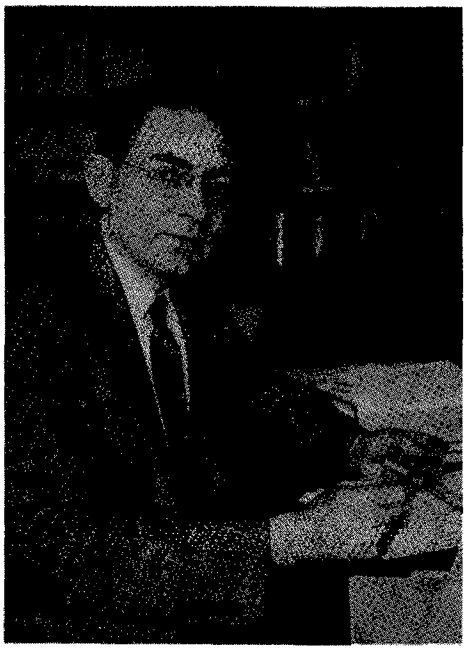

G. O. Burr

Special AOCS Award Highlights Symposium Honoring George Burr

The Symposium on Essential Fatty Acids in Honor of George O. Burr and the Special Award of the American Oil Chemists' Society for his discovery of the essential fatty acids have been made possible through the generous support of the following companies:

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Ralph T. Holman, Chairman

THIRTY-SEVEN YEARS AGO polyunsaturated acids were of minor interest, for their only value was as constituents of drying oils. They were known to be components of dietary fats, but were considered to be useful only as a source of calories. In 1929 George O. Burr and his wife, Mildred, published a paper which revealed that exclusion of fat from the diet of animals induced a deficiency disease, and their later papers showed that this disease could be prevented or cured by the inclusion of linoleic acid in the diet. Thus, they proved conclusively that linoleic acid was an *essential* fatty acid, and introduced the concept that fats should no longer be considered merely as a source of calories and as a carrier of fat-soluble vitamins, but that fats have an inherent specific nutritive value.

In the last three decades the interest in polyunsaturated fatty acids has increased manyfold, and the number of published chemical, analytical and metabolic studies is increasing each year. The recent impetus for this interest has been primarily the association of polyunsaturated fatty acids with lipid transport in animals and man, and the implication that they are involved in maintenance of a normal circulatory system. The current intense interest in polyunsaturated acids is largely traceable to the observations of Burr and Burr that some polyunsaturated acids are essential fatty acids. Their researches have focused attention upon the nutritive value of fat, and have led to the observations that polyunsaturated acids are important components of lipids of all tissues.

At the time of their discovery the concept of the *essential* fatty acids was unorthodox and unpopular. However, subsequent work, some of which was initiated to disprove the theories of Burr and Burr has amply confirmed their conclusions and revealed their experiments to have been well designed and his observations to have been carefully and accurately made.

George O. Burr was born in Conway, Arkansas, Oct. 6, 1896. He received his bachelor's degree at Hendrix College in 1916 and thereafter taught in high schools in Arkansas, and as professor of chemistry at Kentucky Wesleyan College. After service in the Signal Corps in World War I, he returned to his studies at the University of Arkansas (MS, 1921), the University of Chicago, University of Illinois and the University of Minnesota. He received his PhD from the latter in 1924, having worked with Prof. R. A. Gortner on humin formation in the hydrolysis of proteins. Thereafter he was a research associate of H. M. Evans at the University of California where he took part in the program of research on Vitamin E. During the course of this work Evans and Burr found that sucrose could be used as a pure carbohydrate energy source in diets, and they found that growth was better with some lard in the diet than without it.

When the Burrs moved to Minnesota, where he joined the Department of Botany, they continued the study of the effects of a fat-free diet upon rats. Their work was done in the penthouse above the Anatomy Department in the Medical School, and Mrs. Burr was caretaker of the animal colony in addition to her duties as head of the Biology Department at Edison High School, Minneapolis. Several years of intense work resulted in the discovery of the essential fatty acids in 1929.

At the University of Minnesota George O. Burr carried on active research programs in plant physiology and in nutritional biochemistry in the Department of Botany an in the Medical School, respectively. This culminated i his joint appointment as Professor in the Department c Botany and in the Department of Physiology. When th Division of Physiological Chemistry was formed in th Department of Physiology, he became its first direct and he continued to hold his dual position at the Universit

In 1946 he left university life and his leadership in lip chemistry for a new career as head of the Physiology an Biochemistry Department of the Hawaiian Sugar Planter Association in Honolulu. Since that time he has contributed many innovations in sugar research. His work in Hawaii resulted in 20 publications in the field of plant physiology. His academic career in plant physiology had resulted in 11 previous publications and he is the author of an equal number in the general field of nutrition.

Professor Burr's contribution to the field of lipids is even larger, for he is the author of 83 papers in the chemistry, biochemistry and nutrition of lipids. His primary interests in lipid research were essential fatty acids, ultraviolet spectrometric analysis of fats, physical properties of fats, isomerism of unsaturated fatty acids, and rancidity or autoxidation of fats and oils. All of these interests were brought to focus upon polyunsaturated fatty acids, and his research group contributed significantly to the fundamental chemistry of polyunsaturated acids, as well as to the study of their nutritive properties. His versatility in scientific research and broad scientific knowledge was evident to his colleagues and students, and is shown by his simultaneous memberships on the boards of editors of the Journal of Nutrition, the Journal of Physical Chemistry and the Archives of Biochemistry. His achievements have been recognized by his alma mater, Hendrix College, which awarded him the LLD degree in 1936 and by the University of Minnesota which gave him its Distinguished Service Award in 1955 on the occasion of the national meeting of the American Chemical Society