Miller and Mathews obtained in slightly acid solution:

With excess of ferrocyanide ..... 105 to 108 : 100
" " " manganese ..... 110 to 111 : 100

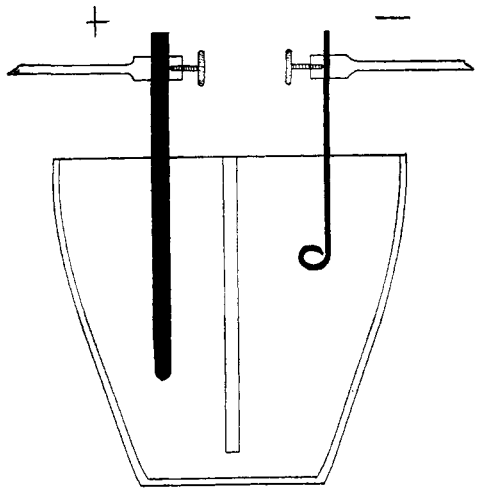
In the new series of experiments we have obtained:

	Ferrocyanide in excess.			Manganese in excess.		
	Mn.	:	Fe.	Mn.		Fe.
In neutral solution.....	103	:	100	107 to 108	:	100
In acid solution 10 cc. hydrochloric acid (1.20) per liter.....	106	:	100	107 to 110	:	100
In acid solution 10 cc. acetic acid (50 per cent.) per liter	101 to 102	:	100	107	:	100
In presence of ammonia and ammonium chloride	decomposed			no test for potassium		

From the above comparative statements of results the reader is left to draw his own conclusions.

NOTES.

Note on the Preparation of Metallic Lithium.—The following method is a modification of that of Bunsen and Matthiessen for



the electrolysis of fused lithium chloride, and will be found to give good results.

The apparatus consists of an ordinary porcelain crucible, about two inches in diameter and one and three-quarters inch high, fitted with a partition of asbestos-board reaching almost to the bottom.

The anode is a pencil of gas carbon which is immersed in the fused chloride on one side of the asbestos diaphragm, the cathode being of iron wire bent into the form shown and placed in the electrolyte on the other side.

A current of from 5 to 7 amperes is used from the 110-volt circuit, and in a few minutes a globule of metallic lithium will appear in the iron wire loop, which may be transferred to a vessel of kerosene by withdrawing the wire and tapping off the metal while it is still melted.

The lithium chloride must be dry and is first fused in the crucible over the gas flame, and during the electrolysis is kept in the molten condition by means of a burner placed underneath and also by the resistance of the current.

The modification was worked out mainly by one of my students, P. F. Cowing, who obtained considerable quantities of the metal in this way. SAMUEL A. TUCKER.

HAVEMEYER LABORATORIES, COLUMBIA UNIVERSITY, May 31, 1902.

A Novel Constant High Temperature Bath.[1]—The sulphate method, exemplified by the work of G. Krüss, for the determination of the atomic weight of certain elements is open to objections, as first pointed out by Brauner and Povlicek and noted by Dennis and myself, but it answers very satisfactorily as a criterion in the fractionation of the rare earths. Our source of heat is gasoline and the gas pressure varies considerably with large classes in the laboratories. As the heating continues for days at a time, it became quite necessary to devise a bath which might be regulated and expected to remain at some fixed temperature between 350° and 450° C. The accompanying diagram shows a section of the bath designed and is really self-explanatory. It was made by Eimer and Amend and paid for in part by a grant from the American Association for the Advancement of Science to which I owe sincere thanks.

The apparatus consists essentially of a porcelain-lined water-

[1] Read at the Pittsburg meeting of the American Chemical Society.