polymerization of the fatty acids (4) produced by the hydrolysis mentioned above. Regardless of the type formed, the total amount is a negligible factor as regards fat loss.

The production of free fatty acid followed the same trend as was suggested in an earlier communication from this laboratory (1). Our results indicate that no increase in polymerization therefore is to be expected from this cause in subsequent fryings.

The total of volatile materials and polymer formed was 0.27%, thus indicating that there is no appreciable loss of fat during surface frying of donuts.

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Book Review

Toxicology and Hygiene of Industrial Solvents. Edited by K. B. Lehmann and F. Flury. Translated by Eleanor King and H. F. Smyth, Jr. The Williams and Wilkins Company, 378 pp. Price $5.00.

According to the preface, this book forms a companion piece to "Chemical Technology of Solvents" by O. Jordon, and it is predominantly of a medical nature.

Development and organization of the information in the book was the result of an assignment entrusted to the medical committee of the German Society for the Protection of Labor. The literature and experimental work was divided and portions assigned to several members, several universities, the Imperial Health Office and the industrial hygiene laboratory of I. G. Farbenindustrie.

The results of laboratory experimental toxicological investigations, together with medical literature on solvents form the principal part of the book. There are also contributions by O. Jordon on chemistry and technology, by W. Frieboes and W. Schulze on skin injuries, by H. Engel and H. Prillwitz on dangers to health and protection, and by H. Engel on the German official regulations for protection of public and workers.

Since most fat and oil industries use organic solvents the book should be welcomed by the industry. Essential toxicological data on industrial solvents has been well organized by the authors. They also had the advantage of having access to abundant unpublished research information.

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Abstracts

Oils and Fats

Edited by
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Refractive index nomograph for liquid fatty acids. D. S. Davis. *Ind. Eng. Chem. 35*, 1302 (1943).

The component fatty acids of human depot fat. D. L. Cramer and J. B. Brown. *J. Biol. Chem. 151*, 427-38 (1943). The methyl esters of the fatty acids from 2 specimens of human depot fat were separated by distillation through an efficient column into 6 or 7 relatively simple fractions; the main fractions representing esters of single carbon series were studies by crystallization procedures at low temp. Methyl myristate, palmitate, stearate, and oleate were isolated and identified as practically pure compds. The presence of tetradecenoic and hexadecenoic acids was demonstrated in this fat for the first time. The oleic and linoleic acids of human fat are the principal C_{18} unsatd. acids present, but they are found along with isomeric octadecenoic and octadecadienoic acids. The presence of arachidonic acid is confirmed. From the data obtained from crystallization studies on 2 specimens and from distn. data on 3 more, the fatty acid compn. of 5 specimens of human fat have been calculated and recorded. In the 5 specimens studied the linoleic (total octadecadienoic) acid contents ranged from 8.2 to 11.0%; the values for arachidonic acid fell between 0.3 and 1.0%.

The distribution of lipids in animal tissues. M. Kaucher, H. Galbraith, V. Button, and H. H. Williams. *Arch. Biochem. 3*, 202-15 (1943). The lipid [phospholipid (cephalin, lecithin, and sphingomyelin) free and combined cholesterol, cerebroside, and neutral fat] distribution in beef organs and muscles, in the muscles of other warm- and cold-blooded species, and in avian and reptilian eggs, was detd. The essential lipid concn. of the various tissues is related to the extent and variety of their physiological activities and confirms a similar relationship previously demonstrated for the phospholipids, which comprise the largest fraction of the essential lipid in all the tissues studied. The distribution of the other lipid fractions, as well as the individual phospholipid components appears to be more directly related to the particular types of functions performed by individual tissues.

Chemical and physical determinations of vitamin A in fish liver oils. B. L. Oser, D. Melnick, and M. Pader. *Ind. & Eng. Chem. Anal. Ed. 15*, 717-24 (1943). An improved method for plotting the ultraviolet absorption curves of vitamin A products is presented, and applied in studies of crystalline vitamin A acetate, fish liver oils, and concs. to evaluate factors which cause distortions in the curves. Emphasis is placed on the importance of conducting the detn. on the unsaponifiable fraction of oils regardless of their potency. The U.S.P. reference cod liver oil No. 2 is shown to be unsuited as a spectrophotometric or colorimetric standard. The estimation of vitamin A in food product. B. L. Oser, D. Melnick, and M.