

**NOTES ON QUALITATIVE  
ANALYSIS: CONCISE  
AND EXPLANATORY**

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Notes on Qualitative Analysis: Concise and Explanatory by H. J. H. Fenton

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NOTES ON  
QUALITATIVE ANALYSIS

CONCISE AND EXPLANATORY

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#### PREFACE TO THE THIRD EDITION.

IN revising the present edition, a few minor corrections and alterations have been made in matters of detail, and some additional foot-notes added. Beyond these I have not considered it necessary or advisable to make any material change in the scope or arrangement of the book.

H. J. H. F.

*January, 1888.*

#### PREFACE TO THE FIRST EDITION.

THE principal object of the present work, while setting forth the usual methods of Qualitative Analysis in their most concise form, is to direct, and if possible to enforce, attention to the rationale of each operation performed, and the nature of each reaction which takes place.

It is hoped that the system adopted will tend to some extent to check the prevailing tendency, common even among more advanced students, to regard Chemical Analysis as a mere routine of mechanical operations, and entirely to overlook its scientific aspect.

It has been my endeavour in drawing up the Analytical Tables, with their Explanations, to render each one comprehensive, avoiding as far as possible the necessity of reference to remote sections or pages.

The scheme of analysis recommended is in substance the same as that given in the standard text-books, but considerable changes have been introduced in many important matters of detail, and in arrangement, such as experience has shewn to be advantageous.

The reactions of some of the more important Organic Substances have been stated in a short form, to meet the requirements of commencing Medical Students.

I am greatly indebted to my friend W. J. SELL, M.A., for his kindness in revising the proof-sheets, and in making some useful suggestions.

H. J. H. F.

*April*, 1883.

## PREFACE TO THE SECOND EDITION.

BUT few alterations or additions have been made in the present edition of these Notes. They have been exhaustively tested in the hands of many hundreds of students of various classes, and have been found satisfactorily to fulfil the objects with which they were written. It has been suggested that the detection and reactions of the "rare" elements should be included; but such would be quite without the scope or intention of the work. It appears to me that in the so-called "common" elements we have ample material—if not too much—wherewith to set forth the principles of Qualitative Analysis on a scientific basis.

Much has been written and said of late calling in question the utility of Qualitative Analysis as a method of scientific training. If the object be solely the identification of unknown substances, and the directions for so doing consist merely of a sequence of bare recipes—like those in a cookery book—it is probable that it has but little value in this respect. But if, while keeping the analytical object ostensibly in view, the processes be employed as means of bringing the student face to face with, and fixing his attention on, various important types and characters of chemical change, Qualitative Analysis becomes a most useful aid in the scientific teaching of Chemistry. The operations are, for the most part, easily performed and successful even in the hands of a beginner. It is of course admitted that these desirable objects may be more directly attained by a series of specially devised experiments, but such are, as a rule, without the reach of the average teacher and student.

*January*, 1886.

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