

Minneapolis Meeting Offers Unsurpassed Technical Program

THE TECHNICAL PROGRAM (including abstracts) presented here in its entirety, signals the culmination of many months of activity which precede the convening of an American Oil Chemists' Society Meeting. On Monday morning, September 30, at the Radisson Hotel, Minneapolis, Minn., the Society will formally open the largest and most comprehensive Technical Program in its fifty-four year history. The 37th Annual Fall Meeting promises to be a landmark of those productive years.

As has been previously reported, this Technical Series will explore both the biological and nutritional aspects of fats and lipids. In addition to the many general papers which will be presented, a full-day Symposium on "Drugs in Lipid Metabolism" has been organized by Rudolpho Paoletti of Italy. A shorter symposium on "Binding of Lipids by Proteins" will be chaired by D. G. Therriault.

In the pages to follow, the reader may review over one hundred scheduled technical presentations which will be offered at the coming Fall Meeting, with times of the scheduled presentations. Programs will also be available in Minneapolis.

MONDAY MORNING

SESSION A

LIPIDS, STRUCTURAL ANALYSIS

Chairman: J. C. Cowan, U.S.D.A., Northern Regional Research Laboratory.

1. **A System for Designating the Configuration of Optically Active Glycerides** 10:20
C. C. Litchfield and H. Rakoff, Texas Agricultural Experiment Station.
2. **Optically Active Triglycerides** 10:40
R. Maier and R. T. Holman, The Hormel Institute.
3. **Determination of the Glyceride Structure of Fats: Distribution of Individual Saturated and Unsaturated Acids** 11:00
M. R. Subbaram and C. G. Youngs, National Research Council of Canada.
4. **Exploitation of the Selectivity of Various Chromatographic Techniques for the Study of the Triglyceride Structure of Natural Fats** 11:20
M. J. McCarthy and A. Kuksis, Queen's University.
5. **Use of Rubber Columns for the Chromatographic Separation of Triglycerides and Other Non-Polar Compounds** 11:40
J. R. Trowbridge, A. B. Herrick, and R. A. Bauman, Colgate-Palmolive Company.

SESSION B

GENERAL

Chairman: H. Schlenk, The Hormel Institute

6. **A Naturally Occurring All-Cis 6,9,12,15-Octadecatetraenoic Acid in Plant Oils** 10:20
B. M. Craig and M. K. Bhatti, National Research Council of Canada.
7. **The Polyunsaturated Odd-Numbered Acids of Mullet (*Mugil Cephalus*)** 10:40
N. Sen and H. Schlenk, The Hormel Institute.
8. **The Preparation of C¹⁴-Labeled Polyunsaturated Fatty Acids from *Ochromonas Danica*** 11:00
J. L. Gellerman and H. Schlenk, The Hormel Institute.
9. **Separation of Cis and Trans Fatty Acid Esters by Argentation, with a Cation Exchange Resin..** 11:20
E. A. Emken, C. R. Scholfield and H. J. Dutton, U.S.D.A., Northern Regional Research Laboratory.
10. **Preparation of 9,15-Octadecadienoate Isomers** 11:40
R. O. Butterfield, C. R. Scholfield and H. J. Dutton, U.S.D.A., Northern Regional Research Laboratory.

MONDAY AFTERNOON

SESSION C

LIPIDS, STRUCTURAL ANALYSIS

Chairman: O. S. Privett, The Hormel Institute.

11. **Motion Picture: Bioassay of Lipids** 2:00
O. S. Privett and M. L. Blank, The Hormel Institute.
12. **Determination of the Glyceride Structure of Fats: Gas Liquid Chromatography (GLC) of Oxidized Glycerides** 2:40
C. G. Youngs and M. R. Subbaram, National Research Council of Canada.
13. **The Triglyceride Composition of *Cuphea miniata* Seed Fat** 3:00
C. Litchfield, M. Farquhar and R. Reiser, Texas Agricultural Experiment Station.
14. **Pancreatic Lipase Hydrolysis of Triglycerides by a Semimicro Technique** 3:20
F. E. Luddy, R. A. Barford, S. F. Herb and R. W. Riemenschneider, U.S.D.A., Eastern Regional Research Laboratory.
15. **The Use of Microchromatoplates for the Quantitative TLC Analysis of Tissue Phospholipids and Neutral Lipids** 3:40
J. J. Peifer, R. Meusing and F. Janssen, The Hormel Institute.
16. **Quantitative Analysis of Lipids by Thin-Layer Chromatography** 4:00
M. L. Blank, J. A. Schmit and O. S. Privett, The Hormel Institute.
17. **Bisglyceride-Ethers. The Intermediates of Acyl Migration** 4:20
D. Buchnea, University of Toronto.

SESSION D

GENERAL

Chairman: W. E. Link, Archer-Daniels-Midland Company.

18. **Some Linseed Esters of Methyl α -D-Glucopyranoside Prepared by Using the Methoxycarbonyl Blocking Group** 2:00
E. J. Dufek and W. J. DeJarlais, U.S.D.A., Northern Regional Research Laboratory.
19. **Reaction of the Cyclopropene Moiety of Vegetable Oils with Acids** 2:20
R. O. Feuge and Z. Zarins, U.S.D.A., Southern Regional Research Laboratory.
20. **A Re-Examination of the Polymerization of Sterculic Acid** 2:40
H. W. Kircher, University of Arizona.
21. **Polyunsaturated Fatty Acids with a "Lonely" Double Bond in the 5-Position** 3:00
J. L. Gellerman and H. Schlenk, The Hormel Institute.
22. **Hydrogenation of Linolenate. XI. Nuclear Magnetic Resonance Investigations** 3:20
A. E. Johnston, C. A. Glass and H. J. Dutton, U.S.D.A., Northern Regional Research Laboratory.
23. **Elaidinization with Mercaptans** 3:40
H. W. Kircher, University of Arizona.
24. **The Synthesis and Evaluation of New Active Chlorine Compounds** 4:00
I. R. Schmolka, M. Cenko and M. Kokorudz, Wyandotte Chemicals Corporation.

25. **Applications of Silicic Acid-Silver Nitrate Chromatography**..... 4:20
M. K. Bhaty and B. M. Craig, National Research Council of Canada.
26. **Fractionation of Complex Lipid Mixtures into Groups of Uniform Degree of Unsaturation**..... 4:40
H. K. Mangold, The Hormel Institute, and C. R. Houle, U. S. Department of the Interior.

SESSION E

SOAPS AND DETERGENTS

Chairman: M. E. Ginn, Armour and Company.

27. **Experiments in the Formulation of Liquid Detergents from Tallow** 2:00
R. G. Bistline, Jr. and A. J. Stirton, U.S.D.A., Eastern Regional Research Laboratory.
28. **A Method for the Determination of Surface Tension of Nonionic Surfactant Solutions at Elevated Temperatures**..... 2:20
E. D. Berglund and S. B. Crecelius, Economics Laboratory, Inc.
29. **Temperature Studies of Coacervation in Aqueous Cationic Soap Solutions** 2:40
I. Cohen and P. Economou, Polytechnic Institute of Brooklyn.
30. **Dynamic Foam Test**..... 3:00
W. G. Spangler, Colgate-Palmolive Company.
31. **Caking Test for Dried Detergents** 3:20
H. Watanabe and W. L. Groves, Continental Oil Company.
32. **A Neutron Activation Method for Soil Removal Measurement** 3:40
D. A. Netzel, C. W. Stanley and D. W. Rathburn, Midwest Research Institute.
33. **Preparation and Properties of Several Amine Oxides** 4:00
R. A. Reek, Armour Industrial Chemical Company.
34. **Two New Stable Polybrominated Salicylanilides for Antibacterial Use in Soap and Detergent Products** 4:20
N. M. Molnar and S. Baron, Fine Organics, Inc.
41. **Identification of Surface Active Agents in Admixture by Thin-Layer Chromatography** 9:40
C. T. Desmond and W. T. Borden, Union Carbide Chemicals Company.
42. **Gas-Liquid Chromatography of Acetate Esters of Nonionic Surfactants** 10:00
L. Gildenberg and J. R. Trowbridge, Colgate-Palmolive Company.
43. **An Automated Version of the Methylene Blue Method for Anionic Surfactants in Water** 10:20
D. P. Lundgren and H. J. Kelly, Lever Brothers Company.
44. **Alpha Sulfo Fatty Esters in Biologically Soft Detergent Formulations** 10:40
E. A. Knaggs, L. Varenyi, J. A. Yeager and E. Fischer, Stepan Chemical Company.
45. **Biodegradation of Some Tallow-Based Surface Active Agents in River Water** 11:00
J. K. Weil and A. J. Stirton, U.S.D.A., Eastern Regional Research Laboratory.
46. **Soft Alkyl Benzenes as Detergent Raw Materials** 11:20
J. Morrisroe, R. W. Atwood and R. E. Temple, Pilot Chemical Company.

SESSION H

ANALYTICAL

Chairman: H. J. Dutton, U.S.D.A., Northern Regional Research Laboratory.

47. **Analysis of Fatty Alcohols as Nitrates by Thin-Layer Chromatography and Infrared Spectroscopy** 9:00
D. C. Malins, J. C. Wekell and C. R. Houle, U. S. Department of the Interior.
48. **Gas-Liquid Chromatography of Polar Fatty Derivatives** 9:20
R. A. Morrissette and W. E. Link, Archer-Daniels-Midland Company.
49. **Infrared Analysis of Methyl Stearate for Deuterium** 9:40
H. Ven Horst, W. K. Rohwedder, E. Selke, C. R. Scholfield and H. J. Dutton, U.S.D.A., Northern Regional Research Laboratory.
50. **The Gas-Liquid Chromatography of Hydroxystearic Acid Esters** 10:00
A. P. Tulloch, National Research Council of Canada.
51. **Characterization and Identification of Lipids by Their Critical Solution Temperatures** 10:20
H. H. O. Schmid, H. K. Mangold, and W. O. Lundberg, The Hormel Institute.
52. **Methods for the Determination of Cyclopropanoid Fatty Acids. IV. Application of the Stepwise HBr Titration Method to the Analysis of Refined and Crude Cottonseed Oils** 10:40
J. A. Harris, F. C. Magne and E. L. Skau, U.S.D.A., Southern Regional Research Laboratory.
53. **The Determination of Dowtherm A in Fatty Acids** 11:00
J. E. Mehrens, Darling and Company.
54. **Determination of Polyoxyethylene (20) Sorbitan Monostearate in Cake, Cake Mixes, Icing and Cream Fillings** 11:20
C. F. Smullin and A. D. Cooper, Atlas Chemical Industries, Inc.

TUESDAY MORNING

SESSION F

SYMPOSIUM: DRUGS IN LIPID METABOLISM. Organized by Rodolpho Paoletti.

Chairman: E. C. Horning, Baylor University.

35. **Gas Chromatography in Lipid Investigations** 9:40
E. C. Horning, Baylor University.
36. **Thin-Layer Chromatography in Studies of Lipid Metabolism** 10:15
H. K. Mangold, The Hormel Institute.
37. **Drugs in Lipid Synthesis** 10:50
W. L. Holmes, Smith, Kline and French Laboratories.
38. **Effect of Neomycin on Cholesterol Metabolism** 11:25
J. G. Hamilton, J. E. Muldrey, Grace A. Goldsmith, B. E. McCracken, and O. N. Miller, Tulane Medical School.

SESSION G

SOAPS AND DETERGENTS

Chairman: T. P. Matson, Continental Oil Company.

39. **Thermal Decomposition of Dimethylaurylamine Oxide** 9:00
G. P. Shulman and W. E. Link, Archer-Daniels-Midland Company.
40. **Analysis of Detergent Mixtures Containing Amine Oxides** 9:20
H. Y. Lew, California Research Corporation.

TUESDAY AFTERNOON

SESSION I

SYMPOSIUM: DRUGS IN LIPID METABOLISM. Organized by Rodolpho Paoletti.

Chairman: W. L. Holmes, Smith, Kline and French Laboratory.

55. **The Use of Thyroid Analogs in the Treatment of Patients with Hypercholesterolemia and Coronary Atherosclerosis** 2:00
N. Tuna, University of Minnesota.
56. **The Action of Adrenal Hormones on Hepatic Transport of Triglycerides and Fatty Acids** 2:35
M. Heimberg, N. B. Fizette, and H. Klausner, Vanderbilt University.
57. **Drugs and Lipid Transport** 3:10
M. Horning, Baylor University.
58. **Potentialiation and Blockade of Some Drug Effects on Lipid Metabolism** 3:45
S. E. Mayer, Emory University.

SESSION J

FAT AND OIL STABILITY

Chairman: C. D. Evans, U. S. D. A., Northern Regional Research Laboratory.

59. **Research into Fat Rancidity by Gas-Liquid Chromatography** 2:00
P. A. T. Swoboda and C. H. Lea, University of Cambridge.
60. **Effects of Ionizing Radiations on Fats. II. Accumulation of Peroxides and Other Chemical Changes** 2:20
J. R. Chipault and G. Mizuno, The Hormel Institute.
61. **Prooxidant Effect of Some Carbonyl Compounds in Vegetable Oils** 2:40
R. H. Anderson and T. E. Huntley, General Mills, Inc.
62. **A Light Test to Measure Stability of Edible Oils** 3:00
Helen A. Moser, C. D. Evans, and W. F. Kwolek, U.S.D.A., Northern Regional Research Laboratory.
63. **The Flavor of Autoxidized Soybean Oil** 3:20
F. D. Hill and E. G. Hammond, Iowa State University.
64. **Relationship of Peroxide Value and Thiobarbituric Acid Value to Development of Undesirable Flavor Characteristics in Fats** 3:40
W. D. Pohle, R. L. Gregory and B. Van Giessen, Swift and Company.
65. **A Study of Methods for Evaluation of the Stability of Fats and Shortenings** 4:00
W. D. Pohle, R. L. Gregory, T. J. Weiss, B. Van Giessen, J. R. Taylor and J. J. Ahern, Swift and Company.

SESSION K

DRYING OILS

Chairman: A. E. Rheineck, North Dakota State University.

66. **Surface Migration of Cobalt Driers in Protective Coatings** 2:00
J. H. Rolker, Jr., Spencer Kellogg Division of Textron Inc.
67. **Novel Urethane Oils** 2:20
A. E. Rheineck and S. Shulman, North Dakota State University.
68. **Evaluation of Fatty Vinyl Ether Polymers and Styrenated Polymers for Metal Coatings** 2:40
B. G. Brand and H. O. Schoen, Battelle Memorial Institute; L. E. Gast and J. C. Cowan, U.S.D.A., Northern Regional Research Laboratory.
69. **The Relationship Between "Gas-Proofness" and Structure in Tung Oil** 3:00
A. E. Rheineck and S. C. S. Peng, North Dakota State University.
70. **Preparation and Properties of Some Water-Dispersible Industrial Coatings from Tung Oil** 3:20
D. L. Wood, L. L. Hopper, Jr. and F. G. Dollear, U.S.D.A., Southern Regional Research Laboratory.
71. **Some Properties of the Glycerol Esters of the Isolated and Conjugated *Cis*, *Trans* Isomers of**

- Linoleic Acid** 3:40
A. E. Rheineck and D. D. Zimmerman, North Dakota State University.

WEDNESDAY MORNING

SESSION L

SYMPOSIUM: BINDING OF LIPIDS BY PROTEINS

Chairman: D. G. Therriault, U. S. Army Research Institute of Environmental Medicine.

72. **Phosphatidylserine-Bovine Serum Albumin Interactions** 9:00
D. G. Therriault and J. F. Taylor, U. S. Army Research Institute of Environmental Medicine.
73. **Binding of Steroids to Proteins** 9:45
U. Westphal, University of Louisville.
74. **Composition and Functional Role of Some Lipoproteins of Industrial Significance** 10:45
J. D. Mullen and D. E. Smith, General Mills, Inc.

SESSION M

CHEMICAL DERIVATIVES

Chairman: E. Dunning, Archer-Daniels-Midland Company.

75. **Evaluation of Butyl Stearate, Butyl Oleate, Butyl Ricinoleate and Methyl Linoleate as Poly (Vinyl Chloride) Plasticizers** 9:00
G. R. Riser, F. W. Bloom and L. P. Witnauer, U.S.D.A., Eastern Regional Research Laboratory.
76. **The Preparation and Plasticizing Characteristics, the Piperidides of Long-Chain Fatty Acids and the Fatty Amides of Other Cyclic Imines** 9:20
R. R. Mod, F. C. Magne and E. L. Skau, U.S.D.A., Southern Regional Research Laboratory.
77. **Preparation of Alcohols from Fatty Cyclic Acids** 9:40
E. W. Bell, J. P. Friedrich, L. E. Gast and J. C. Cowan, U.S.D.A., Northern Regional Research Laboratory.
78. **Acid-Catalyzed Conversion of Epoxyesters to Hydroxyesters** 10:00
G. Maerker, E. T. Haerberer and W. C. Ault, U.S.D.A., Eastern Regional Research Laboratory.
79. **Reaction of Dichlorocarbene with Fats and Oils** 10:20
H. E. Kenney, D. Komanowsky and A. N. Wrigley, U.S.D.A., Eastern Regional Research Laboratory.
80. **Methanesulfonic Acid-Catalyzed Additions. IV. Additions to Methyl Linoleate** 10:40
A. Eisner, T. Perlstein and W. C. Ault, U.S.D.A., Eastern Regional Research Laboratory.
81. **Purification of Aldehydes from Soybean Oil by Base Exchange Resins** 11:00
R. E. Beal, U.S.D.A., Northern Regional Research Laboratory.
82. **Preparation of Malondialdehyde Tetramethyl Acetal by Ozonolysis of Polyunsaturated Fatty Acids** 11:20
P. Fitton, E. H. Pryde and J. C. Cowan, U.S.D.A., Northern Regional Research Laboratory.

SESSION N

OILS AND FATS, PROCESSING AND UTILIZATION

Chairman: C. G. Youngs, National Research Council of Canada.

83. **Recent Trends in Hydrogen Plant Technology** 9:00
B. J. Mayland, R. L. Harvin and C. R. Trimarke, Girdler Corporation.
84. **Homogeneous Catalytic Hydrogenation of Unsaturated Fats: Cobalt Carbonyl** 9:20
E. N. Frankel, V. L. Davison, E. Emken and H. J. Dutton, U.S.D.A., Northern Regional Research Laboratory.
85. **Deuterium Tracer Studies of the Mechanism of Homogeneous Catalytic Hydrogenation of Sorbic Acid with Pentacyanocobaltate II** 9:40
A. F. Mabrouk, E. Selke, W. K. Rohwedder and

H. J. Dutton, U.S.D.A., Northern Regional Research Laboratory.

86. **The Effect on Margarine Texture of Crystallizing the Fat in the Disperse Phase** 10:00
H. Lavery and H. B. Oakley, Unilever Research Laboratory.
87. **Seeding of Some Melted Fats by Mechanical Working** 10:20
N. V. Lovegren, B. Bradshaw and R. O. Feuge, U.S.D.A., Southern Regional Research Laboratory.
88. ***Vernonia anthelmintica* (L.) Willd. The Effect of Storage on the Epoxy Lipid Components of the Seed Oil** 10:40
W. E. Scott and C. F. Krewson, U.S.D.A., Eastern Regional Research Laboratory.
89. **Soybean Unsaponifiables: Hydrocarbons from Deodorizer Condensates** 11:00
C. D. Evans, J. Ostwald and J. C. Cowan, U.S.D.A., Northern Regional Research Laboratory.
90. **Continuous Refining of Crude Cottonseed Miscella** 11:20
L. S. Crauer, DeLaval Separator Company, and H. Pennington, S. A. Camp Cotton Oil Company.

WEDNESDAY AFTERNOON

SESSION O

MEAL AND SEED, PROCESSING AND UTILIZATION

Chairman: L. V. Anderson, Minnesota Linseed Oil Paint Company.

91. **The Variability of Lysine and Available Lysine in and Nutritive Quality of Commercial Cottonseed Meals** 2:00
F. L. Carter and V. L. Frampton, U.S.D.A., Southern Regional Research Laboratory.
92. **Mustard Seed Processing: Simple Methods for Following Heat Damage to Protein Meals** 2:20
J. E. McGhee, L. D. Kirk and G. C. Mustakas, U.S.D.A., Northern Regional Research Laboratory.

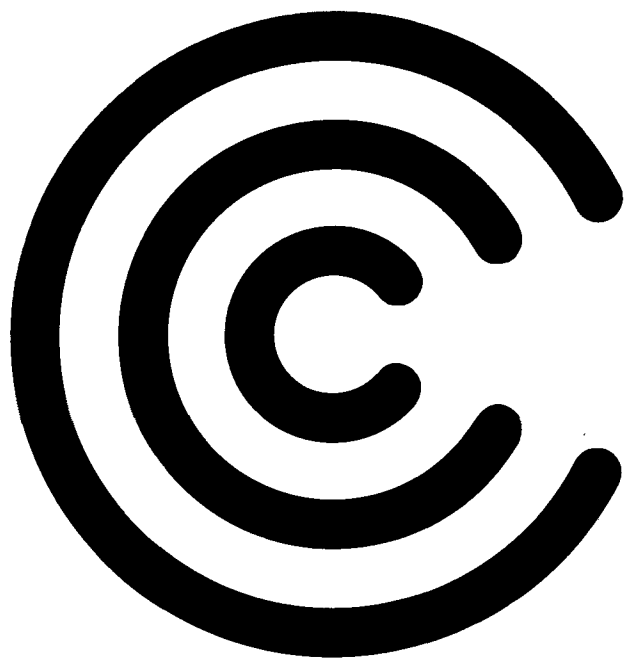
93. ***Vernonia anthelmintica* (L.) Willd. Extraction of Oil or Trivernolin from the Seed** 2:40
C. F. Krewson and W. E. Scott, U.S.D.A., Eastern Regional Research Laboratory.
94. **Production and Nutritional Evaluation of Extrusion-Cooked Full-Fat Soybean Flour** 3:00
G. C. Mustakas and E. L. Griffin, Jr., U.S.D.A., Northern Regional Research Laboratory; L. E. Allen, UNICEF, United Nations; and O. B. Smith, Wenger Mixer Manufacturing.
95. **Genetic Control of Fatty Acid Biosynthesis in Rapeseed (*Brassica Napus*)** 3:20
R. K. Downey and B. M. Craig, National Research Council of Canada.
96. **Gas Chromatographic Determination of Residual Hexane in Hexane-Extracted Oilseed Flakes** 3:40
T. L. Black and G. C. Mustakas, U.S.D.A., Northern Regional Research Laboratory.
97. **Determination of Foreign Materials of Plant Origin in Cotton Linters** 4:00
K. A. Jurbergs and D. J. Dowling, The Buckeye Cellulose Corporation.
98. **Hidden Oil Losses in the Cottonseed Crushing Industry** 4:20
W. Szutowicz, Producers Cotton Oil Company of Arizona.
99. **Studies of the Phospholipid-Glycolipid Complex of Wheat Endosperm** 4:40
M. E. McKillican, Department of Agriculture, Food Research Institute, Ottawa.

SESSION P

BIOLOGICAL AND NUTRITIONAL

Chairman: B. M. Craig, National Research Council of Canada.

100. **Competitive Inhibition in the Metabolism of Polyunsaturated Acids** 2:00
R. T. Holman, The Hormel Institute.
101. **Influence of EFA-Deficiency, EFA and Marine Oil Supplements on the Hypercholesteremia of Rats. The Effects of Total Unsaturation** 2:20
J. J. Peifer, The Hormel Institute.
102. **Studies on the Metabolism of Linoelaidic Acid in the Essential Fatty Acid-Deficient Rat** 2:40
O. S. Privett and M. L. Blank, The Hormel Institute.
103. **Relations Between Amounts of Dietary and Body Fatty Acids in Mice** 3:00
B. M. Craig and J. M. Bell, National Research Council of Canada.
104. **The Relationship of Single Dietary Polyunsaturated Acids to the Fatty Acid Composition of Lipids from Subcellular Particles and Unfractionated Tissues** 3:20
J. J. Rahm and R. T. Holman, The Hormel Institute.
105. **Structural Analyses of the Depot and Dietary Fats of Rats Fed Fresh and Oxidized Cottonseed and Olive Oils** 3:40
H. Kaunitz, R. E. Johnson, M. L. Blank and O. S. Privett, Columbia University and The Hormel Institute.
106. **Platelet Phosphatides, Their Separation, Fatty Acid Composition and Clotting Activity** 4:00
V. Mahadevan, E. Cubero and W. O. Lundberg, The Hormel Institute.
107. **Interconversions of Long-Chain Fatty Acids in the Rat** 4:20
D. Sand, N. Sen and H. Schlenk, The Hormel Institute.
108. **Lenticular Phospholipids of Experimental Animals** 4:40
G. L. Feldman, Baylor University.



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