

PRESENT

meeting to be sent to members of the Society by the Secretary.

(b) Special meetings may be called by the Governing Committee at its discretion, due notice of the time and place of such special meetings to be sent to the members of the Society by the Secretary. Ten members shall constitute a quorum at any special meeting.

ARTICLE IX

Amendments

(a) Proposed amendments to the By-Laws shall be presented in writing to the Governing Committee, and if approved by a majority of that committee shall be presented by one of its members at the annual meeting for adoption or rejection. A majority vote shall be necessary to pass an amendment.

PROPOSED

approximate time and place of the Spring meeting at the previous Spring meeting and the approximate time and place of the Fall meeting at the previous Fall meeting. Due notice of the time and place of each meeting shall be sent to members of the Society by the Secretary. The President shall appoint Chairmen of Local Committees for the Spring and Fall meetings from the localities where the meetings are to be held. The Local Committee chairman shall appoint the other members with the consent of the President. Local Committees shall handle all details of meetings not otherwise provided for in the Constitution and By-Laws, such as place of meeting, exact dates of meeting, program, industrial trips, hotel reservations, etc.

(b) Special meetings may be called by the Governing Committee at its discretion, due notice of the time and place of such special meetings to be sent to the members of the Society by the Secretary. Fifty members shall constitute a quorum at any special meeting.

(a) Proposed amendments to the By-Laws shall be presented in writing to the Governing Committee, and if approved by a majority of that Committee shall be presented by one of its members at the annual meeting or at a special meeting called for that purpose, for adoption or rejection. A majority vote of those members present and voting at the Annual or Special meetings shall be necessary to pass an amendment.

A b s t r a c t s

Oils and Fats

Edited by
M. M. PISKUR

THE CHEMISTRY OF MENHADEN OIL. COMPONENT FATTY ACIDS. W. H. Baldwin and W. B. Lanham, Jr. *Ind. Eng. Chem.* 13, 615-16 (1941).

OLEO BATTLE TAKEN INTO U. S. CONGRESS. BILLS INTRODUCED TO FORBID THE IMITATION OF BUTTER. *Food Field Rptr.* 9, No. 20, 27 (1941). H. R. 5700 was introduced in House by Rep. Andresen, Minn., and S. 1921 in Senate by Senator Gillette, Iowa. Both prohibit shipment of oleo containing milk products or which is yellow in color or imitates butter as to color, flavor or appearance. Enforcement would be with Secretary of Agriculture through injunction supplied by federal courts, seizure and condemnation of products. Federal Trade Commission Act also would be amended to prohibit advertising of oleo in yellow.

DETERMINATION OF FATS AND OF THEIR ACIDITIES WITH TRICHLOROETHYLENE. I. S. Kharshat and A. I. Korobkov. *Lab. Prakt. (U.S.S.R.)* 16, No. 2, 23-5 (1941). Expts. on the use of C_2HCl_3 instead of Et_2O as a solvent in fat analysis are reported. For extn. in a Soxhlet app. C_2HCl_3 required 1.0-1.5 hrs.; Et_2O 3-5 hrs. For the detn. of acidity, add to 5 g. of sample 40 ml. of an alc.- C_2HCl_3 mixt. (1:1 by vol.), shake for 2-3 min. (the oil dissolves completely), add

2-3 drops of phenolphthalein and titrate with 0.1 N NaOH to a pink color. If the color disappears after 1-2 min. add an addnl. 1-3 drops of NaOH. The results differ by 0.1-0.06% from those obtained with Et_2O - $EtOH$ mixt. C_2HCl_3 can be used also in the detn. of the 1 no. and in the analysis of fat acids in egg yolks. The small amts. of C_2HCl_3 which contaminate the surrounding air have no harmful effect. Seven references. (*Chem. Abs.*)

THE DETERMINATION OF FAT IN THE PRESENCE OF FREE FATTY ACIDS. II. DIFFERENCES IN THE BEHAVIOR OF INDIVIDUAL ACIDS IN THE MOJONNIER TEST. Mortimer P. Starr and B. L. Herrington. *J. Dairy Sci.*, 24, 807-11 (1941). The Mojonnier test does not recover equal percentages of the various free acids which may be present in the butterfat. This is due, in part at least, to variations in the amount of different acids volatilized when the sample is heated to remove the ether. It seems probable that the recovery of free acids by the Mojonnier method can be traced to hydrolysis of the ammonium soaps with the subsequent extn. of the liberated acid. The degree of hydrolysis would depend upon the nature of the acid, but it might be reduced in all cases by the substitution of a stronger base for the ammonia. Lithium

hydroxide offers some promise, but its saponifying action must be studied more carefully before it can be recommended.

THE RECOVERY OF BY-PRODUCTS FROM POULTRY EVisCERATION WASTES. George Franklin Stewart and Frank E. Mussehl. *Poultry Sci.* 20, 450-3 (1941). Broilers and fryers yield appreciably lower amts. of oil than roasters. Heavy hen offals yield more oil than those of any other class of chicken. Difficulty will be experienced in dry rendering broiler and fryer offals because of their very low fat content. Gizzard linings should not be used in making meat scrap and oil by the dry rendering process. Chicken scrap compared favorably with two other sources of supplementary protein when fed to chicks for 8 wks. The offals from poultry evisceration make a satisfactory meat scrap and a saleable oil.

STUDIES ON THE FAT REQUIREMENTS OF THE DOMESTIC FOWL. Horace J. Davis and Charles W. Upp. *Poultry Sci.* 20, 459 (1941). The chicks that were fed the fat free ration grew somewhat more slowly than the chicks receiving fat. However, this slight difference was overcome by the time the pullets reached maturity. In expts. conducted with laying hens there was a greater variation in egg production which in general was correlated with an increase in the fat content of the ration. The per cent fertility was essentially the same in all pens. The per cent hatch of fertile eggs was abnormally low in all pens and thus far cannot be satisfactorily explained.

FAT ABSORPTION IN ESSENTIAL FATTY ACID DEFICIENCY. Richard H. Barnes, *et al.* *J. Biol. Chem.* 140, 773-8 (1941). The amt. of fat absorbed in 8 hrs. by fat-deficient rats is less than that absorbed by rats cured of the deficiency. If absorption is calculated on the basis of body size, there is no significant difference in absorption rate. There is a decrease in the incorporation of labeled fatty acids in the intestinal mucosa phospholipids of deficient rats. This deficiency effect is partially, but not completely, overcome by the daily administration of 3 to 4 drops of corn oil for 1 month.

THE FUNCTION OF THE PANCREAS CONSIDERED AS AN ENDOCRINE GLAND FOR THE ABSORPTION OF FAT. Ugo Lombroso. *Ann. physiol., physicochin. biol.* 16, 298-312 (1940). Neutral fat (emulsified olive oil), introduced into a Vella intestinal fistula, can be absorbed to a marked degree in normal dogs but is not absorbed in the same dogs after pancreatectomy. If a fat acid is introduced into the intestinal fistula of a normal dog, the speed of absorption does not differ appreciably from the speed of absorption of the neutral fat, although it may be slightly higher. The fat acid is absorbed by the intestine of depancreatized dogs but to a much smaller degree than in the normal dogs. These facts do not agree with the hypothesis that complete hydrolysis of the fat is necessary and sufficient for the absorption of neutral fats. The dehydrogenating action of the intestinal juice which acts on both the neutral fats and the fat acids is reversible; often, if its action is prolonged for 48 hrs., the I index falls to its initial value. Sufficient proof does not exist that the absorption is due to a simple increase in double bonds. The hydrolysis of the neutral fat favors its absorption but does not

appear to be the sine qua non. The presence of double bonds is indispensable for the absorption of fats. If the bonds are blocked even though the fats are rendered sol. (as with sulfonated fats), absorption is no longer possible. The phys. state of soly. can be necessary but not sufficient to det. the absorption of fats. Increasing the no. of double bonds does not increase the speed of absorption. This indicates that the activity of a double bond (endowed with certain special affinities either because of its position or other conditions) can play a fundamental role in the process of fat absorption. The simple, schematic interpretation of the mechanism of fat absorption does not seem at present to be sufficient. The pancreas can probably influence fat absorption by an endocrine function, in addn. to the external secretion. (*Chem. Abs.*)

THE EFFECT OF ADRENALECTOMY ON FAT ABSORPTION. L. Bavetta, L. Hallman, H. J. Deuel, Jr., and P. O. Greeley. *Am. J. Physiol.* 134, 619-22 (1941). A definite inhibition in fat absorption was noted in adrenalectomized rats. It was slightly improved by the administration of Rubin-Krick soln. After adrenalectomy larger amts. of fatty acids accumulated in the intestine than occurred normally. Both of these phenomena were restored to normal by the administration of cortin. There is no evidence that adrenalectomy alters lipolytic activity.

THE PREVENTION OF ALPHA-TOCOPHEROL OF COD LIVER OIL MUSCULAR DYSTROPHY IN THE RABBIT. C. G. MacKenzie, J. B. MacKenzie, and E. V. McCollum. *Science* 94, 216-17 (1941). The following propositions have now been demonstrated on rabbits receiving the same basal ration: (1) severe dystrophy develops in rabbits on a vitamin E deficient diet in the absence of cod liver oil; (2) alpha-tocopherol prevents this dystrophy; (3) cod liver oil counteracts the anti-dystrophic action of alpha-tocopherol and produces muscle lesions, (4) increasing the alpha-tocopherol sufficiently prevents the dystrophic action of cod liver oil. It seems probable that this quantitative relationship also applies to other species in which cod liver oil produces lesions of the skeletal muscles.

PATENTS

EXTRACTOR PRESS. Wm. Gage Fleming. *U. S.* 2,254,517. A newly designed expeller barrel is described.

METHOD AND PRODUCT OF COTTONSEED EXTRACTION. H. Rosenthal. *U. S.* 2,254 245. The method of extracting from cottonseeds comprises cooling cotton seed meats to a temperature of approx. -5° F. then subjecting the cooled meats to a normally gaseous hydrocarbon solvent, maintaining the solvent in the liquid phase at a temperature below approx. -5° F. while in contact with the material to be extracted, withdrawing the solution, vaporizing the solvent to separate it from the extract. Oil produced by the process was said to yield a "white" grade cottonseed oil after the usual alkali refining.

OIL REFINING PROCESS. R. E. Daly and J. F. Walsh (American Maize-Products Co.). *U. S.* 2,253,480. In the refining of vegetable oil contg. free fatty acids, the method which comprises treating the oil with

sodium ferrocyanide, to decrease the acidity, then treating the oil with an alkali to neutralize additional acid and form soap, and separating the soap from the remaining oil is described.

PROCESS FOR REFINING OILS. B. Clayton, W. B. Kerriek, and H. M. Stadt (Refining Co.). *U. S. 2,247,359*. The principal object of the invention is to reduce the time period in the separation of the various constituents of oils, such as the "foots" from cottonseed and similar oils in a continuous system.

METHOD FOR REFINING ANIMAL AND VEGETABLE OILS. Benj. Clayton (Refining, Inc.). *U. S. 2,254,101*. A process of refining oils of the animal or vegetable type contg. mucilaginous matter and other impurities comprises the steps of: mixing with said oil an aq. medium for which said mucilaginous matter has an affinity and which is capable of impregnating said mucilaginous matter; then adding to and mixing with the resulting product while the impregnated mucilaginous matter remains uniformly suspended therein a

refining reagent capable of acting upon said impurities to form foots; conditioning the resulting mixt. of oil and foots by flowing same through an elongated passage while maintaining such flow conditions therein as to prevent said foots from separating out of said oil; subjecting the conditioned products to centrifugal action as fast as they issue from said elongated passage to continuously separate the oil from the remaining constituents of said conditioned products; and maintaining such temp. conditions in the process as will deliver the conditioned products to the zone of centrifugal sepn. in nonemulsified condition.

THERAPEUTICS. K. C. D. Hickman (Distillation Products, Inc.). *U. S. 2,256,392*. The process which comprises in combination extracting oil from fish liver with a low vapor pressure solvent which has been freed of substantially all volatiles contained therein by high vacuum distillation, separating the solvent and oil from the fish liver tissue and then subjecting the solvent-oil mixture to vacuum distillation to separate the vitamin content thereof is described.

A b s t r a c t s

Soaps

Edited by
M. L. SHEELY

GLYCERINE KEEPS PACE WITH TEXTILE PROGRESS. Georgia Leffingwell and Milton Lesser. *Rayon Textile Monthly*, 22, 9, 72 (1941). The uses of glycerine and glycerine derivatives are reviewed. Glycerine is incorporated in many dyeing and printing formulas. The ripening of cellulose acetate is effected in the presence of glycerine; the fibers retain their resiliency and crimp under such treatment. The alcoholic alkali bath for reducing the shrinkage of wool contains 1% of glycerine to inhibit discoloration.

Alkyd resins in finishes have opened up new markets for cotton and rayon fabrics. These resins are used as adhesive and binding agents in resin emulsions for printing and finishing. Fabrics are made transparent and impermeable to fluids and at the same time increasing their gloss by impregnation with a non-drying or semi-drying oil-modified alkyd resin; in conjunction with urea-formaldehyde condensation products. This new process eliminates discoloration and tackiness as under heat treatment. Urea-formaldehyde-alkyd combinations are also used for printing and decorating textile fabrics.

Glycerine-sebacic acid-condensation products are used to produce waterproofing lacquers, and combined with castor oil, plasticize a urea-formaldehyde condensate for emulsions for treating textile materials. Wetting agents containing triethanolamine, coconut oil, and glycerine, or ricinoleic acid, glycerine, and boric acid were patented recently. Beta methyl glycerine monochlorhydrin, sodium sulfite, and a long chain fatty acid make good foaming agents, detergents, and emulsifiers. Latex and glycerine form a water-proofing composition for cloth. Inks and glycerine compositions contain dyes that are substantially invisible under ordinary light, but clearly visible under ultraviolet light.

RELATION OF CALCIUM SOAPS TO STAPHYLOCOCCAL INFECTIONS IN THE SKIN. K. K. Jones and Marie Lorenz. *J. Investigative Dermatol.* 4, 69-80 (1941). Ca ions in oil-water mixts. contg. bacteria facilitate the passage of bacteria into the oil layer. Bacteria are viable for at least 2 weeks' time in Ca soap pptts. The incorporation of avirulent strains of staphylococci into Ca soap-oil mixts. increases the ability of the organisms to enter follicles and sebaceous glands and produce infection. The prevention of Ca soap formation in wash water and its deposition on skin, hair or clothing is an active prophylactic measure. Ca soaps may protect bacteria against disinfecting and bacteriostatic agents. (*Chem. Abs.*)

THE GLASSY CONDITION OF SOAP. B. Tyutyunnikov, Z. Pleshkova, and A. Chernichkina. *Seifensieder-Ztg.* 68, 193-4, 205-6, 215-16, 227-8, 237 (1941). A review of conditions leading to the formation of transparent soaps including both cold-made and milled varieties. In the latter, transparency and hardness are favored by strong cooling of the rolls; opacity is favored by less cooling. The temperature during plodding must be kept between suitable limits. The authors have constructed a special nozzle for the plodder in which the soap is pressed through an annular orifice, both the internal and the external parts of the orifice being water cooled. By this, greater phys. homogeneity is promoted and crystn. of part of the transparent soap is prevented thereby. (*Chem. Abs.*)

THEORY OF PURIFYING SPENT SOAP LYE. M. Zaliopo. *Masloboino-Zhirovaya Prom.* 16, No. 5/6, 28-30 (1940). Though spent soap lye contains perhaps only 0.1% of lower Na soaps (caproate to caprate) after salting out the higher soaps (laurate, myristate) removal is essential to the quality of glycerol recovered from the lye. About half of the lower fatty acid con-