New Books

L.A. Witting, Book Review Editor

1977 Annual Book of ASTM Standards, Part 30 (American Society for Testing and Materials, Philadelphia, PA, 966 p., $31).

The "Annual Book of ASTM Standards," Part 30, is one of 48 parts and contains all currently formally approved ASTM standard and tentative test methods, definitions, recommended practices, classifications, specifications, and related proposals covering soap and other detergents, engine coolants, polishes, halogenated organic solvents, activated carbon, and industrial chemicals.

Five new standards and two new tentative standards added since the 1976 edition include: Tentative Test Method for Citrate in Synthetic Detergents, Tentative Test Method for Tableware Pattern Removal by Mechanical Dishwasher Detergents, Standard Test Method for Metal Glide Adhesion, Standard Guide for Preparing Specifications for Water-Emulsion Floor Polishes, Standard Test Method for Ignition Temperature of Granular Activated Carbon, Standard Test Method for Carbon Tetrachloride Activity of Activated Carbon, Standard Test Method for Tertiary Hydroxyl Groups with Hydrogen Bromide.

Seven standards have been revised and two contain editorial revisions. Seventeen standards have been reapproved without change.

Two new standards, Specification for ASTM Reference Coolant and Test for Low Concentrations of Diethylene Glycol in Ethylene Glycol by Gas Chromatography, are pending approval by the Society membership. Five revised standards and three standards reapprovals are also pending.

A Proposed Test Method for Traces of Mercury in Industrial Organic Chemicals by Flameless Atomic Absorption Spectroscopy (Wet Digestion Procedure) is included for information purposes.

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Environmental Chemistry, Edited by J.O.M. Bockris (Plenum Press, New York, 1977, 795 p., $49.50).

This book is interesting and fascinating reading, and one that can be re-read as interest and concern for the environment increase. It has enormous scope and indeed covers the complete field of chemistry in all of its environmental ramifications; hence no one person can adequately review it.

This book is written at the advanced undergraduate level, and was reportedly written as a textbook. It should be effective as such, if the subject matter can be adequately presented.

A listing of chapter topics indicates the scope encompassed: environmental chemistry, biochemistry control of human fertility, psychochemistry of pollutants, chemical sources of food, sewage purification resources, formation and control of air pollutants, interactions of gaseous pollutants with materials at the earths surface, control of noxious emissions from internal combustion engines, climatic changes from carbon dioxide increase in the atmosphere, aerosol production in the atmosphere, chemistry of water pollution, organic chemical pollutions, trace element pollution, radioactivity, clean energy, the hydrogen economy, clean fuels and electrochemical transportation, water desalination, analytical chemistry of pollutants, public policy issues, and relevant research.

Each chapter is well documented with references. This book has something for everyone interested in the environment. The chapters are very readable, although style differs considerably due to the number of contributors. The subject index appears reasonably complete.

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Handbook of Lipid Research, Vol. 1, *Fatty Acids and Glycerides,* Edited by Arnis Kuksis (Plenum Press, New York 1978, 469 p., $35).

This is a new series under the general editorship of D.J. Hanahan. The second volume on fat-soluble vitamins edited by H. DeLuca will be available shortly. Volume 1 contains eight chapters: Separation and Determination of Structure of Fatty Acids, by Kuksis; Synthesis and Analysis of Stable Isotope- and Radioisotope-Labeled Fatty Acids, by Emken; Separation and Determination of the Structure of Acylglycerols and Their Ether Analogues, by Myher; Stereospecific Analysis of Triacylglycerols, by Breckenridge; Stereospecific Synthesis of Enantiometric Acylglycerols, by Buchnea; Metabolic Studies with Natural and Synthetic Fatty Acids and Enantiometric Acylglycerols, by O'Doherty; Composition of Selected Dietary Fats, Oils, Margarines, and Butter, by Sheppard, Iverson, and Weihrauch; and Fatty Acid Composition of Glycerolipids of Animal Tissues, by Kuksis.

Since "ordinary" fatty acids are rather easily identified, the first chapter focuses largely on branched, cyclic, and oxygenated structures. Emphasis is on GLC or GLC-MS, but spectrophotometric and enzymatic methods are also considered. Emken provides a fairly detailed review of labeling methods and briefly considers the economics of various sources of label. Biosynthetic methods are noted. Various spectra – mass, infrared, and ^{13}C-NMR – of labeled compounds are presented. The various chapters on synthesis, analysis, and metabolic studies using acylglycerols are comprehensive and informative. Sheppard's chapter on dietary materials appears to be a brief summary of FDA methods with notes on the peculiarities of various products. Kuksis has attempted a monumental project in the final chapter on the lipids of animal tissues. Extensive tabulations appear comparing and contrasting species including man, tissues, cell types, subcellular fractions, and lipoproteins. In general, the data are presented in terms of fatty acid composition of cholesteryl esters, triglycerides, free fatty acids, and total phospholipids. Unfortunately, these data are cited without a statement of the level, i.e., mg/g tissue, or even as a percentage of total lipid. A number of statements are made indicating the limitations inherent in the available data, and (p. 426) the comparisons are frankly described as largely trivial. It cannot be emphasized too strongly how dependent tissue lipid fatty acid composition is upon dietary lipid. To be useful, each set of analyses should ideally include values from animals fed low, intermediate, and high levels of linoleate and also provide information on the effect of dietary ω3 PUFA on tissue lipid fatty acid composition. Tabular data develop a status, particularly when contained in a review, that is

unfortunately completely independent of the limitations and disclaimers contained in the text. Kuksis has emphasized these limitations and it is to be hoped that his readers will not blithely skip these important points.

This series is off to a good start and provides a most useful set of reviews in the area of fatty acids and glycerides. It is heartily recommended to all lipid chemists.

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Practice of Thin Layer Chromatography, by J.C. Touchstone and M.F. Dobbins (John Wiley and Sons, New York, 1978, 383 p., $19.95).

This is a rather strange book which sets out to provide step-by-step practical instructions for the beginner. It is deliberately short on theory and long on listings of commercially available materials. The most useful section to a person familiar with TLC is that on visualization procedures which contains recipes for 207 spray reagents. Perhaps the volume would be more impressive if the reviewer had not heard Dr. Touchstone lecture on the same topics and confess lack of actual familiarity with a number of the newer and more sophisticated devices described. To an unfortunate extent this text is, therefore, a noncritical regurgitation of available, outdated manufacturers' product literature. Since this book is directed specifically to the beginner with no prior experience with TLC, it should be reviewed in that context. For that stated audience this is the best available text on TLC and is heartily recommended to anyone making their first venture into TLC. The text is clear, logically organized, and provides detailed information on all aspects of the subject. Because the text was set in camera-ready copy, the price is quite low, making this book an excellent bench companion for even the most destructive new technician.

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New Publications

Summary of Trade and Tariff Information: Soybeans and Soybean Products (USITC Publication 841, Control 1-14-3), published by U.S. International Trade Commission; covers descriptions, U.S. customs treatment, domestic market, production, exports, imports, foreign production, and world trade; approx. 64 p.; order from USITC, Office of the Secretary, 701 E. St. NW, Washington, DC 20436, or by calling 202-523-5178. ●

Fitzpatrick named staff editor

David A. (Tony) Fitzpatrick is the new staff editor for the *Journal of the American Oil Chemists' Society* and *Lipids.*

Fitzpatrick succeeds Laurie Preece, who, by the time you're reading this, should have given birth to either William Morgan Preece or Thayer Marie Preece.

Fitzpatrick is a native of Oswego, IL. He is a graduate of the University of Illinois and has taught English at the National Academy of Arts and at Bowling Green State University. He is 29, married, and immediately before joining AOCS was on the staff at Parkland College, a community college in Champaign. ●

JUNE 1978

Tall Oil Fatty Acids & Statistics

IN THOUSAND POUNDS	2% & OVER ROSIN CONTENT		LESS THAN 2% ROSIN CONTENT	
	JUNE	Percent change from MAY 1978	JUNE	Percent change from MAY 1978
Stock on Hand JUNE 1, 1978	12,465	+ 72.7	11,379	+ 4.0
Production	16,097	– 28.6	17,826	+ 0.5
Purchases & Receipts	0		162	+ ∞
Disposition Domestic	16,431	+ 7.1	16,344	+ 8.1
Export	3,259	+ 67.8	2,393	+ 10.5
Total Disposition Net Disposition*	19,690 19,690	+ 13.9 + 13.9	18,737 18,575	+ 8.4 + 7.4
Total Stock JUNE 30, 1978	8,872	– 28.8	10,630	– 6.6

*Net – Less purchases & receipts.
Definition: Fatty acids fractionated from crude tall oil having a minimum of 90% fatty acids, not including rosin acids. Primary fractions containing less than 90% fatty acids are classified as distilled tall oils.

Acids in thousand pounds

Month June 1978
Issued Aug. 7, 1978
NUMBER OF MANUFACTURERS REPORTING 16

	FINISHED GOODS INVENTORIES (F) ON 5/30	PRODUCTION (A)	RECEIPTS (B)	DISPOSITION: Captive Consumption (C)	DISPOSITION: Domestic Shipments (D)	DISPOSITION: Shipment for Export (E)	TOTAL DISPOSITION	FINISHED GOODS INVENTORIES (F) ON 6/31
Saturated (SP – Single Pressed; OP – Double Pressed; TP – Triple Pressed)								
STEARIC ACID (40-50% Stearic Content) (1)	7,731	11,105	1,544	4,452	SP 448 DP 4,525 TP 3,692	247	13,364	7,016
HYDROGENATED ANIMAL & VEGETABLE ACIDS: 60 C maximum titer & minimum I.V. 5 (2a)	5,944	8,757	– – –	57	8,287	106	8,450	6,251
HYDROGENATED ANIMAL & VEGETABLE ACIDS: 57 C minimum titer & maximum I.V. under 5 (2b)	6,646	14,857	2,172	6,343	11,580	88	18,011	5,664
HYDROGENATED ANIMAL & VEGETABLE ACIDS: Minimum Stearic Content of 70% (2c)	2,345	2,188	229	512	2,483	22	2,997	1,765
HIGH PALMITIC (Over 60% palmitic I.V. maximum 12) (3)	1,806	879	– – –	418	512	1	931	1,754
HYDROGENATED FISH & MARINE MAMMAL fatty acids (4)	458	678	– – –	98	429	– – –	527	609
LAURIC-TYPE ACIDS (I.V. minimum 5-Sapon val. minimum 245– including coconut, palm kernel, babassu) (5)	5,657	8,003	72	3,102	4,969	6	8,077	5,655
FRACTIONATED FATTY ACIDS: C_{16} or lower, including capric (6a)	438	1,845	1	4	1,733	11	1,748	536
FRACTIONATED FATTY ACIDS: Lauric and/or myristic content of 55% or more (6b)	2,042	2,031	89	559	714	26	1,299	2,863
TOTAL–SATURATED FATTY ACIDS	33,067	50,343	4,107	15,545	39,352	507	55,404	32,113
Unsaturated (ND – Not distilled; SD – Single distilled; MD – Multiple distilled)								
OLEIC ACID (red oil) (7)	11,934	14,557	335	5,983	ND 43 SD 5,456 MD 2,333	165	13,983	12,843
ANIMAL FATTY ACIDS other than oleic (I.V. 36 to 80) (8)	6,615	11,999	146	2,635	8,914	1,171	12,720	6,040
VEGETABLE OR MARINE FATTY ACIDS (I.V. maximum 115) (9)	31	39	– – –	– – –	41	– – –	41	29
UNSATURATED FATTY ACIDS (I.V. 116 to 130) (10)	2,758	5,403	235	1,237	2,574	2,372	6,183	2,213
UNSATURATED FATTY ACIDS (I.V. over 130) (11)	2,575	1,642	– – –	83	1,579	331	1,993	2,224
TOTAL UNSATURATED FATTY ACIDS	23,913	33,640	716	9,938	20,943	4,039	34,920	23,349
TOTAL ALL FATTY ACIDS SATURATED & UNSATURATED	56,980	83,983	4,823	25,483	60,295	4,546	90,324	55,462