

small and our finances are developing sufficiently favorably to warrant consideration of some expansion in size if the material were available.

In November of 1941, we set up an Oil & Soap office and made independent arrangements for printing our Journal. An associate editor was employed to handle the editorial work and business details. Our report of last year covered about half a year's operation under this new arrangement and half a year's operation under the prior arrangement in which Gillette Publishing Co. had handled all business details.

The present report covers for the first time a full year's operation of the Journal under our own management. John Haney, the associate editor employed when we took over management, was called into the service of his country during the year (Sept. 1942). His place has been taken by Mrs. Isabel Cumming Seimer who has now been in Oil & Soap work about seven months.

Financial results show, we believe, that the action taken by the Society in assuming management of the Journal was justified. During the first full fiscal year we have been able to record a net profit somewhat in excess of \$2,000, after having assumed considerable salary and office expense not incurred under the old publishing arrangement. It should be noted, however, that our office rent has been low, through the courtesy of Mr. J. P. Harris, a member of this committee, in

sharing his office space at 35 E. Wacker Drive, Chicago, with us at a very nominal figure. It is noteworthy also that this gain includes the customary amounts allotted to the journal from members' dues. The gain, therefore, is not wholly the result of income coming from outside the Society.

Advertising accounts have been expanded during the year, several new accounts being added. This aspect of the Journal's work will no doubt be discussed by Dr. Kishlar in his report of the Advertising Committee. Further discussion of it is, therefore, omitted from this report.

We have recently received information indicating that a substantial volume of editorial material will be available during the next six months. It appears likely that it will be possible to make at least a temporary expansion of the Journal's size. We believe that the financial results outlined in this report justify such expansion and it is the plan of the Journal Committee to make each issue in the immediate future 36 pages in size. The spring convention issue (May) was expanded to 40 pages because of considerable extra advertising scheduled for that issue.

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Abstracts

Oils and Fats

Edited by

M. M. PISKUR and SARAH HICKS

THE EFFECT OF LECITHIN AS A SHORTENING EXTENDING AGENT IN SUGAR COOKIE MIXTURES. Charles A. Glabau. *Bakers Wkly.* 118, No. 9, 47-8 (1943).

BAKERS' CAKE—WHAT'S AHEAD OF IT IN 1943? *The effect of lecithin as a shortening extending agent in oatmeal cookie mixtures.* Charles A. Glabau. *Bakers Wkly.* 118, No. 10, 43-4 (1943).

CURRENT METHODS OF MEASURING FOAM. Sydney Ross. *Ind. Eng. Chem. Anal. Ed.* 15, 329-34 (1943).

COLORED CHROMATOGRAMS WITH HIGHER FATTY ACIDS. Morris M. Graff and Evald L. Skau. *Ind. Eng. Chem. Anal. Ed.* 15, 340-1 (1943). A method has been described for separating mixtures of higher fatty acids by Tswett adsorption analysis, whereby separation into zones was observed on a column of heavy magnesium oxide impregnated with a suitable indicator. The fatty acids were recovered by dissolving the magnesium oxide in particular sections of the column in acid and extracting with ether. By this procedure it was possible to demonstrate a separation of an unsaturated fatty acid from a saturated fatty acid of the same number of carbon atoms and of two saturated fatty acids differing in chain length by four carbon atoms.

DETERMINATION OF THE SAPONIFICATION NUMBER OF FATS AND OILS. William Rieman, III. *Ind. Eng. Chem. Anal. Ed.* 15, 325-6 (1943). A "Double-indicator method" has been developed for determining the saponification number of fats and oils. For almost all oils this method gives excellent checks with standard method and requires less time, reagents, and apparatus. Titration is potentiometrically.

α -TOCOPHEROL, A NATURAL ANTIOXIDANT IN A FISH LIVER OIL. Charles D. Robeson and James G. Baxter. *J. Am. Chem. Soc.* 65, 940-3 (1943). A natural antioxidant has been isolated from Mangona shark liver oil and identified as natural α -tocopherol. Evidence was obtained indicating that α -tocopherol is the major antioxidant present in this fish liver oil. This finding is of interest since it indicates that the tocopherols may act as natural antioxidants in fish liver oils as well as in vegetable oils.

STORING LARD IN AN ATMOSPHERE CONTAINING CARBON DIOXIDE. N. S. Nakonechnyi. *Miasn. Ind. U.S.S.R.* 10, No. 11-12, 43-4 (1939). The presence of 20-23% CO₂ in the atm. enables lard to be stored for considerably longer periods at 18°, 6°, 2°, and -2°. When the temp. is of the order of -8°, the efficiency of preservation in a CO₂-contg. atm. is appreciably less. The organoleptic characteristics of lard are not affected by storage in CO₂. (*Chem. Abs.*)

RELATION OF DEGREE OF SATURATION OF MILK FAT TO DEVELOPMENT OF OXIDIZED FLAVOR. W. J. Corbett and P. H. Tracy. *J. Dairy Science* 26, 419-27 (1943). A marked variation in the I. no. of the milk fat produced by 6 individual cows fed a control ration of alfalfa hay, corn silage, and grain mixture was observed. Differences in the susceptibility of the milk to become oxidized were noted, yet there was very little correlation between the I. no. of the fat and the tendency of the milk to develop an oxidized flavor. When the degree of saturation of the milk fat was varied by the addition of either corn oil or coconut oil to the ration the I. no. of the milk fat

was altered markedly, yet there was only a slight change in the susceptibility of the milk to oxidized flavor development. The susceptibility of milk to development of oxidized flavor was not correlated to the I. no. in the range of 24 to 40. However, milk with an I. no. greater than 40 developed a slightly greater degree of oxidized flavor than milk having a lower I. no.

PRESERVATION OF LARD FOR PHARMACEUTICAL USE. Harry Brindle and Ernest Pedley. *Quart. J. Pharm. Pharmacol.* 15, 389-97 (1942). A comparison has been made of the effect of a no. of substances upon the development of rancidity in lard under various conditions as measured by peroxide values. Siam benzoin was in good condition after 18 months' exposure to the air of ordinary temp., whereas the untreated sample was rancid after about 3 months. BzOH, cinnamic acid and esters present in benzoin have no preservative effect upon lard. Antiseptics in common use, including *p*-chloro-*m*-xylenol, do not delay the development of rancidity. (*Chem. Abs.*)

COMPARATIVE HYDROGENATION OF OCTADECENOIC ACIDS. G. V. Pigulevski and P. A. Artamonov. *J. Gen. Chem. (U.S.S.R.)* 12, 510-16. The various acids were comparatively hydrogenated by shaking with H₂ in the presence of Pt black. It was found that the location of the double bond affects the ease of hydrogenation; the 2-octadecenoic acid was the least reactive, the 3-octadecenoic acid was hydrogenated more rapidly, with 6-octadecenoic and 9-octadecenoic acids showing progressively greater hydrogenation rates. (*Chem. Abs.*)

COMPARISON OF THE LIPOTROPIC EFFECTS OF CHOLINE, INOSITOL, AND LIPOCAIC IN RATS. Gertrude Gavin, Jean M. Patterson, and E. W. McHenry. *J. Biol. Chem.* 148, 275-9 (1943). A comparison of the lipotropic effects of choline, lipocaic, and inositol has been made with various types of fatty livers caused by diet in rats. Choline is effective for thiamine fatty livers, and partially effective with cholesterol fatty livers, but shows little activity with biotin fatty livers. Against this last type both inositol and lipocaic are active. Lipocaic apparently differs from inositol in being ineffective against fatty livers caused by feeding cholesterol with a high fat diet. Inositol shows no activity with thiamine fatty livers; the addition of other B vitamins permits inositol to be lipotropic.

FURTHER STUDIES ON THE GROWTH-PROMOTING VALUE OF BUTTER FAT. R. K. Boutwell, R. P. Geyer, C. A. Elvehjem, and E. B. Hart. *J. Dairy Science* 26, 429-36 (1943). Rats showed superior growth on butter fat as compared to corn oil when the sole carbohydrate in the diet was lactose. When the sole carbohydrate was dextrose, sucrose, dextrin, or starch the superiority of butter fat disappeared and corn oil gave rates of growth comparable or even slightly better than butter fat. The possible explanations of such results are discussed. Ether extracted skim milk powder plus 35% of fat as well as the synthetic type diet cont. lactose as the sole carbohydrate were suitable rations for studying certain aspects of the nutritional value of fats. Greater differences in the nutritive value of fats on a lactose cont. diet were obtained the younger the rat at the start of the experiment. With the basal ration of ether-extracted-skim-milk powder, increasingly greater differences in the nutritive value of butter fat and corn oil resulted

as the fat level was raised from 25 to 35% of the diet.

DEPRESSIVE EFFECTS PRODUCED ON APPETITE AND ACTIVITY OF RATS BY AN EXCLUSIVE DIET OF YELLOW OR WHITE CORN AND THEIR CORRECTION BY COD LIVER OIL. Curt P. Richter and Katherine K. Rice. *Am. J. Physiol.* 139, 147-54 (1943). Female rats on an exclusive yellow corn diet for a period of 85 days showed a gradual loss of appetite, a scarce maintenance of starting body weights, a great loss of activity, and development of a diestrous condition of the vaginal mucosa. They did not, however, show any other signs of specific nutritional deficiency in this time. Female rats on an exclusive white corn diet for a period of 85 days showed a similar picture, with the exception that after 45 days the cells of the vaginal smears became constantly cornified, and after about 76 days the upper teeth became worn and the lower teeth overgrown. They also showed deficiency symptoms of the eyes and hair. Cod liver oil offered the rats on the yellow corn diet was taken in moderate amounts for the first day and then in minimal amounts, resulting in an almost immediate increase in appetite, body weight, and activity. Regular 4-day cycles also reappeared in the vaginal smears within 4 days. Within 20 days rats had practically reached their original high running levels. Cod liver oil offered the rats on the white corn diet was taken in minimal amounts, producing almost no effect on activity, a small effect on appetite, and only a slight increase in body weight. Within a day, however, the vaginal smears were changed from a condition of constant cornification to one of constant diestrous.

LABORATORY DEODORIZER FOR FATS AND OILS. A. E. Bailey and R. O. Feuge. *Ind. Eng. Chem. Anal. Ed.* 15, 280-1 (1943).

MELTING AND SOLIDIFICATION COURSE OF CACAOBUTTER. Heinrich Fincke. *Kazett.* 30, 254-60, 271-4, 286-91 (1941); *Chem. Zentr.* 1942, I, 434. Practical information on the form of cacao butter (I) glycerides as compared to other fats, formation of crystals, solidification point, effect on d. of chocolate, supercooling and expansion on m. is presented. The expansion of 100 parts of I on heating 6-42° was plotted. The data indicated: solid I d₁₅ 0.970-0.978, d₂₀ 0.965-0.974, semi-solid d₂₅ 0.95-0.96, d₃₀ 0.915-0.930, liquid d₃₀ 0.901-0.903, d₃₅ 0.897-0.899, d₄₀ 0.984-0.896. Due to sugar and fat free components the d. of chocolate was correspondingly greater. (*Chem. Abs.*)

OBTAINING FAT MATERIAL FROM BROOM COOKING LYES. F. Chiarabba. *Chim. peintures* 4, 280-2 (1941); *Chem. Zentr.* 1942, I, 1447. The lye used to boil broom in order to separate the fibers when treated with H₂SO₄ yields a ppt. from which fat material can be extd. with ether. The amt. of fat material is proportional to the concn. of NaOH and the boiling time. About 3.5-4% NaOH is necessary for recovering all the fat. The ppt. contains 40-50% fat. (*Chem. Abs.*)

THE DETERMINATION OF FAT, MOISTURE NON-FAT AND SALT CONTENTS, AND ACIDITY OF BUTTER WITH THE AID OF THE JENA GLASS FILTER CRUCIBLE. Stephan Korpacz and Albert Ersek. *Z. Untersuch. Lebensm.* 63, 218-20 (1942). To obtain the above analytical data by the German method 4 separate detns. are required. In Hungary, fat, moisture, non-fat, and acidity is detd. on one sample by the Szekely-Lieberman method. The author's new *app.* for the latter method comprises a glass filter crucible suspended by a suitable means over a 60 (dia) × 35 mm. cup.

RAPID IODINE NUMBER DETERMINATIONS. Frank A. Norris and Robert J. Buswell. *Ind. Eng. Chem. Anal. Ed. 15*, 258-9 (1943). The combination of mercuric acetate and Wijs soln. provides a rapid I No. method suitable for use on conjugated fats. A rapid I No. method involving the use of easily prepd. and stable solns. comprises the combination of mercuric acetate with Hanus soln. This reagent gives values identical with those obtained in the standard Hanus method on nonconjugated fats, with the notable exception of castor oil, where the ricinoleic acid content is responsible for higher values obtained by the rapid method. On conjugated fats, latter method is unsatisfactory.

PROCESS FOR APPROXIMATELY DETERMINING THE AMOUNT OF SWINE FAT IN FOOD FAT MIXTURES. R. Viollier and E. Iselin. *Mitt. Lebensm. Hyg. 32*, 180-96 (1941); *Chem. Zentr. 1942 I*, 2342. Beef fat contains 2.1-3.1% (av. 2.5) and swine fat 0.43-0.46% of the isoöleic acid, vaccenic acid. A modification of Grossfield and Peters method for detn. of the amts. of this acid present is described. A 2.5 g. of sample of fat is used. Crystn. of the Pb salts should be for 2 hrs. at a temp. of 22-3°. The Hanus method should be used for detn. of I no. of the isolated fat acids. Veal, mutton, and butter fat behaves similar to beef fat. Due to variations in the isoöleic acid content in beef fat the approximation is only within 10%. Partial oxidation of the fats increases the probable error. (*Chem. Abs.*)

COMPOSITION OF SWINE, BEEF, VEAL, AND MUTTON FAT. R. Viollier and E. Iselin. *Mitt. Lebensm. Hyg. 32*, 197-202 (1941); *Chem. Zentr. 1942, I*, 2343. One sample each of swine, veal, beef, and mutton fat tissue with an equal wt. of water was autoclaved at 2.5 atm. (about 135°) and rendered. The fat was washed, clarified, and filtered. The samples gave characteristic values, resp., as follows: m. p. (Polenske) 49.5, 42.0, 49.2, 46.8°; f. p. (Polenske) 29.2, 28.8, 39.0, 32.2°; difference no. (Polenske) 20.3, 13.2, 10.2, 14.6°; n_D^{40} 1.4590, 1.4578, 1.4573, 1.4585; n_D^{40} (Butyro) 49.6, 47.8, 47.0, 48.8; acid no. 1.4, 3.1, 2.6, 1.5; sapon. no. 196.4, 200.0, 197.5, 196.5. I no. (Hanus) 55.0, 46.5, 36.5, 48.0; (SCN) no. 46.2, 40.7, 33.3, 41.3; OH no. 0, 2.4, 1.9, 0.3; unsapon. 0.20, 0.10, 0.13, 0.19%; solid fat acids 42.1, 45.8, 55.6, 48.4%; whose I and (SCN) nos. are 0.94, 5.1, 4.2, 6.3; isoöleic (vaccenic) acid 0.4, 2.6, 2.6, 3.4% solid satd. acids 41.7, 43.2, 53.0, 45.0%. The compns. of the fat acids from the oils, calcd. from the characteristics, were, resp.: satd. 44.0, 50.2, 58.4, 49.4%; oleic 41.2, 36.2, 30.9, 35.4%; isoöleic (vaccenic) see above; linoleic 9.7, 6.4, 3.5, 7.4. (*Chem. Abs.*)

REDUCTION OF BLOOD PRESSURE OF HYPERTENSIVE RATS BY ADMINISTRATION OF CERTAIN MARINE OILS. Arthur Grollman and T. R. Harrison. *Proc. Soc. Exptl. Biol. & Med. 52*, 162-5 (1943). Fish body and liver oils contain a substance which is effective in reducing the blood pressure of hypertensive rats. The effectiveness of these oils is increased by oxidative procedures which destroy vitamin A. The observed activity appears to be associated with some substance, other than vitamin A, present in fish oils. Fish oils offer greater promise than kidneys as a possible source of a therapeutic agent effective in reducing the blood pressure in hypertension.

STUDIES WITH DOGS MAINTAINED ON DIETS LOW IN FAT. Arild E. Hansen and Hilda F. Wiese. *Proc. Soc. Exptl. Biol. & Med. 52*, 205-8 (1943). Distinct

alterations in the appearance of the skin have been observed in puppies reared on a diet low in fat. The skin and hair of the litter-mate puppies receiving 28% of their calories as lard in the diet remained clear and soft. Coincidental with this phenomenon marked differences in the degree of unsaturation of the fatty acids of the blood serum in the 2 groups of animals was demonstrated. The most marked difference in the I No. of the fatty acids was found in the acetone sol. fraction, the avg. value being 83.9 for the animals receiving practically no fat in contrast to 118.7 for the animals receiving lard as a form of fat in the diet.

THE EFFECT OF PANCREATECTOMY ON FAT ABSORPTION FROM THE INTESTINES. Cornelius Vermeulen, Frederick M. Owens, Jr., and Lester R. Dragstedt. *Am. J. Physiol. 138*, 792-6 (1943). Temporary hyperlipemia, which may be produced in normal dogs by the oral administration of neutral fat or fatty acid, is abolished by removal of the pancreas and is not restored by the administration of active pancreatic juice or raw pancreas. Pancreatectomy produces a varying degree of impairment in the absorption of neutral fat, but some animals may still absorb 75% or more of the fat in the diet. Pancreatectomy produces a definite impairment in the absorption of fatty acid, though not so great as in the case of neutral fat.

SOME ASPECTS OF FAT METABOLISM. Herbert C. Tidwell. *Proc. Trans. Texas Acad. Sci. 25*, 33-8 (1941) (Pub. 1942). The absorption of at least a small amt. of fat appears to be prerequisite for the initiation of the hormonal control of gastric activity. This would aid in explaining why fats that are more completely absorbed pass from the stomach more slowly, and would have to be considered as a factor in the small difference in the rate of absorption of fats contg. mixed fat acids, as affected by the rate of passage of the various types of fats into the intestine. (*Chem. Abs.*)

BELT LUBRICANTS. Karl Micksch. *Allgem. Oel- u. Fett-Ztg. 38*, 454-9 (1941); *Chem. Zentr. 1942, I*, 2614. An example compn. suitable for leather belts contains 50 train oil, 20 bone oil, 25 vaseline and 5 parts Swedish wood tar. The train oil can be replaced with tallow and degrass with small addns. of mineral oil or fatty oils. Do not use products contg. large amts. of resins. The need for belt lubricants is discussed. (*Chem. Abs.*)

PATENTS

DECOMPOSITION OF ANIMAL FAT—OR OIL-CONTAINING SUBSTANCES. Willy Ekhard. *Ger. 707,226, Cl. 23a*. Substances, such as crude tallow, hog fat, lard or bones are comminuted and treated with a carbohydrate culture of lactic acid bacteria, e.g., *B. bulgaricus*, *Streptococcus thermophilus*, *B. leichmanni*, *B. delbruckii*, *B. lactis acidii*, and (or) *Thermobacterium mobile*. The treatment is at the proper fermentation temp. and under aeration or in the presence of mild oxidant. The bacterial culture is sepd. and the fat or oil washed. (*Chem. Abs.*)

METHOD FOR REMOVING ACIDIC CONSTITUENTS FROM ORGANIC LIQUIDS. Lawrence M. Henderson (The Pure Oil Company). *U. S. 2,317,056*. The method of removing weakly acidic substances from an organic liquid comprises contacting said liquid with an aq. soln. contg. alkali metal hydroxide and the reaction product of alkali and yacca gum.

PROCESS OF TREATING BUILDING MATERIALS. A. W. Ralston and R. J. Vander Wal (Armour and Company). *U. S. 2,317,301*. The process of rendering cast concrete structures water-repellent comprises treating the concrete structure with an amino compd. chosen from the group consisting of aliphatic amines contg. at least 8 carbon atoms in an alkyl group thereof, and salts thereof.

LIQUID PHASE EXTRACTION OF GLYCERIDE OILS AND ACIDS. S. E. Freeman (Pittsburgh Plate Glass Company). *U. S. 2,316,512*. Fats are fractionated into satd. and unsatd. constituents with solvents contg. polar nitro group in a process which takes advantage of the relatively low miscibility of the satd. constituents at low temps.

PROCESS OF TREATING EDIBLE OILS OR FATS. H. O. Renner (J. R. Short Milling Co.). *U. S. 2,316,621*. A process comprises subjecting an edible peroxidized fat having an undesirable odor or flavor to the action of the freed cell contents of yeast to counteract the organoleptic effect of substances in the fat causing the undesirable odor or flavor.

TREATMENT OF FAT CONTAINING MATERIALS AND PRODUCT. W. R. Johnston (Standard Brands, Incorporated). *U. S. 2,314,988*. A method for inhibiting deleterious changes in fatty materials comprises incorporating the unsaponifiable portion of coffee oil with a fatty substance.

PROCESS FOR ACTIVATING CATALYTIC SURFACES. M. H. Gwynn. *U. S. 2,319,453*. A process for preparing a highly active catalytic surface useful in hydrofining comprises activating a surface whose metal component is selected from the class which consists of nickel, cobalt, and a ferromagnetic and readily reducible alloy, with an aq. halite soln.

CLAY ACTIVATION. J. A. Crowley (Socony-Vacuum Oil Co.). *U. S. 2,319,185*. Roasted absorbent clay

that has been regenerated is rehydrated by treatment with water under press. and a temp. of 275-650°F.

PROCESS FOR MAKING AN OIL MODIFIED ALKYL RESIN. W. A. Waldie (New Wrinkle, Inc.). *U. S. 2,319,022*.

SEBACIC OR HYDROXYDECANOIC ACIDS FROM RICINOLEIC ACID COMPOUNDS. G. D. Davis, B. A. Dombrow (National Oil Products Company). *U. S. 2,318,762*. The products are prepd. by heating ricinoleic acid with alkali in a high boiling point inert hydrocarbon oil.

METHOD OF PURIFYING FATTY ACIDS. Waldo L. Semon (B. F. Goodrich Co.). *U. S. 2,315,664*. The method of sepg. a fatty acid contg. between 12 and 18 carbon atoms from a diarylamine comprises forming a lower-boiling alkyl ester of the fatty acid and sepg. the ester and the diarylamine by fractional distn.

VITAMIN D DISTILLATION PROCESS AND PRODUCT. Kenneth C. D. Hickman and Edward Le B. Gray (Distillation Products, Inc.). *U. S. 2,316,068*. The oil is saponified, nonsaponifiable is removed and fractionally distd. with collection of fractions of diff. vitamin D potency.

PROCESS OF TREATING WATER. Anderson W. Ralston and William O. Pool (Armour & Co.). *U. S. 2,315,734*. Surface active amine derivatives of fat acids are used to clarify turbid waters.

POLYMERIZATION OF OITICICA OIL. Malcolm F. Pratt and Henry G. Berger (Socony Vacuum Oil Co.). *U. S. 2,316,187*. The process of polymerizing oiticica oil to produce a non-frosting, quick drying product, comprises cooking the oil at a temp. above 300°F. in the presence of a small amt. of BF_3 as a polymerization catalyst.

PROCESS OF CONCENTRATING NON-METALLIFEROUS ORES. A. W. Ralston and E. W. Segebrecht (Armour & Co.). *U. S. 2,313,360*. Special amine derivs. of fat acids are used in the process.

Abstracts

Soaps

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FDA OFFICIALS REVIEW RAW MATERIAL PROBLEMS OF POTASH SOAP INDUSTRY AT INFORMAL CONFERENCE IN WASHINGTON, MAY 7. EARLY RELIEF EXPECTED. A. P. Federline. *Soap* 19, No. 6, 34-5, 133 (1943).

FREEZING POINTS OF SOLUTIONS OF TYPICAL COLLOIDAL ELECTROLYTES, SOAPS, SULFONATES, SULFATES, AND BILE SALT. S. A. Johnston and J. W. McBain. *Proc. Roy. Soc. (London) A181*, 119-33 (1942). Cond. alone is shown to be an untrustworthy guide as to whether or not a soln. contains a colloidal electrolyte. The most conclusive evidence comes from direct comparison of thermodynamic with elec. data. F.—. studies are reported for a no. of colloidal electrolytes. Different groups exhibit various types of behavior. All have in common the replacement of ions by colloidal particles as the concn. increase. In the bile salts as well as some wetting agents the cond. approaches very nearly the behavior of an ordinary electrolyte, whereas the lowering of f.p. falls off rather abruptly. Data are reported for f.p. lowerings of dil. aq. solns. of K oleate contg. 4 equivs. % excess of KOH. Measurements were made down to solns. as dil. as 0.00043 molal K oleate (0.000172 *m* KOH) at which the depression is only 0.00157°. Measure-

ments are reported for Na oleate. These show that this is as osmotically active as K oleate. The mechanism of the action of detergents in aq. soln. and nonaq. soln. in solubilizing otherwise insol. substances is discussed. In this connection measurements are reported for aq. K oleate with isoöctane solubilized therein. It is established that the solubilized mols. do not exist as such, but are wholly taken up in colloidal form, chiefly in or on existing soap micelles. The effect of the addn. of the isoöctane is negligible. If in true soln. the isoöctane in the strongest solns. observed would have produced 5 times the observed lowering. Results are given for Na decyl sulfonate. In very dil. solns. the observed values almost coincide with the Debye-Hückel values (agreeing at very dil. soln. to within 0.1%). Data are given for Na decyl sulfate. The osmotic coeff. falls rapidly above 0.026 *m*. Observations on a Na dodecyl sulfate show that the osmotic coeff. begins to leave the Debye-Hückel slope well before its rapid descent at 0.005 *m*. Measurements are reported for the bile salt Na deoxycholate $\text{C}_{23}\text{H}_{37}(\text{OH})_2\text{COONa}$. Both f.p. and cond. data are given. With increasing concn. the cond. quite unlike that of a higher soap or the higher sulfonates or sul-