

The Society of Toxicology

14th Annual Meeting Program 1975

Williamsburg Lodge
Williamsburg, Virginia
March 9-13, 1975



MEETING INFORMATION

REGISTRATION

Registrar

Herman A. Birnbaum

Preregistration forms available from Secretary

R. A. Scala
Exxon Corporation
Medical Department
P.O. Box 45
Linden, New Jersey 07036
(201) 474-2422

Registration Desk

Williamsburg Lodge – East Gallery

Sunday, March 9, 1975	2:00 p.m. – 10:00 p.m.
Monday, March 10, 1975	8:00 a.m. – 4:00 p.m.
Tuesday, March 11, 1975	8:30 a.m. – 5:00 p.m.
Wednesday, March 12, 1975	8:30 a.m. – 5:00 p.m.

Registration Fees

Society of Toxicology Members	\$30.00
Nonmembers	40.00
Predoctoral Full-Time Students	5.00

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 (East Gallery), price \$2.

Locations (see centerfold map)

Hotel Registration - front desk of Lodge, Inn or Motor House
Scientific Sessions - Auditorium, Tidewater Room, ABC Room, North Ballroom
Poster Sessions - North Ballroom
Press Room - Room 3 (main level, adjacent to North Gallery)

SCHEDULE OF MEETINGS

Formal Presentations – Auditorium, Tidewater Room, ABC Room, North Ballroom

Morning meetings 8:45 a.m.–11:55 a.m.
Afternoon meetings 1:00 p.m.– 4:10 p.m. Monday
1:00 p.m.– 4:10 p.m. Tuesday
1:30 p.m.– 4:40 p.m. Wednesday

Poster Sessions – North Ballroom

I Monday March 10 8:45 a.m.–10:15 a.m.
II Monday March 10 10:30 a.m.–12:00 noon
III Wednesday March 12 8:45 a.m.–10:15 a.m.

Symposia

Monday March 10, 1:00 p.m. – Auditorium
Comparative Toxicology
Tuesday March 11, 1:00 p.m. – Auditorium
Some Newer Developments in Respiratory Toxicology
Wednesday March 12, 1:00 p.m. – Auditorium
The Expert Witness

Annual Business Meeting

Monday March 11 at 4:30 p.m. – Auditorium

Committee Meetings

Room G
Times will be posted

SOCIAL EVENTS

Banquet

Tuesday March 11 at 7:30 p.m. – Virginia Room

Speaker:

Tickets available at Registration Desk

Mixer and Reception

Monday March 10, 6:30 p.m.-8:00 p.m.

North Gallery – 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 for coffee – East Lounge

Information on events and places of interest will be available.

SPECIAL SERVICES

Placement Service – Room H

Monday, Tuesday, Wednesday (March 10,11,12)

10:00 a.m.–noon and 2:00 p.m.–4:00 p.m.

Other hours by appointment

John G. Keller, Director

Press Facilitite

Press Facilities – Room 3

Monday, Tuesday, Wednesday (March 10,11,12)

8:00 a.m.–5:00 p.m.

Thursday (March 13)

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.

OFFICERS (1974-1975)

Sheldon D. Murphy *President*
Seymour L. Friess *President-Elect*
Joseph F. Borzelleca *Past-President*
Robert A. Scala *Secretary*
Hans P. Drobeck *Treasurer*

COUNCIL

(Consists of officers and four elected members)

Paul A. Mattis (1973-1975)
Edward D. Palmes (1973-1975)
Julius M. Coon (1974-1976)
Harold N. MacFarland (1974-1976)

COMMITTEES 1974-1975

Awards Committee

Joseph F. Borzelleca, *Chairman*
Julius M. Coon
Harold N. MacFarland

Board of Publications

Mary O. Amdur (1972-1975), *Chairwoman*
Gabriel L. Plaa *Managing Editor*
Sheldon D. Murphy *President*
Herbert H. Cornish (1973-1976)
Bernard A. Becker (1974-1977)
Seymour L. Friess *Auditor*

Education Committee

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John Autian (1973-1975)
John Doull (1974-1976)
Gerald N. Wogan (1974-1976)

Finance Committee

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Gale C. Boxill (1973-1975)
Clifford I. Chappel (1973-1975)
Perry J. Gehring (1974-1976)
Anne M. Wolven (1974-1976)

Membership Committee

Frederick Sperling (1972-1975), *Chairman*
Herbert Blumenthal (1973-1976)
Robert A. Neal (1974-1977)

Nominating Committee

Victor A. Drill, *Chairman*
Bernard D. Asfill
James R. Fouts
Harold C. Grice
Sidney Laskin

Program Committee

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Herman A. Birnbaum (*Registrar*)
A. Wallace Hayes
Margaret Hitchcock
Stephen Korp
Robert E. Menzer
Robert A. Scala
Thomas E. Shellenberger
Richard S. Waritz
Hanspeter R. Witschi

Technical Committee

Raymond D. Harbison, *Co-chairman*
George Levinkas, *Co-chairman*
Evelyn G. Burtis, (*Chairwoman*,
Subcommittee on Regulatory Affairs)
Rolf Hartung
K. S. Khera
Stanley M. Kurtz
John J. Lech
John F. Noble
Paul O. Nees
Robert G. Tardiff
William S. Upholt
Elizabeth K. Weisburger
Benjamin R. Zeitlin

**Advisory Committee on Acquisition of
Toxicological Data on Pesticides for Food Additives
Unit, World Health Organization**

Harold C. Grice, *Chairman*
Sheldon D. Murphy, *Co-chairman*
Milton Eisler
William Durham
W. J. Hayes
Frank C. Lu
Donald D. McCollister
Emil Poulsen
Clara H. Williams

Committee for Legislative Assistance

Joseph F. Borzelleca, *Chairman*
Victor A. Drill
W. J. Hayes
Paul A. Mattis
Sheldon D. Murphy
Robert L. Roudabush

**Committee on Ethics of Animal and Human
Experimentation in Toxicology**

Paul A. Mattis, *Chairman*
Frank G. Standaert, *Co-chairman*
William D'Aguzzo
John Doull
James W. Newberne
John A. Zapp

**Committee to Review Protocols
on Preclinical Animal Testing**

D. D. McCollister, *Chairman*
Paul A. Mattis, *Council Representative*
Robert Beliles
David Blake
Robert Diener
John Noble
Geoffrey Woodard
Roger Yeary

PAST PRESIDENTS – SOCIETY OF TOXICOLOGY

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
Joseph F. Borzelleca 1973-1974

SOCIETY OF TOXICOLOGY AWARDS

Merit

1966 H. F. Smyth, Jr.
1966 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
1974 W. B. Deichmann

Achievement

1967 G. L. Plaa
1968 A. H. Cooney
1969 S. S. Epstein
1970 S. D. Murphy
1971 Y. Alarie
1972 R. L. Dixon
1973

Frank R. Blood

1974 M. F. Cranmer
1974 Y. Alarie

APPOINTMENTS

Historian

Harry W. Hays

Placement

John G. Keller

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 Scientific Advisory Board, National Center for Toxicological Research

Robert A. Scala

Liaison with European Society of Toxicology

Leon Golberg

Bo Holmstedt

Liaison with American Industrial Hygiene Association

Seymour L. Friess

Sheldon D. Murphy

Robert A. Scala

Liaison with American Society for Pharmacology and Experimental Therapeutics

Joseph F. Borzelleca

John J. Burns

David P. Rall

Liaison with Environmental Mutagens Society

John H. Weisburger

Liaison with National Society of Medical Research

Paul J. Garvin

Liaison Member, Z-37 Committee

Harold N. MacFarland

FUTURE MEETINGS – SOCIETY OF TOXICOLOGY

<u>Meeting Number</u>	<u>Year</u>	<u>Dates</u>	<u>Location</u>
15	1976	March 14-18	Marriott Atlanta, Ga.
16	1977	March 27-31	Royal York Toronto, Ontario
17	1978	March 12-16	Hyatt Regency San Francisco, Ca.
18	1979	March 11-15	Marriott New Orleans, La.
19	1980	March	London, England
20	1981	March 8-12	Washington Hilton Washington, D.C.
21	1982	March 7-11	Sheraton Boston Boston, Mass.

March 10, 1975

MONDAY MORNING – AUDITORIUM

“Teratogenic Effects”

Chairman: F. Coulston

Assisted by: J.J. McPhillips, B.A. Jackson

- 8:45 1. Is Red Dye #2 Teratogenic? A Joint Government-Industry Approach to a Toxicological Problem. J.F. Holson, Jr., T.B. Gaines, H.J. Schumacher and M.F. Cranmer, National Center for Toxicological Research, Jefferson, Arkansas.
- 9:05 2. Teratologic Study in Dogs with FD & C Red No. 2. K. Mastalski, D.H. Jenkins, J.B. Plank, F.K. Kinoshita, M.L. Keplinger and J.C. Calandra, Industrial Bio-Test Laboratories, Inc., Northbrook, Ill.
- 9:25 3. Teratogenic Potential of Noise in Mice and Rats. C.A. Kimmel, R.O. Cook and R.E. Staples, National Institute of Environmental Health Sciences, Research Triangle Park, North Carolina.
- 9:45 4. Teratologic Evaluation of Zinc OMADINE(R) When Applied Dermal on Yorkshire Pigs. J.H. Wedig, G.L. Kennedy, D.H. Jenkins, R. Henderson and M.L. Keplinger, Olin Research Center, New Haven Connecticut and Industrial Bio-Test Laboratories, Inc., Northbrook, Illinois.
- 10:05 5. Comparative Embryotoxicity and Teratogenicity of Various Tranquilizing Agents in Mice, Rats, Rabbits, and Rhesus Monkeys. K.T. Szabo, M.E. DiFebbo, Y.J. Kang, A.K. Palmer and R.L. Brent, Smith Kline & French Laboratories, Philadelphia, Pennsylvania, Huntingdon Research Centre, Huntingdon, England and Stein Research Center, Thomas Jefferson University, Philadelphia, Pennsylvania.
- 10-MINUTE BREAK
- 10:35 6. Teratogenicity of 2,3,7,8-Tetrachlorodibenzo-p-Dioxin in CF-1 Mice. F.A. Smith, B.A. Schwetz and P.J. Gehring, Dow Chemical U.S.A., Midland, Michigan.
- 10:55 7. Reproduction and Teratologic Studies with Halothane and Forane. S. Smith, G.L. Kennedy, M.L. Keplinger and J.C. Calandra, Industrial Bio-Test Laboratories, Inc., Northbrook, Illinois.
- 11:15 8. Teratogenicity Studies on Halogenated Benzenes (Pentachloro-, Pentachloronitro- and Hexabromo-) in Rats. K.S. Khera and D.C. Villeneuve, Health Protection Branch, National Health and Welfare, Ottawa, Canada.

March 10, 1975

MONDAY MORNING – TIDEWATER ROOM

“Toxicity of Metals”

Chairman: F.W. Weir

Assisted by: T. Kuiper-Goodman, H.E. Swann

8:45 9. Synthesis and Study of Some New Chelating Agents to Antagonize Methylmercury-Induced Toxicity. M.M. Jones and R.D. Harbison, Center in Toxicology, Vanderbilt Medical Center, Nashville, Tenn.

9:05 10. Toxic Effects of Methylmercury in Infant Monkeys (*Macaca Irus*). J.F. Truelove, R.F. Willes and I.C. Munro, Health Protection Branch, Health and Welfare Canada, Ottawa, Canada.

9:25 11. Effect of Methylmercury on Electroencephalograms of Cats. R.F. Willes, J.F. Truelove, D. Krewski and I.C. Munro, Health Protection Branch, Health and Welfare Canada, Ottawa, Canada.

9:45 12. Effect of Spironolactone on the Distribution of Mercury. C.D. Klaassen, University of Kansas Medical Center, Kansas City, Kansas.

10:05 13. Hypersensitivity to Beryllium in Guinea Pigs. M.J. Palazzolo and A.L. Reeves, Wayne State University School of Medicine, Detroit, Michigan.

10-MINUTE BREAK

10:35 14. Effect of Selenium on Cadmium-Induced Toxicity in Rats. Z. Merali and R.L. Singhal, Department of Pharmacology, University of Ottawa, Ottawa, Can.

10:55 15. Pharmacological and Toxicological Effects of Alkali and Alkaline Earth Metal Ions as Measured by Deprivation-Induced Fluid Consumption. J.E. Zabik, B.R. Fitsch and R.P. Maickel, Department of Pharmacology, Indiana University, Bloomington, Indiana.

11:15 16. Acute Lethality of Selected Heavy Metals in Spontaneously Hypertensive Rats. S.C. Lewis, Department of Toxicology, Indiana University School of Medicine, Indianapolis, Indiana (Sponsor: R.B. Forney).

11:35 17. Absorption and Tissue Distribution of Inorganic Lead in the Developing Infant Monkey (*Macaca Irus*). I.C. Munro, R.F. Willes and J.F. Truelove, Health Protection Branch, Health and Welfare Canada, Ottawa, Canada.

March 10, 1975

MONDAY MORNING – ABC ROOM

“Hepatic Processes I”

Chairman: R.A. Neal

Assisted by: E. Pfitzer, P. Denine

- 8:45 18. **In Vitro Enzymatic Defluorination of 2,2-Dichloro-1,1-difluoroethyl Methyl Ether by Rat Liver Extracts.** F.D. Baker, W.A. Warren and J. Barron, New York State Department of Health, Albany, New York (Sponsor: L. Golberg).
- 9:05 19. **Effect of Acetaminophen-Induced Hepatotoxicity on the Metabolism and Biliary Excretion of 35S-Bromosulfophthalein.** H.S. Buttar, Health Protection Branch, Health and Welfare Canada, Ottawa, Canada (Sponsor: B.B. Coldwell).
- 9:25 20. **Early Liver Changes Produced by Mirex and Their Reversibility.** J.L. Byard and K.A. Pittman, Department of Environmental Toxicology, University of California, Davis, California and Institute of Comparative and Human Toxicology, Albany Medical College, Albany, New York.
- 9:45 21. **Comparative Ultrastructural and Cytochemical Studies in Livers of Mice, Rats and Monkeys Fed Various Levels of Mirex.** J.C. Fulfs, R. Abraham and F. Coulston, Institute of Comparative and Human Toxicology, Albany Medical College, Albany, New York.
- 10:05 22. **The Role of Microsomal Metabolism of Nitrobenzene in Methemoglobin Formation.** A.M. Kaplan and K.L. Khanna, University of Michigan, Ann Arbor, Michigan (Sponsor: R. Hartung).
- 10-MINUTE BREAK
- 10:35 23. **The Effect of Technical and 99% Pure Pentachlorophenol on the Rat Liver. Light Microscopy and Ultrastructure.** R.D. Kimbrough and R.E. Linder, Center for Disease Control, Atlanta, Georgia and Environmental Protection Agency, Research Triangle Park, North Carolina.
- 10:55 24. **Bioactivation of 1-Nitronaphthalene.** D. Johnson and K. Khanna, University of Michigan, Ann Arbor, Michigan (Sponsor: R. Hartung).
- 11:15 25. **Effect of 2-Butanol and 2-Butanone on Rat Hepatic Ultrastructure and Microsomal Drug Metabolizing Enzyme Activity.** G.J. Traiger, J.V. Bruckner and P.H. Cooke, Department of Pharmacology and Toxicology, University of Kansas, Lawrence, Kansas (Sponsor: D. Wenzel).
- 11:35 26. **Hepatotoxicity Produced by the Lung-Toxic Furanoterpenoid, 4-Ipomeanol, After Mixed-Function Oxidase Induction: Reversal of Target Organ for Toxicity and Covalent Binding in Rats Pretreated with 3-Methylcholanthrene.** M.R. Boyd, Center in Environmental Toxicology, Vanderbilt University School of Medicine, Nashville, Tennessee (Sponsor: B.J. Wilson)

March 10, 1975
MONDAY MORNING – NORTH BALLROOM
“Poster Session I”

8:45 – 10:15

175. Aminoaciduria and Proteinuria in Rats after Parenteral Administration of Ni(II). P.H. Gitlitz, F.W. Sunderman, Jr. and P. Goldblatt, University of Connecticut School of Medicine, Farmington, Connecticut.

176. Effects of Lead on the Induction of Hepatic Drug Metabolizing Enzymes by Phenobarbital and 3,4-Benzopyrene. C. Chow and H. Cornish, Interdepartmental Toxicology Program, University of Michigan, Ann Arbor, Michigan.

177. The Metabolism of 3H-Benzene in the Mouse. L.S. Andrews, E.W. Lee, J. Kocsis, C. Witmer and R. Snyder, Thomas Jefferson University, Philadelphia, Pennsylvania.

178. Metabolism of Alkyl Polyethoxylates by the in situ Perfused Rat Liver. R.B. Drotman, The Procter and Gamble Company, Miami Valley Laboratories, Cincinnati, Ohio (Sponsor: L.W. Beck).

179. The Effect of Hyperbilirubinemia on the Plasma Clearance of Indocyanine Green or Sulfobromophthalein. R.A. Yeary, K.J. Wise and D.R. Davis, Department of Veterinary Physiology and Pharmacology, Ohio State University, Columbus, Ohio.

180. Dehydrogenation, A Previously Unreported Pathway of Lindane Metabolism in Mammals. R.W. Chadwick, L.T. Chuang and K. Williams, Environmental Protection Agency, Research Triangle Park, North Carolina (Sponsor: W.F. Durham).

March 10, 1975

MONDAY MORNING – NORTH BALLROOM
"Poster Session II"

10:30 – 12:00

181. Interaction of Degraded Iota Carrageenans with Model Membrane Systems. E.P. Pittz, L. Golberg and F. Coulston, Institute of Comparative and Human Toxicology, Albany Medical College, Albany, N.Y.

182. Cell Proliferation in Mouse Lung Following Intraperitoneal Administration of Butylated Hydroxytoluene. H.P. Witschi and M.G. Cote, Department of Pharmacology, University of Montreal, Montreal, Quebec, Canada.

183. Modification of the Liver Effects of Two Fluorinated Ethanes. J.P.F. Murphy, E.W. Van Stee and K.C. Back, Aerospace Medical Research Laboratory, Wright-Patterson Air Force Base, Ohio

184. The Toxicity of Inhaled $^{239}\text{PuO}_2$ in Immature, Young Adult and Aged Syrian Hamsters. C.H. Hobbs, J.A. Mewhinney, D.O. Slauson, R.O. McClellan and J.J. Miglio, Inhalation Toxicology Research Institute, Lovelace Foundation, Albuquerque, New Mexico.

185. An Evaluation of Petroleum Distillates as Aspiration Hazards in Rats. R.E. Osterberg, R. Johnson, G. Bierbower and J. McLaughlin, Jr., Consumer Product Safety Commission, Washington, D.C.

186. Safety Evaluation of Novel Sources of Protein. B.L. Oser, Food and Drug Research Laboratories, New York, New York.

187. Transplacental Effects of Drugs on Hearing, Vision and Behavior. P.S. Bourdois, J. Junghani, J. Perraud and H. Reinert, Centre de Recherche Pfizer, Amboise, France.

March 10, 1975

MONDAY AFTERNOON – AUDITORIUM

“Symposium Comparative Toxicology”

Comparative toxicology covers a vast area of research and in view of this the symposium can only discuss a few topics in the field. Each topic will address itself to the following three areas: 1) a discussion of species differences in the metabolism and/or pathologic effects of foreign compounds and the extrapolation of data obtained in lower animals to that expected in man; 2) identification of particular cells or organs of a given species which have unique features that render them especially suitable for toxicologic screening; 3) identification of areas that need further development which will ultimately provide a basis for more rational decisions regarding the efficacy or safety of foreign compounds.

- 1:00 **Introductory Remarks** - David Rall, National Institute for Environmental Health Sciences, Research Triangle Park, North Carolina.
- 1:05 **An Overview of the Interpretation of Toxic Effects of Drugs in Animals and the Extrapolation of Such Data to Humans** - H.P.K. Agersborg, Wyeth Laboratories, Radnor, Pennsylvania.
- 1:50 **Species Differences in the Toxicology of Food Additives and Other Involuntarily Ingested Foreign Compounds** – Leon Goldberg, Albany Medical College, Albany, New York.
- 2:35 **Species Differences in the Teratogenic Effects of Food Additives and Drugs** - James Wilson, University of Cincinnati, Cincinnati, Ohio.
- 3:20 **Summary and Perspectives** - David Rall
- 3:45 **Discussion**
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- 4:30 **Annual Business Meeting - Auditorium**
Members of the Society of Toxicology

March 10, 1975

MONDAY AFTERNOON – TIDEWATER ROOM

“Pulmonary/Inhalation”

Chairman: R.T. Drew

Assisted by: L. Jenkins, K. Back

- 1:00 27. **Inhalation Toxicity Studies of Vinyl Chloride Monomer in Phenobarbital or Aroclor R 1254 Pretreated Rats.** R.J. Jaeger, E.S. Reynolds, S. Szabo, M.T. Moslen and S.D. Murphy, Department of Physiology, Kresge Center for Environmental Health, Harvard School of Public Health and Departments of Pathology, Peter Bent Brigham Hospital and Harvard Medical School, Boston, Massachusetts.
- 1:20 28. **Acute Inhalation Toxicity of Vinyl Chloride Monomer: Morphologic and Biochemical Effects of Pretreatment with Inducers of Hepatic Mixed Function Oxidase System.** M.T. Moslen, R.J. Jaeger, S. Szabo and E.S. Reynolds, Departments of Pathology, Peter Bent Brigham Hospital and Harvard Medical School, and Departments of Physiology, Kresge Center for Environmental Health, Harvard School of Public Health, Boston, Massachusetts.
- 1:40 29. **Results of a Vinyl Chloride-Teratology Study in Mice, Rats and Rabbits.** B.A. Schwetz, B.K.J. Leong, F.A. Smith, M. Balmer and P.J. Gehring, Dow Chemical Company, Midland, Michigan.
- 2:00 30. **A Laboratory Aerosol System for Conducting Inhalation Toxicity Studies.** B.S. Brar, C.E. Traitor, C.R. Boshart and J.F. Noble, Lederle Laboratories Division of American Cyanamid Company, Pearl River, New York.
- 2:20 31. **Bronchial Clearance of Radioactive Iron Oxide Particles in Normal Cynomolgus Monkeys.** B.S. Brar, J. Morrison, C.E. Traitor and C.R. Boshart, Lederle Laboratories Division of American Cyanamid Company Pearl River, New York.
- 10-MINUTE BREAK**
- 2:50 32. **In Vitro Studies of Rat Pulmonary Alveolar Macrophages Subsequent to Intrapulmonary Instillation of Lead (PbO).** P. Agosta, C.A. Fischer, E.J. Kaminski and J.C. Calandra, Industrial Bio-Test Laboratories, Inc., Northbrook, Illinois.
- 3:10 33. **Studies on the Mechanism of Tolerance Development to the Pulmonary Toxicity of 4-Ipomeanol.** M.R. Boyd, L.T. Burka, B.A. Osborne and B.J. Wilson, Vanderbilt University School of Medicine, Nashville, Tennessee.
- 3:30 34. **Embryo and Fetotoxicity of Inhaled Trichloroethylene, Perchloroethylene, Methylchloroform and Methylene Chloride in Mice and Rats.** B.K.J. Leong, B.A. Schwetz and P.J. Gehring, Dow Chemical U.S.A., Midland, Michigan.
- 3:50 35. **The Accumulation of Paraquat by the Lung and the Relevance of This to the Treatment of Paraquat Poisoning.** M.S. Rose, L.L. Smith and I. Wyatt, Imperial Chemical Industries Limited, Alderley Park, Nr Macclesfield, Cheshire, England.
- 4:30 **Annual Business Meeting—Auditorium
Members of The Society of Toxicology**

March 10, 1975

MONDAY AFTERNOON – ABC ROOM

“Enzyme Systems”

Chairman: R.W. Newburgh

Assisted by: T.O. King, N.V. Owen

- 1:00 36. Phospholipase C From *Aspergillus Flavus*, D.S. Sawhney, Food and Drug Administration, Washington, D.C. (Sponsor: J.M. Taylor).
- 1:20 37. A Proposed Mechanism of the Action of Carbon Disulfide on Dopamine-B-Hydroxylase. M.J. McKenna and V. DiStefano, University of Rochester School of Medicine and Dentistry, Rochester, New York (Sponsor: D.R. Taves).
- 1:40 38. Antihemolytic and Anticoagulant Activity of Some Substituted Thiosemicarbazides and Their Inhibition of NAD-Dependent Oxidations and Monoamine Oxidase. C. Dwivedi, S.S. Parmar and R.D. Harbison, Vanderbilt University School of Medicine, Nashville, Tennessee.
- 2:00 39. Stimulation and Suppression of Hepatic and Extrahepatic Microsomal Mixed-Function Oxidases (MFOs) by 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD). G.E.R. Hook, B.A. Fowler, T.C. Orton and G.W. Lucier, National Institute of Environmental Health Sciences, Research Triangle Park, North Carolina (Sponsor: J.R. Fouts).
- 2:20 40. Species Difference in the Induction and Inhibition of Drug Metabolizing Enzymes by Rifampin. D. Pessayre and P. Mazel, George Washington University Medical Center, Washington, D.C.
- 10-MINUTE BREAK
- 2:50 41. The Effects of Fenthion and Some of Its Metabolites on Enzymic and Functional Activities in the Cat. G.E. Groblewski, S. Lj. Vitorovic, J. Ngatia, J.H. Wills and F. Coulston, Institute of Comparative and Human Toxicology, Albany Medical College, Albany, New York.
- 3:10 42. In Vitro Inactivation of Dichlorvos (DDVP) and Inhibition of Mouse Tissue Esterases. M. Ehrlich and S.D. Cohen, University of Connecticut, Storrs, Connecticut.
- 3:30 43. Aldrin Epoxidase and Dihydroisodrin Hydroxylase in Hepatic Needle Biopsy Specimens: Assay and Properties. R.I. Krieger, S.J. Gee, J.L. Miller and T. Thongsinthusak, Department of Environmental Toxicology, University of California, Davis, California, (Sponsor: J.L. Byard).
- 3:50 44. Inhibition of Neural Membrane Adenosinetriphosphatases by Organophosphates. H.R. Brown and R.P. Sharma, Utah State University, Logan, Utah.
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- 4:30 Annual Business Meeting—Auditorium
Members of The Society of Toxicology

March 10, 1975

MONDAY AFTERNOON – NORTH BALLROOM

“Hearing/Visual”

Chairman: E.F. Keith

Assisted by: D. Hood, J.D. MacEwen

- 1:00 45. **Hearing Loss Associated with Chronic Lead Poisoning in Squirrel Monkeys.** C. Wilpizeski, Jefferson Medical College, Philadelphia, Pennsylvania (Sponsor: A. Triolo).
- 1:20 46. **Retinal Degeneration in Rats with Elevated Body Temperature Exposed to Fluorescent Illumination.** W.G. Bush and R.L. Swarm, Lincoln University, Pennsylvania and Hoffman-La Roche Inc., Nutley, New Jersey.
- 1:40 47. **Effects of Ethyl and Methyl Cyanoacrylate Adhesives on Albino Rabbit Eyes.** V.M. Seabaugh, G.W. Bierbower, C.A. Hoheisel, J. McLaughlin, Jr., Consumer Product Safety Commission, Washington, D.C.
- 2:00 48. **Ocular Toxicity in Beagle Dogs with an Experimental Fluoromethane Sulfonanilide Sympathomimetic Agent.** G.R. Steffen, J.D. Henderson, Jr., R.A. Nelson, M.T. Case and D.R. Saunders, Riker Laboratories, Inc., 3M Company, St. Paul, Minnesota.
- 2:20 49. **Acute Toxicity and Effect of Dithiobiuret and Acrylamide on Rotorod Performance in Rats and Mice.** R.E. Peterson and N.K. Sheth, Medical College of Wisconsin and Wood VA Center, Wood, Wisconsin (Sponsor: J.M. Fujimoto).

10-MINUTE BREAK

- 2:50 50. **The Effects of Low-Level Dieldrin Exposure on the EEG and Learning Ability of the Squirrel Monkey.** G.A. Van Gelder and W.L. Cunningham, Behavioral Toxicology Laboratory, Iowa State University, Ames, Iowa.
- 3:10 51. **Acute Behavioral Changes Induced in the Rat by the Intracerebroventricular Administration of Thyrotropin Releasing Factor (TRF) and Somatostatin.** M.L. Cohn, University of Pittsburgh School of Medicine, Pittsburgh, Pennsylvania (Sponsor: M.Fisler).
- 4:30 **Annual Business Meeting—Auditorium**
Members of The Society of Toxicology.

March 11, 1975

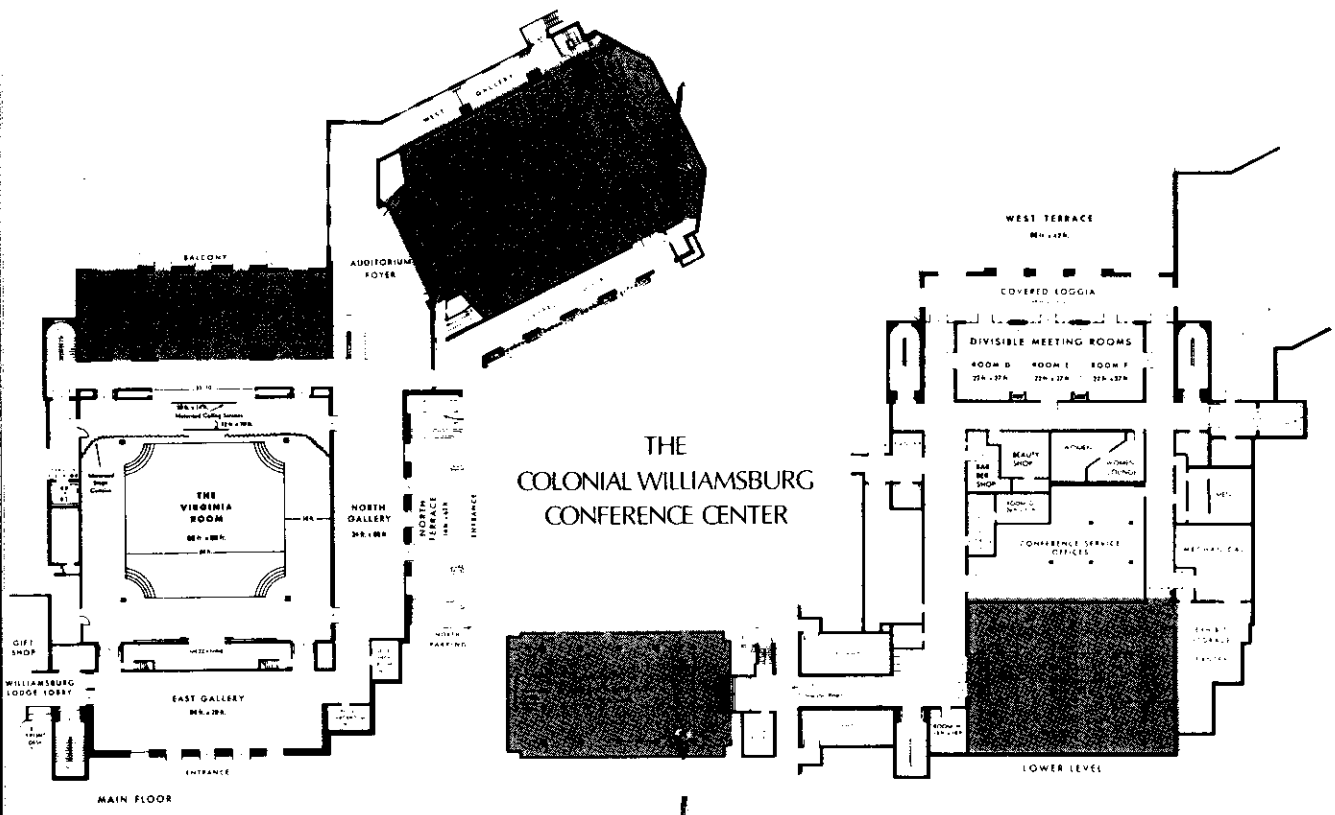
TUESDAY MORNING – AUDITORIUM

“Pesticides and General Chemicals”

Chairman: W.J. Hayes

Assisted by: H.B. Camp, R.J. Jaeger

- 8:45 52. **Studies of the Mechanism of the Negative Inotropic Action of Halogenated Methanes.** E.W. Van Stee, P.A. Toy, A.M. Harris, M.L. Horton and K.C. Back, Aerospace Medical Research Laboratory, Wright-Patterson Air Force Base, Ohio.
- 9:05 53. **Mammalian Toxicity and Degradation of Fenitrooxon and S-Methyl Fenitrooxon,** D.J. Ecobichon, G.L. Myatt and R. Greenhalgh, Department of Pharmacology, Dalhousie University, Halifax, Canada and Chemistry and Biology Research Institute, Canada Department of Agriculture, Ottawa, Canada.
- 9:25 54. **The Morphological Effects of Maternally Administered Phenobarbital and DDT on Hepatic Cell Structure in Young Rats.** M.M. Hansell and D.J. Ecobichon, Departments of Anatomy and Pharmacology, Dalhousie University, Halifax, Nova Scotia, Canada.
- 9:45 55. **Studies on the Toxicity of Phosalone.** M.A. Gallo, Rhodia, Inc., Somerset, New Jersey (Sponsor: A.A. Stein).
- 10:05 56. **Report of Toxicological Tests on 152 Detergents.** G.W. Bierbower, V.M. Seabaugh, R.E. Osterberg and C.A. Hoheisel, Consumer Product Safety Commission, Washington, D.C. (Sponsor: R.M. Hehir).
- 10-MINUTE BREAK**
- 10:35 57. **Mortality from Pesticides in 1969.** W.J. Hayes, Jr., Department of Biochemistry, Vanderbilt University School of Medicine, Nashville, Tennessee.
- 10:55 58. **Alkyl Ethoxy Sulfates. Absorption, Distribution, Excretion and Metabolite Identification Studies in Rats and Man.** J.A. McDermott, D.H. Hughes and P.M. Quinlin, The Procter and Gamble Company, Miami Valley Laboratories, Cincinnati, Ohio (Sponsor: E.V. Buehler).
- 11:15 59. **Carboxyhemoglobin Levels of Humans Exposed to Methylene Chloride.** C.L. Hake, R.D. Stewart, A. Wu and S.A. Graff, Department of Environmental Medicine, The Medical College of Wisconsin, Milwaukee, Wisconsin.
- 11:35 60. **Uptake and Pharmacodynamics of Vinyl Chloride Administered to Rats by Different Routes.** R.J. Withey, Health Protection Branch, Health and Welfare Canada, Ottawa, Ontario, Canada (Sponsor: I.C. Munro).



March 11, 1975

TUESDAY MORNING – TIDEWATER ROOM

“Acute/Chronic Toxicity I”

Chairman: M.L. Keplinger

Assisted by: T.O. McDonald, T.C. Campbell

- 8:45 61. **Placental Transfer of Halogenated Benzenes (Pentachloro-, Pentachloronitro- and Hexabromo-) in Rats.** D.C. Villeneuve and K.S. Khara, Health Protection Branch, National Health and Welfare, Ottawa, Canada.
- 9:05 62. **Preclinical Safety Evaluation of 7-Chloro-2-methyl-3,3a-dihydro-2H, 9H-isoxazolo (3,2-b) (1,3) benzoxazin-9-one (W-2395), A New Anti-Inflammatory Agent.** B.N. Banerjee, N.J. Ivins and R.D. Sofia, Wallace Laboratories, Cranbury, New Jersey.
- 9:25 63. **Fate of ¹⁴C-Hexachlorobenzene in the Rhesus Monkey and the Rat.** R.S.H. Yang and K.A. Pittman, Institute of Comparative and Human Toxicology, Albany Medical College, Albany, New York (Sponsor: J.H. Wills).
- 9:45 64. **Species-Specific Binding of ¹⁴C-Hexachlorobenzene to Animal Blood Cells.** R.S.H. Yang, Institute of Comparative and Human Toxicology, Albany Medical College, Albany, New York (Sponsor: E.W. McChesney).
- 10:05 65. **Acute Toxicity of Penitrem A in Dogs.** A.W. Hayes, D.B. Presley, J.A. Neville and J.R. Grider, University of Alabama, University, Alabama.
- 10-MINUTE BREAK**
- 10:35 66. **Cromolyn Sodium Toxicity Studies in Primates.** J.E. Beach, A.M.J.N. Blair, A.J. Clarke and C.T. Bonfield, Fisons Limited, Loughborough, Leicestershire, England and Fisons Corporation, Bedford, Massachusetts (Sponsor: R.J. Weir).
- 10:55 67. **Dietary Factors Influencing Carrageenan-Induced Cecal Ulceration in the Guinea Pig.** R. Abraham and R. Mankes, Institute of Comparative and Human Toxicology, Albany Medical College, Albany, N.Y.
- 11:15 68. **Comparative Study of Methadone Toxicity and Distribution in Adult, Pregnant, and Newborn Animals.** M.W. Stevens, B. Mantilla-Plata and R.D. Harbison, Department of Pharmacology and Center in Toxicology, Vanderbilt Medical Center, Nashville, Tennessee.
- 11:35 69. **The Acute Toxicity of Dimethylformamide and Its Combined Effects With Ethanol in the Mouse.** J. Burgun, R. Martz, R.B. Forney and G.F. Kiplinger, Department of Toxicology, Indiana University School of Medicine, Indianapolis, Indiana.

March 11, 1975

TUESDAY MORNING – ABC ROOM

“Hepatic Processes II”

Chairman: R. Yeary

Assisted by: J.J.P. Morton, J. Mennear

- 8:45 70. **Cadmium Chloride Administration in Rats and the Onset of Liver Pathology.** E. Faeder, L. King, S. Chaney, R. Bruce, T. Hinners and B. Fowler, Environmental Protection Agency, Research Triangle Park, North Carolina and National Institute of Environmental Health Sciences, Research Triangle Park, North Carolina (Sponsor: F. Andrew).
- 9:05 71. **Protective Role of Liver Metallothionein Against Inhibition of Microsomal Proteins in the Rat.** S.Q. Chaney, E.J. Faeder, L.C. King and T. Hinners, Environmental Protection Agency, Research Triangle Park, North Carolina (Sponsor: W.F. Durham).
- 9:25 72. **Effect of Animal Pretreatment on the In Vivo Covalent Binding of Halothane Metabolites in Rat Hepatic Lipids and Protein.** A.J. Gandolfi and R.A. Van Dyke, Department of Anesthesiology, Mayo Clinic, Rochester, Minnesota.
- 9:45 73. **Effect of Alteration of Hepatic Mixed Function Oxidase Activity on the Toxicity of 2,3,7,8 Tetrachlorodibenzodioxin (TCDD) to Rats.** P.W. Beatty and R.A. Neal, Department of Biochemistry, Vanderbilt University School of Medicine, Nashville, Tenn.
- 10:05 74. **Toxicological Implications of the Mixed Function Oxidase Catalyzed Metabolism of Carbon Disulfide.** R. Dalvi and R.A. Neal, Department of Biochemistry, Vanderbilt University School of Medicine, Nashville, Tennessee.

10-MINUTE BREAK

- 10:35 75. **Effects of a Variety of Narcotics and Narcotic Antagonists on Liver Microsomal Oxygenases.** D.R. Bowman, M.C. Braude and R.P. Maickel, Department of Pharmacology, Indiana University, Bloomington, Indiana and National Institute on Drug Abuse, Rockville, Maryland.
- 10:55 76. **Comparative Metabolism of Environmentally Significant Chlorinated Aromatic Compounds in Hepatic Microsomal Systems.** S.M. Ghiasuddin, J.O. Nelson, R.E. Menzer, P.C. Kearney and J.R. Plimmer, University of Maryland, College Park, Maryland and Pesticide Degradation Laboratory, AFQI, ARS, USDA Beltsville, Maryland.
- 11:15 77. **Assessment of Hepatic Mixed-Function Oxidase Induction in Rhesus Monkeys Using In Vivo, In Vitro and Histological Parameters.** J.L. Miller, R.I. Krieger, M. Rorvik, B. Ruebner, S.J. Gee and T. Thongsinthusak, Departments of Environmental Toxicology and Medical Pathology, University of California, Davis, California (Sponsor: W.W. Kilgore).

March 11, 1975

TUESDAY MORNING – NORTH BALLROOM

“General Toxicology/Pharmacology”

Chairman: J. Fujimoto

Assisted by: F. Reno

- 8:45 78. **Tissue Toxicity of Polymers: The Importance of Sample Standardization.** B.F. Matlaga, L.P. Yasenchak and T.N. Salthouse, Ethicon Research Foundation, Somerville, New Jersey.
- 9:05 79. **An Evaluation of the Cardiac Sensitizing Potential of Scotchgard Brand Fabric Protector.** J.L. Egle, Jr., J.F. Borzelleca and J.E. Long, Medical College of Virginia, Virginia Commonwealth University, Richmond, Virginia and the 3M Company, St. Paul, Minnesota.
- 9:25 80. **Use of z Scores in Characterizing Concentrations of Lead in Human Tissues.** S.B. Gross and S.J. Rasche, Department of Environmental Health, University of Cincinnati, Cincinnati, Ohio.
- 9:45 81. **Spermic Cholinergic System and Occurance of Acetylcholine (ACh) and Other Quaternary Ammonium Compounds in Mammalian Spermatozoa.** M.R. Bishop, V.B.R. Sastry, D.E. Schmidt and R.D. Harbison, Department of Pharmacology, Vanderbilt University School of Medicine, Nashville, Tennessee.
- 10:05 82. **Effects of a Single Infusion of Canine Whole Blood on the Canine Gall Bladder.** D. Abrutyn, G. Briziarelli, J. Tornaben and E. Schwartz, Warner-Lambert Company, Morris Plains, New Jersey.
- 10-MINUTE BREAK**
- 10:35 83. **Toxicity of Citrinin and Ochratoxin A in Guinea Pigs.** H.L. Thacker, W.W. Carlton and G.N. Sansing, School of Veterinary Medicine, Purdue University, West Lafayette, Indiana and Commercial Solvents Corporation, Terre Haute, Indiana.
- 10:55 84. **Ochratoxin A and Citrinin-Induced Nephropathy in Beagle Dogs.** D.N. Kitchen, W.W. Carlton and G.N. Sansing, School of Veterinary Medicine, Purdue University, West Lafayette, Indiana and Commercial Solvents Corporation, Terre Haute, Indiana.
- 11:15 85. **Effect of Maternally Administered Minocycline on Embryonic and Fetal Development in the Rhesus Monkey (*Macaca mulatta*).** B.A. Jackson, D.E. Rodwell, L.A. Kanegis and J.F. Noble, Toxicology Research Section, Lederle Laboratories Division of American Cyanamid Company, Pearl River, New York.

March 11, 1975
TUESDAY AFTERNOON – AUDITORIUM
“Symposium”

Some Newer Developments in Respiratory Toxicology

This symposium will consider the application of new methods and approaches to the assessment of damage to the respiratory tract by toxic agents. Each contribution will highlight a different aspect of this theme.

- 1:00** **Introductory Remarks** – Hanspeter Witschi, Department of Pharmacology, University of Montreal, Montreal, Canada.
- 1:05** **The Cytodynamics of Lung Injury** – Drummond H. Bowden, Department of Pathology, University of Manitoba, Winnipeg, Canada.
- 1:35** **Discussion**
- 1:40** **Pulmonary Metabolism of Xenobiotics** – John R. Bend, National Institute of Environmental Health Sciences, Research Triangle Park, North Carolina.
- 2:10** **Discussion**
- 2:15** **Irritation of the Airways by Chemical Agents** – Yves Alarie, Graduate School of Public Health, University of Pittsburgh, Pittsburgh, Pennsylvania.
- 2:45** **Discussion**
- 2:50** **New Models to Study Respiratory Tract Carcinogenesis** – Sidney Laskin, Department of Environmental Health, New York University Medical Center, New York, New York.
- 3:20** **General Discussion**
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- 7:30** **Society of Toxicology Banquet**
Virginia Room

March 11, 1975

Tuesday Evening

7:30 P.M.

BANQUET

Virginia Room

Menu

Cream of Peanut Soup

Allegheny Brook Trout

Williamsburg Spoon Bread

Roast Prime Ribs of Beef

Roasted Potatoes

Carrots with Pecans

Bib Lettuce Salad with Tomato Wedges

Sour Cherry Trifle with Sherry

Coffee

Wine: Cabernet Sauvignon, Almaden,
Courtesy of the Charles River Companies

March 12, 1975

WEDNESDAY MORNING – AUDITORIUM

“Drugs and Pesticides”

Chairman: R. Menzer

Assisted by: S. Yankell, R.D. Sofia

- 8:45 86. Correlation of Histologic and Serum Enzyme Changes of Isoproterenol-Induced Myocardial Lesions in Dogs. S.E. Sadek and E.A. Pfitzer, Department of Experimental Pathology and Toxicology, Hoffmann-La Roche Inc., Nutley, New Jersey.
- 9:05 87. Subacute Toxicity of Hexachlorobenzene in the Rat. T. Kuiper-Goodman, D.L. Grant, C.A. Moodie, G. Korsrud and I.C. Munro, National Health and Welfare, Health Protection Branch, Ottawa, Can.
- 9:25 88. Parathion-Dieldrin Interactions on Androgen Metabolism in the Mouse. L.G. Schein and J.A. Thomas, Department of Pharmacology, West Virginia University Medical Center, Morgantown, West Va.
- 9:45 89. Effect of Low Dietary Levels of DDT on Acute CC14 Hepatotoxicity in Rats. M.T. Koefler and R.E. Larson, Department of Pharmacology and Toxicology, Oregon State University, Corvallis, Ore.
- 10:05 90. Dose and Age-Dependent Metabolic Disposition of the Herbicide 1-(5-tert-butyl-1,3,4-thiadiazol-2-yl)-1,3-dimethylurea in the Rat. D.G. Hoffman, J.L. Emmerson and D.M. Morton, Toxicology Division, Lilly Research Laboratories, Greenfield, Ind.
- 10-MINUTE BREAK
- 10:35 91. Toxicity Studies of a Short Acting Semisynthetic Cardiac Glycoside. R.D. Hemm, J.J. Pollock and L.L. Authier, Ayerst Research Laboratories, Animal Health Division, Chazy, New York.
- 10:55 92. Preclinical Toxicity of 3-Deazauridine in Dogs and Monkeys. T.R. Castles, J.L. Sanyer and C-C Lee, Pharmacology and Toxicology, Midwest Research Institute, Kansas City, Missouri.
- 11:15 93. Another Hypolipidemic Failure. T. Malmfors, Astra Pharmaceuticals AB, Toxicology Laboratories, Sodertalje, Sweden.
- 11:35 94. The Acute Oral Toxicity of Several Munition Compounds and Their Synthetic Intermediates in Rodents. J.V. Dilley, B.S. Anderson, D.N. Roberts and C-C Lee, Pharmacology and Toxicology, Midwest Research Institute, Kansas City, Missouri.

March 12, 1975

WEDNESDAY MORNING – TIDEWATER ROOM

“Acute/Chronic Toxicology II”

Chairman: V. Cotty

Assisted by: J.F. Ferrell, J. Norris

- 8:45 95. 11-Hydroxy- Δ^9 -Tetrahydrocannabinol Induced Changes in the Perfused Rat Heart. B.R. Manno and J. E. Manno, General Medical Research, Veterans Administration Hospital, Shreveport, Louisiana and Department of Pharmacology and Therapeutics, Louisiana State University School of Medicine, Shreveport, La.
- 9:05 96. Cardiovascular Actions of 11-hydroxy- Δ^9 -tetrahydrocannabinol in the Rat. J.E. Manno and B.R. Manno, Department of Pharmacology and Therapeutics, Louisiana State University School of Medicine, Shreveport, Louisiana and General Medical Research, Veterans Administration Hospital, Shreveport, La.
- 9:25 97. Subacute Oral Toxicity of ABBOTT-41988, A Synthetic Cannabinoid Congener. G.R. Thompson and S. Levin, Abbott Laboratories, North Chicago, Ill.
- 9:45 98. Sequential Histopathologic Changes Induced in Mice by a Technical and a Purified Preparation of 2,4,5-Trichlorophenoxyacetic Acid. B. Highman, T.B. Gaines and H.J. Schumacher, University of Arkansas School of Medicine, Little Rock, Arkansas and the National Center for Toxicological Research, Jefferson, Arkansas.
- 10:05 99. Cytogenetic Evaluation of Several Dioxins in the Rat. S. Green and F.S. Moreland, Food and Drug Administration, Washington, D.C.
- 10-MINUTE BREAK
- 10:35 100. Fate of ^{14}C -Mirex in the Female Rhesus Monkey. M.W. Kennedy, K.A. Pittman and V.M. Stein, Center of Experimental Pathology and Toxicology, Albany Medical College, Albany, New York (Sponsor: E.W. McChesney).
- 10:55 101. Adriamycin-Induced Myopathies in the Rhesus Monkey with Emphasis on Cardiomyopathy. E.P. Denine and L.H. Schmidt, Southern Research Institute, Birmingham, Alabama.
- 11:15 102. Differential Regional Effects of the Convulsant Methionine Sulfoximine on Serotonin Turnover in the Rat Brain. D.D. Dietz and O.Z. Sellinger, Department of Environmental and Industrial Health, Toxicology Division and Laboratory in Neurochemistry, Mental Health Research Institute, University of Michigan, Ann Arbor, Michigan (Sponsor: J.E. Fitzgerald).
- 11:35 103. Growth and Endocrine Alterations After Neonatal Monosodium L-Glutamate in the Rat: Evaluation of Relationship to Arcuate Dopamine Neuron Damage. C.B. Nemeroff, G.N. Ervin, G. Bissette, L.E. Harrell and L.D. Grant, The Neurobiology Program and the Biological Sciences Research Center, University of North Carolina, School of Medicine, Chapel Hill, North Carolina (Sponsor: R.L. Dixon).

March 12, 1975

WEDNESDAY MORNING – ABC ROOM

“Methods in Toxicology”

Chairman: F. Kinoshita

Assisted by: C.J. Terhaar, H. Gittes

- 8:45 104. **The Usefulness of Drug Blood Level Studies During Toxicological Safety Evaluation.** C.B. Countinho, J.A. Cheripko, T. Crews, B.H. Minn and A.C. Levy, Division of Experimental Therapeutics, Hoffmann-La Roche Inc., Nutley, New Jersey.
- 9:05 105. **Estimating the Maximum Test Dose in Carcinogenesis Bioassays Using Computerized Data Handling and Analysis.** E. Gordon, C. Riggs, P. Bostian, B.M. Ulland and L. Callahan, NCI Frederick Cancer Research Center, Frederick, Maryland.
- 9:25 106. **A Statistical Approach to the U.S.P. Biological Evaluation of Plastics.** K.A. Miller, J.E. Doyle and J.G. Schmidt, Baxter Laboratories, Inc., Morton Grove, Illinois (Sponsor: P.J. Garvin).
- 9:45 107. **Advances in Automation for Experimental Pathology.** C.H. Frith, B. Highman and A.J. Konvicka, University of Arkansas School of Medicine, Little Rock, Arkansas and the National Center for Toxicological Research, Jefferson, Arkansas.
- 10:05 108. **The Role of Electron Microscopy in Toxicologic Assessment—Past, Present and Future.** T. Kuiper-Goodman and H.C. Grice, Health Protection Branch National Health and Welfare, Ottawa, Canada.

10-MINUTE BREAK

- 10:35 109. **A Comparative Study of Dermal Reactions Using the Intact Rabbit Skin.** J.B. Sullivan, J.C. Strausburg and R.W. Kapp, Jr., Hazleton Laboratories, Inc., Vienna, Virginia (Sponsor: J.L. Gargus).
- 10:55 110. **Detection of Chlorinated Dioxins: Induction of Aryl Hydrocarbon Hydroxylase Activity in Rat Hepatoma Cell Culture.** J.A. Bradlaw, L.H. Garthoff, D.M. Graff and N.E. Hurley, Food and Drug Administration, Washington, D.C. (Sponsor: S. Green).
- 11:15 111. **A New Technique; Serial Bone Marrow Biopsies for Monitoring Chromosomal Changes.** J.H. Nemenzo, A. Pasi and C.H. Hine, Department of Pharmacology, University of California, San Francisco, California.
- 11:35 112. **Development of a Smoke Toxicity Test.** D.P. Dressler, W.A. Skornik and S.B. Bloom, Department of Surgery, Harvard Medical School, Cambridge Hospital, and Youville Hospital, Cambridge, Mass. (Sponsor: R.M. Hehir).

March 12, 1975

WEDNESDAY MORNING – NORTH BALLROOM
“Poster Session III”

8:45–10:15

188. **Developmental Toxicity of Medroxyprogesterone Acetate After Administration to Pregnant Rabbits.** F.D. Andrew and R.E. Staples, National Institute of Environmental Health Sciences, Research Triangle Park, North Carolina.

189. **Mirex Kinetics in the Rhesus Monkey.** K.A. Pittman, M.W. Kennedy and D.H. Treble, Institute of Comparative and Human Toxicology and Biochemistry Department, Albany Medical College, Albany, N.Y. (Sponsor: F. Coulston).

190. **Preclinical Toxicology of Lergotriple Mesylate (d-2-chloro-6-methylergoline-8B-acetonitrile methane-sulfonic acid salt) --A New Prolactin Inhibitor.** N.V. Owen, W.R. Gibson, W.D. Broddle, C.C. Kehr and G.F. Kiplinger, Lilly Research Laboratories, Toxicology Division, Eli Lilly and Company, Greenfield, Indiana.

191. **Lipid Peroxidation: A Possible Mechanism for Paraquat Toxicity.** J.S. Bus, S.Z. Cagen, S.D. Aust and J.E. Gibson, Department of Pharmacology, Michigan State University, East Lansing, Michigan.

192. **Toxicity and Tissue Distribution of Cyclotri-methylenetrinitramine (RDX).** N.R. Schneider and M.E. Andersen, Armed Forces Radiobiology Research Institute, National Naval Medical Center, Bethesda, Maryland and U.S. Navy Toxicology Unit, National Naval Medical Center, Bethesda, Maryland (Sponsor: L.J. Jenkins, Jr.).

193. **Influence of Chronic Diuretic Therapy on Minoxidil-Induced Necrosis in Dogs.** E. Herman, T. Balazs, F. Earl and S. Krop, Food and Drug Administration, Washington, D.C.

194. **Enhancement of Antibiotic Nephrotoxicity by Furosemide: Studies in Mice.** G. James, W. Smith, H. Bryant and T. Balazs, Food and Drug Administration, Washington, D.C.

195. **The Absorption, Tissue Distribution and Excretion of Dodecyldimethylamine Oxide by Selected Animal Species.** D.P. Rice, Procter & Gamble Company, Miami Valley Laboratories, Cincinnati, Ohio (Sponsor: E.V. Buehler).

March 12, 1975

WEDNESDAY AFTERNOON – AUDITORIUM

“Symposium Expert Witness”

Chairman: C.H. Hine

This symposium will examine some of the qualifications, limits and responsibilities associated with presentation of scientific data in public or judicial proceedings.

- 1:00 **Introductory Remarks** - Charles H. Hine, University of California Medical School, San Francisco, California.
- 1:05 **Regulatory** - Albert C. Kolbye, Jr., Bureau of Foods, Food and Drug Administration, Washington, D.C.
- 1:35 **Judicial** - Jerome Heckman, Keller and Heckman, Washington, D.C.
- 2:05 **Legislative** - Michael Brownlee, U.S. Senate Staff, Washington, D.C.
- 2:35 **Techniques** - Theodora Gordon, Theodora Gordon Associates, Chicago, Illinois.
- 3:05 **Questions and Discussion**

March 12, 1975

WEDNESDAY AFTERNOON – TIDEWATER ROOM

“Acute/Chronic Toxicology III”

Chairman: M.R. Gilman

Assisted by: D. Abbott, N. Owen

- 1:30 113. Effect of Hexachlorobenzene on Rat Reproduction. D.L. Grant, G.V. Hatina and W.E.J. Phillips, Bureau of Chemical Safety, Food Directorate, Health Protection Branch, Ottawa, Canada (Sponsor: W.A. Mannell).
- 1:50 114. The Placental Transfer of Methotrexate in Rats. R.M. McClain and J.J. Siekierka, Department of Experimental Pathology and Toxicology, Hoffmann-La Roche Inc., Nutley, N.J. (Sponsor: S.E. Sadek).
- 2:10 115. Interactive Effects of 5-Fluorouracil and Endotoxin on Mouse Spleen and Bone Marrow DNA Synthesis and Content. K.M. Watt, M.A. Friedman and A.E. Munson, Department of Pharmacology, Medical College of Virginia, Virginia Commonwealth University, Richmond, Virginia.
- 2:30 116. Physiologically Solubilized Di-2-Ethylhexyl Phthalate and Its Effect on the Intact Rhesus Monkey. A Preliminary Report. M.S. Jacobson, L.N. Button, W.H. Watson, B.I. Barwick, R.J. Jaeger and S.V. Kevy, Blood Preservation Laboratory and Transfusion Service, Children's Hospital Medical Center; Department of Pediatrics, Harvard Medical School; Department of Physiology, Harvard School of Public Health, Boston, Mass. (Sponsor: J. Autian).
- 2:50 117. Effects of Vehicle on the Response to Intravenous Di-(2-Ethylhexyl) Phthalate (DEHP) in Rats. J.G. Schmidt, P.J. Garvin and J.E. Leestma, Baxter Laboratories, Inc., Morton Grove, Illinois and Northwestern University, Chicago.
- 10-MINUTE BREAK
- 3:20 118. Pediatric Study of Chronic Morphine Treatment in Rats. M.S. Danilovitz, G.E. Lightkep and A.H. Mosher, Department of Pathology/Toxicology, McNeil Laboratories, Inc., Fort Washington, Penn. (Sponsor: R.L. Steelman).
- 3:40 119. Effect of Narcotics on the Male Reproductive System. J.A. Thomas, J.T. Dombrosky and M.G. Mawhinney, Department of Pharmacology, West Virginia University Medical Center, Morgantown, West Virginia.
- 4:00 120. The Toxicity of Decabromodiphenyl Oxide and Octabromobiphenyl as Determined by Subacute and Chronic Dietary Feeding Studies in Rats. J.M. Norris, R.J. Kociba, C.G. Humiston and P.J. Gehring, Dow Chemical U.S.A., Midland, Michigan.
- 4:20 121. Pharmacokinetic and Toxicologic Studies with Triclocarban. P.L. Wright, L.G. Scharpf, G.J. Levinskas, D.E. Gordon and M.L. Keplinger, Monsanto Company, St. Louis, Missouri and Industrial Bio-Test Laboratories, Inc., Northbrook, Illinois.

March 12, 1975

WEDNESDAY AFTERNOON – ABC ROOM

“Carcino–, Terato–, Mutagenicity”

Chairman: E. Weisburger

Assisted by: W. Busey, C.O. Ward

- 1:30 122. Gamma Glutamyl Transpeptidase Activity as an Indicator of Carcinogenesis in the Mouse. B.J. Gough and K.P. Baetcke, National Center for Toxicological Research, Jefferson, Arkansas.
- 1:50 123. Carcinogenicity of Ethylene Dibromide (EDB) and 1,2-Dibromo-3-Chloropropane (DBCP) After Oral Administration in Rats and Mice. M.B. Powers, R.W. Voelker, N.P. Page, E.K. Weisburger and H.F. Kraybill, Hazleton Laboratories, Inc., Vienna, Virginia and National Cancer Institute, Bethesda, Maryland.
- 2:10 124. Drug Related Thyroid Tumors in the Fischer Rat (F-344). B.Y. Cockrell and F.M. Garner, Litton Bionetics, Kensington, Maryland (Sponsor: E.R. Hart)
- 2:30 125. Chemically Induced Hepatic Neoplasms in the Fischer Rat (F-344). F.M. Garner, B.Y. Cockrell, Litton Bionetics, Kensington, Maryland (Sponsor: E. R. Hart).
- 2:50 126. Mutagenicity of Ethylene Oxide. J.W. Embree and C.H. Hine, Department of Pharmacology, School of Medicine, University of California, San Francisco, California.

10-MINUTE BREAK

- 3:20 127. Study of the Mutagenic Potential of the Monocacium Salt of Nitrilotriacetic Acid (NaCaNTA) by the Dominant Lethal Test in Mice. T.A. Jorgenson, G.W. Newell, P. Gribling, M. O'Brien and D. Chu, Stanford Research Institute, Menlo Park, California.
- 3:40 128. Reproductive and Teratogenic Studies with Naltrexone in Rats and Rabbits. J.A. Nuite, G.L. Kennedy, S. Smith, M.L. Keplinger and J.C. Calandra, Industrial Bio-Test Laboratories, Inc., Northbrook, Illinois and National Institute on Drug Abuse, Rockville, Maryland.
- 4:00 129. Teratogenic Potential of Methadone and 1-alpha-acetylmethadol (LAAM) in Rats and Rabbits. G.L. Kennedy, J.A. Nuite, S. Smith, L. Keplinger, M.C. Braude and J.C. Calandra, Industrial Bio-Test Laboratories, Inc., Northbrook, Illinois and National Institute on Drug Abuse, Rockville, Maryland.
- 4:20 130. Analysis of Strain Differences in Sensitivity and Reproducibility of Results in Assessing 2,4,5-T Teratogenicity in Mice. T.B. Gaines, J.F. Holson, Jr., C.J. Nelson and H.J. Schumacher, National Center for Toxicological Research, U.S. Food and Drug Administration, Jefferson, Arkansas.

March 12, 1975

WEDNESDAY AFTERNOON – NORTH BALLROOM

“Pulmonary and Renal”

Chairman: I. Munor

Assisted by: D.A. Willigan, S. Schwartz

- 1:30 131. Effects from Repeated Inhalation of Parts Per Billion of Bis (Chloromethyl) Ether in Rats. B.K.J. Leong, R.J. Kociba, G.C. Jersey and P.J. Gehring, Toxicology Research Laboratory, Dow Chemical Company, Midland, Michigan.
- 1:50 132. Influence of Ozone on Nembutal Anaesthesia in Mice. D.E. Gardner, J.W. Illing, F.J. Miller and D.L. Coffin, Environmental Protection Agency, Experimental Biology Laboratory, Research Triangle Park, North Carolina.
- 2:10 133. Inhalation Toxicity Studies with Di(C7C9C11-Alkyl) Phthalate and Di-2-Ethyl Hexyl Phthalate. G.J. Levinskas, M.W. Dietrich, K.S. Schadeburg, J.W. Goode, M.L. Keplinger and J.C. Calandra, Monsanto Company, St. Louis, Missouri and Industrial Bio-Test Laboratories, Inc., Northbrook, Illinois.
- 2:20 134. The Relationship of the Total Dose and Duration of Methoxyflurane Anesthesia to Renal Toxicity in Fisher 344 Rats. L.E. Arthaud and T.A. Loomis, School of Medicine, University of Washington, Seattle, Washington.
- 2:50 135. Phlorizin Binding to Renal Cortical Tissue as an Indicator of Nephrotoxicity. J.L. Ecker, J.E. Gibson, G.K. Moore and J.B. Hook, Department of Pharmacology, Michigan State University, East Lansing, Michigan.

10-MINUTE BREAK

- 3:20 136. Tetrachlorodibenzo-p-dioxin Induction of Renal Microsomal Enzyme Systems. B.A. Fowler, G.E.R. Hook and G.W. Lucier, National Institute of Environmental Health Sciences, Research Triangle Park, North Carolina (Sponsor: R.L. Dixon).
- 3:40 137. Toxicology Studies with Cytembena—An Anticancer Drug with a Multispecies Renal Toxic Effect. E.J. Gralla, G.L. Coleman, G.W. Osbaldiston and M. Kashgarian, Yale University School of Medicine, New Haven, Connecticut.
- 4:00 138. Air Pollution and Childhood Lower Respiratory Disease: Exposure to Oxides of Nitrogen. D.I. Hammer, F.J. Miller and C.G. Hayes, Environmental Protection Agency, Research Triangle Park, N.C. (Sponsor: D. Coffin).
- 4:20 139. Dichromate Nephrotoxicity and Renal Dichromate Accumulation. W.O. Berndt, Department of Pharmacology and Toxicology, University of Mississippi Medical Center, Jackson, Mississippi (Sponsor: R.P. Smith).

March 13, 1975

THURSDAY MORNING – AUDITORIUM

“Metabolism”

Chairman: G. Wright

Assisted by: R.J. Kociba

- 8:45 140. On the Metabolism of the Carcinogen 1,2-Dimethylhydrazine in Rats. E.S. Fiala and J.H. Weisburger, American Health Foundation, New York, New York.
- 9:05 141. Interactions of Drugs with ¹⁴C-Isoniazid Metabolism in the Rat. B.H. Thomas and G. Solomonraj, Health Protection Branch, Health and Welfare Canada, Ottawa, Canada (Sponsor: B.B. Coldwell).
- 9:25 142. The Effect of Acetylsalicylic Acid on the Distribution and Metabolism of ¹⁴C-Acetaminophen in Mice. L.W. Whitehouse, C.J. Paul and B.H. Thomas, Health Protection Branch, Health and Welfare Canada, Ottawa, Canada (Sponsor: B.B. Coldwell).
- 9:45 143. Metabolism of 2,4-Toluenediamine in the Rat. P.H. Grantham, T. Glinsukon, L.C. Mohan, T. Benjamin, P.P. Roller, F.E. Mitchell and E.K. Weisburger, Carcinogen Metabolism and Toxicology Branch, National Cancer Institute, Bethesda, Maryland.
- 10:05 144. Metabolism and Biological Disposition of Butyl Alcohols in the Rat. D. Bechtel and H. Cornish, University of Michigan, Ann Arbor, Michigan.

10-MINUTE BREAK

- 10:35 145. Excretion and Metabolism of Three 2-6-¹⁴C-OMADINES(R) Following Intravenous Injection in Female Yorkshire Pigs. M. Adams, J.H. Wedig, R. Jordan, L. Smith, R. Henderson and J. Borzelleca, Medical College of Virginia, Richmond, Virginia and Olin Research Center, New Haven, Connecticut.
- 10:55 146. The Urinary and Fecal Metabolites of a Polychlorinated Biphenyl (Aroclor 1016) Excreted by the Rat. C.C. Smith, K. Lertratanangkoom, M.G. Horning and W.W. Weigel, Department of Environmental Health, University of Cincinnati, Cincinnati, Ohio and the Institute for Lipid Research, Baylor College of Medicine, Houston, Texas.
- 11:15 147. Effects of Pregnancy and Certain Steroids on Demethylation and N-Oxidation by Rabbit Lung Microsomes. T.R. Devereux and J.R. Fouts, National Institute of Environmental Health Sciences, Research Triangle Park, North Carolina.
- 11:35 148. Effects of Piperonyl Butoxide and Diethyl Maleate on Toxicity and Metabolism of Parathion and Methyl Parathion. F.E. Mirer, B.S. Levine and S. D. Murphy, Harvard School of Public Health, Boston, Massachusetts.

March 13, 1975

THURSDAY MORNING – TIDEWATER ROOM

“Acute/Chronic Toxicology IV”

Chairman: W. Hayes

Assisted by: A.G. Ebert

- 8:45 149. The Influence of Maturation on the Acute Toxicity of Nineteen Drugs in Rats. D.L. Hane and W.R. Pool, Department of Experimental Pathology and Toxicology, Hoffmann-La Roche, Inc., Nutley, New Jersey.
- 9:05 150. A Tumorigenic Evaluation of Aspartame, A New Sweetener, in the Mouse. F.E. Reno, R.G. Mc Connell, J.F. Ferrell, J.A. Trutter and K.S. Rao, Hazleton Laboratories, Inc., Vienna, Virginia, Searle Laboratories, Chicago, Illinois and Experimental Pathology Laboratories, Herndon, Virginia.
- 9:25 151. 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD): Results of a 13-Week Oral Toxicity Study in Rats. R. J. Kociba, P.A. Keeler, C.N. Park and P.J. Gehring, Dow Chemical U.S.A., Midland, Michigan.
- 9:45 152. The Fate of 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) Following Single or Repeated Oral Doses to Rats. J.O. Rose, J.C. Ramsey, T.H. Wentzler, R.A. Hummel and P.J. Gehring, Dow Chemical Company, Midland, Michigan.
- 10:05 153. The Dose Dependent Fate of 1,4-Dioxane in Male Rats. J.D. Young and P.J. Gehring, Dow Chemical Company, Midland, Michigan.

10-MINUTE BREAK

- 10:35 154. The Effect of Chlorination on the Distribution and Excretion of Polychlorinated Biphenyls. H.B. Matthews and M.W. Anderson, National Institute of Environmental Health Sciences, Research Triangle Park, North Carolina (Sponsor: R.T. Drew).
- 10:55 155. Failure of Thiocetic Acid to Cure Mushroom-Poisoned Mice and Dogs. F.R. Alleva, T. Balazs, A.O. Sager and A.K. Done, Food and Drug Administration, Washington, D.C.
- 11:15 156. Haloperidol and Propranolol in the Treatment of Acute Amphetamine Intoxication in the Dog. J.D. Catravas, I.W. Waters, G.A. Burdock and W.M. Davis, School of Pharmacy, University of Mississippi, University, Mississippi.
- 11:35 157. The Acute Toxicity of Dimethylnitroamine. M.E. Andersen and L.J. Jenkins, Jr., U.S. Navy Toxicology Unit, Naval Medical Research and Development Command, Bethesda, Maryland.

March 13, 1975

THURSDAY MORNING – ABC ROOM

“Mutagenesis and General
Toxicology/Pharmacology”

Chairman: A. Wolven

Assisted by: C. Kokoski

- 8:45 158. **Mutagenic Evaluation of Hexachlorophene.** D. W. Arnold, G.L. Kennedy, Jr. and M.L. Keplinger, Industrial Bio-Test Laboratories, Inc., Northbrook, Illinois.
- 9:05 159. **Strain-Specific Metabolic Differences in Mice and Their Effect on Mutagen Production from Dimethylnitrosamine in In Vitro Assays.** D.J. Brusick, U. Weekes and D.R. Jagannath, Litton Bionetics, Inc., Kensington, Maryland (Sponsor: R. Weir).
- 9:25 160. **The Relationship of 2-Acetamidofluorene Mutagenicity in Plate Tests with its In Vivo Liver Cell Component Distribution and its Carcinogenic Potential.** D. McGregor, Inversek Research International, Musselburgh, Midlothian, Scotland (Sponsor: G.E. Paget).
- 9:45 161. **LD50 Determination and Hypotensive Effect of 3-Methyl-2-Benzothiazolone Hydrazone.** M.A. Green and J.L. Egle, Jr., Medical College of Virginia, Virginia Commonwealth University, Richmond, Va. (Sponsor: J.F. Borzelleca).
- 10:05 162. **Interactions of Tricyclic Antidepressants and Pentobarbital in Pentobarbital-Tolerant and Non-Tolerant Rats.** I.W. Waters and S.J. Liu, School of Pharmacy, University of Mississippi, University, Mississippi and Wood V.A. Hospital, Wood, Wisconsin (Sponsor: W.M. Davis).

10-MINUTE BREAK

- 10:35 163. **Effects of Viral Replication on Drug Metabolism.** W.L. Ragland and S.J. Buynitzky, Departments of Avian Medicine and Veterinary Pathology, University of Georgia, Athens, Georgia.
- 10:55 164. **The Effects of Lead and Hexachlorophene, Alone and in Combination, in Albino Rats.** D.E. Gordon, G.L. Kennedy, Jr. and J.C. Calandra, Industrial Bio-Test Laboratories, Inc., Northbrook, Ill.
- 11:15 165. **In Vitro Studies of Rat Pulmonary Alveolar Macrophages Subsequent to Intrapulmonary Instillation of Lead (PbO).** P. Agosta, C.A. Fischer, E.J. Kaminski and J.C. Calandra, Industrial Bio-Test Laboratories, Inc., Northbrook, Illinois.

March 13, 1975

THURSDAY MORNING – NORTH BALLROOM

“Fish and Wildlife; Reproduction”

Chairman: L. Stickel

Assisted by: J. McLaughlin

- 8:45 166. Synergism of the Acute Toxic Effects of 2,4-D Butyl Ester, Dieldrin, Rotenone, and Pentachlorophenol in Rainbow Trout by Carbaryl. C.N. Statham and J.J. Lech, Department of Pharmacology, Medical College of Wisconsin, Milwaukee, Wisconsin.
- 9:05 167. Four-Day Static Fish Toxicity Studies Conducted With Thirteen Cadmium Pigments in Three Species of Freshwater Fish. G. Rausina, J.W. Goode, M.L. Keplinger and J.C. Calandra, Industrial Bio-Test Laboratories, Inc., Northbrook, Illinois.
- 9:25 168. The Effect of Simazine on the Reproductive Capability of Mallard Ducks. R.J. Fink, Truslow Farms Inc., Chestertown, Maryland (Sponsor: H.B. Camp).
- 9:45 169. The Effect of Tricyclohexyltin Hydroxide on the Reproductive Capability of Bobwhite Quail. R.J. Fink, Truslow Farms Inc., Chestertown, Maryland (Sponsor: D.D. McCollister).
- 10:05 170. The Fate of $^{14}\text{CH}_3^{203}\text{HgCl}$ in the California Sea Lion. D.R. Buhler and B.R. Mate, Department of Agricultural Chemistry, Oregon State University, Corvallis, Oregon.

10-MINUTE BREAK

- 10:35 171. Glucuronidation of Diethylstilbestrol as a Steroid or Non-Steroid? G.W. Lucier and H.C. Shah, National Institute of Environmental Health Sciences, Research Triangle Park, North Carolina (Sponsor: R.L. Dixon).
- 10:55 172. The Fate of ^{14}C -Diethylstilbestrol in the Pregnant Mouse. H.C. Shah, S. Gipson and J.A. McLachlan, National Institute of Environmental Health Sciences, Research Triangle Park, North Carolina (Sponsor: I.P. Lee).
- 11:15 173. Effect of Prenatal Exposure of Mice to Diethylstilbestrol on Reproductive Tract Function in the Offspring. J.A. McLachlan, H.C. Shah, R.R. Newbold and B.C. Bullock National Institute of Environmental Health Sciences, Research Triangle Park, North Carolina (Sponsor: R.L. Dixon).
- 11:35 174. Reproductive Studies of Methadone and 1-alpha-acetylmethadol (LAAM) in Rats. S. Smith, J.A. Nuite, G.L. Kennedy and M.L. Keplinger, Industrial Bio-Test Laboratories, Inc., Northbrook, Illinois and National Institute on Drug Abuse, Rockville, Md.