preferential effect on cholesteryl esters. In experiments, similar to those of McHenry and Patterson and of Handler in which the rats were given a preliminary period of deficiency of vitamin B_1, choline was uniformly more effective than inositol in decreasing liver glycerides and cholesteryl esters in cholesterol-fed rats receiving diets with or without fat. These results agree with those reported by Handler.

Abstracts

Drying Oils

Edited by
HOWARD M. TEETER

RELATION OF SURVIVAL PERIOD OF RATS IN AVITAMINOSIS B TO THE LIPIDE CONTENT OF THE DIET. L. De Caro (Carlo Erba Co., Milano, Italy). *Boll. soc. ital. biol. sper. 15,* 553 (1940). Young rats given a thiamine-free diet containing 1.8% of fat (olive oil or lard) lived 25-30 days. Increasing the fat in the diet to 26% at the expense of the carbohydrate increased the survival period to 40-60 days or even longer. (*Chem. Abs. 40,* 5475.)

THE OXIDATION OF HIGHER FATTY ACIDS IN HEART MUSCLE SUSPENSIONS. A. L. Lehninger (Univ. Chicago). *J. Biol. Chem. 165,* 131-45 (1946). Rat heart muscle suspensions are capable of the oxidation of higher saturated fatty acids, a reaction which requires the presence of adenine nucleotide and simultaneous furmarate oxidation. Extra succinic acid accumulates as the end-product of fatty acid oxidation in these preparations when succinic dehydrogenase is inhibited by malonate. Analytical data show that the extra succinate which accumulates accounts quantitatively for the fatty acid oxidized if it is assumed that 2-C fragments from the fatty acid combine with oxalacetate to form tricarboxylic acid and ultimately succinate. Citrate and acetoacetate do not accumulate during the oxidation of the fatty acid. Acetoacetate, however, is readily oxidized by the preparation with the formation of extra succinate. Acetate forms neither acetoacetate nor succinate. The results strongly suggest that both fatty acid oxidation and acetoacetate oxidation proceed through the Krebs tricarboxylic acid cycle in heart muscle suspensions.

PATENTS

LINSEED OIL. C. A. Tognoni (Tognoni, Buenos Aires, Argentina). *Industria y quím. 8,* 67-75 (1946). A general discussion of the linseed oil industry in Argentina. *Chem. Abs. 40,* 5935.

THE BLOWING OF OILS. M. Carrière (Faculté Sciences, Marseille). *Corps gras, savons 2,* 39-43 (1944). The drying of blown oils is described and in particular the formation of peroxides is discussed. A review is given on the manufacture and industrial applications of blown oils. 81 references.

NEW DRYING OILS. J. H. Greaves. *Chim. peintures. 9,* 38-42 (1946). Summary of recent progress in perfecting natural drying oils or obtaining new ones from plants not hitherto investigated. 26 references. *Ibid.* 71-2. Summary of recent progress in obtaining chemically modified drying oils by esterification of fat acids with pentaerythritol, mannitol and sorbitol. *Chem Abs. 40,* 5932.

TALL OIL. M. Hess. *Paint Tech. 11,* 299-304 (1946). A review of the origin of tall oil, its composition, processing and uses in the paint industry. 15 references.

FATTY ACID ESTERS OF LAC. B. S. Gidvani and N. R. Kamath. *Paint Tech. 11,* 271-2 (1946). Dewaxed shellac was esterified with stearic acid and with linseed fat acids by heating equivalent amounts at 250° in a beaker heated by a gas burner. Esterification proceeded only to the extent of 50-60%, and no further esterification occurred after heating for about one hour. Only 50% of the excess acids could be removed by distillation. Solvent extraction was efficient, but the product had no outstanding properties and its keeping qualities were poor. Esterification with pentaerythritol or glycerol gave materials (acid value 25-30) which had good film properties but which were inferior to other products prepared from shellac, fat acids and polyalcohol. Products obtained by adding lime, magnesia or ZnO could not be obtained with acid values less than 25. Their properties were not superior to those of the polyalcohol modified product. Esterification of shellac with 60% of the equivalent of fat acid in quinoline gave a product containing almost no fat acid. Removal of the quinoline was difficult.

IMPROVED LAC-OIL VARNISHES. B. S. Gidvani and N. R. Kamath. *Paint Manuf. 16,* 242-6 (1946). A progress report. The desired incorporation of lac in the manufacture of oil varnishes has been hindered by the incompatibility of lac with drying oils and its insolubility in hydrocarbon solvents. This is presumably due to the presence of free OH groups in the lac molecule. Some groups are more reactive than others and at high temperatures combine with each other to form ether-type cross-linkages which gel the resin. This is overcome by heating the drying oil in the presence of metallic oxides and (or) polyhydric alcohols to produce mono- and diglycerides. The former, a solvent for lac, prevents premature gelation and facilitates its incorporation in drying oils. Modifications by physical, chemical, and physicochemical methods and industrial applications are noted. *Chem. Abs. 40,* 5931.

PATENTS

SYNTHETIC GLYCERIDES. H. C. Black and C. A. Overley (Industrial Patents Corp.). *U. S. 2,408,905.* The method of preparing esters of polyhydroxy compounds and unsaturated higher fatty acids comprises saturating the unsaturated bonds of the acid by halogenation to form a saturated higher fatty acid, converting the acid so saturated into an acid chloride, reacting the acyl derivative with at least one hydroxyl group of polyhydroxy compound to form an ester and thereafter dehalogenating the acid radical portion of the ester to reestablish the unsaturated bonds.

POLYMERS OF UNSATURATED COMPOUNDS AND PROCESSES OF PRODUCING SAME. E. L. Kropa (American Cyanamid Co.). *U. S. 2,409,633.* The polymerizable compositions include (1) an unsaturated alkyd resin, (2) triallyl phosphate, and (3) a catalyst for accelerating the copolymerization of (1) and (2).