

Cooperative Research Support

THE FEATURE ARTICLE in this issue deals with a very important area of new knowledge which has been brought to light within the past decade. The work which is described in summary is the result of brilliant research by many scientists. Only 10 years ago little was known about the steps involved in biological oxidation and syntheses of lipids, a subject vital to better understanding of the nature of "adequate diet." The research was basic, complex, and expensive. It involved the attack of research problems where results not only were unpredictable but might be entirely negative. Funds for such research are not usually easy to find. A significant part of the basic work involved in this study was supported by the Nutrition Foundation.

The Nutrition Foundation is an organization supported by funds contributed by industries or individuals interested in the uncovering of new knowledge pertinent to food and nutrition. The contributors make no specification of the research problems on which the money is to be spent. Those decisions are left to the foundation under the very able scientific directorship of Charles Glen King, who has the guiding support of scientists of the highest standing. In the case at hand, funds allotted to the work on the study of intermediary metabolism and enzyme chemistry of fatty acids made possible the uncovering of new basic knowledge, invaluable to nutritional science, in a very important area. As a result, the research problems of food and nutritional industries will benefit and there has been a commendable contribution to our general welfare.

This is an impressive example of the value of well organized guidance of the use of funds contributed cooperatively by industry. While it could not be said with assurance that no single industrial company or group of companies individually would have appropriated the money needed for the achievement of the results described in Dr. Lehninger's article, it does not seem probable.

Factors in Success

THE RECENT OPENING of a new ammonia plant by Shell Chemical Corp. at Ventura, Calif. has a highly significant background. The first and most obvious indication is that the chemical industry's role in agriculture continues to increase. A large proportion of the output of the new plant will go into fertilizers, particularly ammonia for direct application into soil and through irrigation water.

Perhaps less obvious is the lesson which can be drawn from the history of the development of the direct injection

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of anhydrous ammonia into the soil as a fertilizer. Work on this technique began in the '30's under the leadership and inspiration of F. H. Leavitt. He proceeded with what might be described as the toleration of some of his colleagues and superiors. At that time, the idea of putting directly into the soil a simple chemical compound which was a gas at ordinary temperatures was not generally looked upon with enthusiasm as a highly promising method of furnishing nitrogen to crops. Leavitt refused to become discouraged and developed the process that led to the original patents related to the direct injection of liquid ammonia.

The practice was developed to a commercial stage by 1941 but was retarded by the war. During the past eight years, the growth of what Shell now calls Nitrojection has been a primary factor in placing the direct application of ammonia in a position of importance in the fertilizer industry. The building of the new plant, which now will make possible meeting accumulated demands, is a testimonial to that growth.

Another aspect of this development which may serve as a valuable example in the fertilizer and agricultural chemicals industries is the distribution system. We have emphasized in the past that the dealer is a very important man in the fertilizer industry. The Shell system offers concrete evidence.

The distributors and dealers for "Shell NH_3 " are well informed and trained in the values and the techniques of application of anhydrous ammonia fertilizer. All of the Shell product is sold "in the ground." The dealers maintain and provide proper equipment in good condition and apply the ammonia by methods which are very carefully worked out. They know their business and feel a responsibility to sell their product to the farmer in a way which will yield optimum results.

At a luncheon given by Shell Chemical for its distributors and dealers on the occasion of the plant opening, these men showed enthusiasm about the product they sell. It was evident that they were well acquainted with the characteristics and needs of their agricultural area.

Praise is due in this development for pursuing a new idea into a venture valuable both to the producing company and the agriculture of the area, and also for far-sighted and effective management of a marketing system.