

Summary of talk given by Bailey Award winner

C.M. Gooding, Best Foods Division, CPC International, Union, N.J., received the 1973 Alton E. Bailey Award given by the North Central Section of the AOCS. The following is a summary of Gooding's talk given at the award ceremony.

A subject of paramount importance to the fats and oils chemist is that of assuring stability of an edible oil throughout the two phases of its use-life. The first phase follows final deodorization and its use in manufacture of a food product when retention of maximum freshness is desired. Another phase occurs when other components of the food product in contact with the edible oil may be helpful or harmful to long shelf life. The most rapid deterioration occurs in the home kitchen in the half-filled jar or package. To illustrate, trace metal content, which may number as many as 19 different metals in a variety of branded salad oils, was shown. The prooxidant trace metals are effectively deactivated by the use of well-known sequestrants.

The term "sequestrant" was suggested as a more appropriate descriptive nomenclature than "synergist." Graphical analysis of the rates of peroxidation throughout the period of normal shelf life at room temperature shows the reduction in rates due to a combination of synergist and true antioxidant results in a rate which is never greater than that of the algebraic sum of the reduced rates attainable by synergist and true antioxidant used separately. Synergism appears to be an aberrancy resulting from use of only one dimension of rate, i.e. time.

Another factor important to retention of freshness is the degree of unsaturation of an edible oil, particularly its content of polyunsaturated acids. In this connection, the new definition for polyunsaturation adopted by the FDA is a step forward in assuring accurate information to the medical profession and the consumer. An improvement in analytical procedures for cis,cis 9,12 and 9,12,15 unsaturates is an urgent matter for the analyst.

Humphrey calls on Congress to establish Sino-American Soybean Research Institute

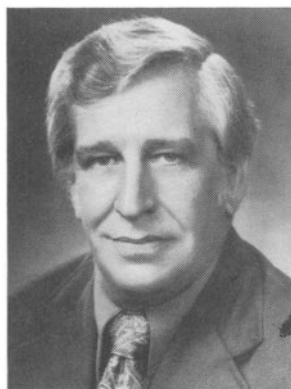
Sen. Hubert Humphrey (D-Minn.) introduced legislation into the U.S. Senate during December to establish a Sino-American Soybean Research Institute in consultation and cooperation with the People's Republic of China. "The immediate and primary purpose of this legislation," he said, "is to provide for the establishment of an institute which would devote its initial attention to improved soybean yields."

Humphrey, who spoke at the World Soy Protein Conference held in November in Munich, told the senators that the U.S. "has reached the limit of acreage that it can devote to soybean production, and a breakthrough is required in order to achieve greater yields per acre, particularly as the world demand for sources of protein increases. Therefore it is my proposal that the world's two leading producers of soybeans combine their research efforts and technology to achieve the much-needed breakthrough in improved yields." ■

The new definition for saturated acids, which includes only lauric, myristic, palmitic and stearic acids, requires closer examination. The fact that the saturated acids containing from 2-10 carbons is not included in the definition appears to be a tacit recognition that all saturated acids are not metabolized in the same manner or degree. For example, the medium chain glycerides fail to exhibit the same biological effects of the longer chain saturated acids. It is reasonable to assume that there is a gradual transition from those saturated acids which appear to have no effect upon the serum cholesterol level in man and those which are harmful. In fact, studies of the metabolism of the individual acids have shown that division between the lymph and portal vein routes does occur in relation to chain length of the fatty acid. It was suggested that much more research might lead to adoption of a P/Z ratio, in which Z would relate to the net "saturatedness" of the sum of the various saturated acids in the diet. This would refine the present, rather limited view that all of only the C12 to C18 saturated acids have equal effects upon the serum cholesterol level in man.

Research into the causes of enhanced stability of fats observed in excess of that ascribed to decrease of unsaturation upon partial hydrogenation is needed. The question was raised as to the possibility that hydrogenation may create minor amounts of hydroquinones from tocopherols by severance of the oxygen linkage to the tertiary carbon of the phytol chain or by severance with creation of unsaturation in the phytol group.

There is a great need for transmittal of the results of nutritional research in the field of fats and oils in lay language to the reading public. Several examples of gross misinformation appearing in the recent popular press can be cited. The benefits of refining, hydrogenation, and deodorization need to be presented as the only way to assure the absence of mycotoxins and pesticide residues which are likely to be present in the so-called "cold-pressed" oils. The public has been led to believe that only the natural, unrefined foods provide the best nutrition. ■



Douglas A. Paisley

Board of directors
appoints
Paisley president
of Alsop Group

AOCS member Douglas A. Paisley was elected president of Alsop Engineering Corp., Milldale, Conn., by unanimous vote of the All-Tech Industries Board of Directors. The appointment, effective immediately, is a promotion for Paisley, who served as vice president of marketing at Alsop since 1968.

Before joining Alsop, Paisley spent two years with the Burgess-Manning Co., Dallas, Tex., as project manager of the liquid filter division and 15 years with Sparkler Manufacturing Co., Conroe, Tex., as vice president, sales, domestic division, and as executive vice president, Sparkler International Ltd.

Alsop produces and markets a series of industrial filtration products. ■