BOOK REVIEW

Treatise on Analytical Chemistry. Part II. Analytical Chemistry of the Elements. Volume 3. Edited by I. M. KOLTHOFF and P. J. ELVING, with the assistance of E. B. SANDELL. Interscience, New York–London, XVII + 380 pp. $13.25.

The *Treatise on Analytical Chemistry* is a massive undertaking which will consist of many volumes organized under three general headings. Part I is entitled *Theory and Practice*, Part II is called *Analytical Chemistry of the Elements*, and Part III is called *The Analytical Chemistry of Industrial Materials*. The book which is under review is volume 3 of Part II.

The preface to Part II states "Part II of the Treatise critically reviews the analytical chemistry, inorganic and organic, of all 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."

Volume 3 of Part II consists of six chapters written by chemists who have had extensive experience in the analysis of the particular elements. Copper is discussed by W. C. Cooper, magnesium by G. B. Wengert, P. F. Riegler, and A. M. Carlson, zinc by J. H. Kanzelmayer, cadmium by Q. Fernando and H. Freiser, mercury by J. F. Coetzee, and tin by M. Farnsworth and J. Pekola.

There is a reasonable degree of uniformity in the format of each of the chapters. The occurrence of the element in nature is briefly described together with its extractive chemistry and metallurgy. Where toxicity is encountered (mercury, cadmium, and zinc) a well-documented account of effects and antidotes is given. The physical and chemical properties of the elements are then presented. Any special problems in sampling are discussed. There is an extensive treatment of the separation and isolation of each element, and a critical discussion of various methods of detecting and determining it, and analyzing its compounds. For the detection of each element, there is a table of reagents, sensitivities, and interferences. Procedures for the determination of the element in various materials are presented and evaluated, together with appropriate references. A small group of selected laboratory procedures for the separation and determination of each element is offered in sufficient detail for practical analysis. They include gravimetric, volumetric and instrumental methods (either polarography or colorimetry), and cover a satisfactorily wide range of sample size.

The book as a whole is excellent. I should like to see a much more complete table of formation constants for copper compounds, a more uniform treatment of nuclear data, a discussion of x-ray fluorescence for the analysis of several of the elements, and some consideration of the quantitative analysis of solids by mass spectrometry. These are, however, distinctly minor drawbacks.

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ERRATUM

Polysaccharide B-1459: A New Hydrocolloid Polyelectrolyte Produced from Glucose by Bacterial Fermentation

(*J. Appl. Polymer Sci.*, **5**, 519–526, 1961)

by ALLENE JEANES, J. E. PITTSLEY, and F. R. SENTI
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On page 519, line 1, the word "values" should be "valued."