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**FROM PAARDEKRAAL TO LANGLAAGTE:
THE SEARCH FOR GOLD IN SOUTH AFRICA,
1852 - 1886**

D.A. PRETORIUS

• INFORMATION CIRCULAR No. 274

UNIVERSITY OF THE WITWATERSRAND
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by

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FROM PAARDEKRAAL TO LANGLAAGTE: THE SEARCH FOR GOLD IN SOUTH AFRICA, 1852 - 1886.

PRELUDE TO THE WITWATERSRAND

As the Highveld crow of the Witwatersrand flew, it was only 16 kilometres, in a northwesterly direction, from the western boundary of the original farm Langlaagte to the eastern edge of the farm Paardekraal. Yet, 34 years were to elapse between the first, alleged finding of gold on the Witwatersrand, in 1852 at Paardekraal, and the momentous discovery of the rich Main Reef Leader conglomerate on Langlaagte in 1886. In those in-between years, prospectors pursued, with greatly varying levels of success, their searches for gold in what were to become, subsequently, the goldfields of eastern Botswana, central Zimbabwe, the western, northern, northeastern, and eastern Transvaal, western Swaziland, and northern Natal. All of these discoveries paled into insignificance in comparison with what was waiting to be revealed between and beyond Paardekraal and Langlaagte. In 100 years of mining since the Langlaagte discovery, 98 per cent of all the gold recovered in Southern Africa has been won from the various Witwatersrand goldfields and only two per cent from all the other fields combined.

It was the gold rushes, in 1851, to the Bendigo and Ballarat fields in Victoria in Australia that kindled an interest in looking for the precious metal in South Africa. From about 1850, rumours of the presence of gold in the Transvaal started filtering down to Durban, and it was on the basis of these tales that John Henry Davis, an English mineralogist, set out from Pietermaritzburg in July, 1852 and headed for the Marico area in the western Transvaal. Perhaps he was intrigued by a map published in 1806 by John Barrow, on which was annotated the presence of a high-lying ridge, rich in gold, roughly in the vicinity of what became known as the Witwatersrand. More likely, he was swayed by a claim that, in 1834, Carel Kruger, while elephant hunting before the first Trekkers crossed the Vaal River, had stumbled across gold-bearing material on what was to become the farm Paardekraal, also known, at various times, as Paardeplaats and Groot Paardekraal, the latter to distinguish it from Klein Paardekraal, situated immediately to the west of Langlaagte. Kruger returned in 1836 with four other elephant-hunters, but three of them, including Kruger, were killed by the Ndebele near the present Potchefstroom. His alleged gold discovery on the Witwatersrand was forgotten about till John Davis, in 1842, possibly located gold on Paardekraal.

At that time, the Potchefstroom Republic, within which the Witwatersrand was situated, strongly discouraged prospecting for gold, for fear of its discovery bringing unwanted foreigners into the territory. Consequently, Davis's finds on Paardekraal were not well received, and one account has it that he was paid £600 by the Republic's Treasury and then escorted out of the territory. Another version of Davis's prospecting is that he searched for almost a year, found nothing of value, and returned to Pietermaritzburg of his own accord.

The next chapter in the Witwatersrand story has as its main character Pieter Jacob Marais whose diaries provide the first documented records of events preceding the Langlaagte discovery. He returned to Cape Town on 1 April, 1853 after spending four years working on the goldfields of California and Victoria, and, after excursions into

Namaqualand, the Karoo, and the Orange Free State, arrived in Potchefstroom on 3 September, 1853. He was more favourably received by the authorities than had been Davis in the previous year. He started prospecting the region between the Magaliesberge and the Witwatersrand and on 7 October, 1853 panned some colours of gold in the Crocodile River, below its junction with the Jukskei River (for location of his discovery see Figure 1). On the following day, he encountered some better showings in the latter stream. He searched for more encouraging signs of gold along the Jukskei up until November 22, when he concluded that the disappointing results did not justify further prospecting, and he returned to Potchefstroom at the end of that month. Present-day geological knowledge renders it doubtful that the very sparse quantities of gold found were derived from the Witwatersrand. On 6 December, 1853, Marais was contracted by the Volksraad to prospect the whole of the Potchefstroom Republic for payable gold. If this were found, he would be paid £500. On penalty of death, the results of his investigations were to be highly secret.

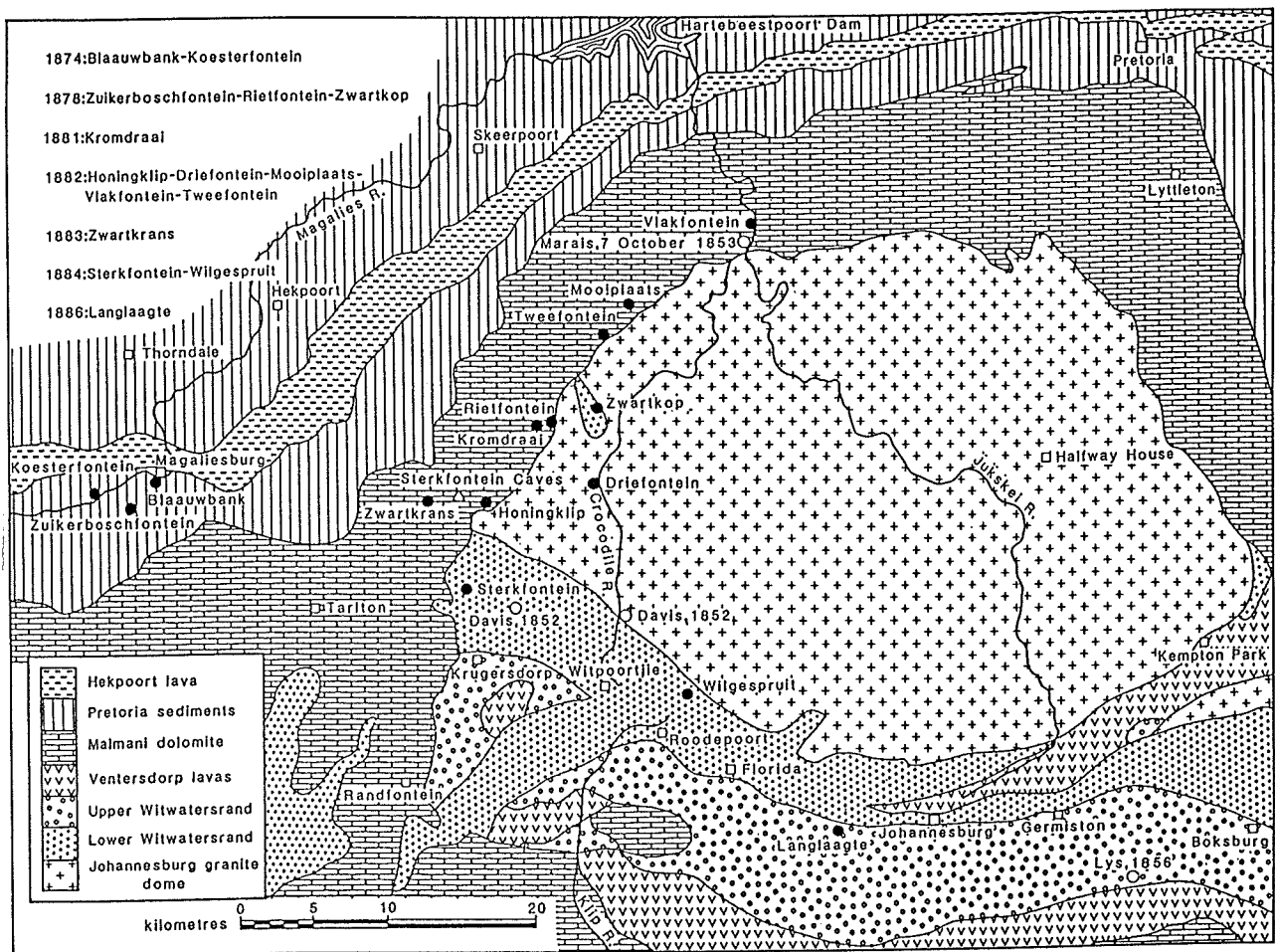


Figure 1: Discoveries of gold leading up to the Langlaagte Bonanza.

Marais conducted his search as far north as Pietersburg and as far west as Zeerust, thrice returning to the Jukskei River to try his luck, but without any greater success. His first return was on 9 December, 1853, the second on 24 February, 1854, and the last on 6 January, 1855. After 16 months of prospecting he submitted a negative report, on 7 April, 1855, to the Volksraad, concluding that the portions of the Republic he had examined appeared to contain no mineral deposits of any importance.

That was the end of the search for gold on and around the Witwatersrand for the next twenty years until early in December, 1874. However, mention of possible gold on the Witwatersrand was made on two occasions in that period. An unsubstantiated tale has it that John Robert Lys, a pioneer of Pretoria, while trekking in 1856 between where Heidelberg now is and Pretoria had his wagon bog down in a marsh subsequently indicated as Lys's Vlei on Fred Jeppe's 1877 map of the Transvaal. To lift up the wagon out of the mud, stones were gathered nearby and packed under the wheels. The vlei was about three kilometres northeast of where the village of Elsburg was established subsequently, on the common boundary between the farms Driefontein and Klippoortjie. The stones were from the outcrop of the Elsburg Conglomerates near the top of the succession of Witwatersrand rocks and well removed from the horizons of the Main Reef Leader. Lys, apparently struck by the unusual appearance of what became known as banket rock, is alleged to have crushed samples of the rock and panned gold from them. If this was the case, and there is a good degree of doubt attached to the story, then the Elsburg strata were the first of the Witwatersrand conglomerates shown to be gold-bearing. Another version places the event in 1863. The second occasion was the publication in 1871, of a description of the northern slopes of the Witwatersrand by Thomas Francois Burgers who was to become President of the South African Republic in July of the following year. While travelling across the ridges on his way to Pretoria he saw what he thought, from a distance, were the long, white, plastered walls of houses. On closer examination these turned out to be massive quartz veins rising up to three metres above the ground, and Burgers expressed a conviction that a good deal of gold would be obtained, one day, from these Witwatersrand quartz veins. One of the veins he saw was probably the Confidence Reef, which Fred Struben proved to be auriferous in August, 1884, and for the crushing of which the first stamp mill on the Witwatersrand proper was erected on Wilgespruit.

DIVERSIONS TO THE NORTH

In the 12 years between 1855 and 1867, there is no indication of any prospecting for gold in the Transvaal. Dormaney prevailed until Karl Gottlieb Mauch, a German geologist, arrived on the scene, to divert the search for gold well away from the Witwatersrand. He left Pietermaritzburg on 27 April, 1865 and reached Rustenburg on June 22, after having passed over the Witwatersrand. Between then and the end of July, Mauch crossed the Rand on about ten occasions, but saw no signs of what he considered to be gold-bearing material. On 15 February, 1866, he met Henry Hartley, the elephant-hunter and early explorer of Zimbabwe. Mauch accompanied him on a trip to Matabeleland between 22 May, 1866 and 10 January, 1867, when they both returned to Hartley's farm at Thorndale, near the present village of Magaliesburg. They departed again for Matabeleland on 15 May, 1867, and, on 28 July, Mauch found gold-bearing quartz veins in ancient workings which Hartley had come

across previously near the Mupfure River in the vicinity of what is now the town of Chegutu (previously known as Hartley). Further prospecting revealed the presence of alluvial gold in several streams and rivers between Kadoma and Bulawayo.

On their return journey to Thorndale, Mauch observed ancient workings north of the present town of Francistown in northeastern Botswana. On 23 September, 1867, he discovered gold on the Tati River, a tributary of the Shashi River (see Figure 2). It was this discovery that initiated an ever-growing influx of prospectors into South Africa from all over the world, among whom Australians were dominant. The Tati finds might well have been made in the same vicinity as the alleged showings of gold which Kommandant Jan Viljoen of Marico had come across in 1853. But, he was more interested in ivory than the yellow metal. It is also thought that Jan Joubert, a member of the Volksraad of the South African Republic, visited the locality on more than one occasion between 1858 and 1863 and became positive that gold was present. Shortly after his return to Potchefstroom, Mauch reported his discoveries of gold in "The Transvaal Argus" of 4 December, 1867 making the exaggerated claim that the Tati fields were richer than those of California and Australia. The first party of nine prospectors left for Tati from Potchefstroom on 11 March, 1868 under the leadership of Captain Black and the guidance of Henry Hartley. By December of that year, 72 diggers were operating in the Tati field. In 1870, the London and Limpopo Gold Mining Company was formed, and it took possession of the whole field, but its hopes and Mauch's predictions were never realized. The Tati was virtually abandoned as more and more new discoveries of gold were made in the Transvaal after President M.W. Pretorius rescinded, in 1868, the laws prohibiting the prospecting for gold.

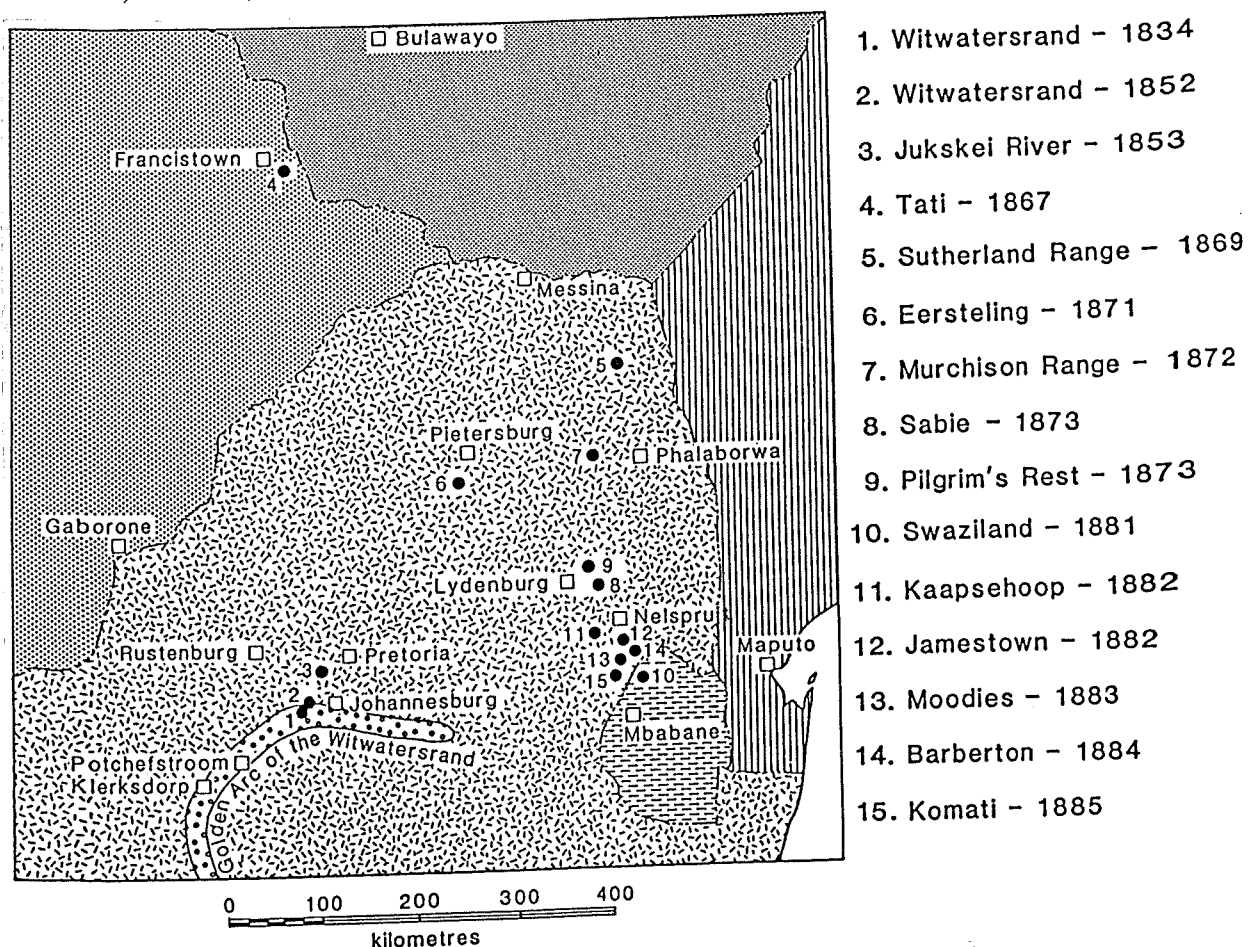


Figure 2: Significant discoveries of gold in the Transvaal: 1834-1885.

In 1877, Fred Jeppe wrote: "The discovery of gold at the Tati was the commencement of the golden era that dawned upon South Eastern Africa". For Karl Mauch there was no financial gain for his role in focusing the attention of the world on the mineral treasure-house of Southern Africa. He continued his geological exploration of the northeastern Transvaal and eastern Zimbabwe up to 1872, during which time he came across the Zimbabwe Ruins on 5 September, 1872. Towards the end of 1872, he boarded a French ship at Quelimane, in Moçambique, and returned to Europe via Marseilles. He died in Germany on 4 April, 1875 at the age of 38 years.

The first significant gold mineralization in the Transvaal was found at Eersteling in the Marabastad field on 31 August, 1871 by Edward Button, possibly the most successful of the early prospectors. He came to Natal with his father in 1850 and learned his geology from Dr. P.C. Sutherland, the Surveyor-General of Natal, and from his father-in-law, William Marshall, who had spent many years on the Australian goldfields. Between 1860 and 1864 Button prospected in Natal, but found only traces of gold in the Tugela River east of Greytown. He and a partner, James Sutherland who had had 20 years' experience digging for gold in California, Australia, and New Zealand, on their way to Tati, moved into the Lydenburg area of the Transvaal in July, 1869 where they were joined by George Parsons and Thomas McLachlan. Button and Sutherland pressed farther north and, in 1869, found showings of gold in the Sutherland Range. On 2 January, 1871 Button claimed a reward from the Volksraad in Pretoria for the discovery of gold north of Lydenburg by himself, Sutherland, Parsons, and McLachlan. Later, on his own, Button successfully prospected the farm Eersteling (Figure 2). He reported to the Volksraad on 7 September, 1871 that he had found payable quartz-reef and alluvial gold near Marabastad and on 15 December purchased the farm Eersteling. Early in 1872 he went to London to float the Transvaal Gold Mining Company, the first operative mining company in the South African Republic. It had a nominal capital of £50 000, and it was intended to have 12 stamps erected for crushing the gold-bearing quartz-veins. By October, 1872 Button had managed to raise only £15 000, and he returned to Eersteling. The first machinery, ordered in England, arrived on 11 March, 1873. Two stamps instead of the planned twelve started operating on 7 May, 1874. While waiting for the stamps Button continued his prospecting and found gold towards the end of 1872 in the Murchison Range (Figure 2). By 23 January, 1875, 325 ounces of gold from Eersteling had been sent to England. But, by that time the Marabastad field had been totally eclipsed by the finds at Sabie and Pilgrim's Rest and, shortly after the British annexation of the Transvaal in 1877, Eersteling closed down bringing to an end the first gold-reef mining venture in South Africa. Edward Button, the pioneer gold-miner, died on 24 May, 1900 and was buried in Pietermaritzburg.

DIVERSIONS TO THE EAST

Although gold was being found in more and more places in the South African Republic and although news of these discoveries was being spread far beyond the boundaries of the Transvaal, yet, no major gold-rush had developed. The reason for this lay in the fact that no significant occurrences of alluvial gold had been found by Marais or Mauch or Button and that the auriferous quartz veins were not particularly high-grade. Up to the 1870's, all the great gold-rushes round the world had been sparked by the finding of extensive spreads of the alluvial metal, which an individual digger could work on a solitary claim and make

a living. Reef-gold required more capital outlay than a digger, or even a syndicate of diggers, could afford. A characteristic feature of gold mineralization in Southern Africa is the absence, except in one field, of major developments of alluvial gold, an aspect that contrasts sharply with other important goldfields of the world, whether they be in California or the Yukon or Brazil or Siberia or Victoria or New Zealand. That one exception, in the eastern Transvaal, changed dramatically the whole course of the search for gold in South Africa and laid the foundation for the greatest gold-mining industry the world has yet seen.

During their visits to Lydenburg in 1869 Edward Button, James Sutherland, George Parsons, and Tom McLachlan panned small, and not encouraging traces of gold on the slopes of Spitskop, near the present Sabie. Parsons and McLachlan stayed on in the area and were joined by J.L. Valentine. Their continued prospecting was ultimately rewarded by finds around Hendriksdal, south of Sabie, and on 5 February, 1873, the Landdrost of Lydenburg, A.F. Jansen, reported their results to Pretoria. The three partners followed up their success by locating still-better alluvial gold on Geelhoutboom, Spitskop, and Graskop, leading to the proclamation of the ward of the Ohrigstad River, in the district of Lydenburg, as a public goldfield on 14 May, 1873. The first real gold-rush in South Africa was under way. A large reservoir of potential prospectors existed in the river and dry diamond diggings around Kimberley, in the various fields of which about 25 000 diggers and an equal number of labourers had gathered in 1873. The lure of new opportunities enticed large numbers of the unsuccessful at Kimberley to take to the road again and head for Lydenburg.

Further occurrences of exploitable alluvial gold were located at the beginning of July around Steenkampsberg by C. Evans and H. Helders. Then came the big strike. On 22 September, 1873 William Trafford panned rich, coarse, alluvial gold, with many nuggets, in the lower reaches of Pilgrim's Creek. At the same time, Alec ("Wheelbarrow") Patterson found exceptional concentrations of gold in the middle reaches of the creek. In July, 1875 the largest nugget weighing 283 ounces (8,02 kg), recovered from the Pilgrim's Rest field, was found near the site of Patterson's original pannings. Pilgrim's Creek was the magnet which drew the prospectors in their hundreds, and many of these came from the Australian diggings. A few weeks before Trafford's and Patterson's lucky day, there were 353 persons of all races involved in the recovery of gold in the Lydenburg fields. By the end of 1873 there were 503 persons and by 30 September, 1874, one year after the discoveries on Pilgrim's Creek, the number had grown to 1508 at Pilgrim's Rest, Mac-Mac, Watervalspruit, and the Blyde River. These figures did not include the large number of prospectors who roamed the hills and creeks located away from the small settlements. By the end of 1875, Pilgrim's Rest housed 21 stores, 18 canteens, and 3 bakeries.

By 1876, the heyday of the individual digger had passed. Syndicates and companies started acquiring blocks of claims. On 10 November, 1881 the Volksraad granted David Benjamin a concession covering most of the fields. He formed the Transvaal Gold Exploration and Land Company from which diggers had to tribute their ground. The gold-rush had lasted eight years. It was time again for the prospectors to move off in search of greener pastures and new fields. Benjamin's company did poorly until the 1890's, when a prospector, C. Robinson, found several rich gold-bearing quartz reefs, the most attractive of which was the Theta Reef. The Pilgrim's Rest and Sabie fields continued to be significant producers up to 1972, when virtually all systematic mining ceased, and they rank as the third

most important source of gold in South Africa, after the Witwatersrand and Barberton fields.

The diggers moved southeastwards from Pilgrim's Rest towards the De Kaap area northwest and west of Barberton where, according to his declaration to the Volksraad on 12 January, 1874 Tom McLachlan had found alluvial gold in several streams and towards Swaziland where the same prospector had come across indications of gold in 1881. In 1882, B. Chomse, after noting the presence of many ancient workings in the area, located payable alluvial ground in the Duiwelskantoor, around the village of Kaapsehoop. In June of the same year, Jim Murray, braving the hazards of the fever-ridden De Kaap Valley, after coming down the escarpment from the high country, found encouraging concentrations of alluvial gold at Jamestown (Figure 2). More and more prospectors followed Murray, with most of them travelling right across the valley to the healthier, hilly country on its southeastern side.

Among those who had been previously at Pilgrim's Rest was another of the great prospectors in the annals of South African mining - Augusta ("French Bob") Robert. On Moodies Concession, south of where the town of Barberton was established subsequently, Robert found the Pioneer Reef on 3 June, 1883. The extensive, vein-type outcrop represented the richest and most-persistent reef found in South Africa up to that date. An even bigger rush than to Pilgrim's Rest was triggered off. The prospectors spread all over the Barberton Mountain Land. On 21 June, 1884 Graham Barber and his two cousins, Fred and Harry Barber, discovered another high-grade reef in what became the Barberton goldfield. In November, 1884 the De Kaap Goldfield was proclaimed and on 11 August, 1885 a second proclamation was made. William Pigg, prospecting in Swaziland, had located, in 1884, the Devil's Reef at what became the important Pigg's Peak Mine and, in November of the same year, Alex Forbes and C.I. Swears discovered the Forbes Reef Mine, also on the Swaziland side of the Mountain Land.

The most sensational gold-strike in the history of South African mining was made in the Sheba Hills northeast of Barberton in May, 1885 when Edwin Bray discovered a huge blow in the Sheba Reef, heavily impregnated with gold, which became the famous Bray's Golden Quarry Mine. The last goldfield in the Barberton Mountains to be proclaimed, on 21 February, 1887 was the Komati field, centred on the village of Steynsdorp. In July, 1885 Jim Painter and Frank Austen came across alluvial gold and, subsequently, several quartz reefs of relatively minor importance. By 1888 the great Barberton boom was over and the financiers, who had put up the capital required for the reef mines, mostly had quit what was to become South Africa's second most-important source of gold and had made their way to the Witwatersrand. Sensing the end of the small-time operator in the De Kaap fields, French Bob led the last rush in South Africa of old-time diggers to the Murchison Range in 1888. His camp became the site of Leydsdorp which served as the centre for 600 prospectors in the Selati Goldfield. By 1899, Steynsdorp, from which 3000 diggers had fanned out in 1887, was nothing more than a collection of crumbled ruins.

BACK TO THE WITWATERSRAND

It was the discovery of gold at Pilgrim's Rest that led to prospectors' attentions swinging back to the Witwatersrand region. The host-rocks of gold mineralization at Tati, Matabeleland, Eersteling, Marabastad, the Sutherland Range, the Murchison Range, the Sheba Hills, Barberton, Steynsdorp, and Swaziland are all constituents of the Archaean Basement Complex, older than 3100 million years in age. The geology of the Lydenburg, Sabie, Pilgrim's Rest, and Kaapsehoep goldfields is very different, and the strata are much younger, between 2200 and 2500 million years in age. One of the most important rock types in this younger Transvaal Sequence is dolomite with its distinctive elephant-skin-like texture on weathered surfaces. Sandwiched between the Basement Complex and the Transvaal Sequence are the conglomerates and other sediments of the Witwatersrand Sequence, the age of which is between 2800 and 3100 million years. Granites of the Basement Complex are exposed in a large uplifted dome, more than 40km in diameter, north of Johannesburg and across which flow the Crocodile and Jukskei rivers (Figure 1). In an extensive arc, on the western, northwestern, and northern flanks of the dome are well-developed outcrops of the Transvaal Sequence, between Magaliesburg-Tarlton and Pretoria-Lyttleton. Prospectors in this "olifantsklip" arc set in motion, between 1874 and 1885, the sequence of events which culminated in the discovery of the fabulous Main Reef Leader on Langlaagte early in 1886.

At the beginning of December, 1874, Henry Lewis, an Australian digger, and two partners, on their way from the Kimberley diamond fields to Pilgrim's Rest, were struck by the similarities between the rocks at Blaaubank, near the present village of Magaliesburg, and those of the Lydenburg goldfields. Their pannings on this farm indicated only unpayable alluvial gold but, on the adjoining farms of Koesterfontein and Zuikerboschfontein, Lewis found rich, but small, quartz reefs. Because of the absence of workable alluvial, Henry Lewis moved on but, on 8 January, 1875 the Volksraad granted a concession of 7 claims for gold to the brothers J.H. and J. Jennings who owned Zuikerboschfontein. On 28 January, 1875 Robert Cottle Green formed the Nil Desperandum Co-operative Quartz Company, with a capital of £850. This was the first gold mining company to be formed in the Witwatersrand region. A concession of 17 claims for gold on Koesterfontein was obtained by the company on 24 March, 1876. Up to the end of 1877 very little gold had been won from the Blaaubank area and the field was virtually abandoned. Attempts to restart digging on Zuikerboschfontein were made again in 1878 and 1881, but these efforts also ended in failure.

The focus of attention shifted to the east when, in 1878, David Wardrop found gold in the dolomite on Rietfontein (Figure 1). Some slight interest in areas away from Blaaubank had developed and then petered out after Pompie Meintjes, the 14-year old son of S.J. Meintjes, located minor amounts of gold early in 1875 on the townlands of Pretoria and after Harry Struben had prospected a few quartz reefs in the dolomite on the farm Waterval, east of Tarlton. To Wardrop must be given credit for finding the first gold veins in Witwatersrand strata since John Davis's alleged winning of the metal on Paardekraal in 1852. Wardrop's discovery, on 18 July, 1878 on Zwartkop was made in sediments of the lower part of the Witwatersrand Sequence, which is preserved as a small, isolated, outlier well north of the Witwatersrand proper. Twenty years were to elapse before geological mapping disclosed that David Wardrop had, in fact, been prospecting in Witwatersrand rocks.

Despite the disappointing results at Blaaubank diggers continued to show interest in the Pilgrim's Rest look-alike rocks of the Tarlton-Lyttleton arc and more and more of them headed towards the region between the Magalies and Crocodile rivers instead of pushing on to the Lydenburg fields, the boom-times of which had already passed. Travelling northwards from the Vaal River, C.M. Douthwaite came across, on Witkoppies, traces of alluvial gold in the Klip River where it runs through dolomite country between Henley-on-Klip and Meyerton, about 30km south of Johannesburg. This was in November, 1881, and, shortly thereafter, David Schalk van der Merwe found further small quantities of alluvial on Rietfontein, Slangfontein, and Vogelfontein, in the same general area.

But the real stimulus to exploring the Witwatersrand region was provided by Stephanus Minaar's findings of gold on Kromdraai, about 40km northwest of Johannesburg. Towards the end of 1881 he picked up a small nugget on the road to Pretoria, which led him to locating a payable quartz reef. Minaar and J. Lisemore continued their prospecting on Kromdraai, Honingklip, Driefontein, and Rietfontein into the first half of 1882, when Jan Bantjes obtained a concession over Kromdraai. A syndicate then was formed in Potchefstroom, consisting of R.R. Hollins, C.M. Douthwaite, A. Smith, S.J. Minaar, and J.G. Bantjes, the last-mentioned acting as the on-site manager. The syndicate abandoned Kromdraai in 1884, and it was then taken over by Henry Nourse who, together with R.R. Hollins and W.K. Dow, formed a company which put up a five-stamp, later an 18-stamp, mill, but which could not make the venture pay. Despite this Kromdraai was proclaimed a public digging on 8 December, 1885, the first such proclamation in the vicinity of the Witwatersrand.

The other discovery, which supplemented Kromdraai as a magnet for prospectors, was made on Tweefontein by J.E. Erasmus in March, 1882, and by S. Hammerschlag. In June, 1885, Hammerschlag and Louis Schultis erected a small stamp-battery driven by water-power. This was the first mill for crushing gold-bearing ore put up in the Witwatersrand region.

THE PATH TO LANGLAAGTE

The scene was now set for the unfolding of the Witwatersrand saga. Fred Struben, returning to his brother, Harry, in Pretoria, after working on the Marabastad, Pilgrim's Rest, and Kaapsehoep fields, heard about the finds at Kromdraai and Tweefontein and was reminded of Harry's prospecting on Waterval in 1877. Fred Struben decided, in December, 1883, to have a look at the area and proceeded to Sterkfontein at the southwestern extremity of the dolomite arc and close to Waterval. He may have been influenced, also, by the finding in May, 1883 of gold on Zwartkrans adjoining Sterkfontein.

The dolomitic rocks on Sterkfontein had been prospected, unsuccessfully, in July, 1878 by Alfred Watson Armfield. He had spent the years 1862-1872 on the Australian diggings, had arrived in Pretoria in 1875, and had been appointed, in 1878, as inspector of goldfields by Sir Theophilus Shepstone. But, unknown to Armfield or the Strubens or any other prospectors in the area was the fact that, on Sterkfontein, rocks of the lower portion of the Witwatersrand Sequence emerge from beneath the cover of younger dolomites, and that the locality marks the northwestern limit of Witwatersrand rocks.

In January, 1884 Fred Struben stepped across the Transvaal formations onto the Witwatersrand strata. He found a gold-bearing quartz vein, which he named the Dana Reef. Harry Struben purchased the farm and, in August, 1884 the brothers formed the Sterkfontein Junction Mining Syndicate that, however, failed to produce even a small amount of gold from Sterkfontein. Fred Struben continued to push eastwards and, in April, he noticed quartz pebbles lying on the surface of Groot Paardekraal. He tracked these to their source which, subsequently, proved to be the conglomerates of the Government Reef in the lower strata of the Witwatersrand Sequence on the northern slopes of the ridges of hills. Gold was panned from the crushed conglomerate, but the concentration was unpayable. The findings on Paardekraal meant that the search for gold had turned full circle and was back where it had started in 1852. To Fred Struben must be accorded the honour of discovering the first gold-bearing conglomerates on the Witwatersrand.

He felt that quartz veins offered a better hope and his tracing of these culminated in his finding, on 18 September, 1884, the well-developed and extensive Confidence Reef on Wilgespruit. Fred Struben's efforts to open up and mine the Confidence Reef resulted in the erection of a 5-stamp battery, the first crusher on the Witwatersrand proper, on 12 December, 1885. He also carried on with his prospecting and found further conglomerates in the Government assemblage on Groot Paardekraal, Honingklip, and Waterval, all to the west, north, and east of Krugersdorp. Unpayable conglomerate reefs of the Jeppes town assemblage were also located on Groot Paardekraal. In April, 1885 Fred Struben discovered the Main Reef on Groot Paardekraal, the first time the important conglomerates of the upper division of the Witwatersrand Sequence were seen. The site was close to where the Midas Shaft of the Luipaards Vlei Gold Mine subsequently was sunk. Unfortunately, the rich Main Reef Leader, associated with the Main Reef, is not present in this locality. Had it been, Fred Struben would be down in history as the unquestioned discoverer of the Witwatersrand, a full eleven months before Langlaagte.

In November, 1885 J.G. Bantjes decided to quit fossicking around Kromdraai and, together with C.M. Douthwaite, George Jacobson, and Adolf Kauffman, came to Wilgespruit to see what Struben was doing. He was told about the presence of auriferous conglomerates on Roodepoort, south of Wilgespruit. In January, 1886 Bantjes brought some of this material for a trial crushing in Struben's battery. In the meantime, two prospectors, down on their luck and on their way from Potchefstroom to Barberton arrived at Wilgespruit in December, 1885 looking for work. George Walker stayed on to help in the mill, while George Harrison moved eastwards to undertake some building on Langlaagte. While Walker was at Wilgespruit he witnessed the crushing of Bantjes's Government Reef conglomerate in January, 1886 and also the recovery, in March, of gold from the Bird Reef conglomerates which Bantjes and Struben had found on Vogelstruisfontein in February and March, respectively.

Walker's employment at the Wilgespruit battery came to an end in March and he departed for Langlaagte to meet up with Harrison and continue on to Barberton. When he arrived he saw that the stone Harrison was using to build the farmhouse walls was the same conglomeratic material that Fred Struben had crushed in January and March. Harrison who apparently was unaware that gold could be found in such rocks had given no thought to testing the contents of his building-stones. It is likely that, on Sunday, 28 March, 1886,

Harrison showed Walker the outcrops from which the stone had come, that Walker crushed and panned some of the material, and that a long tail of gold appeared in the pan. The Main Reef Leader had been found. Walker informed Struben who came across to Langlaagte and collected more of the conglomerate to take back to test at Wilgespruit. The results convincingly persuaded Fred Struben to shelve work on the Confidence Reef and to take up the search for an extension of the Langlaagte reef. In April, he found the Main Reef Leader on the western portion of Vogelstruisfontein and started sinking a shaft. In May, Bantjes located the Leader on the eastern division of the same farm. On 14 May, 1886 Colonel I. Ferreira staked his camp on Turffontein, as a centre for diggers, and the greatest of South Africa's gold rushes was on. In Pretoria, George Harrison told President Paul Kruger, on 24 July, 1884, that he thought his find on Langlaagte was a payable goldfield and, between 20 September and 11 October, 1886, four proclamations substantiated George Harrison's modest claim.

A. Boveon, among the first arrivals in Ferreira's Camp, looking along the strike of the Main Reef Leader, later recalled his reaction: "What a hopeless outlook did that waterless, dry, dusty, windy spot present". But, the diggers were not disheartened. They saw what Edward Fuchs, another pioneer, still remembered on the 20th anniversary of the first proclamation: "This banket proved of extraordinary richness, and piece after piece that I knocked off with my hammer was literally peppered with the precious metal".

The story of the prospecting for, and the finding of, gold between 1874 and 1886, which culminated in the discovery of the Witwatersrand, is summed up on Figure 3.

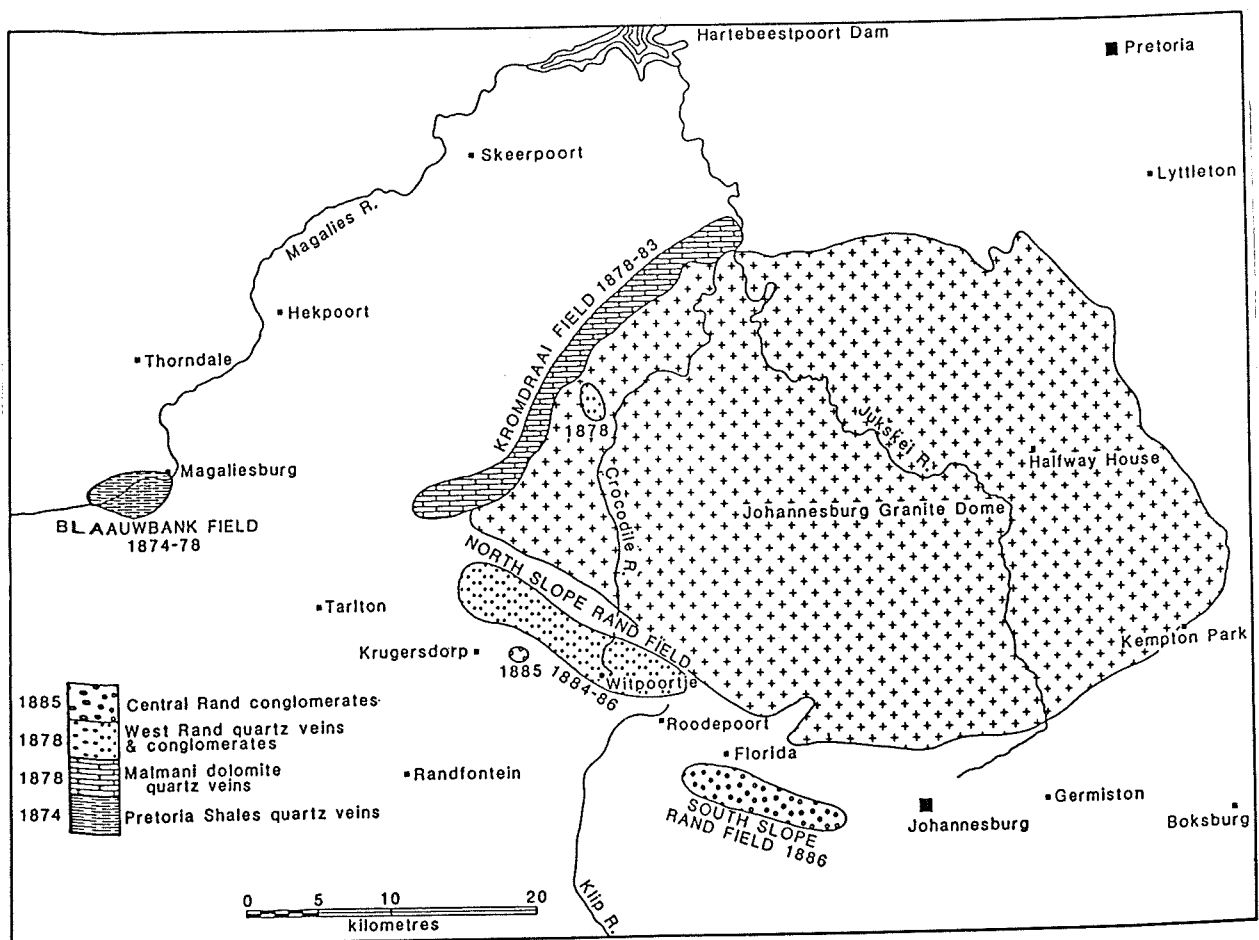


Figure 3: Goldfields on the western flank of the Johannesburg granite dome: 1874-1886.

The first gold produced from the Witwatersrand came from the Jubilee Mine, and 250 ounces arrived in Pietermaritzburg on 12 April, 1887. The second mine into production was the Wemmer, the 5-stamp battery of which came into production on 14 May, 1887. By the end of that month it had milled 90 tonnes of ore and had won 27,593 kg of gold, at a recovery grade of 307 grammes per tonne. At the end of 1887, there were 22 mines, with 175 stamps, at work. The total production for the Witwatersrand between the beginning of April and the end of December, 1887, was 714, 598 kg of gold, which had resulted from the crushing of 11 090 tonnes of the Main Reef Leader, at a recovery grade of 64 grammes per tonne. This was the beginning of what the Rand Daily Mail, in its Pioneer Supplement of 22 September, 1906, lauded as "... the most wonderful mining field the world has ever known; it is possible its equal will never be found".

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