

NEW BOOKS

Advances in Food Research, Vol. IV

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AGRICULTURE is feeling the effects of the growth and development of the physical, chemical, and biological sciences. The field of agriculture is exceedingly broad, and every science and every technology bear upon it. The editors have recognized the change which the impact of the newer knowledge has made on agriculture, and they have attempted to provide in the *Advances* a series of contributions covering the progress in food research and the progress of some of the fundamental scientific studies that are likely to generate new ideas and methods or modify processes in the technology of foods.

It is a problem of major importance to select from this vast field of accumulating information the areas most in need of cultivation and discussion.

Diverse Topics

The editors have selected for Volume IV a group of topics which will be of interest to workers in the food industry. It contains the following chapters: Wiltshire Bacon, by N. E. Gibbons; Work Methods Design and Work Simplification, by Louis E. Davis; Nutritional Stress Factors and Food Processing, by Samuel Lepkovsky; The Chemistry of Chlorophyll (with Special Reference to Foods), by S. Aronoff; Reversion Problems in Edible Fats, by B. F. Daubert and Paul W. O'Connell; Fish Preservation in Southeast Asia, by A. G. van Veen; The Effects of Heat upon the Nutritive Value of Protein, by Eldon E. Rice and Jack F. Beuk; Insects Attacking Stored Products, by A. E. Michelbacher; The Use of Ascorbic Acid in Processing Foods, by J. C. Bauernfeind.

Each one of the chapters can readily be justified, but whether or not one would select the items which the editors have considered important depends on one's immediate environment and point of view.

Chlorophyll is given attention although it has not yet arrived as a food product, except that it is present in fruits and vegetables. However, a working knowledge of the chemistry of chlorophyll is of use to the food technologist in respect to

the problems of food processing and preservation.

It is of interest to have the author point out applications to technology. Perhaps more attention should be given to this phase, for the industrial scientist may not have time to familiarize himself with all the aspects of the problem. Thus many applications, now evident to the investigator, may be overlooked by the technologist. We are fortunate that the author has discussed the anti-biotic action of chlorophyll, gonadotropic effect, photodynamic aspects, fate of chlorophyll on mammalian ingestion, medical applications, and a number of industrial applications, such as its use as a deodorizer, oil oxidation, and its use in paints.

Meat and Proteins

The authors have ably discussed methods of determining protein quality, composition of proteins, the effects of heat and processing on the quality and effectiveness of protein, the relationship of the browning reaction to changes occurring in foods, alteration in the rate at which various amino acids are released from the protein, and destruction of amino acids. Research and discussion in this area have given us a better appreciation of the problems demanding further investigation.

Many industries have derived from the knowledge gained by centuries of experience. The processing of meats is not too well defined chemically. The chapter on Wiltshire Bacon is well written and of great interest. We learn that curing, storage, and quality are not under chemical control, and better control of rancidity is urgently needed. The recent work on the use of ascorbic acid in meat and fish preservation is an index of the impact which chemistry and food technology are making on old established processes. It is a matter of surprise to find that even the optimum condition of the animal for slaughter is not known in spite of the fact that animals have been slaughtered since ancient times. More fundamental work is necessary, and it is hoped that the meat industry will assume its responsibilities.

Procedures from Asia

The unique procedures employed in processing and preserving fish for food in Southeastern Asia have not heretofore been fully and precisely presented, so far as this reviewer is aware, to the

American technologists. This information will be helpful in orienting our ideas and will assist us in the further examination of our basic nutritional theories and practices. The excellent chapter on protein is a fitting supplement to this chapter.

The organization of the data available on the use of ascorbic acid in the food industry is timely and complete. The chapter covers a vast number of subjects; consequently, each item is necessarily brief. This contribution should be helpful to those who have not been aware of the progress in this field, especially the progress in respect to problems encountered in control work and in manufacturing, such as in the processing of fruits and vegetables and products derived from them. This chapter contains a large amount of useful and effective information.

Fats and oils are economically, nutritionally, and from the flavor acceptance standpoint of great significance. The authors of this chapter have had a prominent place in developing productive research on these products. They have written an excellent survey. In spite of progress made, they frankly point out that much remains to be done in order to satisfy the high standards set by the food technologist, the manufacturer, and the consumer.

Storage Problems

The chapter on insects attacking stored products is replete with excellent information. We are concerned over the failure of some food products to meet the high standards set by the Food and Drug Administration and by the leading food manufacturers. We are aware that the technology to give effective control is available. However, some manufacturers and operators of storage facilities have not made use of this information. Unfortunately, the author has lost a great opportunity to make his article more effective and easily read by failing to clearly designate the figures on the plates in the description.

The editors have ventured into fields somewhat remote from actual food research, but certainly of importance to the food technologist. The chapter on "Nutritional Stress Factors and Food Processing" brings together interesting information. The importance of food, as a factor in mental well-being as well as its significance in food acceptance and in promoting good health and thereby preventing stress, is pointed out.