

## Current Aspects of the Fatty Acid Industry

IT WOULD BE INTERESTING to devote this editorial to a prophecy of what lies ahead in the way of new products and processes. However the industry's uncertain past has cooled my desire to become a seer and I have decided to take you back a few years, then establish our present position, and let you make your own predictions as to the future.



R. H. Potts

It is not necessary to go far into history to recognize certain developments which have exerted a marked influence on the growth of our industry. One is the replacement of soap by chemicals, mainly of non-fat origin, collectively known as synthetic detergents. This revolution, while taking away a portion of our markets, has furnished the fatty acid industry with an abundance of better and cheaper raw material. Furthermore the new detergents have lacked foam stability, and we have been able to recover some of the lost market by supplying fatty acid fractions well suited to correct this deficiency. In addition, many fat chemicals are excellent detergents in their own right, and the fatty acid industry should continue to enjoy a portion of the growing detergent market.

The phenomenal growth of the tall oil industry is another factor which will play an important part in the future of the fatty acid industry. By 1958 the existing and projected tall oil distillation units will have the capacity to produce over 200 million pounds of high grade unsaturated fatty acid per year. The installed distillation capacity will be greater than that of the rest of the fatty acid industry put together.

The abundance of fat and fatty acid has created a buyers' market, and industry has had to raise its standards of quality. To make these better products requires modern equipment and more exacting processes, and we find industry meeting the challenge. For preparation of raw material, continuous high pressure autoclaves continue to replace the older methods. Still design has improved, and at least five new stills have been placed on stream within the past year. The new stills operate continuously and automatically and are designed for minimum thermal decomposition and for efficient removal of high and low boiling impurities. As fine as these new stills are, they are outclassed in regard to fractionating efficiency and capacity by the new stills being built for the tall oil industry.

ANOTHER DEVELOPMENT, not exactly new but one that will bear watching, is the increasing interest displayed in the use of methyl esters as starting raw materials for the manufacture of synthetics. Methyl esters are more heat-stable than fatty acids, boil at lower temperatures, and can be processed and stored in black iron equipment. Several companies are in large scale production, and undoubtedly more will follow.

Production of stearic acid and red oil follow established methods with the solvent plants gradually replacing the older panning and pressing methods. The relatively newer extraction methods account for a portion of the high grade saturated acid market. Several processes disclosed in patent literature look interesting: one having to do with the separation of stearic from oleic acid using chilled water, surfactants, and centrifugals to perform the separation; and another making use of the differential solubility of sodium soaps in water solutions.

After the war Europe looked to the United States for new processes, and many American-designed plants for fat-splitting, fractional distillation, fat-amine production, solvent crystallization, liquid-extraction, etc., were built. European equipment manufacturers are now meeting their requirements and again are exporting fatty acid equipment to all parts of the world.

In Europe synthetics have as yet replaced only a small portion of the soap market but they are on the increase, and several large plants are being built to produce aryl-alkyl sulphates. Europe may not require our tallow in the future, and the problem of converting the excess into fatty acids and derivatives should keep some members of the American Oil Chemists' Society occupied at least part of the time.

R. H. POTTS  
Armour and Company  
McCook, Ill.