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BY

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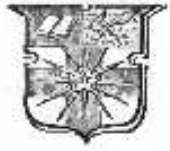

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PREFACE.

This little book provides a course of experimental work which is designed to meet the requirements of the Senior Cambridge Local Examination in Practical Chemistry.

It is divided into three parts. In Part I., Chapter I., a number of carefully selected preparations are described, with full working details and diagrams (where necessary); in Chapter II. the action of heat on some typical substances is investigated. Part II. deals with Quantitative Analysis, Chapter I. consisting of a selection of simple experiments mainly gravimetric, whilst Chapter II. contains an elementary treatment of Volumetric Analysis. Part III. is concerned with the Qualitative Analysis of Simple Salts. The syllabus of the Examination, however, states that alternative questions will be set, so that a candidate may avoid the Qualitative Analysis altogether if he wishes.

No apologies are needed for writing a text-book to a particular syllabus provided it is a good syllabus. As this condition is certainly satisfied the author hopes that the book will be found useful by a wider range of students than those for whom he is ostensibly writing.

We have to thank the Controller of His Majesty's Stationery Office, and also Messrs. Macmillan and Co. for their kind permission to include in this book the Tables of Logarithms and Antilogarithms published in "Examinations in Science and Technology."

H. W. BAUSOR.

CAMBRIDGE
September 1918.

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CHAPTER I.

PREPARATIONS.

In the following pages the working details of a number of preparations are described. If the student is to obtain satisfactory results it is all-important that he should carry out these details *exactly*. Careful notes of each preparation should be made at the time of the experiment, accompanied in general by a sketch of the apparatus used. Following a preparation the student is usually directed to carry out some experiments with the substance prepared, in order to identify it or to test its purity. Precise notes of the results of these experiments should also be made.

1. Hydrogen Peroxide, H_2O_2.—Add 10 c.c. of concentrated sulphuric acid, gradually with stirring, to 200 c.c. of water, and allow the mixture to stand till it becomes quite cold; now add little by little, with constant stirring, about 30 grams of barium dioxide. Allow to settle, and decant off the clear liquid, which is a dilute solution of hydrogen peroxide. The change which takes place is represented by the equation

$$BaO_2 + H_2SO_4 = BaSO_4 + H_2O_2.$$

The following experiments should be performed with the solution:—

(1) To some of the liquid add a little potassium iodide solution; iodine will be liberated, and the solution become brown.

$$2KI + H_2O_2 = 2KOH + I_2.$$

(2) Make a dark stain of sulphide of lead on filter paper by first moistening it with a solution of a lead salt,