ber gaskets containing a lubricant that does not soften the rubber. The lubricants mentioned are paraffin, beeswax, carnauba, candelilla, montan or Chinese insect waxes. Rubber halide films plasticized with spermaceti were produced by the Wingfoot Corp. (*Brit.* 479,464). Patents covering the use of a rubber-wax composition for making a coated sheet material were granted to the Marathon Paper Mills Co. (*Brit.* 481,426; 481,427; 481,428). The Harvel Corp. (*Brit.* 481,960) added polymerized cashew nut shell oil to rubber compositions containing waxes.

Miscellaneous Uses

Recipes for nine ski waxes were given in the *Industrial Chemist* (*14,* 416-7) and L. Walden (*School Sci. Rev. 19,* 212-27) described the use of various waxes in the laboratory. Products useful as additions to wax preparations were patented by M. M. Brubaker and B. W. Howk (*U. S.* 2,100,468) and by the I. G. Farbenindustrie A.-G. (*Brit.* 476,189). B. H. Porter (*J. Applied Phys. 8,* 479-82) studied the impregnation of waxes with graphite.

Compositions that slowly evolve gases were described by J. M. Holm and Imperial Chemical Industries Ltd. (Brit. 477,956) and by H. H. Heer (*Brit.* 483,390; *Fr.* 813,103). Waxes were used in these products. P. Stock (*Brit.* 481,627) employed a wax mold in the manufacture of a transparent gas mask, and K. Braun (*Ger.* 659,874) developed a wax-coated filter for beer. A firelighter made from resin, hard wax, wax soap and petroleum was prepared by Martin Fiedler G.m.b.H. (*Ger.* 662,985). In a process for making ruled screens for photomechanical or optical purposes, H. Eckerlin (*Brit.* 471,703) used a resist varnish made from a solution of wax and asphalt.

O. R. Sweeney and L. K. Arnold (*Iowa State College Agr. Mech. Arts, Eng. Expt. Sta., Bull. 136,* 75 pp.) discussed the use of wax sizing in the manufacture of insulating board. Wool fat and wool fat pitch are used in making colored roofing compositions, according to C. R. Platzman (*Farben-Ztg. 42,* 436-7). M. F. Monbiot and British Rayophane Ltd. (*Brit.* 471,440) patented the following coating composition: a solution of chlorinated rubber 25-45, a resin 15-40, a plasticizer 15-25 and a wax 10-15%. The coating is used for textiles, paper, leather, wood and sheets of cellulose derivatives or gelatin.

C. Brooks (*Proc. Am. Soc. Hort. Sci. 35,* 720) reported that waxing the stem scar of tomatoes to delay ripening had about the same effect on flavor and quality as the delay caused by low temperatures. The use of lanolin preparations of growth-promoting substances was described by P. W. Zimmerman and A. E. Hitchcock (*Contrib. Boyce Thompson Inst. 9,* 299-328), N. Brown and F. E. Gardner (*Phytopathology 27,* 1110-13), and by J. W. Mitchell and C. L. Hamner (*Botan. Gaz. 99,* 569-83).

Progress in the production and use of waxes and wax-like substances was discussed by R. Straus (*Seifensieder-Ztg. 65,* 246a-247, 267-9).

ABSTRACTS

Oils and Fats

Edited by
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GERMAN FISH UTILIZATION. A Behre. *Fette u. Seifen 46,* 187-9 (1939).

GERMAN MODERN WHALING. N. Peters. *Fette u. Seifen 46,* 190-2 (1939). The I value of the blubber, bone and flesh fat of the blue whale, resp., were 121.8, 116.9 and 126.6; these values for the fin whale were 118, 112.5 and 131.6. The I value for the humpback whale oil of east Atlantic was 135, west Atlantic 138-140 and Indian Ocean 127-129. The I value of the oil from whales of the antarctic vary in some parts from 106 to 108 and from other parts from 123 to 126.

SENSITIVITY OF FISH LIVER OIL TO OXIDATION. H. P. Kaufmann and H. Fiedler. *Fette u. Seifen 46,* 200-3 (1939). Graphical and tabular data on the oxidation of 10 fish liver oils as detd. by the Mackey test are presented. It is possible that this test may be used in place of manometric O_2 uptake methods.

USEFULNESS OF THE MACKEY TEST FOR JUDGING OLEINS. H. P. Kaufmann and H. Fiedler. *Fette u. Seifen 46,* 210-3 (1939). Oils with a difference greater than 20 between the I value and the SCN value give positive Mackey tests. Oleic acid prepns. contg. 1% Ni stearate of 0.1% Fe stearate, even though the difference in the above values is small give positive Mackey tests. Data on the influence of free fat acids, pro-oxidants, antioxidants and unsaponifiable on the course of oxidation are graphically presented.

CHEMISTRY OF FAT SPOILAGE. VII. THE INFLUENCE OF HEATING ON THE STORAGE CAPACITY OF FAT. J. J. Köchling and K. Täufel. *Fette u. Seifen 46,* 206-9 (1939). Heating in air increases the susceptibility of an oil to oxidation and with heating in N_2 atmosphere the increases are in a lesser degree. Acceleration of oxidation of peanut oil was possible by adding 2 cc. of the heated oil to 15 cc. of unheated oil. Tabulated data show the degree of the effect on heating at different temps. and using oils in various stages of oxidation.

A NEW CHARACTERISTIC FOR OLIVE OIL. J. Grossfeld and H. Timm. *Z. Untersuch. Lebensm. 77,* 249-53 (1939). Fresh olive oils contain small amts. of highly unsatd. hydrocarbons that require considerably larger amts. of I than those hydrocarbons of other edible oils according to the Margosches I no. detn. Details for the method of sapong. the oil extg. the hydrocarbons with benzine and detg. I value are presented. The results are calcd. as the per cent *Squalene* in the oil. The data on fresh olive oils were 0.41-0.54% squalene; old olive oils, rape oil, peanut oils, sesame oil, linseed oil, apricot oil and train liver oil contained 0.02-0.10% squalene by the method. Dryng the hydrocarbons at 105° before detg. I value did not influence the results.

A RARE ADULTERANT OF OLIVE OIL. J. Pritzker and Rob. Jungkunz. *Z. Untersuch. Lebensm. 77,*

254-6 (1939). An oil labeled guaranteed pure and extra virgin olive oil gave results by physical and chemical tests that checked with pure olive oil except that in the Kreis and Roth test (C. A. 7, 1559[3]), 4 hrs. time was required to ppt. the lead salts of the fat acid. Pure olive oils require 1 hr. and tea seed oil 4 hrs. for the same operation. The Swiss government food analysis methods for detection of dyes gave negative results. The dye was extd. from the oil with petroleum ether at ice cold temps. When compared with several solns. of dyes by fluorescence in filtered quartz lamp light, quinoline yellow was identified as the color used in prepg. the adulterated oil.

COMPOSITION OF THE WAX PORTION EXTRACTED FROM COFFEE BEANS THAT WERE SUBJECTED TO THE COFFEE-HAG PROCESS. III. Hans Wagner. *Z. Untersuch. Lebensm. 77,* 225-47 (1939); cf. *C. A.* 33, 767[9]. The wax obtained by the coffee-Hag treatment of coffee beans was divided into an oily portion (48-49%) and an earth colored resinous powder (51-52%) by extn. with petroleum ether. The oily portion was principally glycerides. There was 40.5% solid and 50.7% liquid fat acids. In addn. to palmitic acid the solid acid portion contained an acid of 81° m.p. and 351.3 mol. wt. The liquid fat acids were 52.87% oleic and 56.26% linoleic acid. The unsap. matter contained phytosterol, m.p. 138.4°, and kahweol, m.p. 143.5°. Phosphatides were present. Trigonelline was not identified. The petroleum ether insol. portion contained phytosterol, and oxidation product of kahweol, a fat acid of 84.6 m.p. and mol. wt. of 364.4 and a constituent of m.p. above 90°. The ash (1.64%), of this resin was principally FeO (0.86%) and SiO_2 (0.60%). The resin fat acids could be split off by the action of HCl and HNO_3.

FATS FROM FAT ACIDS WITH ODD NUMBERS OF CARBON ATOMS. PRELIMINARY. Keil Werner, *Hans Appel. & Gerhard Berger. Z. Physiol. Chem. 257,* I-III (1939). Mixed fat acids of cacao butter were increased in length by 1 carbon atom & resyinthesized to glycerides. The "odd" fat so obtained behaved like normal cacao butter in animal expts. with respect to effect on R. Q., lipase action, rat-wt. curve, I no. of depot fat & C:N in urine. (*Chem. Abs.*)

CENTRAL CONTROL OF THE METABOLISM OF FATS. C. D. de Langen. *Acta Med. Scand. 97,* 427-39 (1938). The severe hyperlipemia which develops suddenly when the hemoglobin content and red cell count are reduced to about 40% of the original value either by bleeding or hemolysis can be prevented by sectioning the cord between the third and fourth thoracic vertebrae. Under this condition no hyperlipemia occurs even if the hemoglobin is diminished below the crit. 40% level. This suggests a central control of the hyperlipemia. The role which the liver plays in the fat metabolism is also emphasized and it is shown that the hyperlipemia due to the artificial anemia or mesencephalon narcosis in assocd. with a large accumulation of lipides in this organ, while the I value of the liver fat decreases toward that found generally in the fat depots. (*Chem Abs.*)

THE USE OF LARD IN CAKE MAKING. Helen Baeder. *Univ. of Nebr. Bull. 320,* Oct., 1938. Lard can be used successfully as a shortening agent in cake making, provided a suitable formula and method of mixing are used. The "hot-lard," "single-stage" and "cornstarch" methods are recommended. The hot-lard method is a successful method of mixing for lard cakes, with general-purpose flour and cornstarch in the formula. It is especially suitable for the high temps. occurring during the summer and when lard is kept without refrigeration. The "single-stage" method is simple and produces satisfactory cakes even from soft lard but does not mask "off" flavors. The "cornstarch" method masks "off" flavors but is not suited for use with soft lards. The flavor of rancid lard is masked when using the hot-lard method or the cornstarch method.

PATENTS

METHODS AND APPARATUS FOR CONTINUOUS REFINING OF FATS AND OILS. B. H. Thurman (to Refining, Inc.). U. S. 2,142,062, 2,150,732-3.

ALGINATE IN OLEOMARGARINE. V. K. Wilt (to Kelco Co.). U. S. 2,156,036. Sodium alginate is used as an emulsifier for oleomargarine.

PROCESS AND APPARATUS FOR EXTRACTION OF OILS, FATS AND OTHER SOLUBLE CONSTITUENTS FROM MATERIALS CONTAINING THE SAME. M. Bonotto (to Extractol Process Ltd.). U. S. 2,156,236. A countercurrent extn. app. is described.

METHOD OF CONTROLLING THE PLASTICITY OF HYDROGENATED GLYCERIDE OIL. L. G. Jenness (to Intermetal Corp.). U. S. 2,154,542. Satd. acids of C atoms equal in no. to those of the highest acid in the oil are used for controlling the plasticity of hydrogenated semi-solid fat.

PROCESS OF HYDROLYZING OILS AND FATS. G. W. Eisenlohr. U. S. 2,154,835. The continuous splitting process comprises passing a mixt. of fat and water under at least 2500 lbs. pressure through a heated coil, continually discharging the mixt. and condensing the material.

GREASE-SETTING AGENT. T. Hasselstrom (to G. & A. Labs.). U. S. 2,154,616. Sulfonation products of rosin acids are used.

FOOTS-REMOVING MEANS FOR EXPRESSING PRESSES. H. Fricke & J. Brunken (to Afga Ansco Corp.). U. S. 2,154,965.

METHOD OF REFINING CRACKED OIL BY USING METALLIC SOAPS. M. Mizuta and T. Yoshimura. U. S. 2,154,988. Odor substances in cracked oil are removed by treatment with metallic soaps. The mercaptans are pptd. as insol. metallic salts.

MANUFACTURING OF POLYMERIZED OIL. E. W. Fawcett, R. O. Gibson & M. W. Perrin (to Imp. Chem. Indus.). U. S. 2,155,009. Special heating technic is described.

PREPARATION OF CHLORIDES OF HIGHER FATTY ACIDS. A. Dierichs (to I. G. Farbenind.). U. S. 2,156,177. The liquid fat acids are heated with phosgene in presence and contact with charcoal at a temp. between 100° and 250° C.

WATER RESISTANT AND NOISELESS PAPER. L. B. Arnold (to E. I. du Pont). U. S. 2,142,986. Water resistant and noiseless qualities are induced in paper by impregnating with a mixt. comprising fat alc., sulfated alc. and a wax.

FATTY ACIDS. N. V. Ned. Research Centrale in Haag. German 674,752 Cl. 12o Gr. 21. Se and compds. of the same are used as catalysts for elaidinization of fats or fatty acids.

CATALYST. Procter & Gamble. Brit. 492,636. The catalyst metal carbonate is boiled with water to reduce the amt. of combined CO_2 and the pptd. carbonates are reduced.