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FOREWORD

PLATINUM and its family of related metals must without doubt be regarded as one of South Africa's most strategic commodities. This vast resource within the Bushveld Complex, together with the dominant elements — such as chromium, vanadium, and others — has resulted in this geological phenomenon being probably the richest depository of economic mineralization in the world.

It will therefore surprise the reader to know that no comprehensive treatise has been written on this subject since Wagner published his famous book 'The Platinum Deposits and Mines of South Africa' in 1929, barely five years after the discovery of platiniferous ore in the Bushveld Complex.

Frank Vermaak has wisely expanded his horizons to embrace other occurrences throughout the world. By so doing, he provides the reader with an indication of the current known potential, together with his views on the future and current applications of platinum-group elements.

Platinum metals are particularly exciting in that not only are they extremely rare — only one-twentieth as much platinum is produced as gold, itself a very rare metal — but, as noble metals, they are chemically much more versatile than gold, and have found numerous applications in the industrial field. They are also the only competitor for gold when sold as bullion or used for jewellery purposes.

It has been my good fortune that, throughout my career as a metallurgist, I have been intimately associated with this family of commodities. After having worked on the South African platinum mines for a number of years, and subsequently been closely associated with research and development at Mintek, I have gained a great appreciation of new production and refining technologies, as well as the applications of these metals in industry.

Likewise, Frank Vermaak, as a prominent South African geologist, has gained a deep insight into the complexities of this ever-challenging suite of metals. The extraction and marketing of these commodities have, through the years, proven to be difficult, and many companies have floundered as a consequence. After the dramatic boom period following the discovery of platinum in the 1920s, only Rustenburg Platinum Mines survived into the 1930s. They were joined by Impala and Western Platinum in the late 1960s. In similar fashion, the euphoria of the late 1980s was again followed by a severe shake-out. Platinum differs from other mineral deposits in that the extraction, refining and marketing are complex — certainly far more so than meets the eye.

In an environmentally conscious world, the platinum-group elements will continue to maintain a prominent position, and their future is secure. However, I should warn that the vagaries of the market and the limited number of market outlets will continue to play havoc with the ambitions of those who dare to venture into this arena with their eyes not fully open.

Frank Vermaak must be commended on piecing together so much data in his thorough style, particularly in view of the apparent secrecy surrounding the activities of those engaged in the exploitation of the platinum-group elements.

A.M. Edwards
President: Mintek

26 January 1995