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978-1-107-69324-1 - Rhenium: Dvi-Manganese, the Element of Atomic Number 75

J. G. F. Druce

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RHENIUM

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PREFACE

The discovery of the element of atomic number 75, Mendeléeŕ's dvi-manganese, may be said to have been made in 1925 when three announcements claiming the isolation of this congener of manganese were made almost simultaneously. Credit for the discovery is usually given to the German investigators, W. Noddack, I. Tacke and O. Berg, who called the new element rhenium, after Germany's 'Westmark', the Rhineland, just as they called eka-manganese (which they also claimed to have discovered) by the name of masurium, after Germany's 'Ostmark', Masurenland.

Some share in the honours of discovery is, however, surely due to the British co-discoverers and also to the Czechs, J. Heyrovský and V. Dolejšek. From 1922 onwards, F. H. Loring (together with the author) had been engaged upon a search for missing elements, including the possibility of a third missing congener of manganese, heavier than uranium and possessing an atomic number 93. Loring died in 1944 from injuries sustained in an air-raid.

Heyrovský is best known through his introduction of a new instrument for chemical researches of many kinds, namely, the polarograph. One of the first discoveries to be made with the polarograph was the presence of traces of dvi-manganese in crude manganese preparations. Dolejšek, who carried out the X-ray spectrographic examination of Heyrovský's preparations (and also of some of the author's), died at Terezín concentration camp early in 1945.

Nearly four hundred scientific communications dealing with rhenium have now appeared, and within a few years of its discovery four short works were published on rhenium, namely,

Rhenium (and Masurium), by P. W. Tyler, U.S. Bureau of Mines, 1931, pp. 17.

Das Rhenium, by Dr W. Schrotter, Stuttgart, 1932, pp. 59.

Renij, by Dr E. S. Kronman, Moscow, 1932, pp. 86.

Das Rhenium, by I. and W. Noddack, Leipzig, 1933, pp. 86.

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Since 1933 much new knowledge has accumulated and the chemistry of rhenium has been fully investigated. The element, though still scarce, has become an article of commerce, and some of its salts are also obtainable commercially.

The present work is therefore an attempt to give a comprehensive survey of the chemistry of dvi-manganese, or rhenium, based upon the researches recorded in many journals published in many lands.

It emphasizes once again that progress in science is due to international effort.

J. G. F. DRUCE

LONDON, S.W. 16

February 1947