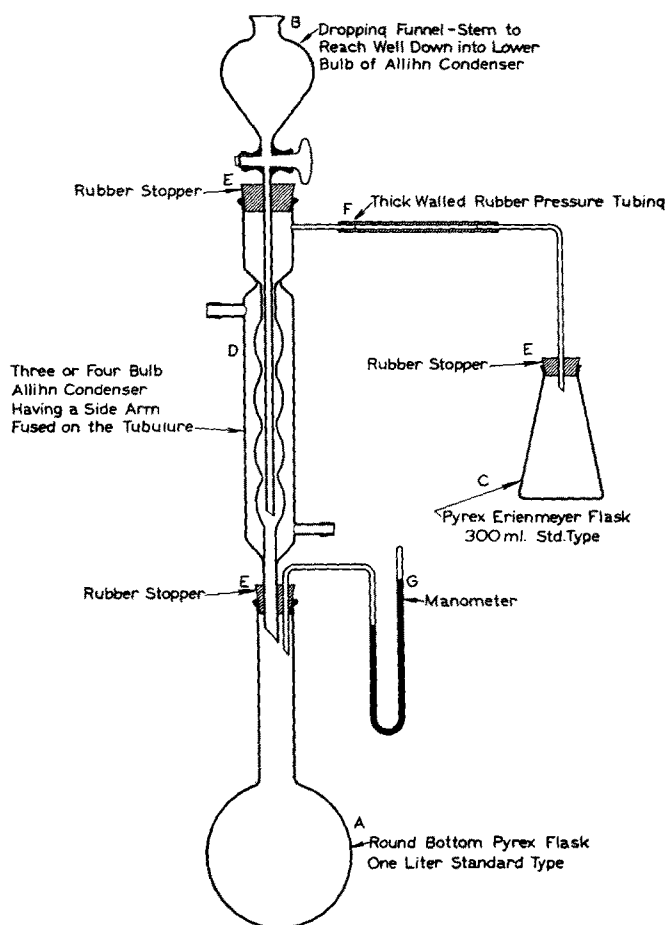


CORRECTION

Apparatus for Evolution - Volumetric Method
for the Determination of Carbonates
as CO₂ in Soap and Other Detergents



Apparatus for Evolution-Volumetric Method for the Determination of Carbonates as CO₂ in Soap and Other Detergents.

(We regret that this drawing in the April issue was incorrect. A comparison with this corrected sketch will show that the extension of the thistle tube inside the condenser to coincide with the inside condenser tube was the mistake.)

Abstracts

Oils and Fats

Edited by
M. M. PISKUR

CHARACTERIZING OILS BY DETERMINING THEIR INTERFACIAL TENSION AGAINST WATER AND WATER SOLUTIONS. F. Seelich. *Fette u. Seifen* 48, 15-20 (1941).

EXTRACTION OF FAT FROM TISSUE FOR THE DECOMPOSITION TESTS. Fr. Kiermeier. *Fette u. Seifen* 48, 11-2 (1941). The influence of solvents and extn. methods on the peroxide and aldehyde reactions of fats was investigated. For peroxide detn. K. recommends refluxing 10 g. sample with 50 cc. low boiling petrol. ether. An atm. of CO₂ may be used. Filter in 100 cc. flask, make to vol. and evap. 10 cc. in a special app. Det. peroxide value of the residue. The method is not suitable for obtaining sample for the aldehyde test.

MEASURING OXIDATION OF A VEGETABLE OIL. G. L. Clark and F. M. Rugg. *Ind. Eng. Chem. Anal. Ed.* 13, 243-4 (1941). The measurement of the spreading pressure of a drop of liquid placed on a monomol. film on the hydrophilic balance is a far more accurate evaluation of oxidation in a vegetable oil such as soybean oil or the presence of hydrophilic groups in any liquid than the familiar peroxide number. The evaluation of lubricating addn. agents is an especially valuable application.

FRACTIONAL DISTILLATION OF UNSATURATED FATTY ACIDS. THE EFFECT OF VACUUM DISTILLATION ON THE ABSORPTION SPECTRA OF POLYETHENOID ESTERS FROM COD LIVER OIL. Frank A. Norris, Irving I. Rusoff, Elmer S. Miller and Geo. O. Burr. *J. Biol. Chem.* 139, 199-205 (1941). Spectroscopic and chem. evidence indicates that distillates obtained by vacuum fractional distn. of methyl esters of highly unsaturated fatty acids are sufficiently representative of the original material to be used in isolation and structure work. Analytical applications of the process are limited by the concn. of isomerized material in the residue.

SOLVENT EXTRACTION OF COTTONSEED OIL. H. S. Olcott. *Ind. Eng. Chem.* 33, 611-15 (1941). Problems involved in the introduction of solvent-extrn. methods into the cottonseed oil industry are reviewed. Although there is a slightly higher refining loss, the hexane extn. of rolled and cooked cottonseed meats yields a refined oil directly comparable to that obtained by pressing methods. Except that larger yields of oil are obtained, no changes in the existing methods of treatment and disposal of oil and meal are required.

ANTIOXIDANTS AND THE AUTOXIDATION OF FATS. XIII. THE ANTIOXYGENIC ACTION OF ASCORBIC ACID IN ASSOCIATION WITH TOCOPHEROLS, HYDROQUINONES AND RELATED COMPS. Calvin Golumbic and H. A. Mattill. *J. Am. Chem. Soc.* 63, 1279-80 (1941). Ascorbic acid is an effective antioxidant for certain vegetable oils, their hydrogenated products and esters. It enhances the antioxygenic activity of tocopherols, hydroxy chromans, hydroquinones and related compds.

A SUGGESTION FOR A U.S.P. TEST FOR OLIVE OIL TO ELIMINATE TEASEED OIL. Wallace H. Dickhart. *Am. J. Pharm.* 112, 371-2 (1940).

PURIFICATION OF GLYCEROL BY CRYSTALLIZATION. H. B. Hass and J. A. Patterson. *Ind. Eng. Chem.* 33, 615-16 (1941).

THE ISOLATION OF PURE LINOLEIC ACID BY CRYSTALLIZATION. Jerome Frankel and J. B. Brown. *J. Am. Chem. Soc.* 63, 1483-4 (1941). A bromination procedure is followed by crystn. to remove iso-acids.

FORMATION AND DETERIORATION OF PAINT FILMS. J. L. Overholt and A. C. Elm. *Ind. Eng. Chem.* 33, 658-60 (1941). Changes in the glyceryl esters of several unsaturated fatty acids under exposure to ultraviolet light. Data on the changes in I, acid, aldehyde, peroxide and ester values, viscosity, refractive index and total oxygen of olein, linolein, linolenin stearin on exposure to ultraviolet light are graphically presented.

THE PRODUCTS OF THERMAL TREATMENT OF RICINOLEIC ACID AND ITS MIXTURE WITH OXALIC ACID. V. I. Esafov and A. V. Shpadi. *J. Applied Chem. (U.S.S.R.)* 13, 1040-4 (1940). In heating ricinoleic acid at 200°, no decompn. to enanthaldehyde and undecylenic acid was observed, the main reactions being the formation of (1) estolides of linear type; and (2) cyclic esters: The products of both polymerization reactions (especially of the latter one) may be used for the prepn. of a composition for a plastic mass. (*Chem. Abs.*)

THE FUNGISTATIC PROPERTIES OF BINARY FATTY ACID MIXTURES. C. Hoffman, et al. *J. Am. Chem. Soc.* 63, 1472-3 (1941). The definite subtractive effect exerted by a weak fungistatic fatty acid on a strongly fungistatic fatty acid suggests (1) the presence of a molecular aggregate at the cellular interface similar to that of a dimer in non-polar solvents or (2) the adsorption one acid molecule on the cellular surface blocks the adsorption of another molecule which is statistically equiv. to the acids acting in pairs.

ANABOLISM OF FAT ACIDS. H. Glasér. *Z. physiol. Chem.* 266, 123-9 (1940). Thin sections of rat and rabbit organs do not form any unsatd. acids from capronic, caprylic, nonylic, capric or myristic acids; nor do they form volatile fat acids from myristic or lauric acids. The fat acid dehydrogenase of Lang does not use hexadecane-1,16-dicarboxylic, sebacic, azelaic, suberic, adipic or glutaric acid as substrates, but distearin and ethyl palmitate are substrates. (*Chem. Abs.*)

FATS FROM FAT ACIDS WITH UNEVEN NUMBERS OF CARBON ATOMS. II. H. Appel, G. Berger, H. Böhm, W. Keil and G. Shiller. *Z. physiol. Chem.* 266, 158-73 (1940). Cacao butter fat acids were reduced to the alcs., converted to bromides with HBr and these to nitriles with NaCN and these hydrolyzed to fat acids with uneven nos. of C atoms. These, as well as the original fat acids, were resynthesized to "uneven" cacao fat and "even" cacao fat and compared with natural cacao fat and with each other. The synthetic fats were completely hydrogenated. The fats were fed at 5, 10 and 20% levels to rats. No significant differences in body weight, deposition of fat, residual fats after starvation, their I nos., extent of resorption or dicarboxylic aciduria were observed. The resorption of the 3 fats is practically equal in man. (*Chem. Abs.*)

METABOLIC EXPERIMENTS WITH NATURAL CACAO FATS AND "UNEVEN" CACAO FAT. Rolf Emmrich and Erich Nebe. *Z. physiol. Chem.* 266, 174-82 (1940); cf. above abstr.—Natural and "uneven" cacao fats when fed in large quantities (200 g. per day) to men or dogs (60 g. per day) lead to small and equal excretions of dicarboxylic acids. Azelaic, pimelic, sebacic and sorbic acids were identified in the urines. (*Chem. Abs.*)

THE COMPONENT ACIDS OF PHOSPHATIDES PRESENT IN COW'S MILK FAT. Thomas P. Hilditch and Lionel Maddison. *Biochem. J.* 35, 24-30 (1941). The results of the two analyses of cow's milk phosphatide component acids confirm the findings of previous investigators that the typical milk fat glyceride acids (butyric, etc.) of low molecular weight are wholly absent from the phosphatide acids. It has been demonstrated (Graham et al. 1936; Maynard et al. 1938) that the blood phosphatides of the cow are not removed by the mammary gland, and that these are not the precursors of milk fat glycerides. It is now equally well established that the component fatty acids of milk fat phosphatides have little in common with those of the milk fat glycerides; on the other hand, they bear more general similarity to those of the phosphatides of the ox liver.

CORRELATED CHEMICAL AND HISTOLOGICAL STUDIES OF THE ADRENAL LIPIDS. I. THE EFFECT OF EXTREME MUSCULAR ACTIVITY ON THE ADRENAL LIPIDS OF THE GUINEA PIG. R. A. Knouff et al. *Anat. Rec.* 79, 17-38 (1941). The adrenals of 2 groups of guinea pigs comprising 26 animals (13 controls and 13 treated) were studied. One adrenal from each animal was analyzed chemically, the other histologically. Chemical analyses included total lipid, phospholipid, total, free and combined cholesterol and total fatty acids. Histological observations were based on Sudan staining, the Schultz histochemical

cholesterol reaction, and polariscopic examination. For the direct detn. of total lipid, the glands of 3d group (10 control and 10 treated) were pooled and assayed by the ether-Soxhlet extraction method. All quantitative data were subjected to statistical analysis. The treated animals were fatigued to exhaustion in a motor driven treadmill. The most striking effect was a reduction in cholesterol esters which was established both histochemically by the Schultz reaction and by chemical analysis. This reduction was not accompanied, however, by a fall in total lipid or by a change in moisture content. The histological findings agreed in general with the chemical data. Sudan staining particularly the method of Romeis, for demonstrating total lipid, and the Schultz cholesterol test gave results that corresponded roughly with those obtained by chemical analyses. (*Biol. Abs.*)

FURTHER STUDIES OF THE INFLUENCE OF FAT INTAKE ON MILK AND FAT SECRETION. L. A. Maynard, et al. *Proc. Am. Soc. Animal Production* 340-44, (1940). The table summarizes 9 sep. trials involving a total of 105 cows and comprising various levels of fat studied by both the continuous and the reversal system. All the trials except one resulted in a higher av. milk production where a higher fat level was fed and the av. figures were universally higher for fat and fat-corrected milk. In the double-reversal system where 49 cows were used on both diets only 6 of them failed to show the trend in favor of the higher fat mixt.

PATENTS

PROCESS OF EXTRACTING OIL. Harden F. Taylor and Robert H. Bedford (Atlantic Coast Fisheries Company). *U. S.* 2,240,232. The process for extg. medicinal oils from animal and fish viscera includes treatment of the stock with alkali followed by solvent extn.

PROCESS OF REFINING CORN OIL. G. A. Moore (Corn Products Refining Co.). *U. S.* 2,236,493. Process of refining corn oil which comprises: heating the crude corn oil to a temperature of about 90-100° F.; mixing an alkaline solution with the oil; heating the mixture to a temperature of about 130-140° F.; causing the heated mixture to pass through a substantially vertically arranged return bent conduit at such velocity as to require about four minutes for the material to reach the centrifugal after being heated; and then centrifuging the mixture to separate foots from oil is described.

PROCESS FOR CONTROLLING THE ODOR OR FLAVOR OF EDIBLE OILS AND FATS. H. O. Renner. *Brit.* 513,514. The unpleasant odor or flavor of fats is reduced by treating the fats with the enzymes derived from plasmolyzed yeast.

FRACTIONAL DISTILLATION OF FATTY ACID MATERIALS. R. H. Potts, J. E. McKee (Armour and Company). *U. S.* 2,224,925-6. Improvements in a fatty acid still are described.

OBTAINMENT OF VITAMINOUS OILS. William S. Jones (E. R. Squibbs & Sons). *U. S.* 2,238,059. The method of obtaining a vitaminous oil from fish tissues that comprises heating the tissues with substantially the amount of alkali metal hydroxide required to fix the acids and coloring matter within the fish-tissue proteins, extracting a vitaminous oil from the thus-treated tissues with a solvent for fatty oils, and recovering the oil from the extract was described.

ANTIOXIDANT FOR PACKAGING MATERIALS. Sidney Musher (Musher Foundation, Inc.). *U. S.* 2,233,141-2. Paper for packaging fat products or fat-contg. products is treated with an antioxidant and then coated with wax or other water repellent material.