AAAS Publication No. 77: Food Quality

Food Quality: Effects of Production Practices and Processing. George W. Irving, Jr., and Sam R. Hoover, Eds. AAAS, Washington, D.C., 1965. viii + 298 pp. Illus. Members (prepaid order), $7.50; others, $8.50.

Food Quality is a compilation of the papers delivered at a symposium organized by the AAAS Section on Agriculture and presented at the Philadelphia meeting in 1962. Five groups of commodities are covered: fruits and vegetables, cereals, dairy products, poultry and eggs, and meats. The subject matter includes the scientific aspects of the evaluation of food quality and the effects of production practices and processing. The socioeconomic factors that influence food quality are not considered.

The high degree of competence of the 25 contributors in their respective fields has insured the preparation of a volume that is informative and authoritative. The book will be useful not only to research workers, but also to a wide audience of students and people in government and industry who are concerned with this aspect of food. The improvement of the quality of food is shown to depend on the contributions of geneticists, agronomists, entomologists, pathologists, engineers, microbiologists, chemists, and physicists.

With so many contributors, it is unavoidable that the individual chapters differ greatly in scientific depth. Some papers provide no references to the literature, and others cite fewer than half a dozen publications. However, a majority of the papers provide adequate citations for the use of the reader who wishes to delve further into the subject and arrive at his own judgment about the validity of the conclusions.

One of the principal values of the book is that it will encourage the application of advances made with certain commodities to a broader range of food products that have similar problems. For example, the discussions of the recent applications of gas chromatography to studies on the flavor of tomato and dairy products will be of wide interest to workers on other commodities. The book will also serve a useful purpose in demonstrating the scope of the scientific research that is contributing to food quality, which is a subject that is important to everyone.

The printing and binding are of the highest quality, and an index contributes to the usefulness of the book. There are five pages of illustrations.

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History of Science: Liebig's Animal Chemistry

Animal Chemistry: or Organic Chemistry in Its Application to Physiology and Pathology. Justus Liebig. Edited from the author's manuscript by William Gregory with additions, notes, and corrections by Gregory and John W. Webster. A facsimile of the Cambridge edition, 1842, with a new introduction by Frederic L. Holmes. Johnson Reprint Corporation, New York, 1964. cxvi + xl + 347 pp. $13.50.

At the time that Liebig published his book on animal chemistry in 1842 he was edging the elderly Berzelius out of his position as the world's foremost chemical authority. Liebig had contributed significantly toward laying the foundations of organic analysis, and his students at Giessen had accomplished a great deal in the application of those methods to the chemistry of naturally occuring substances. Liebig's fame was widespread as a consequence of his research, his school, his book on agricultural chemistry, and his travels devoted to the promotion of chemistry and its applications.

As a consequence, it is not surprising that the publication of his *Animal Chemistry* was greeted with great enthusiasm, despite the fact that he himself had been involved in no animal experimentation of consequence. With typical self-assurance Liebig had assumed himself qualified to deal with the subject of physiology because, according to him, the physiologists had failed.

The result was a book that had a profound impact on the development of physiological thought, despite the glaring shortcomings of the work. As Frederic Holmes points out in his introductory essay, "When Liebig's ideas appeared, the leading physiologist of the time avowed that they offered deep insights concerning the internal processes of the entire animal economy. An equally eminent chemist complained, however, that Liebig was merely encumbering physiology with erroneous hypotheses presented as facts." Both critics were correct. Liebig's many speculative ideas presented with authoritative conviction stimulated inquiry and rebuttal, thereby speeding the understanding of a difficult discipline.

It is good to have Liebig's text available in a well-produced facsimile reprint, particularly in conjunction with the thoughtful interpretative essay by Holmes.

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Notes

In his guide to wildlife refuges, **The Sign of the Flying Goose** (Natural History Press, Garden City, N.Y., 1965. 311 pp. $5.95), George Laycock recounts the story of the refuges, which range from the eight-million acre Arctic Wildlife Range above the Arctic in Alaska to small marshes in Maine and Florida and islands in the Hawaiian atoll. Twenty chapters (pp. 15 to 249) are devoted to 17 of the refuges, including the "first" refuge (and its warden), Pelican Island on the Florida coast, Okefenokke, Agassiz, Three Arch Rocks, and Tule Lake. The section "Other refuges briefly described" (pp. 250 to 283) is an alphabetically arranged (by state and by refuge within the state) list that provides basic information on 145 other refuges.

The main purpose of **Shore Wildflowers of California, Oregon, and Washington** (University of California Press, Berkeley, 1964. 122 pp. Paper, $2.95; cloth, $4.75), by Philip A. Munz, is to enable laymen to identify, and to understand the relationships of, the plants that grow wild along the shores of the three Pacific Coast states. Coastal ferns and their allies and some trees and shrubs found near the shore are included. Color plates for 96 species are arranged according to color: yellow to orange; rose to purplish-red; blue to violet; and whitish to greenish.