ABSTRACTS

Oils and Fats

Edited by
W. F. BOLLENS and M. M. PISKUR

New method of refining fish and aquatic animal fats. A. Sergeev. *Masloboĭno Zhirovoe Delo* **11**, 551-3(1935).—A novel feature of the usual procedure consists in the pptn. of albuminous and mucilaginous substances with 0.5% oak-bark ext. *C. A.* **30**, 2781.

Corn breeding shows how oil imports might be replaced. C. M. Woodworth and W. J. Mumm. Ill. Agr. Expt. Sta., *47th Ann. Rept.* **1933-34**, 48-51(1935).—By continued breeding expts. the high-oil strain of corn now contains 11.97% oil, i. e., 6.7 lb. per bu., as compared to 1.27% oil in the low-oil strain. Similar results were obtained in breeding a high-protein strain of corn. In 1 strain the protein content has reached 21.75% as compared to only 9.05% in the low-protein strain. The *feeding value for stock* of high-protein corn is greater than that of low-protein corn. The effect on edible oil imports if high-oil corn is widely grown is pointed out. *C. A.* **30**, 2413.

Physical and chemical properties of cocklebur (Xanthium commune Britton) oil. Lyle Tussing and Ralph E. Dunbar. *Proc. S. Dakota Acad. Sci.* **15**, 14-16(1935).—Extn. of ground cocklebur yields 4.63 to 7.45% oil, depending upon the solvent used. Successively greater amts. are obtained in the following order: CH_2ClCH_2Cl, petroleum ether, Me_2CO, CCl_4, $CHCl_3$, CS_2 and C_6H_6. The following max. and min. in phys. and chem. consts. are noted: d^{25} 0.8938 and 1.0088; *n* 1.4746 and 1.499; I no. 44.6 and 103, color (yellow) 0.0 to 0.5. *C. A.* **30**, 2784.

The component glycerides of cacao butter. T. P. Hilditch and W. J. Stainsby. *J. Soc. Chem. Indus.* **55**, 96-101T. Cacao butter glycerides were shown to be made up approximately as follows (wt.%): Oleopalmitostearins 52, oleodistearins 19, stearodioleins 12, palmitodioleins 9, oleodipalmitins 6, palmitostearins 2%. Much of the trebly mixed glyceride must be beta-palmito-oleostearin; beta-oleodipalmitin and beta-oleodistearins are probably the isomerides of these types mainly present, while both alpha- and beta-stearodiolein may occur.

The Fat Acids of Margosa Oil. R. Child and S. Ramananathan. *J. Soc. Chem. Ind.* **55**, 124-7T (1936). Margosa (*Azadirachta indica*) seed contain 19.8-23.2% oil or 33-42.8% in the seed kernel. Characteristics of oil are: $d\frac{30}{30}$ .9163-.9182; $n\frac{40}{D}$ 1.4616-1.4623; titer 39.6; saponification value 198.5-207.2; I. no. 69.3-71.9; (SCN) no. 54.3-57.1; R-M no. 1.7-3.8; Pol. no. 1.2-3.5; and unsapon. 0.7-1.1%. Component fat acids: palmitic 13.6; stearic 19.1; arachidic 2.4; oleic 49.1; and linoleic 15.8%.

Estimation of Oleomargarine in Ice Cream. T. H. Whitehead and J. B. Dunson. *Ind. & Eng. Chem. Anal. Ed.* **8**, 203-4 (1936). A method for determining the percentage of oleomargarine and butter fat in ice cream is given, which consists of a modified Roese-Gottlieb extraction procedure combined with a modified Reichert-Meissl procedure. Formulas are derived for calculating the percentage of oleomargarine in the extracted fat, the fat being calculated in the usual manner.

Irregularities in the Determination of the A- and B- Value. N. N. Godbole and Sadgopal. *Z. Unters. Lebensm.* **71**, 252-3 (1936). Recent literature has shown some inaccuracies in the methods for detg. A- and B- values. Since no adequate reasons have been given for the changes, it is suggested that the method described by Holde (1923) should be most acceptable. This detn. is used to detect adulteration of butter with margarine.

Fat Metabolism. XVI. The biological breakdown of fat acids, esters and fats to dicarboxylic acids. B. Flaschentrager and K. Bernhard. *Z. physiol. Chem.* **238**, 221-32 (1936). Of the salts of fat acids with 6, 7, 8, 9, 10, 11, 12, 14, 16, 18 C atoms fed to dogs only caprylic, polargonic and capric acids yielded small quantities of dibasic acids. The Me and Et esters behaved similarly. Sebacic and other dicarboxylic acids, when administered in small amt., were excreted for the most part unchanged, but a minor portion underwent B-oxidation. (*C. A.* **30**, 2620.)

The intestinal absorption of oils with a varying degree of unsaturation. G. Peretti and L. Reale. *Boll. soc. ital. biol. sper.* **10**, 871-3 (1935). Cacao butter, olive, sesame, papaver and cottonseed oil (1-2 g.) were administered to 5 groups of albino rats. The animals were killed after 6 hrs. and the amt. of fat present in the stomach and intestine was detd. The results indicate that there is no parallelism between the degree of unsatn. and absorption. (*C. A.* **30**, 2625.)

Comparative studies on the absorption of the oleic acid in monoolein and diolein. G. Peretti. *Boll. soc. ital. biol. sper.* **10**, 873-4 (1935). Oleic acid, monoolein and diolein (0.9 g. acid radical per 100 g. animal) were administered to 3 groups of albino rats. The amt. absorbed in 6 hrs. was detd. The results show that free oleic acid is poorly absorbed (0.11 g. per 100 g. animal); the mono- and diolein are absorbed with a velocity of the same order as the triglycerides (0.455 and 0.364 g. per 100 g. animal, resp.). (*C. A.* **30**, 2625.)

The chemistry of linseed oil stand oil. Hans Kurz. *Angew. Chemie.* **49**, 235-8 (1936). Linseed oil was polymerized under various conditions; the constituents of the final stand oils were separated by acetone extn. and their characteristics reported. On the basis of data obtained it was concluded that polymerization does not deal with reactions between the double bonds of unsatd. groups, but is a condensation taking place at the methyl group situated between conjugated double bonds and a carbon atom of the glyceride radical with the liberation of a free fat acid.

Cause of "crystallization" of tung-oil vehicles. Julius Hyman and Theodore Greenfield. *Ind. Eng. Chem.* **28**, 238-41 (1936). Earlier theories of the "crystallization" of tung-oil varnishes are discussed. "Crystallization" is shown to be caused by as little as

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4 parts per million of NO_2, which is formed from air by the action of flames, sparks or ultraviolet light. O_3 is without action. The yellowing of paints and paper, the fading of ink, and the knocking of motor fuels may also be influenced by traces of NO_2. App. is described for studying the "crystallization," which is a very sensitive test for NO_2. (*C. A.* **30,** 2410.)

The yellowing of oil films and its prevention. III. A. Eibner. *Paint Varnish Production Mgr.* **14,** 7-8, 10-11 (Feb., 1936); cf. *C. A.* **29,** 8364^9. A discussion of **Hantz'** hypothesis of pseudo acids, as applied to the yellowing oil, and of other hypotheses. The glycerol radical tends to prevent the yellowing of oil films exposed to light. Et ester and glycol esters yellowed in 30 days or less, while the glyceride showed no yellowing after 45 days' exposure to light. A decrease of the O content of the films decreases the yellowing tendency. (*C. A.* **30,** 2410.)

Report of experiments on the manufacture of lubricating oil from vegetable oils. E. C. Ku and Su-Ming Chen. *Ind. Research* (*China*) **4,** 239-44 (1935). After partial oxidation by blowing in air, soybean oil becomes viscous and assumes the properties of lubricating oils. Expts. are reported for different temps. (150°, 175°, 200°, 225°) and different times of air blowing (2, 4, 6, 8 hrs.). The best result is obtained at 200° for 8 hrs., the product having then a viscosity of 866° Saybolt. The product is yellowish brown and has an acid value of 0.26. (*C. A.* **30,** 2742.)

PATENTS

Apparatus for rendering fat. Charles B. Upton. Can. 355,866, Feb. 11, 1936. A charge of fat-bearing materials is heated and continuously agitated in one portion of a closed chamber to release the fats, which are drained to another portion of the chamber and continuously agitated and heated and mixed with a finely divided solid refining agent. Both portions of the chamber are subjected to a partial vacuum, and the refined fats sepd. from the refining agent, so that the refined fats, the cracklings and the refining agent can be removed separately from the chamber. (*C. A.* **30,** 2787.)

Highly viscous products from catalytic polymerization of fatty oils. N. V. de Bataafsche Petroleum Maatschappij (E. Eichwald, inventor). Dutch 36,242, Sept. 16, 1935. Fatty oils (e.g., rape oil) are polymerized at temps. below 200° in the presence of BF_3 catalysts (1%) with or without diluent. The product is valuable in lubricating oils because of its flat viscosity curve. (*C. A.* **30,** 2788.)

Nondrying denatured fish oils. Asahi Denka Kôgyô K. K. (Naoki Kumagai, inventor). Japan 111,-342, June 26, 1935. A fish oil is hydrogenated until its I value becomes 100-40. Then it is heated with BuOH (or AmOH, cyclohexanol or methylcyclohexanol). The product is a liquid at room temp. and its m. p. and viscosity are low; it is suitable for use in the textile industry, soap manuf., etc. (*C. A.* **30,** 2416.)

Polymerization products from drying or semidrying oils. N. V. Industrielle Maatschappij voorheen Noury & van der Lande. Dutch 36,952, Dec. 16, 1935. The product of polymerization of fat acids or of saponified polymerized fatty acids is sepd. from nonpolymerized acid by steam or vacuum distn.; satd. acids and oleic acid will distil. The polymerized acids in the distn. residue are esterified to glycerides. The polymerization itself is conducted under high or low pressure at about 300°. (*C. A.* **30,** 2788.)

ABSTRACTS

Soaps

Edited by **M. L. SHEELY**

Disinfectant Soaps. *Perfumery and Essential Oil Record* **27,** [4] 187 (1935). In a paper on "Industrial Disinfectants" recently published in "Chemistry and Industry" (February 7, 1936, 107, the author, J. Gibson, has a good deal to say of interest to the maker of disinfectant soaps. At the outset he states that mercuric chloride is much weaker as a germicide than was formerly supposed, its carbolic coefficient being only 23; he adds that the efficiency of mercury salts is rapidly destroyed by organic matter and that they are precipitated by soap. He did not mention, however, that the incompatibility of mercuric iodide or bromide with soap was overcome many years ago by Thompson and by Cooke, by the addition respectively of the corresponding potassium salts, i.e., potassium iodide or bromide, nor did he make any reference to the new organic mercury compounds the addition of which to soap was recently patented by Lever Bros. ("P. & E. C. R.," 1935, 400). A large amount of research was carried out last year in America on the bactericidal action of organ-mercury compounds, notably by Hart and Anderson ("J. Amer. Chem. Soc.," 1935, 1059) and by Stark and Montgomery ("J. Bact.," 1935, 6), and their high germicidal activity has been fully established and as has already been pointed out, it is claimed in the patent referred to above, that the addition of 0.1 per cent of these substances is sufficient to produce a good germicidal soap.

Gibson's paper deals fairly fully with the coal tar disinfectants, including lysol, the so-called "black fluids" which consist of creosote oil and phenols emulsified with soap, and the "white fluids" consisting of the same coal tar raw materials, but emulsified with glue, gelatine, casein, or dextrin. Lysol and similar fluids are said to