies; the establishment of a library and museum for the use of members; to act as arbitrators in the settlement of disputes arising out of mining; and various other functions relating to the purchase and sale of Chamber property, the investment and borrowing of money, and the obtaining of an Act of the Volksraad for the incorporation of the Chamber.<sup>44</sup> As Etheredge has suggested,<sup>45</sup>

"... the underlying object for the Chamber was to protect and foster the interests of the owners of the mines as against a Government it considered oppressive and as against its employees (a native labour force) which it considered overpaid"

and

"... to provide a means whereby the mining companies could act in concert... It brought about a loose federation of the companies and facilitated co-operation and consultation amongst them."

Like its predecessor, the new Chamber sought official recognition. The Volksraad, however, fearing that such a move would enhance the power of that body, rejected all overtures for an act of incorporation down to 1897.<sup>46</sup> The Government did, nevertheless, recognise the authoritative standing of the Chamber and respected its advice, as is clear from the sequence of events surrounding the food shortages of October 1889 and the revision of the Gold Law.<sup>47</sup>

The major area in which the Chamber of Mines strove for the attainment of co-operation within the industry was in the establishment of a uniform policy for the treatment of African labourers. In the years down to 1894 the first attempts were made to introduce a system of monthly payments and to impose maximum wage levels. These matters have already received considerable attention<sup>48</sup> and it is only necessary to emphasise their relationship to the endogenous co-operation between the various mining companies of the Witwatersrand industry. It is similarly clear that these activities on the part of the Chamber arose

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44. Witwatersrand Chamber of Mines, Second Annual Report for 1890, p.5.

45. Etheredge, D.A., op.cit., p.17.

46. Ibid., pp.29-34.

47. Witwatersrand Chamber of Mines, First Annual Report for 1889, pp.12-13, and see below, pp.288ff.

48. See above, Chapter VI, pp.255ff.

out of a growing awareness and concern on the part of its members of the detrimental influence which the prevailing spirit of endogenous competition between the companies was having on the cost structure of the industry. In 1890 it was estimated that African labour was costing the mines £45 000 per month prior to the first attempt at a reduction of wages. In August of that year the average rate of pay was 63s. 4d. exclusive of food and shelter. By October it was reduced to 48s. 10d. and in December 1890 it was again lowered to 44s. per month, resulting in a saving of some £15 000 a month to the industry.<sup>49</sup> Despite this attempt at successful co-operation between the various mining companies, with obvious advantages in cost saving, the system of wage reduction was clearly vulnerable, not only from the offer of competitive wages from those companies within the industry which held aloof of any such scheme, but also from competitive wages offered by employers in the rest of the economy. This fact was recognised and spelled out by the Chamber in an Annual Report,<sup>50</sup>

"... The local industry is subject to outside competition in the labour market. Other mining districts offer wages almost as high as the Rand, the Railways being constructed in Natal and the Cape Colony draw away large number(s) of Kaffirs, and the Boksburg Tramway is employing 1 500 to 2 000 Kaffirs at a very high rate of pay."

Thus it was clear that the success or disintegration of any scheme for endogenous co-operation in the sphere of labour employment rested on the knife-edge of willing participation by the companies, and that any hint of a better deal regarding the supply of this relatively scarce resource was likely to lead to the collapse of the arrangement. The seasonal scarcity of labour in the winter months of 1891 resulted in the rapid demise of the project.<sup>51</sup>

Beyond the area of labour most of the endogenous competition within the Witwatersrand gold mining industry was confined to the scramble to stake out claims and water rights and the subsequent drive to win investment capital. Competition was largely restricted to the acquisition of these scarce resources due to the non-competitive nature of the sales

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49. Witwatersrand Chamber of Mines, Second Annual Report for 1890, p.12.

50. Witwatersrand Chamber of Mines, First Annual Report for 1889, p.10.

51. See above, Chapter VI, p.260.

function. Faced with a fixed price for gold and a virtually unlimited demand for it at that price, competition within the industry rested on those factors determining output. Undoubtedly, there was competition in the acquisition of claims and water rights in the early months following the announcement of the discovery of the field but the extent to which these aspects were inherited by directoral and mine management from the initial prospectors and promoters is difficult to ascertain. We do have evidence of the Simmer and Jack Company's conflict with the holders of the grazing licence on the farm Elandsfontein which delayed the commencement of the Company's operations. There is also the case of that Company's later search for an additional water right which brought it into opposition with the Stanhope Geldenhuis Deep Level Company.<sup>52</sup> Both these incidents suggest that such competition for claims and water rights extended beyond the initial scramble for properties. Similarly, it is possible to see both the Simmer and Jack and the Ferreira Companies in competition with the respective deep level propositions to the south of them in the bid for the inclusion of the deep level claims into these Companies.<sup>53</sup>

In the case of water rights, competition also grew with the passage of time when additional companies, particularly those on the deep level claims, were floated to work the reef. Commenting on the need for a more equitable distribution of water rights in order to grant the new companies access to existing water sources, an editorial in the Johannesburg press noted,<sup>54</sup>

"The happy go lucky fashion in which water rights were granted in the early days has not proved conducive to the benefit of mining. When the right of granting water rights rested with the Diggers' Committee, all that was needed apparently was an application. It mattered little whether the applicant was a mine owner or not, so long as he was first in the field his application was granted. Long stretches of water sluits were also granted to bona fide companies, without the slightest regard to the future, and now if anyone will take the trouble to inspect, he will see that two companies, in some cases, take up the whole of a water sluit, ... nearly a mile in extent."

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52. See above, Chapter III, pp.81-82.

53. See above, Chapter III, pp.97ff, and Chapter V, pp.187ff.

54. The Diggers' News, 21 May 1889.

The competition for claims was given a greater intensity by the provisions of the Gold Law which offered little permanency of tenure and allowed for claim jumping where all requirements of the Act were not complied with. Thus although the amended Gold Law of 1885 made provision for the holding of amalgamated blocks of up to twelve claims, it still remained necessary for a company holding more than one such area to show evidence on a regular basis of the working of each respective block. As late as 1895 it was even proposed by Government that each amalgamated block should be separately surveyed and beacons off,<sup>55</sup> and it required prompt action by the Chamber of Mines to defeat the suggestion. It is correct to say that the Law of 1885 was in most respects geared to the administration of small alluvial gold fields where surety of tenure was not of paramount importance, given that the diggers were wont to wander off in search of better prospects once the better part of a claim or claims had been picked out. In contrast to this situation it was soon realised that the Witwatersrand field had a potential which could be measured in decades and the companies formed to work the claims thus called for greater security of their tenure. While companies like the Jumpers Gold Mining Company took their names from the early scramble and repeated jumping of properties, once a semblance of order was established and capital invested in plant and mine development, the threat from claim jumpers took on a new significance. While the onus rested with the companies or owners of claims to indicate the exact extent and correct boundaries of their properties, and to maintain the necessary beacons, the slightest deviation or doubt in the exercise of surveys or the positioning of beacons rendered the property liable to jumping by anyone. One important example of such jumping occurred in 1889 when, due to technical errors on the part of the Paarl Pretoria Gold Mining Company in the transfer of its property in an amalgamation with the Central Langlaagte Gold Mining Company, a block of claims were duly jumped. The jumper's case was upheld in the Pretoria High Court and the claims in question were subsequently floated as part of the Royal Langlaagte Gold Mining Company.<sup>56</sup> The example of Young and the Witwatersrand Company, while not specifically referring

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55. W.C.M., Seventh Annual Report for 1895, pp.95-96.

56. The Star, 26 November 1889.

to that Company's mining claims, is another example in this regard.<sup>57</sup>

It was generally felt by the mining companies and those connected with them that the situation where responsibility for the proof of ownership and correctness of surveys rested with the owner rather than the jumper was unjustifiably harsh. Hence appeals were made by the Chamber of Mines to the Government for an appropriate amendment of the Gold Law in 1889, "... by which the locking up of water by persons applying for water rights without any intention of using them may be prevented" and "... by which an indefeasible title can be obtained to claims and other mining property."<sup>58</sup> In an interview with President Kruger on 25 February 1890, Hermann Eckstein, as President of the Chamber of Mines, elicited an assurance from Kruger that, "... he would do his best to induce the Volksraad to give every regularly constituted concern, or company, a clear and indisputable title to their property, thus to make jumping an impossibility."<sup>59</sup> The matter was subsequently taken up by the Volksraad in 1891 and the appropriate amendments to the Gold Law introduced.<sup>60</sup>

The endogenous competition which emerged in the industry with regard to the acquisition of capital has already been discussed.<sup>61</sup> The ability of a company to draw capital in the early years of the industry depended to a large extent on its capacity to offer shareholders dividends on their investment. But the ability of a company such as the Wemmer to pay dividends was closely related to the quantity of its best ore worked. Hence, where companies plundered their richest ores merely for the sake of early dividend payments, such a move, while placing them in a favourable position *vis-à-vis* their competitors, was not necessarily in the long term best interests of either company or shareholder. Nevertheless, such dividend payments undoubtedly placed a company like the Wemmer in a far better position in relation to other non dividend paying companies as regards the raising of fresh capital on the market.<sup>62</sup>

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57. See above, Chapter II, pp.48-49.

58. W.C.M., First Annual Report for 1889, p.12.

59. W.C.M., Second Annual Report for 1890, p.15.

60. See below, p.289.

61. See above, Chapter VI, pp.204ff.

62. See above, Chapter IV, p.111.

The exogenous factors concern the integration of the companies in particular and the industry in general into the rest of the economy and society. Here the relationship between the industry, as represented by the Chamber of Mines, and the Government and Volksraad of the South African Republic, is an area of major importance, bringing the industry into both co-operation and conflict with the Government.

The greatest area of co-operation between the State and the Chamber of Mines representing the mining industry was in relation to the amending of the Gold Law and the promulgation of mining regulations. From an early date the Government adopted the attitude that the mining industry should play an active role in the promulgation of legislation directly affecting it. Thus it was that Harry Struben was involved in the drafting of the first Gold Law,<sup>63</sup> and subsequent amendments were made after consultation with the miners. From the outset of its formation in 1889, the reconstituted Witwatersrand Chamber of Mines took an active interest in the Gold Law and was not slow in advising the Government of changes which it considered essential for the smooth operation of the Witwatersrand industry. Towards this end the Chamber established a committee in 1889 and the following year recommended to the Volksraad that a joint committee of members of the Raad and Chamber be established to draft an entirely new law.<sup>64</sup> While this suggestion was not adopted by the Volksraad, in June 1891 the Minister of Mines called a conference of Mining Commissioners to consider possible amendments to the Gold Law which would be proposed to the Volksraad at its next session. In keeping with Government policy in this regard, the Chamber of Mines was invited to send two representatives to the Pretoria meeting. Mr G.H. Goch and the Chamber's legal adviser, C.H.B. Leonard, were duly chosen to represent the industry's interests. The gathering debated for nearly a fortnight, during which time a comprehensive list of amendments were submitted for discussion by the industry's spokesmen. The Chamber was jubilant in that these proposals were accepted "almost in their entirety by the conference and were afterwards adopted by the Volksraad with only minor modification."<sup>65</sup> So pleased was the Executive of the Chamber with the handling of the conference that it was decided to vote the two

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63. Struben, H.W., Recollections of Adventures, 1850-1911, pp.137ff.

64. Etheredge, D.A., *op.cit.*, p.83.

65. W.C.M., Third Annual Report for 1891, p.12.

representatives a remuneration of £550.<sup>66</sup>

Certainly the greatest achievement for the industry at the 1891 Mining Commissioners' Conference was the abolition of the concept of jumping of claims and the granting of surety of tenure to legitimate claimholders. Similarly, the regulations relating to water rights and the ownership of mynpacht rights were clarified so that mortgages could in future be effected on these claims. Mynpacht rights were also made renewable in perpetuity.<sup>67</sup> Clause 21 of the Law was amended to give the Mining Commissioners power to prohibit the pegging off of gardens, buildings, depositing areas, and ground with tailing heaps on them, and severe penalties were prescribed for wilfully attempting to encroach upon the rights of others by pegging.<sup>68</sup> Goch's influence as a director of the Witwatersrand Company faced with the pending action against Young, on the passage of this amendment can only be guessed at.<sup>69</sup> While not meeting all of the requirements regarding security of tenure for stands held by a company beyond its mynpacht, the clause went a long way towards clarifying the position of companies as the owners of machinery sites and water rights. Clause 21 as proposed by the conference was, however, modified by the Volksraad on the instigation of the Government and in this new form generated a good deal of anxiety in the industry. Thus while in general the amendments proposed in 1891 were adopted into the Gold Law of 1892 with the full support of the mining industry, the amended clause 21 became a point of conflict between the Government and the Chamber of Mines throughout the remaining years of the South African Republic.

The Government's amendment to clause 21 wholly altered the Law with respect to prospecting and mining under townships and "bewaarplaatsen." Bewaarplaatsen originally referred to the depositing sites of the mines for their tailings and waste rock but with time grew to mean any area under which mining was prohibited, such as the ground over which the companies held water rights or stands for tailings and machinery. The first section of the amendment prohibited prospecting and mining under such places, while the second empowered the State to grant

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66. Ibid., p.43.

67. W.C.M., Third Annual Report for 1891, pp.41ff.

68. Ibid.

69. See above, Chapter II, pp.48-49.

permission to do so upon application being made. The southern slopes of the Witwatersrand and the water courses thereon were chosen as the ideal situation for the siting of the early mills and dumping areas which were thus usually located south of the lower boundaries of the outcrop companies to maximize the use of gravitational flow of water and ore to these positions. With the passage of time it became known that the reef dipped away under these sites and their potential value was thus enhanced. It was generally felt by the managements of the various companies on the outcrop that their possession of the surface rights to such mill sites and depositing areas assured them a priority claim to the mineral rights. Similarly, much of the planning and purchasing of the deep level claims by firms like Wernher, Beit and Company was undertaken with this assumption in mind. Clause 21 of the Gold Law of 1892 dispelled any such illusion. The position of the bewaarplaatsen in relation to the various companies was such that the loss of the right to mine under them could make for a more complex situation, either in the mining of the initial row of deep level properties, or in the shortening of the lives of the outcrop companies. Similarly, if the mining rights of the bewaarplaatsen were acquired by outside parties the possession of them would serve as a useful bargaining tool for gaining entrée to the deep level ventures or for subsequently disposing of these claims or rights to such companies at considerable profit.

The immediate response by the mining companies to protect their interests was to make application for the mining rights under their bewaarplaatsen. They were soon informed by Pretoria that only applications received after 1 September 1892 would be considered, and then on a priority basis, that being the date on which the amended Gold Law was due to come into force.<sup>70</sup> New applications were subsequently lodged in September but the Witwatersrand mines were to be kept in suspense for several years to come.

It seems probable that the issue of the bewaarplaatsen was initiated by a syndicate in which E.A. Lippert was prominent and which hoped to be granted a concession to mine under the bewaarplaatsen irrespective of who held the surface rights. The party clearly had ulterior motives for the position and scattered nature of the

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70. W.C.M., Fourth Annual Report for 1892, p.7.

bewaarplaatsen of the various companies would have made their mining by one organisation prohibitively expensive, particularly as most of them were situated on deep level ground which required large consolidated blocks of claims as a prerequisite for the economies of scale required for profitable mining. Allegations made by the South African Mining Journal suggested that the syndicate was spending money freely in Pretoria to gain their objective.<sup>71</sup> Such measures provoked the inevitable reaction and Phillips wrote to Beit in 1894 to suggest that the cost of swaying the issue was likely to be about £25 000.<sup>72</sup> The direction of the swing, whether for the general interest of the mining industry or those of Wernher, Beit and Company, is not clear. As Marais indicates, however, not even this amount was sufficient to gain a favourable resolution to the issue which remained undecided at the collapse of the Republic.<sup>73</sup>

Despite the difficulties experienced by the companies in the early years of the Witwatersrand regarding security of tenure and the later resolution of the bewaarplaatsen issue, the industry was generally fortunate in that the Gold Law of the South African Republic placed a higher proportion of the profits from the mines in the hands of the capitalists and shareholders than the mining laws of any other country.<sup>74</sup> The Gold Law made provision for a tax of two and a half per cent of gold production to be levied on mining companies as an alternative to the payment of licence fees but it was only in 1898 when, with the prospect of war looming nearer, the State decided to exercise this option with regard to the gross yield of mynpachts being profitably worked.<sup>75</sup> Prior to this the State was content to rely on a revenue drawn from licences and the indirect taxes of its concessions policy and high import duties on food and other items like mining equipment, which, in raising the costs to the industry, affected the profitability of the companies. The attitude of the Government is epitomized in the statement made to Mathers by President Kruger in 1887,<sup>76</sup>

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71. Etheredge, D.A., *op.cit.*, p.85.

72. *Ibid.*

73. Marais, J.S., The Fall of Kruger's Republic, p.20.

74. *Ibid.*, p.3.

75. Zuid Afrikaansche Republiek Law No.15 of 1898, and see below, p.297ff.

76. Mathers, E.P., The Gold Fields Revisited, p.240.

"If a company has paid their licences to Government, it is of no consequence to the Government whether they lose their gold or keep it; it is no business of mine to interfere."

Another source of Government revenue, and one which brought it into conflict with the mining industry was the system of concessions. The first such concession was that granted to Alois Nellmapius for distilling liquor.<sup>77</sup> Others were to follow, the most taxing and annoying of which for the mining industry was that granted for the manufacture and supply of dynamite in the Republic, granted to E.A. Lippert in 1888. The concession, valid for sixteen years, gave the holder the exclusive right to manufacture and trade in dynamite in the South African Republic. It prohibited the import of manufactured dynamite, although the holder was entitled to import all materials and equipment for its making free of duty and imports were allowed as the monopoly of the concessionaire until such times as the local factory was completed. The manufacturing plant had to be erected within a year and the maximum sale price was not to exceed £7 10s. per 50lb. case. In return the Government received an annual rental of £3 750 and a royalty of 2s. on each case sold.<sup>78</sup>

The Old Chamber did not oppose the granting of the dynamite concession but from 1890 onwards the reconstituted Chamber adopted an increasingly strident stand against "De Zuid Afrikaansche Maatschappij van Ontploffbare Stoffen Beperk", the company formed by Lippert to exploit the concession. Initially the Chamber asked for the appointment of a commission of inquiry to investigate the charges that the dynamite supplied by the concessionaires was of an inferior quality and was resulting in an increasing number of accidents underground.<sup>79</sup> A commission of inquiry was ultimately appointed in November 1890 which reported that the local product was satisfactory and of similar quality to that previously imported.<sup>80</sup> This finding left the Chamber's "Dynamite Sub-Committee" dissatisfied and their views seemed justified following a spate of dynamite accidents in the mines towards the end of 1891 and early in 1892.<sup>81</sup> Following these events, and increasing

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77. See above, Chapter I, p.5 note 18.

78. Etheredge, D.A., op.cit., p.42.

79. Ibid., p.46.

80. Ibid., pp.47-48.

81. Ibid., p.51.

diplomatic pressure, the Volksraad appointed another commission to investigate the monopoly.<sup>82</sup> It was against this background that evidence surfaced that, in contravention of the concession, the dynamite company was importing processed dynamite.<sup>83</sup> The State had little choice but to cancel the concession and by the end of 1892 the Chamber of Mines looked forward to some form of free trade in the product. Such optimism was unwarranted and by October 1893 the Government assumed a monopoly for the importation of dynamite with the former dynamite company acting as its agent.<sup>84</sup> Hence by the end of 1894 the Chamber had achieved little towards its goal of a free trade in dynamite which would reduce the price of this important product for the mining industry. One of the conditions of the new contract with the dynamite company was that the maximum price which could be charged for the commodity was reduced to £4 15s. per case of 50lbs.<sup>85</sup> The dynamite concession thus served to heighten tensions between the mining industry and the State and the cost of explosives in 1895 constituted twelve per cent of the total working costs of the mining industry.<sup>86</sup>

In 1892 the Chamber of Mines singled out for attack the patents held by the African Gold Recovery Company on the MacArthur-Forrest Cyanide Process for the extraction of gold, as part of a general campaign against the granting of patents deemed harmful to the mining industry. In June that year evidence came to hand that the State would soon grant a cyanide concession on similar lines to that already operating for dynamite.<sup>87</sup> With strong protest from the Chamber the application for the concession was held over by the Volksraad until the following year. As the matter would be raised in the following session of the Raad, the Chamber decided to take the initiative with an attack not only against the granting of further concessions but also against the cyanide patent holders. For this action it received the stern rebuke of the press which pointed out the valuable contribution made by the cyanide

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82. Ibid., pp.43-51.

83. Ibid., pp.52-56.

84. Ibid., pp.61ff.

85. Ibid., p.61.

86. Hatch, F.H. and Chalmers, J.A., The Gold Mines of the Rand, p.271.

87. W.C.M., Fourth Annual Report for 1892, pp.66ff.

process to the profitability of many Rand mining companies.<sup>88</sup> It was decided, nevertheless, to test the legality of the cyanide patent in the High Court, the Chamber basing its case on the fact that the African Gold Recovery Company's patents covered previously known chemical processes. Similarly, a successful attack was made against the granting of the cyanide concession, which was rejected by the Volksraad in 1893.<sup>89</sup> In keeping with this policy a joint committee was formed in 1894 composed of members of the Chamber, the Chemical and Metallurgical Society, and of the Engineers' and Architects' Association, for the purpose of examining all applications for patents, the granting of which would affect the industry, and to advise the Chamber of Mines on which ones to oppose.<sup>90</sup>

The threat posed to the patents held by the African Gold Recovery Company by the Chamber of Mines drove that company into the arms of the State, which now sought the creation of a cyanide monopoly along the same lines as the dynamite monopoly, with Mr W.W. Webster, manager of the African Gold Recovery Company, acting as agent.<sup>91</sup> On 28 May 1894 the Executive Committee of the Chamber of Mines was informed of the contemplated monopoly by which the present patent holders would receive five per cent of a uniform royalty of seven and a half per cent to be charged for the use of the patent.<sup>92</sup> Immediate steps were taken to counter the measure as it was recognised that the cyanide process "... had become a part of the regular operation of gold mining on the Witwatersrand, and the gold so obtained is an important factor in the profitable working of the mines."<sup>93</sup> A deputation was sent to Pretoria where it was received by the State President and Executive Council. The Chamber based its arguments against the granting of the monopoly on two points, namely, that patents had also been granted for other cyanide processes besides the MacArthur-Forrest one and that the holders of these would be done an injustice if the monopoly was granted. Secondly, the validity of the MacArthur-Forrest process was being

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88. The Star, 11 November 1892.

89. W.C.M., Fifth Annual Report for 1893, pp.10, 158.

90. W.C.M., Sixth Annual Report for 1894, p.11.

91. *Ibid.*

92. Fraser, M. and Jeeves, A., *op.cit.*, p.77.

93. W.C.M., Sixth Annual Report for 1894, p.205.

challenged in the High Court and if the case pending was decided against the African Gold Recovery Company no further royalty would be payable. The establishment of a State monopoly would then deprive the mining companies of their rights under law and reveal the Government's action for what it was. In this second argument the stand of the Chamber was assisted by the technicality that it was unconstitutional for the Volksraad to consider the issue of the establishment of the monopoly without giving three months notice in the Government Gazette. Such notice would, however, push the matter beyond the current sitting of the Raad and the decision of the High Court, anticipated to be favourable to the Chamber, would be known before the 1895 sitting. Under these circumstances the Government had no option but to capitulate on the issue, the State President giving the Chamber's delegation of L. Phillips and A. Goerz the assurance that no further industrial monopolies would be granted.<sup>94</sup>

It is difficult to believe that the policy of the Government of the South African Republic regarding the granting of concessions and the establishing of monopolies, such as those discussed above, was entirely motivated by the need for revenue. The annual rental on the dynamite concession of £3 750 and the low royalty of two shillings per case could not have accounted for a substantial inflow of income for the State. As Marais has suggested nepotism and corruption were never far from the surface in the civil service in Pretoria and it is rather in this direction that a reason for such action might be sought.<sup>95</sup> The Witwatersrand, nevertheless, became the chief source of revenue for the Republic, both directly from the sale of licences for mining and prospecting and indirectly through the massive increase in import duties payable on the food and mining equipment brought into the State. The fact that the Witwatersrand would carry the country financially was soon recognised by the mining community and commented on by the Johannesburg press which, as early as January 1888, noted that the monthly contribution of the town and mines to State revenues amounted to approximately £30 000, while the revenue collected by the Gold Commissioner during 1887 had nearly doubled.<sup>96</sup> The Department of

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94. *Ibid.*, pp.209ff.

95. Marais, J.S., *op.cit.*, pp.19-20.

96. The Eastern Star (Grahamstown), 10 January 1888.

Mines gave as the total income from the industry for the years 1888 to 1893 as follows:<sup>97</sup>

<u>Year</u>	<u>State Revenue from Mining</u>
1888	£399 616 11s. 9½d.
1889	723 048 6 5
1890	518 610 17 1
1891	357 055 19 8
1892	563 585 10 10¼
1893	823 471 6 2

Such revenue was, however, also derived from mining areas beyond the Witwatersrand. It, nevertheless, provides a good example of the magnitude of the revenue derived from the mining industry, the largest contribution being made by the Witwatersrand. The size of this revenue payment was considered excessive in relation to those made by mining areas in other parts of the world, and an editorial early in 1890 noted that the situation on the Australian gold fields was far more favourable to the gold miners.<sup>98</sup>

"In Victoria ... in 1888 dividends to the value of £525 281 1s.9d. were paid. The value of gold won was about £2 500 000, but the entire Government revenue derived from mining, including licences and every other direct charge on the industry was only £19 236 2s. 7d. Contrast these figures with the amount paid to Government (Transvaal) on an earning of £1 200 000 and the heavy handicap which the mining industry suffers here will be at once apparent."

Thus it was claimed that while direct charges on the mining industry in Victoria provided only about one per cent of State revenue, in the South African Republic the figure amounted to about twenty five per cent. What the newspaper failed to take into consideration was the fact that there was no profits tax on the mining companies in the South African Republic.

With the passage of time the contribution of the mining industry to State coffers was also seen as excessive in terms of the net returns enjoyed by the industry. The standard of the civil service remained poor and fell short of the expectations to which the managerial and

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97. Rapport van het Hoofd van Mijnwezen, 1 Mei 1893 tot 1 Mei 1894.

98. The Diggers' News, 21 February 1890.

technical staffs of the mines felt themselves to be entitled.<sup>99</sup> It was not before 1893, however, that the leading mining magnates were drawn into a participation in politics as a possible solution to the difficulties created by a lax administration.<sup>100</sup> The conflict between the Government and certain of the firms thereafter assumed a role which extended beyond the economic sphere.

It was inevitable that the attitude of the State towards the mining industry, which as already indicated, fluctuated between active co-operation in certain areas to outright conflict in others, should have coloured the attitude of the managements of the mining companies towards the Pretoria authorities. It is probably accurate to assume even on the limited evidence available, that the actions of the Government in connection to its concessions and monopoly policy created a great deal of annoyance amongst a body of men already confronted with a wide range of factors contributing towards the high cost structure of the industry. Likewise it was generally felt that the industry was sorely taxed in terms of the various licence fees and import duties at a time when few of the companies found themselves in a sound financial position. Against such a background, rumours such as those of October 1891, that the Government was about to exercise its right to impose the two and a half per cent tax on total gold production, were greeted with feelings of apprehension and hostility.<sup>101</sup>

The reaction of the mining companies to the news of a possible introduction of a direct gold tax was swift and effective. Such a tax could only be levied on the basis of monthly production figures submitted by the companies to the Mining Commissioners of the various mining districts. By January 1892 it was reported that the Minister of Mines had written to the Mining Commissioners complaining that companies were not complying with the regulation requiring them to submit monthly returns.<sup>102</sup> The regulation was introduced in November 1889 and besides the necessity for submitting monthly production figures also required information on the proceedings of regular meetings, plans of works,

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99. Marais, J.S., op.cit., p.19.

100. Ibid., pp.62-63.

101. The Standard and Diggers' News, 20 October 1891.

102. The Standard and Diggers' News, 1 February 1892.

financial statements, and additions to capital and machinery.<sup>103</sup>  
 The lack of an effective civil service and assistants to the Mining Commissioners of the various mining districts ensured that compliance with the regulation rested heavily on the good will of the managements of the companies.

Strict compliance with the regulation for the submission of returns was something which many companies found not to be in their own best interests even prior to the 1891 scare. As already outlined in the case of the Ferreira Company<sup>104</sup> many of the mines aimed at a system of the averaging of monthly output. Wide fluctuations in the returns presented every month were unlikely to instil confidence in shareholders, particularly if they were as demanding as those of the Ferreira Company. In any event, a certain amount of gold was usually retained by the companies either in the form of dressed amalgam plates or in the raw gold needed for preparing them. Thus the figures submitted to the Chamber of Mines and the Mining Commissioners were never more than rough approximations of the true output of the companies for any month and the leeway in accuracy of measurement rested on the aspirations and good will of the managements. This state of affairs drew rebuke from the press in 1890 when it was recognised that a reflection of the largest possible monthly yield from the field was an essential prerequisite for the restoration of overseas investors' confidence.<sup>105</sup> It was pointed out that if gold was being withheld by the companies, "... in order that they may be able to issue sensational reports when 'the market' becomes once more susceptible to influences of that character ...", then they were rendering the field a disservice. More accurate was the assertion that the companies intended using the withheld gold to average out their monthly production figures during the winter months when labour, fuel and water were scarce and stores more expensive.<sup>106</sup> It is thus clear that even under normal circumstances the production figures submitted by the companies were not a true reflection of monthly output and that any endeavour on the part of Government to introduce a tax based on such figures would have been

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103. The Diggers' News, 9 November 1889.

104. See above, Chapter V, p.172.

105. The Star, 10 May 1890.

106. *Ibid.*

ineffective without a considerable increase in the staff and efficiency of the Department of Mines. Hence the imposition of a tax on gold output was not contemplated again before 1898 when the threat of war made any measure likely to result in an increase in State revenue attractive.

The deficiency in the civil service likewise made the implementation of a code of mining regulations impossible before 1 September 1893.<sup>107</sup> The code was drawn up with the assistance of the Chamber of Mines and made provision for the appointment of Mining Inspectors to enforce the regulations pertaining mainly to the implementation of safety standards in the mines. By the following year, however, it was admitted in the Chamber's Annual Report that in practice the measures had not proved satisfactory.<sup>108</sup> The State Mining Engineer found the measures so defective that he issued an entirely new draft amendment of the regulations. At the request of the Chamber, the time given for the submission of objections to the new draft regulations was extended, thus allowing the Chamber to submit a memorial to Pretoria noting its qualifications to the measure and appealing for a commission to inquire into the whole matter of mining regulations.<sup>109</sup> A commission was duly appointed in 1895.<sup>110</sup>

The need for a code of mining regulations was a very real one. The 1893 Annual Report of the State Mining Engineer indicated that 204 of the 224 deaths and 488 of the 594 injuries registered in the Republic occurred on the Witwatersrand.<sup>111</sup> While these figures might only reflect the poor state of record-keeping in the rest of the country, and while not all deaths and injuries recorded on the Witwatersrand were the result of mine accidents, it is probably accurate to suggest that a fair proportion of them were so caused. As the report noted, despite the introduction of the mining regulations in that year, a large number of mining companies were ignoring the measures and operating illegally with danger to life and limb, so that

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107. W.C.M., Fifth Annual Report for 1893, p.7.

108. W.C.M., Sixth Annual Report for 1894, p.10.

109. Ibid.

110. W.C.M., Seventh Annual Report for 1895, pp.96-97.

111. Rapport van der Staats Mijningenieur over het jaar 1893.

in virtually every case of a mine accident a contravention of the regulations existed.<sup>112</sup>

Sporadic comment on the lax safety precautions of the mines was also forthcoming from the press. In August 1889 it was noted that the number of mining accidents was greatly on the increase. It was felt that the cause of this situation was the lack of adequate supervision, particularly of inexperienced black workers, in the clearing up operations after blasting had taken place underground.<sup>113</sup> Again in 1890 comment was made on the number of accidents. In the absence of a Government safety inspector it was seen that,<sup>114</sup>

"... belts in a machine may be unguarded, shafts dangerous owing to defective timbering, head gear ropes chafed beyond the chance of safety, and a thousand other things 'wrong' in a mine, and yet there is no one responsible for neglect of culpability. ... Remonstrance is of no avail. Managers of mines are callous to the matter, and seem to think that the lives and limbs of their employees is no concern of theirs."

The press called for the establishment of a private organisation to act if the Minister of Mines failed in this regard. No doubt it was hoped that the newly reconstituted Chamber of Mines would accept the challenge of policing the mine managers. To the extent that such accidents made no or little inroad on the profitability of the companies, such action was unlikely, as the Chamber represented the owners of the mines. As if accepting the inevitability of the situation, the article concluded by chiding managers to assume the initial responsibility, on moral if not financial grounds.<sup>115</sup>

The extent to which the various mining companies pursued minimal safety regulations on their own initiative, and the influence such measures had on the reputation of particular mines as places of employment is virtually impossible to determine as only major disasters were reported in the press and there is a conspicuous absence of accounts of accidents in the annual reports. Knowledge of the reputation of companies for safety was no doubt passed on by word of mouth.

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112. Ibid.

113. The Diggers' News, 13 August 1889.

114. The Diggers' News, 17 April 1890.

115. Ibid.

In 1892 the mining companies, through the action of the Chamber of Mines, made some form of contribution towards the situation regarding the health of the community in financing the completion of the new wing of the Johannesburg Hospital. In May the Hospital Board issued an appeal to the mining companies for subscriptions and the following month the Chamber formally extended the appeal to the companies. It was pointed out that the State had already contributed £33 000 towards the venture and that further aid from that quarter was unlikely. It was hoped to raise £5 000 from the companies and a scale of donations was suggested with direct advantages to the companies. Hence a first class donation of £200 would give the donor company preferential rights to two beds for two years, a second class contribution of £100 would yield a preferential right to one bed for two years and a third class of £50 would ensure the right to one bed for one year. In this way an amount of £3 469 10s. was raised by 39 companies, the Simmer and Jack Company bestowing £200, while the Ferreira gave £100 and the Wemmer £50. The Witwatersrand Company was not amongst those who contributed.<sup>116</sup> Even then qualifications for the donation were not complete, the Chamber requesting a seat on the Hospital Board. On 8 September 1892 Mr W.Y. Campbell was duly elected as the Chamber's representative.<sup>117</sup> The gesture on the part of the companies who contributed might be interpreted as an example of exogenous co-operation, but when the specific conditions under which it was made are considered, it is doubtful if any term other than 'self interest' can be applied.

Closer to the mark of true exogenous co-operation were the activities on the part of the Chamber in alleviating the food shortages of late 1889. Again, however, the peculiar circumstances prevailing in early Johannesburg left the Chamber with little option in this regard as it formed the predominant group of employers who stood to lose most from a general exodus of population. The Chamber was, nevertheless, also the only organisation which possessed the necessary machinery for undertaking research into the problem and attempting to co-ordinate a solution. Thus in October 1889, following the continued delay of the spring rains, it was the Chamber which instituted a fairly detailed evaluation of the available food supply in the town, as well

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116. W.C.M., Fourth Annual Report for 1892, pp.98-99.

117. Ibid.

as that in transit to Johannesburg. It was found that these sources would not be sufficient to meet the needs of the community and as a first step towards a solution telegrams were sent to the Landdrosts and Magistrates of the major South African towns requesting information on the availability of meal and grain supplies in their areas and of any transport willing to carry it to Johannesburg. At the same time the Chamber entered into correspondence with the Government requesting aid for the community and the suspension of the high import duties payable on grain and meal imported into the Republic from the British Colonies. In response the State agreed provisionally to suspend the duty on meal, flour, butter and tinned meats and also contributed £5 000 for the alleviation of distress. The fund was used to pay a bonus of £20 to each of the first 250 wagoners who brought into the Republic supplies of flour, maize and maize meal after the date of the announcement. Requests made to the Cape and Natal Governments to lower their railway rates on food consigned for the Transvaal fell on deaf ears, but the Natal administration was prepared to offer a bonus of £20 to each of the first fifty wagons leaving their railway terminus with food supplies for the Rand.<sup>118</sup>

The success of the bonus scheme is measured in the fact that 329 wagons applied for the reward. Of these applications 47 were disallowed and a further partial bonus was given to 282 wagoners. The amount of produce brought in was 660 200 lbs. of maize, 2 310 000 lbs. of meal, 55 000 lbs. of flour, 156 000 lbs. of wheat and 394 282 lbs. of general provisions.<sup>119</sup> Johannesburg would not starve. Good rains also fell at the end of October ensuring the return of the spring vegetation which in turn made wagoners more willing to participate in the carrying trade towards Johannesburg. For its part the Chamber used the incident to launch a concerted campaign for the construction of rail links between Johannesburg and the coast.

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118. W.C.M., First Annual Report for 1889, pp.5ff.

119. Ibid., p.13.

The relationship which developed between the new mining industry and the citizens of the South African Republic was also significant. The discovery of the Witwatersrand represented a climax in a progression of gold discoveries dating back to the early 1870's.<sup>120</sup> Hence it is possible to agree with Preller that a growing awareness of the mineral wealth of their country was becoming a feature in the perspective of many burgers, an increasing number of whom wished to participate in the wealth generated from this source.<sup>121</sup> Undoubtedly there were many who abandoned their farms for a spell of fortune seeking on the alluvial fields and evidence exists to suggest that a fair proportion of the early Witwatersrand claims were pegged out by citizens of the Republic.<sup>122</sup> We know that Schalk Meyer remained a participating shareholder in the Simmer and Jack Company for quite some time after its formation, while Colonel Ferreira sat on the board of the Company named after him for at least a year<sup>123</sup> and could well have remained a shareholder thereafter. Perhaps the greatest participation by burgers and their capital, however, was the case of the Paarl Pretoria Gold Mining Company, whose initial board comprised Rev. S.J. du Toit, Gen. P. Joubert, J.J. Malan, C.W.H. Kohler, Dr van Wyk, J.S. Marais and P.B. de Ville.<sup>124</sup> It is undoubtedly true, however, that many of the initial Boer claimholders soon sold their claims to foreign capitalists and returned to their pastoral way of life as they lacked the capital for the successful development of their properties. Nevertheless, enterprising men would still have carried away with them amounts of money ranging from tens to hundreds of pounds, which they considered ample reward for the effort of driving in a few boundary stakes. We can only speculate as to how this cash injection was spent but it is possible that some went towards the purchase of more land or wagons and livestock. For the more enterprising the wagons and oxen could be turned to good account in the carrying trade which developed between the coast or rail terminuses and the new mining camp. Nevertheless, Marais is right to assert that only a small proportion of the wealth generated by the Rand found its way into the

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120. See above, Chapter I, p.3.

121. Preller, G.S., Argonauts of the Rand, pp.120ff.

122. See above, Chapter I, p.16.

123. See above, Chapter III, p.65, and Chapter V, p.150.

124. Goldman, C.S., op.cit. (1892), p.182.

pockets of the Boers.<sup>125</sup> For the greater part the population was unaffected by the Witwatersrand discovery before 1895. Besides those few directly involved in company promotion and speculation, the transport riders, the few unscrupulous politicians, and those who now either directed their farming operations towards the newly created market or participated in the emerging service sector in some other way, few were affected. Even here Marais points out that the market gardening and dairy farming in the vicinity of Johannesburg "... was mostly in the hands of foreigners."<sup>126</sup> The closing of the rail links with the coast also spelled the demise of the transport riding business.

The main point to be borne in mind in considering the interaction of the Witwatersrand with the wider economy of the South African Republic is the relatively undeveloped state of that economy in 1886. Unlike so much of the previous mineral discovery in the State, the Witwatersrand emerged from the outset as both a capital and labour intensive industry. It was thus an exotic implant which before 1895 had had little time to interact with and influence the broader economy of the State beyond the important aspects of the employment of a large number of Africans resident in the State and the generation of a State revenue which was massive by comparison with anything previously received. Even the secondary industry which grew up in the years down to 1895, whether encouraged by the Government concession policy or developing independently, like the engineering works of Messrs Begbie and Holleman or Hubert Davies,<sup>127</sup> was largely geared towards the supply of the mining industry and staffed by foreigners.

The expenditure of State revenue was channelled into three main areas, namely, the development of a civil service, the construction of railways, and the equipping of the arsenal with modern military hardware. Regarding the latter two areas of expenditure it is clear that much of the money spent in purchases of this nature flowed out of the State. Even the skilled personnel of the railway company, as was the case with much of the civil service, were expatriate Hollanders and thus considered foreigners by the Boer inhabitants of the Republic. Thus a large

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125. Marais, J.S., op.cit., p.4.

126. Ibid.

127. The Star, 28 October 1891, gives a description of a visit to the works of Messrs Begbie and Holleman.

percentage of State expenditure had little direct influence on either the traditional white inhabitants or on the general economy before 1895. The impact that a more efficient civil service and the railway network were to have on the economy lay in the future, while what limited effect they did exercise was rather viewed in a negative light. Any improvement in the tax collecting efficiency of the State machinery while little tangible benefit was visible was only likely to provoke hostility.<sup>128</sup> Similarly, the increase in the mobility of the African labour force commuting to the mines or railway construction camps was seen as a threat to the security of the white overlords and a factor which would ultimately threaten their status.

The extent to which the wages earned by African mine workers were spent in Johannesburg as opposed to outlying trading stores has not been determined, and similarly the influence of their purchasing power on the prices of land, cattle and other commodities in their home environment requires further research. Undoubtedly, however, the income generated by the black mine workers went some way towards assisting in the successful emergence of an African peasantry in South Africa before 1910 and evidence exists that the purchase of land by Africans in the Republic increased after 1886.<sup>129</sup> The emergence of an African peasantry was, however, one of the factors limiting the supply of labour to the mining industry and was thus increasingly countered by the Chamber of Mines. The rapid rise in the demand for African labour experienced after 1892, as the mining industry recovered from the 1889-91 recession, saw an unsuccessful attempt to recruit underground labour from the Cape and the establishment of the Chamber's Native Labour Department with William Grant as the first Native Labour Commissioner.<sup>130</sup>

While the efforts of the Chamber of Mines in the recruitment of African labour met with only limited success in the years down to 1895, the activities of individual companies and firms enjoyed greater promise. It was soon recognised by the large capitalist firms that the extensive

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128. Gordon, C.T., The Growth of Boer Opposition to Kruger, 1890-95, passim.

129. Bundy, C., The Rise and Fall of the South African Peasantry, pp.197ff.

130. W.C.M., Fifth Annual Report for 1893, p.3.

tracts of land acquired initially for prospecting purposes and the pre-emption of mineral rights could be put to use to serve as labour pools.<sup>131</sup> J.B. Taylor describes how H. Eckstein and Company bought three million acres for these purposes in the Zoutpansberg, Waterberg and Lichtenberg districts, ultimately forming the Transvaal Consolidated Land Company, which settled Africans as tenants and squatters on these farms.<sup>132</sup> The Africans could then be coerced into periodic spells of labour on the mines to pay for their tenancy. Beyond these measures individual companies also undertook their own recruiting drives. One such company was the Ferreira which, following its reconstruction and the recommencement of operations in 1891, sent out recruiting agents to enlist African workers for the mine. Evidence of these activities emerged when one of the Company's African employees was apprehended by the police near Pretoria on the charge that he was press-ganging Africans on their way to seek work in Pretoria and diverting them to the mine. The charge was denied, it being suggested that the recruiter was rather engaged, "... in the legitimate occupation of escorting and pioneering a batch of raw umfaans to the Ferreira Company's mine for which they had been secured." As the press pointed out, what had probably happened was that other companies' "advance agents" had molested the man in the prosecution of his work and "... endeavoured to jump his company of niggers; there has been trouble in consequence, and the police, misinterpreting appearances have altogether mistaken the rights and wrongs of the case."<sup>133</sup>

A similar incident of police interference in the passage of African workers on their way to the mines was reported in 1891 and resulted in the Chamber of Mines sending a letter to the State Secretary in protest. What had happened was that certain police officers, either in the employ of the Netherlands Railway Company or the Government, were turning back or detaining potential mine workers in the proximity of the Mocambique border at Komatipoort, where the railway company had recently commenced operations on the building of the line to link Pretoria with the Portuguese territory.<sup>134</sup>

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131. Denoon, D., Southern Africa Since 1800, pp.130-31.

132. Taylor, J.B., A Pioneer Looks Back, p.142.

133. The Standard and Diggers' News, 24 July 1891.

134. W.C.M., Third Annual Report for 1891, p.49.

The increasing competition between the Rand mining companies and the rest of the economy, especially the various railway construction projects, for labour has already been discussed.<sup>135</sup> Such competition from the railway companies was of limited duration, for once the construction of the actual lines was completed, far fewer labourers were required for the maintenance and running of the lines. As the Annual Report of the Netherlands Railway Company for 1890 noted, the personnel of the Rand Tramline consisted of approximately 142 whites and 140 "kleurlingen".<sup>136</sup> Thus while such competition undoubtedly deprived the mines of some of their potential labour the issue was never considered serious enough to evoke the concerted action of the Chamber of Mines. The need for some form of wage agreement for African labour with the various railway companies was advocated by the press in 1890,<sup>137</sup> but the attitude adopted by the Chamber was that the speedy completion of rail links with the outside world would be of far greater value to the industry than any effort for uniform wages which might be used by the State or railway companies as an excuse for further delays in the construction of railway links into the Republic. Hence the Second Annual Report of the Chamber noted that the greatest efforts had been made in advocating the rapid construction of railways,<sup>138</sup> and the State President on a visit to Johannesburg in March 1890 gave the assurance that early railway extension was a priority of the State. Thus the first railway communication between Johannesburg and the coast via the Cape and Orange Free State was completed on 8 September, and the first through train from the coast arrived on 15 September 1892.<sup>139</sup> Once more the exigencies of the situation had forced some degree of co-operation on the part of the Government in meeting the needs of the Witwatersrand mining industry.

Exact figures regarding the distribution of mining revenue for the early years of the industry are not available. There is similarly a

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135. See above, p.284.

136. Verslag der Nederlandsche Zuid-Afrikaansche Spoorweg Maatschappij 1890.

137. The Diggers' News, 9 June 1890.

138. W.C.M., Second Annual Report for 1890, p.11.

139. The Star, 15 September 1892.

lack of national income figures for the Republic. Under these circumstances it is impossible to give a numerical estimate of the relative importance of the industry in the economy. It is clear, however, that the Witwatersrand mining industry had a profound effect on the economy not only of the South African Republic but of all the South African states in the longer term. The rate of inflow of immigrants attracted to the mining industry exercised a powerful psychological influence on the political framework of the State as well as heralding a massive surge in the demand for agricultural and other products.<sup>140</sup> Before 1895 this demand had achieved little in stimulating local production and Johannesburg relied on imported foodstuffs. The Witwatersrand mines also served as a financial "magnet" which attracted between £116 and £134 million in equity and loan capital in the years down to 1913<sup>141</sup> for direct investment in the industry besides also encouraging investment in other fields like railway construction. The Witwatersrand industry was destined to become the "growth sector" for all of southern Africa.

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140. Marais, J.S., *op.cit.*, pp.1ff.

141. Kubicek, R.V., *op.cit.*, pp.21ff.

## APPENDIX I

Company Name	Original Nominal Capital	Vendor Shares	Working Capital	Reserve Shares
Aurora	£30 000	24 000	6 000	
Banket	120 000	90 000	20 000	1 000
Bantjes	95 000	70 000	13 000	12 000
Beatrice	20 000	12 000	6 000	2 000
Benoni	20 000	14 000	6 000	
Botha's Reef	139 000	139 000 (?)		
City & Suburban	50 000	34 000	16 000	
Croesus	25 000	17 500	5 000	2 500
Edinburgh	22 000	14 000	4 000	4 000
Empire	33 000	28 000	3 000	2 000
Evelyn	12 000	8 600	3 400	
Ferreira	12 000	6 000	6 000	
Geldenhuis Est.	80 000	62 000	13 000	5 000
George Goch	15 000	10 000	5 000	
Paarl Pretoria	60 000	25 000	35 000	
Henry Nourse	35 000	24 000	11 000	
Heriot	50 000	40 000	10 000	
Johannesburg				
Pioneer	15 000	9 300	5 700	
Jubilee	15 000	9 000	6 000	
Jumpers	42 000	27 000	15 000	
Metropolitan	20 000	10 000	10 000	
Morkel	60 000	45 000	10 000	5 000
Moss Rose	15 000	12 000	3 000	
Nabob	50 000	39 000	7 500	3 500
Primrose	35 000	20 000	10 000	5 000
Paarl Ophir	12 000		12 000 (?)	
Ruby	9 000	3 500	5 500	
Salisbury	15 000	10 000	5 000	
Simmer & Jack	75 000	52 000	20 000	3 000
Spes Bona	26 000	17 950	6 000	2 050
Stanhope	30 000	23 000	7 000	
Star	35 000	27 500	5 000	2 500
Tharsis	50 000	40 000	5 000	5 000
Wemmer	12 000		10 000	2 000
Witwatersrand	210 000	195 000	15 000	
Wolhuter	40 000	29 000	11 000	
Worcester	15 000	10 000	5 000	
37	£1 599 000	£1 228 850	£387 400	£88 050



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H.E.12	Outgoing Correspondence: Letters to Kimberley	3 Oct 1887 - 21 Dec 1887
H.E.13	Idem	2 Jan 1888 - 4 Oct 1888
H.E.14	Idem	4 Oct 1888 - 11 Jul 1889
H.E.15	Idem	12 Jul 1889 - 21 Oct 1890
H.E.16	Idem	21 Oct 1890 - 11 Apr 1896
H.E.47	General and Technical Reports	Oct 1889 - Feb 1894

B) London Letters

Jules Porges & Co.

H.E.49	Incoming Correspondence	9 Jan 1888 - 27 Dec 1889
H.E.50	Outgoing Correspondence, Private London and other Letters	3 Feb 1888 - 26 Oct 1888
H.E.51	Idem	19 Oct 1888 - 26 Apr 1889
H.E.52	Idem	7 May 1889 - 6 Dec 1889
H.E.53	Letters and Wires	2 Jan 1888 - 27 Sep 1888
H.E.54	Share Letters and Cables	28 Sep 1888 - 1 Mar 1889
H.E.55	Idem	6 Mar 1889 - 7 Feb 1890

B) London Letters

Wernher, Beit and Co.

H.E.56	Official and Private	10 Jan 1890 - 24 Apr 1891
H.E.57	Idem	5 May 1891 - 14 May 1892
H.E.58	Idem	14 May 1892 - 26 May 1893
H.E.59	Idem	22 Apr 1893 20 Jul 1894
H.E.60	Idem	21 Jul 1894 - 29 Dec 1894
H.E.61	Idem	6 Dec 1894 1 Nov 1895

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H.E.80	Official Letters to London	13 Dec 1889 - 21 Mar 1890.
H.E.81	Idem	14 Feb 1890 - 21 Feb 1891
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H.E.83	Idem	1 Oct 1892 - 10 Mar 1894
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H.E.189	Johannesburg and London Letters	7 Jan 1891 - 6 Feb 1891
H.E.190	Idem	17 Feb 1891 - 18 Sep 1891
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WELTEVREDEN

WATERVAL

BRAAM

VOGELSTRAUIS FONTEIN

MARAISBURG

MIDDEL FONTEIN

AUCKLAND PARK

Sanitary

PAARDEKRANS

DEPROCLAIMED LANGLAAGTE ESTATE

PAARLS HOOP

DEPROCLAIMED LANGLAAGTE ESTATE

LANGLAAGTE OF

MOOI FONTEIN

RAND MINES LIM.

KLIP SPRUIT

DIEP KLOOF G. M. C.

CONCORDIA ESTATE & G. M. C.

DIEP KLOOF

VIER FONTEIN SYND.

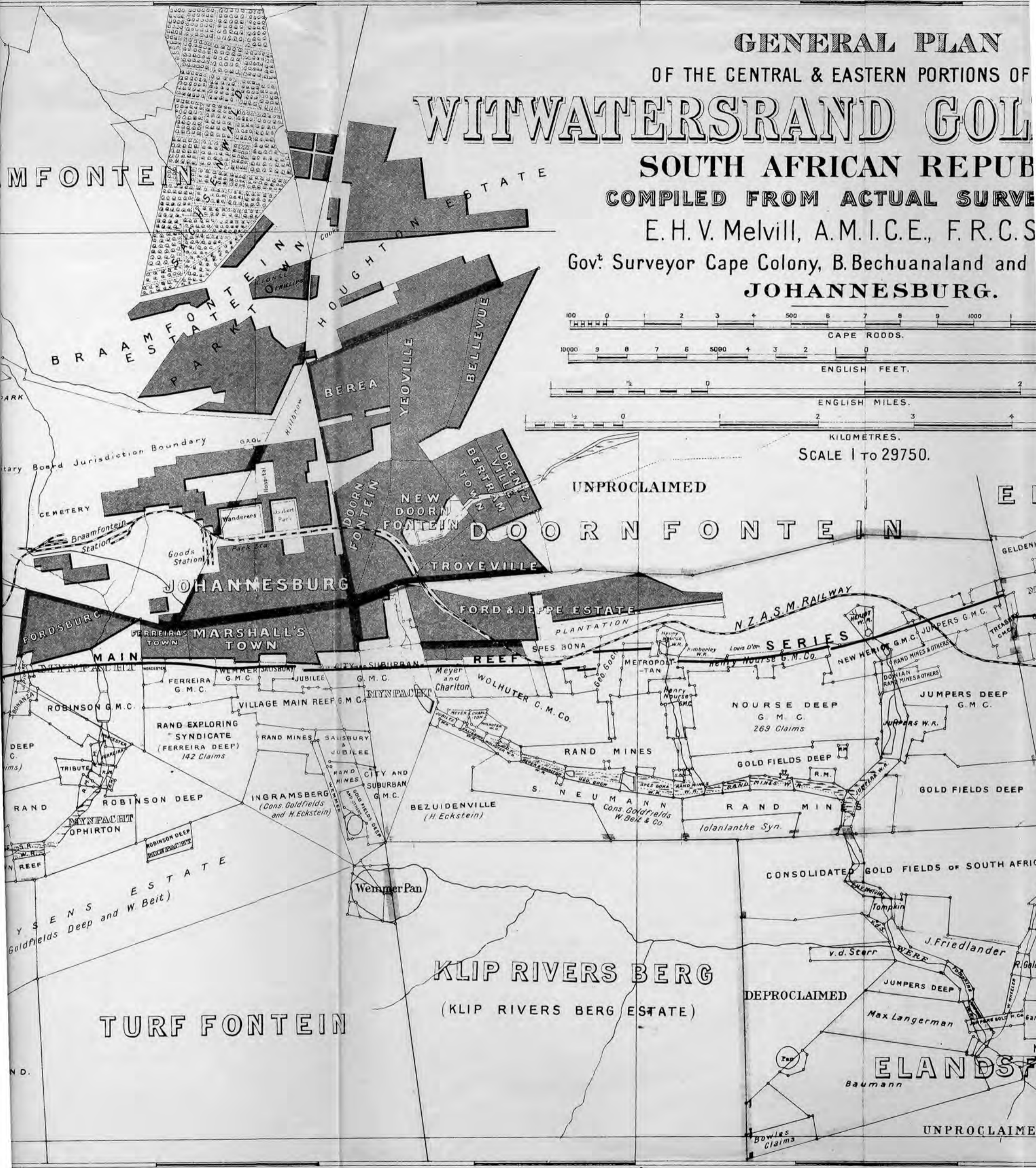
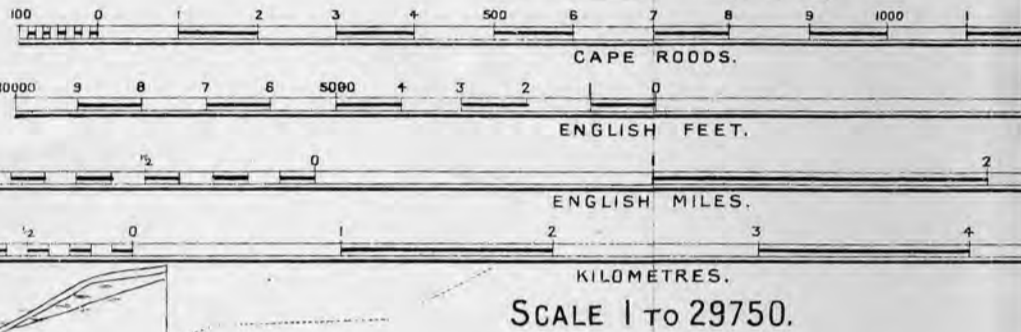
VIER FONTEIN

BOOY (Gold)

28°5'

# GENERAL PLAN OF THE CENTRAL & EASTERN PORTIONS OF WITWATERSRAND GOLD SOUTH AFRICAN REPUBLIC

COMPILED FROM ACTUAL SURVEY  
E. H. V. Melvill, A.M.I.C.E., F.R.C.S.  
Govt. Surveyor Cape Colony, B. Bechuanaland and  
JOHANNESBURG.



28°5'

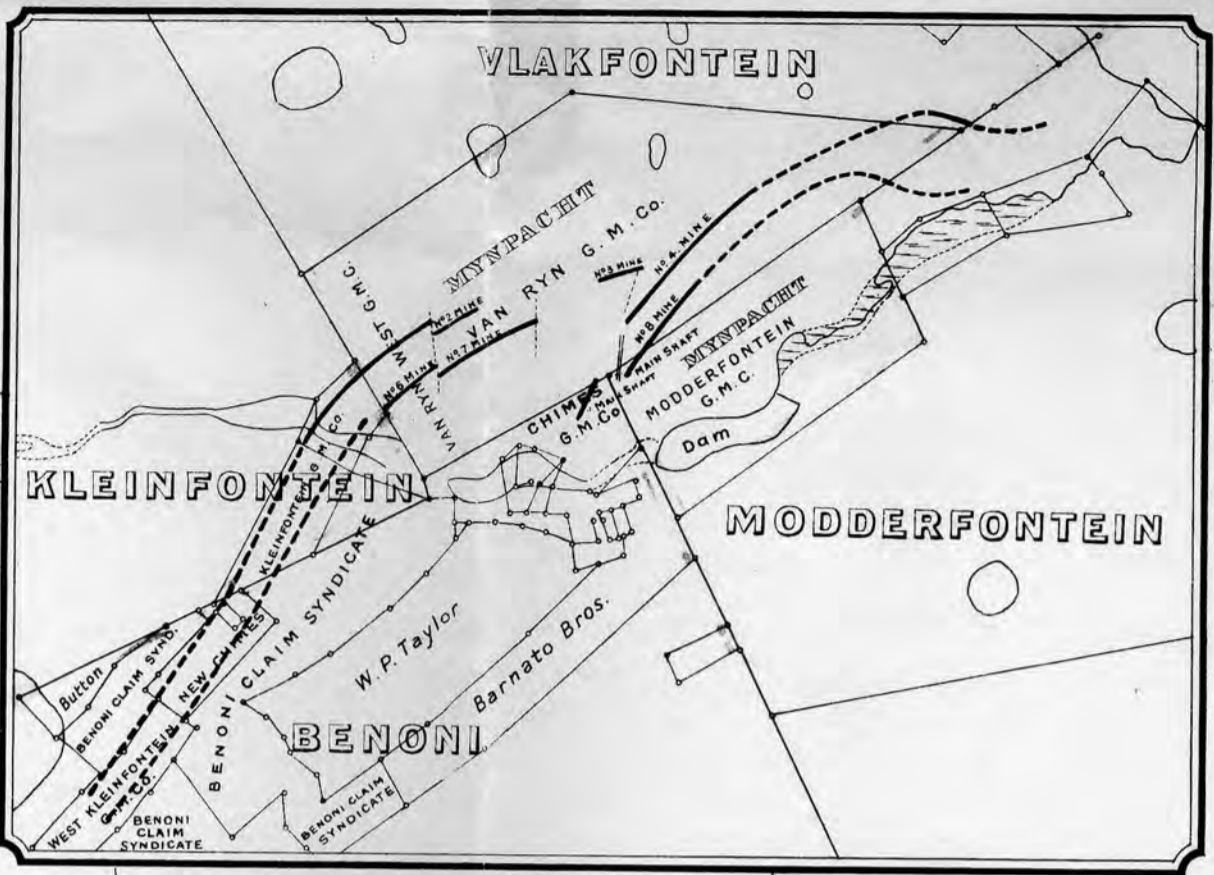




RIET FONTEIN  
G. M. Co.

WITKOPJE

VLAKFONTEIN



KLIPFONTEIN

KLEINFONTEIN

RIET FONTEIN  
G.M. Co.

ANGEL  
GOLD MINES LTD

NEW COMET  
G.M. Co.

CINDERELLA  
G.M. Co.

BLACK TREASURE SYND.

Z.A.S.M. RAILWAY

BENONI

VOGELFONTEIN

VOGELFONTEIN

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APEX MINES

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BOKSBURG

Boksburg Dam

J. Weil

Barret and Brayshaw

HOLFAST M.R.G.M.

WISHAW COAL AND GOLD MINING CO.

MYNPACHT

GAUF SYNDICATE

J.H.G. Henderson

BARRET and BRAYSHAW

LEEUEWPOORT

EAST RAND PROPRIETARY SYNDICATE

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