

**13th  
Annual  
Meeting**

**Society  
of  
Toxicology**



WASHINGTON HILTON HOTEL  
Washington, D. C.

MARCH 10-14, 1974

**PROGRAM**

## INFORMATION

### REGISTRATION

- **Registrar**  
Ralph C. Wands
- **Preregistration forms available from Secretary**  
R. A. Scala  
Esso Research & Engineering Co.  
Box 45  
Linden, New Jersey 07036  
Telephone: (201) 474-2422
- **Registration Desk**  
**Washington Hilton – Concourse Lobby**

Sunday, March 10, 1974	2:00 p.m. – 10:00 p.m.
Monday, March 11, 1974	8:00 a.m. – 4:00 p.m.
Tuesday, March 12, 1974	8:30 a.m. – 5:00 p.m.
Wednesday, March 13, 1974	8:30 a.m. – 5:00 p.m.
- **Registration Fees**

Society of Toxicology Members	..... \$20.00
Nonmembers	..... 25.00
Predoctoral Full-time Students	..... 5.00

Registrants for the Society of Toxicology meeting will be admitted to the Environmental Mutagens Society session on Monday morning. Registrants for the Environmental Mutagens Society meeting will be admitted to all SOT sessions on Monday, March 11.
- **Abstracts of Papers**

Distributed without charge to all members of the Society of Toxicology and to all preregistrants in advance of the meeting. Included in the registration fee for those registering at the meeting. Additional copies of the abstracts available at the Registration Desk, price \$2.
- **Locations (see centerfold map)**

Hotel registration – Lobby Floor  
Terrace Lobby – One level below Lobby Floor  
Concourse Lobby – Two levels below Lobby Floor  
Jefferson, Lincoln, Monroe Rooms – Concourse Level  
International Ballroom – Concourse Level  
Edison, Farragut, Grant, Hamilton Rooms – Main Lobby Floor

## SCHEDULE OF MEETINGS

- **Scientific Sessions – Jefferson, Lincoln, Monroe Rooms**

Monday, Tuesday, Wednesday  
8:20 a.m. – 12:10 p.m.  
1:30 p.m. – 5:10 p.m.

Thursday  
8:20 a.m. – 12:10 p.m.

Note: For morning sessions on Tuesday, Wednesday, and Thursday, the Jefferson Room will be divided into Jefferson–East and Jefferson–West.
- **Symposia**

Monday, March 11, at 9:00 a.m.  
Evaluation of mutagenicity data and its toxicological significance – sponsored by the Environmental Mutagens Society.

Monday, March 11, at 1:30 p.m. – International Ballroom, Center.  
Nitrosamines and nitrosamides: environmental occurrence and toxicological significance.

Wednesday, March 13, at 1:30 p.m. – Lincoln Room  
Pharmacokinetics/principles and applications to toxicology.
- **Workshop**

Tuesday, March 12, at 2:15 p.m. – Lincoln Room  
Educational methods in toxicology – sponsored by the Educational Committee of the Society of Toxicology.
- **Special Presentations**

Tuesday, March 12, at 4:30 p.m. – Lincoln Room  
Results of the survey on manpower needs and training in toxicology (part of the Educational Workshop) – H. W. Hays.

Wednesday, March 13, at 4:50 p.m. – Monroe Room  
Needs of the WHO Expert Committee on Pesticides Residues for Toxicological Data – F. C. Lu.
- **Annual Business Meeting**

Monday, March 11, at 4:15 p.m. – International Ballroom, West
- **Committee Meetings**

Farragut Room  
Time will be posted.

## SOCIAL EVENTS

- **Banquet**  
Tuesday, March 12, at 7:30 p.m. – International Ballroom  
Speaker: Philip Handler, President, National Academy of Sciences  
Tickets available at Registration Desk
- **Mixer and Reception**  
Monday, March 11, 6:00 p.m. to 8:00 p.m. Terrace.  
Cash bar.  
Officers and members of Council will be available to meet and talk with colleagues attending the meeting.
- **Ladies Hospitality**  
Mornings at 9:30 a.m. for coffee – Terrace  
Information on events and places of interest will be available.

## SPECIAL SERVICES

- **Placement Service**  
Monday, Tuesday, Wednesday – Hamilton Room  
10:00 a.m. – 12:00 noon  
2:00 p.m. – 4:00 p.m.  
Other hours by appointment  
John G. Keller, Director
- **Press Facilities – Edison Room**  
Monday, Tuesday, Wednesday  
8:00 a.m. – 5:00 p.m.  
Thursday  
8:00 a.m. – 12:00 noon  
Members of the Press registered at the meeting may use the area to review meeting materials, prepare news items, and meet with speakers.

## APPOINTMENTS

### Placement

John G. Keller

### Representative to Division of Chemistry and Chemical Technology, NAS-NRC

V. K. Rowe

### Representative to Drug Research Board, NAS-NRC

Victor A. Drill

### Representative to Science Advisory Committee Registry of Tissue Reactions to Drugs, NAS-NRC

Harold M. Peck

### Representative to Public Advisory Committee on the Revision and Application of Drinking Water Standards, EPA

John A. Zapp, Jr.

### Representative to Scientific Advisory Board, National Center for Toxicological Research

Robert A. Scala

### Liaison with American Industrial Hygiene Association

James E. Long

### Liaison with American Society for Pharmacology and Experimental Therapeutics

Robert M. Hehir

### Liaison with Environmental Mutagens Society

John H. Weisburger

### Liaison with National Society for Medical Research

Victor A. Drill

## FUTURE MEETINGS—SOCIETY OF TOXICOLOGY

Meeting Number	Year	Dates	Location
14	1975	March 9-13	Williamsburg Lodge Williamsburg, Va.
15	1976	March 14-18	Marriott Atlanta, Ga.
16	1977	March 27-31	Royal York Toronto, Ontario
17	1978	March 5-9	Deauville Miami Beach, Florida
18	1979	March 11-15	Marriott New Orleans, La.
19	1980	March	London, England
20	1981	March 8-12	Washington Hilton Washington, D. C.

## PAST PRESIDENTS

Harold C. Hodge	1961-1962
C. Boyd Shaffer	1962-1963
Paul S. Larson	1963-1964
Harry W. Hays	1964-1965
Frederick Coulston	1965-1966
Verald K. Rowe	1966-1967
John A. Zapp, Jr.	1967-1968
Carrol S. Weil	1968-1969
Ted A. Loomis	1969-1970
Robert L. Roudabush	1970-1971
Wayland J. Hayes, Jr.	1971-1972
Victor A. Drill	1972-1973

## SOCIETY OF TOXICOLOGY AWARDS

### Merit

1966	H. F. Smyth, Jr.
1967	A. J. Lehman
1968	R. T. Williams
1969	H. C. Hodge
1970	D. D. Irish
1971	K. P. DuBois
1972	O. G. Fitzhugh
1973	H. E. Stokinger

### Achievement

1967	G. L. Plaa
1968	A. H. Conney
1969	S. S. Epstein
1970	S. D. Murphy
1971	Y. Alarie
1972	R. L. Dixon

March 11, 1974

MONDAY MORNING — JEFFERSON ROOM

Chairman: R. B. Forney

Assisted by: W. M. Butler, B. R. Manno

- 8:20 1. Narcosis in Rhesus Monkeys Following Oral Dosage with Glutethimide; Correlations with Serum Concentrations. D.E. Bailey, A.J. Kutches, K. Morgareidge, and F. Meyer; Food & Drug Res. Labs., Waverly, N.Y., and Extracorporeal Medical Specialties, King of Prussia, Pa. (Sponsor: B.L. Oser).
- 8:40 2. The Development of Tolerance to Methadone Lethality after Morphine Pellet Implantation and Repeated Methadone Administration. L.W. Masten, C.H. Hine, and E.L. Way; Dept. of Pharmacology, Univ. of Calif., San Francisco, Calif.
- 9:00 3. Effects of Subchronic Administration of Methadone on Reproduction in Rats. L.K. McDonald, K. Blum, J.F. Maddux, and J.E. Wallace; Depts. of Psychiatry, Pharmacology, and Pathology, The Univ. of Tex. Health Sci. Center, San Antonio, Texas (Sponsor: J.M. Singh).
- 9:20 4. Studies of the Carcinogenicity of an Acetone Extract of Hashish. B.G. Procter, P. Dussault, G. Rona, and C.I. Chappel; Bio-Research Labs., Ltd., Pointe Claire, Que., Canada.
- 9:40 5. The Influence of Cannabinoid Mixtures on Drug-Induced Sleep in Mice. D.J. McCoy, D.J. Brown, and R.B. Forney; Dept. of Tox., Indiana Univ. Sch. of Med., Indianapolis, Ind.
- 10:00 6. Effect of Cannabinoids on Pentobarbital Metabolism in the Rat. B.B. Coldwell, K. Bailey, G. Anderson, and C. Paul; Drug Res. Labs., Health Protection Br., Health & Welfare Canada, Ottawa, Canada.
- 10:20 7. Chronic Oral Toxicity of Cannabinoids in Monkeys. G.R. Thompson, R.W. Fleischman, H. Rosenkrantz, and M.C. Braude; Mason Res. Inst., Worcester, Mass., and Nat'l. Inst. of Mental Health, Rockville, Md.
- 10:40 8. Distribution Studies of <sup>14</sup>C-Delta-9-Tetrahydrocannabinol (THC) in Mice. B. Mantilla-Plata and R.D. Harbison; Dept. of Pharm. & Center in Tox., Vanderbilt Med. Center, Nashville, Tenn.
- 11:00 9. Absence of Tolerance to the Hypotensive Effects of Delta-9-Tetrahydrocannabinol in Hypertensive Rats. S.C. Lewis, D.J. Brown, and R.B. Forney; Dept. of Tox., Indiana Univ. Sch. of Med., Indianapolis, Ind.
- 11:20 10. The Effects of Delta-9-Tetrahydrocannabinol on Lung Resistance and Compliance in the Dog. T.P. Bright, M.O. Farber, L.W. Winter, D.J. Brown, and R.B. Forney; Veterans Admin. Hospital and Indiana Univ. Med. Center, Indianapolis, Ind.
- 11:40 11. Effect of Apomorphine and Nalline on Methadone-Induced Behavioral Changes. J.M. Singh; Dept. of Psychiatry, Charity Hospital, New Orleans, La.

March 11, 1974

MONDAY MORNING – MONROE ROOM

*Chairman: H. N. MacFarland*

*Assisted by: S. Laskin, F. W. Weir*

- 8:20 12. Comparative Deposition, Retention, and Early Toxicity of Inhaled Insoluble  $^{144}\text{Ce}$  Aerosols in Mice, Syrian Hamsters, and Beagle Dogs. C.H. Hobbs, R.O. McClellan, S.A. Benjamin, B.B. Boecker, F.F. Hahn, D.L. Lundgren, and R.L. Thomas; Inhalation Tox. Res. Inst., Lovelace Foundation, Albuquerque, N.M.
- 8:40 13. Effects of  $\text{NO}_2$  on Humoral Immunologic Defense Mechanisms. W.C. Felsenstein, J.C. Prather, D.E. Gardner, and D.L. Coffin; Environ. Protection Agency, Research Triangle Park, N.C.
- 9:00 14. Acute Toxicity of Cigarette Smoke Inhalation in Mice, in Relation to Nicotine and Tar Content. P. Bernfeld; Bio-Research Consultants, Cambridge, Mass. (Sponsor: F. Homburger).
- 9:20 15. Effect of Dibromotrifluoroethane Inhalation on Hepatic Drug Metabolism. J.P.F. Murphy, E.W. Van Stee, and K.C. Back; 6570 Aerospace Med. Res. Lab., Wright-Patterson AFB, Ohio.
- 9:40 16. Toxicity and Biochemical Changes in Rats after Inhalation Exposure to 1,1-Dichloroethylene, Bromobenzene, Styrene, Acrylonitrile, or 2-Chloro-butadiene. R.J. Jaeger, R.B. Conolly, and S.D. Murphy; Dept. of Physiology, Harvard Sch. of Public Health, Boston, Mass.
- 10:00 17. Comparative Toxicity of Aerosol Propellants. D.M. Aviado and M. Belej; Dept. of Pharmacology, Univ. of Penn. Sch. of Med., Philadelphia, Penn.
- 10:20 18. Continuous Exposure of Rats to Hexafluoroethane. T.B. Griffin, J.L. Byard, F. Coulston, L. Golberg, and E.S. Harris; Inst. of Comparative & Human Tox., Albany Med. Coll., Albany, N.Y.; NASA Manned Spacecraft Center, Houston, Texas.
- 10:40 19. Development of Biologic Standards for the Industrial Worker Exposed to Trichloroethylene. R.D. Stewart, C.L. Hake, A.J. Lebrun, J.E. Peterson, H.V. Forster, and P.E. Newton; Dept. of Environ. Med., The Medical Coll. of Wisc., Milwaukee, Wisc.
- 11:00 20. Use of Breath Analysis to Monitor Trichloroethylene Exposures. R.D. Stewart, C.L. Hake, and J.E. Peterson; Dept. of Environ. Med., The Medical Coll. of Wisc., Milwaukee, Wisc.
- 11:20 21. "Degreasers' Flush": Dermal Response to Trichloroethylene and Ethanol. R.D. Stewart, C.L. Hake, and J.E. Peterson; Dept. of Environ. Med., The Medical Coll. of Wisc., Milwaukee, Wisc.



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MONDAY MORNING – LINCOLN ROOM

Chairman: R. M. Hehir

Assisted by: F. X. Kamienski, S. Laham

- 8:20 22. Methods for Evaluating Corrosive Effects of Ingesting Detergents. G.G. Cloyd, N.M. Brown, and J.F. Griffith; The Procter & Gamble Co., Cincinnati, Ohio.
- 8:40 23. Evaluation of Nonphosphate Detergent Formulations for Ingestion Hazard. N.M. Brown and J.F. Griffith; The Procter & Gamble Co., Cincinnati, Ohio.
- 9:00 24. The Oral Toxicity in Dogs of Several Commercial Detergent Products. F.F. Hahn, B.A. Muggenburg, and J.L. Mauderly; Lovelace Foundation for Med. Education and Res., Albuquerque, N.M. (Sponsor: R.O. McClellan).
- 9:20 25. Interspecies Studies Comparing Skin Irritation Produced by Detergents and Chemicals Following a Proposed Revision of the FHSA Test. G.A. Nixon and C.A. Tyson; The Procter & Gamble Co., Cincinnati, Ohio (Sponsor: J.F. Griffith).
- 9:40 26. Reproductive, Subacute, and Chronic Safety Evaluation Studies of Amine Fluorides. J.M. Smith, W.R. Rapp, W.F. Strauss, M.M. Dolan, and S.L. Yanke; Bio/dynamics Inc., E. Millstone, N.J., and Menley & James Labs. Ltd., Philadelphia, Penn.
- 10:00 27. Dermal Toxicity of Triphenyltin Chloride as Affected by Solvent and Solvent Temperature. T.R. Lewis, V.B. Perone, H.D. Specht, and W. Smallwood; Nat'l. Inst. for Occupational Safety and Health (Sponsor: H.E. Stokinger).
- 10:20 28. 1,4-Dioxane Toxicity as Determined by a Two-Year Dose-Response Study in Rats. R.J. Kociba, S.B. McCollister, C. Park, T.R. Torkelson, and P.J. Gehring; Chemical Biology Res., The Dow Chemical Co., Midland, Mich.
- 10:40 29. Lack of Manifestation of Toxicity in Rats Inhaling 111 PPM 1,4-Dioxane for Two Years. T.R. Torkelson, B.K.J. Leong, R.J. Kociba, W.A. Richter, and P.J. Gehring; The Dow Chemical Co., Midland, Mich., and Industrial Bio-Test Labs., Inc., Northbrook, Ill.
- 11:00 30. Acute and Subacute Toxicity of 2,2,4-Trimethyl-1,3-Pentanediol (TMPD). C.J. Terhaar, W.J. Krasavage, and R.L. Roudabush; Health & Safety Lab., Eastman Kodak, Co., Rochester, N.Y.
- 11:20 31. Toxicological Properties of 2,3,5-Trichloro-4-(n-Propylsulfonyl)-Pyridine. L.W. Rampy, J.M. Norris, C.G. Humiston, R.J. Kociba, and P.J. Gehring; The Dow Chemical Co., Midland, Mich.
- 11:40 32. A Toxicological Investigation of the Acute, Subacute, and Chronic Effects of Administering Di-2-Ethylhexyl Phthalate (DEHP) and Other Phthalate Esters. W.H. Lawrence, M. Malik, J.E. Turner, A.R. Singh, and J. Autian; The Materials Science Tox. Labs., Univ. of Tennessee Medical Units, Memphis, Tenn.

March 11, 1974

**ENVIRONMENTAL MUTAGENS SOCIETY**

**MONDAY MORNING**

**Evaluation of Mutagenicity Data and  
Its Toxicological Significance**

*Chairman: Seymour Abrahamson*

**9:00** Mutagenesis and the Disease Burden in Man.  
James Crow.

**9:45** Assessment of Germinal Mutation in Mammals.  
Thomas Roderick.

**10:30** Detection of Mutation in Human Cells: Utility,  
Potential, and Future. Robert DeMars.

**11:15** Ascertainment of Maximum Permissible Levels of  
Mutagens in the Environment.

Persons registered for the Society of Toxicology  
meeting will be admitted to this session.

March 11, 1974

**MONDAY AFTERNOON –  
INTERNATIONAL BALLROOM,  
CENTER – SYMPOSIUM**

**Nitrosamines and Nitrosamides:  
Environmental Occurrence and  
Toxicological Significance**

*Chairman: Gerald N. Wogan*

- 1:30 **Introduction.** Gerald N. Wogan, Department of Nutrition and Food Science, Massachusetts Institute of Technology, Cambridge, Mass.
- 1:35 **Chemistry of N-nitroso Compounds.** Sidney Mirvish, Eppley Institute for Research in Cancer, University of Nebraska Medical Center, Omaha, Nebr.
- 2:05 **Environmental Occurrence of N-nitroso Compounds.** Ronald C. Shank, Department of Nutrition and Food Science, Massachusetts Institute of Technology, Cambridge, Mass.
- 3:05 **Assessment of Human Exposure and Response to N-nitroso Compounds.** John Weisburger, American Health Foundation, New York, New York.
- 3:20 **Summary and Evaluation.** Gerald N. Wogan, Department of Nutrition and Food Science, Massachusetts Institute of Technology, Cambridge, Mass.
- 3:50 **General Discussion.**
- 4:15 **Annual Business Meeting – International Ballroom, West.**  
Members of the Society of Toxicology.

March 12, 1974

TUESDAY MORNING – JEFFERSON ROOM—EAST

*Chairman: J. R. Gillette*

*Assisted by: R. H. Adamson, G. P. Carlson*

- 8:20 33. Distribution and Kinetics of 2,4,5,2',5'-Pentachlorobiphenyl (PCB) in the Male Rat. H.B. Matthews, J.R. Bend, and M.W. Anderson; Nat'l. Inst. of Environ. Health Sciences, Research Triangle Park, N.C. (Sponsor: J.R. Fouts).
- 8:40 34. Metabolism and Excretion of 2,4,5,2',5'-Pentachlorobiphenyl (PCB) in the Male Rat. P.R. Chen and H.B. Matthews; Nat'l. Inst. of Environ. Health Sciences, Research Triangle Park, N.C. (Sponsor: J.R. Fouts).
- 9:00 35. Studies of the Mixed Function Oxidase Catalyzed Metabolism of Carbon Disulfide. R. Dalvi, E. Poore, and R.A. Neal; Center in Environ. Tox., Vanderbilt Univ. Sch. of Med., Nashville, Tenn.
- 9:20 36. GC-MS Studies of the Metabolism of Safrole, an Hepatocarcinogen, in the Rat and Guinea Pig. M.G. Horning, L. Bell, M.J. Carman, and W.G. Stillwell; Baylor Coll. of Med., Houston, Tex. (Sponsor: G.L. Plaa).
- 9:40 37. Metabolism of Aflatoxin B<sub>1</sub> by an Intact and Reconstituted Rat Liver Microsomal Enzyme System. S. Nerurkar and T.C. Campbell; Dept. of Biochem. & Nutrition, Virginia Polytechnic Inst. and State Univ., Blacksburg, Va.
- 10:00 38. Cyclization and n-Dealkylation of Chlorguanide by Rabbit and Rat Hepatic Microsomes. V.L. Armstrong and C.C. Smith; Coll. of Pharmacy and Coll. of Med., The Univ. of Cincinnati, Cincinnati, Ohio.
- 10:20 39. Mechanism of Dose Threshold for Furosemide Hepatotoxicity. M. Weihe, W.Z. Potter, W.L. Nelson, D.J. Jollow, and J.R. Mitchell; Lab. Chem. Pharm., Nat'l. Heart & Lung Inst., Bethesda, Md. (Sponsor: J.R. Gillette).
- 10:40 40. Interaction of Nitrofurazone with Hepatic and Extrahepatic Tissues from Mice and Rats. B. Stripp, R.H. Menard, and J.R. Gillette, Nat'l. Institutes of Health, Bethesda, Md.
- 11:00 41. The Influence of Maternally-Administered Phenobarbital on the Kinetic Parameters and Development of Hepatic Drug-Metabolizing Enzymes in the Perinatal Rat. J.U. Bell and D.J. Ecobichon; Dept. of Pharm., Dalhousie Univ., Halifax, Nova Scotia, Canada.
- 11:20 42. Hepatic and Extrahepatic Glucuronyltransferase and Beta-Glucuronidase. B.R. Sonawane and G.W. Lucier; Nat'l. Inst. of Environ. Health Sciences, Research Triangle Park, N.C. (Sponsor: R.L. Dixon).
- 11:40 43. Comparative Inductive Effects of Phenobarbital and Endrin on Liver Microsomal Activity in Endrin Resistant and Susceptible Pine Voles. R.W. Hartgrove, Jr., S.G. Hundley, and R.E. Webb; Dept. Human Nutrition & Foods, Va. Polytechnic Inst. and State Univ., Blacksburg, Va.

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TUESDAY MORNING – MONROE ROOM

Chairman: J. L. Gargus

Assisted by: F. Homburger, R. L. Swarm

- 8:20 44. An Integrated Computer System for Large-Scale Chronic Carcinogenic Bioassays. L.R. Lawrence, M.F. Cranmer, A.J. Konvicka; Nat'l. Center for Tox. Res., Jefferson, Ark.
- 8:40 45. Induction of Tumors in Nonhuman Primates with Various Chemical Carcinogens. R.H. Adamson, P. Correa, and D. W. Dalgard; Nat'l. Cancer Inst., Bethesda, Md., and Hazleton Labs., Vienna, Va.
- 9:00 46. Mouse Dermal Study of Smoke Condensate from "Chemosol" Treated Cigarettes. J.L. Gargus, J.B. Sullivan, R.T. Habermann, J. Copeland, and J.R. Everly; Hazleton Labs., Vienna, Va.
- 9:20 47. Distribution of Metabolites of Benzo(a)pyrene in the Isolated Perfused Rabbit Lung Preparation. R.W. Niemeier and E. Bingham; Kettering Lab., Cincinnati, Ohio.
- 9:40 48. The Effects of Benzo(a)pyrene and 3-Methylcholanthrene on Mouse Lungs. W. Ho and A. Furst; Inst. of Chem. Biology, Univ. of San Francisco, San Francisco, Calif.
- 10:00 49. Influence of a Polychlorinated Biphenyl (PCB) on Biochemical Effects and Metabolism of Aflatoxin. E.L. Peters, L. Friedman, and K.G. Davis; Food & Drug Admin., Washington, D.C.
- 10:20 50. Studies on the Excretion of Aflatoxin and its Derivatives by Humans. A.H. Merrill, Jr., L. Salamat, and T.C. Campbell; Dept. of Biochem. & Nutrition, Virginia Polytechnic Inst. and State Univ., Blacksburg, Va., and Food & Nutrition Res. Center, Manila, Philippines.
- 10:40 51. Preclinical Toxicity of Cyclocytidine in Dogs and Monkeys. J.L. Sanyer and C.C. Lee; Midwest Res. Inst., Kansas City, Mo.
- 11:00 52. Metabolism of 6-Aminochrysene in the Rat. P.H. Grantham, G.N. Ba, L.C. Mohan, E.K. Weisburger, Ng. Ph. Buu-Hoi, and R. Roncucci; Nat'l. Cancer Inst., Bethesda, Md., and Continental Pharma, Brussels, Belgium.
- 11:20 53. Single- and Repeated-Dose Toxicity of 3-Tritylthio-L-Alanine Clinical Formulation (NSC 83265) Administered in Dogs and Monkeys by the Intravenous Route. P.E. Palm, M.W. Rohovsky, E.P. Arnold, P.C. Rachwall, and M.S. Nick; Arthur D. Little, Cambridge, Mass.
- 11:40 54. Mutagenic Activity of Alkylating Agents as a Function of Number of Doses and Route of Administration. D.W. Arnold, G.L. Kennedy, Jr., M.L. Keplinger, and J.C. Calandra; Industrial Bio-Test Labs., Northbrook, Ill.

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TUESDAY MORNING – LINCOLN ROOM

Chairman: C. D. Proctor

Assisted by: T. Balazs, J. F. Noble

- 8:20 55. Soft Contact Lens Studies in Rabbit Eyes. F.A. de la Iglesia, L. Mitchell, and E. Schwartz; Warner-Lambert Res. Inst. of Canada, Sheridan Park, Mississauga, Ont., Canada, and Warner-Lambert Res. Inst., Morris Plains, N.J.
- 8:40 56. Ototoxic Interaction between Aminoglycoside Antibiotics and Diuretics. R.E. Brummett, B. West, J. Traynor, and N. Manor; Kresge Hearing Res. Lab., Portland, Ore.
- 9:00 57. Acute and Subacute Toxicity Evaluation of Intravenous Sodium Fluorescein in Mice, Rats, and Dogs. T. McDonald, K. Kasten, R. Hervey, S. Gregg, C.A. Robb, A.R. Borgmann; Alcon Labs., Inc., Ft. Worth, Tex. (Sponsor: O.G. Fitzhugh).
- 9:20 58. Nicotine Antagonists: Studies on  $\omega$ -(N,N-Diethylamino)-n-Butyl 3,4,5-Trimethoxybenzoate (TMB-4) as an Antagonist of Nicotine. B.V. Rama-Sastry, C.P. Robinson, and C.Y. Chiou; Dept. of Pharmacology, Vanderbilt Univ. Sch. of Med., Nashville, Tenn., and Univ. of Fla. Coll. of Med., Gainesville, Fla.
- 9:40 59. The Treatment of Acute Ethylene Glycol Toxicosis with Pyrazole. E.W. Van Stee, M.L. Horton, A.M. Harris, and K.C. Back; 6570 Aerospace Med. Res. Lab., Wright-Patterson AFB, Ohio.
- 10:00 60. Five-Year Progress Report on Long-Term Oral Contraceptive Studies in Female Dogs and Monkeys. F.X. Wazeter, R.G. Geil, K.M. Cookson, V.R. Berliner, and J.K. Lamar; Int'l. Res. and Dev. Corp., Mattawan, Mich., and Food & Drug Admin., Rockville, Md.
- 10:20 61. Preclinical Safety Studies of a Synthetic Gonadotrophin Releasing Hormone (LH-RH). R.D. Hemm, J.J. Pollock, L. Arslanoglou, and L. Authier; Ayerst Labs., Chazy, N.Y.
- 10:40 62. Toxicology of W-2587 (5-dimethylaminoacetyl-1,2,3,4,4a,5,6,11a-octa-hydromorphanthridine hydrochloride) – A New Antihypertensive Agent. B.N. Banerjee and N. Ivins; Wallace Labs., Cranbury, N.J.
- 11:00 63. The Effect of Propranolol on Myocardial Necrosis Induced by Minoxidil in Dogs. T. Balazs, F. Earl, and W. Busey; Food & Drug Admin., Washington, D.C.
- 11:20 64. Myocardial Sensitization to Epinephrine by Halothane and Two Halogenated Cyclobutanes. H.H. Borgstedt; Univ. of Rochester Sch. of Med. & Dentistry, Rochester, N.Y.
- 11:40 65. Cardiovascular Actions of Intravenous Methqualone in the Cat. P.P. Mathur, J.A. Quest, G.S. Rowles, G.N. Mir, and L.T. Mulligan; Res. Div., William H. Rorer, Inc., Ft. Washington, Penn. (Sponsor: J.M. Smith).

March 12, 1974

TUESDAY MORNING — JEFFERSON ROOM—WEST

*Chairman: C. H. Williams*

*Assisted by: J. E. Gibson, G. Levinskas*

- 8:20 66. Effects of Hexachlorobenzene on Liver Porphyrin Levels and Microsomal Enzymes in the Rat. D.L. Grant, F. Iverson, G.V. Hatina, and D.C. Villeneuve; Food Res. Labs., Health Protection Br., Ottawa, Canada (Sponsor: K.S. Khera).
- 8:40 67. Toxic Effects of Hexachlorobenzene in the Rat. Correlations of Electron Microscopy with Other Toxic Parameters. T. Kuiper-Goodman, D. Grant, G. Korsrud, C.A. Moodie, and I.C. Munro; Health & Welfare Canada, Food Res. Labs., Health Protection Br., Ottawa, Canada (Sponsor: H.C. Grice).
- 9:00 68. Microsomal Enzyme Induction by Hexabromobiphenyl. T.M. Farber and A. Baker; Food & Drug Admin., Washington, D.C.
- 9:20 69. Potentiation of Carbon Tetrachloride Hepatotoxicity by Polychlorinated Biphenyls. G.P. Carlson; Coll. of Pharmacy, Univ. of Rhode Island, Kingston, R.I.
- 9:40 70. The Effect of Isomerically Pure Chlorobiphenyls on the Structure of Kidney Tubules in the Rat. M.M. Hansell and D.J. Ecobichon; Depts. of Anatomy and Pharmacology, Dalhousie Univ., Halifax, Nova Scotia, Canada.
- 10:00 71. Effect of Chronic Ingestion of Polychlorinated Biphenyls on the Rat. J.V. Bruckner, K.L. Khanna, and H.H. Cornish; Sch. of Public Health, The Univ. of Michigan, Ann Arbor, Mich.
- 10:20 72. Dominant Lethal Studies in Rats of the Polychlorinated Biphenyls, Aroclor 1242 and 1254. S. Green, F.M. Sauro, and K.A. Palmer; Food & Drug Admin., Washington, D.C. (Sponsor: Leonard Friedman).
- 10:40 73. Toxicodynamics of PCB 1254 in the Beagle Dog and Miniature Swine. J.L. Couvillion, F.L. Earl, and E.J. Van Loon; Food & Drug Admin., Washington, D.C.
- 11:00 74. The Reproductive Effects of PCB 1254 in Beagle Dogs and Miniature Swine. F.L. Earl, J.L. Couvillion, and E.J. Van Loon; Food & Drug Admin., Washington, D.C.
- 11:20 75. Persistence of PCB Homologs and Isomers in the Domestic Hen and the Rat. F.D. Baker, B. Bush, and C. Tumasonis; N.Y. State Dept. of Health, Albany, N.Y. (Sponsor: L. Golberg).
- 11:40 76. Computer-Assisted Reduction and Display of Gas Chromatographic Data from Long-Term Toxicity Studies of Commercial Mixtures of Polychlorinated Biphenyls in Chickens and in Rats. B. Bush, F.C. Lo, and F.D. Baker; N.Y. State Dept. of Health, Albany, N.Y. (Sponsor: L. Golberg).

March 12, 1974

**TUESDAY AFTERNOON – JEFFERSON ROOM**

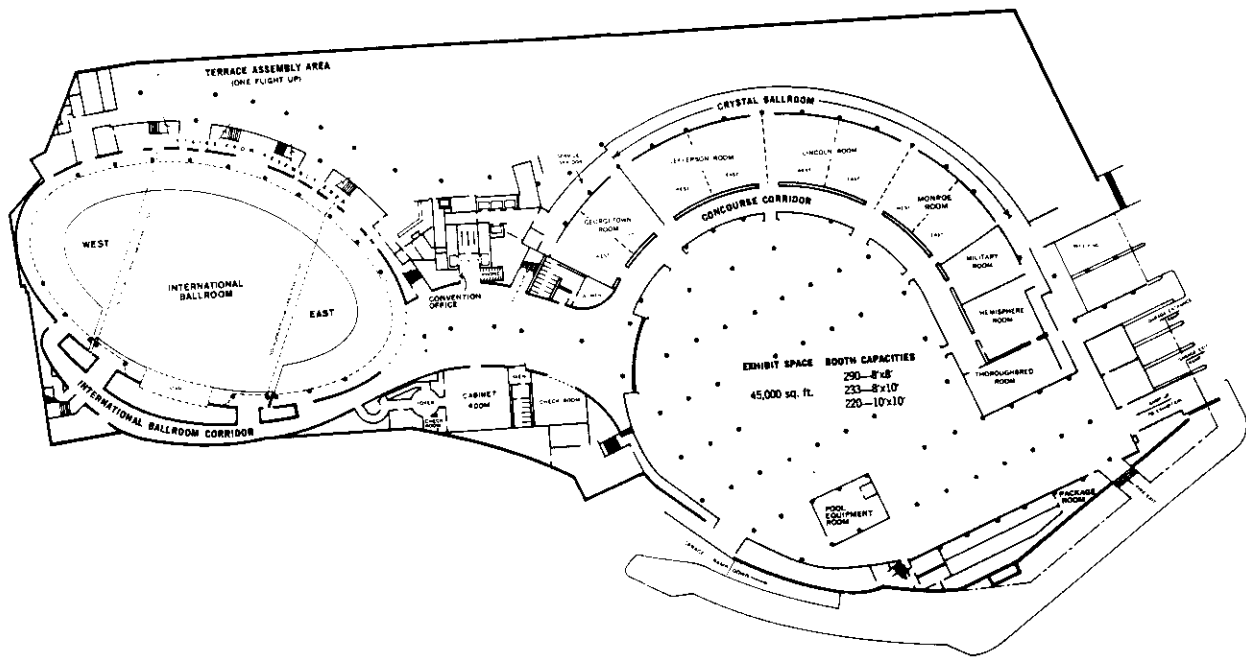
*Chairman: H. R. Witschi*

*Assisted by: D. L. Gilbert, E. K. Weisburger*

- 1:30 77. Subacute 2-FAA Toxicity in C57BL/6 and BALB/c Strain Mice. G. Schieferstein and T.J. Haley; Nat'l. Center for Tox. Res., Jefferson, Ark.
- 1:50 78. Histologic Response of Mouse Urinary Bladder to 2-AAF in a Large Subacute Experiment. W.E. Jaques and C.H. Frith; Nat'l. Center for Tox. Res., Jefferson, Ark. (Sponsor: T.J. Haley).
- 2:10 79. Chronic Dose Response Studies in Mice Fed 2-AAF. N.A. Littlefield, C. Cueto, Jr., A.K. Davis, and K. Medlock; Nat'l. Center for Tox. Res., Jefferson, Ark.
- 2:30 80. Histopathologic Changes in Mice Fed 2-Acetylaminofluorene in a Chronic Study. C.H. Frith and W.E. Jaques; Nat'l. Center for Tox. Res., Jefferson, Ark. (Sponsor: C. Cueto, Jr.).
- 2:50 81. Determination of 2-Acetylaminofluorene and its Metabolites by Liquid and Gas Chromatography. F.R. Fullerton and C.D. Jackson; Nat'l. Center for Tox. Res., Jefferson, Ark. (Sponsor: T.E. Shellenberger).
- 3:10 82. Tissue Binding of 2-Acetylaminofluorene-9-<sup>14</sup>C in Mice during Oral Administration. C.D. Jackson, C. Weis, and T.E. Shellenberger; Nat'l. Center for Tox. Res., Jefferson, Ark.
- 3:30 83. The *In Vitro* Metabolism of 2-Acetylaminofluorene in Mouse Liver. B.J. Gough, K.P. Baetcke, and T.E. Shellenberger; Nat'l. Center for Tox. Res., Jefferson, Ark.
- 3:50 84. Toxicity of 2-Acetylaminofluorene and its Metabolites in Liver Slices. C.D. Jackson and C.C. Irving; Veterans Admin. Hospital and Dept. of Biochem., Univ. of Tennessee Medical Units, Memphis, Tenn. (Sponsor: T.E. Shellenberger.).
- 4:30       **Special Presentation – Lincoln Room**  
**Results of the Survey on Manpower Needs and Training in Toxicology.** Harry W. Hays; U.S. Department of Agriculture, Beltsville, Md.
- 7:30 **Society of Toxicology Banquet – International Ballroom**



# THE WASHINGTON HILTON CONFERENCE AREA



March 12, 1974

**TUESDAY AFTERNOON – MONROE ROOM**

*Chairman: D. R. Buhler*

*Assisted by: J. J. Lech, L. F. Stickel*

- 1:30 85. Percutaneous Absorption of Hexachlorophene Following Daily Whole Body Washings. B. Calesnick, C.H. Costello, J.P. Ryan, and J. DiGregorio; Hahnemann Med. Coll. and Hospital, Philadelphia, Penn., and Colgate-Palmolive Co., Piscataway, N.J.
- 1:50 86. Placental Transfer of Hexachlorobenzene in the Rabbit. D.C. Villeneuve, L.G. Panopio, and D.L. Grant; Food Res. Labs., Health Protection Br., Ottawa, Canada (Sponsor: K.S. Khera).
- 2:10 87. Hexachlorobenzene: Teratogenicity and Dominant Lethal Studies in Rats. K.S. Khera; Food Res. Labs., Health Protection Br., Health & Welfare Canada, Ottawa, Canada.
- 2:30 88. A Computer System for the Collection and Statistical Analysis of Teratology Data. J.W. Noveroske, R.T. Drew, K. Wolford, W.P. Greenberg, J.L. Ciminera, and N.R. Bohidar; Merck Inst. for Therapeutic Res., West Point, Penn. (Sponsor: P.A. Mattis).
- 2:50 89. The Effect of Indomethacin on Parturition in the Rat when Administered in Combination with Prostaglandin F<sub>2</sub>α. J. Iulucci, W. Williams, A. Cerniski, and E. Schwartz; Warner-Lambert Res. Inst., Morris Plains, N.J.
- 3:10 90. Effect of Single and Daily Injections of Phenobarbital on Ovulation in Hamsters. J.J. Alleva, M.V. Waleski, F.R. Alleva, and T. Balazs; Food & Drug Admin., Washington, D.C.
- 3:30 91. Influence of Environmental Contaminants on Biochemical Adaptation to Stress in Birds. M.P. Dieter; Patuxent Wildlife Res. Center, Laurel, Md. (Sponsor: L.F. Stickel).
- 3:50 92. Biological Availability of Arsenic from Fish. I.C. Munro, S.M. Charbonneau, E. Sandi, K. Spencer, F. Bryce, and H.C. Grice; Food Res. Labs., Health Protection Br., Health & Welfare Canada, Ottawa, Canada.
- 4:10 93. The Fish as a Toxicological Tool. L.E. Mawdesley-Thomas; Huntingdon Res. Centre, Huntingdon, England.
- 4:30 **Special Presentation – Lincoln Room**  
**Results of the Survey on Manpower Needs and Training in Toxicology.** Harry W. Hays; U.S. Department of Agriculture, Beltsville, Md.
- 7:30 **Society of Toxicology Banquet – International Ballroom**

March 12, 1974

**TUESDAY AFTERNOON – LINCOLN ROOM**

**Workshop on Educational Methods  
in Toxicology**

*Sponsored and Organized by the  
Educational Committee of the Society*

- 2:15 **Introductory Remarks.** Florence Kinoshita, Industrial Bio-Test Laboratories, Northbrook, Ill.
- 2:30 **The Vital Quality of Academic Training in Toxicology: How Can We Attain It?** Leon Golberg, Institute of Experimental Pathology and Toxicology, Albany Medical College, Albany, N.Y.
- 2:50 **Computer-Assisted and Computer-Managed Instruction in Toxicologic Education.** John Doull, Department of Pharmacology and Toxicology, University of Kansas Medical Center, Kansas City, Kans.
- 3:10 **Self-Instructional Materials in Toxicology.** Frank E. Lisella and Richard A. Lasco, Media Resources Branch, National Medical Audiovisual Center, Atlanta, Ga.
- 3:30 **A Training Program in Parapathology and Histologic Techniques.** William E. Jaques, Department of Pathology, University of Arkansas, Little Rock, Ark.
- 3:50 **Government Funding Agencies and Current Training in Toxicology.** Rob S. McCutcheon, Toxicology Study Section, National Institutes of Health, Bethesda, Md.
- 4:10 **Panel Discussion.**
- 4:30 **Special Report to the Society: Results of the Survey on Manpower Needs and Training in Toxicology.** Harry W. Hays, U.S. Department of Agriculture, Beltsville, Md.
- 7:30 **Society of Toxicology Banquet – International Ballroom**

**March 12, 1974**

**Tuesday Evening**

**7:30 P.M.**

**BANQUET**

**International Ballroom**

**Menu**

Maryland Crab Bisque

Filet Mignon

Baked Potato  
Sour Cream and Chives

Broccoli  
Herbed Bread Crumbs

Salad au Suisse  
Oil and Vinegar Dressing

Napoleons Delight

Coffee

**Wine: Cabernet Sauvignon, Clement Colombet**  
Courtesy of the Charles River Companies

**Welcome: Joseph F. Borzelleca, President**  
Society of Toxicology

**Guest Speaker: Philip Handler, President**  
National Academy of Sciences

March 13, 1974

**WEDNESDAY MORNING –  
JEFFERSON ROOM–EAST**

*Chairman: R. P. Smith*

*Assisted by: D. A. Blake, M. A. Friedman*

- 8:20 94. The Effects of Inducers on Acute *p*-Xylene Toxicity. R.T. Drew and J.R. Fouts; Nat'l. Inst. of Environ. Health Sciences, Research Triangle Park, N.C.
- 8:40 95. The Effect of Phenobarbital on Chronic Benzene Toxicity in Rats. R.T. Drew, C. Harper, J.G. Zinkl, B.N. Gupta, and M.D. Hogan; Nat'l. Inst. of Environ. Health Sciences, Research Triangle Park, N.C. (Sponsor: J.R. Fouts).
- 9:00 96. Modification of Benzene Metabolism and Myelotoxicity in Male Albino Rats by Pretreatment with Phenobarbital, SKF-525A, or 3-Methylcholanthrene (3-MC). D.P. Gill, J.B. Nash, and S. Ellis; Univ. of Texas Med. Br., Galveston, Tex.
- 9:20 97. Benzene Toxicity and its Metabolism. E.W. Lee, L.S. Andrews, J. Kocsis, and R. Snyder; Thomas Jefferson Univ., Philadelphia, Penn.
- 9:40 98. Methemoglobinemia and Metabolism of Nitro Compounds. A.M. Kaplan, K.L. Khanna, and H.H. Cornish; Univ. of Michigan, Ann Arbor, Mich.
- 10:00 99. Initial Events Involving Nuclear-Cytoplasmic Relationships in Rat Liver after Phenobarbital. J.D. Young and D. Couri; The Ohio State Univ. Coll. of Med., Columbus, Ohio.
- 10:20 100. Influence of Barbiturate Analogues on Liver Microsomal RNA Degradation during Development of Metabolic Tolerance. R.T. Louis-Ferdinand; Dept. of Pharm., Sch. of Pharmacy, Univ. of Maryland, Baltimore, Md. (Sponsor: E. Miller).
- 10:40 101. Dearylation of Dialkyl *p*-Nitrophenyl Phosphates: A Case of Substrate Specificity of Mixed-Function Oxygenases. P.A. Cammer and R.M. Hollingworth; Dept. of Entomology, Purdue Univ., W. Lafayette, Ind. (Sponsor: T.S. Miya).
- 11:00 102. Glucuronide Formation in Rainbow Trout: Effect of Salicylamide on the Acute Toxicity, Conjugation, and Excretion of 3-Trifluoromethyl-4-Nitrophenol. J.J. Lech; Med. Coll. of Wisconsin, Milwaukee, Wisc.
- 11:20 103. Metabolism of Intravenously or Orally Administered Butylene Glycol Adipic Acid Polyester. P.L. Wright, G.J. Levinkas, M.L. Keplinger, and J.C. Calandra; Monsanto Co., St. Louis, Mo., and Industrial Bio-Test Labs., Northbrook, Ill.
- 11:40 104. The Metabolism of Hexafluoropropene by Washed Rat Red Blood Cells (RBC). J.V. Dilley and E.S. Harris; Northrop Services and the Nat'l. Aeronautics and Space Admin., Houston, Tex.

March 13, 1974

WEDNESDAY MORNING — MONROE ROOM

Chairman: M. Eisler

Assisted by: J. J. McPhillips, V. L. Zaratzian

- 8:20 105. Phenothiazine Tranquilizer PD-50's Exerted against Amphetamine Effect in Aggregated Mice. C.D. Proctor and J.B. Cho; Meharry Med. Coll., Nashville, Tenn.
- 8:40 106. An Effect of Amphetamine on Mouse Brain Polyribosomes. M.A. Blackshear, M.L. Harris, R. Bennett, and C.D. Proctor; Meharry Med. Coll., Nashville, Tenn.
- 9:00 107. An Effect of Amphetamine on Incorporation of Leucine into Mouse Brain Protein. M.L. Harris, M.A. Blackshear, R. Bennett, and C.D. Proctor; Meharry Med. Coll., Nashville, Tenn.
- 9:20 108. Mechanism of Action of Phencyclidine on the Peripheral Sympathetic Nervous System. H. Hitner and G.J. DiGregorio; Hahnemann Med. Coll., Philadelphia, Penn. (Sponsor: B. Calesnick).
- 9:40 109. A Comparison of the Antianesthetic Effect of Cyclic AMP and Analeptic Drugs of Amobarbital-Induced Narcosis. M.L. Cohn, B.J. Kraynack, and M. Cohn; Univ. of Pittsburgh Sch. of Med., Pittsburgh, Penn. (Sponsor: M. Eisler).
- 10:00 110. Recovery of Infant Monkeys from the Effects of Repeated Bathing with an Antibacterial Scrub Formulation Containing Hexachlorophene. E.R. Hart, K. Pittman, H.P. Drobeck, and J.F. Kurtzke; Litton Bionetics, Falls Church, Va., Sterling-Winthrop Res. Inst., Rensselaer, N.Y., and Georgetown Univ., Washington, D.C.
- 10:20 111. Lead-Induced Hyperactivity. E.K. Silbergeld and A.M. Goldberg; The Johns Hopkins Univ., Sch. of Hygiene and Public Health, Baltimore, Md. (Sponsor: D. Blake).
- 10:40 112. Comparative Neurotoxicity and the Distribution of Methyl Mercury in the CNS of the Beagle Dog and Miniature Swine. E. Miller, P.P. Sapienza, F.L. Earl, T.C. Michel, V.L. Olivito, and E.J. Van Loon; Food & Drug Admin., Washington, D.C.
- 11:00 113. Changes in Brain Biogenic Amines and Body Temperature after Cyclodiene Insecticides. P.D. Hrdina, R.L. Singhal, and D.A.V. Peters; Dept. of Pharm., Univ. of Ottawa, Ottawa, Canada (Sponsor: J.A. Thomas).
- 11:20 114. Effect of Acute and Chronic Dieldrin Exposure on Brain Biogenic Amines of Male and Female Rats. S.R. Wagner and F.E. Greene; Dept. of Phar., Milton S. Hershey Med. Center, Hershey, Penn.
- 11:40 115. Choline Acetylase (ChA) Inhibitors: Studies on the Mechanism of the Inhibition of ChA by Iodoacetylcholine (IACH). B.V. Rama-Sastry and G.I. Henderson; Dept. of Pharm., Vanderbilt Univ. Sch. of Med., Nashville, Tenn.

March 13, 1974

WEDNESDAY MORNING – LINCOLN ROOM

*Chairman: R. L. Dixon*

*Assisted by: R. D. Harbison, R. A. Yeary*

- 8:20 116. **Reproduction and Teratology Studies with the Fungicide Ferbam.** J.L. Minor, J.Q. Russell, and C.C. Lee; Midwest Res. Inst., Kansas City, Mo.
- 8:40 117. **Routine Teratogenicity Screening Procedures; Experiences and Recommendations.** K. Morgareidge, D.E. Bailey, A.J. Kuches, J. McLaughlin, and T.F.X. Collins; Food & Drug Res. Labs., Waverly, N.Y., and Food & Drug Admin., Washington, D.C.
- 9:00 118. **Teratogenic Studies with Certified Colors in Rats and Rabbits.** C.M. Burnett, H.P.K. Agersborg, Jr., J.F. Borzelleca, E. Eagle, A.G. Ebert, E.C. Pierce, J.C. Kirschman, and R.A. Scala; Inter-Industry Color Committee Task Force, Washington, D.C.
- 9:20 119. **Multigeneration Reproduction Studies with Certified Colors in Rats.** E.C. Pierce, H.P.K. Agersborg, J.F. Borzelleca, C.M. Burnett, E. Eagle, A.G. Ebert, J.C. Kirschman, and R.A. Scala; Inter-Industry Color Committee Task Force, Washington, D.C.
- 9:40 120. **Enhancement of Dinoseb-Induced Teratogenicity by Maternal Food Deprivation in Mice.** M.M. Preache and J.E. Gibson; Dept. of Phar., Michigan State Univ., E. Lansing, Mich.
- 10:00 121. **Distribution, Placental Transfer, and Perinatal Toxicity of Paraquat in Mice.** J.S. Bus, M.M. Preache, and J.E. Gibson; Dept. of Pharm., Michigan State Univ., E. Lansing, Mich.
- 10:20 122. **Embryo- and Fetotoxicity of Inhaled Carbon Tetrachloride, 1,1-Dichloroethane and Methyl Ethyl Ketone in Rats.** B.K.J. Leong, B.A. Schwetz, and P.J. Gehring; Chem. Biology Res., The Dow Chemical Co., Midland, Mich.
- 10:40 123. **Embryo- and Fetotoxicity of Inhaled Chloroform in Rats.** B.A. Schwetz, B.K.J. Leong, and P.J. Gehring; Chem. Biology Res., The Dow Chemical Co., Midland, Mich.
- 11:00 124. **Teratology Studies on Orally Administered Chloroform in the Rat and Rabbit.** D.J. Thompson, S.D. Warner, and V.B. Robinson; The Dow Chemical Co., Zionsville, Ind.
- 11:20 125. **Teratologic and Reproduction Studies with Cyclazocine.** S. Smith, G.L. Kennedy, M.L. Keplinger, J.C. Calandra, and J.A. Nuite; Industrial Bio-Test Labs., Northbrook, Ill., and Nat'l. Inst. of Mental Health, Bethesda, Md.
- 11:40 126. **Teratogenic and Biochemical Aspects of the Interaction of 5-Diazouracil and 5-Fluorouracil in the Mouse Embryo.** R.G. Skalko and R.D. Sax; Birth Defects Inst., N.Y. State Health Dept. and Inst. of Comparative Human Tox., Albany Med. Coll., Albany, N.Y. (Sponsor: L. Golberg).

March 13, 1974

WEDNESDAY MORNING —  
JEFFERSON ROOM—WEST

Chairman: D. J. Ecobichon

Assisted by: T. B. Gaines, R. E. Menzer

- 8:20 127. An Examination of the *In Vitro* Metabolism of Parathion in Rat Lung and Brain. B.J. Norman and R.A. Neal; Center in Environ. Tox., Dept. of Biochem., Vanderbilt Univ. Sch. of Med., Nashville, Tenn.
- 8:40 128. The Influence of Age and Sex on the Toxicity and Multiple Pathways of Metabolism of Methyl Parathion and Parathion in Rats. G.M. Benke and S.D. Murphy; Dept. of Physiology, Harvard Sch. of Public Health, Boston, Mass.
- 9:00 129. Propanil-Induced Methemoglobin Formation in Relation to its Metabolism *In Vitro*. A.Y.K. Chow and S.D. Murphy; Dept. of Physiology, Harvard Sch. of Public Health, Boston, Mass.
- 9:20 130. Interaction of Endrin and Dieldrin with Hepatic Microsomal Cytochrome P-450. J.R. Hayes, R.W. Hartgrove, S.G. Hundley, T.C. Campbell, and R.E. Webb; Depts. of Biochem. and Nutrition and Human Nutrition & Foods, Virginia Polytechnic Inst. and State Univ., Blacksburg, Va.
- 9:40 131. Biochemical Changes Produced in the Liver by Mirex. J.L. Byard, U. Ch. Koepke, R. Abraham, L. Golberg, and F. Coulston; Inst. of Comparative & Human Tox., Albany Med. Coll., Albany, N.Y.
- 10:00 132. Comparative Lindane Metabolism and Enzyme Induction in Rats Pretreated with Eight Different Chlorinated Pesticides. R.W. Chadwick and J.J. Freal; Environmental Protection Agency, Nat'l. Environ. Res. Center, Primate & Pesticides Effects Lab., Research Triangle Park, N.C. (Sponsor: R.S. McCutcheon).
- 10:20 133. Transfer of Endrin Via the Milk in Endrin Susceptible and Resistant Pine Mice and the Resultant Effects on Liver Microsomal Activity in the Neonate. S.G. Hundley, R.W. Hartgrove, Jr., and R.E. Webb; Depts. of Biochem. & Nutrition and Human Nutrition & Foods, Virginia Polytechnic Inst. and State Univ., Blacksburg, Va.
- 10:40 134. Effects of Perinatal Dieldrin Exposure on Hepatic Microsomal Enzymes of Immature and Adult Rats. F.E. Greene, J.T. Stevens, M.R.I. Soliman, and K.A. Oberholser; Dept. of Pharm., The M.S. Hershey Med. Center, Hershey, Penn.
- 11:00 135. Individual and Combined Effects of Mirex and Polychlorinated Biphenyls on Mouse Liver Cells. R. Abraham, U. Ch. Koepke, L. Golberg, and F. Coulston; Inst. of Comparative & Human Tox., Albany Med. Coll., Albany, N.Y.
- 11:20 136. Toxicity Studies of an Insect Juvenile Hormone Analogue in Domestic Animals. H.E. Smalley, J.E. Wright, H.R. Crookshank, and R.L. Younger; Dept. of Agriculture, College Station, Tex.
- 11:40 137. The Toxicological Properties of 4-((4,8-Dimethyldecyl)Oxy)-1,2-(Methylenedioxy)Benzene and 1-((7-Ethoxy-3,7-Dimethyloctyl)Oxy)-4-Ethyl Benzene, Two Insect Juvenile Hormone Mimics. J.M. Norris, C.G. Humiston, B.A. Schwetz, R.J. Kociba, G.C. Jersey, and C.E. Wade; Chem. Biol. Res., The Dow Chemical Co., Midland, Mich. (Sponsor: P.J. Gehring).



March 13, 1974

WEDNESDAY AFTERNOON –  
JEFFERSON ROOM

*Chairman: E. Bingham*

*Assisted by: R. O. McClellan, A. L. Reeves*

- 1:30 138. Enhancement of Effect of Exposure to O<sub>3</sub> and NO<sub>2</sub> by Exercise. D.E. Gardner, J.W. Illing, and D.L. Coffin; Environmental Protection Agency, Research Triangle Park, N.C.
- 1:50 139. Time/Dose Response for NO<sub>2</sub> Exposure in an Infectivity Model. D.L. Coffin, D.E. Gardner, and E.J. Blommer; Environmental Protection Agency, Research Triangle Park, N.C.
- 2:10 140. Histopathologic Effects of Nitrogen Dioxide Exposure and Heat Stress in Cynomolgus Monkeys. W.M. Busey, W.B. Coate, and D.W. Badger; Experimental Pathology Labs., Hazleton Labs., and Nat'l. Inst. of Occupational Safety & Health.
- 2:30 141. Physiological Effects of Nitrogen Dioxide Exposure and Heat Stress in Cynomolgus Monkeys. W.B. Coate and D.W. Badger; Hazleton Labs. and Nat'l. Inst. of Occupational Safety & Health (Sponsor: W.M. Busey).
- 2:50 142. Peripheral Airway Obstruction in Primates Following Long-Term Inhalation Exposure to Coal Dust. W.J. Moorman, T.R. Lewis, and W.D. Wagner; Nat'l. Inst. for Occupational Safety & Health, Cincinnati, Ohio (Sponsor: H.E. Stokinger).
- 3:10 143. Influence of Hypoxia or Hypercapnia during Sensory Irritation by Airborne Chemicals. Y. Alarie and J. Kominsky; Grad. Sch. of Public Health, Univ. of Pittsburgh, Pittsburgh, Penn.
- 3:30 144. Red Cell 2,3-Diphosphoglycerate and Oxygen Toxicity in Rats. J.B. Weissberg and J.D. Crapo; Nat'l. Inst. of Environ. Health Sciences, Research Triangle Park, N.C. (Sponsor: R.L. Dixon).
- 3:50 145. Metal Cytotoxicity: Comparative Studies with Rabbit Alveolar Macrophages and Human Lung Fibroblasts (Strain WI-38). M.D. Waters, D.E. Gardner, and D.L. Coffin; Environmental Protection Agency, Research Triangle Park, N.C.
- 4:10 146. Distribution and Excretion of Radioactivity in the Rat after Intraperitoneal Administration of the Lung-Edemagenic Toxin, 4-Ipomeanol-C<sup>14</sup>. M.R. Boyd, L.T. Burka, B.J. Wilson, and B.V.R. Sastry; Center in Environ. Tox. and Dept. of Pharm., Vanderbilt Univ. Sch of Med., Nashville, Tenn.
- 4:30 147. The Effects of Freon 11 on Isolated Auricles. J.H. Wills and D. Silber; Center of Experimental Pathology & Tox., Albany Med. Coll., Albany, N.Y.
- 4:50 Special Presentation – Monroe Room  
Needs of the WHO Expert Committee on Pesticides Residues for Toxicological Data. F.C. Lu; World Health Organization, Geneva, Switzerland.

March 13, 1974

WEDNESDAY AFTERNOON — MONROE ROOM

*Chairman: V. H. Freed*

*Assisted by: F. L. Lyman, O. E. Paynter*

- 1:30 148. **Statistical Analyses of Clinical Biochemistry Data Obtained from the Pesticide Community Studies.** K.P. Baetcke, A. Peoples, M.F. Cranmer, and D.L. Gaylor; Nat'l. Center for Tox. Res., Jefferson, Ark.
- 1:50 149. **Toxicology of USB 3584.** J.B. Plank, D.C. Lindberg, G.L. Kennedy, M.L. Keplinger, J. C. Calandra, and J.D. Stone; Industrial Bio-Test Labs., Northbrook, Ill., and U.S. Borax Res. Corp., Anaheim, Calif.
- 2:10 150. **Metabolic Studies with USB 3584.** G.L. Kennedy, M.L. Keplinger, O.E. Fancher, J.C. Calandra, and J.D. Stone; Industrial Bio-Test Labs., Northbrook, Ill., and U.S. Borax Res. Corp., Anaheim, Calif.
- 2:30 151. **Toxicity and Reproduction Studies in Quail and Ducks with Dieldrin and USB 3584.** D.H. Jenkins, J.B. Plank, M.L. Keplinger, and J.C. Calandra; Industrial Bio-Test Labs., Northbrook, Ill.
- 2:50 152. **Pathologic Effects of a Preparation of 2,4,5-Trichlorophenoxyacetic Acid on Maternal Mice.** B. Highman and H.J. Schumacher; Nat'l. Center for Tox. Res., Jefferson, Ark. (Sponsor: T.J. Haley).
- 3:10 153. **Failure of Parathion to Alter Male Mouse Reproductive Organ Activity.** J.A. Thomas and M.G. Mawhiney; Dept. of Pharm., West Virginia Univ. Med. Center, Morgantown, W.Va.
- 3:30 154. **Toxicological Studies on the Avicide 3-Chloro-p-Toluidine.** W.C. Felsenstein, R.P. Smith, and R.E. Gosselin; Dartmouth Med. Sch., Hanover, N.H.
- 3:50 155. **Quantitative Aspects of Immunosuppression by Selected Pesticides.** J.C. Street and R.P. Sharma; Depts. of Animal and Veterinary Science, Utah State Univ., Logan, Utah.
- 4:10 156. **Delayed Neurotoxic Potential of a Series of Alkyl Esters of 2,2-Dichlorovinyl Phosphoric Acid in the Chicken.** J.R. Albert and S.M. Stearns; Shell Development Co., Modesto, Calif.
- 4:30 157. **Studies on Dichlorvos-Induced Intestinal Enteritis in the Dog.** V.L. Kirkland, J.R. Albert, and K. Van Kampen; Shell Development Co., Modesto, Calif., and Intermountain Lab., Salt Lake City, Utah.
- 4:50 158. **Needs of the WHO Expert Committee on Pesticide Residues for Toxicological Data.** F.C. Lu; World Health Organization, Geneva, Switzerland.

March 13, 1974

WEDNESDAY AFTERNOON – LINCOLN ROOM

SYMPOSIUM

**Pharmacokinetics/Principles and  
Applications to Toxicology**

*Cochairmen: P. Gehring, T. Shellenberger*

*Assisted by: C. D. Klaassen*

- 1:30      **Introduction.** P.J. Gehring, Dow Chemical Co.,  
Midland, Mich.
- 1:35      **Basics of Pharmacokinetics.** E.R. Garrett; J. Hillis  
Miller Health Center, University of Florida, Gainesville,  
Fla.
- 2:35      **Nonlinear Pharmacokinetics and Dose-Effect  
Responses.** W.J. Jusko; Department of Pharmaceutics,  
State University of New York, Buffalo, N.Y.
- 3:10      **Correlation of Blood and Body Levels of Drugs  
(Chemicals) with Effects.** M. Gibaldi; Department of  
Pharmaceutics, State University of New York, Buffalo,  
N.Y.
- 3:50      **Toxicological Implications of Biopharmaceutics.**  
S.A. Kaplan; Department of Biochemistry and Drug  
Metabolism, Hoffmann-LaRoche, Nutley, N.J.
- 4:25      **Panel Discussion.**
- 4:50      **Special Presentation – Monroe Room. Needs of  
the WHO Expert Committee on Pesticides Residues for  
Toxicological Data.** F.C. Lu, World Health Organiza-  
tion, Geneva, Switzerland.

March 14, 1974

THURSDAY MORNING —  
JEFFERSON ROOM—EAST

Chairman: P. B. Hammond

Assisted by: I. P. Lee, R. J. Weir

- 8:20 159. The Effect of Glutathione Depletion on the Renal Deposition of Methylmercury in Rats. R.J. Richardson and S.D. Murphy; Dept. of Physiology, Harvard Sch. of Public Health, Boston, Mass.
- 8:40 160. Whole Body Half-Life of Methylmercury in Adult Cats. R.F. Willes, J.G. Hollins, F.R. Bryce, S.M. Charbonneau, I.C. Munro, and H.C. Grice; Food Res. Labs., Health Protection Br., Health & Welfare Canada, and Biological Sciences, Nat'l. Res. Council, Ottawa, Canada.
- 9:00 161. Chronic Toxicity of Methylmercury in the Adult Cat. S.M. Charbonneau, I.C. Munro, E.A. Nera, F.A.J. Armstrong, R. F. Willes, and H.C. Grice; Food Res. Labs., Health Protection Br., Health & Welfare Canada, Ottawa, Canada.
- 9:20 162. Toxicity of Methylmercury in Pregnant Rhesus Monkeys. W.J. Dougherty, F. Coulston, and L. Golberg; Int'l. Center of Environ. Safety, Holloman AFB, N.M., and Inst. of Comparative & Human Tox., Albany Med. Coll., Albany, N.Y.
- 9:40 163. The Absorption, Distribution, and Excretion of Orally Administered  $BA^{133}Cl_2$  in Weanling Male Rats. J.J. Clary and R.G. Tardiff; Nat'l. Inst. for Occupational Safety & Health and Environmental Protection Agency, Cincinnati, Ohio.
- 10:00 164. Decreased Antibody Formation in Lead-Exposed Mice. L.D. Koller and S.A. Kovacic; Environ. Health Science Center and the Dept. of Veterinary Med., Oregon State Univ., Corvallis, Ore. (Sponsor: V.H. Freed).
- 10:20 165. Toxicity Produced in Rats Fed Dry Paint Chips for Thirteen Weeks which Contained Different Concentrations and Forms of Lead. T.R. Castles, J.L. Sanyer, J.A. Hoch, H.M. Miller, and J.L. Spigarelli; Midwest Research Inst., Kansas City, Mo.
- 10:40 166. Alterations in Rat Liver and Kidney Cortex Metabolism after Acute and Chronic Exposure to Cadmium. Z. Merali, S. Kacew, and R.L. Singhal; Dept. of Pharm., Univ. of Ottawa, Ottawa, Canada (Sponsor: J.A. Thomas).
- 11:00 167. Some Effects of Cadmium-Induced Hypertension on Vascular Smooth Muscle. R. Golden and R. Hartung; Univ. of Michigan, Ann Arbor, Mich.
- 11:20 168. On the Role of Cadmium-Binding Protein in the Transport and Excretion of Cadmium in the Rat. M.G. Cherian and J.J. Vostal; Dept. of Pharm. & Tox., Univ. of Rochester Sch. of Med. & Dentistry, Rochester, N.Y.
- 11:40 169. Biliary Excretion of Cadmium in the Rat. J.J. Vostal and M.G. Cherian; Dept. of Pharm. & Tox., Univ. of Rochester Sch. of Med. & Dentistry, Rochester, N.Y.

March 14, 1974

THURSDAY MORNING – MONROE ROOM

Chairman: J. M. Fujimoto

Assisted by: C. B. Coutinho, A. M. Guarino

- 8:20 170. Are Fluorocarbon Propellants Metabolized? Studies on <sup>14</sup>C-Labeled Trichlorofluoromethane (F-11) and Dichlorodifluoromethane (F-12) in Beagles and Humans. D.A. Blake and G.W. Mergner; Univ. of Maryland, Sch. of Pharmacy, Baltimore, Md.
- 8:40 171. Kinetics of Uptake and Elimination of Trichlorofluoromethane (F-11) and Dichloro-difluoromethane (F-12) in Beagles and Humans. J. Adir, D.A. Blake, and G.W. Mergner; Univ. of Maryland, Sch. of Pharmacy, Baltimore, Md.
- 9:00 172. Influence of the Physical State of the Plasticizer, Di(2-ethylhexyl) Phthalate (DEHP) on its Biological Disposition and Action. R.J. Rubin and C.O. Schulz; The Johns Hopkins Univ. Sch. of Hygiene & Public Health, Baltimore, Md. (Sponsor: D.A. Blake).
- 9:20 173. Distribution of Dieldrin Following a Single Oral Dose. W.J. Hayes, Jr.; Center in Tox., Dept. of Biochem., Vanderbilt Univ., Nashville, Tenn.
- 9:40 174. Comparative Effect of Stress and Ethanol on Hexobarbital in the Rat: I *In Vitro* Metabolism. II. Chung and D.R. Brown; Univ. of Maryland, Sch. of Pharmacy, Baltimore, Md. (Sponsor: D.A. Blake).
- 10:00 175. Comparative Effect of Stress Alone and in Combination with Ethanol on Hexobarbital (HB) in the Rat: II Pharmacokinetics Studies. J. Adir, H. Chung, and D.R. Brown; Univ. of Maryland, Sch. of Pharmacy, Baltimore, Md. (Sponsor: D.A. Blake).
- 10:20 176. Alteration of Hexobarbital Disposition by Dietary Glucose in Mice. R.B. Forney, Jr., J. Ashmore, and R.B. Forney; Indiana Univ. Sch. of Med., Indianapolis, Ind.
- 10:40 177. Sex Variations in the Biliary and Urinary Excretion of <sup>14</sup>C-Pentobarbital and its Metabolites in Rats. H.S. Buttar, B.B. Coldwell, and B.H. Thomas; Drug Res. Labs., Health Protection Br., Health & Welfare Canada, Ottawa, Canada.
- 11:00 178. Metabolic Disposition of Tilorone Hydrochloride in Mice, Rats, and Dogs. R.H. Hook, J.M. Williams, G.F. Brunzie, and G.J. Wright; Merrell-National Labs., Cincinnati, Ohio.
- 11:20 179. Effect of Acetylsalicylic Acid on the Tissue Distribution and Metabolism of Acetaminophen. B.H. Thomas, W. Zeitz, and B.B. Coldwell; Drug Res. Labs., Health Protection Br., Health & Welfare Canada, Ottawa, Canada.
- 11:40 180. Stimulation of the Development of the Hepatic Excretory Mechanism for Ouabain in Newborn Rats with Microsomal Enzyme Inducers. C.D. Klaassen; Univ. of Kansas Med. Center, Kansas City, Kans.

March 14, 1974

THURSDAY MORNING – LINCOLN ROOM

Chairman: D. Couri

Assisted by: M. Hite, L. J. Jenkins

- 8:20 181. Experience with Isolated Canine Livers Perfused with a Heart-Lung Machine. H. Reinert; Centre de Recherche Pfizer, Amboise, France.
- 8:40 182. The Application of Image Analysis in Pathology and Toxicology. A.J. Newman; Huntingdon Research Centre, Huntingdon, England (Sponsor: P.M. Newberne).
- 9:00 183. Application of Radiorespirometry as a Fast Screening Method for Toxic Substances. I. Effect of Methylmercurychloride. S.D. Lee, R.M. Danner, L. McMillan, and R. Illtis; Nat'l. Environ. Res. Center, Cincinnati, Ohio (Sponsor: J.W. Clayton, Jr.).
- 9:20 184. Application of Radiorespirometry as a Fast Screening Method for Toxic Substances. II. Mathematical Modeling and Computer Simulation for Prediction of Effects. R. Illtis and S.D. Lee; Environmental Protection Agency, Nat'l. Environ. Res. Center, Cincinnati, Ohio (Sponsor: J.W. Clayton, Jr.).
- 9:40 185. Structure-Activity Relationships for Diabetogenic Activity of Nitrosourea Compounds in Mice. T. Anderson, M. McMenamin, P.S. Schein; Nat'l. Cancer Inst., Bethesda, Md.
- 10:00 186. Effects of  $CCl_4$  Liver Damage on Biliary Absorption and Re-Excretion of Compounds Administered to Rats by Retrograde Intrahepatic Injection (RII). R.E. Peterson and J.M. Fujimoto; Med. Coll. of Wisconsin, Milwaukee, Wisc.
- 10:20 187. Effect of Isopropanol Pretreatment on the Hepatotoxic Response to Several Chemicals. G.L. Plaa, G.K. Hanasono, G.J. Traiger, and H.P. Witschi; Dept. of Pharm., Univ. of Montreal, Montreal, Canada.
- 10:40 188. Effect of Carbon Tetrachloride on the Membranous and Polysomal Components of the Liver Endoplasmic Reticulum. J.A. Castro, M.I. Diaz Gomez, E.C. de Ferreyra, M.C. Villarruel, N. D'Acosta, C.R. de Castro, and O.M. de Fenos; CITEFA, Zufriategui y Varela, V. Martelli. Pcia de Bs As. Argentina.
- 11:00 189. On the Glucose Protection against Alloxan-Induced Insulin Release from Isolated Mouse Pancreatic Islets. W. Fung, J.H. Mennear; Purdue Univ., W. Lafayette, Ind.
- 11:20 190. Interspecies Variability in Metabolism of Ingested Sulfite. A.F. Gunnison, J.T. Gunnison, and E.D. Palmes; N.Y. Univ. Med. Center, Inst. of Environ. Med., New York, N.Y.
- 11:40 191. An *In Vitro* Method to Determine Binding of Halothane- $1-^{14}C$  in the Liver. L.C. Howard, D.A. Blake, and D.R. Brown, Univ. of Maryland, Sch. of Pharmacy, Baltimore, Md.

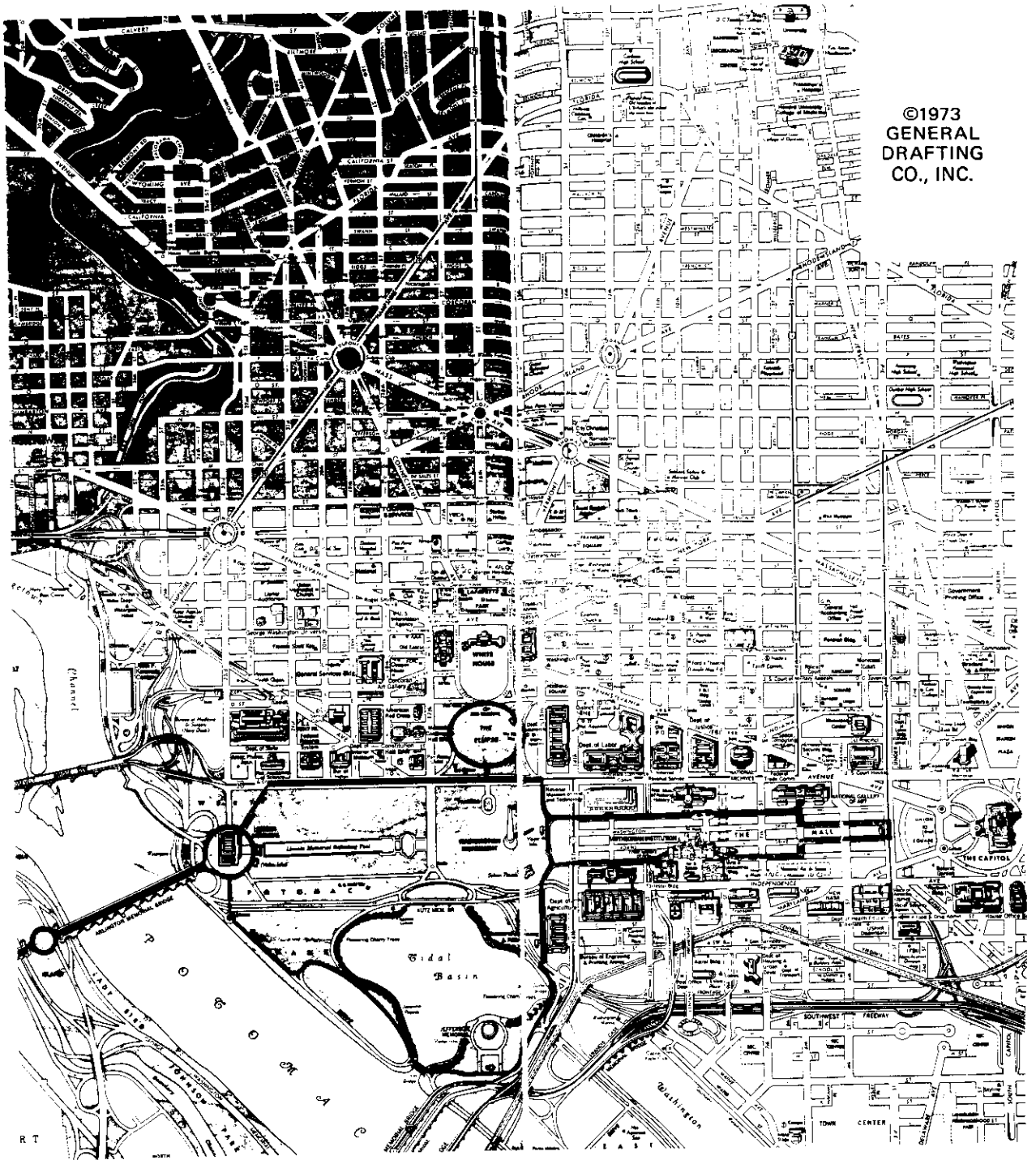
March 14, 1974

THURSDAY MORNING –  
JEFFERSON ROOM–WEST

*Chairman: Leo Friedman*

*Assisted by: A. W. Hayes, K. S. Rao*

- 8:20 192. Absorption and Disposition of Carrageenan Fractions. R. Abraham, L. Golberg, and F. Coulston; Inst. of Comparative & Human Tox., Albany Med. Coll., Albany, N.Y.
- 8:40 193. The Fate of 2,2,4-Trimethyl-1,3-Pentanediol (TMPD) Orally in Rats and Percutaneously in Rabbits, Guinea Pigs, and Man. B.D. Astill and D.W. Fassett; Eastman Kodak Co., Rochester, N.Y.
- 9:00 194. Progress of Chronic Toxicity Studies with Brominated Soybean Oil. D.E. Gordon, J.B. Plank, G.L. Kennedy, M.L. Keplinger, J.C. Calandra; Industrial Bio-Test Labs., Northbrook, Ill.
- 9:20 195. The Oral Toxicology of Dichlorodifluoromethane. H. Sherman, J.R. Barnes, and E.F. Stula; Haskell Lab. for Tox. and Ind. Med., E.I. duPont de Nemours & Co., Newark, Dela.
- 9:40 196. Preliminary Assay for the Teratogenicity of Mycotoxins. A.W. Hayes, R.D. Hood, and K. Snowden; Depts. of Microbiology and Biology, The Univ. of Alabama, University, Ala.
- 10:00 197. Some Effects of Graded Levels of Dietary Copper Sulfate Supplementation in Broiler Chickens. M.J. Norvell, C.C. Calvert, M.C. Thomas, and W.D. Goatcher; Food & Drug Admin., Rockville, Md., and Agricultural Environ. Quality Inst., U.S. Dept. of Agriculture, Beltsville, Md. (Sponsor: D.J. Wagstaff).
- 10:20 198. Studies on Impurities in Commercial Saccharin. R. Lacombe, B. Stavric, C.A. Moodie, D.R. Stoltz, R.F. Willes, and I.C. Munro; Food Res. Labs., Health Protection Br., Health & Welfare Canada, Ottawa, Canada (Sponsor: H.C. Grice).
- 10:40 199. Assessment of the Carcinogenicity of Commercial Saccharin. I.C. Munro, C.A. Moodie, and H.C. Grice; Food Res. Labs., Health Protection Br., Health & Welfare Canada, Ottawa, Canada.
- 11:00 200. Combined Chronic Feeding and Three-Generation Reproduction Study of Sodium Saccharin in the Rat. J.M. Taylor and Leo Friedman; Food & Drug Admin., Washington, D.C.
- 11:20 201. Further Observations on the Metabolism of Saccharin in Man. J.L. Byard, E.W. Golberg, and F. Coulston; Inst. of Comparative & Human Tox., Albany, N.Y.
- 11:40 202. Evaluation of the Toxicologic Potential of a Nutritive Sweetener (Aspartame) in the Dog. K.S. Rao and R.G. McConnell; Searle Labs., Chicago, Ill.





**Notes:**

