PREFACE

Methods of amino acid determination, which are of prime importance in biochemical studies, may be considered to have come of age some 10 or 20 years ago. These methods are nevertheless subject to continuing change and improvement. Techniques have developed rapidly, and the advantages and capabilities of the different procedures are now clearly understood. Continuing improvements in their speed, sensitivity, and versatility are being made which give reliable information on amino acid composition from even small amounts of protein or peptide. Fluorometric methods of detection may permit further increases in sensitivity to be achieved. Since the appearance of the first edition of this monograph, the automatic analyzer has maintained and strengthened its preeminent position in the field of amino acid determination. The instrument is reviewed in the present book by Dr. G. W. Robinson, who is actively involved in development and use of the analyzer. The application of computer techniques to the control of automatic analyzers is developing rapidly as is the computation of results obtained from them; this topic is reviewed by workers in this field.

Striking developments in gas chromatographic techniques have taken place in parallel with those in automatic analyzer methods; procedures for the separation of enantiomers of amino acids are particularly important. Use of both analytical techniques in the study of lunar material reflects their importance. The increase in sensitivity of automatic analyzer and other methods and the consequent reduction in the size of analytical samples has meant that increasing care is required to avoid contamination of these samples.

Marked advances in hydrolytic techniques mean that sources of error arising during hydrolysis are minimized. Determination of all the common protein amino acids using a single hydrolyzate is now feasible.

The present volume, while in no sense a practical manual, assembles authoritative accounts of the various procedures and techniques, emphasizing the practical application of means of determination of amino acids. Biochemists and analysts can thus select methods appropriate to their research problems. The biological aspect of amino acid determination is stressed in the description of the analysis of physiological fluids.

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