

tides from brain and lung were found to have the highest amino acid content. The egg yolk phosphatides were free of amino acid. Data on the effect of storage on phospholipid compn. and a discussion of some of the implications of the exptl. results are included.

THE EFFECT OF VARIATIONS OF DIET FAT ON DIETARY FATTY LIVERS IN RATS. H. J. Channon *et al.* *Biochem. J.* 36, 214-20 (1942). In continuation of the work of Channon & Wilkinson the influence of dietary fat on the extent of fat infiltration of the liver of the rat has been further investigated with a view to assessing whether choline was concerned with the desatn. of fatty acids in the liver. It has been shown that on high diets in fat and low in choline, the extent of fatty infiltration is related to the proptn. of C₁₄-C₁₂ saturated fatty acids. Solid unsatd. acids exert no effect. Elaidic acid is treated normally in the body, appearing in liver, carcass, and faecal fats in proportions dependent on its amt. in the diet.

THE RELATION OF B-VITAMINS AND DIETARY FAT TO THE LIPOTROPIC ACTION OF CHOLINE. R. W. Engel. *J. Nutr.* 24, 175-85 (1942). When thiamine, riboflavin, pantothenic acid, pyridoxine, corn oil, and choline were fed to rats receiving a purified diet contg. 18% of casein for a 3-wk. exptl. period, an abnormal accumulation of liver-fat resulted. Under these conditions 2 mg. of choline chloride per rat daily failed to prevent the kidney hemorrhages of choline deficiency; at least 10 mg. of choline chloride was necessary for this factor to exert its max. lipotropic action but normal liver-fat levels were still not obtained. The addn. of 3 mg. of inositol per rat daily to the diet adequate in choline and contg. the above B-vitamins reduced the liver fat to the normal level found in rats receiving an adequate stock diet. Prolonged feeding of a diet deficient in pyridoxine or essential fatty acids resulted in fatty livers, even

though the diet contd. adequate choline. It is concluded that pyridoxine and a source of essential fatty acids are necessary in the diet for choline to function properly as a lipotropic agent. Inositol, in addn. to choline, is a necessary dietary constituent for the rat receiving purified diets supplemented with the other B-vitamins known to be required by this species.

PATENTS

METHOD OF DEHYDRATING CASTOR OIL. Oscar A. Cherry (Glidden Co.). *U. S.* 2,290,165.

PROCESS FOR BREAKING PETROLEUM EMULSIONS. Charles M. Blair (Petrolite Corp. Ltd.). *U. S.* 2,290,154.

PROCESS FOR BREAKING PETROLEUM EMULSIONS. Melvin DeGroot and Bernhard Keiser (Petrolite Corp.). *U. S.* 2,290,411-7. Various fat acid derivatives are used as deemulsifiers for mineral oils.

PROCEDURE FOR PREPARING FISH OILS. Kenneth C. D. Hickman (Distillation Products, Inc.). *U. S.* 2,289,780-1. Sodium sulfite or other absorbent is added to animal or fish tissue to preserve the vitamin contg. oil until extn.

PROCESS FOR PRODUCING FATTY ACID POLYHYDRIC ESTERS FROM GLYCERIDES. W. H. Goss and H. F. Johnstone (Secretary of Agriculture). *U. S.* 2,290,609. A method of selectively sepg. fatty acid monoesters into fractions, one of which contains a high concn. of relatively unsatd. valence bonds and another which contains a lesser concn. of unsatd. valence bonds consists of treating the monoesters with a solvent system wherein the monoesters are distributed between incompletely miscible liquid phases, sepg. the phases, and removing the solvent system.

MERCURATED ALIPHATIC NITRILE. A. W. Ralston and Miles R. McCorkle (Armour & Co.). *U. S.* 2,289,590. The products are germicides and weed killers.

Abstracts

Soaps

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DANGERS IN THE PERFUMING OF SOAPS AND THEIR ELIMINATION. A. Foulon. *Fette u. Seifen* 48, 148 (1941). Perfumes added to soaps are decompd. by free alkali, fatty acids, and unsapond. fats. This is avoided by addn. of ZnO (I). I makes it unnecessary to have some free alkali in soaps. The chem. action of I is the formation of zinc soaps of the lower fatty acids. These soaps are harmless and emulsify well. The phys. action of I depends upon its fine particle size and surface activity. Impurities are absorbed in the surface as are the added perfumes and the acids of low mol. wt. I converts the colored oxidation products of perfumes, e.g., acids from aldehydes, to colorless salts. (*Chem. Abs.*)

STANDARD METHODS FOR THE SAMPLING AND ANALYSIS OF COMMERCIAL SOAPS AND SOAP PRODUCTS REVISED. F. W. Smither, R. E. Divine, J. E. Doherty, C. P. Long, E. B. Millard, M. L. Sheely, and H. P. Trevithick. *Ind. Eng. Chem. Anal. Ed.* 20, 558-67 (1942). A revision of the 1937 methods, covering cake, powd., and liquid soaps and soap pastes. Methods are given

for: moisture; alc.-insol. material; free acid or alkali; water-insol. material; anhyd. soap; chloride; unsap.; unsaponified matter; rosin; titer tests, acid no., I no. of the fatty acids; borax; silica present as alk. silicates; carbonates; phosphates; sulfates; glycerol, sugar and starch; volatile hydrocarbons; combined Na and K oxides. 21 refs.

ESTIMATION OF ORTHO-, PYRO-, META-, AND POLY-PHOSPHATES IN PRESENCE OF ONE ANOTHER. Loren T. Jones. *Ind. Eng. Chem. Anal. Ed.* 20, 536-42 (1942). The method is intended primarily for analysis of soaps and detergents. Abrasives are removed by filtration; fatty acids are removed by addn. of acid and filtration. (1) Total phosphate is detd. on an aliquot portion of the soln. as follows: convert all phosphates to ortho form by boiling with excess nitric acid; then ppt. as phosphomolybdate and det. P₂O₅ in phosphomolybdate volumetrically. (2) Ppt. hexametaphosphate from a second aliquot by addn. of BaCl₂ to the acid soln., and det. P₂O₅ on the ppt. as in (1); det. trimetaphosphate in the filtrate as in

(1), after sepn. of Ba phosphates by addn. of NaOH.
 (3) Make a 3rd aliquot just acid to methyl red, add ammonium nitrate and let stand just 15 min. to ppt. orthophosphate. P_2O_5 is detd. in this ppt. as in (1).
 (4) Pyrophosphate is detd. on a 5th aliquot by pptn. as Mn pyrophosphate in acetone soln. after removal of hexametaphosphate with Ba. Addn. of $BaCl_2$ to the filtrate gives a ppt. in 15 min. if tetrphosphate is present, but none with the tri-compd. P_2O_5 as tetra- (or tri-) phosphate is calcd. from total P_2O_5 and other phosphates detd.

DETECTION OF ORTHOPHOSPHATES BY MEANS OF DROP REACTIONS. Philip W. West and Thomas Houtman. *Ind. Eng. Chem. Anal. Ed.* 20, 597-99 (1942). "Positive," "negative," and "masking" interferences are given for the strychnine-molybdate, ammonium molybdate-stannous chloride, and ammonium molybdate-benzidine tests. A modified strychnine-molybdate test, for which there are no pos. interferences, is developed. Neg. interferences are: As^{+++} , V^{+++} , F^- , $C_2O_4^{--}$, $P_6O_{18}^{-----}$, $P_4O_{13}^{-----}$, $HAsO_4^{--}$. Masking interferences: S^{--} , MnO_4^- , and $Fe(Cn)_6^{----}$.

DETERGENTS FROM PETROLEUM. Lawrence Flett. *Chem. & Eng. News (A.C.S.)* 20, 844-47 (1942). This is an address. The properties and uses of Nacconol as a possible substitute for soap and other detergents from coconut oil are shown.

SOLUBILIZATION AND OTHER FACTORS IN DETERGENT ACTION. James W. McBain. *Advances in Colloid Sci.* 1, 99-142 (1942). The literature on detergents is discussed critically. A few new data including surface tension-concn. curves for about 35 detergents are included. (*Chem. Abs.*)

RECENT EXPERIMENTAL INVESTIGATION OF THE USE OF METASILICATE IN LAUNDRIES. Bruno Walther. *Deut. Wascherei-Forsch. Ber.* 7, 92-6, 98-9, 107-13, 121-7 (1939). The effects of metasilicate (Melsite, van Baerle and Co.) and of washing soda on cotton, linen, cotton-spun rayon mixts. and spun rayon were tested. The Melsite contained $Na_2O \cdot SiO_2 \cdot 9H_2O$, other alkalis and a wetting agent; the washing soda contained soda, water glass, fatty acids, and a wetting agent. Changes in the tensile strength of cotton and mixed fabrics from the use of metasilicate or the water glass-contg. washing soda were very slight. Such changes with linen were within the limits prescribed by government standards. Pure spun rayon fabrics behaved like linen. The ignition residues were always very low. No SiO_2 was present in the ash, which was evidence against the assumption of the adsorption of hydrolytically split off SiO_2 by the fiber. Deposition of SiO_2 on the fiber occurred only when hard water was used and laundering was improperly done (inefficient rinsing). According to government standards the whiteness must amount to 70% after 50 washings. Only with spun rayon, which as new fabric had a whiteness of 72.4%, did the exptl. pieces show a whiteness of 70.8-71.4%. The whiteness was higher for all other fabrics. It is concluded that, when metasilicate or water glass-contg. washing soda are used, bleaching is either unnecessary or very little bleaching is required. Silicates are therefore harmless as washing agents and show a good detergent action for all types of fibers tested.

No injury to the fiber results from hydrolytically split off alkali. When silicates and silicate-contg. washing soda are used, soft water must be used and the concn. must be carefully controlled. Time and temp. fall within limits permissible for the usual washing methods. (*Chem. Abs.*)

THE SOLUBILITY OF PROPYLENE VAPOR IN WATER AS AFFECTED BY TYPICAL DETERGENTS. James W. McBain and A. M. Soldate. *J. Am. Chem. Soc.* 64, 1556-7 (1942). Effect of various typical detergents, surface agents, and other substances on soly, of propylene in water are given in the range 500-700 mm. pressure. Detergents exert a large solubilizing effect; this is rel. much greater than the effect of addn. of organic solvent. Salts such as carbonate, pyrophosphate or Calgon exert a salting out effect.

METALLIC SOAPS. Stanley B. Elliott. *Soap & Sanitary Chem.* 18, 7, 26-27, 73-74 (1942). This is a review. Raw materials are listed, and these include naturally occurring oils, essentially pure satd. fatty acids (e.g. Neo-Fats), mixed fatty acids, naphthenic acids, rosin, and tall oils. Manuf. of metallic soaps by pptn. and fusion is described. Metallic soaps are used (1) as catalysts, e.g. as driers in paint and varnish; as fungicides, e.g. in rot-proofing sandbags and camouflage nets; (2) in pigment dispersion in paints; or to avoid undesirable gelation in bodying oils; in extreme pressure lubricants; (3) as flattening agents; to prevent chalking of TiO_2 -contg. paints; to increase abrasive resistance of e.g. paints and varnishes.

RELATIVE TOXICITIES OF CERTAIN ANTISEPTICS CONTAINING SOAP AND ALCOHOL WITH SPECIAL REFERENCE TO MOUTHWASHES. Henry Welch and Charles M. Brewer. *Am. J. Pub. Health* 32, 261-7 (1942). By using the destruction of phagocytic activity as a measurement of toxicity and comparing toxicity with germicidal ability under a similar set of conditions to obtain a toxicity index, the authors found that the addn. of alc. to a soln. of phenol increased the toxicity index. A very marked increase in the toxicity index occurred when soap was added to phenol solns. The relatively high toxicity index caused by the addn. of soap was demonstrated with several phenolic compds. and essential oils. (*Chem. Abs.*)

PATENTS

METHOD OF OBTAINING STEROLS. Erhard Fernholz (E. R. Squibb & Sons). *U. S.* 2,280,815. Sterols are recovered from soya bean soap stock or other sterol-fatty acid mixt. by distilling off the fatty acids (after addn. of sulfuric acid); the sterols are recovered from the residue by, e.g. extraction with methanol.

ROSIN-CONTAINING SOAPS. Irvin W. Humphrey (to Hercules Powder Company). *U. S.* 2,285,333. Light stability of rosin soap is improved by using rosin that is 50% or more hydrogenated. As an example there is given a coconut-oil-hydrogenated rosin soap.

FLEXIBLE SHEET. Clement Ehret. *U. S.* 2,251,328. A gelatin, or other water-sol., inner sheet, is coated on the outside with soap film, or by an antiseptic-contg. film, followed by soap film. The innermost sheet may contain skin conditioner.