

**RESEARCHES UPON THE ATOMIC
WEIGHTS OF CADMIUM,
MANGANESE, BROMINE, LEAD,
ARSENIC, IODINE, SILVER,
CHROMIUM, AND PHOSPHORUS**

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Researches upon the atomic weights of cadmium, manganese, bromine, lead, arsenic, iodine, silver, chromium, and phosphorus by Gregory Paul Baxter

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GREGORY PAUL BAXTER

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UPON
THE ATOMIC WEIGHTS
OF
CADMIUM, MANGANESE, BROMINE,
LEAD, ARSENIC, IODINE, SILVER
CHROMIUM, AND PHOSPHORUS

BY
GREGORY PAUL BAXTER

IN COLLABORATION WITH
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G. S. TILLEY, EDWARD MUELLER, R. H. JESSE, JR.,
AND GRINNELL JONES



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PREFACE.

This collection of papers upon the atomic weights of certain common elements embodies the results of researches of which the experimental work has been carried on in the Chemical Laboratory of Harvard College during the past six years. All of the papers have already been published separately both in American and in German periodicals, and references to the places of publication are given at the beginning of each article.

In reprinting the papers in the present form the only changes of importance which have been made are due to more exact knowledge of the fundamental atomic weights upon which the calculations depend. Many recent investigations, especially that upon the analysis of lithium chloride and perchlorate by Richards and Willard,¹ have shown that the atomic weight of silver, referred to oxygen 16.000, is certainly as low as 107.880, and possibly as low as 107.870. Since the International Committee upon Atomic Weights at the date of writing have chosen the higher of these values, the calculations have been based upon the value 107.880 for silver, the atomic weights of chlorine and bromine being assumed to be 35.457² and 79.916³ respectively. The effect of a change from 107.880 to 107.870 in the atomic weight of silver is, however, plainly indicated in each instance.

In the case of cadmium the subject-matter of two papers has been rearranged in a manner differing considerably from that of the original publication. In the case of iodine the subject-matter of two papers has been combined in one. In all other cases the presentation is essentially that of the original publication.

Generous grants from the Carnegie Institution of Washington have been of the greatest assistance in the progress of this work, while grants from the Cyrus M. Warren Fund for Research in Harvard University have materially aided all the investigations.

G. P. BAXTER.

¹ *Publications of the Carnegie Institution*, No. 125 (1910); *Jour. Amer. Chem. Soc.*, 32, 4.

² *Publications of the Carnegie Institution*, No. 28 (1905); *Jour. Amer. Chem. Soc.*, 27, 459; *Zeit. anorg. Chem.*, 47, 56.

³ *Proc. Amer. Acad.*, 42, 201 (1906); *Jour. Amer. Chem. Soc.*, 28, 1322; *Zeit. anorg. Chem. Soc.*, 389. (See page 49.)

CONTENTS.

	PAGE
PREFACE	iii
I. A REVISION OF THE ATOMIC WEIGHT OF CADMIUM; THE ANALYSIS OF CADMIUM CHLORIDE. BY G. P. BAXTER AND M. A. HINES.	
Introduction	3
Purification of Materials	4
Preparation of Cadmium Chloride for the Preliminary Analyses	7
Method of Analysis	10
Preliminary Series of Results	13
Action of Hydrochloric-Acid Gas upon Phosphorus Pentoxide	14
Preparation and Drying of Cadmium Chloride for the Final Analyses	15
Final Series of Results	16
II. A REVISION OF THE ATOMIC WEIGHT OF CADMIUM; THE ANALYSIS OF CADMIUM BROMIDE. BY G. P. BAXTER, M. A. HINES, AND H. L. FREVERT.	
Purification of Materials	21
Drying of Cadmium Bromide for Analysis	22
Method of Analysis	24
Results and Discussion	26
III. A REVISION OF THE ATOMIC WEIGHT OF MANGANESE; THE ANALYSES OF MANGANOUS BROMIDE AND CHLORIDE. BY G. P. BAXTER AND M. A. HINES.	
Introduction	33
Analysis of Manganous Bromide	34
Purification of Materials	34
Drying of Manganous Bromide	37
Method of Analysis	38
Density of Manganous Bromide	40
Results	42
Analysis of Manganous Chloride	44
Purification of Materials	44
Drying of Manganous Chloride	44
Method of Analysis	45
Density of Manganous Chloride	46
Results and Discussion	46
IV. A REVISION OF THE ATOMIC WEIGHT OF BROMINE; THE SYNTHESIS OF SILVER BROMIDE AND THE RATIO OF SILVER BROMIDE TO SILVER CHLORIDE. BY G. P. BAXTER.	
Introduction	51
Purification of Materials	54
Synthesis of Silver Bromide	57
Results	58
Conversion of Silver Bromide into Silver Chloride	59
Results and Discussion	60
V. A REVISION OF THE ATOMIC WEIGHT OF LEAD; THE ANALYSIS OF LEAD CHLORIDE. BY G. P. BAXTER AND J. H. WILSON.	
Introduction	65
Purification of Materials	67
Drying of Lead Chloride and Method of Analysis	68
Results and Discussion	69

VI. A REVISION OF THE ATOMIC WEIGHT OF ARSENIC; THE ANALYSIS OF SILVER ARSENATE. BY G. P. BAXTER AND F. B. COFFIN.

Introduction	73
Preparation of Trisilver Arsenate	74
Purification of Other Materials	76
Methods of Analysis	77
Insoluble Residue	81
Determination of Moisture in Dried Silver Arsenate	82
Specific Gravity of Silver Arsenate	84
Results and Discussion	85

VII. A REVISION OF THE ATOMIC WEIGHT OF IODINE; THE SYNTHESIS OF SILVER IODIDE AND THE RATIO OF SILVER IODIDE TO SILVER BROMIDE AND SILVER CHLORIDE. BY G. P. BAXTER.

Introduction	91
Ratio of Silver to Silver Iodide	92
Purification of Materials	92
Method of Synthesis	94
Specific Gravity of Silver Iodide	96
Results	97
Ratio of Silver to Iodine	99
Results	101
Ratio of Silver Iodide to Silver Chloride	102
Results	104
Ratio of Silver Iodide to Silver Bromide	105
Results	106
Ratio of Iodine to Silver and Silver Iodide	107
Discussion of Results	110
Ratio of Silver Bromide to Silver Chloride	111
Historical Discussion	112
Summary	114

VIII. A REVISION OF THE ATOMIC WEIGHTS OF IODINE AND SILVER; THE ANALYSIS OF IODINE PENTOXIDE. BY G. P. BAXTER AND G. S. TILLEY.

Introduction	117
Purification of Materials for the First Series of Analyses	118
Conversion of Iodic Acid into Iodine Pentoxide	121
Determination of Iodine in Iodine Pentoxide	123
Determination of Moisture in Iodine Pentoxide	126
Specific Gravity of Iodine Pentoxide	129
Absorption of Air by Iodine Pentoxide	130
Purification of Iodic Acid and Silver for the Second Series of Analyses	132
Method of Analyses	133
Discussion of Results	135

IX. A REVISION OF THE ATOMIC WEIGHT OF CHROMIUM; THE ANALYSIS OF SILVER CHROMATE. BY G. P. BAXTER, ED. MUELLER, AND M. A. HINES.

Introduction	139
Purification of Materials	141
Preparation of Silver Chromate	142
Drying of Silver Chromate	144
Determination of Silver in Silver Chromate	145
Determination of Moisture in Dried Silver Chromate	147
Specific Gravity of Silver Chromate	149
Discussion of Results	151

X. A REVISION OF THE ATOMIC WEIGHT OF CHROMIUM; THE ANALYSIS OF SILVER DICHROMATE. BY G. P. BAXTER AND R. H. JESSE, JR.	
Introduction	155
Purification of Materials	156
Preparation of Silver Dichromate	157
Drying of Silver Dichromate	158
Determination of Silver in Silver Dichromate	158
Determination of Moisture and Nitric Acid in Dried Silver Dichromate	159
Specific Gravity of Silver Dichromate	161
Discussion of Results	163
XI. THE REVISION OF THE ATOMIC WEIGHT OF PHOSPHORUS; THE ANALYSIS OF SILVER PHOSPHATE. BY G. P. BAXTER AND GRINNELL JONES.	
Introduction	167
Purification of Materials	169
Preparation of Trisilver Phosphate	171
Drying of Silver Phosphate	176
Determination of Silver in Silver Phosphate	177
Insoluble Residue	178
Determination of Moisture in Dried Silver Phosphate	181
Specific Gravity of Silver Phosphate	182
Adsorption of Air by Silver Phosphate	183
Ratio of Silver Bromide to Silver Phosphate	184
Discussion of Results	184
Summary	185