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ESTIMATION OF ORGANIC COMPOUNDS

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PREFACE

The constitution of an organic compound is established by a complete analysis of its elements and by characterization of its groupings. In simple molecules it may only be necessary to find the percentage of carbon and hydrogen and identify a single grouping, but with more complex structures each of the characteristic groupings should be estimated. The principles of a limited number of analytical methods are described in textbooks of organic chemistry, but the improved laboratory techniques which are now available are hardly ever mentioned and even more rarely used. Many of the newer simple methods remain unnoticed and untried, although often they would give better results.

The estimation of groupings is rarely dealt with adequately in the teaching of organic chemistry as little or no time is set aside in laboratory courses for quantitative analysis, although its fundamental importance in the determination of structure is stressed in the lecture room. A few of the simpler experiments for the determination of the commoner groupings should be included at an early stage in all elementary practical courses, not only to provide a link with the lecture room and the textbook, but also to introduce into laboratory work an accuracy which is frequently absent from preparative organic chemistry. A wider range of methods should be established in advanced courses, to provide the future research worker with the necessary fundamental knowledge of organic analysis.

I hope that this book will help to stimulate interest in this branch of chemistry, by presenting methods which are used for the estimation of organic compounds. Selected general methods of analysis and the estimation of a number of specific simple substances are described in detail. The specialized methods—often involving individual techniques—used for amino acids, the sugars and the sulphonamides are not included.

I wish to express my gratitude to my wife for her constant help and advice in the preparation of the manuscript, to Mr A. R. Gilson for his assistance in the section on hydrogenation and in

particular for providing the sketches for figs. 1, 2, and 3, and to Messrs British Drug Houses Limited and Messrs Townsend and Mercer Limited for permission to describe and reproduce in fig. 11 a simplified and improved form of apparatus for the Karl Fischer reagent. I also wish to thank the staff of the University Press for their patient collaboration, without which this volume would have been impossible.

F. W.

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