A SHORT COURSE IN QUALITATIVE CHEMICAL ANALYSIS

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JOHN HOWARD APPLETON

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IN

QUALITATIVE

CHEMICAL ANALYSIS.

BY

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1895.

PROFESSOR APPLETON'S WORKS ON CHEMISTRY.

I. THE BEGINNER'S HANDBOOK OF CHEMISTRY: *Price* $1.00. This is an introduction to the study of Chemistry, suitable for general readers. It treats chiefly the non-metals, these being generally found to furnish the best material for an elementary course, and to best illustrate the fundamental facts and principles of the science.

The book is written in attractive style, and has had a very large sale. It is profusely illustrated with engravings, and has, in addition, fourteen colored plates.

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THE EXPLANATIONS ARE DIRECT AND CLEAR, so that the pupil is enabled to work intelligently *even without the constant guidance of the teacher.* By this means the book is adapted for self-instruction of teachers and others who require this kind of help to enable them to advance beyond their present attainments.

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The work is fully illustrated.

Copies sent by mail, postpaid, by the Publishers, *upon receipt of the advertised price.*

PREFACE.

THE author, having used this little work for several years in his own classes, offers a new and revised edition to his fellow-teachers.

The features of the book that are considered of especial importance are—

First, its brevity and compactness;

Second, the direct and simple course of analysis prescribed;

Third, the large number of formulas and equations presented.

The experienced teacher will at once appreciate the importance of these characteristics.

There are many valuable works on this subject, but most of them are too bulky and too costly; so, also, some of the best of them give processes of analysis that are far too complex and involved, for a beginner. As to formulas and equations,—these are unquestionably of great importance: no matter whether the student hopes to become an expert professional analyst, or merely to gain mental discipline, he must master reactions and formulas if he would really comprehend the subject.

The especial aim of the author is to afford a short but instructive course in this fascinating branch of Chemistry.

BROWN UNIVERSITY, PROVIDENCE, R.I.

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QUALITATIVE ANALYSIS.

CHAPTER I.

FIRST GROUP OF METALS.

Description.

1. THE First Group includes those metals which are precipitated upon addition of Chlorohydric acid (H Cl) to their solution.

The metals are—

Lead,	**Pb**	(Plumbum),	usually II. (sometimes **IV.**).
Silver,	**Ag**	(Argentum),	" I.
Mercury, (when it is in its mercurous form),			
	Hg_2	(Hydrargyrum),	II.

Types of Compounds.

2.

Plumbic oxide,	Pb O,	Pb $=$ O.
Plumbic di-oxide,	Pb O_2,	Pb $\begin{cases} = O. \\ = O. \end{cases}$
Argentic chloride,	Ag Cl,	Ag — Cl.
Mercurous chloride,	Hg_2 Cl_2	Cl — Hg — Hg — Cl.

Mercuric compounds belong to the Second Group. For if we add Chlorohydric acid to a Mercuric compound, Mercuric chloride is formed; but Mercuric chloride is *soluble*, hence it does not appear as a precipitate in the First Group, but passes on to the next Group, where it *is* precipitated.