glycerin and unreacted alcohol; volatilizing the unreacted alcohol from said liquid body; acidifying the residue of said liquid body; and separating the esters from the glycerin.

TREATING FATTY GLYCERIDES. G. A. Glossop (Colgate-Palmolive-Peet Co.). *U. S. 2,383,599.* A process comprises treating a fatty glyceride containing free fatty acid with a solvent for said free acid at least partially immiscible with the fatty glyceride to form 2 phases, separating a fatty glyceride phase from a solvent phase containing free fatty acid, and reacting the fatty glyceride with a monohydric alcohol having 1-6 C atoms per molecule in the presence of an alcoholysis catalyst.

MONOGLYCERIDES. C. J. Arrowsmith and J. Ross (Colgate-Palmolive-Peet Co.). *U. S. 2,383,581.* A process for preparing fatty acid monoglycerides comprises reacting a fatty triglyceride with an excess of glycerin in the presence of an alcoholysis catalyst to provide a liquid body containing a fatty acid monoglyceride and unreacted glycerin, bringing the liquid body to a pH of about 6 to about 7, and distilling said liquid body under reduced pressure to obtain a distillate comprising the fatty acid monoglyceride.

PETROLEUM DEMULSIFIERS. M. De Groote (Petrolite Corp., Ltd.). *U. S. 2,384,605-7.* The products are fat acid derivatives of 5-amino-1, 3-dioxanes.

PETROLEUM DEMULSIFIERS. M. De Groote and B. Keiser (Petrolite Corp., Ltd.). *U. S. 2,384,608.* The products are fat acid aminoalcohol esters of carbonic acid.

LUBRICANT MANUFACTURE. J. C. Zimmer (Standard Oil Development Co.). *U. S. 2,383,904.* This invention relates to the manufacture of soda soap grease from an oil suspension of kerosene-dehydrated caustic soda.

LUBRICANTS. J. C. Zimmer and G. M. McNulty (Standard Oil Development Co.). *U. S. 2,383,905.* An extreme pressure lubricant consists of 10% Pb oleate, 40% asphaltic mineral lubricating oil and 50% water.

FLOTATION OF IRON ORES. J. B. Clemmer and B. H. Clemmons (Sec. Int.). *U. S. 2,383,467.* The flotation reagent used is a mixture of soluble phosphate salts, Na oleate, and oleic acid.

CONDENSATION PRODUCTS AND METHODS OF PREPARING AND USING THE SAME. E. Lieber (Standard Oil Development Co.). *U. S. 2,384,935.* The process comprises reacting stearyl benzene with formaldehyde and subjecting the reaction mixture to distillation up to about 600° F. under reduced pressure to obtain the desired high molecular weight condensation product as distillation residue.

PLASTIC COMPOSITION AND METHOD OF PREPARING SAME. J. C. Cowan and H. M. Teeter (Sec. Agr.). *U. S. 2,384,443.* The process of manufacturing a plastic composition comprises intimately mixing a dihydric alcohol polyester of a polymeric fat acid with rubber compounding agents, heating the mixture until it becomes millable and then plasticizing the resulting composition by milling.

SOLVENT FOR OILS, WAXES, RESIN, ETC. O. Huppert. *U. S. 2,385,281.* The solvent is a condensation product prepared by reacting isophorone, maleic anhydride and a primary 1,2-hydroxyalkyl amine.

Abstracts

Drying Oils

Edited by
HOWARD M. TEETER

RAPID DETERMINATION OF THE IODINE VALUE OF CASTOR OIL. R. Rosenbusch and R. Parker. *J. Soc. Chem. Ind. 64,* 211-212 (1945). The use of mercuric acetate to catalyze the addition of Hanus reagent to castor oil gives results which are 6 to 7 units higher than those determined by standard methods. The deviation is shown to increase with an increase in the amount of mercuric acetate employed, but it can be reduced to the normal experimental error by acetylation of the hydroxyl group. It was found by experiment that satisfactory analyses could be made by reducing the volume of mercuric acetate employed. The procedure requires addition of 2.3 ml. of Hanus solution to a solution of 0.307 g. of castor in 10 ml. of carbon tetrachloride and immediately thereafter 2 ml. of 2.5 volume-percent mercuric acetate solution in glacial acetic acid. After an absorption time of 3-5 minutes at 21-24° C., the sample is titrated in the usual way. With one sample of oil, iodine values of 83.77 to 84.04, average 83.91, were obtained as compared with values ranging from 84.04 to 84.7, averaging 84.13, obtained by the standard Hanus method.

SPECTROPHOTOMETRIC DETERMINATION OF ALPHA-ELEOSTEARIC ACID IN FRESHLY EXTRACTED TUNG OIL. R. T. O'Connor, D. C. Heinzelman, A. F. Freeman and F. C. Pack. *Ind. Eng. Chem., Anal. Ed., 17,* 467-470 (1945). The extinction coefficients of freshly prepared eleostearic acid in 99 percent ethyl alcohol, iso-octane, and cyclohexane are 183.4, 169.8, and 168.6 respectively. After storage of the acid in the dark at about 0° C. for 24 hours, the value in alcohol dropped to 170 and there were similar changes in the hydrocarbon solvents. Measurements were made with a Beckman spectrophotometer at 270 $m\mu$ for alcohol and iso-octane and at 271 $m\mu$ for cyclohexane. Using these constants, α-eleostearic acid content of 5 samples of tung oil was determined by dissolving a weighed sample of the oil in the solvent, diluting to about 0.005 g. per l, and reading the density in a 1-cm. cell in the spectrophotometer. The values ranged from 78.7 to 81.8 percent. It is not necessary that tung oil be examined the same day it is extracted since the combined acid is more stable than the isolated acid, but the examination should be made as soon as practicable.

THE USE OF LOW-TEMPERATURE CRYSTALLIZATION IN THE DETERMINATION OF COMPONENT ACIDS OF LIQUID FATS. I. FATS IN WHICH OLEIC AND LINOLEIC ACIDS ARE MAJOR COMPONENTS. T. P. Hilditch and J. P. Riley. *J. Soc. Chem. Ind. 64,* 204-207 (1945). Low-temperature fractional crystallization has been applied to the quantitative estimation of the component acids from sunflower, sesame, and ground nut oils. The acids are first crystallized from acetone (5 g. per ml.) at —30°

The part remaining in solution contains most of the linoleic acid. The precipitated acids are crystallized from ether (10 g. per ml.) giving a soluble fraction containing mainly oleic and linoleic acids with minor proportions of saturated acids, and an insoluble fraction consisting mainly of saturated acids and having an iodine number of 10-20, due, as a rule, wholly to oleic acid. (As a precaution this fraction should be examined spectrophotometrically for linoleic acid.) The crystallization from ether may be repeated. The various fractions are converted to methyl esters and fractionated, and the composition of the original fatty acids is calculated in the usual way from the iodine values and equivalents of the fractions obtained. Fractional crystallization of the methyl esters of the original fatty acids may also be employed, but the separation effected is less complete. The final analysis obtained is, however, satisfactory. The analyses obtained by these procedures compare well with those obtained by lead salt separation or spectrographic analysis.

TESTS FOR SUPPOSED ALPHA-DICARBONYL COMPOUNDS IN AUTOXIDIZED FATTY SYSTEMS. H. Jasperson, R. Jones and J. W. Lord. *J. Soc. Chem. Ind. 64*, 143-5 (1945). The colorimetric tests for alpha-dicarbonyl compounds proposed by Prill, O'Daniel and Parsons were applied to biacetyl, diketostearic acid, autoxidized methyl linoleate and autoxidized peanut oil. The colors obtained were examined spectroscopically. substances responsible for the color of autoxidized fatty systems are not necessarily dicarbonyls. (*Chem. Abs. 39,* 4503.)

SOME VARIATIONS IN SOLVENT-EXTRACTED TUNG OILS RESULTING FROM SOLVENTS EMPLOYED. R. S. McKinney and R. E. Oglesbee. *Proc. Am. Tung Oil Assoc., 1945,* 43-7. The quality of oil recovered is affected by the nature of the solvent. One heptane fraction yielded an oil which was solid at room temperature, while heptane from another source yielded oil that was almost entirely liquid at ice-box temperatures. Hexane fractions yield oils liquid at room temperature and solid in the cold. Trichloroethylene yielded excellent extracted oils. (*Chem. Abs. 39,* 4498.)

CHANGES IN LINSEED OIL FILMS DURING DRYING. G. Fearnley. *Can. Chem. Process Inds. 29,* 519-20, 530 (1945). A review with twelve references. (*Chem. Abs. 39,* 4498.)

PATENTS

PROCESS FOR PRODUCING DRYING PRODUCT. Ivor M. Colbeth. *U. S. 2,388,122.* The process comprises oxidizing an aliphatic ester having a long chain acid radical and containing at least two unconjugated double bonds until its iodine value is reduced appreciably, and dehydroxylating the oxidized product.

FRACTIONATION OF TALL OIL. A. W. Hixson and R. Miller (Chemical Foundation, Inc.). *U. S. 2,388,412.* Fatty acids are continuously extracted from tall oil by treatment with liquefied, normally gaseous, hydrocarbon at elevated temperatures at which the rosin is insoluble.

PAINT COMPOSITIONS. J. C. Lichty and N. V. Seeger. *U. S. 2,388,656.* The coating composition comprises a solution of a drying oil, organic isocyanate, and a condensation derivative of rubber.

ISOMERIZING POLYUNSATURATED FAT ACIDS AND DRYING OILS PREPARED FROM THEM. Cyanamid Co. and A. H. Stevens. *Brit. 558,881.* Higher aliphatic polyolefinic monocarboxylic acids are isomerized to increase their degree of conjugated unsaturation by heating an aqueous solution of their soaps and an excell of alkali under pressure at 200-250°. A drying oil is produced by esterification of the isomerized acids with a polyhydric alcohol containing at least three esterifiable hydroxyl groups. (*Chem. Abs. 39,* 4506.)

Abstracts

Soaps

Edited by
LENORE PETCHAFT

NEW TRENDS IN SOAP INDUSTRY—PART II. J. Davidsohn and A. Davidsohn. *Ind. Chem. 21,* 461-4 (1945). Besides the usual solvents for the manufacture of soaps such as simple hydrocarbons, turpentine oils and the simple chlorinated hydrocarbons, there are new synthetics such as hydrogenated naphthalene derivatives, hydrogenated phenols and amines. Refined wool fat and lecithin are being used as superfatting agents for toilet soaps. Other additives include egg yolk, products from seaweeds, casein, the mono- and di-glycerine-esters and glycol-esters. Formic acid may be used to lower the pH of soap, while *p*-octyl-phenoxy-acetic acid renders hard soaps more soluble in water. New synthetic detergents are reviewed and the theory of solubilization is discussed.

SURFACE-ACTIVE CHEMICALS — WARTIME CHEMICAL DEVELOPMENTS IN GERMAN INDUSTRY. *Chem. & Met. Eng. 52,* No. 9, 192 (1945). One of the most important discoveries made was the fact that the addition of cellulose glycollic acid sodium salt to synthetic detergents increases their effectiveness to fully the equivalent of that of soap. The amount required was about 25% of the amount of synthetic detergent. The older emulsifying agents were of the long chain aryl polyglycol ether type. Later there was introduced the Emulphor STH and STX type, made by condensing a long chain aliphatic sulfone chloride (Mersol) with ammonia and then with chloroacetic acid. Later, because of shortages, dodecyl xylene sulfonate was also under the same name. Demulsifying agents were of three types—alkyl aryl polyglycol ethers, derivatives (amides) of hydroxyoleic acid sulfate ester, and the sulfonate of di- (ethyl hexyl) maleate. These were each very specific for certain types of petroleum.

DETERGENTS FROM PRIMARY ALCOHOLS OF HIGH MOLECULAR WEIGHT. A. A. Bag and T. P. Egupov. *Uspekhi Khim 14,* No. 1, 56-65 (1945). Individual primary alcs. of high mol. wt. were prepd. by a process of continuous hydrogenation of compound esters of fatty acids in vertical columns filled with small lumps of catalyst comprising a Cu-Al alloy contg. 34% Cu and 66% Al, under high pressure. From these alcs. synthetic detergents of the types "Hardinol," "Velan," and "Cefirol" were prepd. and their properties were