recommendations. Most of these committees will be continued for further work during the coming year.

Some of our methods have been tentative for at least one year and should be made official. In this connection we are asking Mr. Andrews, who looks after the revision of methods, to make the necessary recommendations. Mr. Andrews called attention to the Lefax methods on pages 1, 2, and 3 and moved that these be made official. This action was approved by the Society.

The specifications for a forced draft oven have been tentative for some considerable time. It was moved that these be made official and the society approved such action.

The specifications for olive oil, which were adopted as tentative last year, should be made official. On motion, duly seconded, this action was approved by the Society.

At the meeting of the Uniform Methods and Planning Committee it was decided that new committees should be appointed to study several matters which have recently been suggested. We are, therefore, making recommendation to the incoming President that he appoint committees to study the following subjects:

1. The color reading of meals under artificial light in a closed box or room, using the General Electric Fluorescent daylight lamp, or some other lamp of similar character.
2. A method for evaluating peanuts. Sooner or later the Society will have to develop rules for peanuts and we thought that it might be well to have a committee to study this subject.
3. A committee to study the Pot Cook Method for the determination of cellulose yields of lint and hull fibre. This method has been in use by several laboratories and will be published under a heading which will show that it is neither tentative nor official, but merely a method which the society has now under consideration.

The Uniform Methods and Planning Committee also feels that the methods, as they are now written, need considerable revision, not from the standpoint of requiring many changes, but in order to have them compiled in proper sequence and eliminate possible duplications, as well as clarifying some of the wording. With that in view the committee is recommending to the incoming President and his Governing Board that sufficient funds be appropriated to employ a man to revise these methods, this work to be done under the supervision of the Uniform Methods and Planning Committee. Mr. Andrews of our committee has done a great deal of work in this direction, but it is extremely difficult to do it in spare time.

J. T. R. Andrews
E. B. Freyer
R. C. Hatter
T. C. Law
C. P. Long
H. P. Trevithick
J. J. Vollertsen, Chairman.

ABSTRACTS

Oils and Fats

Edited by
M. M. PISKUR and RUTH LINDAHL

WILHELM NORMAN'S OBITUARY. H. P. Kaufmann. *Fette u. Seifen 46,* 259-64 (1939). WALTHER SCHRAUTH'S OBITUARY. H. Bertsch. *Ibid.* 265-7 (1939). The obituaries contain good reviews and a bibliography of each of the men's life work.

CONTINUOUS EXTRACTION OF SEEDS AND APPARATUS THEREFORE. K. Hildebrandt. *Fette u. Seifen 46,* 350-2 (1939).

COMPARATIVE EXPERIMENTS ON THE EXTRACTION OF SAMPLES CONTAINING FAT. J. Jany and A. Morvay. *Z. anal. Chem. 106,* 166-9 (1939). Extn. with CCl_4, $CHCl_3$, CS_2, ether and petr. ether of egg yolk, cheese rind and chromed leather showed that in general more ext. is obtained and more real fat with CCl_4 than with any of the others. Chromed leather contg. difficulty sol. fat shows this particularly. It is true that H_3BO_3, H_3PO_4, ethers, etc., were also dissolved to some extent from egg yolk but no more relatively than by others solvents. $CHCl_3$ was nearly as good but as it is more expensive it is not practical to use it. CS_2 was very good with chromed leather but otherwise, distinctly inferior. Ether does not ext. fat as well and it dissolves more foreign material. Petr. ether dissolves much less foreign matter but it also exts. less fat. (Chem. Abs.)

ANTIMICROBE ACTION OF DISINFECTING AND PRESERVING AGENTS IN THE PRESENCE OF ANIMAL AND VEGETABLE FATS AS WELL AS MINERAL OIL. T. Sabalitchka and A. Priem. *Fette u. Seifen 46,* 277-8 (1939). A review of the literature has indicated that disinfectants are not as active in oil or water and oil solns. as they are in water. The killing time of phenol and resorcin on staphylococci in water, and oil: water mixt. are tabulated. One percent phenol solns. in vaseline and coco fat were prepd. Five g. of the former killed staphylococci in 0.1 cc. of water in 5 mins. With coco fat soln. of the phenol the staphylococci were still alive after 4 hrs.

ABSORPTION SEPARATING IN THE FAT FIELD. *I.* INVESTIGATIONS OF FAT ACID MIXTURES. H. P. Kaufmann. *Fette u. Seifen 46,* 268-73 (1939). The literature on fat acid sepn. is reviewed. A 1:1 mixt. of stearic and myristic acids disolved in benzol, was poured through a tube contg. Al_2O_3. The obsorbate was divided into 3 parts and eluted with acetone. The top portion contg. pure stearic acid, second and third portions 16:84 and 32:68 ratios of myristic:stearic acids, resp. The filtrate was pure myristic acid. With oleic and linoleic acid mxts. the more unsatd. acids are least absorbed. Erucic acid was absorbed in preference to oleic on either Al_2O_3 or $CaCO_3$. In several other expts. the satd. acids were preferentially absorbed when mixed with unsatd. acids. Results of tests with mixts. of several fat acids and the fat acids of whale were tabulated. The tabulation gives the I value of original, various parts of the absorbed and of the filtrate acids.

OXIDATION OF THE FAT OF BUTTER DURING COLD STORAGE. W. J. Wiley. *J. Dairy Res. 10,* 300-9 (1939). It was found that acidity, starter organisms, salt and low-pasturization temps. each favor the oxidation. Neither diacetyl nor acetoin influence the oxidation.

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The results indicate the presence in ripened pasteurized cream and in unripened raw cream of a fat-oxidizing enzyme which is most active at low pH values (about 5) and high salt concns.

THE RAPID DETERMINATION OF PEROXIDE VALUES FOR THE FAT IN MILK POWDERS. J. A. B. Smith. *J. Dairy Res. 10,* 294-9 (1939). 10. g. of milk powder are weighed into a 100 ml. graduated flask and 50 ml. glacial acetic acid are added. To facilitate dissolving the fat, the mixt. is warmed to 35° C. for 5 min. and during that time it is shaken at intervals. Chloroform is then added from a burette until the 100 ml. mark is reached, and during this addn. the mixt. is well-shaken several times. If it is desired to know as nearly as possible the total amt. of solvent in the flask, the vol. of chloroform which is required may be obtained from the burette. After a further vigorous shaking, the mixt. is filtered rapidly through an ordinary filter funnel of at least 100 ml. capacity. An aliquot of the filtrate, as large as can conveniently be obtained, is then measured out, 1 ml. of a satd. soln. of KI added, and the mixt. shaken for 1 min. It is then dild. with 100 ml. water and titrated with standard sodium thiosulphate, when normalities from 0.01 to 0.002 may be used. The whole detn. is, of course, performed in duplicate.

FAT SOLVENTS FOR IODINE VALUE DETERMINATION AND THE IODINE VALUE OF WOOL FAT. W. Normann. *Fette u. Seifen 46,* 273-4 (1939). The iodine value of a wool fat was reported as 44.7 and 19.7 resp., from 2 laboratories both using the Kaufmann method, but one using $CHCl_3$ and the other CCl_4 solvent. Both methods checked on soybean, sunflower and sardine oils but not with wool fat or linseed oil. Theories on this were reviewed. When more time is allowed for reaction, the methods check at a value considerably higher than the true I value because of substitution. A comparison with other methods indicated that the higher value ($CHCl_3$ solvent) was closer to the true value.

NATURAL AND ARTIFICIAL OXIDATION OF FAT. *I.* TESTING OXIDATION INHIBITING AGENTS. H. P. Kaufmann & H. Fiedler. *Fette u. Seifen 46,* 275-7 (1939). Experiments indicate that the Mackey test can be used to evaluate antioxdants.

OXIDATION OF FAT. E. Glimm. *Fette u. Seifen 46,* 348-50 (1939). A review of theories.

THE PROCESSING OF WASTE FAT IN THE SOAP INDUSTRY. Heinz. Zilske. *Allgem. Ocl- u. Fett-Ztg. 36,* 189-93 (1939). Waste fats are warmed with concd. salt water and allowed to settle over night. The salt water and floating lime are removed and the fat is washed. Free fat acids are removed with NaOH and the fat is bleached with H_2O_2. For grain soap the fat can be used with equal parts of other fat; for toilet soap less than 30% of this fat should be used. The manuf. of the soap is described. Sulfonated castor oil fat acids or boric acid are recommended for neutralization of excess alkali in the soaps.

FISHY FLAVOR IN BUTTER. B. Rewald. vs. H. M. Langton. *Food 92,* 325 (1939). Polemic. R. argues that fishiness of butter cannot be attributed to lecithin splitting off trimethylamine because fishiness develops rarely in margarin contg. lecithin. L. points out that margarin is rarely stored as long as butter, also that vegetable lecithin is not identical to that of butter.

GROWTH AND REPRODUCTION ON A LOW FAT DIET. C. G. Mackenzie, J. B. Mackenzie and E. V. McCollum. *Biochem. J. 33,* 935-43. The prepn. of a diet lower in lipids than any previously reported has been described. The total lipid content of this diet is approx. 0.27%. The max. non-vitamin lipid content of the diet is 0.0156% and of the diet without vitamin E conc. 0.0056%. The other fat-sol. essentials were added in pure form. This low fat diet was found satisfactory for good growth and reproduction. The results of feeding expts. on the complete and vitamin E- deficient diets furnish no evidence for the existence of a hitherto unknown fat-sol. factor necessary for growth or reproduction in the rat. The early symptoms of paralysis observed in adult rats on a vitamin E- deficient diet were prevented by a highly potent conc. of vitamin E.

DEPOSITION AND UTILIZATION OF FATTY ACIDS. *II.* THE NON-PREFERENTIAL UTILIZATION AND SLOW REPLACEMENT OF DEPOT FAT CONSISTING MAINLY OF OLEIC AND LINOLEIC ACIDS; AND A FATTY ACID ANALYSIS OF CORN OIL. H. E. Longenecker. *J. Biol. Chem. 129,* 13-22 (1939). The depot fat laid down in fasted rats on a high corn oil diet was found to be almost identical in fatty acid compn. with corn oil itself. It contained chiefly oleic (44.8%) and linoleic (32.3%) acids with 19% C_{16} acids. A complete fatty acid analysis of corn oil showed the presence of 48.8% oleic acid, 34.0% linoleic acid and 11.0% palmitic acid. Minor amts. of myristic acid (1.7), stearic acid (2.9), and hexadecenoic acid (1.6%) were found. Considerable changes in fatty acid compn. were effected by substituting an equicaloric ration contg. sucrose instead of corn oil. These were most noticeable when animals were fasted previous to making the dietary change. The fasted animals after only 9 days on the hardening ration were found to have greatly increased proportions of C_{16} acids, about the same oleic acid, but much less linoleic acid. The nonfasted animals, fed the hardening ration for 23 days, showed much less change from the original body fat.

SUPPLEMENTARY PROTEINS AND AMINO ACIDS AND DIETARY PRODUCTION OF FATTY LIVERS IN MICE. S. A. Singal and H. C. Eckstein. *Proc. Soc. Exptl. Biol. & Med. 41,* 512-3 (1939). High fat diets contg. 5% casein, 5% arachin, 20% arachin or 5% arachin supplemented with cystine produced fatty livers in mice. A lipotropic effect occurred when methionine was substituted for cystine in the 5% arachin diet or when a high fat diet contg. 20% casein was fed. Fatty livers were obtained when cysteine was added to the 5% arachin diet or when homocystine supplemented the 5% casein or 5% arachin diets. The effects produced when cystine or methionine supplemented the 5% arachin diet resembled those previously reported on rats when these amino acids supplemented a 5% casein diet. The results obtained with the 5% and 20% casein diets were also like those reported for rats.

ABSTRACTS

Oils and Fats

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PRODUCTION OF FATTY LIVERS IN GUINEA PIGS WITH SCORBUTOGENIC DIETS. M. A. Spellberg & R. W. Keeton. *Proc. Soc. Exptl. Biol. & Med. 41,* 570-2 (1939). Scurvy produced in guinea pigs by the scorbutogenic diets usually is accompanied by severe fatty degeneration of the liver. This process is slighty retarded by addnl. carbohydrate in the diet. These diets are apparently deficient in some other factor or factors, whose presence is necessary for normal liver physiology and morphology.

PATENTS

TREATMENT OF NONMINERAL FATTY MATTER RAFFINATES. W. J. Hund and L. Rosenstein. (to Shell Development Co.). *U. S. 2,164,012.* Amines and amine soaps that may be in oils that were refined with amines are removed by washing with very dilute acids.

FATTY MATTER REFINING PROCESS. W. J. Hund and D. H. Rowe (to Shell Development Co.). *U. S. 2,164,189.* Free fatty acids, coloring bodies, mucilaginous material, etc., are removed from fats with a continuous countercurrent extn. process.

TREATMENT OF FATTY ACIDS. F. G. Amther & G. Zinzalian (to Wecoline Products, Inc.). *U. S. 2,162,542.* The color of fatty acids is preserved by addg. a small amt. of oxalic acid.

TREATMENT OF OLEO OIL. H. S. Mitchell (to Indus. Pats. Corp.). *U. S. 2,163,912.* Small quantities of hydrogenated refined soybean oil are added to oleo oil to stabilize the latter.

CATALYST, HYDROGENATION PROCESS AND PRODUCT. L. G. Jenness (to Intermetal Corp.). *U. S. 2,163,602-3; 2,164,291.* Mixts. of 6:1 NiO and CrO_3 or 13:1 NiO and Al_2O_3 are prepd. The CrO_3 or Al_2O_3 is dissolved off and the remainder is reduced. Soybean oil hydrogenated with this catalyst at 280-380° F. at the rate of a drop of 15 I nos. per hr. to 110 and further hydrogenation yields a product that is resistant to reversion.

INCREASING THE DRYING PROPERTIES OF OIL. M. R. Coe. *U. S. 2,165,130.* The drying properties of drying and semidrying oils are increased by incorporating a plant pigment (a photosensitizer) into the oil and exposng the product to light rays of inducing autoxidation.

PROCESS OF PREPARING NITROGEN-CONTAINING COMPOUNDS. A. W. Ralston & W. M. Selby. *U. S. 2,164,284.* Nitrile compounds are prepd. by heating waste proteins of the packing, fish and leather industries with fats to 250-350° C.

COMPOUNDED LUBRICATING OIL. G. L. Neely & F. W. Kavanagh (to Standard Oil Co.). *U. S. 2,163,622.* Oleic and / or stearic acid is used in the mineral oil lubricant.

CORRECTION: See *Oil & Soap 14,* 121 (1939). The number of the patent entitled "Method of controlling the plasticity of hydrogenated glyceride oil" should be changed to *U. S. 2,154,452.*

ABSTRACTS

Soaps

Edited by M. L. SHEELY

ACTION OF SOAP ON SKIN. I. H. Blank. *Arch. Dermotol. Syphilol. 39,* 911-24 (1939). Satd. fatty acids of low mol. wt. yield a much higher percentage of pos. skin reactions in the patch test than do acids of high mol. wet. . . . . It is suggested that in soap neither the alk. nor fat acids alone are responsible for the irritation, but that each is a contributing factor. The higher the mol. wt. of the fatty acid the more alkali will be required before irritation results. In 150 cases of contact or atopic dermatitis, a mixt. of 25% sulfonated mixed olive and teaseed oils, 25% liquid petrolatum and 50% water at approx. pH 6.5 was substituted for soap. Irritations followed the use of the mix in less than 10% of cases. In 18 cases in which there were remissions with the use of the oil mixt., relapses occurred when soap was again used. (*Chem. Abs.*).

EXTRACTION OF SAPONIN FROM SOAP NUT. J. L. Sarin and M. L. Beri. *Ind. & Eng. Chem. 31,* 712-3 (1939). A method has been worked out for the extn. of saponin from soap nut, a raw material which is found abundantly in India. This method is efficient and is practicable commercially. The yield of saponin was 17.21% of the wt. of the nut. The soap nut saponin prepd. could be utilized for the same purposes as saponin from other sources — e. g., as an emulsifying agent for vegetable and essential oils, as a foam stabilizer and in the manuf. of soapless shampoos.

SULFONATION OF NAPHTHENANILIDE, STEARANILIDE, ETC. Henri Blum *Bull. soc. ind. Mulhouse 105,* 113 (1939). Napthenanilide and the anilides of the fatty acids such as stearic acid and palmitic acid can be sulfonated by the action of fuming sulfuric acid. The resulting sulfonic acids and their salts are good emulsifiers. They prevent the pptn. of fatty acids from soaps in the presence of acids and hold free fatty acids in aq. soln. even in the presence of Al acetate and other salts. They can be used to incorporate fatty acids in dyeing with alizarin and other dyes. *Chem. Abs.*).

THE DEPENDENCE OF THE VISCOSITY OF FATTY ACIDS OF HIGH MOLECULAR WEIGHT UPON THE TEMPERATURE AND UPON THEIR DEGREE OF SATURATION AND UNSATURATION. G. B. Ravich *Compt. rend. acad. sci. U. S. S. R. 22,* 34-6 (1939). The viscosity (in centipoises) of linolenic, linoleic, oleic or stearic acids or mixts. of linolenic and linoleic or oleic and stearic acids decreases linearly with increase in Hubl I value, and also decreases with increase in temp. Equations are developed for calcn. of the viscosities of the