About six-sevenths of the carbon had disappeared. Whether this loss alone can account for the peculiar structural change in the steel would seem doubtful.

I am indebted to Mr. B. R. Haile for assistance in the above analyses.

[CONTRIBUTIONS FROM THE CHEMICAL LABORATORY OF THE UNIVERSITY OF CINCINNATI.]

L. A TUNGSTEN-IRON ALLOY.

BY T. H. NORTON.

Received January 18, 1897.

THE nature and composition of tungsten-iron alloys has formed the subject of several papers published during the past few years. As an additional contribution to the literature of the subject, the following brief note of the examination of a commercial alloy may be of interest.

The alloy in question was introduced commercially on account of its extreme hardness. The specimen examined was of a lustrous appearance, except in places where it was coated with a yellowish-green incrustation. A large number of blow-holes were observed. The hardness was about 7, quartz being scratched with some difficulty. The material was quite brittle, being easily shattered with the hammer. The small pieces were powdered with some difficulty in an agate mortar. The specific gravity of the powder was 14.55.

The method of analysis employed was that recommended by Ziegler,[1] which consists essentially in fusion with sodium nitrate in a silver crucible, and subsequent precipitation of the tungsten as mercurous tungstate.

The results obtained were as follows:

	I.	II.
Tungsten	93.22	93.43
Iron	6.08	6.18
	99.30	99.61

Mr. D. M. Roth assisted in the analysis of this alloy.

1 *Ding. poly. J.*, 274, 513.