lubricating oil and a small amt. (0.25-1%) of an aliphatic nitride having at least 6 C atoms to increase the oiliness of said mineral oil.

Penetrating oil. A. W. Ralston, W. O. Pool and J. Harwood. U. S. 2,053,046, Sept. 1, 1936.—Mixt. of mineral lubricant and aliphatic nitrile.

Improving blown fatty oil. J. Scheiber. Ger. 625,902. Cl. 12o 26.01, Feb. 17, 1936.—Example: 900 pts. of linseed oil are blown 6 hrs. at 150° or until there is an 80 Ac no.; 420 pts. of linseed oil fat acids are added and the mixt. is heated to 200° for 2 to 3 hrs. The temp. is progressively raised to 300°, cooled, 46 pts. glycerin are added and heat is applied until the acid no. falls below 5. Protective coatings made with this product are highly water resistant.

Wool grease naphthenate compositions suitable for use as driers in paints, varnishes and lacquers. Friedrich Meidert (to I. G. Farbenind, A.-G.). U. S. 2,049,396, July 28.—Wool grease or wool grease acids are saponified with an aq. soln. contg. an excess of caustic alkali, the excess alkali is neutralized with naphthenic, linoleic or resin acid or the acids obtainable by the oxidation of paraffin or petrolatum, a sol. salt of a siccative metal such as $MnSO_4$ is added, and the ppt. thus formed is washed with water, water remaining in the ppt. is evapd. and the ppt. is heated to the fusion point. *(Chem. Abs.)*

ABSTRACTS

Soaps

***Edited by* M. L. SHEELY**

The Nature and Structure of Solid Soaps and the Importance of These Factors in Soap Making. B. Tyutyunnikov and N. Kas'yanova. *Allgem. Oel u. Fett-Ztg.* **33,** 204-16 (1936).—Literature on the subject is reviewed. Tyutyunnikov and Kas'yanova present 32 photomicrographs of soaps. All the soaps displayed a crystal structure. Further study should lead to a criterion for investigating common soap manufacturing methods so as to create such improvements that will yield desirable physical qualities in soaps. *(Chem. Abs.)*

Bleaching Oils, Fats and Soaps. *Seifens. Zeit.* **63,** 291-3 (1936).—The method of bleaching dark-colored fats, tallows, etc., by treatment first with dilute sulphuric acid and then with hydrogen peroxide of 30% strength, is described. It may be used also with oils, but the author is of opinion that bleaching the soaps is preferable to prior bleaching of the oils and fats. These latter may be subjected to a little preliminary bleaching or refining with dilute sulphuric acid, then saponified, and the resulting soap—either in the soap pan or crutcher—bleached with hydrogen peroxide, of which various proprietary brands are named, together with suitable apparatus, including a steam jet stirrer. *(Oil and Colour Trades Journal* **90,** 1976, 616.)

Preventing Rancidity. *Drug and Cosmetic Industry* **39,** 2, 241 (August, 1936).—Antioxidants are useful materials to add to fats and oils to prolong the induction period and retard the development of rancidity. Among these are hydroquinone, alpha and beta naphthol and guaiacol as well as tannings. Hydroxydiphenyls and dinaphthyls have a protective action when they are present in concentrations as low as 0.001 to 0.1%. The protective action is also exhibited by compounds in which the aryl groups are not directly connected but are separated by a methyl, amino or oxygen group. Transition products of phenol with formaldehyde or amines are also useful as antioxidants. Several of the unsaturated polybasic acids, such as maleic, fumaric, aconitic, citraconic and itaconic acids have been found useful. Of the amino derivatives used for stabilization, the aromatic amines for aminophenols such as para-aminophenol are effective in concentrations of 0.01-0.5%. *(Allg. Oel und Fett-Ztg.)*

Synthetic Fatty Acids from Mineral Oils. *Oil and Colour Trades Journal* **90,** 1975, 554 (1936).—In Russia Petrov, Daniloswitsch and Rabinowitsch used mineral oil distillates for the production of synthetic fatty acids. Oxidation is preceded by sulphonation with oleum or gaseous SO_3. With the simultaneously purification of the crude oil with 18% sulphuric acid containing 20% anhydride, the sulphonation products obtained are known as Kontakt Petrov and find extensive application in the fat-splitting industries. The purified oil after separation of the sulphonation products is neutralized with 4% caustic soda and consists chiefly of hydrocarbons of the methane and naphthene series. It is oxidized at atmospheric pressure by passing through an air current at 90 to 115° C. for 48 hours. A catalyst is used. After 48 hours 15 to 20% fatty acids are produced. The total acid yield and the predominance of one or other kind of acid depends on the time of reaction.

The crude acid mixture contains carboxylic acids, oxy acids, lactones, anhydrides, alcohols, aldehydes, ketones and resins. Carboxylic acids are used in soaps and the oxy acids in the lacquer industry, in plastics and for dark soap for special purposes. Mixed with hydrogenated fats up to 50% they are used in making soap. The fatty acids sulphonate well and become solid. The calcium salts of the fatty acids rub out well with pigment and dry quickly. The fatty acids are being used in varnishes or interior work.

The Thermal Conductivity of Glycerol-Water Mixtures. S. Erk and A. Keller. *Physik. Z.* **37,** 353-8 (1936).—Determinations cover the range 6° to 72° and 18 to 88% glycerol by weight. *(Chem. Abs.)*

Glycerin Research in Russia. *Perfumery and Essential Oil Record* **27,** [8], 327 (1936).—Considerable attention is now being given to research in connection with oils, fats and fatty acids, in Russia, including fat-

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splitting and glycerine production. Various modifications in ordinary methods of fat-splitting include that of using glycerin waters or sweet water of higher concentration, that is to say, the material obtained from previous splitting, with a view to reducing the working period. For example, waters of 7.5° and 4° Be respectively were worked up to higher concentrations, with some economy in operation, and a better product in respect to ash content and organic residue. Splitting agents, such as those of the Petroff or Contact type, have been decomposed into their higher molecular constituents. It was found that the former, the higher molecular sulphonic acids, were fat-soluble and possessed practically the same splitting activity as the original Petroff agent; whilst the lower molecular sulphonic acids were water-soluble and had little or no splitting effect. It is understood that by using the fraction consisting of the higher acids certain advantages are obtained over the usual method; but this seems to need confirmation, in view of the extra labor of splitting the agent up into its fractions in this way. Another alleged improvement, due to Rehbinder, is the use of a colloidal dispersion agent, such as kaolin or graphite, to act as "centres of crystallization" and facilitate removal of lime compounds and other unwanted substances from the glycerin. Lime compounds in the normal course are apt to form insoluble scale deposits, liable to block up pipes, etc., whereas by using graphite in the colloidal form in this way this particular difficulty is avoided. Yet another development is a supposedly easier and more expeditious method of control in the splitting operations. Some details are given by "H" in *Seifens. Zeit.* 63, 36-7.

Soybean Oil for Soap Making. A. A. Horvath. *J. Soc. Chem. Indus.* **55**, 691-693.—The lathering capacity of soybean oil soap is not much affected by the hardness of the water. The caustic soda lye used in the initial saponification step of soybean oil should not exceed 8.5° Be. For curd soaps soybean oil should be used only in mixtures with other fats and oils. Soybean oil is very suitable for the manufacture of soft soap. The hydrolysis of soybean oil by Twitchell reagent and the manufacture of soap from the fatty acids are discussed.

PATENTS

Production of Soap Filaments. Dr. Arch Paterson, D.Sc., of the Universal Soap Company, Limited, S. W. 1 in British Patent Specification No. 446,342, describes a process for the manufacture of soap filaments by a so-called spinning operation comprising feeding soap to a delivery nozzle or outlet of a spinning device, and dividing it into filaments by a revolving cutter as it is delivered or extruded from the nozzle or outlet. The soap can be sold to the public in the form of filaments. Alternatively, the filaments constitute material for the economical production of powdered soap. The filaments can be employed, also, for effecting a substantial economy in the production of bar, cake or tablet soap. Thus, for example, the spun soap may be delivered to a mixer wherein perfume or other additional matter can be incorporated and blended with the soap filaments, the mixture being then passed into a plodder wherein it is compressed before delivery to the stamps for stamping and shaping. By this means a very homogeneous product is obtained with the added matters perfectly distributed, this result being obtained without the employment of a mill and therefore with great economy. *(Perfumery and Essential Oil Record* **27**, [6], 271.)

Soap-Like Sulfonates from Unsaturated Fatty Alcohols. U. S. 2,044,919, June 23, 1936. Walther Schrauth and Richard Huster (to "Unichem" Chemikalien Handels A.-G.). Lime-, magnesia-, and acid-resisting sulfonates are formed by the gradual addition of unsaturated fatty alcohols such as oleyl alcohol to concentrated H_2SO_4 which is precooled to a temperature only slightly above the melting point of the alcohols. *(Chem. Abs.)*

Wetting, Cleansing, and Emulsifying Agents and Method of Producing the Same. H. Hunsdiecker and N. Vogt, Cologne, Ger. U. S. 2,051,947, Aug. 25, 1936.—The product comprises a known agent for improving properties of fibers in combination with S-dodecyl isothiourea halogenide.

Soap. German 625,606, February 12, 1936 (Cl. 23a 3). Metallgesellschaft A.-G.—Soap stock is worked up by completely or partly drying in vacuo and treating with aqueous solution of alcohol and salt. The solution may also contain acid. By this means, alcohol soap solution is separated free from impurities. *(Chem. Abs.)*

Sodium Silicate Detergent. U. S. 2,046,192, June 30, 1936. Foster D. Snell and Henry V. Moss (to Swann Research, Inc.). A granular detergent is prepared containing more than 50% of the reaction products of NaOH and Na silicate with a ratio of $Na_2O:SiO_2$ of about 5:3. The granules may be coated with about 0.1% of a saponifiable oil or oleic acid and are suitable for use in laundering cotton fabrics, etc. Cf. *C. A.* **29**, 1906. *(Chem. Abs.)*

Fatty Polyglycerol Esters. British 442,950. Lever Brothers, Ltd., Port Sunlight, and R. Furness, Westbourne, Belvoir-rd., Lower Walton, Warrington.—Crude polyglycerol fatty acid esters containing free hydroxy groups are agitated with an equeous solution of an inorganic acid salt in order to effect separation of the glycerol and polyglycerol present. Two layers result, the upper consisting of the purified ester and the lower, an aqueous salt solution from which glycerol and polyglycerol may be recovered. A preliminary test is made at 80-100° C. and using a 20% aqueous solution of the salt, to ascertain whether the separation of the ester from the aqueous salt solution containing the glycerol and polyglycerol is effective. In an example, a crude ester derived from coconut oil and a polyglycerol is stirred and heated with aqueous sodium sulphate. The upper layer after separation is subjected to a further washing treatment with aqueous sodium sulphate. Sulphates of aluminum, magnesium, ammonium, zinc, lithium and potassium and sodium dihydrogenphosphate, sodium metaphosphate, sodium thiosulphate and sodium sulphite may be used satisfactorily. *(Oil and Colour Trades Journal* **90**, 1974, 491 (1936).)

New Taxes Will Affect Oil and Fat Trade

Marked changes in the trade use of several important fats and oils as a result of the new excise taxes are to be expected, says the Bureau of Agricultural Economics, which has just made public a study of the probable effect of the excise taxes of 1936 on fats and oils. The taxes went in effect August 21.

The new items subject to an excise tax on imports are tallow and inedible animal fats and greases, 3 cents per pound; hemp and perilla oils, rape and kapok oil, 4½ cents per pound; hemp, perilla, rape, kapok and sesame seeds, 2c per pound.

Fatty acids and salts of taxable oils are taxed at the same rate as the fat or oil from which derived. Fatty acids of linseed oil are taxed 4½ cents per pound. The excise taxes now apply to all the taxable oils, fatty acids and salts whether or not refined or otherwise processed.

The rate of excise taxes imposed by the Revenue Act of 1934 on coconut oil (Philippine and other) and palm and palm-kernel oils, whale and fish oils has not been changed by the Revenue Act of 1936, but a 3 cent tax has been added to the fatty acids and salts of each of them.

The tax of 3 cents per pound on tallow (and on certain other inedible animal fats and greases) is cited as an example of one item that probably will have a significant effect. During the past two years with a 3 cent per pound tax on coconut oil, palm and palm-kernel oils and only ½ cent duty on tallow, tallow has been imported for soap, displacing coconut and palm oils to some extent. Tallow imports increased from 200,000 pounds in 1933 to 246,000,000 in 1935. Such imports dropped, however, to 30,000,000 pounds in the first five months of 1936.

At current prices the use of imported tallow in soaps is likely to be discouraged. Throwing the Argentine tallow back on to foreign markets may tend to reduce prices of other foreign soap materials coming into the United States.

Perilla oil, free of duty, has been lower in price than linseed oil and its imports also have been mounting rapidly. The addition of a 4½ cent excise tax on imports probably will increase the cost of perilla oil but still leaves it lower in cost than tung oil, which remains free of either duty or tax. Imports of perilla oil probably will be reduced, but some may continue to enter.

Tung oil, free of duty or tax but higher in price than the more abundant drying oils, will continue to be imported for uses which demand its special quick-drying and waterproof qualities, the Bureau says.

China and Manchuria Expect Larger Oil-Seed Production

The combined Chinese and Manchurian production of oil seeds, including soybean, sesame, peanuts, cotton, rape, hemp, perilla and linseed, is expected to be substantially larger in 1936-37 than in the 1935-36 marketing period, according to a radiogram to the Bureau of Agricultural Economics from Agricultural Commissioner O. L. Dawson in Shanghai.

Shipments from Manchuria probably will show some increase, but this increase is likely to be offset by reduction in the Chinese supplies available for export. Consequently the combined exports from both countries during the 1936-37 marketing season probably will be less than the large 1936 crop might indicate.