S.Afr.J.Geol.,1999,102(3),178–183

The discovery of the platiniferous Merensky Reef in 1924

R.G. Cawthorn
Department of Geology, University of the Witwatersrand, P.O. Box 3, P.O. Wits, 2050 Republic of South Africa
E-mail: 065rgc@cosmos.wits.ac.za

Accepted 10 March 1999

This special issue of the South African Journal of Geology commemorates the discovery, 75 years ago, of the largest platinum reserve in the world. The details of that discovery are partially recorded, but a re-examination of those events suggests that there are many enigmatic, and even inconsistent, pieces of information. It could almost be considered a discovery before its time, as the world consumption of platinum, and its price, became extremely depressed by 1930. Further fluctuations in the 1940s and 1950s did not encourage major expansion of mining activities, and did not support or necessitate the enormous scale of mining now seen around the Bushveld Complex until the early 1970s (Edwards and Silk, 1987).

There have been various descriptions of the history of the discovery in September, 1924, of the layer of rock which was to become known as the Merensky Reef (Lombaard, 1945; 1996; Lehmann, 1955; Bartholomew *et al.*, 1989; Worst, 1991; Wedepohl, 1995). However, the development of the geological data base and exploration strategy used by Dr. Merensky, as distinct from a straight chronology of events, have never been investigated. While such an undertaking might seem presumptuous, especially 75 years after the event, an examination of three infrequently referenced articles (Merensky, 1925; 1926; Wagner, 1925a), two published within six months of the discovery, and an unpublished company report by Merensky (1924), offer some interesting observations and implications. A short summary of the discovery of platinum in South Africa is first presented, and is followed by some speculations on the events that culminated in the discovery of the Merensky Reef.

It has been recorded that William Bettel identified osmium–iridium alloy particles in concentrate from the Witwatersrand gold mines in 1892, and that first Bettel in 1906 (as reported by Bartholomew *et al.*, 1989), and then Hall and Humphrey (1908) recorded the presence of platinum in the chromitite layers of the Bushveld Complex (Wagner, 1929). Wagner (1924) reported the presence of sperrylite in the orebodies at Vlakfontein near the Pilanesberg, where unusual pipe-like bodies, rich in nickel and copper sulphides, cut the layering, but are considered to be a part of the Bushveld Complex. None of these occurrences of the platinum-group elements were considered of any economic significance, but collectively they demonstrated an awareness of, and an ability to identify, the platinum-group minerals by South African geologists. In fact, Wagner (1925a, page 91) stated that in 1923 he was '*Assigned the task of systematically examining the chromite of the Bushveld Complex for platinum. He was forced reluctantly to conclude..... that it would never pay to work the chromite rock for that metal [Pt] alone*'. Obviously, the Director of the Geological Survey, Dr W.A. Rogers, who presumably instigated that survey, was a man of great vision. Wagner (1925a) also stated that A.L. Hall and T.G. Trevor (highly respected geologist and mining engineer, respectively) had been persistent advocates of the view that platinum would be found in paying quantities in the Bushveld Complex, but Wagner also added (1925a) that '*The professional geologist made only one mistake. He followed too closely the experience gained in the Urals, where platinum is always associated with chromite.*' As the UG2 Chromitite layer is now considered to have an even greater ore reserve than the Merensky Reef, perhaps the 'professional geologist' was not mistaken, merely more than half a century ahead of metallurgical capabilities.

The first economic discovery, called the Waterberg platinum, was made by Adolf Erasmus in the Rooiberg felsites near Naboomspruit, between Nylstroom and Potgietersrus (Figure 1), and described by Wagner and Trevor (1923), but reserves ultimately did not prove significant. Nevertheless, in 1924 expectations and interest in platinum were extremely high.

The details of the subsequent events in 1924 are recorded in detail by Merensky (1925; 1926) and Wagner (1925a). Unpublished reports by Dr Hans Merensky (especially one dated 31st December, 1924), archived at the Westfalia Estate — Merensky's 'retirement' farm, near Tzaneen — also provided valuable information). The most important diagram, copied as Figure 2, is taken from that report. That document appears to be the only surviving record dated in the year of discovery, 1924. In view of Dr Percy Wagner's position at the Geological Survey, collaborating with A.L. Hall and W.A. Humphrey, and as evidenced by his previous studies, he was possibly the most appropriate person to document these discoveries, and his publication in 1929 on '*The Platinum Deposits and Mines of South Africa*' is a truly remarkable and prescient documentation, compiled less than 5 years after the initial discovery.

Wagner (1925a) reported that the initial major discovery of platinum in the Bushveld Complex was made by A.F. Lombaard in June 1924, panning in a dry river bed on the farm Maandagshoek (Figure 2). (The farm is located between Driekop and Mooihoek in Figure 1). He noted that Lombaard had experience of alluvial gold digging, and that on finding '*a few specks of heavy white metal, he [Lombaard] at once suspected it might be platinum*'. In a letter in Dr Merensky's archives, it is stated that this concentrate was sent on 7th June by Mr H.C. Dunne, Lombaard's brother-in-law, to Merensky who had it confirmed as platinum by an analytical company in Johannesburg. Merensky made a short visit to the area, and returned to Johannesburg to raise funds for the prospecting programme. After raising funds as the Lydenburg Platinum Syndicate, Merensky joined Lombaard on 12th August in the field, and '*Within three days succeeded in determining plati-*

doi: 10.10520/EJC-112518d32d

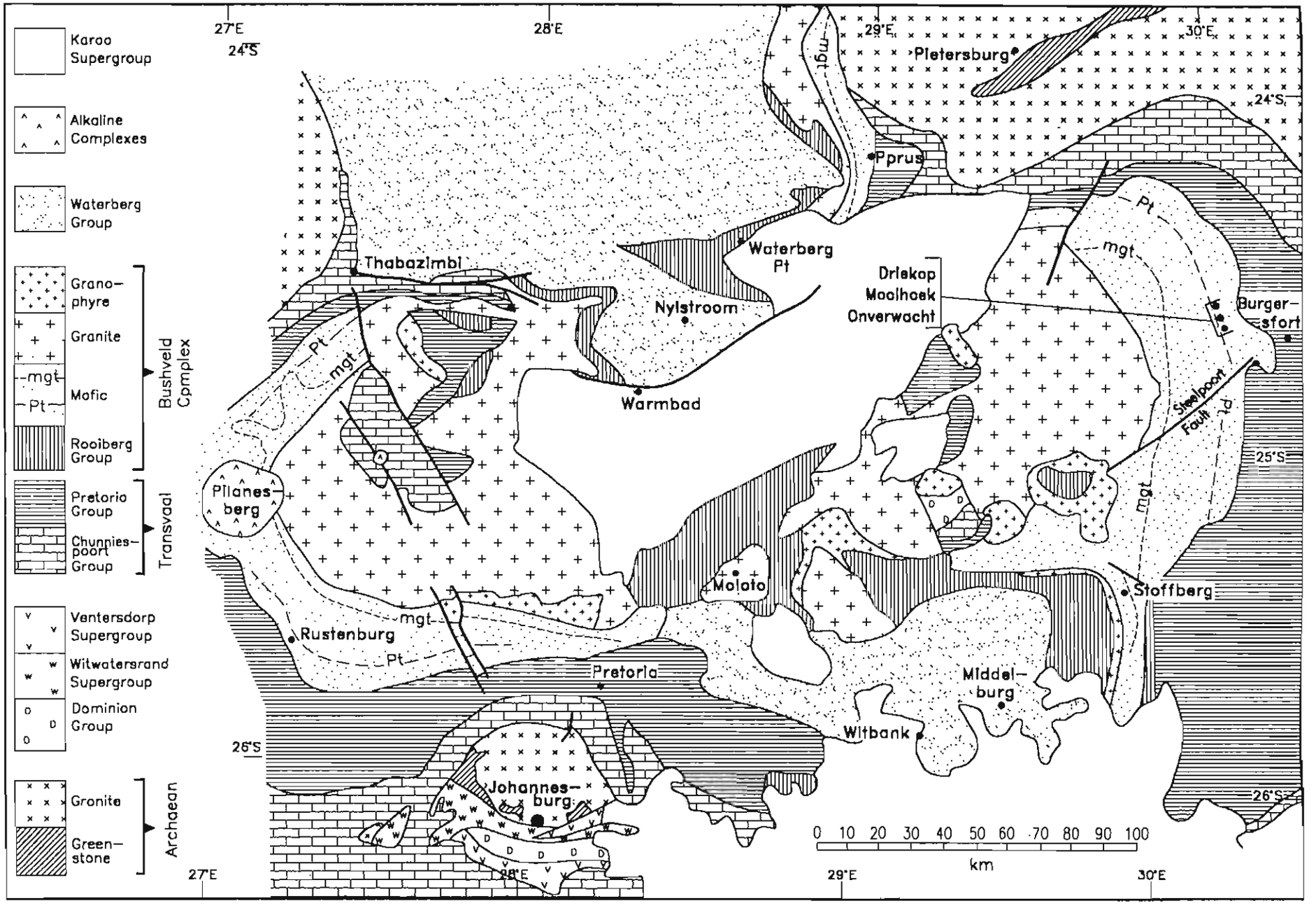

Figure 1 General geological map of the Bushveld Complex. The three best mineralized ultramafic pipes occur on Driekop, Mooihoek, and Onverwacht. The Waterberg platinum site is shown between Nylstroom and Potgietersrus.

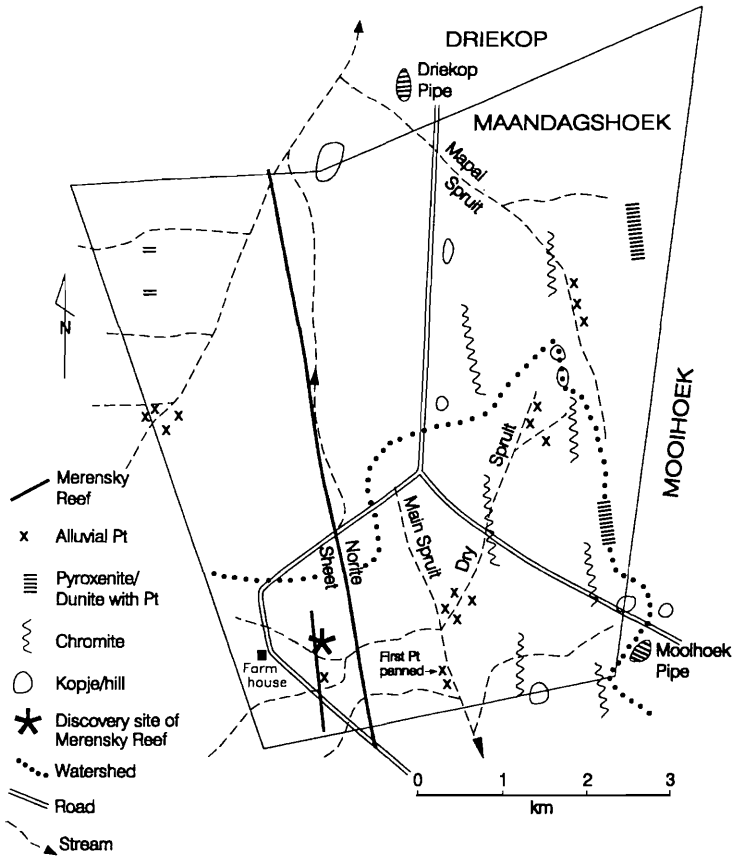

Figure 2 Map of the farm Maandagshoek, taken from the unpublished report of Merensky (1924). The only geological item not on his original map or report is the discovery site of the Merensky Reef, which is taken from Wagner (1929), who stated that it was 700 yards north of the southern boundary of the farm. There is one item of confusion on the original map. In the southern part of the farm, Merensky showed two layers identified on his map as the mineralized norite (Merensky Reef). One appears to have been partially erased. It is not certain whether Merensky in 1924 considered both layers to be mineralized and possibly corresponding to what are now called the 'Merensky' and the overlying 'Bastard' Reefs, or whether he was correcting an error in what he recalled to be the location of the main ore body. This writer believes the Merensky Reef to lie west of the confluence of two small streams, suggesting that the western layer shown by Merensky to be the true location. The Mooihoek and Driekop platiniferous pipes are shown as the shaded oval hills immediately east and north of the Maandagshoek boundaries.

num in a pyroxenite and associated ultrabasic rocks on the farms Mooihoek and Maandagshoek' (Merensky, 1925, page 474), within a sequence of norites which we now regard as part of the Upper Critical Zone. (The exact names used by Merensky of pyroxenite and ultrabasic rocks are important in terms of later events described below.)

What actually happened during those momentous three days can only be surmised, but some details of the trail can be sketched. In his unpublished report of 31st December 1924, Merensky stated that the first panned platinum came from the 'Main Spruit', at the point indicated on Figure 2. As this lay in the middle of the catchment area, the source could have been north, west, or east. In his favour was the fact that the catchment boundaries were extremely close in these directions as shown in Figure 2. A disadvantage was the fact that these streams would all be dry in mid-winter. Wagner (1925a) reported that there was a perennial stream at the north end of the farm, but this ran northwards across the farm Driekop (Figure 2). Sampling and *in situ* panning would therefore have been impossible (unless they had used donkeys to carry water.) It is more likely, and consistent with the account recorded by Lehmann (1955), that the samples were taken back to the farm for panning, which would have impeded progress. (The location of the farmhouse on Figure 2 is taken from Lombaard, 1996). It is also apparent from Merensky's map that the alluvial and eluvial platinum occurrences which they identified were extremely erratic. Three facts are important with regard to the prospecting. Firstly, platinum from the Mooihoek pipe (which was to become the first significant orebody to be discovered) could not have reached the Main Spruit as far north as the site of the first panned platinum. Secondly, there is no recorded platinum in the stream which runs westward from close to the Mooihoek pipe. Finally, the pipe itself lies immediately east of a slight rise which probably acts as the watershed, and so the catchment boundary probably separates the pipe from the drainage system on Maandagshoek. Detritus from the pipe is more likely to have travelled eastward. Hence, the Mooihoek pipe could not have been discovered by panning in the stream system shown in Figure 2.

The fact that Merensky (1925) reported finding platinum in ultrabasic rocks on Mooihoek *and Maandagshoek* suggests that it is more likely that they panned platinum from the next west-flowing side-stream to the north (called Dry Spruit by Merensky on Figure 2) and followed it into a large heavily eroded amphitheatre, where there are many boulders of conspicuous, black ultrabasic rocks and magnetite. It is now known that there is an ultrabasic pipe in this valley (Gain, 1985), but it is considered unmineralized. Perhaps it is possible that the pipe does not contain economic mineralization, but has sufficient platinum for some to have been discovered in the stream. Thus, the ultrabasic bodies on the farm Maandagshoek, shown on Merensky's map (Figure 2), may have been the first platinum-bearing rocks to be identified. A search for outcrops of similar rocks may have been aided by their striking appearance, and the fact that the farm road from Maandagshoek to Burgersfort passed right over another example, which ultimately proved to be the platiniferous Mooihoek pipe. By the third day they had found the Mooihoek occurrence, but only after finding these other examples on Maandagshoek. In his version of the discovery story, Wagner (1925a) indicated that similar rocks, with platinum, were also very well developed on Hendriksplaats, the next farm to the south of Maandagshoek. Neither Merensky (1925) nor Wagner (1925a) give a date for the discovery of the Driekop pipe to the north (Figure 2), but the other reports indicate that it may have been very shortly after 15th August. It was colloquially named Willemkop, after one of the two Schoeman brothers assisting Merensky and Lombaard, who apparently remembered an occurrence of this distinctive rock type on the side of a prominent hill on Driekop.

Two unrelated features may have influenced the prospecting and discovery of the mineralization in these ultramafic rocks. The four occurrences documented above (from north to south — Driekop, Maandagshoek, Mooihoek, Hendriksplaats), all occur on hills. Also they define a roughly straight line which is parallel to the regional north–northwest strike of the layered rocks of the Critical Zone. By early in 1925, both these features were prominent in the geological interpretation of this mineralization, and which may have been formulating in the mind of Merensky in mid-August (see below).

Rather surprisingly, the exploration would appear to have been side-tracked at this stage. Merensky (1925) continued that '*It was proved on the 25th August that the extensive alluvial flats on the Steelpoort River at Burgersfort also carried platinum*'. This statement suggests that Merensky was following the Russian examples, where most platinum was exploited from alluvial workings; the actual source rock usually being of too low a grade to be economic. The low grade was certainly true for the Maandagshoek and Hendriksplaats occurrences. Considerable effort was obviously expended in the ten days from 15th to 25th August in prospecting downstream from Mooihoek/Maandagshoek towards the Moopetsi and into the Steelpoort Rivers. However, these alluvial terraces in the Steelpoort valley proved disappointing, and it appears that attention reverted to the source rocks.

The exact events of the next two crucial weeks are not recorded. Merensky's (1925) narrative continued that '*A third and by far the most important discovery was made in the first half of September....*'. This discovery was the layer which was to become known as the Merensky Reef. Neither Merensky (1925) nor Wagner (1925a) indicated who the actual discoverer was, although it is reported by both Bartholomew *et al.* (1989) and Worst (1991) that it was A.F. Lombaard. Surprisingly, the exact date is not recorded, in contrast to the previous events which were well diarized. Had the collector of the first sample of 'Merensky Reef' appreciated what he had sampled immediately, I suggest that the date would have been more accurately recorded. I surmise a reason as follows. In late August/early September Merensky dispatched a team of prospectors around the neighbouring farms to collect likely samples. Merensky may now have been focusing on solid rock samples rather than panning of alluvium. (I will return to what might be considered 'likely samples' later.) It is now known that the discovery site of the Merensky Reef was in a dry river bed on Maandagshoek. Wagner (1929) stated that it was 700 yards north of the southern boundary of the farm. This locality is indicated on Figure 2, but was not part of Merensky's original map or description in his report of 31st December 1924. Because there would have been no water for panning, samples would not have been crushed and panned when collected, but taken back to the farmhouse or to the Moopetsi/Hoosi River, which may have had some water, or to the Steelpoort River for subsequent panning. If this is correct, the exact date when the first sample of Merensky Reef was taken may not have been accurately known. The question now remains, what instructions did Merensky give to his assistants in the search for 'likely samples'? In view of the lack of water, it would have been impossible to simply walk every dry river bed and pan every 'promising looking wash', as Wagner (1925a, page 90) described the gravel where Lombaard made his initial discovery in June.

As of the beginning of September 1924, the only platiniferous rocks which had been identified were from a few hills between Driekop and Hendriksplaats. The occurrence on Onverwacht, which was to become the richest source of platinum (Figure 1), was only discovered by F.W. Blaine on 10th October (Wagner, 1925a; page 91). However, what is very clear is that, even by February 1925, no-one had realized that the Mooihoek (and Onverwacht and Driekop) occurrences were actually pipes, discordant bodies cutting across the layering in the Critical Zone. Merensky (article dated 10th January, 1925) referred to the mineralization as occurring along two lines, the 'Kopje Line' and the 'Main Ore Body'. It is explicit in that article, and the report by Wagner (1925a), that both authors considered the former occurrences to be part of a concordant sheet or layer, albeit slightly irregular and lensoid. A subsequent article by Wagner and Mellor (1925) included a footnote, added at some date after 2nd February 1925, which questioned whether these bodies defined a concordant layer, and noted that in their diagram (shown here as Figure 3) '*the presumed shape* [of the dunite/serpentinite] *is not correct*'. The first reference to a pipe-like geometry is given by Wagner (1925b, article dated 16th November), in which he indicated that information from mining and lack of lateral stratigraphic correlation of all of the many dunite occurrences indicated that they are discordant bodies, not concordant, as originally supposed. What is crucial from these dates is that in August 1924, Merensky thought that he was dealing with platinum mineralization in a concordant layer in the Bushveld Complex.

It is perhaps also important to note that '*The* dunite *of the platinum occurrences was first recognized as such by Dr E.T.*

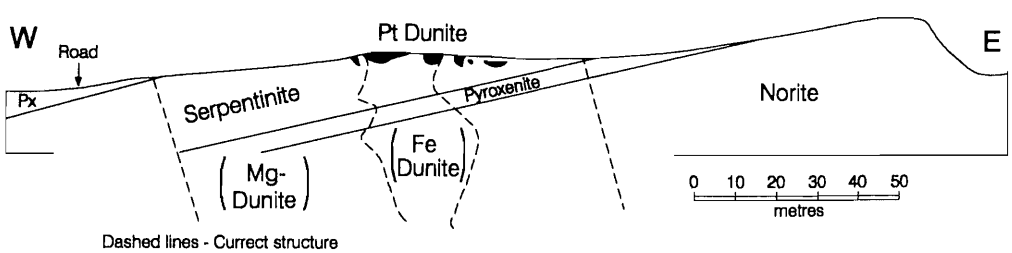

Figure 3 Copy of the cross-section produced by Wagner and Mellor (1925) of the Mooihoek pipe, as understood in early 1925. By the time their paper was published, they added in a footnote that this geometry was incorrect, and that the platinum-bearing rock (dunite or serpentinite) did not define a concordant layer. The solid lines refer to the cross-section drawn by Wagner and Mellor (1925); the dashed lines indicate the subsequent interpretation of the geology based on mining (Wagner, 1929).

Mellor..... early in December 1924' (Wagner, 1925a; page 96), and that it was only Wagner's detailed study after that date that identified the iron-rich nature of the olivine. In August 1924, Merensky still referred to these rocks as pyroxenite and associated ultrabasic rocks (Merensky, 1925). He also emphasized that the platinum occurred in the strongly differentiated sequences (referring to the fact that the outcrops on Mooihoek and Maandagshoek occurred within a plagioclase-rich sequence). The dark colour, the coarse grain size, and possibly the presence of shiny clinopyroxene grains in the platinum-bearing rocks would also have been noted. Hence, Merensky would have based his exploration strategy on the assumption that the already-discovered platinum on the hills occurred in a concordant layer, which was ultrabasic to pyroxenitic, within a strongly differentiated noritic sequence, was coarse grained, and (maybe) had clinopyroxene. Were these the diagnostic features of the host rocks (or 'likely samples' referred to above) given to the prospecting team in late August as they widened their search for more platinum mineralization in solid rock?

It is reported by Bartholomew *et al.* (1989) that Merensky left the Lydenburg district for Johannesburg shortly after 25th August and did not return until after the discovery of the first outcrop of the Merensky Reef. If these were the instructions of what to look for which he gave to the prospecting team before leaving, they were inspired, as they provide a good field definition of the Merensky Reef even now. His instructions brought results within two weeks — the location of the greatest platinum deposit in the world! However, the fact is that this model (correct, as it turned out to be) was based on an incorrect understanding of the geology of the first platinum discoveries on Mooihoek. If exploitation of the Mooihoek body had developed quickly enough to indicate that it was a discordant pipe, or if the discovery of the Onverwacht body at a stratigraphically lower level had been made earlier, it might have been realized that these bodies were not part of a concordant layer. Given the correct geological structure (discordant pipes) for these bodies on Mooihoek and Maandagshoek, would Merensky have proposed the same exploration strategy? *Was the discovery of the greatest ore body in the world based on a model and an exploration strategy conceived by Dr Hans Merensky, which was the result of a geological misunderstanding?*

That suggestion is but one guess into the mind of Dr. Merensky, because there is yet one more intriguing aspect of this story. It relates to the source of the platinum found by Lombaard in June 1924. Merensky (1925) stated that both 'gold and platinum' were detected in the concentrate. Gold was mentioned before platinum. It begs the questions: Why? Where did the *gold* and platinum originate? The locality given by Merensky (Figure 2) for the panned platinum indicates that the source could be north, west, or east. They could therefore have been derived from pipes, Merensky Reef, or even UG2 Chromitite, none of which is more than 2 km away.

Could the gold and platinum have been derived from the pipes? Surprisingly, such a source is not probable, because there are no significantly platiniferous pipes in the catchment area (Figure 2). On Maandagshoek is a watershed between two streams following a major north–south valley, but in opposite directions (Figure 2). It is probable, from the shape of this valley, that at some time in the past, the river on Driekop flowed to the south towards the Steelpoort River, and that a relatively recent gentle warping created this new watershed. Hence, detrital platinum from the Driekop pipe may have been washed southward prior to this warping to produce the alluvial deposit panned by Lombaard. However, there is a problem with this suggestion. In none of the publications on any of the platiniferous pipes has any gold ever been reported. A total of six analyses of very small samples from these pipes has been presented by McDonald *et al.* (1995), from which can be calculated an average ratio of Pt/Au of about 40. Hence, it is debatable whether the pipes could have been the source of the gold panned by Lombaard.

The UG2 Chromitite layer, which crops out parallel to the Main Spruit in Figure 2, is also very low in its gold content (Gain, 1985; Peyerl, 1982). The platinum mineralization in the UG2 is also extremely fine grained, so unless there had been major supergene growth of grains it is unlikely that the platinum from the UG2 would have been coarse enough to be retained during panning, and could not have been the source of gold.

The Merensky Reef has a ratio of Pt/Au of 12 (Naldrett *et al.*, 1987), but in this area it may be slightly depleted relative to this figure, based on the modal observations of Kinloch (1982) and Kinloch and Peyerl (1990). However, what is important is that there is more gold in the Merensky Reef than the platiniferous pipes. Is it therefore possible that the gold (and platinum) first panned by Lombaard contained (some) material derived from the Merensky Reef only 1 km to the west? When Merensky (1925) described the discovery of the reef, he reported that 'Gold, and above all platinum' were found in this rock. Why did gold figure as the first metal mentioned when describing the original panned platinum concentrate received from Lombaard (see above), and why did gold again take pride of place over platinum in his description of the greatest platinum discovery in the world? Did Merensky realize that the absence of gold in the Driekop and Mooihoek ores indicated an alternative source for the platinum? Instead of consolidating his initial discoveries by exploring and evaluating the pipes, did he instigate the search for the platinum deposit associated with gold? Had he noted an absence of gold in mineralized rocks from the east side of the Main Spruit, and so was not distracted by the first discoveries, but set his sights to the west side? Did Merensky refuse to accept the obvious — that the 'Kopje' orebodies they had discovered were the (only) source of platinum? (After all, what is the possibility that the one farm, where the first platinum discovery in the whole of the Bushveld Complex was made, could contain two totally different platinum deposits?)

Tradition has it that Lombaard panned the first platinum and found the first outcrop of the famous reef. It is reported that the reef first bore the name Lombaard Reef (this author has not found this name documented in any contemporaneous reference), but that Lombaard insisted it be changed to Merensky Reef. In Lombaard's view, Merensky's contribution to the discovery must have been more than paramount to make him relinquish such an honour. Was that contribution the recollection of the yellow, not the white, metal, which caused Merensky to continue his search and to 'Look Beyond the Wind' — the title of his biography (Lehmann, 1955)?

We can never know what actually transpired in mid-August to early September 1924, and certainly not what Merensky was thinking as the prospecting developed, but the records re-examined here suggest that both were probably much more circuitous than previous realized.

Acknowledgments

I thank the Merensky Trust for access to and permission to publish information and diagrams from their archives. Numerous people, including Carl Anhaeusser, Gordon Chunnett, Chris Hatton, Ron Hieber, Euan Kinloch, Johan Kruger, Chris Lee, Gerry Levin, Wolfgang Maier, Terence McCarthy, John McIver, Laurence Robb, Morris Viljoen, and Gerhard von Gruenewaldt offered a variety of stimulating comments and valuable observations as this reassessment was being compiled, but ultimate responsibility for these suggestions lies with the author.

References

Bartholomew, R., Hieber, R. and Lee, C. (1989). The Merensky Reef and JCI. *Geobulletin*, Geol. Soc. S. Afr., Johannesburg, S. Afr., **32**(2), 29–31.

Edwards, A.M. and Silk, M.H. (1987). *Platinum in South Africa*. Spec. Publ., Coun. Miner. Technology, Randburg, S. Afr., **12**, 55 pp.

Gain, S.B. (1985). The geologic setting of the platiniferous UG2 chromitite layer on the farm Maandagshoek, eastern Bushveld Complex. *Econ. Geol.*, 77, 1393–1404.

Hall, A.L. and Humphrey, A.W. (1908). On the occurrence of chromite deposits along the southern and eastern margins of the Bushveld Plutonic Complex. *Trans. Geol. Soc. S. Afr.*, **11**, 69–77.

Kinloch, E.D. (1982). Regional trends in the platinum-group mineralogy of the Critical Zone of the Bushveld Complex, South Africa. *Econ. Geol.*, 77, 1328–1347.

Kinloch, E.D. and Peyerl, W. (1990). Platinum-group minerals in various rock types of the Merensky Reef: genetic implications. *Econ. Geol.*, **85**, 537–555.

Lehmann, O. (1955). *Look Beyond the Wind — The Life of Dr Hans Merensky*. Howard Timmins, Cape Town, S. Afr., 182 pp.

Lombaard, B.V. (1945). Die ontdekkers van platina in die Transvaal. *Historical Stud., Univ. Pretoria*, S. Afr., **6**(1), 32–40.

Lombaard, B.V. (1996). Die ontdekkers van platina in die Transvaal. *Geobulletin*, Geol. Soc. S. Afr., Johannesburg, S. Afr., **39**(3), 37–38; **39**(4), 24–25.

McDonald, I., Vaughan, D.J. and Tredoux, M. (1995). Platinum mineralization in quartz veins near Naboomspruit, central Transvaal. *S. Afr J. Geol.*, **98**, 168–175.

Merensky, H. (1924). *The various platinum occurrences on the farm Maandagshoek No. 148.* Unpubl. Mem. Lydenburg Platinum Syndicate, archives of Merensky Trust, Duiwelskloof, 4 pp.

Merensky, H. (1925). The platinum areas of Lydenburg. *S. Afr. Min. Engng. J.*, (Jan 10th), Johannesburg, S. Afr., 474–475.

Merensky, H. (1926). Die neuentdeckten Platinfelder im mittleren Transvaal, und ihre wirtshaftlicher Bedeutung. *Berl. Zeit. D. Geol. Ges.*, **78**, 298–314.

Naldrett, A.J., Cameron, G., Von Gruenewaldt, G. and Sharpe, M.R. (1987). The formation of stratiform PGE deposits in layered intrusions. *In*: Parsons, I. (Ed.), *Origins of Igneous Layering*. D. Reidel, Dordrecht, Holland, 313–397.

Peyerl, W. (1982). The influence of the Driekop dunite pipe on the platinum-group mineralogy of the UG2 chromitite in its vicinity. *Econ. Geol.*, 77, 1432–1438.

Wagner, P.A. (1924). On the magmatic nickel deposits of the Bushveld Complex in the Rustenburg district, Transvaal, South Africa. *Mem. Geol. Surv.*, **21**, 181 pp.

Wagner, P.A. (1925a). Platinum deposits in the western part of the Lydenburg District. *S. Afr. J. Ind.*, **8**, 90–113.

Wagner, P.A. (1925b). Notes on the platinum deposits of the Bushveld Complex. *Trans. Geol. Soc. S.Afr.*, **28**, 83–133.

Wagner, P.A. (1929). *The Platinum Deposits and Mines of South Africa.* Oliver and Boyd, Edinburgh, Scotland, 588 pp.

Wagner, P.A. and Mellor, E.T. (1925). On platinum-bearing hortonolite–dunite of the Lydenburg Distract. *Trans. Geol. Soc. S. Afr.*, **28**, 1–18.

Wagner, P.A. and Trevor, T.G. (1923). Platinum in the Waterberg District — a description of the recently discovered Transvaal deposits. *S. Afr. J. Ind.*, **6**, 577–597.

Wedepohl, A. (1995). Hans Merensky (1871–1952). *Geobulletin*, Geol. Soc. S. Afr., Johannesburg, S. Afr., **38**(1), 6–7.

Worst, B. (1991). The discovery of platinum in South Africa. *Geobulletin*, Geol. Soc. S. Afr., Johannesburg, S. Afr., **34**(3), 20–21.

Editorial handling: J.M. Barton Jr.