from the oil fed groups. Abnormal excessive molting beginning at the 6th wk. was noted in the lots fed more than 14% of oil.

QUINONYL DERIVATIVES OF FATTY ACIDS. L. F. Fieser et al. *J. Am. Chem. Soc. 62,* 2966-70 (1940). Bactericides, spermicides.

PATENTS

PROCESS FOR COUNTERCURRENT EXTRACTION. G. Bottaro. *U.S. 2,218,080.* App. is described.

TREATMENT OF DISTILLERY SLOP. C. R. Brown et al (Sharples Corp.) *U.S. 2,216,904-5.* The distillery slop contg. oil is heated to 250°F., filtered and oil is recovered from the filter cake by pressing.

RECOVERY OF FATTY ACIDS. M. Harder (Jasco, Inc.). *U.S. 2,216,238.* Oxidized nonaromatic hydrocarbons are submitted to sapon., the volatile constituents are removed by vacuum distn. and the fat acids are obtained from the resultant soap by treatment with inorg. acid.

PROCESS OF REFINING FATTY ACIDS. A. W. Hixson and R. Miller (Chemical Foundation, Inc.). *U.S. 2,219,652.* Fatty acids are sepd. from tar-like residues by extn. with normally gaseous hydrocarbons.

METHOD FOR PURIFYING REFINED OILS. B. Clayton (Refining, Inc.). *U.S. 2,216,104.* Refined oil contg. a trace of soapstock and moisture is pasted through a heating zone into a low pressure zone, the operation is so adjusted that moisture is removed and the soapstock is dried. The soapstock is then removed.

PROCESS FOR TREATING REFINED OIL. B. H. Thurman (Refining, Inc.). *U.S. 2,216,680.* Freshly pressed oil is mixed with water to form an emulsion and the emulsion is centrifugally sepd. The process removes impurities from the oil.

MARGARINE PRODUCT AND METHOD OF MAKING SAME. A. K. Epstein et al. *U.S. 2,217,309.* The emulsifier is incorporated into the margarine mixt. in aq. or milk soln.

FOOD PRODUCT AND METHOD FOR PRODUCING IT. A. Musher (Musher Corp.). *U.S. 2,218,475.* Water and fat emulsions are prepd. for use in canned fish and other foods. The emulsion may contain fat, salt, sugar, spices, gum tragacanth and vinegar.

CANNED FOOD PRODUCT AND CANNING METHOD. A. Musher (Musher Corp.). *U.S. 2,217,698.* A special dressing is used in canned fish.

SALAD DRESSING AND METHOD OF PREPARING THE SAME. A. Musher (Musher Corp.). *U.S. 2,217,699.* Gumminess is reduced by using thickener in paste form and aerating to 20° air by vol.

ANTIOXIDANTS. S. Shappirio. *U.S. 2,217,711.* Betaines, their esters or salts are used as antioxidants.

PROCESS OF RETARDING FAT BLOOM AT THE SURFACE OF CHOCOLATE AND CHOCOLATE-COATED PRODUCTS, AND THE RESULTING PRODUCT. L. R. Cook and J. H. Light (Wilbur-Suchard Chocolate Co., Inc.). *U.S. 2,216,660.* A portion of the cocoa butter of the product is elaidinized, i.e., treated with oxides of N or S to convert some of the oleic acid to elaidic acid. The treatment raises the m.p. of the cocoa-butter thus reducing the tendency to crystallize.

METHOD FOR CRYSTALLIZING FATS. C. Dedlow (Swift & Company). *U.S. 2,200,982.* The process comprises two quick chilling steps, in the first the seed crystals are formed and in the second quick chill the seed crystals are increased by accretion.

CONVERSION OF BONES INTO EDIBLE FAT AND GLUE CONTAINING CRUSHED BONES. W. Steinmann. *Ger. 686,-158 Cl. 23a.* The rendering of glue stock contg. crushed bones is accomplished by first drying at 58° under reduced press. and removing the fat from glue stock with centrifuges.

CONVERSION OF RICINOLEATES INTO OTHER ORGANIC COMPOUNDS. A. G. Houpt (American Cyanamid Co.). *U.S. 2,217,515-6.* In the prepn. of monohydroxydecanoic acid, castor oil soap is heated with water at 180-230°. For sebacic acid heat to 235-275°.

PROCESS FOR PRODUCING FATTY ACIDS AND RESINOUS MATERIALS FROM FATTY GLYCERIDES. A. Greth and F. Lemmer (Resinous Products & Chemical Co.). *U.S. 2,217,363.* Glycerides of drying oils are heated with an acidic resin under vacuum during which the liberated fat acids are distd. off.

MODIFICATION OF THE PHYSICAL PROPERTIES OF ISOCOLLOIDS. L. Auer (J. Randolph Newman). *U.S. 2,213,943.* The viscosity of mineral oils are increased by adding fatty oil and a sulfonated emulsifier and heating to 100-300°.

APPARATUS FOR RECOVERING GLYCERIN. B. Clayton (Refining, Inc.). *U.S. 2,218,279.* This still principle is based on the spraying of heated soap glycerin mixt. into a vacuum chamber, in which the glycerin vaporizes and distills off.

Abstracts

Soaps

Edited by M. L. SHEELY

CATALYTIC SOAP DARKENING. Mykola Zajcev. *Seifensieder-Ztg. 67,* 132 (1940). Soap containing 0.001% of cupric oxide or ferric oxide showed a noticeable darkening after exposure for four weeks to diffused daylight at 20-25° C.; that containing 0.005% of either oxide showed deterioration after one week. It is suggested that rancidity proceeds in the following manner: The unsaponified fat, which is in a finely divided state in the soap, oxidizes in the presence of moisture, light and catalysts to form lower molecular weight fatty acids, aldehydes, ketones and other products, with a decrease in the alkalinity of the soap, until finally all free alkali is removed and rancid acid soap remains.

VAPOR PRESSURE OF GLYCERINE SOLUTIONS AT 20°. D. W. Grover and J. M. Nicol. *J. Soc. Chem. Ind. 59,* 175 (1940). The vapor pressures of glycerine solutions from 25-92% by weight are measured by determining the dew point of air maintained in equilibrium with the solutions. By means of Dühring's rule it is proved that the relative vapor pressure of glycerine solutions is substantially independent of temperature over the range of 0° to 70° C., a fact which enables the figures of various workers to be compared. The relative vapor pressures obtained at 20° are in good agreement with the majority of the published data, but not with one table in the International Critical Tables, which must therefore be considered to be in error.

USE OF SOAP IN MAKING VULCANIZED LATEX MOLDS

FOR PLASTER CASTING. *Rubber Age 48,* No. 1, 31 (1940). When the model is ready for the application of prevulcanized latex, an artist oil brush of convenient size is selected and rinsed in a weak solution of soap water to prevent the latex from vulcanizing on the brush.

Plasteline flanges are placed at suitable points on the model so that a split will be formed in the mold at the enclosed spaces and the mold can be released from the model and from subsequent casts. After the model has been coated with several layers of latex, soap solution is painted on the rubber surface that is formed against the plasteline flange. The soap solution will form a separation and therefore split at this point in the completed mold.

Before removing the rubber mold from the model it is necessary to apply a plaster shell over the latex to support the mold while casting. After the plaster is set hard, a strong soap solution is brushed on the plaster flange and when the soap is well absorbed a coat of sweet oil is applied. This will form a separation between the adjoining plaster section of the shell.

After removal from the model, the mold is washed with soap and water, rinsed well, and finally rinsed in a weak solution of soap water.

TOILET SOAP DISCOLORATION. *Perfumery and Essential Oil Record 31, 299* (1940). Soap dried on a band dryer was found to develop discolored spots although the same soap remained flawless when frame-cooled.

Cottonseed and linseed oil yield soaps with a tendency to discoloration. Rancid fats and fats with a high percentage of unsaponifiable also yield soaps with this tendency. Discoloration from metallic impurities is due to the formation of metallic soaps. Speed of formation of these soaps is proportional to the basicity of the metal and the acidity of the fatty acid, i.e., the lower the molecular weight of the acid the greater the speed of reaction. Traces of metallic soap catalyzes the oxidation of soaps to an amazing extent.

Braun (Reichstaff Ind. Kosmetik 12, 124, 1937) believes that recent investigations have shown that aluminum is not invariably resistant to fats although aluminum soap formation proceeds on a small scale and does not appear to be responsible for any serious discoloration. Certain aluminum alloys appear, however, to be exceptionally resistant to oils and fats.

Musk, vanillin, indole, eugenol, isoeugenol and limonene are perfume ingredients which discolor soap. Musk gives a yellow stain while the others produce brown stains with the exception of limonene which bleaches soap. Stannous chloride is claimed to inhibit completely the oxidation caused by certain perfumes.

ANTISEPTIC SOAPS. J. H. Frydlender. *Arch. drogeurie pharm. 6,* 111, 138, 165, 194 (1938); *Chem. Zentr. 1939,* I, 556. The general requirements for the manufacture of disinfecting soaps are described. The discussion includes the use of suitable phenol derivs. for antiseptic soaps, common commercial soaps contg. phenols and soaps contg. S, HCHO, tar, Ag, active Cl, ethereal oils and water. Directions and manufacturing processes are given *(Chem. Abs.).*

FORMATION OF TRIMETHYLENE GLYCOL FROM GLYCEROL BY AEROBACTER. M. N. Micklson and C. H. Werkman. *Enzymologia 8,* 252 (1940) (in English). The fermentation of glycerol (I) by 4 strains of Aerobacter in a medium of only I and inorg. salts resulted in the conversion of about 45% of I to trimethylene glycol (II). Small amounts of acetylmethylcarbinal and considerable quantities of 2, 3-butanediol were also found, but no succinic acid. The formation of II from I by Aerobacter invalidates its use in the differentiation of the intermediate coli-aerogenes forms from Aerobaster. These results are in contradiction to the concept that only the intermediate coli-aerogenes bacteria from II from I. *(Chem. Abs.).*

RAPID DETERMINATION OF THE TITER OF FATS. T. Loseva and B. Kolkov. *Maslob. Zhir. Delo 16,* No. 1, 27 (1940). The simplified method gives accurate results in 30-5 min. To 50 ml. of fat mixture, heated on a water bath, add 40 ml. NaOH (d. 1.32) in 40 ml. of hot alc. and continue heating, with stirring, until the sapon. is completed. Dissolve the Na soap in 70-5 ml. of hot alc. decomp. with 80 ml. sulfuric acid (d. 1.18-1.21) and siphon off the dil. sulfuric acid. Wash the fat acids with water, transfer to a porcelain evapg. dish and dry over free flame at 105-10°. Filter into the Zhukov app. and det. the solidification point as usual *(Chem. Abs.).*

RAPID DETERMINATION OF FATTY ACIDS IN SOAP. S. Semenov and M. Zaliopo. *Maslob. Zhir. Delo 16,* No. 2, 22 (1940). The method is based on the neutralization with NaOH and sodium carbonate and decomposition of Na salts of fatty acids by titration with HCl in the presence of kerosene and the detn. of org. acids in the soap is prevented by adding neutral 96% alc. Kerosene is freed from any org. acids by shaking with NaOH and washing to a neutral reaction. Dissolve 5 g. soap in 40-50 ml. water, add to the hot soln. 15 ml. kerosene and 2-3 drops of 0.02% methyl orange and titrate, with vigorous shaking, with 0.5 N HCl. Introduce 90 ml. alc. and 15-16 drops of 1% phenolphthalein and titrate with 0.5 N NaOH as above *(Chem. Abs.).*

PATENTS

SOAP CUTTING MACHINE. John Van Buren. *U.S. 2,216,525.* A soap cutting machine comprising a cylinder, a plunger having a piston in said cylinder, hydraulic means for actuating said plunger, including a valve for controlling the admission of fluid to said cylinder to cause said plunger to move forwardly or backwardly in said cylinder, means connected to said plunger for feeding a slab of soap, for cutting the slab into strips, means for feeding said strips laterally and including a cylinder, plunger and hydraulic control means for controlling the admission of fluid to said cylinder to cause the feeding means to feed the strips and to retract said feeding means, cutting means in the path of movement of the strips to cut the strips into cakes, means connected to the slab feeding means for operating the strip feed control means to cause said fluid to cause the strip feeding plunger to operate the strip feeding means, and means connected to the strip feeding means to cause the slab feeding plunger and strip feeding plunger to be retracted, thus returning both said feeding meant to their initial positions.

DETERGENT. Lucas Kyrides to Monsanto Chemical Co. *U.S. 2,218,472.* A detergent composition comprising as its essential detergent constituent a mixture of sodium salts of monosulfonated monophenyl alkanes and polyphenyl alkanes, obtainable by chlorinating a kerosene fraction having a distillation range within the range of approximately 205° C. to 245° C. to the extent of less than 100% and more than one-third of that required to form the monochloride, condensing benzene therewith to obtain an alkylated benzene mixture containing monophenyl alkanes and polyphenyl alkanes, separating the unchlorinated kerosene fraction from the alkylated benzene mixture and converting the resulting sulfonated product to sodium salts.

PROCESS FOR PRODUCING FLOATING TOILET SOAPS. Ben Hood to Lever Brothers Co.. *U.S. 2,210,924.* A process

of producing water-buoyant milled soap which comprises the steps of enclosing a quantity of relatively thin, warped, milled soap particles, in a sealed container, thereafter establishing an interstitial gaseous content at sub-atmospheric pressure, the weight of gas, relative to the weight of soap, being such that subsequent compression of the mixture may compact the soap into a coherent whole, with interstitial gas which, when released and expanded to atmospheric condition, will result in the coherent whole having a specific gravity less than 1, and so compressing the mass.

METHOD OF PLODDING SOAP. Bruce Strain (to Proctor and Gamble Co.). *U.S. 2,213,772.* In the process of plodding milled soap to form a homogeneous bar, in which process the soap is deaerated under superatmospheric pressure, the steps of kneading the soap and forcing same toward an extrusion orifice against opposing superatmospheric deaerating pressure, and passing the soap through an unobstructed elongated welding zone in its path to the extrusion orifice, the said deaerating pressure being caused mainly by frictional resistance to the passage of the soap through said welding zone and being substantially greater than that required for extrusion alone, so that the flow of the soap from the kneading and forcing zone to and through the welding zone is without such obstruction as would divide the soap into filamentary parts having difficult weldable surfaces which would result in cleavage planes in the extruded product.

DISTILLING GLYCEROL. Ralph Peterson (to E. I. du Pont de Nemours and Co.). *U.S. 2,215,189.* The process of distilling glycerol from a crude solution thereof, having a high content of non-volatile solids, such as fermentation slops, foots from the distillation of saponification crudes, and the like, which process comprises supplying said solution at the locus of minimum clearance between the heated surfaces of two metallic cylinders revolving on substantially horizontal axis and with a relatively small clearance there between, rotating said cylinders so that the tops thereof move inward toward said locus of minimum clearance, forming a film of said solution simultaneously on each of said heated surfaces, and distilling glycerol from said heated surfaces at a pressure less than atmospheric.

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