1921-1922	Battle Lab's.—Montgomery, Ala.
1922-1923	Battle Lab's.—Montgomery, Ala.
1923-1924	L. B. Forbes—Memphis, Tenn.
1924-1925	E. H. Tenent—International Sugar Feed Co. No. 2, Memphis, Tenn.
1925-1926	Battle Lab's.—Montgomery, Ala.
1926-1927	W. F. Hand—Miss. State College, State College, Miss.
1827-1928	E. H. Tenent—International Sugar Feed Co., Memphis, Tenn.
1928-1929	Geo. W. Gooch Lab's.—Los Angeles, Calif.
1929-1930	Southwestern Lab's.—Dallas, Texas
1930-1931	W. F. Hand—Miss. State College, State College, Miss.
1931-1932	J. N. Pless—Royal Stafolife Mills, Memphis, Tenn.
1932-1933	J. B. McIsaac—International Veg. Oil Co., Savannah, Ga.
1933-1934	W. F. Hand—Miss. State College, State College, Miss.
1934-1935	W. F. Hand—Miss. State College, State College, Miss.
1935-1936	N. C. Hamner—Southwestern Lab's., Dallas, Texas
1936-1937	N. C. Hamner—Southwestern Lab's., Dallas, Texas
1937-1938	W. F. Hand—Miss. State College, State College, Miss.
1938-1939	W. F. Hand—Miss. State College, State College, Miss.
1939-1940	A. G. Thompson, Jr.—Southern C. O. Co., Columbia, S. C.
1940-1941	Russell Haire—Planters Mfg. Co., Clarksdale, Miss.
1941-1942	T. L. Rettger—Buckeye Cotton Oil Co., Memphis, Tenn.

Mr. Thos. C. Law has for many years been taking care of the preparation and distribution of the samples. His painstaking and careful work is indicated by the lack of complaints from the collaborators and we wish to commend his efforts in behalf of the Society.

L. B. CALDWELL
T. C. LAW
W. C. MOOR
J. N. PLESS
E. H. TENENT
J. J. VOLLERTSEN, Chairman

TABLE III
Determination of Oil and Nitrogen

Analyst No.	Per cent efficiency
36	99.964
48	99.943
51	99.933
45-83	99.931
49	99.921
4-66	99.918
53	99.895
31	99.883
7	99.880
55	99.872
74	99.869
32-85	99.867
21	99.850
38	99.833
80	99.813
39	99.806
15	99.777
54	99.765
77	99.764
57	99.761
18	99.759
37	99.746
3	99.726
23-64	99.723
56	99.704
2	99.702
68	99.700
50	99.680
59	99.671
67	99.633
17	99.631
63	99.628
82	99.572
52	99.564
20	99.561
79	99.500
26	99.494
1	99.467
69	99.238
29-34	99.209
9	98.659

TABLE IV
Special Table

Analyst No.	Points off	Per cent efficiency
Determination of Oil		
16	54	99.723
5	97	99,502
30	101	99.481
Determination of Nitrogen		
30	25	99.872
5	28	99.857
16	73	99.626
Determination of Oil and Nitrogen		
5	....	99.680
30	....	99.677
16	....	99.675

Abstracts

Oils and Fats

Edited by
M. M. PISKUR and SARAH HICKS

THE THIAMINE REQUIREMENT OF THE ALBINO RAT AS RELATED TO THE CARBOHYDRATE, PROTEIN AND FAT OF THE DIET. W. W. Wainio. *Federation Proc. pt. 11, 1,* 87-88 (1942). The calcn. of requirement values in terms of the nutrients contd. in the diets reveals that each g. of sucrose required the presence of 2.94 micrograms of thiamine in the diet and that each g. of casein and fat required the presence of 1.81 and 1.29 micrograms of thiamine, resp.

THE VITAMINS A AND D POTENCY OF THE OILS OBTAINED FROM THE LIVER, INTESTINES, BODY AND OFFAL OF SHAD, ALOSA SAPIDISSIMA WILSON, AND MACKEREL, SCOMBER SCOMBRUS L. L. I. Pugsley, et al. *Can. J. Research, 20D,* 167-9 (1942). Data are presented on the percentage of liver and intestines in the fish, percentage of oil in body, liver, intestines, and offal and the vitamins A and D potency, iodine value, and percentage of unsaponifiable matter in these oils of shad and mackerel.

VITAMIN E, COD LIVER OIL AND MUSCULAR DYSTROPHY. H. A. Mattill and Calvin Golumbic. *J. Nutr. 23,* 625-31 (1942). Evidence is presented to show that no distinction need be made between a cod-liver oil-induced muscular dystrophy in rabbits and the nutritional muscular dystrophy produced by lack of vitamin E. None of the members of the vitamin B complex appears to be concerned with nutritional muscular dystrophy.

VITAMIN B_1 PANTOTHENIC ACID AND UNSATURATED FAT ACIDS AS THEY AFFECT DERMATITIS IN RATS. L. R. Richardson, A. G. Hogan and K. F. Itschner. *Missouri Agr. Expt. Sta. Research Bull. 333,* 3-12 (1941). The addn. of pyridoxine and pantothenic acid to a low-fat basal ration prevented or healed the charac-

teristic dermatitis but after a prolonged survival period every rat died of a fat acid deficiency. The inclusion of linoleic or Me arachidonate in the diet caused good growth, the females attaining a wt. of 175-195 g. Neither linoleic acid nor Me arachidonate protected permanently against dermatitis. The lesions characteristic of the dermatitis of pantothenic acid or pyridoxine deficiencies were indistinguishable on gross examn.

PATENTS

DEODORIZATION OF ANIMAL AND VEGETABLE OILS. D. K. Dean (Foster Wheeler Corp.). *U. S. 2,280,896.* Improvements were made in the location and heating elements of a continuous fat and oil deodorizing system.

ART OF EFFECTING COUNTERCURRENT CONTACT BETWEEN FLUIDS. Walter J. Podbielniak (Benjamin B. Schneider). *U. S. 2,281,796.*

REFINING OF FATTY OILS. Francis B. Lachle (The Sharples Corp.). *U. S. 2,281,884.* The process involves 2 alkali treatments.

PROCESSING APPARATUS. Bruce De Haven Miller, Henry W. Bevarly (The Girdler Corp.). *U. S. 2,281,944.* The present invention relates to an app. for refrigerating liquids or semi-plastic materials, and is particularly useful in the prepn. of paraffines, soaps, waxes, oils, fats, lard, margarine, greases, ice cream and the like.

PEANUT AND SOYA BEAN OIL. Sidney Musher (Musher Foundation Inc.). *U. S. 2,282,820.*

DEHYDRATING CASTOR OIL. Alexander Schwareman (Spencer Kellogg and Sons, Inc.). *U. S. 2,282,892.*

METHOD OF OBTAINING STEROLS. E. Fernholz (E. R. Squibb & Sons). *U. S. 2,280,815.* The method of obtaining a sterol from a sterol-contg. oil comprises deriving a sterol-fat-acid mixt. from the oil, distg. off the fat acids and recovering the sterol from the residue.

HIGH-VACUUM DISTILLATION. K. C. D. Hickman (Distillation Products, Inc.). *Brit. 532,770.* The high vacuum still contains means for scrapping the evapg. and condensing surfaces. The still is used for the production of vitamin A from fish liver oils.

PRESERVATION OF GLYCERIDE OILS. Kenneth C. D. Hickman and J. G. Baxter (Distillation Products, Inc.). *U. S. 2,282,054.* Vitamin A contg. oils are protected against the effect or formation of active oxygen by floating on aq. body contg. Na_2SO_3.

FATTY ACID SALTS OF AMINO ALCOHOLS. B. M. Vanderbilt (Commercial Solvents Corp.). *U. S. 2,281,177.* The invention related to the use of higher fat acid salts of monohydric aminoalcohols as emulsifying agents.

SOLIDIFIED EDIBLE FATS. L. Gurwitsch. *Brit. 534,223.* Means of incorporating malt in fat is described. The product is used as margarine or bakers' shortening.

ANTIOXIDANT. Sidney Musher (Musher Foundation Inc.). *U. S. 2,282,789-90, 2,282,800-6.* Caramelized milk protein product or combination of heated milk proteins and seed materials are used as antioxidant for fats, oils, fruits, vegetables, coffee beans, cereal flakes and the like.

ANTIOXIDANT. Sidney Musher (Musher Foundation). *U. S. 2,282,783-4.* Puffed cereals are used as antioxidants.

METHOD OF PRODUCING GLYCERIDE OIL. Sidney Musher (Musher Foundation). *U. S. 2,282,779-82.* Stable olive oils are prepd. by curing olives in salt soln. before extn; and flavor is enhanced by addg. benzaldehyde.

ANTIOXIDANTS. Sidney Musher (Musher Foundation. *U. S. 2,282,797-2, 2,282,816-7.* Seed germ oils are used as antioxidants.

STABILIZED FOOD COMPOSITION. Sidney Musher (Musher Foundation). *U. S. 2,282,818-9.* Salt cured macerated seeds are used for stabilization of fats and oils.

TREATMENT OF RENDERED GLYCERIDE OILS. Sidney Musher (Musher Foundation). *U. S. 2,282,807-15* (1942). Heating oil with residue of clove extn., sugar and hydroquinone, gallic acids, sugar and org. acids, phosphates and org. acids, carbohydrates and proteins, or phosphates and proteins improves their stability.

VITAMIN PRODUCT. Sidney Musher (Musher Foundation). *U. S. 2,282,795-6.* A method of extg. stable vitamin contg. oil from dry animal livers or grass comprises grinding the raw material in oil to form a paste then pressing.

STABILIZATION OF FOODS AND OILS. Sidney Musher (Musher Foundation Inc.). *U. S. 2,282,792-4.* Inactivated yeasts are used as antioxidants.

STABILIZATION OF FOODS AND OILS Sidney Musher (Musher Foundation Inc.). *U. S. 2,282,798.* Exts. of germinated grains are used to stabilize foods and fats.

STABILIZATION OF OILS. Sidney Musher (Musher Foundation). *U. S. 2,282,791.* Heating to 250-375° F. in inert atm. improves stability of medicinal fish oils.

STABILIZED EMULSION OF VITAMIN CONTAINING VEGETATIVE MATERIALS IN MOLASSES. Sidney Musher (Musher Foundation Inc.). *U. S. 2,282,785-8.* Vitamin oil for animal feeds is incorporated into the molasses (black strap) portion of the feed or into a dil. H_2SO_3 ext. of corn.

ESTERS OF POLYGLYCEROL. Bruson (Röhm & Haas). *U. S. 2,284,127.* The emulsifier is a reaction product of resin forming dicarboxylic acid, polyglycerol and fat acids of non drying oils.

PREPARATION OF HIGHER MOLECULAR WEIGHT FAT ACID HALIDES. Frank J. Cahn (The Emulsol Corp.). *U. S. 2,282,320.*

RICINOLEIC ACID ESTER. Melvin De Groote and Bernhard Keiser (Petrolite Corp., Ltd.) *U. S. 2,282,646.* Ricinoleic acid esters of amino ales. are used as petroleum deemulsifiers.

MERCURATED ALIPHATIC ALCOHOLS. Anderson W. Ralston and Miles R. McCorkle (Armour & Co.). *U. S. 2,284,067.* Ethyl oleate or like compd. is hydroxylated and reacted with Hg Ac to yield compds. useful as germicides and antiseptics.

PARASITICIDAL MATERIAL. A. K. Epstein and B. R. Harris. *U. S. 2,268,206.* The material comprises halogenated acetates of alkylolamines wherein at least one amino or OH hydrogen of the alkylolamine is replaced by a fat acid radical or one of similar properties.

PARASITICIDAL MATERIAL. A. K. Epstein and B. R. Harris. *U. S. 2,273,849.* Special halogenated fat acid amides are used as parasiticides.

LUBRICANT AND METHOD OF PREPARING SAME. Norman D. Williams (Pure Oil Co.). *U. S. 2,274.022.* Sulfurized or phosphorized fatty materials are used as lubricant improvers.

COATING AND IMPREGNATING COMPOSITION. A. H. Gleason. *U. S. 2,284,570.* Poly-esters of hydroxy fat acids, with mol. wt. of over 5,000 are used as protective coating ingredients.

COATING COMPOSITION AND METHOD OF PREPARATION. B. E. Sorenson (duPont). *U. S. 2,280,862.* A new article of manuf. is the reaction product of a modified fatty unsatd. non-hydroxylated oil having substantially no conjugation and an ester of maleic acid and an unsatd. alc.

COMPOSITION OF MATTER AND METHOD OF PRODUCING THE SAME. E. W. Mace (Petrolite Corp.). *U. S. 2,281,316.* A viscous, non-gelatinized product is formed by oxidizing with an O_2-contg. gas the reaction product of a member of the group consisting of ricinoleic acid, polyricinoleic acid and their esters with a member of the group consisting of aldehydes and ketones.

LUBRICATING OIL COMPOSITION. John E. Schott (Tide Water Associated Oil Co.). *U. S. 2,281,623.* The lubricant is made up of mineral oil and small portion of al-soap and a glycol fat acid ester.

GREASE COMPOSITION AND METHOD FOR MAKING SAME. J. C. Zimmer and Arnold J. Morway (Standard Oil Co.). *U. S. 2,265,791.* The lubricant contains mineral oil, rape seed oil and rape seed oil soap.

LUBRICANT. Carl. F. Prutton (The Lubri-Zol Development Corp.). *U. S. 2,272,923.* Ca salts of halogenated fat acids are used as improvers for mineral oil lubricants.

Abstracts

Soaps

Edited by
MARY GRIFFITH

DETERGENTS IN THE DAIRY INDUSTRY. C. Schwartz. *J. Milk Technol. 4,* 258-67 (1941). This is a general discussion of the dairy equipment cleaning problem, with a classification of detergents and suggestions regarding the selection and use of a detergent best adapted to a particular job. As a general conclusion, it is stated that the best detergent available to the dairy industry today is one in which there is contained an efficient Ca-sequestering material for the control or prevention of alkaline-earth-metal ppts. and an alkali sufficient in amt. to do a good cleaning job and of a type least harmful both to operator and equipment.

APPLICATION OF THE GIBBS ADSORPTION EQUATION TO SOLUTIONS OF PARAFFIN-CHAIN SALTS. A. E. Alexander. *Nature 148,* 752 (1941). Recently considerable doubt has been cast on the validity of the Gibbs adsorption isotherm as applied to aq. solns. of the paraffin-chain salts (soaps and soap-like mols.). The chief objection is the numerous examples of dil. solns. showing a min. in the surface tension-concn. curve, usually at 30-35 dynes, presenting the paradox of a surface tension much lower than that of water, and showing a zero or neg. surface excess of solute as calcd. from the Gibbs equation when applied in the customary manner. The anomaly is satisfactorily explained by Powney and Addison (C. A. 32:1161). When using the activity of the soln. as a whole, the Gibbs equation breaks down; the activity term should be that for the molecularly dispersed solute in bulk soln. The Gibbs equation holds, even with the paraffin-chain salts, when micelles are absent. Calcns. of adsorption by solns. of lauryl sulfonic acid at two concns. are in good agreement with expt. *(Chem. Abs.)*

DETERMINATION OF CAUSTIC ALKALI AND ALKALI CARBONATE WHEN THEY OCCUR TOGETHER IN SOAPS. Th. Hesse. *Fette u. Siefen 47,* 41-9 (1940); *Chem. Zentr. 1940, I, 2878.* The known methods of volumetric analysis are discussed. These methods were studied by making potentiometric measurements during the whole course of the analysis and plotting the corresponding curves. This was done for the potentiometric titration of KOH and K_2CO_3 in various solvents in both the presence and absence of K oleate. These results were used in detns. made on some tech. soaps in order to det. the correct end point with indicators. The following method is given for the detn. of free alkali in soaps in the presence of alkali carbonates: 5.6 g. of soap is dissolved in 50 cc. neutralized alc. (96 vol.—%) and decompd. by shaking vigorously with 25 cc. of 10% $BaCl_2$ soln. Liquid and ppt. are then titrated with 0.1 N HCl. The titration must be done slowly in order that the Ba soaps and $BaCO_3$ are not attacked by the HCl. The % free alkali = z/10 (z = cc. of 0.1 N HCl used). Alkali carbonates in soap in the presence of caustic alkali were detd. as follows: 5.6 g. of soap was dissolved in 50 cc. neutralized alc. as before and titrated immediately in the cold with 0.1 N HCl (k = cc. used). The blank value (w) for the alc. must also be detd. The % alkali carbonate then = 0.246 (k — z) + 0.246 w. Details and numerous tables are given in the original. *(Chem. Abs.)*

MODERN SOAP AND GLYCERINE MAKING. James A. Lee. *Chem. and Met. 49,* No. 5, 125-8 (1942). The modernized plant of Manhattan Soap Co. is discussed in detail, starting with the refining and bleaching equipment, saponification equipment, tunnel dryers, plodders, and finishing equipment for toilet soaps. The nigre is purified, mixed with TSP and Na silicate and dried in flakes. Glycerine recovery is described. Nickel clad steel is used for the sections of the soap kettle that are generally above the liquor level. The glycerine-lye evaporators have copper tubes and 5% nickel steel castings. Pipe lines for salt slurries are made of red brass. Aluminum steam coils are used in storage tanks for coconut oil.

PHOSPHATIDES FROM SOYBEAN OIL. M. H. Thornton and H. R. Kraybill. *Ind. Eng. Chem. 34,* 625-8 (1942). A method for refining vegetable oils by treatment with a solid adsorbent is described. The materials removed can be recovered, substantially unaltered, by extraction from the adsorbent with solvents. The adsorption method is applied to the refining of soybean oil, and a procedure for the recovery of the adsorbed material is outlined. The adsorbed phosphatide material is recovered by successive extractions with acetone, ether, absolute ethanol, and 50% ethanol. The acetone extract consists largely of oil together with some phosphatides, sterols, and sterol glucosides. The ether extract is made up of material with the same physical properties as those usually ascribed to phosphatides. However, the P:N ratio is approximately 2:1. It contains more cephalin than