

allows the presence of fine hair cracks, particularly in deposits thicker than 0.0001 inch.

A bend test is laid down for the assessment of adhesion, but the specification draws attention to the fact that the rhodium deposit may well crack on bending and that a distinction must be made between such cracking and actual exfoliation.

The hardness of electrodeposited rhodium is extremely high—of the order of 800 to 900 Vickers—but it is naturally extremely difficult to determine hardness values on very thin

electrodeposits. The specification accepts this difficulty for deposits less than 0.0004 inch in thickness, but for thicker deposits states that the hardness, as determined by a suitable micro-hardness tester, may be checked at the discretion of the inspector.

Owing to the chemical stability of rhodium the only means of measuring the thickness of a deposit is by a destructive method. Mounting and sectioning, followed by measurement with an eyepiece graticule or direct measurement of a photomicrograph, is the specified method.

## A History of Platinum

**P**LATINUM, by comparison with metals such as copper, silver and gold, has a relatively short history, but there is none the less a fascinating story to unfold in tracing the beginnings of an understanding of its character and in outlining its commercial exploitation.

It was not until the Spanish conquest of South America that rumours were heard of a new metal that could not readily be melted, the first published reference occurring in 1557 in the writings of the Italian scholar and poet Julius Caesar Scaliger. Only in the middle of the eighteenth century were specimens of this metal received in Europe and subjected to proper scientific examination, first by the Englishman Brownrigg and then in quick succession by chemists in France, Germany, Spain and Sweden.

Much effort was then directed towards the refining, melting and working of platinum, culminating in the well-known work of Wollaston, early in the nineteenth century, in producing malleable platinum by the technique nowadays known as powder metallurgy.

From then on the pace quickened and the commercial development of platinum, its sister metals and its alloys really began; the discovery of catalysis by Döbereiner, the introduction of the melting of glass in platinum vessels by Faraday, the design and manufacture of enormous platinum boilers for the concentration of sulphuric acid by Johnson and Matthey are but a few of the outstanding features along the way.

In **A History of Platinum**, published by Johnson, Matthey & Co., Limited (35s or \$5.50), Donald McDonald has, by diligent research into both published literature and private archives, succeeded in putting together a clear and readable account of these developments that has never before been given as a continuous story.



Two illustrations from Donald McDonald's "A History of Platinum". Above, Julius Caesar Scaliger, the Italian scholar whose writings included the first reference to platinum, published in 1557. Below, the press used by Wollaston to compress platinum powder into cakes before forging

