New Books

Advances in Food Research Volume VI

Edited by E. M. Mrak and G. F. Stewart; Academic Press, Inc., New York 10, N. Y. 1955. xii + 398 pages. $9.00. Reviewed by Kenneth Morgareidge, Food Research Laboratories, Inc., Long Island City, N. Y.

This volume, the sixth in the series published under this title, continues the editorial policy of presenting review articles on selected subjects written by experts in the fields covered. The general excellence and utility of the series as a whole should not be judged on the basis of any one volume since each presents a limited number of topics. The articles, in the words of the editors, are intended to be "exhaustive, critical, integrating, and of fundamental importance to the development of food research in wide areas of the food industries." The present volume contains seven articles in which their respective authors have evidenced due regard for this editorial concept. Consequently, like its predecessors, it contains much information of historical and background value in addition to data of current interest. This is especially true with respect to topics dealing with foods and processes rich in tradition and folk methods.

Three of the articles deal primarily with microbiology. Reese H. Vaughn, of the University of California at Davis, discusses bacterial spoilage of wines with special reference to California conditions. The history of the "diseases" of wine has been sketched from the work of Pasteur through the present highly developed bacteriology of wine production, including a good deal of taxonomic discussion.

John C. Ayers of the Iowa Agricultural Experiment Station at Ames has written a detailed resume of microbiological implications in the handling, slaughtering, and dressing of meat animals. This excellent article summarizes what is known concerning the effects of processing practices on the bacterial load found on and in meats and their relation to rate of spoilage. The author expresses his personal opinion on the highly controversial question of more rigid enforcement of bacteriological controls on cuts of meat at the wholesale level with the establishment of tolerance limits.

The third paper dealing with a bacteriological subject is by Georg Borgstrom, Swedish Institute for Food Preservation Research at Göteborg, and considers microbiological problems of frozen foods. He has ably summarized much of the published literature up to 1953 although American readers will recognize a lack of first-hand familiarity with current commercial practice in this country, especially as regards precooked frozen foods. It is in rapidly changing fields such as this that the practicing food technologist is likely to find fault with the editorial policy expressed above. Highly current information does not lend itself readily to incorporation in a review of basic principles.

Of the remaining four articles, two deal with products (candy and dehydrated potato granules), one with the general technology of tunnel dehydrators for fruits and vegetables, and one with the specific problem of the thermal destruction of thiamine in foods.

L. F. Martin of the Southern Utilization Research Branch, USDA, has written on the application of research to problems of candy manufacture. The author points out that the candymaker's skill is still largely "rule of thumb" and that, far from being simple, the chemistry of candy making is highly complex and little understood. Throughout this interesting discussion, emphasis is placed on the need for intensive research.

Recent development in the technology of potato granules has been well summarized in an article by R. L. Olson and W. O. Harrington of the Western Utilization Research Branch, USDA, Albany, Calif. This informative report brings the reader up to date on a subject of major importance in the dehydrated food field.

P. W. Kilpatrick, E. Lowe, and W. B. Van Arsdel, also of WURB, have presented a thorough description of the basic theory, construction, and commercial use of tunnel dehydrators for fruits and vegetables. This is an excellent example of the application of unit processes in the food industry.

Finally, K. T. H. Farrer, of Kraft Foods, Ltd., Melbourne, Australia, has reviewed the literature dealing with the thermal losses of thiamine during processing and storage of major food classes. This article is chiefly of interest in advancing the theory that the rate of loss of this vitamin obeys first order reaction kinetics and that the Arrhenius equation permits the prediction of thiamine behavior under specified conditions. A wider understanding of this simple fact should lead to other applications in problems of shelf-life for foods and pharmaceutical products.

Radiation Sterilization of Food

A nontechnical explanation of research in radiation sterilization of food is available from the Office of Technical Services, Department of Commerce, Washington 25, D. C., for 50 cents. Included in the 27-page booklet are the proceedings of a panel discussion by four Army research officials during the second annual exhibition on the peaceful uses of atomic energy held April 17.

Also available from OTS at the same address are: "Bibliography on Ionizing Radiation, Supplements No. I and II," August 1955, 537 pages, $11; and "Subject Index on Ionizing Radiations, Supplements No. I and II," August 1955, 161 pages, $4.25. These publications were prepared by the Quartermaster Food and Container Institute for the Armed Forces to keep researchers up to date on literature dealing with the effects of radiation in the treatment for extending storage life of meats, dairy products, vegetables, and flour.

LITERATURE AVAILABLE

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scribe the varied types and applications of Gibbs flotation units. Dept. A&F, F. S. Gibbs, Inc., Newton 62, Mass.

Monomers. Folder gives physical properties and suggested uses for the 36 monomers that the company supplies. Aside from extensive use in polymer applications, these compounds are reactive intermediates for the synthesis of insecticides, oil additives, dyestuffs, plasticizers, and related products. Dept. A&F, Carbide & Carbon Chemicals Co., 30 East 42nd St., New York 17, N. Y.

Plastisol Coatings. Four-page bulletin describes chemically-resistant sprayable plastisols which can be used to protect tanks, vessels, and related equipment which cannot be dip-coated. Dept. A&F, Metal & Thermit Corp., Rahway, N. J.

Polyethylene Ware. Catalog lists a full line of polyethylene laboratory apparatus able to withstand 230° F. Dept. A&F, Chicago Apparatus Co., 1735 N. Ashland Ave., Chicago 22, Ill.

Separators. Four-page bulletin highlights design features and applications of several models of heavy duty separators. Dept. A&F, Centrico, Inc., 75 West Forest Ave., Englewood, N. J.