ABSTRACTS

Oils and Fats

Edited by
W. F. BOLLENS and R. E. KISTLER

Cacao butter and the quartz lamp. E. A. MAUERSBERGER. *Chem.-Ztg.* **56**, 861-2 (1932).—The brilliant white luminescence of cacao butter when observed in the light of a quartz lamp is due to traces of Al and Ca soaps, formed while in contact with fuller's earth during the bleaching process. This color should not be considered as characteristic for "extd." cacao butter, because any "pressed" butter, if treated with fuller's earth, would give the same color, and inversely any "extd." butter not bleached with fuller's earth would show a normal color and be erroneously classed as "pressed" butter.

P. ESCHER.

Fat Spoilage. K. TAUFEL. *Chem. Umschau Fette, Oele, Wachse Harze* **39**, 264-7 (1932) ; cf. *C.A.* **26**, 3394, 5441.—T.'s new test for the presence of ketone bodies in fats does not in all cases coincide with rancidity or nearness to spoilage, as exemplified by cases experienced; not enough facts have accumulated to make it a positive test for the evaluation of edible fats; its value, however, as a definite test for the presence or absence of ketone bodies is established. P. ESCHER.

Studies of the iodine number of drying oils with reference to Margosches' rapid method. R. KLATT. *Chem. Umschau Fette, Oele, Wachse Harze* **39**, 225-6 (1932).—The difficulty in obtaining consistent results with Margosches' rapid I no. method (cf. "Chemische Analyse" 1927, p. 121 by Margosches and *C. A.* **18**, 2436), especially for wood or fish oils, is overcome by substituting for the 10-15 cc. alc. a mixt. of 10 cc. ether-acetone (1:2) or a mixt. of 10 cc. amyl alc.-abs. alc. (1:4) ; in the latter case add the 2 cc. amyl alc. first, then weigh in the oil and add 8 cc. abs. alc. P. ESCHER.

Ultra-violet absorption of certain animal or vegetable oils. ANDRE CHEVALLIER, JEAN GUILLOT and PIERRE CHABRE. *Compt. rend.* **195**, 678-9 (1932).—Olive oil and cod-liver oil have characteristic absorption curves controlled by the presence of vitamin A, unsaponifiable matter, free fatty acids and pigments. RACHEL BROWN.

Analytical classification of the fish-liver oils. NORMAN EVERS and WILFRED SMITH. *Quart. J. Pharm. Pharmacol.* **5**, 331-40 (1932).—The compn. of the unsaponifiable matter of a no. of fish-liver oils has been examd., especially from the point of view of the content of cholesterol and batyl alc. A quant. method, based on the sepn. of the acid phthalic esters of cholesterol and dihydric aliphatic alcs. by means of their solubilities in petr. ether, has been applied to these oils. The I value of the unsaponifiable matter of the oils has been detd. The results show a compn. of the unsaponifiable matter according to the zoological classification of the fish. The I value of the unsaponifiable matter combined with the acid phthalic ester value detd. by the method described should prove useful in detg. the type of fish from which an unknown oil has been obtained. The usual analytical values for these oils are given.

W. O. E.

The cracking of cottonseed oil. GUSTAV EGLOFF and J. C. MORRELL. *Ind. Eng. Chem.* **24**, 1426-7 (1932).—A cottonseed oil cracked at 9.5 kg. per sq. cm. and 445-85° yielded 58.7% of unrefined motor fuel, b. 46-225°, consisting largely of mixed hydro-carbons; 10.6% fuel oil; 12.6% coke; 5.3% H_2O of 3.6 *N* acidity; and 12.8% gas and loss.

H. A. BEATTY.

Method of Differential Analysis of Animal Fat. *Chemical Abstracts*, Vol. 27, No. 1, Page 202, January 10, 1933.—B. A. WASSILJÓW. *Z. Fleish Milchhyg.* **43**, 45-7 (1932).—Pour the melted fat to a given mark in a narrow test tube, solidify the fat by floating the tube with a perforated cork in ice water for 10 minutes; place a small steel ball or shot on the surface of the fat and transfer the tube to a bath of 70°. The time interval between introduction into the 70° bath and the moment when the steel ball reaches the bottom of the test tube after sinking through the melting fat is taken as criterion. Fats from the same animal when kept on different feeds can be differentiated from each other. P. ESCHER.

The Action of Glycerol Upon Respiration. *Chemical Abstracts*, Vol. 27, No. 3, Page 533, February 10, 1933.—EMILIO TRABUCCHI. *Arch. farmacol. sper.* **54**, 197-206 (1932).—Glycerol, given intravenously in rabbits, causes a marked increase in respiration, both in amplitude and frequency. The effect does not depend on the concentration of the injected solutions or on the speed of injection, but is related to the quantity injected, and only appears when the glycerol concentration of the blood has reached a certain level. The effect on the respiration does not disappear after vagotomy, and is not accompanied by any significant change in the physiochemical properties of the blood or in blood pressure. It is apparently due to specific action on the respiratory center, possibly related to excitant action of glycerol on the spinal cord. L. W. BUTZ.

Distillation of Glycerol Produced by Fermenation. *Chemical Abstracts*, Vol. 27, No. 3, Page 559, February 10, 1933.—James W. Lawrie (to E. I. du Pont de Nemours & Co.) U. S. 1,881,718, October 11. Glycerol-containing slop is atomized in the presence of a hot gaseous medium such as superheated steam to vaporize quickly the glycerol, and the latter is condensed, the vaporization being conducted in the absence of glycerol-decomposing catalysts of greater activity than solids normally present in the glycerol slop. Apparatus is described, which may be formed of Cu or Al.

Purifying Fats and Oils. *Chemical Abstracts*, Vol. 27, No. 3, Page 619, February 10, 1933.—Wilhelm Gensecke (to American Lurgi Corp.) U. S. 1,880,383, October 4. Maize oil or other animal or vegetable fat or oil material containing some free fatty acid and coloring matter is treated with a concentrated alkali solution such as a 25° Be. *NaOH solution in sufficient* quantity to neutralize the free fatty acid (but not more than 5% in excess of such quantity) and the fatty acid soap formed is dried in vacuo and after separation of the soap from the mixture the latter is further treated with a diluted alkali solution such as a 3° Be NaOH solution to separate coloring matter.

Pure Glycerol. *Chemical Abstracts*, Vol. 27, No. 3, Page 619, February 10, 1933.—I. G. Farbenind. A.-G. (Gunther Kunze and Eugen Bernard, inventors). German 557,802, March 15, 1929. Crude glycerol is purified by treatment under low pressure with gases or vapors or mixtures containing low-boiling liquids in a very finely divided condition. Thus, crude glycerol (containing 82% glycerol) is treated with wet steam or CO_2 sprayed with C_6H_6, at 20- to 30-mm. pressure, to give glycerol of 99% purity.

Nature of antioxygens present in natural fats. II. Removal of antioxygens from olive and linseed oils. A. BANKS and T. P. HILDITCH. *J. Soc. Chem. Ind.* **51**, 411-14T (1932) ; cf. *C. A.* **26**, 2881.—The natural antioxygens in olive and linseed oil can be removed by boiling the oils with water. In this process they are decompd. or oxidized, since the material recovered from the aq. exts. does not inhibit O absorption when added to an linseed oil. Pressed Argentine linseed oil which exhibits marked resistance to atm. oxidation can be readily changed in this respect by agitation with boiling water. The addn. of 0.3% of quinol to olive oil, from which the natural antioxygen has been removed, produced a resistance to O absorption of the same order as that of the original oil, but the form of the O absorption-time curves was not the same in both cases. Attention is drawn to the need for more exact knowledge of the structure of the peroxidic compd. produced when O unites with an unsatd. fatty ester, and some unsuccessful attempts to reduce such compds. by various chem. agents are recorded. E. S.

Analysis of oleins and stearins [for hydroxy acids]. VICTOR BOULEZ. *Bull. mat. grasses inst. colonial Marseille.* **16**, 298-300 (1932).—Five g. sample, 15 g. xylene (both accurately weighed), 15 g. Ac_2O and 2 g. NaOAc were refluxed 2 hrs. Excess Ac_2O is then decompd. with H_2O, and the xylene soln. is washed repeatedly with warm H_2O and dried with Na_2SO_4. From. sapon. no. and acid no. of the original material and the sapon. no. of this xylene soln., the hydroxy acid content (expressed as hydroxystearic acid) is calcd. Allowance must be made for the gain in wt. of the xylene soln. due to fixation of Ac. ARNOLD M. COLLINS.

Hydrogenation of linseed oil. N. E. COCCHINARAS. *J. Soc. Chem. Ind.* **51**, 403-4T (1932) ; cf. *C. A.* **26**, 3127.—The rate of hydrogenation of linolenic acid is much higher than that of linoleic acid. The percentage of oleic and isoöleic acid found is very small, whereas the increase in the satd. acids is noticeable from the start. These results are opposed to those of Hilditch and Moore, Richter, H. K. Moore and Van Arsdel, who used app. in which the oil is mixed with the powd. catalyst and heated in a vessel with mech. agitation. Lush, with an app. of the overflow and drip type, found that the course of hydrogenation was influenced by the kind of app. He concluded from his results with cottonseed oil that the isoöleic acid formed with the overflow method is due to the dehydrogenation of the stearic acid. The rate of hydrogenation as shown by the author's analytical figures of the partly hydrogenated linseed oil is in accordance with Lush's evidence from his expts. with hydrogenated cottonseed oil. E. SCHERUBEL.