oleic acid for these experiments from earthnut oil, the latter containing 17.4 to 20.3% of saturated fatty acids, according to the source from which the oil came.

All the known methods for purification of oleic acid were examined to separate it from the saturated fatty acids, as, for example, purification with lead and barium salts, distillation in a vacuum, crystallization of lithium soaps in alcohol, ammonium and sodium soaps in ether, solubility of copper soaps in petroleum ether, purification with amides and anilines, fractional crystallization, bromination by the Grun method, freezing in petroleum ether, precipitation by treatment with dibromostearic acid in various solutions, as, for example, petroleum ether, acetic anhydride; petroleum ether and 70% alcohol; paraffin oil and 70% alcohol; paraffin oil and methyl alcohol; petroleum ether and aniline; petroleum ether and phenol; paraffin oil and phenol, etc.

All these methods gave unsatisfactory results. Oleic acid, it seems, has a tendency to form mixed crystals in presence of saturated fatty acids, and thus is explained the uselessness of the various attempts to purify this acid by crystallization.

Finally it was found that with mercury acetate in presence of acetic acid and methyl alcohol the percentage of saturated fatty acids could be reduced to less than 0.5%. Having studied the effect of quantity of these reagents, the following method to remove saturated fatty acids from crude oleic acid was obtained.

Oleic acid, 100 grammes, was heated in a water bath with 175 grammes of mercuric oleate, 140 cubic centimeters of methyl alcohol and 45 of glacial acetic acid. The mixture is then cooled and let rest for 24 hours, at the end of which it is filtered with a pump. The filtrate is treated with 50 cubic centimeters of hydrochloric acid (density 1.19) to split the complex products and after dilution it is briskly agitated with petroleum ether. The extract is washed with water and filtered. The petroleum ether is distilled in a water-bath and the residue saponified in the usual way. The soapy solution is agitated with petroleum ether to free it from non-saponifiable matter, and after adding diluted sulphuric acid the oleic acid is extracted with petroleum ether, the extract washed and the solvent distilled. Thus oleic acid, containing only 0.4 to 0.5% saturated fatty acids is obtained. This oleic acid, however, has a certain amount of acids with a greater degree of saturation (linoleic acid, etc.). It can be freed from these compounds also by crystallization cold in acetone as follows:—The oleic acid is dissolved in pure acetone, *viz.*, distilled on potassium permanganate and dried with anhydrous sodium sulphate, the solution being refrigerated at —10°C. to —15°C. in a mixture of alcohol and carbonic snow in a Dewar receptacle. After crystallization it is filtered through a funnel with double sides refrigerated with alcohol and carbonic snow. Care must be taken to cover the funnel with a sheet of glass to keep away moisture.

Repeating crystallization in this way a practically pure oleic acid is obtained.

The British Soap Manufacturer.

An investigation of the effect of various gases upon the yield in glycerine synthesis has shown that yields comparable with those obtained under atmospheric pressure may be had using SO_2,CO_2, N, and HCl, all under reduced pressure. *J. Soc. Chem. Ind.* 278-80T (1928).

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