Book Reviews

Optical Image Evaluation. Proc. of NBS Symposium held Oct. 18–20, 1951. National Bureau of Standards, Washington, D.C., 1954. x + 289 pp. Illus. $2.25. (Order from Supt. of Documents, GPO, Washington 25, D.C.)

Because it is a field in which the NBS has been active for many years, the evaluation of optical imagery formed the subject of one of the 12 symposiums held to mark the Jubilee of the National Bureau of Standards in 1954. Included in this volume are 20 contributions by authorities from all parts of the world as well as what appears to be a verbatim record of the discussion which followed each session. Since all communications are printed in clear and readable English, the reader is spared some of the language difficulties which inevitably accompany meetings of international scope.

There are a number of contributions dealing with theoretical aspects of optical image formation, particularly the diffraction theory of aberrations. The bulk of the symposium, however, was devoted to a discussion of the methods and instruments developed in various laboratories to explore the light distribution in images produced by optical systems. Interferometric and photoelectric procedures are described as well as more conventional tests involving resolution and visual judgment. It is obvious that considerable progress has been made in this field and that the experimental results are in turn stimulating further theoretical work. Perhaps the best evaluation of the status of this aspect of optics is given by Irvine C. Gardner in his introduction to the book:

> The papers of this symposium touch upon most aspects of the problem in more or less detail but, like most useful scientific work, the papers also suggest the large amount of work that remains to be done.

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Plant Regulators in Agriculture. H. B. Tukey, Ed. Wiley, New York; Chapman & Hall, London, 1954. x + 269 pp. Illus. $5.50.

A need has long existed for a readable, authoritative book dealing with plant (growth) regulators and their practical application in agriculture. Man has sought to manipulate plant growth and development since the dawn of agriculture, yet the sudden advent of chemical regulation, some 20 years ago, was so veiled with mystery that much confusion has resulted, particularly in the minds of those who can best use the findings—the agriculturists.

This book brings together the latest information of the many and varied uses of plant regulators in agriculture. Each aspect was written by a specialist well qualified by training and experience. The whole is correlated and edited by a competent person who did pioneer work in this field. The terminology used for chemicals is that recently proposed by a committee of the American Society of Plant Physiologists of which the editor was a member. After a brief survey of the nature of plant regulators and the basic concept of plant growth, the information presented pertains largely to application, such as propagation, fruit set, defoliation, blossom thinning, preharvest drop, plant breeding, fruit ripening, sprout inhibition, and weed control. The final chapter is devoted to equipment and methods of application.

Each chapter begins with elementary facts and principles before moving on to more involved and advanced phases. The book avoids routine formulas and oversimplified directions. Instead, basic principles that can be modified to fit local situations are emphasized.

The editor states that the book was written for advanced high-school students, college students, a sprinkling of business and professional men, and county agricultural agents, in particular. To me, this goal has been attained to a high degree.

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Thermo-Mikro-Methoden. Ludwig Kofler and Adelheid Kofler. Verlag Chemie, Weinheim/Bergstr., ed. 3, 1954. xi + 608 pp. Illus. DM. 39.80.

This third edition is considerably enlarged and revised, partly as a result of the description of newly developed apparatus and identification techniques and partly as a result of the expansion of the tables of properties of individual compounds to include more than 1200 substances.

Those not already familiar with Kofler's book will find in it a definitive and exhaustive treatment of micro methods for the physical identification of organic substances. Excellent theoretical discussions, practical experimental details, and descriptive illustrations are given on the determination and interpretation of melting points, boiling points, refractive indices, molecular weights, and the special properties of crystals. Particularly valuable are the extensions of these determinations to the analyses of multicomponent systems.

Of special interest to the practicing organic chemist is the rapid and convenient method described for characterizing and identifying substances by the melting points of their eutectic mixtures with one or more commonly available organic compounds, such as azobenzene, benzil, acetanilide, and phenacetin.

The typography is excellent and the paper is fair, but the binding is poor.

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