

the melting is observed through a microscope, and the corresponding "black body" temperature of the platinum ribbon is observed with an optical or radiation pyrometer. From the known departure of platinum radiation from black body radiation, the true temperatures are obtained.

The platinum ribbon is mounted within an enclosure with mica window thus permitting determinations to be carried out in any desired atmospheres (air, H, N). The method is particularly applicable to the oxidizable elements, and also to the rare elements as only a few milligrams are required. Experiments with different size particles of metals of known melting points give the small correction for the temperature difference between strip and specimen undergoing melt.

The method has been applied to a study of the metals of the iron group and to palladium, and is applicable within the range 600° to 1650° C., and higher with iridium or graphite strips.

#### CHELTENHAM MAGNETIC OBSERVATORY REGISTRATION OF EFFECTS FROM ELECTRIC CARS OVER TWELVE MILES DISTANT.<sup>1</sup>

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A CLOSE inspection of the magnetograms obtained during the past year at the United States Coast and Geodetic Survey Magnetic Observatory situated at Cheltenham, Maryland, employing the sensitive Eschenhagen-Edler variometers has disclosed the interesting fact that magnetic effects are being photographically registered daily which are to be ascribed to an electric car line 12 to 14 miles distant. This line proceeding from Washington to Mt. Vernon, Virginia, is a "single trolley" line with defective bonding of the rails.

The magnetic element principally affected, viz., the vertical intensity, exhibits during the period of the day (5 A. M. to about one and one half hours after midnight), when the cars are running, a number of short, more or less periodic, waves of fluctuations superimposed upon the normal curve. The average deflection to be ascribed to the electric car effect is about  $\frac{1}{75000}$  to  $\frac{1}{150000}$  part of the vertical intensity.

The effects are being further investigated; a fuller publication will be found in the March issue of the journal "Terrestrial Magnetism and Atmospheric Electricity."

Up to this time it had been generally supposed that no electric car effects could be detected beyond five miles.

<sup>1</sup> Abstract of a paper presented at the meeting of the Physical Society held April 20-21, 1906.