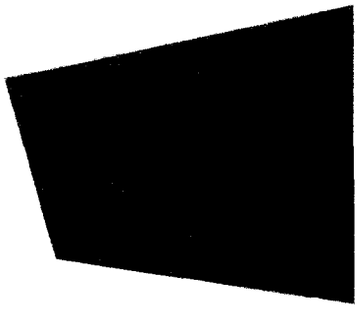

WALTER J. MURPHY, Editor

Agriculture Is an Industry

THE INDUSTRIAL REVOLUTION affected the mechanical aspects of our agricultural and food production, but the broad effects were not strikingly apparent as soon as were those in some other areas. While the village shoemaker and the chandler disappeared long ago, the individual farmer has remained as a basic unit of our civilization.

Farming as a way of life has held a firm place. The growing of food on the farm and its consumption by the populace have been accepted as a part of nature; relatively few people have given any serious thought to the possibility that the existing system is anything less than a preordained and basically perfected part of the best of all possible worlds.

The meat packers developed the production line into one of its most efficient manifestations. Food packers have mass-produced canned fruits and vegetables. But the products of these industries were basically similar to that which came from butchering day on the farm or which the farmer's wife packed in Mason jars. And it was accepted that the dinner table was the ultimate goal for all that could be produced. Nevertheless, deep-seated changes were on the way and now they are becoming visible to both consumer and producer.

Farming has become a business and agriculture an industry.

Assistant Secretary of Agriculture Coke said recently that any farmer today using his grandfather's farming system would be bankrupt in five years. Technological changes in our production system have created a different atmosphere than we had two generations ago. Not only has technology influenced farming directly, but farm products have become inextricably a part of the same competitive system with nonfarm products.

In this issue (page 602) we see the effects of change on the industrial molasses market. The greatest use of molasses recently was as the base for producing alcohol by fermentation. Today, the rise of chemical synthesis of alcohol from petroleum products is changing the picture and the value of molasses as animal feed is being realized to an important extent. Also in this issue (page 596) we see concrete results from an attack on the food problem through algal culture, a source quite apart from the farm. Recently (AG AND FOOD, July 8, page 552), Ewell pointed out that the use pattern of inedible fats is changing. Chemically synthesized detergents are taking away some of the market for soaps, which consumed large amounts of inedible fats. Other new products are making inroads where fats previously found a market.

In the chemical industry, a component of a reaction system which doesn't have economically satisfactory commercial value sometimes may be recycled. This is now being done with tallow and grease—they are being fed back to animals. We want the high protein meat, but not the fats, so the fats go back into the production system for reuse.

Secretary of Agriculture Benson said that cotton and butter have been researched out of the market. Wasn't the neglect of research leading to improvement of position a result of failure to realize that agriculture has become an industry and that its products must compete with those of other industries? The rate of change of other industrial products is increasing. Agriculture cannot afford to be left behind. In the chemical industry there is broad agreement that a company should spend on research about 3% of the amount it receives from gross sales if it intends to hold its own in the competitive race. Is the agricultural industry giving serious thought to that principle? If it doesn't, we'll find increasingly that its products, like cotton and butter, will be researched out of the market.

It would be unfair to allow an inference that no research has been done. We have pointed out in the past that there is a great amount of valuable knowledge which is not being fully used—in fertilizers and agricultural chemicals, for example. The industries which can profit through sales of those products are beginning to realize that they have been missing an opportunity in failing to educate the farmer to the advantages to him. But in some areas, most of the research has been supported by federal and state initiative and funds. If agriculture as an industry is to hold its own, today certainly is not too early to increase the amount of hard thinking about cooperating in an attack on the problem. There is pleasant sentiment in farming as a way of life, but hard economic thinking must go into farming as a business.

Centennial of Condensed Milk

THIS YEAR marks the centennial of the perfection of the process to produce condensed milk, an event which has had a profound effect on the dairy field.

Gail Borden was an inventor of scores of gadgets and processes, but only one proved successful. Condensed milk made him a millionaire.

Borden was not alone in the search for a process that would keep milk from becoming sour. He had many rivals here and abroad, but all of them failed because they cooked the milk in the open air over a hot fire with the result that it turned brown.

It is very doubtful that Borden ever heard the expression "chemical engineer," but his solution to the problem would do credit to any member of the profession. He sensed that if he evaporated the milk over low heat in a partial vacuum, it would not be discolored.

The scene of Borden's invention in 1853 was the Shaker community of New Lebanon, N. Y. He borrowed a vacuum pan from his Shaker neighbors who used it for canning fruit. A few experiments and a man, who was considered by his neighbors as impractical and a failure, was on his way to fame and fortune. As a self-taught technologist Borden was considerably ahead of his time.