TREATISE ON ANALYTICAL CHEMISTRY

PART II
ANALYTICAL CHEMISTRY OF THE ELEMENTS
VOLUME 1

TREATISE ON ANALYTICAL CHEMISTRY

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PART II

ANALYTICAL CHEMISTRY OF THE ELEMENTS

VOLUME 1

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TREATISE ON ANALYTICAL CHEMISTRY

A comprehensive account in three parts

PART I

THEORY AND PRACTICE

PART II

ANALYTICAL CHEMISTRY
OF THE ELEMENTS

PART III

ANALYSIS OF INDUSTRIAL PRODUCTS

TREATISE ON ANALYTICAL CHEMISTRY

PART II

ANALYTICAL CHEMISTRY OF THE ELEMENTS

SECTION A

Systematic Analytical Chemistry of the Elements

VOLUME 1: INORGANIC NOMENCLATURE
GENERAL CONCEPTS
HYDROGEN · WATER
INERT GASES · ALKALI METALS

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Preface to Part II

Part II of the Treatise critically reviews the analytical chemistry, inorganic and organic, of all of the elements. It is not encyclopedic in nature and in that sense it is not an attempt to compete with the excellent *Handbuch der analytischen Chemie,* edited by Professor Wilhelm Fresenius and Professor Gerhart Jander.

Section A deals with the analytical chemistry of the various elements. Through a harmonious cooperation between the authors and the editors, it has been possible to present the material in a uniform way with emphasis on critically selected approaches and procedures. In brief, the reader is first given a short summary of the occurrence of the element, of industrial processes involving it, and of its toxicology. This introduction is followed by a description of the analytically important physical and chemical properties of the element. Sections covering distinctive features in the sampling of materials containing the element and outlining its separation and isolation are followed by systematic discussions of the current situation in respect to the detection and quantitative determination of the element and the analysis of its most important compounds. The discussion of each element is concluded by selected references for the determination of the element in specific materials and by a group of critically selected general laboratory procedures.

In order to assure a critical treatment, authors have been invited who have a rich experience in the field of the particular element and who were willing to assume responsibility for selecting recommended procedures.

Section A of Part II is largely devoted to the analysis and determination of the elements in their inorganic forms. In Section B of Part II of the Treatise, which is at present in preparation, the determination of the elements as such in organic compounds and as components of organic functional groups is systematically covered. The differences between organic and inorganic analysis are now not as sharp as formerly. Determination of inorganic constituents in various types of bonding is gaining more and more importance.

A systematic treatment of the detection of the elements and of their functional groups is reserved for Section C of Part II after the quantitative treatment because qualitative analysis often uses the same properties

that are used for the quantitative determination. Principles of separation and identification in qualitative analysis are frequently the same as those used for separation and determination in quantitative analysis.

It is probably most convenient as well as most logical to have the order of the discussions of the analytical chemistry of the individual elements or of groups of related elements in Section A of Part II of the Treatise parallel the occurrence of the elements in the familiar Periodic Table arrangement. Consequently, Section A will be issued in seven or eight volumes organized on the basis of the Periodic Table. The order in which the volumes are issued will be determined to a considerable extent by the order in which allied groups of manuscripts are completed. To minimize the possible delays in publication which may arise as a consequence of delayed completion of some manuscripts, it may be necessary to take certain liberties in the arrangement of the individual chapters, including some slight deviations from the Periodic Table arrangement.

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P. J. ELVING

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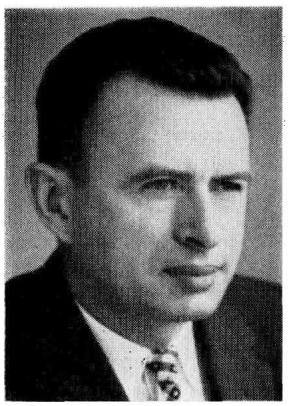

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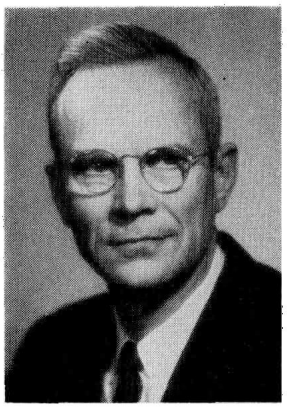

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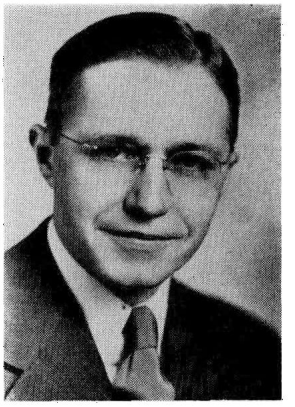

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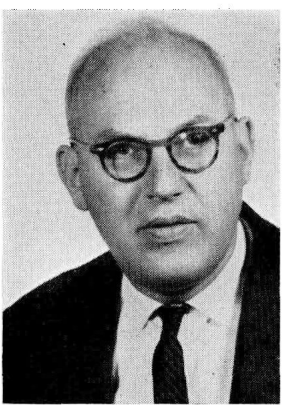

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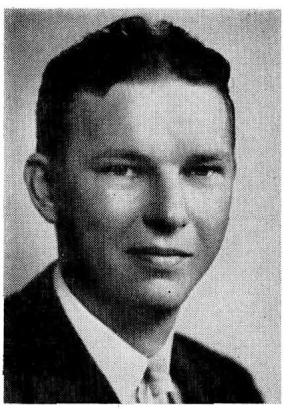

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PART II. ANALYTICAL CHEMISTRY OF THE ELEMENTS

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SECTION A. Systematic Analytical Chemistry of the Elements