acid being formed. **IV** was also obtained directly from the oil of *Licania rigida* kernels. **IV** was probably the same as the "conepic acid" obtained by van Loon and Steger (*C. A.* 25, 4848). E. W. SCOTT.

Hyoscyamus niger-seed oil. Kh. Lyuttenberg and S. Ivanov. *Allgem. Oel- u. Fett-Ztg.* 32, 189-94 (1935).—Petr. ether extd. 28.9% oil from ripe seeds. After heating 25 min. at 280° the oil dried in 3 days. Analysis shows: n^{40}_{D} 1.4693, acid no. 11.95, ester no. 174.8, sapon. no. 186.7, I no. 142.9, thiocyanate no. 81.1, unsaponifiable 1.99%, glycerides of satd. acids 6.3-8.7%, and glycerides of linoleic acid 65.7-71.3%. Some evidence is presented which shows that a solid unsatd. acid may be present. The oil-free seed residue is a source of the alkaloids atropine and hyoscyamine. M. M. PISKUR.

PATENTS

Treating oils and fats. Sigval Schmidt-Nielsen. Fr. 779,695, Apr. 10, 1935. Oils or fats are heated in the absence of air to above 200° for not less than 24 hrs. until the I index has been reduced to the desired value or until the viscosity has been increased to the desired value.

Castor oil. Isser Davidsohn and Robert Strauss. Ger. 608,973, Feb. 5, 1935 (Cl. 23*c*. 2). Castor oil is rendered sol. in mineral oil by mixing with chlorinated high-mol. aliphatic hydrocarbons. The mixt. may be heated to 200°. Examples are given. The product is used for lubricating, softening leather, making lacquer, impregnating textiles, etc.

Stearin. H. Briske. *Seifensieder-Ztg.* 62, 383-4 (1935).—A brief review of raw materials, production methods, uses, etc., of tech. stearic acid. J. W. P.

Selective hydrogenation of the mixed glycerides in natural fats. T. P. Hilditch. *Sci. J. Roy. Coll. Sci.* 5, 63-9 (1935); cf. *C. A.* 29, 3867.[1]—Recent work is reviewed. The relative rates of hydrogenation of the acyl groups in mixed glycerides and of the corresponding free acids are not const., but depend on the mech. conditions employed and on the configuration of the glyceride mols. H. A. BEATTY.

ABSTRACTS

Soaps

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

Polymerized Oils as Soap-Stock. *Perfumery and Essential Oil Record,* 26, 8, 322 (August, 1935). Polymerized oils as soap-making materials continue to attract attention, and a considerable amount of research on the subject is being carried out, notably in Japan, particularly with reference to the treatment of fish oils and soya bean oil. Some of this work has already been drawn attention to in these notes ("P. & E. O. R.," 1932, 333, and 1933, 287), and further contributions appear in the "Journ. Soc. Chem. Ind.," Japan, 1935, 51B and 77B.

A recent patent by S. Schmidt-Neilson (British Patent 426.752) claims to produce from whale oil excellent raw material for the manufacture of toilet or household soap. The oil is heated either in completely filled containers, or in an indifferent gas such as nitrogen or carbon dioxide, to a temperature of 250-260° C. for at least 48 hours, or more generally, 72 hours. A No. 0-1 whale oil treated in this way gave on saponification a light colored soap, of pleasing odor, and was quite a suitable material, when admixed with hydrogenated fat, for the manufacture of toilet soaps. Such a polymerization process is said to effect considerable reduction in the auto-oxidizability of the oil, and so lessen the risk of rancidity.

Various catalysts have been proposed for assisting the polymerization process, including lime, magnesia, zinc, zinc oxide, alumina, whilst the use of hydrofluoric acid has been claimed to allow of polymerization at much lower temperatures, not exceeding 100° C. In British Patent, 428,993 the N. V. de Bataafsche Petroleum Maats now claim the polymerization of oils at temperatures of 100-200° C. in the presence of small amounts of boron trifluoride as catalyst.

Soap Used to Keep Baffle Plates Clean. *Industrial and Engineering Chemistry,* 27, 8, 12 (August, 1935). To keep baffle plates clean during spray painting operations, the New York Industrial Commission recommends first spraying the whole interior of the booth, where painting is done, with a liquid soap. A soap which will dry but will not harden is best. Then, because there is a membrane of soap between the metal wall of the booth and the deposited paint, the waste paint and soap can be easily scraped off.

Bactericidal Soaps. *Oil and Colour Trades Journal* 87, 1915, 1896 (June 28, 1935). In Seifens. Zeit. (1935, 62, 361). Dr. Th. Ruemele summarizes some of the essential conditions in the manufacture of bactericidal soaps, and enumerates the principal chemical agents for incorporating therein. Most soaps, especially those with certain kinds of perfume, have some disinfecting and perhaps even bactericidal power; but a bactericidal soap properly so-called requires specially active constituents. These need to be very carefully chosen in order to avoid untoward reactions in the soap, and the soap itself must preferably be dry and neutral, though it may be to some extent superfatted. It must also possess cleansing as well as disinfecting qualities. In some cases, as with alcoholic preparations, the former condition is not fulfilled. Another important factor is that the substances incorporated shall have no harmful action on the skin. Water-soluble metal salts, such as those of magnesium, aluminum, or zinc, alkyl or aralkyl ethers of carbohydrates (cellulose, starch, dextrin, etc.), glycerin, or lanolin may be safely used, for they not only increase the cleansing power but also the dermatological efficacy of the soap. Other important constituents are colloidal sulphur, coal tar, alcohols, formaldehyde, phenols, essential and other oils, fluorides, metal compounds, albuminoids. Thus a very great variety of preparations is possible, of which it is possible only to note one or two examples, such as the phenol, formaldehyde, and sulphur soaps, which are briefly described.

Sulfonating the Higher Alcohols. *Chemical Industries,* 37, 2, 147 (August, 1935). A cheaper and more convenient method of sulfonating the higher alcohols is described by Mario and Alberto in a recent issue of Seifensieder-Zeitung and digested in the British The Soap, Perfumery and Cosmetic Trade Review for April.

ABSTRACTS

Soaps

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

Ten kg. of sperm oil are discovered at ordinary temperature in 100 kg. dry trichlorethylene. The solution is cooled to —2° C. and then 8 kg. chlorosulfonic acid is added slowly and carefully. Reaction is complete after 48 hours. Mixture is then slowly poured into 100 kg. ice and 50 kg. water. The free mineral acid is neutralized with lime and the solvent recovered by steam distillation. Mixture is then filtered and washed with cold water. Filtrate contains the calcium salt of the sulfonic acid of the cetyl alcohol. Then soda is added, by which calcium carbonate is precipitated and the sodium sulfonate of the cetyl alcohol is obtained, the solution is concentrated to dryness in vacuo.

This dry substance is then ground, and forms a yellow powder which is highly soluble in water and yields solutions which are stable toward calcium and magnesium salts. When the solution is shaken, a stable lather is developed. Residue which is obtained after precipitation with lime consists chiefly of calcium sulfate, calcium palmitate and a few impurities formed during the reaction. This residue is treated with hydrochloric acid and heated, whereby palmitic acid is separated, which can be obtained in a fairly pure condition. Yield is large. Properties of the sulfonate are satisfactory when compared with those of the product which is obtained from the pure cetyl alcohol, and the output of fatty acids which can be recovered is sufficiently good to influence the cost price favorably.

PATENTS

Hydroxy Sulfonated Fatty Acid Esters (Foaming, Emulsifying, Wetting and Cleansing Agents). U. S. 2,006,309, June 25, 1935. Charles C. Clark (to Procter & Gamble Company). One of the OH groups of 1.2–dihydroxypropanesulfonic acid is esterified with a fatty acid containing at least 6 C atoms, such as fatty acids of coconut oil, oleic acid, fatty acids from tallow or stearic acid (various types of reaction for producing the esters being described, with examples and details of procedure). (C. A. 29, 16, 5547, August 20, 1935.)

Distilling Higher Fat Acids. U. S. 2,006,491, July 2, 1935. Lucius M. Tolman (to New Process Fat Refining Corporation). Stock containing fat acids is rapidly heated to a volatilizing temperature while passing it in a restricted stream through a heating zone and is passed countercurrent to steam under subatmospheric pressure in a distilling zone to vaporize fat acids, and entrainment is removed from the volatilized fat acids by contact with a body of substantially pure higher fat acids condensed from the vapors. Various details of apparatus and operation are described. Cf. C. A. 29, 3868. (C. A. 29, 16, 5686, August 20, 1935.)

Retarding Aging of Oils and Soaps. *Soap Gazette and Perfumer,* 37, 6, 14 (June, 1935). British Patent Number 410,274. The aging of soaps and mineral or fatty oils is retarded by the addition of a diarylamine having at least one aliphatic hydrocarbon group which contains at least two carbon atoms substituted in the aromatic nucleus. The aryl groups do not contain any other substituents than hydrocarbon groups, amino groups, or alkoxy groups. 0.1-5.0 percent is suitable. Mixtures of such diarylamines with each other and/or with other antioxidants may be used. In a preferred modification the aliphatic hydrocarbon group is in the para position and contains a branched chain, e.g., in p-isopropyldiphenylamine or p-p^1-di-tertoary-butyldiphenylamine. A list of other suitable compounds is included.

Heat-Exchange Liquid Suitable for Use in Automobile Radiators, etc. U. S. 2,007,243, July 9, 1935. Frederick B. Downing and Richard G. Clarkson (to E. I. du Pont de Nemours & Company). Water is used with a small proportion of a corrosion inhibitor comprising a mixture of o-toluidine, an oil such as a refined paraffin oil and an emulsifying agent such as soap and oleic acid, sulfonated castor oil and oleic acid, petroleum sludge acids or sulfonated polynuclear aromatic hydrocarbons. (C. A. 29, 16, 5547, August 20, 1935.)

Soap. British 424,283, February 18, 1935. E. I. du Pont de Nemours and Company. Soap is superfatted without risk of rancidity by adding 1 or more aliphatic alcohols having 8-20 C atoms and obtained by catalytic hydrogenation of fat acids (including naphthenic acids) or their derivatives, e.g., esters, amides, chlorides. The alcohols may be added to the semifinished or stock soap, or to the fat acids, fats or oils prior to saponification with alkali. Conveniently a part of the soap fat is converted into alcohols by hydrogenation and added to the remaining fat to be saponified; or the entire soap stock may be mildly hydrogenated to convert a part of the glycerides to alcohols; or the required concentration of alcohols may be obtained simultaneously with hardening of the fats by catalytic hydrogenation. Among examples, palm kernel oil 900, cottonseed oil 600 and tallow 400 lb. are mixed; 200 lb. of the mixture is withdrawn and passed continuously at 385° and 2,000 lb. pressure with excess H over a mixture of Zn and Cu chromites; about 85% of the fats is converted into alcohols. The hydrogenated and untreated fats are mixed, boiled with 1,555 lb. of 30° Be. NaOh and finished with 100 lb. of fresh palm-kernel oil. (C. A. 29, 15, 5297, August 10, 1935.)

Soap. German 609,634, February 19, 1935 (Cl. 23e 2). Carl Stiepel. Superfatted soap or soap-containing solvent is obtained by using esters of high-molecular fat acids and monohydric low-molecular alcohols as the superfatting agent or solvent. Thus, superfatted toilet soap is made by kneading ordinary soap with 4% of ethyl stearate. Liquid soap is made by melting common soft soap with 6% of methyl oleate. (C. A. 29, 15, 5297, August 10, 1935.)

Homogenizing and Refining Soap Bases. U. S. 2,005,333, June 18, 1935. John W. Bodman (to Lever Brothers Company). To obtain a homogeneous plastic mass from which bars or cakes can be cast, the temperature of the base is regulated to maintain a predetermined condition of plasticity and, while in this condition, the material is repeatedly forced under high pressure through successive sets of minute orifices of decreasing size, with none of the orifices having a size materially greater than the openings of a 20-mesh screen. Apparatus is described. (C. A. 29, 15, 5298, August 10, 1935.)