The Canadian Chemist and the A.O.C.S.

THE guest editorial in the July issue of the Journal brought you greetings from the British Dominion farthest removed from your shores, namely, New Zealand, and now you are hearing from the Senior Dominion, which is your neighbor. In complying with the editor's request for this commentary, I feel at a disadvantage compared to the New Zealander because you are probably already well informed regarding the oils and fats industry in Canada.

The list of 48 Canadians who are members of the American Oil Chemists' Society comprises an almost complete roster of the oil chemists in this country, and the number seems surprisingly small considering the size of the country and the magnitude of the industry. Furthermore the majority of those listed are concerned with production and processing rather than research and development, thus indicating that little or no research is being carried on by industry. The reason is not hard to find. Our largest concerns are subsidiaries of United States companies who carry on almost all their research and development south of the border. It must also be conceded that there is not much incentive for the smaller independent Canadian companies to undertake research, especially in the field of new products, as the market is highly competitive and restricted by our relatively small consuming population.

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On the other hand, fundamental and applied investigations on oils and fats form a significant part of the research programs of our government and university laboratories, and noteworthy contributions have been made to our knowledge of numerous and important areas of fat chemistry. C. Y. Hopkins has furnished valuable data on the fatty acid composition of vegetable and marine oils in general, and N. C. Grace has studied more specifically the composition and properties of the erucic acid oils. The composition of heat polymerized oils and the nutritive value of fractions of these oils have been the subject of several papers by R. H. Common and E. W. Crampton. The fundamental investigations by H. W. Lemon of isolinoleic acid in relation to the flavor deterioration of edible fats are well known. Problems of fat oxidation and deterioration are of special importance to Canada as the oils that we produce in largest volume—linseed, soybean, rapeseed, and marine oils—are of the reverting type. Hence numerous researches have been made in the field of antioxidants by several Canadians. The work of R. A. Chapman and his associates on the kinetics of the destruction of phenolic antioxidants added to fats is worthy of special mention.

In view of our climatic conditions we have special problems concerned with the diversification of our oil seed crops to give a more stable oil seeds economy, as, for example, the development of rust-resistant varieties of sunflower and the adaptation of safflower for safe production in Western Canada. H. R. Sallans has been prominent among the chemists assisting in these projects. There have been gradual but significant changes in oil-bearing crops in Canada during recent years, the most important being the increase in production of soybeans from some 200,000 bushels in 1940 to 4,128,000 bushels in 1952. We still import about 5 million bushels of soybeans annually so there is room for a material increase in production. This can only be accomplished through research to develop varieties adapted to the soil and climatic conditions in more northerly areas. Such developments obviously extend the opportunities for the employment of oil chemists in this country.

Researches of the nature indicated above form the main topics of discussion at the annual meeting of the Canadian Committee on Fats and Oils. This is an Associate Committee of the National Research Council and is comprised of representatives of the National Research Council, Department of Agriculture, Department of Trade and Commerce, Food and Drugs Division of the Department of National Health and Welfare, Fisheries Research Board, and the oils and fats industries. Each year this committee is convened as soon as possible after the fall meeting of the A.O.C.S.

To keep abreast of new trends and developments in their particular specialties our industrial chemists in general depend to a large degree upon the publications and meetings of your chemical societies. This is especially true of our oil chemists, and hence they are among the most active members of the A.O.C.S. They profit greatly from the deliberations of the society and particularly from the Journal, and they are always represented at the semi-annual meetings.

The invitation to write this commentary is a much appreciated compliment, and I am sure my Canadian colleagues will wish to join me in expressing the hope that it will serve to strengthen our ties with fellow members of the A.O.C.S. in other parts of the world.

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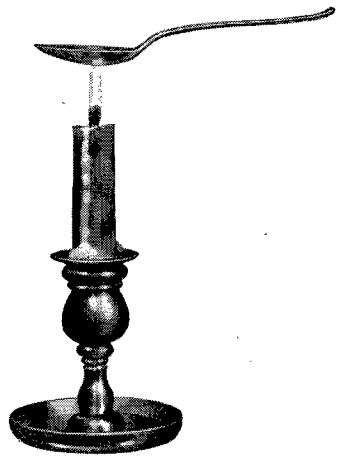

Kitol + heat = vitamin A

There's a lot of vitamin A in whale liver oil. It also has another substance in which we have considerable interest.

A few years ago, while experimentally distilling the oil which occurs in the liver of the behemoth of the deep, we found that the books weren't balancing. More vitamin A was coming out of the still than we were putting in.

To vindicate the precision of his assay methods, the chemist running the experiment isolated from the crude whale liver oil a dihydric alcohol of the approximate formula $C_{40}H_{60}O_2$.

We call it *kitol*, after the Greek word for whale, and here's the interesting thing about it. Kitol is a provitamin A in the strict sense, which means that it has little or no biological activity, but when you heat it above 200 C, each molecule of kitol splits off one molecule of genuine vitamin A.

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