The structure and mechanism of formation of the fibrin clot is treated by J. D. Ferry. It was emphasized, especially by John T. Edsall, that there is a large difference between the structures of the fibrin clots formed in the presence of various inhibitors, thus indicating that the inhibitory action occurs at different points of the molecule. This is a new observation which may throw light on what really happens when fibrinogen is converted into fibrin.

The transactions end with a chapter by C. W. Sorenson and I. S. Wright on the action of a new synthetic anticoagulant of the heparin type (a polysulfuric ester of alginic acid). It was not proved that this synthetic substance is devoid of the drawbacks of similar synthetic substances previously investigated. It may be worth while to point out that no transfusion of blood will act as an antidote against heparin. Such a treatment will result only in a decrease of the concentration of heparin in the blood—a reduction of probably no clinical importance. In an emergency heparin has to be inactivated almost completely.

An appendix contains a description by W. H. Seegers, E. Erickson and Ch. A. Pickard on the preparation and use of colored and black background lantern slides. This gives detailed information on how the slides presented by Dr. Seegers were made.

The book contains but few typographical errors, none of which are serious enough to be mentioned.

The value of these (and forthcoming) transactions for those actively engaged in the field is immense. The discussions especially contain a wealth of arguments and suggestions which should be read by all with more than a purely academic interest in the mechanism of blood clotting. Concerning the theories of blood clotting the reviewer has on occasions recorded the warning expressed by Hammarsten fifty years ago [see *Acta Physiol. Scand.* **7**, *suppl.* 21 (1944) and *Advances in Enzymol.* **10** (1950)]. He would like to conclude this review by quoting Dr. John Ferguson (p. 214) who gives the same advice almost in shorthand:

"If we stick to the facts, the theories will take care of themselves."

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Methods in Food Analysis Applied to Plant Products. By MAYNARD A. JOSLYN, Professor of Food Technology, University of California, and Biochemist in the California Agricultural Experiment Station. Academic Press Inc., New York, 1950. 525 pp. Price $8.50.

This book offers a new and intriguing approach to a subject that this writer has so often found handled in a boring manner. An attempt has been made to stress principles and a critical evaluation of methods of food analysis, rather than the typical "cook book" approach. Such a treatment is found only in periodical literature and in voluminous books. As pointed out by the author: "The reproducibility of empirically developed procedures depends on strict adherence to those conditions that exert a definite influence on the results." In line with this the author has discussed these factors and points out the possibilities and limitations of various methods.

The book is unique for one concerned with food analysis in that it includes chapters on statistical analysis and sampling. The matter of sampling is so important and yet so often overlooked. The reviewer was particularly intrigued with the chapter con-

cerned with moisture content and total solids. The difficulties involved in these apparently simple determinations are thoroughly discussed, and in an interesting manner.

Other chapters are concerned with ash content and ashing procedures, extraction and separation processes, densimetric methods, refractometric methods, polarimetry and saccharimetry, colorimetry and spectrophotometry, potentiometric and related methods, pH and buffer capacity, viscometric and other physical methods, acidimetry, alcoholometry, carbohydrates, pectins and pentosans, tannins, and organic nitrogenous compounds.

It is unfortunate that the index is sketchy in parts, and could have been expanded to a more useful degree. In general, the book is well written, easy to read, well documented and thorough, and certainly is of interest to anyone concerned with food analysis, whether it be animal or plant products, even though the book stresses the latter.

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Biological Antioxidants. Transactions of the Third Conference, October 7–8, 1948. Edited by COSMO G. MACKENZIE, Cornell University Medical School. Published by Josiah Macy, Jr. Foundation, 565 Park Avenue, New York 21, N. Y. 146 pp. Price $2.70.

This third volume of collected papers fulfills the purpose of the conference as expressed by Dr. Frank Fremont-Smith in that it represents "in so far as possible all the branches of science which bear on a chosen problem." Considerable progress in this direction is seen when it is compared with the *Transactions of the First Conference* held in 1946. In the earlier volume, seven of the ten papers were concerned with oxidation of unsaturated fatty acids, rancidity, and antioxidants which retard autoxidation. The broader scope of the present volume is indicated by the Table of Contents: The Mechanism of Autoxidation and the Action of an Antioxidant, L. Michaelis; Naphthoquinones as Antimalarials and Inhibitors of Respiration, Louis F. Fieser; Autoxidation of Alpha-Ketols, Enediols and Hydroquinones: Quinone Catalysis and Inhibition, A. Weissberger, Discussion; General Pharmacology and Toxicology of Quinones and Hydroquinones, Joseph Seifter, Discussion; Recent Developments in the Chemistry and Metabolism of Vitamin E, Stanley R. Ames and Philip L. Harris, Discussion; Observations on the Biological Effect of Tocopherol in Living Organisms, Paul Gyorgy, Discussion; The Role of Flavonoids and Related Substances in Biological Oxidations, William G. Clark and T. A. Geissman, Discussion; Report on Symposium of Lipides, Richard H. Barnes, Discussion; The Antioxidant Effect of Estrogens and Androgens, Roland K. Meyer and W. H. McShan; Mechanism of Action of Lipoxidase, Ralph T. Holman, Discussion.

Only the final paper, on lipoxidase, deals with the unsaturated fatty acids as the substrate for oxidation.

Some of the papers have extensive bibliographies which add much to the value of the volume as a reference work.

In addition to the excellent presentation of subject matter in the main papers there is a considerable record of discussions which clear up many points. The volume is recommended to everyone interested in the mechanisms of biological oxidation.

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