ABSTRACTS . . . R. A. REINERS, Editor

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• Oils and Fats

The autoxidation of unsaturated compounds. VI. The autoxidation of methyl 9,11-octadecadienoate. W. Kern, A. R. Heinz and D. Hohr (Univ. Mainz, Ger.). *Makromol. Chem.* **18/19**, 406-13 (1956). Ricinelaidic acid was made from ricinoleic acid and then dehydrated. The production of the polymeric peroxide of the methyl ricinelaidate was followed at 70°. The methyl ester was separated from the reaction mixture by formation of its urea adduct. The polymeric peroxide has a cyroscopically determined molecular weight of 925 and has one mole of oxygen per mole of the ester. Like other peroxides, the polymeric peroxide can initiate free radical chain reactions; e.g. the autoxidation of methyl 9,12-linoleate. The polymeric peroxide was shown not to contain an OOH end group. The oxidation of the polymeric peroxide by potassium permanganate produced only enanthic and azelaic acids. Tollens reagent produces no aldehydes. With Raney nickel, the polymeric peroxide can be hydrogenated to a mixture of 3 isomers of methyl dihydroxystearate. (*C. A.* **51**, 4269)

Extraction of cellular lipides and the turnover and contamination of phospholipide-phosphorus. Yutaka Tashiro and Hikoji Yamane (Kyoto Univ.). *J. Physiol. Soc. Japan* **18**, 659-62 (1956). The amount of lipides extracted in 10 minutes from rat liver homogenate and rat liver mitochondria with various solvents was compared and the following order of extraction was obtained: alcohol-ether (3 : 1) > chloroform > ether > petroleum ether. The solvents with considerable degree of polarity and of solubility in water could extract more lipides. This might be due to the direct or indirect combination of the associated micellar lipides with proteins or nucleoproteins. The contamination of inorganic P^{32} in the lipide fraction would not be due to the binding of P^{32} to the lipides, but mainly due to the partition of P^{32} to the lipide solvent. (*C. A.* **51**, 4474)

The quality of margarine. I. The influence of refining and hydrogenation upon the quality of raw fats. II. The effect of the margarine constituents on its quality. J. Czaplicki, K. Danowski, A. Jakubowski, W. Krolikowski, H. Niewiodomski, and I. Uruska (Inst. Przemyslu Tluszczowego, Gdansk, Poland). *Prace Inst. i Lab. Badawczych Przemyslu Rolnego i Spozywczego* **593**, 1-22 (1955). The hydration and refining of rapeseed oil are discussed. Hydrogenation of peanut, soybean, and rapeseed oil was studied. The use of the following margarine additives is discussed: salt, sugar, biacetyl, coloring substances, and vitamin A and D. (*C. A.* **51**, 630)

Six less-known Japanese vegetable oils. Yoshiyuki Toyama and Hideko Takai. *Mem. Fac. Eng. Nagoya Univ.* **7**, 161-6 (1955). Oils were extracted from the seeds of *Clerodendron tricotomum, Euonymus japonica, Mallotus japonicus, Hammamelis japonica, Pittosporum tobira,* and *Phytolacca americana.* Some properties of these oils and their fatty acids were determined. (*C. A.* **51**, 4736)

Fatty oils of aquatic invertebrates. IX. Properties of fatty oils from 13 kinds of Japanese shellfish. Yoshiyuki Toyama, Tatsuo Tanaka and Takeo Maeda. *Mem. Fac. Eng. Nagoya Univ.* **7**, 145-50 (1955). The oils of 13 kinds of Japanese shellfish were examined. The viscera gives a higher yield of ether extract than the flesh. The unsaponifiable matter of visceral oil contains a smaller proportion of sterol than that of flesh oil, whereas the provitamin D is the reverse in the two oils.

X. Fatty oils of Stichopus japonicus, Astriclypeus manni, Clypeaster japonicus and Gorgonocephalus caryi. Yoshiyuki Toyama and Toru Takagi. *Ibid.* 151-5. Fatty oils from *S. japonicus, A. Manni, C. japonicus* and *G. Caryi* were examined.

XI. Fatty acids and unsaponifiable matter of sea anemone. *Ibid.* 156-60. Fatty acids and unsaponifiable matter separated from the oil extracted from sea anemones were examined. (*C. A.* **51**, 4737)

Possible utilization of fatty acids from whale oil. L. P. Bezzubov (Fat Trust, Kazan). *Masloboino-Zhirovaya Prom.* **21**(7), 25-7 (1956). The fatty acids from whale oil can be mixed with fatty acids of vegetable oils to form commercial olein. Whale oil fatty acid mixed with coriander oil fatty acid forms a eutectic that melts considerably lower than does either of the components; the lowest melting points are obtained in mixtures of 30-40% whale oil acid with 60-70% of coriander oil acid. Mixtures of whale oil acid with rape oil acid have melting points intermediate between those of the components. Mixtures of whale oil acid with sunflower oil acid melt slightly lower than does either of the components. (*C. A.* **51**, 4737)

Enzymic chemistry of the conjugated lipide. Morio Yasuda and Yasuhiko Fujino (Hokkaido Univ., Sapporo). *Seitai no Kagaku* **4**, 146-53. A review with 77 references. (*C. A.* **51**, 4466)

The nature of amorphous abietic acid. B. V. Erofeev, S. F. Naumova, and M. V. Zaretskii. *Vestsi Akad. Navuk Belarus. S.S.R., Ser. Fiz.-Tekh. Navuk* **1956**(2), 103-9. Amorphous abietic acid was obtained by heating pure crystalline abietic acid in a vacuum glass tube or in nitrogen atmosphere for 5, 15 and 30 minutes. Differences between the crystalline abietic acid and the amorphous acid prepared at different temperatures were found in X-ray patterns, spectroscopic absorptions, acid number, and specific rotation. It is concluded that amorphous abietic acid contains partially decarbohydrated abietic acid and some other modified products of abietic acid, the amounts of which depend on the heating time. (*C. A.* **51**, 4021)

Chemical constituents of Japan wax-p-bromophenacylates of Japanic and trichocarpinic acids. Nobuyoshi Kananiwa and Teruko Isono (Kanazawa Univ.). *Ann. Rept. Fac. Pharm. Kanazawa Univ.* **3**, 17-21 (1953). The *p*-bromophenacylate was obtained from Japan wax. The amount obtained was so small that no refining was possible, but the material was apparently a mixture of dicarboxylic acids. (*C. A.* **51**, 4028)

Fatty-acid derivatives. I. Chemical constituents of yama-urushi wax. 3. Chotaro Tsukamoto, Nobuyoshi Nanamori and Teruko Kananiwa (Kanazawa Univ.). *Ann. Rept. Fac. Pharm. Kanazawa Univ.* **3**, 22-4 (1953). The *p*-bromophenacylate separated from yama-urushi wax was hydrolyzed to the free acid which showed no depression of melting point when mixed with the equimolar mixture of synthesized $C_{22}H_{42}O_4$ and $C_{20}H_{38}O_4$. The acid was esterified with anhydrous ethanol and concentrated sulfuric acid to diethyl eicosane-dicarboxylate. Methyl esters prepared from the wax consisted of palmitic, stearic, and oleic acid. (*C. A.* **51**, 4028)

Storage of cottonseed. I. Changes in the chemical composition on the sotrage of cottonseed at various moisture levels. Azhar Saleem and Anwar Hussain (Agr. Coll. Lyallpur). *Agr. Pakistan* **7**(2), 105-13 (1956). At 12% moisture and above, free fatty acids increased rapidly from an initial 1% to very high levels of 20-60%. At 16% moisture and above, oil content dropped from over 20 to 12-14% at 10 months, protein soluble in 3% sodium chloride solution showed sharp decreases and total sugars decreased from 3 to 1%. (*C. A.* **51**, 4735)

Processing of unhulled cottonseed on Uch-Kurgansk oil-extraction plant. V. G. Klepikov, V. A. Ivanov and N. I. Mrykhin. *Masloboino-Zhirovaya Prom.* **21**(7), 15-9 (1956). The work shows that both the quality of oil and the refining methods involved were not affected by the hulls from the whole cottonseed in the solvent (benzene) extraction process. (*C. A.* **51**, 4735)

Oil content of cottonseed. Abdul Hameed Khan (Agr. Coll., Lyallpur). *Agr. Pakistan* **7**(2), 128-39 (1956). Oil content of 8 commercial varieties was 16-23%. Oil content of 24 new strains varied from 15-27%, and that of 8 reselections of L.S.S. varied from 20-25%. Another group of 13 reselections of L.S.S. had oil contents of 24-27% and better ginning outturn but about the same staple length as L.S.S. (*C. A.* **51**, 4736)

Acidification of palm oil of the Belgian Congo. M. Loncin (Ceria, Brussels). *Compt. rend. 27^e congr. intern. chim. ind. Brussels*, **1954**, 3; *Industrie chim. belge* **20**, Spec. No. 883-6 (1955). Acidification is due to hydrolysis by the dissolved water and is catalyzed by the fatty acids. Enzymic hydrolysis is only rarely observed. (*C. A.* **51**, 4028)

Relative stability of blended and straight-hardened hydrogenated peanut oils. B. R. Roy and B. C. Guha(Univ. Calcutta). *J. Sci. Ind. Research(India)* **15C**, 192–4(1956). Fats prepared from peanut oil by partially hydrogenating the total oil and by blending unhydrogenated with well hardened oil were compared with regard to development of peroxides and rancidity, and decrease in iodine number during storage. The blend is much less stable than the all-hydrogenated fat. (*C. A.* **51**, 4028)

Hydroxyl value of linseed oil polymerized to a different degree. M. Taniewski and E. Piekutowska. *Przemysl Chem.* **9**, 612–3 (1953). Hydroxyl value of linseed oils polymerized to a different degree increases with the increase of viscosity at any one temperature and decreases with the increase in polymerization temperature at constant viscosity. The color of the polymerized oil is darker the higher the polymerization temperature. (*C. A.* **51**, 4028)

Notes on the ternary system cod-liver oil-fatty acid-furfural and cod-liver oil-furfural tie lines. Fermín Vásquez López. *Anales real soc. españ. fis. y quím.(Madrid)* **52B**, 207–14 (1956). The ternary system presents two pairs of miscible components at 20° and 25° at which it is not possible to extract pure fatty acids. The ternary system oil(iodine number 100)-oil(iodine number 140)-furfural presents only one pair of miscible components from which it is possible theoretically to separate a pure fraction of a component with an iodine number of 140. (*C. A.* **51**, 4029)

The role of permanganate in speeding up the oxidation of paraffin with atmospheric oxygen. B. N. Tyutyunnikov and A. A. Perchenko(Polytech. Inst. Kharkov). *Masloboino-Zhirovaya Prom.* **21**(7), 20–3(1956). Manganese oxides formed from MnO_4^- during aeration of liquid paraffin in the synthetic fatty acid manufacturing process are believed to be largely responsible for the oxidation of paraffin by atmospheric oxygen, since both the pyrolusite and manganese oxide from ascorbic acid manufacturing plants produced the same results. (*C. A.* **51**, 4738)

Solvent extraction of wool wax. Motoi Kamada and Hiroshi Inoue(Hokkaido Prefectural Ind. Research Inst., Sapporo). *J. Japan Oil Chemists' Soc.* **5**, 239–40(1956). Semi-countercurrent extraction was carried out with trichloroethylene at 45 ± 2° for 20–30 min. About 20 volumes of the solvent was used for 1 weight of wool.

Utilization of sperm whale oil. II. Solvent fractionation of acetylated fatty alcohols by the urea adducts. Shoichiro Watanabe and Yoshiro Abe(Keio Univ., Tokyo). *J. Japan Oil Chemists' Soc.* **5**, 152–5(1956). The effect of acetylation of higher fatty alcohol was very small in the fractionation as urea adducts. The experiment was made with sperm fatty alcohol. Solvents such as methanol *vs.* ethanol and benzene *vs.* chloroform were compared.

The oxidation of monoethenoid fatty acids and esters. The autoxidation products of erucic acid and its methyl and n-propyl ester. J. H. Skellon and P. E. Taylor(Chem. Dept., Acton Technical College, London, W.3). *J. Applied Chem.* **7**, 67–72 (1957). Highly purified erucic acid, methyl erucate and *n*-propyl erucate were oxidized at 120° in the presence of 0.05% of U. Recovery of starting materials was, respectively, 15.23, 0.41 and 44.50%. Saponification of the oxidation products gave acidic dimers which eventually broke down into 13:14-dihydroxybehenic acid and various keto-hydroxy, unsaturated ketonic and epoxy derivatives. As percentages of free acid, yields of primary products from erucic acid, the methyl and *n*-propyl esters were, respectively, dihydroxybehenic acid, 30.08, 7.44 and 27.99; epoxyerucic acid, 0.32, 12.41 and 1.70; keto-hydroxy acids plus some 13:14 dihydroxybehenic acid, 12.07, 1.20 and 16.63; ketonic oils, 35.41, 72.55 and 6.83. The characteristic oily resinous products may have been formed by union of scission fragments resulting from hydroperoxide decomposition. The mechanism of the oxidation is discussed briefly.

Wax polish technology and testing methods. C. L. Jones(Chiswick Products, Ltd.). *Paint Technol.* **21**, 43–8(1957). Compositions and characteristics are briefly reviewed for shoe polishes, furniture creams, car polishes, and dry-bright polishes. Methods of testing are outlined.

The use of differential curves in the dilatometry of fats. H. Jasperson and A. A. McKerrigan(Research Dept., J. Bibby & Sons, Ltd., King Edward St., Liverpool, 3). *J. Sci. Food Agr.* **8**, 46–54(1957). A dilation tube is described and the procedure for making dilatometric measurements is outlined. Dilatometric curves in which the rate of expansion is plotted against temperature are shown for cacao butter, palm kernel oil, palm oil, lard, tallow, hydrogenated groundnut oils, butter fats, margarines, shortenings, and binary mixtures of hydrogenated cottonseed oil with palm oil or palm kerenel oil. These data are discussed in relation to the nature of the glycerides in each fat.

Method of refining oils and fatty substances. P. Vandervoort(Extraction Continue de Smet). *U. S. 2,786,858.* In a process for refining oils and fatty materials by solvent extraction, the crude miscella is mixed with a neutralizing agent and isopropyl alcohol. The upper layer consisting chiefly of neutralized miscella is separated from the lower layer consisting of soaps in isopropyl alcohol, and the interphase containing gums and other impurities. The upper and lower phases are washed separately by passage through a column countercurrently to the flow of water.

Treatment of safflower oil. L. M. Christensen. *U. S. 2,786,859.* A color-stable safflower oil is produced by hydrating the oil micella at 75° to 200°F. for 5 to 30 min., filtering out the insoluble materials, and separating the oil from the solvent.

Method for making an edible oil preparation. C. H. Struble and R. E. Stephens(The Miami Margarine Co.). *U. S. 2,787,-550.* A multiphase edible oil preparation is made by mixing a fat, water and a baking emulsifier above the melting points of the ingredients. The product consists of a colloidal dispersion of hard fat particles in a continuous aqueous phase with emulsifier adsorbed at the interface. This is then dispersed in an edible oil.

Cottonseed oil color reversion prevention. J. M. Dechary, Roslyn P. Kupperman and F. H. Thurber(U.S.A., Secy. Agr.). *U. S. 2,787,625.* Crude cottonseed oil is reacted with an amount of *p*-aminobenzoic acid approximately equivalent stoichiometrically to the amount of gossypol and related pigments. The resulting precipitate is removed before the oil is refined with alkali.

Extraction and refining of glyceride oils and fats. G. C. Cavanagh(Ranchers Cotton Oil). *U. S. 2,789,120.* In the alkali refining stage, the mixture of miscella and caustic soda are passed through an homogenizer for 15 to 90 seconds. This process neutralizes free fatty acids and improves the color in the shortest possible time with minimum saponification of the oil.

Process for the extraction of isanic acid from vegetable oils. E. DeVries(Union Chimique Belge, S. A.) *U. S. 2,789,993.* Isanic acid is recovered by extraction of the soaps obtained from the hydrolysis of boleko oil with potassium hydroxide in isopropyl alcohol at temperatures below 0°.

Process and apparatus for refining fatty oils and greases. P. van der Voort(Extraction Continue de Smet Soc. anon.). *Belg. 516,203.* A solution of fatty oils and greases, especially of vegetable oils and greases, is treated with a neutralizing agent in the presence of a third solvent which partially soluble in the solvent for oils and greases and the neutralizing agent. The mixture obtained is decanted. The solution of the solvent for oils and greases contains up to 40% of fatty matter. Sodium hydroxide, preferably of 20° Bé., is used as the agent. (*C. A.* **51**, 4030)

Separation of solid and liquid fatty acids. N. V. Koninklijke Stearine Kaarsenfabrieken ''Gouda-Appollo.'' *Dutch 79,195.* Mixtures of fatty acids, e.g. those obtained by saponification of oils, are melted. After solidification, the congealed more or less finely divided mass is extracted at constant or slightly rising temperature with a solvent having an initial temperature equal to that of the mixture to be extracted. The product has a lighter color than the starting material and is practically odorless. (*C. A.* **51**, 4030)

Nondrying oils. B. Bogoyavlensky, P. Charuel and M. Methivet. *Fr. 1,002,167.* Nondrying oils especially useful in perfumery, cosmetics, cleaning processes, etc. are obtained by fractional distillation of vegetable products, especially rosin, the fraction distilling below 360^e which contains the nondrying oils being separated and decolorized with filter earth. (*C. A.* **51**, 4739)

Deodorization of fish oil. Shizuo Takumi, *et al.*(Tsutomu Kuwada) *Japan 284('56).* Hydrogenation of whale oil (iodine number 117.5) with 0.2% nickel catalyst and hydrogen at normal pressure for 5 hours at 110° gave a product which had an iodine number 82 and which was free from fishy odor. (*C. A.* **51**, 4031)

Composition for use in refining of edible oils. R. S. Arranz. *Span. 226,657.* The composition consists of 5 parts kaolin and 1.95 parts magnesium oxide. This is used to treat 493 parts of an edible oil with 1° of acidity. (*C. A.* **51**, 3869)

Cocoa-butter substitute. Commercial Henkel, S. A. *Spanish 226,999.* Vegetable oils are hydrogenated with a nickel catalyst to produce a cheaper fat which can be mixed with or used as a substitute for cocoa butter. For example, 25 kg. olive oil was heated to 90° and 0.25 kg. sulfur powder was stirred in. The temperature was increased to 180° for 2 hours. Refined olive oil (252 gal.) was heated to 180° and 11 kg. of the sulfur treated oil was stirred into it. Three kg. of nickel catalyst previously used for hydrogenation was added, along with 1 kg. fresh nickel. Hydrogen was admitted to a pressure of 1.5–2 atmosphere. After 2–3 hours, hydrogen was no longer used and 1 kg. of fresh nickel was added. After 5 hours, the fat melts at 27° and contained 50–60% solid fraction at 20°. (*C. A.* **51**, 4598)

Stabilization of butter. T. Gutestam. *Swed. 155,385.* During forced cooling of the butter, it is subjected to vibrations at the temperature at which it solidifies. The flocculation of proteins in the butter is prevented, thus minimizing deterioration of quality caused by such flocculation. (*C. A.* **51**, 4598)

FATTY ACID DERIVATIVES

Synthesis of higher fatty alcohols by direct oxidation of paraffin hydrocarbons. A. N. Bashkirov. *Khim. Nauka i Prom.* **1**, 273–81(1956). The oxidation of paraffin hydrocarbons in the presence of various catalysts is reviewed. Direct oxidation of paraffins to the corresponding alcohols in the presence of 5% H_3BO_3 or B_2O_3 is reported. The optimum of temperature is 165–170°. The specific consumption of gases is 500 liters per kg.-hour. Influence of the partial pressure of oxygen, hydrocarbon concentration, specific amount of bubbled gases, height of hydrocarbon layer and of the coarseness of the distribution grille were investigated. (*C. A.* **51**, 4027)

Cationic nitrogen derivatives of fatty acids. M. K. Schwitzer. *Ind. Chemist* **32**, 426–33(1956). Uses in flotation, road construction, as antistatic agents, corrosion inhibitors, bactericides, and in the textile and laundry industries are discussed. (*C. A.* **51**, 4735)

Use of hydrazine as a reducing agent for unsaturated compounds. III. Hydrogenation of linoleic acid. F. Aylward and C. V. Narayana Rao(Borough Polytechnic, London, S. E. 1). *J. Applied Chem.* **7**, 134–7(1957). As estimated from Wijs iodine values, the reduction of linoleic acid by 5 moles of hydrazine is 90% complete in 8 hr. at 50°. During the initial stages, the hydrogenation of linoleic acid proceeds more rapidly than those of oleic, elaidic or ricinoleic acids. **IV. Hydrogenation of elaeostearic acid from tung (China wood) oil.** *Ibid.*, 137–44. The hydrogenation of α-elaeostearic acid by hydrazine was followed by periodic determinations of total unsaturation by means of catalytic hydrogenation, melting points, trienoic and dienoic acid concentrations by means of ultraviolet spectroscopy, and *cis-trans* isomers by means of infrared spectroscopy. Provided a 6:1 molar ratio of hydrazine hydrate to acid is used, a 74% decrease in unsaturation takes place in about 8 hr. However, no appreciable amount of stearic acid is formed during this period. The data indicate that the reduction proceeds by two parallel routes: (a) formation of a dienoid acid and its conversion to the saturated acid by simultaneous addition of two molecules of hydrogen, and (b) formation of a monoethenoid followed by its conversion to the saturated acid.

Linoleum cement from tall oil ester. J. J. Bradley, Jr.(Shell Development Co.). *U. S. 2,786,773.* The cement is prepared by agitating and blowing a tall oil polyester of an esterifiable glyceryl polyether of a dihydric phenol with an oxygen-containing gas at 150° to 250°F.

Moisture resistant paper. L. J. Novak and J. T. Tyree(The Commonwealth Engr. Co. of Ohio). *U. S. 2,786,786.* The water resistance of calendered paper is increased by a coating containing a C_8 to C_{18} fatty acid ester of a dextran.

Anhydrides of mucochloric acid. E. E. Gilbert and E. J. Rumanowski(Allied Chemical & Dye Corp.). *U. S. 2,786,798.* The active ingredient in a fungicidal composition is mucochloric-myristic anhydride or mucochloric-palmitic anhydride.

Cellular plastic materials which are condensation products of hydroxy containing fatty acid glycerides and arylene diisocyanates. S. R. Detrick and E. Barthel, Jr.(E. I. duPont de Nemours & Co.). *U. S. 2,787,601.* A cellular plastic is prepared by condensation of an arylene diisocyanate and a glyceride having a hydroxyl value of at least 49. The ratio of hydroxy to isocyanate groups is between 0.45 and 0.95 to 2. Sufficient water should be present to provide about one mol of water for 2 unreacted isocyanate groups in the condensation mass.

Acceleration of fatty amine addition reactions. S. A. Harrison and D. Aelony(General Mills, Inc.). *U. S. 2,787,663.* A primary C_8 to C_{22} fatty amine is reacted with a compound selected from the group consisting of nitriles and lower alkyl esters of acrylic acid, methacrylic acid and crotonic acid in the presence of 2 to 25% by wt. of an additive such as methyl, ethyl, propyl, *i*-propyl, *n*-butyl, *sec.*-butyl or *tert.*-butyl alcohols or dioxane.

Nongelling polyamide solutions. S. Zweig(The Borden Co.). *U. S. 2,788,287.* A solution of alkylenediaminepolyamides of polymeric fatty acids in a liquid hydrocarbon is stabilized against gelling at ordinary temperatures by the addition of an alcohol, such as butyl or isopropyl alcohol, and 0.1 to 6% of water based on the total weight of the solution.

Cellular reaction products of castor oil, an epoxy resin, and an aromatic diisocyanate. E. Barthel, Jr.(E. I. du Pont de Nemours & Co.). *U. S. 2,788,335.* A cellular plastic material is prepared from an epoxy resin-castor oil condensation product in which the resin has been made by the reaction of epichlorohydrin and *bis*-phenylolpropane. The epoxy resin-castor oil condensate is reacted with an arylene diisocyanate and then with water.

Production of fatty acid monoglycerides. B. T. D. Sully(A. Boake Roberts & Co., Ltd.). *U. S. 2,789,119.* Monoglycerides are made by the reaction of diglycerides and/or triglycerides and anhydrous glycerol in the presence of *tert*-butyl alcohol and an alkaline catalyst.

Hydrophobic, organophilic pigments. J. W. Eastes and T. F. Cooke(American Cyanamide Co.). *U. S. 2,789,919.* The pigment is made hydrophobic and organophilic by a treatment with a C_6 to C_{18} monoisocyanate at 100° to 160°.

Process for recovery of acids from aqueous mixtures of their salts. C. E. Frank and W. E. Foster(National Distillers Products Corp.). *U. S. 2,790,002.* The aqueous mixture contains alkali metal salts of mono- and dibasic acids including sebacic and other isomeric C_{10} acids that are produced by hydrogenating the products of carbonation of dialkali metal octadienes. The mixture is acidified, and extracted with an aromatic hydrocarbon which does not dissolve sebacic acid. Pure sebacic acid is readily obtained from the insoluble portion.

• Biology and Nutrition

Error in the method of electrophoretic separation of serum lipoproteins. F. M. Antonini and A. Sodi(Univ. Florence, Italy). *Sperimentale* **106**, 423–32(1956). It is not practical to subdivide the alpha- and beta-fractions, because the subfractions of beta are not clearly separated. The subfractions are not uniform in repeated tests owing to electroosmotic influences. Although the error is high, it does not invalidate the results obtained with a large number of determinations. (*C. A.* **51**, 4486)

Biosynthesis of milk fat in the intact cow. T. A. Rogers and M. Kleiber(Univ. of Calif., Davis). *Biochem. et Biophys. Acta* **22**, 284–92(1956). The radioactivity of the milk-fat constituents was determined following the injection into cows of the following C-labeled metabolites: carbonate, glucose, acetate, propionate, butyrate and formate. Fixation of carbonate into the glycerol moiety was significant and into fatty acids almost negligible. Glucose was an important precursor of glycerol but was a precursor for fatty acids synthesis to only a small extent. Acetate was the most potent precursor for fatty acids and was also a source of glycerol. Propionate was unimportant in fatty acids synthesis, but the activity of glycerol following injection of the propionate supported the view that it is the main carbohydrate precursor in the cow. Butyrate showed intermediate activity as a precursor for fat and carbohydrate. Formate was not a source of fatty acids but was a source of glycerol. Peak radioactivity of all the fat constituents occurred in milk samples taken 11 hours after injection of the metabolites, whereas that of casein and lactose was in samples taken 3 hours after injection. (*C. A.* **51**, 3784)

Deteriorative reactions involving phospholipids and lipoproteins. C. H. Lea(Low Temp. Station for Research in Biochem. & Biophys., Univ. Cambridge and Dept. Sci. and Indus. Research). *J. Sci. Food Agr.* **8**, 1–13(1957). Review with 66 references. Types of deteriorative reactions are discussed including decomposition of lipoproteins, hydrolytic decomposition of phospholipids, autoxidation, lipid "browning" reactions, and lipid-protein co-polymerization reactions. The effects of these reactions are reviewed in terms of keeping qualities of commercial lecithin, milk and butter, dried eggs and dried blood plasma. The highly unsaturated fatty acids and nitrogenous groups in the phospholipids appear to be responsible for much of the undesirable deterioration of these products in storage.

The destruction of vitamin E in flour by chlorine dioxide. T. Moore, I. M. Sharman and R. J. Ward(Dunn Nutritional Lab., Univ. Cambridge and Medical Research Council). *J. Sci. Food Agr.* **8**, 97–104(1957). Paper chromatographic analysis showed that chlorine dioxide caused almost complete destruction of all types of tocopherols in wheat flour. Biological tests with rats included observations on hemolysis, dental depigmentation, condition of testes, reproduction in female, and kidney degeneration. All tests demonstrated that untreated flour when included as the main component of the diet contained enough tocopherol to satisfy rat requirements. Signs of avitaminosis E developed, however, on similar diets containing flour that had been treated with chlorine dioxide. Baking destroys about 47% of the vitamin E of untreated flour. Bread made from dough treated with potassium bromate and ascorbic acid contained as much vitamin E as that from untreated flour. However, the aeration process caused considerable loss of vitamin E.

The vitamin A of the lobster. G. Wald and S. P. Burg(The Biological Labs., Harvard Univ., Cambridge). *J. Gen. Physiol.* **40**, 609–25(1957). The vitamin A isolated from lobster eyes is shown to consist almost entirely of the hindered *cis*-isomer, neo-*b*, the precursor in the vertebrate retina of the visual pigments rhodopsin and iodopsin. It is almost completely extracted from the eye by petroleum ether and exists to the extent of 70% in the esterified form. The structure was assigned on the basis of absorption spectra, changes in spectra during isomerization, and oxidation to the corresponding retinene followed by conversion to rhodopsin.

The vitamin A of a euphausiid crustacean. G. Wald and P. K. Brown(The Biological Labs., Harvard Univ., Cambridge). *J. Gen. Physiol.* **40**, 627–34 (1957). The vitamin A of the euphausiid crustacean *Meganyctiphanes norvegica* is shown to consist almost entirely of the hindered *cis*-isomer, neo-*b*, (11-*cis*). This pigment is concentrated in the eyes and exists primarily in the esterified form. It was identified from its absorption spectrum, the changes in the spectrum during isomerization, and oxidation to neo-*b* retinene followed by conversion to rhodopsin.

The phosphatide of aquatic animals. IV. Lecithins, cephalins, neutral fat, and unsaponifiable matter of the heart of a rorqual (Balaenoptera borealis). Hisanao Igarashi, Kôichi Zama, and Muneo Katada(Hokkaido Univ., Hakodate). *J. Agr. Chem. Soc. Japan* **30**, 111–15(1956). The isolated fractions were analyzed with the following results. The lecithin contained 4.13% P, 1.76% N, and 14.57% choline, and had an iodine number of 91.6. The cephalin contained 2.66% P, 1.37% N, 4.90% ethanolamine, and 2.52% serine, and had an iodine number of 122.3. The acetone-soluble fraction had acid number 1.0, saponification number 127.8, iodine number 130.5, and 43.8% unsaponifiable matter. The component fatty acids estimated spectrophotometrically of the lecithin and cephalin were, respectively, saturated 20.6, 26.4; monoethylenic 52.9, 35.0; dienoic 4.1, 0.8; trienoic 6.1, 16.5; tetraenoic 7.6, 10.0; pentaenoic 6.2, 8.2, and hexaenoic 2.5, 3.1%. The component fatty acids of the acetone-soluble fraction were myristic 2, palmitic 12, stearic 12, zoomaric 4, oleic 24, eicosenoic 8, linoleic plus linolenic 6, arachidonic 16, and clupanodoic 16%. Cholesterol was identified and cetyl, octadecyl, zoomaryl, oleyl, gadoleyl, and C_{20} highly unsaturated alcohols were presumably present in the unsaponifiable matter.

V. Phosphatidic acid of the heart of a rorqual. Hisanao Igarashi, Kôichi Zama, and Muneo Katada. *Ibid.* 116–19. This phosphatidic acid contained 3.96% P, 0.07% N, and had an iodine no. of 112.1. The skeletal structure of the phosphatidic acid was supposed to be similar to cardiolipin. The component fatty acids were saturated 34.0, monoethylenic 13.8, dienoic 9.0, trienoic 12.1, pentaenoic 6.2, and hexaenoic 1.3%.

VI. The brain cephalins of pollacks (Theragra chalcogramma). Kôichi Zama and Hisanao Igarashi. *Ibid.* 433–5. The cephalin fraction prepared from the acetone-treated brain of pollacks contained 1.86% N, 4.06% P, 1.74% amino N, and 10.03% ash. The iodine number was 95.8. It contained 1.75% serine and 1.83% aminoethanol, and showed positive reaction of inositol. Thus it was not a single phosphatide, but a mixture of at least 3 phosphatides containing inositol, serine, and aminoethanol. Fractionation of this crude cephalin with chloroform and ethanol showed the possibility of accumulation of each phosphatide. Iodine number of each subfraction differed significantly. The component fatty acids of cephalin fraction were saturated 27.1, monoethylenic 44.9, dienoic 5.0, trienoic 5.1, tetraenoic 5.5, pentaenoic 9.1, and hexaenoic 3.3%.

VII. The brain cephalins of sperm whale (Physeter catodon). *Ibid.* 435–8. The cephalin fraction prepared from the acetone-treated brain of a sperm whale contained 1.58% N, 4.04% P, 1.32% amino N, 10.91% ash, 1.38% serine, and 2.78% aminoethanol. It showed a positive reaction for inositol and had an iodine number of 90.9. The component fatty acids were saturated 33.0, monoethylenic 40.4, dienoic 5.2, trienoic 7.9, tetraenoic 1.3, pentaenoic 9.5, and hexaenoic 2.7%. Fractionation of cephalins was made similarly as in Part VI. From the corresponding subfractions serine, ethanolamine, and inositol were actually separated. Thus the cephalin fraction consisted of diphosphoinositide, phosphatidyl serine, and phosphatidyl ethanolamine.

VIII. The egg lecithins of pollacks (Theragra chalcogramma). Hisanao Igarashi, Kôichi Zama, and Muneo Katada. *Ibid.* 566–8. The lecithin was purified with alumina adsorption column from the crude phosphatide, insoluble in acetone and soluble in ethanol, prepared from eggs of pollacks. The component fatty acids of the lecithin were myristic 3, palmitic 16, stearic 13, hexadecenoic 10, oleic 23, octatrienoic plus octatetraenoic 12, eicosatetraenoic 9, and docosapentaenoic 14%.

IX. Cephalin, natural fat, and unsaponifiable matter of the eggs of pollacks (Theragra chalcogramma). *Ibid.* 568–72. Only serine was found (12.97%) in the cephalin of these eggs. The cephalin contained 1.93% N, 3.68% P, and 10.76% glycerol. The iodine number was 92.9. The component fatty acids of the cephalin were saturated 20.4, monoethylenic 43.0, dienoic 6.0, trienoic 5.0, tetraenoic 12.0, pentaenoic 8.5, and hexaenoic 5.1%. The neutral fat consisted of myristic 4, palmitic 25, stearic 5, arachidic 2, zoomaric 12, oleic 18, eicosaenoic 2, octadecatrienoic 12, eicosatetraenoic 10, docosapentaenoic 8, and tetracosahexaenoic 2%. In the unsaponifiable matter cholesterol and saturated and unsaturated alcohols with 14 carbon atoms were identified. Other alcohols were presumed to be present.

X. Cephalins and phosphatidic acids of unfertilized and fertilized eggs of crabs (Paralithodes camtschatica). *Ibid.* **31**, 4–8(1957). The cephalin was prepared from both eggs. The yield was 0.091% from fresh unfertilized eggs, while it was only 0.027% from fertilized ones. The cephalin of unfertilized and fertilized eggs contained, respectively, P 3.31, 3.32%; N 1.60, 1.64%, and glycerol, 9.89, 9.78%. The iodine numbers were 76.8, 66.5. Fatty acid analysis showed saturated acids 45.3, 34.6; monoethylenic 29.5, 45.2; dienoic 2.5, 3.7; trienoic 3.3, 5.2; tetraenoic 9.5, 8.5; pentaenoic 6.5, 2.3, and hexaenoic 3.4, 0.5%. The serine contents were 9.52%, none; aminoethanol, none, 6.05%. Phosphatidic acid was prepared in the yields of 0.0057 and 0.0027% from unfertilized and fertilized eggs. Phosphatidic acid from both eggs showed identity on paper chromatogram and in the activity (low) against syphilis serum.

XI. Lecithins from unfertilized and fertilized eggs of crabs. *Ibid.* 8–11. The lecithin from unfertilized and fertilized eggs gave the following data: yield 2.57, 0.091%; iodine number 108.7, 72.3; P 3.57, 3.62%; N 1.64, 1.68%; glycerol 11.01, 10.95%, and choline 13.85, 13.85%. The fatty acid compositions were myristic 1, — (not determined separately); palmitic 9, —; stearic 10, —; saturated 20, 37.7; hexadecenoic 5, —; octadecenoic 30, —; eicosenoic 14, —; monoethylenic 49, 37.8; dienoic —, 2.1; trienoic 10, 8.8; tetraenoic 13, 9.8; pentaenoic 8, 3.4, and hexaenoic acids —, 0.4%. Only minute amounts of sphingolipide fraction were obtained from both eggs.

Topping concentrate and method of making it. R. H. Prince. *U. S. 2,786,765.* An edible stable concentrate is described which consists of an emulsion that may be diluted with water and then whipped so as to increase the volume up to about 500%. The emulsion consists of about 30% of a hardened fat, about 70% of a concentrated sugar solution, an ionic emulsifier such as sodium stearate, and an edible nonionic emulsifier such as sorbitan monostearate.

Process for making fat-free animal feed products. R. Stöbe (Wacker-Chemie G.m.b.H.). *U. S. 2,788,275.* A fat-free animal feed is prepared from animal tissue by treating it under pressure with steam at temperatures about 119°. Liquid perchloroethylene is added to extract both water and fat. After removal of the extract, the residual solid is treated with perchloroethylene vapor, and is finally desolventized with steam at about 115°. The product is dry, powdery, and essentially odorless.

Process for the preparation of sterile butter. M. Vermeulen. *U. S. 2,789,910.* Most of the thermolabile substances are removed from cream by extraction with 2 to 5 volumes of water. The remainder are destroyed by seeding the cream with *Streptococcus lactis* or *Micrococcus cremoris* and incubating at 30 to 35° as long as acidity increases. The mixture is centrifuged and concentrated. The finished product is sealed into air-tight and heat-resistant containers and sterilized with heat.

• Drying Oils and Paints

Alkyd resin modified with conjugated dienoic fatty acids. Hiroshi Sakurai and Sadao Nakayama(Osaka Univ., Sakai). *J. Japan Oil Chemists' Soc.* 5, 236–8(1956). The fatty acids with 15 or 30% conjugated acids were prepared by conjugating the soybean polyunsaturated acid separated by the urea adduct method. Alkyd resins prepared from these fatty acids were equivalent to those prepared from dehydrated castor oil fatty acids containing 28% conjugated acids. When the soybean fatty acids contained more than 50% conjugated acids the resin produced was different than that from dehydrated castor oil fatty acids.

Higher fatty alcohols. X. Unsaturated higher fatty alcohol esters of acrylic and methacrylic acids. Shinroku Masuyama (Osaka Munic. Tech. Research Inst.). *J. Agr. Chem. Soc. Japan* 30, 290–2(1956). Linoleyl alcohol (15.6 g.) with 18.0 g. ethyl acrylate, 0.4 g. hydroquinone, and 0.05 g. H_2SO_4 was refluxed under CO_2 at 155–60° to give 14.5 g. linoleyl acrylate, b.p. 190–2°/2.5 mm. Hg. Similar interesterification was carried out for cottonseed fatty alcohols, linseed fatty alcohols, poppyseed fatty alcohols, soybean fatty alcohols, and isomerized soybean fatty alcohols with ethyl acrylate or methyl methacrylate. The esters formed were polymerized after complete removal of hydroquinone and the products were excellent in drying properties.

Tung oil. Jack Greenfield. *Paint Ind. Mag.* 71, 16, 18, 61 (1956). A discussion of the preparation of hydroxylated and epoxidized tung oil with hydrogen peroxide is followed by reference to very recent work on tung acids and methyl esters which may lead to the synthesis of new coatings. Polyamides usable in gelling type alkyds may be prepared from the fatty acids. Other tests are outlined. (*C. A.* 51, 4020)

Dehydrated castor oil (Ridesol). I. Drimus, I. Ionescu and R. Stoica(Polytech. Inst., Bucharest). *Acad. rep. populare Romine, Studii cercetari chim.* 3, 252–36(1955). Dehydrated castor oil can be obtained in 85–90% yield by heating at 225° under reduced pressure (15–20 mm.) with potassium acid sulfate (2%) as a catalyst. Other catalysts have a greater tendency to promote secondary reactions, affecting yields and the quality of the product. On dehydration, the viscosity of the oil decreases; it is lowest at the optimum working temperature which varies from catalyst to catalyst. Polymerization starts at 280°, apparently independently of the catalyst used. (*C. A.* 51, 4737)

A review of the uses of lanolin in coatings. C. A. Acaster (Croda Ltd.). *Paint Technol.* 21, 49–51(1957). The applications of lanolin are discussed briefly for anticorrosive coatings including wool-grease soaps, air-drying paints containing resins, varnish and emulsion paints, and as a plasticizer. The various types of lanolin are mentioned.

Peroxide treatment of fatty oils. N. V. de Bataafsche Petroleum Maatschappij. *Dutch 79,636.* Products having good drying properties are obtained by heating a fatty oil having an iodine number greater than 120 at 100–250° in the presence of a peroxide containing a tert-alkyl peroxy radical. Oils, e.g. fish oil, linseed oil, or soybean oil, are converted into products which dry to hard films free of tack and stickiness. Optimum results are obtained with di-tert-butyl peroxide and 1-(tert-butylperoxy) ethanol. The products are particularly suitable for use in the paint, lacquer, varnish, and linoleum industries. (*C. A.* 51, 4024)

• Detergents

The kettle-wax phase in soap systems: dilatometric study of the systems sodium laurate-water and sodium laurate-sodium chloride-water. S. L. Aggarwal, N. R. Sanjana and J. W. McBain(Natl. Chem. Lab., Poona, India). *J. Appl. Chem.* 6, 391–9(1956). Volume-temperature curves for the systems Na laurate-H_2O and Na laurate-NaCl-H_2O are presented. Numerous distinct phases, including the curd phase, liquid crystalline phase(neat soap or middle soap) and isotropic solutions, are exhibited by the Na laurate-H_2O system. An additional wax-like phase, called kettle-wax, is observed in ternary systems containing at least 58% Na laurate or 4% NaCl. From the curves it is possible to distinguish between ternary systems capable of existence as a homogeneous phase from those which exist through the temperature range as an equilibrium; and mixtures of 2 or more phases and systems resulting in a homogeneous kettle-wax phase at elevated temperature(80–100°) from those resulting in a neat or middle soap phase. The lower boundary of the kettle wax region sets an upper limit of soap concentration that can be obtained by graining out. (*C. A.* 51, 4738)

The influence of soaps on the bactericidal activity of a sparingly water-soluble phenol. H. Berry and A. Briggs. *J. Pharm. and Pharmacol.* 8, 1143–54(1956). The solubility of 5-chloro-2-hydroxydiphenylmethane(benzylchlorophenol) (I) in solutions of K laurate and K ricinoleate when expressed as moles of I per mole of soap, decreases as the soap concentration is increased up to the critical concentration. Thereafter the shape of the solubility curve is similar to those reported for water-insoluble dyes in aqueous soap solutions. When mixtures containing a constant I to soap molar ratio and varying soap concentrations are used, changes in the bactericidal activity can be correlated with changes in the slope of the solubility curve. The effect of varying the molar ratio was determined at different soap concentrations. For a given weight of I the highest level of activity is obtained in K laurate, the lowest in K ricinoleate, and intermediate in K oleate solution. (*C. A.* 51, 5447)

Soaps with DDT. I. Production and analysis of soap with DDT. K. Galinski. *Prace Inst. Lab. Badawczych Przemyslu Rolnego i Spozywczego* 6(2), 109–24(1956). Tallow and several other fats may be used for the production of DDT soap. The odor of DDT may be neutralized by addition of up to 1% turpentine. Breaking of the soap-DDT emulsion may be prevented by slow cooling of the soap. Surface activity and detergent power of DDT soap were similar to those of regular soap. A method for the determination of DDT in soap is given. **II. Insecticidal properties of soaps with DDT.** Anna Bojanowski, *Ibid.* 125–35. All DDT soap, irrespective of the solvent fat used, had the same activity against lice. Full activity was retained for at least 1 year of storage. Clothes washed with DDT soap were protected for up to 6 months. (*C. A.* 51, 3079)

Soap sheets. H. Goldschmiedt(MEM Co., New York). *Soap & Chem. Specialties* 33(4), 47–9, 54(1957). Soap alone cannot be pressed into thin sheets or films. To obtain a soap film, absorbent paper or fabric may be used as a carrier. After use, these leave a residue which may irritate the skin or clog a drain. More recent suggestions call for passing continuous sheets of tissue paper through hot soap solution and scraping off the excess soap before drying. But this method gives only a very thin coating and the detergent and foaming power of sheets made by this process is slight. The author uses a mixture of polyvinyl alcohol and polyvinyl pyrrolidone which yields a film which is completely soluble in hot or cold water, compatible with soap and synthetic detergents, and capable of having medicinal additives incorporated.

Modern detergents. F. Courtney Harwood. *Soap, Perfumery, Cosmetics* 30, 401–4(1957). A detergent may be defined as a surface-active agent which must wet the surface of the substance to be removed and eventually the surface of the material to which the soiling matter is adherent, it must displace the soiling matter from that surface, it must emulsify the soil, and it must suspend the soil and prevent its redeposition. In the light of this definition, the growth of synthetic detergents, their preparation, properties and uses were discussed.

Detergents in sewage. H. V. Moss(Monsanto Chem. Co., St. Louis, Mo.). *Soap & Chem. Specialties* 33(4), 43–6, 53–4 (1957). Based on current investigations, it appears that alkylbenzene sulfonate in concentrations now present in sewage does not affect bacterial life nor otherwise significantly affect efficiency of operation of a sewage plant. It is nonetheless apparent that alkylbenzene sulfonate in raw sewage is not completely eliminated by existing treatment and some proportion goes off in its original or partially degraded form through the effluent. In regard to phosphates, accumulating evidence points to the fact that the possible offenders (polyphosphates) do not find their way in sufficient concentrations into raw waters to pose a real problem.

Study of polypropylene benzenesulfonates as synthetic detergents. F. V. Nevolin. *Masloboino-Zhirovaya Prom.* **21**(7), 24–5(1956). The detergency of a mixture containing both tetra- and penta-polypropylene benzenesulfonates (I) and of tetra- alone were found to be slightly better at 0.25% level and superior at 0.125%, respectively, than that of the ordinary soap. The tri-form of I in the mixture lowered somewhat the detergency of the compound. (*C. A.* **51**, 4739)

Hydrolysis of the sodium tripolyphosphate during the atomization of detergent compounds. O. Pfrengle. *Rev. franc. corps gras* **4**, 5–16(1957). The spray drying of alkyl-aryl sulfonate-tripolyphosphate, $Na_5P_3O_{10}$(I), mixtures was investigated to determine the effect of spray nozzle, temperature, aging, working, and presence of sulfate and silicate on the decomposition of I to pyro- and *o*-phosphates. The decomposition can be limited but not avoided. (*C. A.* **51**, 5448)

Attempts to standardize the testing methods for textile assistants. XI. Determination of the vat acid dispersing power of surface-active substances. G. Schwen and C. Rackemann. *Melliand Textilber.* **37**, 1345–7(1956). Several anionic, cationic and nonionic surface-active agents were examined as to their ability to prevent the precipitation of vat dyes. The method for determining the minimum addition for preventing precipitation is described and results are tabulated.

Metered detergent container. P. A. Toensmeier(New Haven Board & Carton Co., New Haven, Conn.). *Soap & Chem. Specialties* **33**(4), 117–18, 137(1957). A new folding paper carton for powdered home laundry products has built-in unit for measuring precise amounts of product.

The adsorption of cations by anionic foams. C. Walling, E. E. Ruff and J. L. Thornton, Jr.(Lever Brothers Co., Edgewater, N. J.). *J. Phys. Chem.* **61**, 486–9(1957). A study of the relative adsorption of calcium and sodium ion by N-palmitoyl methyl taurine foams indicates a strong preferential adsorption of calcium ion by the anionic surface layer. Quantitative interpretation of the phenomenon is however complicated by a competitive preferential adsorption of calcium ion by micelles in the solution being foamed. Similar preferential adsorption of a number of other cations by anionic foams has also been demonstrated, polyvalent ions being, in general, the most strongly held. The relation of this absorption to foam properties is discussed.

Studies on rinsing. Eiko Ichihara, Yoshie Matsumoto, and Akihiko Yabe(Chiba Univ.). *J. Japan Oil Chemists' Soc.* **5**, 155–63(1956). Adsorption of various detergents increased with temperature and concentration. Fabrics in decreasing order of adsorption were wool, silk, vinylon, acetate rayon, amylan, and cotton. The effect of rinsing increased with temperature.

Transitions in soaps and syndets. F. D. Snell(Foster D. Snell, Inc., New York). *Chem. Eng. News* **35**, 106–10(1957). The development of synthetic detergents to their present market position is reviewed. The gradual replacement of soap by synthetic and builders and the results of this change are also described. The future of synthetics in toilet bars, petroleum recovery, animal feeds, fertilizers, etc., is discussed.

Treatment of soap particles. S. L. Eaton(Procter & Gamble Co.). *U. S. 2,776,943.* The balling of soap particles consisting essentially of sodium soaps containing insufficient soaps of saturated fatty acids having 8 to 14 carbon atoms to prevent balling and more than 1½% sodium silicate solids, is prevented by applying to the particles from 1% to about 7% of a saturated fatty acid having 8 to 14 carbon atoms and reacting the fatty acid in fluid conditions with silicate solids at the surface of the particles.

All-purpose detergent bar. R. K. Mayhew and J. A. Yeager (General Aniline & Film Corp.). *U. S. 2,781,321.* An all-purpose detergent bar consists of about 5 to 50% by weight of an alkylbenzene sulfonate detergent such as sodium dodecylbenzene sulfonate; about 15 to 65% of a water-insoluble salt of a higher fatty acid of at least 9 carbon atoms such as calcium stearate; and about 5 to 25% of lathering agents such as sodium diisopropyl naphthalene sulfonate and sodium diamylsulfosuccinate.

Guanidine salts of N-higher aliphatic amino carboxylic acids and compositions thereof. W. W. Wellman(Colgate-Palmolive Co.). *U. S. 2,778,773.* Guanidine salts of N-higher aliphatic acyl lower aliphatic amino carboxylic acid having 12–16 C atoms in the acyl group possess detersive, foaming, softening, emulsifying, wetting and antibacterial properties.

Sulfoxide containing detergent compositions. I. D. Webb (Union Oil Company of California). *U. S. 2,787,595.* A detergent composition suitable for use in aqueous media consists of a dialkyl sulfoxide such as methyl dodecyl sulfoxide or ethyl octadecyl sulfoxide, and water soluble salts selected from the class consisting of the alkali-metal sulfates, carbonates, silicates, phosphates, borates, and mixtures.

Cleansing composition. D. Stewart(Scottish Oils Ltd.). *U. S. 2,787,596.* A single phase liquid cleaning agent comprises an alkali metal alkyl sulfate, obtained by the sulfation of a distillation fraction of shale oil, together with water, a mineral oil and a diethylene glycol alkyl ether.

Surface active composition containing a corrosion inhibitor. J. F. Yost(American Cyanamid Co.). *U. S. 2,788,329.* A surface-active composition consists of an aqueous dispersion of a dialkyl sulfosuccinate and, as a corrosion inhibitor therefor, an N,N-dialkylaniline in which the alkyl groups each contain from one to five carbon atoms such as N,N-dimethylaniline, this inhibitor being present in an amount of from 0.1% to 6% by weight of the dialkyl sulfosuccinate.

Soap-free washing composition. Boehme Fettchemie G.m.b.H. *Brit. 759,837.* A non-irritating soap-free composition for toilet purposes contains a major amount of a neutral-reacting, acid-stable, anion-active compound and a minor amount of a complex obtained by reacting an acid-stable, anion-active compound with a cation-active substance.

Detersive polyoxyethylene ethers and compositions thereof. Atlas Powder Co. *Brit. 759,854.* An improved detergent composition consists of a polyoxyethylene mono-ether reaction product of from 10 to 20 moles ethylene oxide with 1 mole of a saturated, multi-branched C_{11}–C_{15} alcohols having the configuration characteristic of alcohols produced by the OXO synthesis and suitable alkaline builders.

Improved alkyl sulfate detergent compositions. California Research Corp. *Brit. 761,383.* The foaming properties and foam stability of salts of C_{12}–C_{22} straight chain alkyl sulfuric acid detergents are improved by the addition of N-alkyl aminocarboxylic acids.

Detergent compositions. California Research Corp. *Brit. 761.-384.* A detergent composition with a high degree of persistence of its foam under agitation in dilute aqueous solutions consists of a water-soluble salt of a C_9–C_{18} monoalkylbenzene sulfonic acid and from 5 to 20% of a water-soluble salt of an N-alkyl iminodiacetic acid, where the N-alkyl group contains from 8 to 18 carbon atoms.

Improvements in or relating to antiseptic detergent compositions and process of making the same. American Cyanamid Co. *Brit. 761,269.* A germicidal detergent is prepared by incorporation of a very small amount of neomycin in an anionic organic detergent, either soap or synthetic. The compositions are useful as toilet soap, surgical soaps, shampoos, etc.

Fabric-conserving washing compositions. H. Flammer(Kraemer & Flammer Kommanditgesellschaft). *Brit. 765,215.* A washing composition which helps to avoid damage to textiles consists of a solid washing composition containing a salt of a sulfonated or sulfated synthetic organic detergent with a metal of the second or third periodic group such as aluminum and another salt of the same detergent.

CORRECTION

The abstract of the article **Solvent-detergent Combination Products** by A. Davidsohn, which appeared in Volume **34**, p. 31 of this Journal, was incorrect due to an error in translation. The last two sentences of the abstract should have read "Experiments were carried out with pine oil and Teepol, a secondary alkyl sulfate. These experiments showed pine oil to exert a strong synergistic effect upon the wetting speed of the secondary fatty alcohol sulfonate."