

# **20th ANNUAL MEETING**

**March 1-5, 1981**

**Town and Country Hotel  
San Diego, CA**

**PROGRAM**

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**Mixer and Reception**

Sunday, March 1, 1981

6:00 - 7:30 P.M.

Atlas Ballroom Foyer

Cash Bar

Open to all attendees and guests

**ANNUAL BUSINESS MEETING**

Tuesday, March 3, 1981

3:15 P.M.

Town and Country Room

SOT Members Only

President Perry J. Gehring, Presiding

**ANNUAL BANQUET**

Tuesday, March 3, 1981

7:00 P.M.

Town and Country Room

Open to all attendees and guests

Complimentary Wine

Courtesy, Charles River Breeding Laboratories, Inc.

**ISSUES SESSION**

Wednesday, March 4, 1981

12 Noon - 1:15 P.M.

San Diego Room

Bring a sandwich, etc. and participate in an open  
forum discussion of SOT affairs.

Chaired by President Perry J. Gehring

# 20TH ANNUAL MEETING

sponsored by

# Society of Toxicology

Town and Country Hotel — San Diego, CA

March 1 - 5, 1981

## REGISTRATION FEES

	Member or Post Doctoral In Training	Non- Member	Student, Full-time, Predoctoral
Preregistration	\$50.00	\$75.00	\$ 5.00
At Conference	60.00	85.00	10.00
Banquet	18.00	18.00	18.00

## SESSIONS SUMMARY

### Platform

<u>Day</u>	<u>Topic</u>	<u>Room</u>	<u>See Page</u>
Monday 8:30 A.M.	Biochemical Toxicology I	Town and Country	12
Monday 8:30 A.M.	Respiratory I	Golden West	13
Monday 8:30 A.M.	Renal I	California	15
Monday 1:30 P.M.	Biotransformation I	San Diego	24
Monday 1:30 P.M.	General Toxicology I	Golden West	26
Monday 1:30 P.M.	Mutagenesis II	California	31
Tuesday 8:30 A.M.	Biotransformation II	San Diego	35
Tuesday 8:30 A.M.	General Toxicology II	Golden West	37
Tuesday 8:30 A.M.	Metals I	California	39
Tuesday 1:15 P.M.	Respiratory III	Town and Country	47
Wednesday 8:30 A.M.	General Toxicology III	San Diego	51
Wednesday 8:30 A.M.	Halogenated Hydrocarbons	Golden West	53
Wednesday 8:30 A.M.	Reproduction II	California	54
Wednesday 1:30 P.M.	Biochemical Toxicology IV	San Diego	62
Wednesday 1:30 P.M.	Oncogenesis I	Town and Country	63
Thursday 8:30 A.M.	Biotransformation IV	Town and Country	68
Thursday 8:30 A.M.	Teratology II	Golden West	69

<b>Symposia</b>			<b>See Page</b>
Monday 1:30 P.M.	Perspectives in Metal Toxicity	Town and Country	25
Tuesday 8:30 A.M.	Reproductive Toxicity in Animals and Humans	Town and Country	38
Wednesday 8:30 A.M.	Immunotoxicology	Town and Country	51
Thursday 1:30 P.M.	Mechanisms of DNA Repair (Jointly sponsored by Environmental Mutagen Society)	Town and Country	76

### **Poster**

Monday 8:30 A.M.	General Toxicology I	Mission Ballroom (Rear)	16
Monday 10:30 A.M.	Methods in Toxicology	Mission Ballroom (Rear)	20
Monday 10:30 A.M.	Mutagenesis I	Mission Ballroom (Rear)	21
Monday 10:30 A.M.	Reproduction I	Mission Ballroom (Rear)	22
Monday 10:30 A.M.	Teratology I	Mission Ballroom (Rear)	22
Monday 1:30 P.M.	Neurotoxicity I	Mission Ballroom (Rear)	32
Tuesday 8:30 A.M.	Biochemical Toxicology II	Mission Ballroom (Rear)	40
Tuesday 10:30 A.M.	Respiratory II and Renal II	Mission Ballroom (Rear)	43
Tuesday 1:30 P.M.	Biotransformation III	Mission Ballroom (Rear)	48
Wednesday 8:30 A.M.	Biochemical Toxicology III	Mission Ballroom (Rear)	56
Wednesday 10:30 A.M.	Metals II	Mission Ballroom (Rear)	59
Wednesday 1:30 P.M.	General Toxicology IV	Mission Ballroom (Rear)	65
Wednesday 1:30 P.M.	Respiratory IV	Mission Ballroom (Rear)	66
Thursday 8:30 A.M.	General Toxicology V	Mission Ballroom (Rear)	71
Thursday 8:30 A.M.	Oncogenesis II	Mission Ballroom (Rear)	72
Thursday 10:30 A.M.	Neurotoxicity II	Mission Ballroom (Rear)	73
Thursday 10:30 A.M.	Aquatic Toxicology	Mission Ballroom (Rear)	75

## —GENERAL MEETING INFORMATION—

### **Registration**

Convention Center Foyer — Sunday, March 1: 1 P.M. - 8 P.M.; Monday, Tuesday, and Wednesday, March 2, 3, 4: 8 A.M. - 5 P.M.

### **Abstracts of Papers (The Toxicologist)**

Distributed without charge to all members of the Society of Toxicology in advance of the meeting. Non-members will be given the abstracts with their registration at the meeting. Additional copies available at Conference Registration Desk (Exhibit Hall Lobby) at \$5 each.

### **Hotel Accommodations**

The Town and Country Hotel is Conference headquarters. The following guaranteed guest room rates apply when reservations are made on the printed form accompanying the pre-conference mailing:

Single	\$40-55
Twin or Double	45-60

The hotel accepts major credit cards.

Other hotels, located nearby, will be used after the Town and Country fills, at comparable rates. These reservations will be made by the Town and Country.

### **Sessions**

All held in the Convention Center of the Town and Country Hotel.

### **Airport Limousine Service**

The Town and Country Hotel is approximately five miles from the San Diego Airport. Cab fares will approximate \$10. The Town and Country Hotel provides a private bus service at a cost of \$3.50 per person. It can be obtained by calling from the courtesy telephone inside the Airport terminal.

## —SPECIAL EVENTS AND SERVICES—

### **Annual Banquet**

Town and Country Room, 7:00 P.M., Tuesday, March 3, \$18.00.  
Complimentary wine; Courtesy, Charles River Breeding Laboratories.

### **Annual Business Meeting**

Town and Country Room, 3:00 P.M. Tuesday, March 3. Open only to  
Society of Toxicology members.

### **“Issues” Session**

San Diego Room, Wednesday, March 4, 12:00 - 1:15 P.M. The Officers  
and Councilors will be available for discussions of pertinent questions  
with the membership in an open forum. Bring your sandwich, etc., and  
participate in a stimulating discussion of SOT affairs.

### **Spouse Hospitality**

Sunset Room, 9 A.M. - 4 P.M., Monday, Tuesday, Wednesday; 9 A.M. -  
Noon, Thursday.

### **Mixer and Reception**

Atlas Ballroom Foyer, 6:00 - 7:30 P.M., Sunday, Cash Bar.

### **Placement Service**

De Anza and Mesa Rooms (Mezzanine, above Mission Ballroom)  
10 A.M. - Noon, Monday, Tuesday, Wednesday  
2 P.M. - 4 P.M., Monday, Tuesday  
Co-Chairmen: W.E. Rinehart, F.R. Johannsen

### **Press Room**

Helix Room  
8 A.M. - 5 P.M., Monday, Tuesday, Wednesday  
8 A.M. - Noon, Thursday

# SOCIETY OF TOXICOLOGY

## OFFICERS (1980-1981)

Perry J. Gehring, President  
Robert B. Forney, President-Elect  
J. Wesley Clayton, Jr., Secretary  
Harold N. MacFarland, Treasurer  
Tom S. Miya, Past President

## COUNCILORS

Evelyn G. Burtis (1980-1982)  
William W. Carlton (1979-1981)  
Margaret Hitchcock (1979-1981)  
Orville E. Paynter (1980-1982)

## EXECUTIVE SECRETARY

William E. McCormick  
475 Wolf Ledges Parkway  
Akron, OH 44311  
(216) 762-2289

## OFFICE OF THE SECRETARY

J. Wesley Clayton, Jr.  
Chemistry Building 320  
University of Arizona  
Tucson, AZ 85721  
(602) 626-4558

# COMMITTEES 1980-1981

## ELECTED COMMITTEES

### Educational Committee

Curtis D. Klaassen (1979-1981), Chairman  
Paul M. Newberne (1980-1982)  
Roger P. Smith (1980-1982)  
Elizabeth Weisburger (1979-1981)

### Finance Committee

Harold N. MacFarland, Chairman  
Robert M. Diener (1980-1982)  
John L. Emmerson (1979-1981)  
James E. Gibson (1980-1982)  
Albert C. Kolbye (1979-1981)

### Membership Committee

Clarence J. Terhaar (1978-1981), Chairman  
Clifford I. Chappel (1980-1983)  
Steven D. Cohen (1979-1982)  
Wallace A. Hayes (1980-1981)  
Robert M. Hehir (1980-1983)  
Charles O. Ward (1980-1982)

## APPOINTED COMMITTEES

### **Awards Committee**

Tom S. Miya, Chairman  
Marion W. Anders  
Frederick P. Guengerich

### **Nominating Committee**

Leon Golberg, Chairman  
Daniel B. Menzel  
John A. Moore  
Emil A. Pfitzer  
Robert Snyder

### **Program Committee**

Robert B. Forney, Chairman  
J. Wesley Clayton, Jr., Secretary  
Marion W. Anders (1978-1981)  
James E. Gibson (1979-1982)  
Jerry B. Hood (1980-1983)  
Richard J. Kociba (1979-1982)  
Robert I. Krieger (1978-1981)  
Roger O. McClellan (1980-1983)  
Paul M. Newberne (1978-1981)  
R. Craig Schnell (1979-1982)  
Mary Vore (1980-1983)

### **Conference Arrangements**

Fred W. Oehme, Chairman

### **Technical Committee**

Raghubir P. Sharma, Chairman  
Rajender Abraham  
Daniel Couri  
George D. DiVencenzo  
Virgil H. Freed  
Gio B. Gori  
Jane F. Robens  
Thomas E. Shellenberger  
Donald E. Stevenson  
George M. Szczech

### **Committee on Regulatory Affairs and Legislative Assistance**

Richard S. Waritz, Chairman  
Kenneth C. Back  
Donald D. McCollister  
Gordon W. Newell  
Marshall Steinberg

### **Committee on Professional Relations and Standards**

Charles F. Reinhardt, Chairman  
Herbert H. Cornish  
Frederick W. Oehme  
Jerry M. Smith  
Ralph C. Wands  
Anne M. Wolven-Garrett

### **Board of Publications**

Bernard A. Schwetz (1978-1981), Chairman  
Paul B. Hammond (1979-1982)  
Edward A. Smuckler (1980-1983)  
Perry J. Gehring, President  
Robert B. Forney, Auditor  
Robert A. Neal, Auditor

## **APPOINTMENTS**

### **Historian**

Harry W. Hays

### **Placement**

William E. Rinehart, Director  
Frederick R. Johannsen, Co-Director

### **Representative to the Steering Committee of the International Congress of Toxicology**

Seymour L. Friess

### **Liaison with American College of Veterinary Pathology**

William W. Carlton  
Richard J. Kociba

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

Frederick P. Guengerich, Chairman  
Paul B. Hammond  
Mary Vore

### **Liaison with European Society of Toxicology**

Bo Holmstedt  
Iain F.H. Purchase

### **Liaison with American Industrial Hygiene Association**

J. Wesley Clayton, Jr.  
Robert T. Drew  
Perry J. Gehring

### **Liaison with Environmental Mutagen Society**

David J. Brusick

### **Liaison with The Teratology Society**

Raymond D. Harbison

# FUTURE MEETINGS

Meeting	Year	Dates	Location
21	1982	March 7-11	Sheraton Boston Boston, MA
22	1983	March 6-10	Caesar's Palace Las Vegas, NV
23	1984	March 11-15	Atlanta Hilton Atlanta, GA
24	1985	March 17-21	Town and Country San Diego, CA

# 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
Joseph F. Borzelleca	1973-1974
Sheldon D. Murphy	1974-1975
Seymour L. Friess	1975-1976
Robert A. Scala	1976-1977
Harold M. Peck	1977-1978
Leon Golberg	1978-1979
Tom S. Miya	1979-1980

# AWARDS

## Achievement

1967	.....	G.L. Plaa
1968	.....	A.H. Conney
1969	.....	S.S. Epstein
1970	.....	S.D. Murphy
1971	.....	Y. Alarie
1972	.....	R.L. Dixon
1973	.....	No Award
1974	.....	M.F. Cranmer
1975	.....	I.C. Munro
1976	.....	C.D. Klaassen
1977	.....	J.E. Gibson
1978	.....	R.D. Harbison
1979	.....	M.R. Boyd
1980	.....	P.G. Watanabe

## 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
1974	.....	W.B. Deichmann
1975	.....	F. Coulston
1976	.....	V.K. Rowe
1977	.....	H.W. Hays
1978	.....	J.M. Coon
1979	.....	D.W. Fassett
1980	.....	B.L. Oser

## Frank R. Blood

1974	.....	Y. Alarie
1975	.....	D.J. Ecobichon
		G.J. Johnstone
		O. Hutzinger
1976	.....	R.D. Brown
1977	.....	J. Dedinas
		G.D. DiVincenzo
		C.J. Kaplan
1978	.....	P.J. Gehring
		E.O. Madrid
		G.R. McGowan
		P.G. Watanabe
1979	.....	R. Fradkin
		E.J. Ritter
		W.J. Scott
		J.G. Wilson
1980	.....	J.A. Last
		P.F. Moore
		O.G. Raabe
		B.K. Tarkington

## Education

1975	.....	H.C. Hodge
1976	.....	T.A. Loomis
1977	.....	R.B. Forney
1978	.....	none awarded
1979	.....	S.D. Murphy
1980	.....	H.H. Cornish

## Arnold J. Lehman

1980	.....	Allan H. Conney
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## Distinguished Fellow

The following have been given the Distinguished Fellow Award:

Julius M. Coon, M.D., Ph.D.  
 Frédérick Coulston, Ph.D.  
 William B. Deichmann, M.D., Ph.D.  
 Victor A. Drill, M.D., Ph.D.  
 David W. Fassett, M.D.  
 O. Garth Fitzhugh, Ph.D.  
 Wayland J. Hayes, Jr., M.D., Ph.D.  
 Harry W. Hays, Ph.D.  
 Harold C. Hodge, Ph.D.

Don D. Irish, Ph.D.  
 Paul S. Larson, Ph.D.  
 Ted A. Loomis, M.D., Ph.D.  
 Robert L. Roudabush, Ph.D.  
 Verald K. Rowe, Sc.D.  
 C. Boyd Shaffer, Ph.D.  
 Henry F. Smyth, Jr., Ph.D.  
 Herbert E. Stokinger, Ph.D.  
 Carrol S. Weil  
 John A. Zapp, Jr., Ph.D.

## **OPEN FORUM: National Toxicology Program**

Sunday Afternoon, March 1, 1981

Golden West Room

2:00 - 5:00 P.M.

The National Toxicology Program actively encourages suggestions, criticisms, and comments on its ongoing and planned activities from the scientific community. The NTP Annual Plan serves as a reference that describes these activities. While comments on all phases of the NTP are welcome, comments on the two following areas are solicited:

Cellular and Genetic Toxicology: Short-Term Testing, Test Development, and Validation Efforts

Fertility and Reproductive Assessment Activities

Dr. D.P. Rall and staff will lead the discussion.

The meeting is open to all attendees

## **REFRESHER COURSE: Inhalation Toxicology**

Sunday Afternoon, March 1, 1981

1:00 - 5:00 P.M.

San Diego Room

See page 28 for details

Fee: \$25. Preregistration required

## PLATFORM SESSION 1: Biochemical Toxicology I

Monday Morning, March 2, 1981

Town and Country Room

**Chairman: M.J. Iatropoulos, American Cyanamid Co.,  
Pearl River, NY**

**Assistants: B.M. Sparano, American Cyanamid Co., Pearl River, NY  
K. Rozman, GSF, Munich, West Germany**

Paper No.	Time (A.M.)	
1	8:30	<b>Microsomal Activation of N-Hydroxy Norcocaine to a Reactive Nitroxide.</b> M.A. Evans, <i>Dept. of Pharmacol., Univ. of Illinois Med. Ctr., Chicago, IL.</i>
2	8:45	<b>Structural Identification of the Protein Covalent Adduct Formed <i>in vivo</i> in Rat Liver After Thioacetamide Treatment.</b> M.C. Dyroff and R.A. Neal, <i>Dept. of Biochem., Vanderbilt Univ. School of Med., Nashville, TN.</i>
3	9:00	<b>Vapor Pressure (b.p.) Mainly Determines Inhibition of Microsomal Drug Oxidation by Halohydrocarbons.</b> H. Uehleke and S. Poplawski-Tabarelli, <i>Inst. of Pharmacol., Univ. of Tübingen, Tübingen, West Germany, and Dept. of Tox., Bundesgesundheitsamt, Berlin, West Germany.</i>
4	9:15	<b>Comparison of the Effects of Biphenyl, Monochlorobiphenyl and Polychlorinated Biphenyl Mixtures on Hepatic Mixed-Function Oxidase Activity and Histopathology in Male Rats.</b> F.K. Dietz, J.F. Quast, R.R. Albee, J.E. Beyer and M.D. Dryzga, <i>Tox. Res. Lab., Dow Chemical Co., Midland, MI</i> , and L.R. Shull, P.A. Alsbach and B.A. Olson, <i>Dept. of Dairy Sci., Mich. State Univ., East Lansing, MI.</i> Sponsor: W.H. Braun.
5	9:30	<b>Effects of 2,3,7,8-Tetrachlorodibenzo-p-Dioxin on Ornithine Decarboxylase in Rat Liver.</b> C. Potter, D.H. Russell and I.G. Sipes, <i>Depts. of Pharmacol. and Tox., Univ. of Arizona, Tucson, AZ.</i>
6	9:45	<b>Potent Mixed-Type Induction of Rat Liver Microsomal Drug-Metabolizing Enzymes by 2,3,3',4,4',5'-Hexabromobiphenyl, a Component of Firemaster.</b> L.W. Robertson, A. Parkinson and S. Safe, <i>Sch. of Pub. Hlth., Univ. of Michigan, Ann Arbor, MI, and Dept. of Chem., Univ. of Guelph, Guelph, Ont.</i> Sponsor: R. Hartung.
7	10:00	<b>Indirect Evidence that 2',3,4,4',5,5'-Hexachlorobiphenyl is an Isosafrole-Type Inducer of Cytochrome P-450.</b> A. Parkinson, L.W. Robertson, S. Bandiera, R. Cockerline, K. Riley, L. Uhlig and S. Safe, <i>Dept. of Chem., Univ. of Guelph, Guelph, Ont.</i> Sponsor: R. Hartung.

8	10:15	<b>The Effects of Phenobarbital - Iron Dextran Interactions on Hepatic Microsomal and Lysosomal Enzyme Activity.</b> T.L. Horling, G.S. Rao, G. Witz, B.D. Goldstein and M.A. Gallo, <i>Dept. of Environ. and Comm. Med., CMDNJ-Rutgers Med. School, Piscataway, NJ.</i>
9	10:30	<b>Alpha-Naphthylisothiocyanate (ANIT) Induced Alterations in Hepatic Epoxide Hydratase (EH) and DT-Diaphorase (DTD) Activities.</b> T.B. Leonard, J.A. Popp, M.E. Graichen and J.G. Dent, <i>Chem. Ind. Inst. Tox., Research Triangle Park, NC.</i>
10	10:45	<b>Effect of Di-2-(Ethylhexyl) Phthalate (DEHP) on Xenobiotic Metabolizing Enzymes and Cytochrome P-450 Levels.</b> P.K. Seth and D.K. Agarwal, <i>Ind. Toxicol. Res. Center, Lucknow, India.</i> Sponsor: R.S. Chhabra.
11	11:00	<b>Pharmacokinetics and Liver Microsomal Metabolism of Diflubenzuron in Two Breeds of Chickens.</b> J.C. Opdycke and R.E. Menzer, <i>Dept. of Entomol., Univ. of Maryland, College Park, MD.</i>
12	11:15	<b>A Sulfite Oxidase-Deficient Rat Model for Investigation of Sulfite Toxicity.</b> A.F. Gunnison, L. Dulak, T.J. Farruggella, G. Chiang, J. Zaccardi and E.D. Palmes, <i>Inst. Env. Med., NYU Med. Center, New York, NY.</i>
13	11:30	<b>Effect of Drugs on Hepatic Progesterone Metabolism.</b> M.S.I. Dhami and G. Feuer, <i>Dept. Clin. Biochem., Univ. of Toronto, and Can. Mem. Chirop. College, Toronto, Ont.</i>
14	11:45	<b>Distribution and Excretion of <sup>14</sup>C-Parachloroaniline in the Rat.</b> D.F. Perry, D.E. Carter and I.G. Sipes. <i>Tox. Program, Univ. of Arizona, Tucson, AZ.</i>

## PLATFORM SESSION 2: Respiratory I

Monday Morning, March 2, 1981

Golden West Room

**Chairman: M.J. McKenna, Dow Chemical U.S.A., Midland, MI**

**Assistants: G. Pollock, Univ. of Idaho, Moscow, ID**

**A.R. Dahl, Inhal. Tox. Res. Inst., Albuquerque, NM**

Paper No.	Time (A.M.)	
15	8:30	<b>A 30-Day Toxicity Study of Inhaled Fenitrothion in the Albino Rat.</b> C. Breckenridge, M. Pesant and D.J. Ecobichon, <i>Bio-Research Labs., Senneville, Que., and Dept. Pharmacol. &amp; Therapeu., McGill Univ., Montreal, Que.</i>
16	8:45	<b>Carbofuran I. Toxicity in the Rat Following Aerosol Inhalation.</b> P.W. Ferguson, S.A. Jewell, R.I. Krieger and O.G. Raabe, <i>Dept. of Environ. Tox. and Lab. for Energy-Related Health Research, Univ. of California, Davis, CA.</i>

- 17 9:00 **Metabolic Changes Associated with Subchronic Exposure to Methyl Mercaptan Vapor.** M.F. Tansy, F.M. Kendall, W.E. Landin, R. Oberly and W. Sherman, *Dept. of Physiol. and Biophys., Temple Univ., Philadelphia, PA.*
- 18 9:15 **Sensory Irritation by Inhaled Formaldehyde in B6C3F1 Mice and F-344 Rats Following Single or Repeated Exposure.** C.S. Barrow and W.S. Steinhagen, *Chem. Ind. Inst. of Tox., Research Triangle Park, NC.*
- 19 9:30 **A Thirteen Week Inhalation Toxicity Study of Ethylene Dibromide in Rats.** K.D. Nitschke, R.J. Kociba, D.G. Keyes and M.J. McKenna, *Tox. Res. Lab., Dow Chemical USA, Midland, MI.*
- 20 9:45 **Pharmacokinetics and Metabolism of Inhaled Methyl Chloride in the Rat.** T.D. Landry, T.S. Gushow, P.W. Langvardt and M.J. McKenna, *Tox. Research Lab., Dow Chemical USA, Midland, MI.*
- 21 10:00 **Studies on Perchloroethylene-Ethanol Interaction.** S. Laham and J. Szabo, *Health and Welfare Canada, Ottawa, Ont., and Ottawa Univ., Faculty of Medicine, Ottawa, Ont.*
- 22 10:15 **Six-Month Inhalation Toxicity Study of Monochloro-Benzene in Beagle Dogs.** M.V. Roloff, S.V. Becker and J.B. Terrill, *Monsanto Co., Environ. Health Lab., St. Louis, MO.*
- 23 10:30 **Short-Term Inhalation Toxicity of Perfluoroisobutylene.** L.W. Smith, R.J. Gardner and G.L. Kennedy, Jr., *E.I. du Pont de Nemours and Company, Inc., Haskell Lab. for Tox. and Ind. Med., Newark, DE.*
- 24 10:45 **Monitoring Delayed Respiratory Hypersensitivity in Guinea Pigs.** M.H. Karol, D.W. Underhill, J. Stadler and Y. Alarie, *Grad. Sch. of Pub. Hlth., Univ. of Pittsburgh, Pittsburgh, PA.*
- 25 11:00 **Development of Recommended Test Method for Toxicological Assessment of Inhaled Combustion Products.** M.M. Birky, B.C. Levin and M. Paabo, *Center for Fire Research, National Bureau of Standards, Washington, DC,* and D. Malek, *Johns Hopkins School of Hyg. and Pub. Health, Baltimore, MD.* Sponsor: T. Wernick.
- 26 11:15 **An Interlaboratory Evaluation of the National Bureau of Standards Test Method for Measuring Combustion Toxicity in Rats.** B.C. Levin and M.M. Birky, *Center for Fire Research, National Bureau of Standards, Washington, DC,* and D. Malek, *Johns Hopkins School of Hyg. and Pub. Health, Baltimore, MD.* Sponsor: T. Wernick.
- 27 11:30 **Toxicologic Classification of Decomposition Products of Synthetic and Natural Polymers.** Y. Alarie and R.C. Anderson, *Grad. Sch. of Pub. Hlth., Univ. of Pittsburgh, Pittsburgh, PA.*
- 28 11:45 **Inhalation Toxicity of a Bronchodilator.** R. Martin, J.M. Sturgess and F.A. de la Iglésia, *Dept. of Tox., Warner-Lambert/Parke-Davis Pharmaceut. Res., Sheridan Park, Canada and Ann Arbor, MI.*

## PLATFORM SESSION 3: Renal I

Monday Morning, March 2, 1981

California Room

**Chairman: J.B. Hook, Michigan State Univ., East Lansing, MI**

**Assistants: M.E. Davis, Univ. of Mississippi, University, MS**

**W.R. Hewitt, Univ. of Missouri, Columbia, MO**

Paper No.	Time (A.M.)	
29	8:30	<b>Further Evaluation of the Nephrotoxicity of Hexachloro 1:3 Butadiene in the Rat.</b> J.B. Hook* and E.A. Lock, <i>ICI Ltd., Central Tox. Lab., Alderley Park, North Macclesfield, Cheshire, UK, and *Center for Environ. Tox., Michigan State Univ., East Lansing, MI.</i>
30	8:45	<b>Diethylmaleate or Cysteine Pretreatment Modifies Hexachlorobutadiene Nephrotoxicity.</b> M.E. Davis, W.O. Berndt and H.M. Mehendale, <i>Dept. of Pharmacol. and Tox., Univ. of Miss. Med. Ctr., Jackson, MS.</i>
31	9:00	<b>Effects of Nephrotoxic Fungal Toxins on Renal Calcium Transport.</b> W.O. Berndt and A.W. Hayes, <i>Dept. Pharmacol. &amp; Tox., Univ. Miss. Med. Ctr., Jackson, MS.</i>
32	9:15	<b>The Potential Role of Plasma Disulfide in the Renal Accumulation of Inorganic Mercury.</b> W.A. Abbott and T.W. Clarkson, <i>Div. of Tox., Univ. of Rochester School of Med. and Dent., Rochester, NY.</i>
33	9:30	<b>Calculated Dose Levels of 2,4-D in Exposed Forest Workers Based on Urinary Excretion Data and Dermal Pharmacokinetics of 2,4-D in the Rat.</b> F.A. Smith, J.C. Ramsey, M.D. Dryzga and W.H. Braun, <i>Tox. Res. Lab., Dow Chemical Co., Midland, MI.</i>
34	9:45	<b>Acute, Dose-Dependent Toxicity of 1,2-Dibromo-3-Chloropropane (DBCP) and Repair of the Lesions in Male, F344 Rats.</b> W.M. Kluwe, <i>Natl. Tox. Program, Natl. Inst. of Environ. Health Sci., Research Triangle Park, NC.</i> Sponsor: J.A. Moore.
35	10:00	<b>Effect of Enzyme Inducers on Acetaminophen (APAP)-Induced Nephrotoxicity and Hepatotoxicity.</b> C.-H. Kuo, R.W. McNish, S.L. Mehl and J.B. Hook, <i>Ctr. for Environ. Tox. and Dept. of Pharmacol. and Tox., Mich. State Univ., East Lansing, MI.</i>
36	10:15	<b>Changes in Urinary Zinc Excretion After Lead Exposure.</b> W. Victory, N. Soifer, J. Weiss, D. Thomas and A.J. Vander, <i>Physiol. Dept., Univ. of Michigan, Ann Arbor, MI.</i> Sponsor: R.J. Richardson.
37	10:30	<b>Inhibition of Rat Kidney Biliverdin Reductase by Mercury and the Reversal of the Inhibition by Selenium.</b> R.K. Kutty and M.D. Maines, <i>Dept. of Pharmacol., Univ. of Illinois, College of Med., Chicago, IL.</i>

- 38 10:45 **Alterations of Cephalosporin Antibiotic Drug Disposition in Male Rats with Experimentally-Reduced Kidney Function.** G.K. Hanasono and C.L. Moss, *Tox. Div., Lilly Res. Labs., Eli Lilly and Co., Greenfield, IN.* Sponsor: D.G. Hoffman.
- 39 11:00 **Effect of Semisynthetic Penicillins on the Kidneys of Neonatal Beagle Dogs.** B.M. Sparano, W.J. Dougherty, V.C. James and M.J. Iatropoulos, *Med. Res. Div., American Cyanamid Co., Pearl River, NY.*
- 40 11:15 **Dose-Related Increases in Blood Pressure and Vascular Responsiveness Following Prenatal Salicylate Treatment in Rats.** C.A. Kimmel and J. Buelke-Sam. *Div. of Teratogenesis Res., Natl. Center for Tox. Res., FDA/DHHS, Jefferson, AR.*
- 41 11:30 **Effects of Selected Carbohydrates Including Modified Food Starch on Renal Lesions and Calcium Absorption.** M.L. Buttolph and P.M. Newberne, *Dept. of Nutrition and Food Sci., M.I.T., Cambridge, MA.*
- 42 11:45 **Urinary Saturation, Calculus Formation, and Bladder Hyperplasia in Rats Ingesting Terephthalic Acid (TPA) or Dimethyl Terephthalate (DMT).** H. Heck, T.Y. Chin, R.W. Tyl and J.A. Popp, *Depts. of Biochem. Tox., Tox., and Pathol., Chem. Ind. Inst. of Tox., Research Triangle Park, NC.* Sponsor: J.E. Gibson.

## POSTER SESSION 1: General Toxicology I

Monday Morning, March 2, 1981

Mission Ballroom (Rear)

**Chairman: R.C. Schnell, Univ. of Nebraska Med. Center, Omaha, NE**

**Assistant: J.U. Bell, Univ. of Florida, Gainesville, FL**

- | Paper No. | Time (A.M.)  |   |
|-----------|--------------|---|
| 43        | 8:30 - 10:00 | <b>Comparative Toxicopathology of Firemaster BP-6, 2,2',4,4',5,5'-Hexabromobiphenyl (HBB) and 3,3',4,4',5,5'-HBB After 10 and 30 days of Dietary Administration to Rats.</b> S.D. Sleight, J.A. Render, B.T. Akoso, S.D. Aust and R. Nachreiner, <i>Depts. of Pathol. and Biochem., Michigan State Univ., East Lansing, MI.</i> |
| 44        |              | <b>Behavioral and Pharmacological Alterations Following Exposure to Monomeric Acrylamide.</b> L.S. Rafales, R.L. Bornschein and V. Caruso, <i>Dept. of Environ. Health, Univ. of Cincinnati, Cincinnati, OH.</i> Sponsor: P.B. Hammond.   |
| 45        |              | <b>PAPER CANCELLED</b>  |
| 46        |              | <b>ABBTX System for Collecting and Reporting Toxicology Data.</b> D.L. Conine, E. Seidman, R. Bergeon, R. Chamberlain and I.A. Heyman, <i>Div. of Drug Safety Evaluation, Abbott Labs., North Chicago, IL.</i>  |

- 47 **Influence of Pentachlorophenol on the Splenic Antibody Response in the Mouse.** S.P. Mudzinski and L.D. Loose, *Inst. of Comp. and Human Tox., Albany Medical College, Albany, NY.*
- 48 **Subchronic Toxicity of Chloropropanol in Rats and Dogs.** I.W. Daly and R.D. Phillips, *Bio/dynamics Inc., and Exxon Corp. Res. Environ. Hlth. Div., East Millstone, NJ.* Sponsor: W.E. Rinehart.
- 49 **Subchronic Toxicity Study of Carnauba Wax in Rats.** R.A. Parent, G.E. Cox, F.G. Hess and P.J. Becci, *Food and Drug Research Labs., Inc., Waverly, NY,* and J.B. Babish, *Cornell Univ., Ithaca, NY.*
- 50 **Effects of Subchronic Feeding Studies of Epoxy or Polyester Facsimiles Extracted from a Food Package Adhesive in Sprague-Dawley Rats.** F.G. Hess, G.E. Cox, K.A. Voss and P.J. Becci, *Food and Drug Research Labs., Inc., Waverly, NY,* and J.G. Babish, *Cornell Univ., Ithaca, NY.*
- 51 **Clinical and Morphological Findings in Untreated Beagle Dogs.** W.D. Johnson, P.J. Becci, F.G. Hess, K.A. Voss, D.L. Bachman, L.A. Gephart, G.E. Cox and R.A. Parent, *Food and Drug Res. Labs., Inc., Waverly, NY.* Sponsor: J.G. Babish.
- 52 **Subacute Intramuscular Toxicity Study in Rats Given Hydroxypropyl Methyl Cellulose.** L.N. Curcio, V.M. Traina, R.M. Diener and R.H. Spaet, *Div. of Tox. and Pathol., Ciba-Geigy Corp., Summit, NJ.*
- 53 **Teratogenic and Dominant Lethal Investigation of Two Hydrocarbon Solvents.** R.D. Phillips and G.F. Egan, *Exxon Corp., Res. & Environ. Hlth. Div., East Millstone, NJ.* Sponsor: E.G. Burtis.
- 54 **Histochemical Demonstration of Direct Toxicity of Phenol on Kidney.** M.L. Coan, R.B. Baggs and H.B. Bosmann, *Depts. of Pharmacol. and Tox., Univ. of Rochester, School of Med. and Dent., Rochester, NY.* Sponsor: T.W. Clarkson.
- 55 **Hepatic Calcification Following CCl<sub>4</sub> Poisoning.** D.M. Phillips and D.R. Taves, *Tox. Training Program and Dept. of Pharmacol., Univ. of Rochester, Rochester, NY.*
- 56 **A Mobile Intelligent Collection Station for Animal Weight Data and In-Life Mass Observations.** A.J. George<sup>1</sup>, J.R. Lego<sup>2;3</sup> and M.J. Fleming, <sup>2;1</sup>*Biomedical Res. Dept.,* <sup>2</sup>*Management Information Services Dept., ICI Americas Inc., Wilmington, DE.* <sup>3</sup>*Presently with SmithKline Corp., Philadelphia, PA.* Sponsor: L.E. Gongwer.
- 57 **The Acute Toxicity of Perfluoro-N-Decanoic Acid: Similarities with 2,3,7,8-Tetrachlorodibenzodioxin.** M.E. Andersen, G. Baskin and A. Rogers, *Air Force Aerospace Med. Res. Lab., Wright-Patterson AFB, OH.*

- 58 **Interspecies Variation in the Response of Fetal Hepatic Metallothionein to Maternally-Administered Cadmium.** M.P. Waalkes and J.U. Bell, *Dept. of Pharmacol. and Tox., West Virginia Univ. Med. Center, Morgantown, WV.*
- 59 **Experimental Photosensitization.** C.K. Wood, J.W. McAlack and F.A. McBride, *Haskell Lab. for Tox. and Ind. Med., E.I. du Pont de Nemours and Co., Inc., Newark, DE.* Sponsor: J.R. Gibson.
- 60 **Toxicity Studies of Naturally Occurring Grape Color Extract with Carrier Malto-Dextrin in Rats and Dogs.** P.J. Becci, F.G. Hess, G.A. Rucci, G.E. Cox, W.D. Johnson, J.G. Babish and R.A. Parent, *Food and Drug Research Labs., Inc., Waverly, NY.*
- 64 **Effects of Age and Sex on 2,4-Dithiobiuret (DTB) Toxicity in Rats: Correlation of Toxicity with Body Burden.** W. Atchison, J. Dickins and R. Peterson, *Univ. Wisconsin, Madison, WI.*
- 65 **Comparison of Hepatotoxicities of Trichloroethylene and Perchloroethylene.** J.A. Buben and E.J. O'Flaherty, *Dept. of Environ. Health, Univ. of Cincinnati, Cincinnati, OH.* Sponsor: P.B. Hammond.
- 61 **Effect of Thiobenzamide on the Biliary Excretion of Phenoldibromophthalein Disulfonate in Rats.** G. Traiger, R. Hanzlik and K. Vyas, *Dept. of Pharmacol. and Tox., and Med. Chem., School of Pharmacy, Univ. of Kansas, Lawrence, KS.*
- 62 **Delayed Contact Hypersensitivity of Guinea Pigs to Ethyl Acrylate.** R.D. Parsons and R.C. Baldwin, *Tox. Dept., Rohm and Haas Co., Spring House, PA.* Sponsor: A.W. Hayes.
- 63 **Toxicity and Enzyme Inductive Effect of 5-Fluoro-7,12-Dimethylbenz(a)anthracene and its 7-Hydroxymethyl- and 7-Acetoxyethyl- Derivatives.** M. Chien and J.W. Flesher, *Dept. of Pharmacol., College of Med. and Grad. Center for Tox., Univ. of Kentucky, Lexington, KY.* Sponsor: M. Vore.
- 66 **Enzymuria in Rats During the Course of Nephrotoxicity Induced by Mercuric Chloride or Hexamethrine Bromide.** K.W. Obrosky, R.S. Nair and I.W. Waters, *Dept. of Pharmacol., Sch. of Pharmacy, Univ. of Mississippi, University, MS.* Sponsor: W.M. Davis.
- 67 **Combined Effects of Propranolol and Ethanol.** R. Lindenschmidt, D. Brown, B. Cerimele, T. Bright, R.B. Forney and T. Walle, *Dept. of Pharmacol. and Tox., Indiana Univ. School of Med., and the Dow Chemical Co., Indianapolis, IN.*
- 68 **Equine Lead Intoxication in the Lead-Silver Mining Region of North Idaho: Clinical and Experimental.** G.E. Burrows, *Dept. Physiol. Sci., College of Vet. Med., Oklahoma State Univ., Stillwater, OK.*

- 69 **Acute Optic Neuropathy After Dermal Methylthioacetate Exposure.** J.W. Embree, Z.A. Wong, L.S. Beck, D.N. Kitchen and G.A. Severin, *Chevron Environ. Health Center, Standard Oil Co. of California, Richmond, CA; ELARS Bioresearch Labs., Fort Collins, CO; Westpath Labs., Inc., Fort Collins, CO; and Colorado State Univ., Fort Collins, CO.* Sponsor: J.K. Kodama.
- 70 **Lead-Induced Alteration of Renal Mitochondrial Membrane Structure and Function.** B.A. Fowler, K.S. Squibb, A. Oskarsson, J.A. Taylor and G.T. Carver, *NIEHS, Research Triangle Park, NC.*
- 71 **Chronic Postweaning Lead Exposure and Response Duration Performance.** D.A. Cory-Slechta, S.T. Bissen, A.M. Young and T. Thompson, *Environ. Hlth. Sci. Ctr. and Dept. of Radiation Biol. & Biophysics, Univ. of Rochester School of Med., Rochester, NY, and Dept. of Psychol., Univ. of Minnesota, Minneapolis, MN.* Sponsor: T.W. Clarkson.
- 72 **Species Difference in Biochemical Expression of Misonidazole Neurotoxicity.** A.B. Shaw and P.J. Conroy, *Tox. Training Program and Div. of Radiation Oncology, Dept. of Radiol., Univ. of Rochester School of Med. and Dent., Rochester, NY.* Sponsor: G.G. Berg.
- 73 **Effect of Indomethacin on the Bone Marrow and Immune System in the Mouse.** G.A. Boorman, M.I. Luster, J.H. Dean, *NTP, NIEHS, Research Triangle Park, NC.*
- 74 **Behavioral Toxicity of Phenylpropanolamine in Adult and Aged Hamsters.** L.R. Weiss, *Div. of Drug Biology, Food and Drug Admin., Washington, DC.*
- 75 **Functional Neurologic Effects of Metronidazole Phosphate in the Dog.** J.E. Gray, R.N. Weaver, K. Stern and G. Elfring, *Res. Div., The Upjohn Co., Kalamazoo, MI.*
- 76 **Influence of I.V. Administration Factors on the Toxicity of Cyclohexanone in Dogs.** M.T. Koefel, T.R. Miller, L. Martis, P.J. Garvin and J.L. Dörner, *Baxter Travenol Labs., Inc., Morton Grove, IL, and Dept. of Pathol. and Hyg., Univ. of Illinois College Vet. Med., Urbana-Champaign, IL.*
- 77 **Age Dependent Effects of Dibutyltin Dichloride and Their Possible Relationship to Metabolism.** J.K. Yermakoff and G.C. Fuller, *Univ. of Rhode Island, Kingston, RI.*
- 78 **Sodium Azide: Stability and Subchronic Toxicity in Rats.** E.W. Lee, H.J. White and K.L. Smiler, *Biomed. Sci. Dept., General Motors Res. Labs., Warren, MI.*
- 586 **Combined Effects of Delta-9-Tetrahydrocannabinol and Cannabichromene in Humans.** P.J. Pence, G.A.W. Waterhouse, L. Lemberger, W.S. Dalton, B.J. Cerimele and R.B. Forney, *Dept. Pharmacol. and Tox., Indiana Univ. School of Med., Lilly Lab. for Clinical Research, and Dow Chemical Co., Indianapolis, IN.*

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**Marihuana as a Cause of False Positive Urine Pregnancy Tests.** G.A.W. Waterhouse, J. Noland, Jr., R.A. Munsick, D.J. Doedens, L. Lemberger and R.B. Forney, *Dept. Pharmacol. and Tox., Dept. Obstetrics and Gynecology, Indiana Univ. School of Med. and Lilly Lab. for Clinical Research, Indianapolis, IN.*

## POSTER SESSION 2A: Methods in Toxicology

Monday Morning, March 2, 1981

Mission Ballroom (Rear)

**Chairman: R.C. Schnell, Univ. of Nebraska Med. Center, Omaha, NE**

**Assistant: G.S. Probst, Eli Lilly Co., Greenfield, IN**

Paper No.	Time (A.M.)	
79	10:30 - Noon	<b>Computer Randomization of Animals for Toxicity Studies.</b> R.A. Martin, C.J. DiFonzo, A. Daly and F.A. de la Iglesia, <i>Dept. of Tox., Warner-Lambert/Parke-Davis Pharm. Res., Sheridan Park, Canada and Ann Arbor, MI.</i>
80		<b>A New Approach to the Extraction of Polar Metabolites from Body Fluids.</b> C.C. Smith and G.F. Wolfe, <i>Dept. of Environ. Health, Univ. of Cincinnati, College of Med., Cincinnati, OH.</i>
81		<b>Comparison of Metallothionein Estimation by Polarographic and Cadmium Saturation Methods.</b> S. Onosaka and M.G. Cherian, <i>Dept. of Pathol., Univ. of Western Ontario, London, Ont.</i>
82		<b>High Performance Size-Exclusion Chromatography of Milk Proteins.</b> G.P. Dimenna and H.J. Segall, <i>Dept. Physiol. Sci., Univ. of California, Davis, CA.</i> Sponsor: G.M. Conzelman.
83		<b>Clinical Pathology Sample Collection Data: A Real Time Collection and Reporting System.</b> I.L. Schoch, R.W. Liddell, R.S. Wasserman, R.A. Schroer and S.M. Arseven, <i>Med. Res. Div./Information Services Div., American Cyanamid Co., Pearl River, NY.</i> Sponsor: J.F. Noble.
84		<b>Urinary Thiocyanate as an Indication of Cigarette Smoking.</b> D.J. Ashmore, T.P. Bright, L.W. Emmard and R.B. Forney, <i>Dept. of Pharmacol. and Tox., Indiana Univ. School of Med. and the Dow Chemical Co., Indianapolis, IN.</i>
85		<b>A Real Time Automated Data Management System for Experimental Toxicology.</b> J.L. O'Donoghue, C. Byrnes and C.J. Terhaar, <i>Health, Safety and Human Factors Lab., and Management Services Div., Eastman Kodak Co., Rochester, NY.</i>

## POSTER SESSION 2B: Mutagenesis I

Monday Morning, March 2, 1981

Mission Ballroom (Rear)

**Chairman: R.C. Schnell, Univ. of Nebraska Med. Center, Omaha, NE**

**Assistant: G.S. Probst, Eli Lilly Co., Greenfield, IN**

Paper No.	Time (A.M.)	
86	10:30 - Noon	<b>Dominant Lethal Assay with OBTS (N-Oxydiethylene-2-Benzothiazole Sulfenamide).</b> R.K. Hinderer, M. Knickerbocker and F.J. Koschier, <i>B.F. Goodrich Chemical Co., Cleveland, OH, and Food &amp; Drug Res. Labs., Inc., Waverly, NY.</i>
87		<b>Dominant Lethal Assay with Cure-Rite®-18 (N-Oxydiethylenethiocarbonyl-N-Oxydiethylene Sulfenamide).</b> R.K. Hinderer, M. Knickerbocker and F.J. Koschier, <i>B.F. Goodrich Chemical Co., Cleveland, OH, and Food &amp; Drug Res. Labs., Inc., Waverly, NY.</i>
88		<b>Chemically-Induced Sister Chromatid Exchange <i>in vivo</i> in Chinese Hamster Bone Marrow.</b> G.S. Probst and S.B. Neal, <i>Lilly Res. Labs., Eli Lilly and Co., Greenfield, IN.</i> Sponsor: J.L. Emmerson.
89		<b>Dietary Indoles Protect Against Covalent Binding of N-Nitrosodimethylamine Metabolites to Mouse Liver DNA and Protein.</b> H.G. Shertzer, <i>Kettering Lab., Univ. of Cincinnati, Cincinnati, OH.</i> Sponsor: P.B. Hammond.
90		<b>Lack of a Correlation Between Arylhydrocarbon Hydroxylase (AHH) Activity and Capacity to Generate Toxic Metabolites of Benzo(a)Pyrene (BP).</b> D.J. Doolittle, M.B. Kazanski and J.I. Goodman, <i>Dept. Pharmacol./Tox., and Ctr. for Environ. Tox., Mich. State Univ., East Lansing, MI.</i>
91		<b>Measurement of DNA Strand Breakage Induced by Genotoxic Chemicals in Cells Without the Use of Radiolabeled Deoxynucleotides.</b> S.M. Pyle and F.B. Daniel, <i>Health Effects Res. Lab., U.S. Environ. Protection Agency, Cincinnati, OH.</i> Sponsor: R.J. Bull.
92		<b>Toxicity, Mutagenesis and Co-Mutagenesis of Cadmium (Cd) in Salmonella Mutants TA98 and TA100.</b> R.J. Rubin and R. Kroll, <i>Dept. Environ. Health Sci., Johns Hopkins Univ., Baltimore, MD.</i>
93		<b>Promutagen Activation by Constitutive and Aroclor 1254 Induced S-9 of the Ferret (<i>Mustelo Furo</i>).</b> J.G. Babish and B.E. Johnson, <i>Dept. of Prev. Med., N.Y.S. College of Vet. Med., and C.F. Wilkinson, Dept. of Entomol., Cornell Univ., Ithaca, NY.</i>
94		<b>The Mutagenicity of Dichloro- and Chlorofluoromethane.</b> T. Green, <i>ICI Ltd., Central Tox. Lab., Alderley Park, Nr. Macclesfield, Cheshire, UK.</i> Sponsor: M.S. Rose.

## POSTER SESSION 2C: Reproduction I

Monday Morning, March 2, 1981

Mission Ballroom (Rear)

**Chairman: R.C. Schnell, Univ. of Nebraska Med. Center, Omaha, NE**

**Assistant: B.S. Probst, Eli Lilly Co., Greenfield, IN**

Paper No.	Time (A.M.)	
95	10:30 - Noon	<b>Effects of 1,2-Dichloroethane and 1,1,1-Trichloroethane in Drinking Water on Reproduction and Development in Mice.</b> B.L. Riddle, R.A. Carchman and J.F. Borzelleca, <i>Dept. of Pharmacol., Medical College of Virginia, Richmond, VA.</i>
96		<b>Neonatal Kepone Exposure Alters Behavioral Sexual Differentiation in Female Hamsters.</b> L.E. Gray, Jr., J. McLamb and J.M. Ferrell, <i>Experimental Biol. Div., U.S. Environ. Protection Agency, Research Triangle Park, NC.</i> Sponsor: L. Hall.
97		<b>Reproductive Effects of Subacute Inhalation of Trifluoroethanol in the Rat.</b> R.M. Wilkenfeld, A. Al-Juburi and F.A. Smith, <i>Depts. Rad. Biol. and Biophys., and Urology, Univ. of Rochester, Rochester, NY.</i>
98		<b>Fate of Metronidazole (Flagyl)<sup>®</sup> Following Intravaginal and Intravenous Administration to Rabbits.</b> H.S. Buttar, <i>Drug Res. Labs., Health Protection Branch, Ottawa, Ont.</i>

## POSTER SESSION 2D: Teratology I

Monday Morning, March 2, 1981

Mission Ballroom (Rear)

**Chairman: R.C. Schnell, Univ. of Nebraska Med. Center, Omaha, NE**

**Assistant: G.S. Probst, Eli Lilly Co., Greenfield, IN**

Paper No.	Time (A.M.)	
99	10:30 - Noon	<b>Teratogenic Evaluation of Accel [Adenine, N-Benzyl-9-(Tetrahydro-2H-Pyran-2-YL)] in the Rat.</b> C.M. Parker, <i>Shell Development Co., Houston, TX,</i> and R.P. Beliles, <i>Litton Bionetics, Inc., Kensington, MD.</i> Sponsor: G.A. Van Gelder.
100		<b>Teratogenic Effects of 6-Mercaptopurine Monohydrate in the Rabbit.</b> S.H. Smith, C.M. Salamon, C.K. O'Loughlin, P.V. Enloe and J.G. Page, <i>ToxiGenics, Inc., Decatur, IL.</i> Sponsor: D.W. Arnold.
101		<b>Evaluation of the Prenatal Toxicity of Methyl Chloroform.</b> R. York, B. Sowry, L. Hastings and J. Manson, <i>Dept. of Environ. Health, Univ. of Cincinnati, Cincinnati, OH.</i> Sponsor: P.B. Hammond.

- 102 **Effects of L-Alanosine (NSC-153353) on Reproduction and Prenatal Development in Sprague-Dawley Rats.** D.J. Thompson, I.L. Dyke, C.E. Lower, J.A. Molello and J.E. LeBeau, *Health and Consumer Products Dept., Dow Chemical U.S.A., Indianapolis, IN.*
- 103 **Significance of Altered Nutrition in Ethanol Fetotoxicity.** P.T. Goad, W. Slikker, C.A. Kimmel, D.W. Gaylor and D.E. Hill, *Div. of Teratogenesis Res., Natl. Center for Tox. Res., Jefferson, AR, and Depts. of Pharmacol. and Interdisciplinary Tox. and Pediatrics, Univ. of Arkansas Med. Sci., Little Rock, AR.*
- 104 **Potential of Diphenylhydantoin Teratogenicity in Mice Fed Purified Diets.** R.M. McClain and J.M. Walsh, *Dept. of Tox. and Pathol., Hoffmann-La Roche Inc., Nutley, NJ.*
- 105 **Determination of the Embryonic Target Organ in Nitrofen-Induced Neonatal Death and the Metabolism of Nitrofen (2,4-Dichloro-4'-Nitrodiphenyl Ether) in the Pregnant Rat.** R.D. Costlow and J.M. Manson, *Dept. Environ. Hlth., Kettering Lab., Univ. of Cincinnati Med. College, Cincinnati, OH.* Sponsor: P. B. Hammond.
- 106 **Behavioral Effects of Repeated Morphine Injection on the Developing Chick.** M.B. Newby-Schmidt and S. Norton, *Dept. of Pharmacol., Univ. of Kansas Med. Center, Kansas City, KS.*
- 107 **Teratologic Evaluation of N-Methylpyrrolidone in Sprague-Dawley Rats.** P.J. Becci, M.J. Knickerbocker, R.A. Parent and L.W. Burnette, *Food and Drug Research Labs., Inc., Waverly, NY, and GAF Corp., Wayne, NJ.* Sponsor: J.G. Babish.
- 108 **The Embryotoxic and Teratological Evaluation of Dietary Sulfite in Sulfite Oxidase Deficient Rats.** G. Chiang, L. Dulak and A.F. Gunnison, *Inst. Env. Med., NYU Med. Center, New York, NY.*
- 109 **The Effect of Zinc and Cadmium on Hepatic Metallothionein in the Fetal Rat.** L.B. Sasser, V.L. Charles-Shannon, B.D. Bergquist and B.J. Kelman, *Comparative Animal Res. Lab., Oak Ridge, TN.*
- 110 **Effects of Inhalation Exposure to Ethoxyethanol on Pregnant Rats and Rabbits.** F.D. Andrew, L.F. Montgomery and M.R. Sikov, *Biol. Dept., Battelle, Pacific Northwest Labs., Richland, WA, and B.D. Hardin, Div. Biomed. & Behavioral Sci., NIOSH, Cincinnati, OH.*
- 111 **Evaluation of the Embryotoxicity of JP10 in the Rat.** W.C. Keller, R.C. Inman and K.C. Back, *Toxic Hazards Div., Air Force Aerospace Med. Res. Lab., Wright-Patterson AFB, OH.*
- 112 **A Comparative Study of the Teratogenic Effects of Ethyl Alcohol and Selected Alcoholic Beverages Utilizing the Rat Model.** E.R. Richardson and J.C. Picciano, *Dept. of Pharm. Sci., Grad. Div., St. John's Univ., Jamaica, NY.* Sponsor: H. Salem.

- 113 **Neonatal Toxicity in Rats Following Maternal Chlorphentermine (CP) Treatment.** D.L. Thoma and M.J. Reasor, *Dept. of Pharmacol. and Tox., West Virginia Univ. Med. Ctr., Morgantown, WV.* Sponsor: J.A. Thomas.
- 114 **The Toxicology of Chemical Interactions During Pregnancy in Mice: Caffeine and Dilantin.** R.G. Skalko and P.D. Poche, *Dept. of Anatomy, Quillen-Dishner College of Med., East Tennessee State Univ., Johnson City, TN.* Sponsor: K.-F. Benitz.
- 115 **Developmental Toxicology of Methanol.** R. Infurna, W. Schubin and B. Weiss, *Dept. of Rad. Biol. and Biophys., Univ. of Rochester School of Med. and Dent., Rochester, NY.* Sponsor: F.A. Smith.

## PLATFORM SESSION 4: Biotransformation I

Monday Afternoon, March 2, 1981

San Diego Room

**Chairman: P.G. Watanabe, Dow Chemical U.S.A., Midland, MI**

**Assistants: J.C. Ramsey, Dow Chemical U.S.A., Midland, MI**

**R.S.H. Yang, Bushy Run Research Ctr., Pittsburgh, PA**

Paper No.	Time (P.M.)	
116	1:30	<b>Effects of Rubratoxin B on Drug Metabolism in the Isolated Rat Parenchymal Cell.</b> S.A. Watson and A.W. Hayes, <i>Dept. of Pharmacol. and Tox., Univ. Miss. Med. Ctr., Jackson, MS.</i>
117	1:45	<b>Rubratoxin B Hepatotoxicity: An Electron Microscopic Study.</b> V.G. Lockard, S.A. Watson, M.Y. Siraj, A.W. Hayes and R.M. O'Neal, <i>Depts. Pathol. and Pharmacol./Tox., Univ. Miss. Med. Ctr., Jackson, MS.</i>
118	2:00	<b>Experimental Equine Aflatoxicosis.</b> S.J. Cysewski, A.C. Pier and A.L. Baetz, <i>VTERL, College Station, TX, and NADC, Ames, IA.</i> Sponsor: T.D. Phillips.
119	2:15	<b>Kinetics and Metabolism of Penicillic Acid in the Mouse After Oral, Intraperitoneal and Intravenous Administration.</b> P.K. Chan and A.W. Hayes, <i>Dept. of Pharmacol./Tox., Univ. Miss. Med. Ctr., Jackson, MS.</i>
120	2:30	<b>Aflatoxin Carryover from the Diet and Tissue Clearance in the Pig.</b> R.M. Furtado <sup>1</sup> , A.M. Pearson <sup>1</sup> , M.G. Hogberg <sup>2</sup> , E.R. Miller <sup>2</sup> , J.I. Gray <sup>1</sup> and S.D. Aust <sup>3</sup> , <i>Depts. of Food Science &amp; Human Nutr.<sup>1</sup>, Animal Sci.<sup>2</sup>, &amp; Biochem.<sup>3</sup>, Mich. State Univ., East Lansing, MI.</i>
121	2:45	<b>Enterohepatic Fate of Aflatoxin B<sub>1</sub>.</b> J.J. Wong, L. Kayashima and D.P.H. Hsieh, <i>Dept. of Environ. Tox., Univ. of California, Davis, CA.</i>

- 122 3:00 **The Nature of the Resistance to Cytotoxicity Induced in Hepatocytes by Feeding a Carcinogenic Regime of Aflatoxin B<sub>1</sub> to Male Fischer Rats.** G.E. Neal and J.R.P. Cabral, *MRC Tox. Unit, Med. Res. Council Labs., Carshalton, Surrey, UK.* Sponsor: P. Shubik.
- 123 3:15 **Metabolism of Cyclopropenoid Fatty Acids and Aflatoxin B<sub>1</sub> in Isolated Hepatocytes of Rainbow Trout (*Salmo gairdneri*).** M.J. Taylor, G.S. Bailey and D.P. Selivonchick, *Dept. Food Sci., Oregon State Univ., Corvallis, OR.* Sponsor: R.E. Larson.
- 124 3:30 **Estrogenicity of Zearalenone Mycotoxins in Liver.** G.W. Lucier, S. Raeford and W. Powell-Jones, *NIEHS, Research Triangle Park, NC.*
- 125 3:45 **The Disposition of Hexamethylphosphoramide (HMPA) in Rats Following Various Routes of Administration.** R.W. Rickard and J.P. Quarles, *Haskell Lab. for Tox. and Ind. Med., E. I. du Pont de Nemours and Co., Inc., Newark, DE.* Sponsor: J.R. Gibson.
- 126 4:00 **Metabolism and Disposition of Tris BP in the Rat.** H.B. Matthews and A.A. Nomeir, *Natl. Inst. of Env. Hlth. Sci. and Natl. Tox. Program, Research Triangle Park, NC.*
- 127 4:15 **Metabolic alpha-Hydroxylation of N-Nitrosomorpholine.** S.S. Hecht, R. Young and C.-h. B. Chen, *American Health Found., Valhalla, NY.*
- 128 4:30 **Sulfate-Dependent Metabolic Activation of 2-Acetylaminofluorene by Primary Cultures of Adult Rat Hepatocytes.** S.D. Spilman and J.L. Byard, *Dept. of Environ. Tox., Univ. of California, Davis, CA.*

## **SYMPOSIUM 1: Perspectives in Metal Toxicity**

Monday Afternoon, March 2, 1981

Town and Country Room

*Co-chairmen: M.G. Cherian, Univ. of Western Ontario, London, Ont.*

*R.C. Schnell, Univ. of Nebraska Med. Center, Omaha, NE*

### **Time (P.M.)**

- 1:30 **Introduction.** R.C. Schnell, *Univ. of Nebraska Med. Center, Omaha, NE.*
- 1:35 **Recent Advances in the Toxicity of Metals.** I.C. Munro, *Bureau of Chemical Safety, Health Protection Branch, Canada, Ottawa, Ont.*
- 2:05 **Pharmacokinetics in Metal Toxicity.** C.D. Klaassen, *Univ. of Kansas Med. Center, Kansas City, KS.*
- 2:35 **Metal Ions as Regulators of Heme Metabolism: Implications for Drug Metabolism and Detoxification Activities.** M.D. Maines, *Univ. of Illinois Med. Center, Chicago, IL.*

- 3:05 **Interactions of Selenium and Antioxidants with Mercury, Cadmium, and Silver.** J. Ridlington and P.D. Whanger, *Oregon State Univ., Corvallis, OR.*
- 3:35 **Role of Chelating Agents in Metal Toxicity.** T.W. Clarkson, *Univ. of Rochester Med. Center, Rochester, NY.*
- 4:05 **Final Remarks.** M.G. Cherian, *Univ. of Western Ontario, London, Ont.*
- 4:15 **Discussion.**

## PLATFORM SESSION 5: General Toxicology I

Monday Afternoon, March 2, 1981

Golden West Room

**Chairman: H.H. Cornish, Univ. of Michigan, Ann Arbor, MI**

**Assistants: J.P. Bright, Dow Chemical Co., Midland, MI**

**G.A.W. Waterhouse, Ind. Univ. Sch. of Med., Indianapolis, IN**

Paper No.	Time (P.M.)	
129	1:30	<b>The Subchronic Toxicity, Metabolism, and Teratogenicity of Alternariol Monomethyl Ether.</b> C.E. DiSabatino, G.A. Pollock and R.C. Heimsch, <i>Vet. Med., Univ. of Idaho, Moscow, ID.</i> Sponsor: L.D. Koller.
130	1:45	<b>The Cooperative Interaction between Vitamin C and Vitamin E in Suppression of Peroxidation of Membrane Phospholipids.</b> H.W. Leung, M.J. Vang & R.D. Mavis, <i>Dept. of Radiation Biol. and Biophys., Univ. of Rochester Sch. of Med. &amp; Dent., Rochester, NY.</i> Sponsor: P.E. Morrow.
131	2:00	<b>Application to Benzo(a)pyrene Fed Rats of a Proposed Short-Term <i>in vivo</i> Carcinogen Screening Protocol.</b> J.N. Boyd <sup>1</sup> , N. Misslbeck <sup>2</sup> , T.C. Campbell <sup>2</sup> , J.G. Babish <sup>3</sup> and G.S. Stoewsand <sup>1</sup> , <sup>1</sup> <i>Inst. of Food Sci.,</i> <sup>2</sup> <i>Div. of Nutritional Sci.,</i> and <sup>3</sup> <i>Dept. of Prev. Med., Cornell Univ., Geneva and Ithaca, NY.</i>
132	2:15	<b>Assessment of Potential Tetrachlorobenzene Toxicity During Pregnancy.</b> S. Kacew, M.R. Parulekar, J.A. Ruddick, D.C. Villeneuve and V.E. Valli, <i>Dept. of Pharmacol., Univ. of Ottawa; Bureau of Chem. Hazards, Health Protection Branch, Ottawa, Ont., and Bio Path Analysis, Ltd., Guelph, Ont.</i>
133	2:30	<b>Toxicity of PCB (Aroclor 1254) in Rhesus and Cynomolgus Monkeys.</b> S.M. Charbonneau, J. Mes, J.H. Wong, F. Bryce and Z. Zawidzka, <i>Health Prot. Branch, 2E Banting Res. Center, Tunney's Pasture, Ottawa, Ont.</i>
134	2:45	<b>Studies on the Metabolism of Vinyl Acetate in the Rat and Mouse.</b> R. Hopkins, D.H. Pullinger and H.S. Strong, <i>Hazleton Labs. Europe Ltd., Harrogate, UK.</i> Sponsor: J.J. Clary.



# **REFRESHER COURSE**

## **INHALATION TOXICOLOGY**

*A Society of Toxicology Continuing Education Course*

**Sunday, March 1, 1981**

1:00 p.m. to 5:00 p.m.

San Diego Room

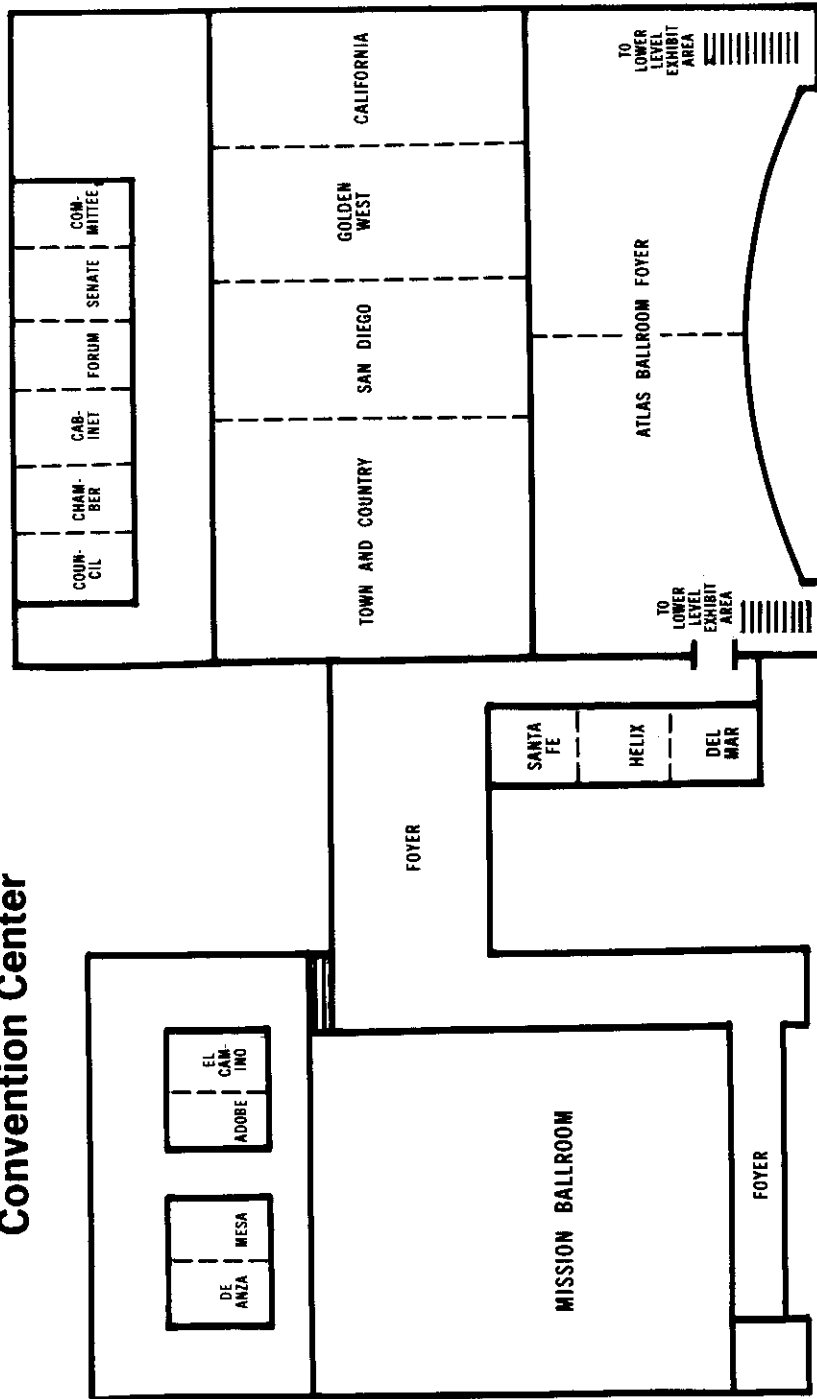
An overview of inhalation toxicology concepts will be provided, with in-depth discussions of the structure of the lung, techniques for inhalation exposure, deposition and clearance of inhaled materials, and assessment of non-pathologic endpoints. Manuscripts for each presentation will be made available to participants. Recognized experts in this field will provide each presentation, followed by the opportunity for questions and discussions from the floor after each topic.

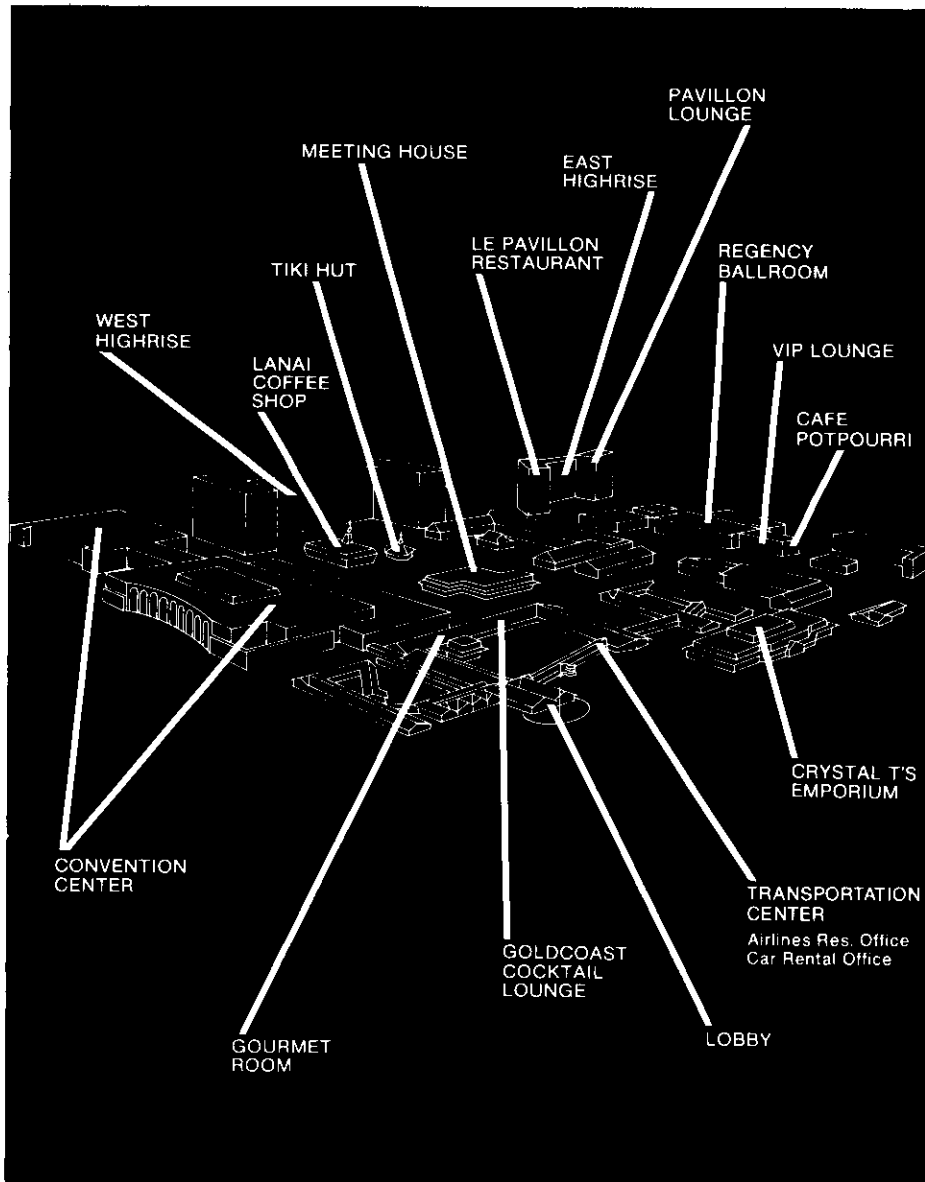
**\$ 25.00**

**Pre-Registration necessary**

**See Conference Pre-Registration form enclosed in this packet.**

# Convention Center





## PLATFORM SESSION 6: Mutagenesis II

Monday Afternoon, March 2, 1981

California Room

**Chairman: J.G. Dent, Chem. Ind. Inst. Tox.,  
Research Triangle Park, NC**

**Assistants: D. Guest, Eastman Kodak, Rochester, NY  
M. Medinsky, Chem. Ind. Inst. Tox., Research Triangle Park, NC**

Paper No.	Time (P.M.)	
143	1:30	<b>Characterization of DNA Metabolism in Mouse Primary Spermatocytes.</b> R.W. Lane, R.A. Carchman and J.F. Borzelleca, <i>Dept. of Pharmacol., Med. College of Virginia, Virginia Commonwealth Univ., Richmond, VA.</i>
144	1:45	<b>Detection of Dominant Lethal Mutation in Mice After Repeated Low Dose Administration of 6-Mercapto-Purine.</b> C.W. Sheu and F.M. Moreland, <i>Genetic Tox. Branch, Food and Drug Administration, Washington, DC.</i> Sponsor: S. Green.
145	2:00	<b>Micronuclei in Peripheral Blood Erythrocytes: A Convenient Indicator of <i>in vivo</i> Cytogenetic Damage.</b> J.T. MacGregor and C.M. Wehr, <i>USDA, Western Regional Research Center, Berkeley, CA;</i> R.G. Langlois, <i>Lawrence Livermore Lab., Livermore, CA;</i> D.H. Gould, <i>The Ohio State Univ., Columbus, OH.</i>
146	2:15	<b>Quantitative Mutagenesis and Mutagen Screening with Mammalian Cells: Toward a Comprehensive Chinese Hamster Genetic Toxicity System.</b> A.W. Hsie, <i>Biol. Div., Oak Ridge National Lab., Oak Ridge, TN.</i>
147	2:30	<b>Toxicity and Mutagenicity of Hydrazine and Three Methylated Derivatives in L5178Y Mouse Lymphoma Cells.</b> A.M. Rogers* and K.C. Back, <i>Air Force Aerospace Med. Res. Lab., Wright-Patterson AFB, OH.</i> *NRC Resident Research Associate.
148	2:45	<b>Mutagenicity of Chloropropanol in a Genetic Screening Battery.</b> R.W. Biles, <i>Exxon Corp., East Millstone, NJ,</i> and C.E. Piper, <i>Hazleton Labs., America, Vienna, VA.</i> Sponsor: R.A. Scala.
149	3:00	<b>Mutagenic Impurities Associated with 1,3-Dichloropropene.</b> R.E. Talcott, <i>Dept. Lab. Med., Northern California Occup. Health Center, Univ. of California, San Francisco, CA.</i>
150	3:15	<b>A New Mutagen from the Organic Residues of Drinking Water.</b> M.W. Tabor and J.C. Loper, <i>Dept. of Environ. Health, and Dept. of Microbiol., Univ. of Cincinnati Coll. of Med., Cincinnati, OH.</i> Sponsor: C.C. Smith.
151	3:30	<b>Bacterial Mutagenicity and Cytotoxicity of Cycloaliphatic Epoxides.</b> S.W. Frantz, J.E. Sinsheimer and H.H. Cornish, <i>Sch. of Pub. Hlth., The Univ. of Michigan, Ann Arbor, MI.</i>

- 152 3:45 **Potency of Aflatoxin B<sub>1</sub> and Aflatoxin M<sub>1</sub> in Cytotoxicity and DNA Repair Assays.** C.E. Green, D.W. Rice, D.P.H. Hsieh and J.L. Byard, *Dept. of Environ. Tox., Univ. of California, Davis, CA.*
- 153 4:00 **Antagonistic Effects of Animal Sera, Lung and Liver Cytosols and Sulfhydryl Compounds on the Cytotoxicity of Diesel Exhaust Particle Extracts.** A.P. Li, *Lovelace Inhalation Tox. Res. Inst., Albuquerque, NM.* Sponsor: R.O. McClellan.
- 154 4:15 **Factors Influencing Mutagenicity of Diesel Particulate Exhaust Extracts: Fuel Type and Car-to-Car Variability.** C.R. Clark, R.E. Royer and R.O. McClellan, *Lovelace Inhalation Tox. Res. Inst., Albuquerque, NM.* and W.F. Marshall, *Bartlesville Energy Tech. Center, Bartlesville, OK.*
- 155 4:30 **Organic Matter from Diesel Soot: Effects on Mutagenicity with Sodium Borohydride Reduction.** J.P. Nachtman, X.B. Xu, R.E. Talcott and E.T. Wei, *Sch. Pub. Hlth., Univ. of California, Berkeley, CA, and San Francisco General Hosp., San Francisco, CA.*

### POSTER SESSION 3: Neurotoxicity I

Monday Afternoon, March 2, 1981

Mission Ballroom (Rear)

**Chairman: R.C. Schnell, Univ. Nebraska Med. Center, Omaha NE**

**Assistants: R.A. Yokel, Univ. of Kentucky, Lexington, KY**

- | Paper No. | Time (P.M.) |   |
|-----------|-------------|---|
| 156       | 1:30 - 3:00 | <b>Effects of Acute Trimethyltin (TMT) Exposure on Hippocampal and Amygdaloid Seizures.</b> R.S. Dyer, and W.E. Howell, <i>US EPA, Neurotoxicology Div., Research Triangle Park, NC.</i> Sponsor: L.W. Reiter.                          |
| 157       |             | <b>Long Term Changes in Behavior and Neuropathology After Methyl Mercury Chloride (MMC) and Effect of a Diet Supplement.</b> L. Zimmer, <i>Dept. of Animal Physiol., Univ. of California, Davis, CA.</i> Sponsor: D.E. Wooley.          |
| 158       |             | <b>Sensory System Effects of Acute Trimethyltin (TMT) Exposure.</b> W.E. Howell, R.S. Dyer, W.F. Wonderlin, K. Kidd and L.W. Reiter, <i>USEPA, Neurotoxicology Div., Research Triangle Park, NC.</i>                                    |
| 159       |             | <b>Studies on the Flavor Aversions Induced by N-Substituted Carbamates and by Alkyl-Tin Compounds.</b> R.C. MacPhail, <i>Neurotoxicology Div., USEPA, Research Triangle Park, NC.</i> Sponsor: L.W. Reiter.                             |
| 160       |             | <b>Comparative Effects of Lead and Triethyltin on Myelination in the Developing Rat Brain.</b> R. Rocco, J. Ning, J. Blumberg and D.R. Brown, <i>College of Pharmacy and Allied Health Professions, Northeastern Univ., Boston, MA.</i> |

- 161 **Lysosomal Changes in the Central Nervous System of Developing Rats Exposed to Lead and Triethyltin.** J. Ning, R. Rocco, J. Blumberg and D.R. Brown, *College of Pharmacy and Allied Health Professions, Northeastern Univ. Boston, MA.*
- 162 **Operant Behavior of Rats Postnatally Exposed to Triethyltin (TET).** M.I. Gage, R. Rhoderick, R.J. Pettinelli, J.D. Edwards, E.T. Puckett and L.W. Reiter, *USEPA, Neurotoxicology Div., Research Triangle Park, NC.*
- 163 **Postnatally Administered Triethyltin and Trimethyltin Affects Spatially-Controlled Behavior in Rats.** D.B. Miller, J.A. Garner, J.D. Edwards, G.E. Anderson, W.M. Kozel, W.A. Parrott, D.A. Eckerman, M.R. Krigman and L.D. Grant, *Neurotoxicology Div., US EPA, and the Univ. of North Carolina, Research Triangle Park, NC.* Sponsor: L.W. Reiter.
- 164 **Triethyltin (TET) Decreases Maximal Electroshock Seizure (MES) Severity in Neonatal Rats.** S.V. Doctor, V.L. Fabiano and D.A. Fox, *Div. of Tox., Univ. of Texas Med. Sch., Houston, TX.* Sponsor: S.D. Murphy.
- 165 **Triethyltin (TET) Decreases Maximal Electroshock Seizure (MES) Severity in Adult Rats.** D.A. Fox, S.V. Doctor, V.L. Fabiano and M. Brower, *Div. of Tox., Univ. of Texas Med. Sch., Houston, TX.* Sponsor: S.D. Murphy.
- 166 **Chronic Peripheral Aluminum Exposure Reduces Learning in Rabbits.** R.A. Yokel and M.T. Willhite, *College of Pharmacy, Univ. of Kentucky.* Sponsor: S.D. Harrison.
- 167 **Chronic Lindane Exposure Increases the Rate of Development of Kindling in the Rat.** R.M. Joy, L.G. Stark, L.S. Gordon, S.L. Peterson and T.E. Albertson, *Sch. of Vet. Med., Univ. of California, Davis, CA.*
- 168 **Electrophysiology and Gait in Acrylamide Poisoned Rats.** W.K. Boyes and G.P. Cooper, *Dept. Env. Health, Univ. of Cincinnati Coll. Med., Cincinnati, OH.* Sponsor: J.C. Smith.
- 169 **Short- and Long-Term Memory Deficits in Adulthood Following Mild Prenatal Carbon Monoxide Exposure.** C.F. Mactutus, Z. Annau and L.D. Fechter, *Dept. of Environ. Hlth. Sci., Johns Hopkins Univ., Baltimore, MD.*
- 170 **Effects of Prenatal Carbon Monoxide Exposure on Brain Biochemistry.** L.D. Fechter, Z. Annau, M.L. Thakur and U. Srivastava, *Dept. of Env. Hlth. Sci., Johns Hopkins Univ., Baltimore, MD, and Dept. of Nutrition, Univ. of Montreal, Montreal, P.Q.*
- 171 **Differential Effects of Disulfoton (DS) on Maximal Electroshock Seizures (MES).** V.L. Fabiano, S.V. Doctor and D.A. Fox, *Div. of Tox., Univ. of Texas Med. Sch., Houston, TX.* Sponsor: S.D. Murphy.
- 172 **Therapeutics of Methylhydrazine Toxicity.** M.E. George, M.K. Pinkerton and K.C. Back, *Toxic Hazards Div., Air Force Aerospace Med. Res. Lab., Wright-Patterson AFB, OH.*

- 173            **Assessment of Auditory Sensitivity in the Rat Made Ataxic by Acute Exposure to Methyl Alcohol.** J.R. Wecker, J.R. Ison and R. Wood, *Dept. of Psychology, Dept. of Radiation Biol. and Biophys., and Environ. Hlth. Sci. Ctr., Univ. of Rochester School of Med. and Dent., Rochester, NY.* Sponsor: G.G. Berg.
- 174            **The Effects of Cholinergic Agents on Spatially Controlled Behavior in Rats.** W.A. Gordon, D.A. Eckerman, S.L. Elliott, R.E. Vail and R.C. MacPhail, *Neurotoxicology Div., US EPA, and the Univ. of North Carolina.* Sponsor: L.W. Reiter.
- 175            **Effects of Decamethrin, Chlordimeform, Baygon, and Carbaryl on Spatially Controlled Behavior of Rats.** W.A. Gordon, D.A. Eckerman, S.L. Elliott, J.A. Garner and R.C. MacPhail, *Neurotoxicology Div., US EPA, and the Univ. of North Carolina.* Sponsor: L.W. Reiter.
- 176            **Changes in Muscarinic Receptors in Chronic Disulfoton Treated Mice.** L.G. Costa, B.W. Schwab, H. Hand and S.D. Murphy, *Div. of Tox., Univ. of Texas Med. Sch., Houston, TX.*
- 177            **The Effects of Select Environmental Pollutants on Synaptic Transport of Biogenic Amines.** W.M. Bracken, R.P. Sharma and S.J. Kleinschuster, *Tox. Program, Utah State Univ., Logan, UT.*
- 178            **Diethyldithiocarbamate Selectively Alters Uptake of Neurotransmitters into Hippocampal and Striatal Synaptosomes.** S.M. Sato, J.J. Valdes and A.M. Goldberg, *Dept. of Environ. Hlth. Sci., The Johns Hopkins Univ., Baltimore, MD.*
- 179            **Depressed Acetylcholine Release: One Possible Mechanism of Action of 2,4-Dithiobiuret (DTB) in Rats.** W. Atchison and R. Peterson, *Univ. of Wisconsin, Madison, WI.*
- 180            **Studies of GABA Levels and GAD Activity in the Frontal Cerebral Cortex of the Cobalt Epileptic Rat.** S.M. Ross and C.R. Craig, *Dept. of Pharmacol. and Tox., West Virginia Univ. Med. Center, Morgantown, WV.* Sponsor: J.A. Thomas.
- 181            **Inhibitory Effects of BHT on Myenteric Neurons of Guinea Pig Ileum.** S.R. Lavenhar, *Clement Associates, Washington, DC.* Sponsor: R. Bates.
- 182            **Thiohydroximic Acid Esters as Nonquaternary Reactivators of Phosphorylated Cholinesterase.** R.A. Kenley, R.A. Howd, E.M. Acton, C.W. Mosher and J.S. Winterle, *SRI International, Menlo Park, CA.* Sponsor: D.C. Jones.
- 183            **Acute Behavioral Toxicity of Baygon and Carbaryl in the Rat.** L.W. Reiter, P.H. Ruppert, L. Cook, K.F. Kidd, G. Heavner and D.B. Miller, *Neurotoxicology Div., US EPA, Research Triangle Park, NC.*

- 184 **Neurotoxicity of Commercial-Grade 5-Methyl-2-Octanone (Methyl Heptyl Ketone) Containing 5-Nonanone.** J.L. O'Donoghue and W.J. Krasavage, *Health, Safety, and Human Factors Lab., Eastman Kodak Co., Rochester, NY.*
- 185 **Altered Lipid Metabolism in 2,5-Hexanedione-Induced Testicular Atrophy and Peripheral Neuropathy in the Rat.** P.J. Gillies, R.M. Norton and J.S. Bus, *Chemical Ind. Inst. of Tox., Research Triangle Park, NC.*
- 186 **Differential Neurotoxicity of Dichloroacetate and 2,5-Hexanedione: Implications for the Pathogenesis of Gamma-Diketone Neuropathy.** P.S. Spencer and M.C. Bischoff, *Inst. of Neurotoxicology, Albert Einstein College of Med., Bronx, NY,* and P.W. Stacpoole, *Dept. of Med., Univ. of Florida, Gainesville, FL.*
- 187 **Partial Characterization Organophosphorus Inhibitor Resistant Phenyl Valerate Esterase.** P.E. Gurba, B.R. Dudek and R.J. Richardson, *Sch. of Pub. Hlth., Univ. of Michigan, Ann Arbor, MI.*
- 188 **Protective Effect of Sodium Pyruvate on Acrylamide Induced Neuropathy in Rats.** W. Dairman and L. Juhasz, *Dept. of Tox. and Pathol., Hoffmann-La Roche, Nutley, NJ,* and M.I. Sabri, M. Bischoff and P.S. Spencer, *Inst. of Neurotoxicology, Albert Einstein College of Med., Bronx, NY.*
- 189 **Acrylamide Effects on Catecholamine Metabolism.** C.N. Aldous, R.P. Sharma and C.H. Farr, *Tox. Program, Utah State Univ., Logan, UT.*
- 190 **Acrylamide Neurotoxicity: Levels of Tryptophan, Serotonin and 5-Hydroxyindoleacetic Acid and Serotonin Turnover in Rat Brain.** C.H. Farr, R.P. Sharma and C.N. Aldous, *Tox. Program, Utah State Univ., Logan, UT.*

## PLATFORM SESSION 7: Biotransformation II

Tuesday Morning, March 3, 1981

San Diego Room

**Chairman: M.B. Abou-Donia, Duke Univ. Med. Ctr., Durham, NC**

**Assistants: B.L. Reichert, American Cyanamid Co., Princeton, NJ**

**F. Stultz, Intn'l Flav. and Frag., Union Beach, NJ**

Paper No.	Time (A.M.)	
191	8:30	<b>Blood Dynamics of Acrylamide in Rats.</b> T. Pastoor and R.J. Richardson, <i>Dept. of Env. &amp; Ind. Hlth., Sch. of Pub. Hlth., Univ. of Michigan, Ann Arbor, MI.</i>
192	8:45	<b>In vivo Evidence of Metabolism of the Cardiovascular Toxin, Allylamine, to Acrolein.</b> P.J. Boor and T.J. Nelson, <i>Dept. of Pathol., Univ. of Texas Med. Branch, Galveston, TX.</i> Sponsor: M.T. Moslen.

- 193 9:00 **Disposition of Fyrol® CEF [Tri-(2-Chloroethyl) Phosphate] in the Rat.** M.W. Sauerhoff, L.A. Weber and M.F. Marcus, *Stauffer Chemical Co., Environ. Health Center, Farmington, CT.*
- 194 9:15 **Effects of Piperonyl Butoxide (PB) on the Metabolic Enzyme Kinetics of Azinphos Methyl (AM) and Azinphos Ethyl (AE).** S.-N. Lin, C.-H. Ao and S.D. Murphy, *Div. of Tox., Univ. of Texas Med. Sch., Houston, TX.*
- 195 9:30 **Activation of Phosphorothionate Insecticides to Anticholinesterases by Rat Lung, Liver and Skin.** S. Mahagaokar, C.Y. Chen and S.D. Murphy, *Div. of Tox., Univ. of Texas Med. Sch., Houston, TX.*
- 196 9:45 **Inhalation Pharmacokinetics: Evaluation of Total Systemic Clearance Based on Steady State Blood: Gas Partitioning of Inhaled Gases and Vapors.** M.E. Andersen, *Air Force Aerospace Med. Res. Lab., Wright-Patterson AFB, OH.*
- 197 10:00 **Toxicity and Fate of Di-Isodecyl Phthalate Following Inhalation Exposure in Rats.** D.G. Pegg, *Biomed. Sci. Dept., General Motors Res. Labs., Warren, MI.* Sponsor: J.J. Vostal.
- 198 *PAPER MOVED to Platform Session 15, Wednesday Afternoon.*
- 199 10:30 **Comparisons of Nonciliated Bronchiolar Epithelial Cell (NCBEC) Smooth Endoplasmic Reticulum (SER), Lung Cytochrome P-450, and the Toxicity of Perilla Ketone in the Rabbit and Dog.** J.R. Szabo, *Dept. Vet. Pathobiol., W.C. Wilson, J.E. Corbin and J.E. Garst, Dept. Animal Sci., Univ. of Illinois, Urbana, IL; W.M. Thurlbeck, Dept. Pathol., Univ. British Columbia, Vancouver, B.C.; and R.M. Philpot, Natl. Inst. Environ. Hlth. Sci., Research Triangle Park, NC.* Sponsor: B.J. Wilson.
- 200 10:45 **Effect of Chlorphentermine Pretreatment on Chlorphentermine Uptake by Isolated Perfused Rat Lung.** L.S. Angevine and H.M. Mehendale, *Dept. of Pharmacol. and Tox., Univ. of Miss. Med. Ctr., Jackson, MS.*
- 201 11:00 **Metabolism of Chlorpromazine by Pulmonary Microsomal Enzymes in the Rat and Rabbit.** Y. Ohmiya and H.M. Mehendale, *Dept. Pharmacol. & Tox., Univ. Miss. Med. Ctr., Jackson, MS.*
- 202 11:15 **Phenobarbital Alteration of 1-Nitronaphthalene Distribution and Toxicity.** D. Dankovic and H.H. Cornish, *Dept. of Toxicology, Univ. of Michigan, Ann Arbor, MI.*

## PLATFORM SESSION 8: General Toxicology II

Tuesday Morning, March 3, 1981

Golden West Room

**Chairman: J.E. Manno, Louisiana State Univ. Med. Sch.,  
Shreveport, LA**

**Assistants: M.A. Evans, Univ. of Ill. Med. Ctr., Chicago, IL  
P.C. Pence, Ind. Univ. Sch. of Med., Indianapolis, IN**

Paper No.	Time (A.M.)	
203	8:30	<b>The Effect of Indomethacin and Prednisolone on Pulmonary Fibrosis Produced by Treatment with Butylated Hydroxytoluene and Oxygen.</b> J.P. Kehrer, <i>Dept. of Pharmacol., Univ. of Texas at Austin, Austin, TX</i> , and H.P. Witschi, <i>Biol. Div., ORNL, Oak Ridge, TN</i> .
204	8:45	<b>Thymic Atrophy in Normal and Adrenalectomized Rats Exposed to 3,3',4,4'-Tetrachloroazobenzene and 3,3',4,4'-Tetrachloroazoxybenzene.</b> M.T.S. Hsia, K.R. Schrankel, B.L. Kreamer and C.F. Burant, <i>Environ. Tox. Center and Dept. of Entomol., Univ. of Wisconsin, Madison, WI</i> .
205	9:00	<b>Validity of the BSP Liver Function Test in Dogs, Monkeys, and Rats.</b> C.K. Parekh, <i>International Minerals &amp; Chemical Corp., Terre Haute, IN</i> .
206	9:15	<b>Detection of Theophylline Intoxication in Infant and Adolescent Patients by HPLC Serum Analyses.</b> A.J. Quattrone and R.S. Putnam, <i>Dept. of Pathol., Univ. Texas Health Center, Dallas, TX</i> . Sponsor: M.F. Mason.
207	9:30	<b>Development of Contact Photosensitization Test in Guinea Pigs.</b> Y. Katsumura, Y. Sato, H. Ichikawa, T. Kobayashi, K. Nakajima and S. Ohta, <i>Dept. of Dermatol. and Tox., Shiseido Labs., Yokohama, Japan</i> , and L.C. Harber, <i>Dept. of Dermatol., Columbia Univ. Med. Center, New York, NY</i> . Sponsor: T. Miya.
208	9:45	<b>Persisting Effects of Perinatal Hypothyroidism on Neuronal Morphology and Motor Behavior in Rats.</b> C. P. Comer and S. Norton, <i>Dept. of Pharmacol., Univ. of Kansas Med. Center, Kansas City, KS</i> .
209	10:00	<b>Induction of Hyperfunctional Liver Enlargement by ICI 1519 A 1H-v-Triazole in Animals.</b> P.J. DeBaecke, R.D. Millman, P.A.G. Malya, J.O. Malbica and C. Yeh, <i>ICI Americas Inc., Biomed. Res. Dept., Wilmington, DE</i> . Sponsor: M.E. Goldberg.
210	10:15	<b>Chronic Toxicity and Reproduction Studies on Rubber Antizonants (Substituted Para-Phenylenediamines).</b> M.W. Stevens, G.J. Levinskas and P.R. Graham, <i>Dept. Med. &amp; Environ. Health, Monsanto Co., St. Louis, MO</i> .

- 211 10:30 **Effects of Dietary Methylcellulose in the Rat: Lysosomal Storage in the Mononuclear Phagocytic System and Hepatosplenomegaly.** K.H. Moy, R.F. Mankes and R. Abraham, *Inst. of Experimental Pathol. & Tox., Albany Med. College, Albany, NY.*
- 212 10:45 **Effects from Low Levels of Dimethyl (DMP) and Diethyl (DEP) Phthalates upon Isolated Perfused Rabbit Hearts and L-Cells in Culture.** W.H. Lawrence, R.R. Raje, E.O. Dillingham and J. Autian, *Materials Sci. Tox. Labs., Univ. of Tennessee Center for the Health Sciences, Memphis, TN.*
- 213 11:00 **Subchronic Toxicity of Trinitrotoluene (TNT), Cyclotrimethylene Trinitramine (RDX) and TNT/RDX Mixtures in F344 Rats.** B.S. Levine, E.M. Furedi, D. Gordon and P.M. Lish, *Life Sci. Div., IIT Res. Inst., Chicago, IL.* Sponsor: M.C. Henry.
- 214 11:15 **Drug-Induced Neutropenia with Antihypertensive Agents.** N.J. Barsoum, R.A. Martin, L. Mitchell, J.M. Sturgess, J.R. Stokes and F.A. de la Iglesia, *Dept. of Tox., Warner-Lambert/Parke-Davis Pharmaceut. Res., Sheridan Park, Ont. and Ann Arbor, MI.*
- 215 11:30 **90 Day Toxicology Study of Love Canal Soil Volatiles in Mice.** J. Silkworth, D.N. McMartin, R. Rej, R. Narang and L. Kaminsky, *Div. of Labs. and Res., New York Dept. of Health, Albany, NY.*
- 216 11:45 **2,4-D((2,4-Dichlorophenoxy) Acetic Acid): Results of a 13-Week Feeding Study in CDF Fischer 344 Rats.** S.J. Gorzinski, R.J. Kociba, C.E. Wade, D.C. Morden, D.G. Keyes and B.A. Schwetz, *Tox. Res. Lab., Dow Chemical U.S.A., Midland, MI.*

## **SYMPOSIUM 2: Reproductive Toxicity in Animals and Humans**

Tuesday Morning, March 3, 1981

8:30 A.M. - Noon

Town and Country Ballroom

**Chairman: B.A. Schwetz, Dow Chemical U.S.A., Midland, MI**

**Assistant: K.S. Rao, Dow Chemical U.S.A., Midland, MI**

- A. **Normal Development of Ova and Sperm.** R.M. Hoar, *Hoffmann-La Roche, Inc., Nutley, NJ.*
- B. **Interference with Normal Development of Ova and Sperm.** R.L. Dixon, *NIEHS, Research Triangle Park, NC.*
- C. **Laboratory Animal Models for Detecting Specific Alterations in Reproduction.** R.P. Amann, *Colorado State University, Fort Collins, CO.*
- D. **Reproductive Toxins in Humans.** C.A. Paulsen, *U.S. Public Health Service Hospital, Seattle, WA.*

## PLATFORM SESSION 9: Metals I

Tuesday Morning, March 3, 1981

California Room

**Chairman: R.T. Louis-Ferdinand, Wayne State Univ., Detroit, MI**

**Assistant: F. Beuthin, Wayne State Univ., Detroit, MI**

Paper No.	Time (A.M.)	
217	8:30	<b>The Influence of Age on the Gastrointestinal Absorption of Mercuric Chloride and Methyl Mercuric Chloride in the Rat.</b> C.T. Walsh, <i>Dept. of Pharm. and Exp. Ther., Boston Univ. Med. Ctr., Boston, MA.</i> Sponsor: J.A. Hayes.
218	8:45	<b>The Regional Distribution of Manganese in Rat Brain After Chronic Manganese Exposure.</b> A.M. Scheuhammer and M.G. Cherian, <i>Dept. of Path., Univ. of Western Ontario, London, Ont.</i>
219	9:00	<b>Chelation of Cadmium from Metallothionein <i>in vivo</i> with Thiol Compounds and its Biliary Excretion.</b> M.G. Cherian, C. Routhier and S. Onosaka, <i>Dept. of Pathol., Univ. of Western Ontario, London, Ont.</i>
220	9:15	<b>Modification of Jejunal Zn and Cd Transport in Rats by Glucocorticoid not Correlated with Metallothionein Synthesis.</b> R.F. Bonewitz and E.C. Foulkes, <i>Dept. Env. Health, Univ. Cincinnati Med. Ctr., Cincinnati, OH.</i> Sponsor: P.B. Hammond.
221	9:30	<b>Differences in Excretion Rates of Methylmercury in Two Genetic Variant Strains of Mice.</b> P.J. Kostyniak, <i>Dept. of Pharmacol. and Therapeutics, State Univ. of New York at Buffalo, Buffalo, NY.</i> Sponsor: T.W. Clarkson.
222	9:45	<b>Effects of Early Postnatal Lead Exposure on Hippocampal Morphology in the 15-day-old Rat.</b> J.B. Campbell, D.E. Woolley, V.K. Vijayan and S.R. Overmann, <i>Dept. of Animal Physiol., Univ. of California, Davis, CA.</i>
223	10:00	<b>The Influence of Dietary Aluminum Upon Regional Trace Metal, Catecholamine, and Enzyme Activity in the Rat.</b> G.L. Wenk and K.L. Stemmer, <i>Inst. of Env. Hlth., Univ. of Cincinnati, Cincinnati, OH.</i>
224	10:15	<b>Is Inhibition of Acetylcholine-Receptor Binding the Primary Mechanism of Cadmium Neurotoxicity?</b> J. Donaldson, D. McGregor, H. Gesser and F.S. LaBella, <i>Dept. of Pharmacol. &amp; Therapeutics, Univ. of Manitoba, Winnipeg, Man.</i>
225	10:30	<b>Toxic Effects of Cadmium in the Brain of Newborn Rats.</b> K.-L. Wong and C.D. Klaassen, <i>Dept. of Pharmacol., Univ. of Kansas Med. Ctr., Kansas City, KS.</i>
226	10:45	<b>Inhibition of Glutathione Transferases by Mercury, Lead and Cadmium Ions.</b> C.C. Reddy, R.W. Scholz and E.J. Massaro, <i>Center for Air Environ. Studies, Penna. State Univ., University Park, PA.</i>

- 227 11:00 **Triethyltin Intoxication Alters Acetylcholine Release from Rat Hemidiaphragm.** G.G. Bierkamper, J.J. Valdes and A.M. Goldberg, *Div. of Tox., Johns Hopkins Univ., Baltimore, MD.*
- 228 11:15 **The Interaction of Lead and Calcium in the Isolated Rat Hepatocyte: I. Effect of Lead on Calcium Homeostasis.** R.W. Wright, J.G. Pounds, D. Morrison and D.A. Casciano, *Food and Drug Administration, Natl. Center for Tox. Res., Jefferson, AR.* Sponsor: L. Fishbein.
- 229 11:30 **The Interaction of Lead and Calcium in the Isolated Rat Hepatocyte: II. Effect of Lead on Calcium Mediated Cell Function.** J.G. Pounds, D. Morrison, R. Wright and D.A. Casciano, *Food and Drug Administration, Natl. Center for Tox. Res., Jefferson, AR.* Sponsor: L. Fishbein.
- 230 11:45 **Influence of Ni<sup>++</sup>, Cd<sup>++</sup>, and Co<sup>++</sup> on the Metabolism and Binding of <sup>3</sup>H-Benzo(a)pyrene in the Isolated, Ventilated, and Perfused Rat Lung.** S.J. Williams, M.A. Karis and D.B. Menzel, *Dept. of Pharmacol. and Med., Duke Univ. Med. Center, Durham, NC.*

## POSTER SESSION 4: Biochemical Toxicology II

Tuesday Morning, March 3, 1981

Mission Ballroom (Rear)

**Chairman: R.C. Schnell, Univ. of Nebraska Med. Center, Omaha, NE**

**Assistant: G.P. Carlson, Purdue Univ., West Lafayette, IN**

- | Paper No. | Time (A.M.)  |  |
|-----------|--------------|--|
| 231       | 8:30 - 10:00 | <b>Phospholipid Changes of Mitochondrial Membranes Following CCl<sub>4</sub> Exposure.</b> A. Wisner-Gebhart, K. Sheets and M.J. Brabec, <i>Dept. of Env. Ind. Hlth., Univ. of Mich., Ann Arbor, MI.</i> Sponsor: H.H. Cornish.  |
| 232       |              | <b>Synthesis of Sulfite Oxidase After CCl<sub>4</sub> Intoxication.</b> R.A. Head, K. Sheets and M.J. Brabec, <i>Dept. of Env. Ind. Hlth, Univ. of Mich., Ann Arbor, MI.</i> Sponsor: H.H. Cornish.  |
| 233       |              | <b>Studies on the Mechanism of Triton WR 1339 Enhancement of Carbon Tetrachloride Hepatotoxicity.</b> E.C. de Ferreyra, E.G.D. de Toranzo, O.M. de Fenos and J.A. Castro, <i>Laboratorio Quimica-Biotoxicologica-CITEFA-Zufriategui y Varela-Villa Martelli 1603 Pcia., Buenos Aires, Argentina.</i> |
| 234       |              | <b>Dose Response Relationship of Carbon Tetrachloride-Induced Decrease in <i>in vivo</i> Acetaldehyde Oxidation in Mice.</b> J.J. Hjelle, A.S. Gordon and D.R. Petersen, <i>Dept. of Pharmacol., Univ. of Colorado, Boulder, CO.</i> Sponsor: F.N. Kotsonis.   |
| 235       |              | <b>Effects of Halogenated Hydrocarbons on <i>in vivo</i> Acetaldehyde Oxidation.</b> J.J. Hjelle, A.S. Gordon, N.  |

- Atkinson and D.R. Petersen, *Dept. of Pharmacol., Univ. of Colorado, Boulder, CO*. Sponsor: F.N. Kotsonis.
- 236 **Sequential, Light and Electron Microscopic Analysis of Hepatocellular Carcinoma Induced by Aroclor 1260.** R.H. Weltman and D.H. Norback, *Wm. S. Middleton Memorial Veterans' Hosp. and Univ. of Wisconsin, Madison, WI*.
- 237 **Effect of Halogenated Benzenes on the Toxicity and Metabolism of Parathion and Paraoxon in Mice.** B.A. Townsend and G.P. Carlson, *Dept. of Pharmacol. and Tox., Purdue Univ., West Lafayette, IN*.
- 238 **Disposition of Tetrachlorodibenzofuran in Mice.** G.M. Decad, L.S. Birnbaum and H.B. Matthews, *NIH, Natl. Inst. of Environ. Health Sci., Research Triangle Park, NC*.
- 239 **Receptor-Binding Studies with Polychlorinated Biphenyls Classified as PB-, MC-, and Mixed-Type Inducers.** S. Bandiera, A.B. Okey and S. Safe, *Dept. of Chem., Univ. of Guelph, Guelph, Ont., and Div. of Clin. Pharmacol., Hosp. for Sick Children, Toronto, Ont*. Sponsor: R. Hartung.
- 240 **Quantitation of TCDD in Animal and Human Tissues by Radio Immunoassay.** M.I. Luster, P.W. Albro, K. Chae and J.D. McKinney, *Lab. of Environ. Chemistry, NIEHS, Research Triangle Park, NC*.
- 241 **Evaluation of AHH Induction by Polybrominated Biphenyls.** C.D. Millis, G.A. Dannan and S.D. Aust, *Biochem. Dept., Michigan State Univ., East Lansing, MI*.
- 242 **Aroclor 1260 and 2,3,6,2',3',6'-Hexachlorobiphenyl Induced Hepatic Drug Metabolizing Enzyme Activities in Rats During Chronic Exposure.** G. Reddy, R.H. Weltman and D.H. Norback, *Wm. S. Middleton Memorial Veterans' Hosp. and Univ. of Wisconsin, Madison, WI*.
- 243 **The Effect of Mineral Oil and/or Cholestyramine Upon Fecal and Biliary Elimination of 2,4,5,2',4',5' <sup>14</sup>C-Hexabromobiphenyl and/or Metabolites in the Rhesus Monkey.** K. Rozman, T. Rozman and H. Greim, *Abteilung fur Toxikologie der Gesellschaft fur Strahlenund Umweltforschung mbH, Munich, Federal Republic of Germany*. Sponsor: M.J. Iatropoulos.
- 244 **Comparison of Chloroform and 1,2-Dibromoethane Adducts to Protein.** R.M. Maiorino, A.J. Gandolfi and I.G. Sipes, *Tox. Program, Univ. of Arizona, Tucson, AZ*.
- 245 **Differentiation of Rat Liver Microsomal Amine Oxidase and Cytochrome P-450 Catalyzed Metabolism of Thioacetamide (TAA) and Thioacetamide S-Oxide (TAAO).** M.J. Gudzinowicz and R.A. Neal, *Center in Tox., Vanderbilt Univ., Nashville, TN*.
- 246 **The Influence of Some Thiono-Sulfur-Containing Compounds on Glutathione S-Transferase Activity of Rat Liver Cytosol.** A. Hunter, *Dept. of Pharmacol., East Carolina Univ., Greenville, NC*. Sponsor: J.P. DaVanzo.

- 247 **Early Loss of Hepatic Glutathione Transferase Activities in 1,1-Dichloroethylene Poisoned Rats.** M.T. Moslen and E.S. Reynolds, *Pathol. Dept., Univ. of Texas Med. Branch, Galveston, TX.*
- 248 **The Distribution and Metabolism of Pentachloroanisole (PCA) in Mice and Rainbow Trout.** M.J. Vodicknik, A.H. Glickman and J.J. Lech, *Dept. of Pharmacol. and Tox., Med. College of Wisconsin, Milwaukee, WI.*
- 249 **The Metabolism of Polychlorinated Biphenyls (PCBs) in Isolated Hepatocytes.** A. Vickers, K. Brendel, D. Sundheimer and I.G. Sipes, *Dept. of Pharmacol. and Tox., Univ. of Arizona, Tucson, AZ.*
- 250 ***In vivo* Metabolism of 2,2',2'',5,5',5''-Hexachloroterphenyls (HCTs) in the Rat.** K.A. Voss, *Food and Drug Research Labs., Inc., Waverly, NY.* Sponsor: J.G. Babish.
- 251 ***In vivo* Metabolism of Polychlorinated Terphenyls (Aroclor 5460) in the Rat.** K.A. Voss, *Food and Drug Research Labs., Inc., Waverly, NY.* Sponsor: J.G. Babish.
- 252 **The *in vitro* and *in vivo* Metabolism of 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD) in the Rat.** J.R. Olson, M. Gudzinowicz and R.A. Neal, *Center in Tox., Vanderbilt Univ., Nashville, TN, and Dept. of Pharmacol. and Ther., SUNY at Buffalo, Buffalo, NY.*
- 253 **Studies of the Metabolism of Methyl Chloride in Relation to its Incorporation into Macromolecules.** D.J. Kornbrust, G. Doerjer and J.S. Bus, *Chemical Ind. Inst. of Tox., Research Triangle Park, NC.*
- 254 **Evidence for *in vivo* Reaction of  $\bullet\text{CCl}_3$  Derived from  $\text{CCl}_4$  with Cholesterol of Rat Liver.** G.A.S. Ansari, M.T. Moslen and E.S. Reynolds, *Dept. of Pathol., Univ. of Texas Med. Branch, Galveston, TX.*
- 255 **Effects of 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD) on Microsomal Prostaglandin Synthesis.** J.A. Goldstein and K.K. Kohli, *Natl. Inst. of Environ. Hlth. Sci., Research Triangle Park, NC.*
- 256 **Species Differences in the Subacute Toxicity of Trichloroethylene (TRI).** C.R. Elcombe, I. Pratt and M.S. Rose, *ICI, Ltd., Central Tox. Lab., Alderley Park, Nr. Macclesfield, Cheshire, UK.*
- 257 **Species Differences in the Biochemical Toxicology of Trichloroethylene (TRI).** C.R. Elcombe, I. Pratt and M.S. Rose, *ICI Ltd., Central Tox. Lab., Alderley Park, Nr. Macclesfield, Cheshire, UK.*
- 258 **Induction by PBB of Drug-Metabolizing Enzymes in Chick Embryo Hepatocytes in Culture.** P. Sinclair, J. Bement, J. Sinclair and H. Bonkowsky, *Veterans Admin. Center, White River Junction, VT, and Depts. Med. & Biochem., Dartmouth Med. Sch., Hanover, NH; S. Aust and G. Dannon, Dept. Biochem., Mich. State Univ., East Lansing, MI.*
- 259 **Porphyrogenic Effects of PBB in Chick Embryo Hepatocytes in Culture.** P. Sinclair, J. Bement, J. Sinclair and H. Bonkowsky, *Veterans Admin. Center,*

White River Junction, VT, and Depts. Med. & Biochem., Dartmouth Med. Sch., Hanover, NH; S. Aust and G. Dannon, Dept. Biochem., Mich. State Univ., East Lansing, MI.

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**Inhibition of Metabolic Cooperation in Chinese Hamster Cells by Specific Congeners of Polybrominated Biphenyls.** J.E. Trosko, G. Tsushimoto, C.C. Chang and S.D. Aust, Dept. of Ped. & Hum. Dev. and Dept. of Biochem., Mich. State Univ., East Lansing, MI.

## POSTER SESSION 5: Respiratory II and Renal II

Tuesday Morning, March 3, 1981

Mission Ballroom (Rear)

**Chairman: R.C. Schnell, Univ. of Nebraska Med. Center, Omaha, NE**

**Assistant: J.J. Vostal, General Motors Corp., Warren, MI**

Paper No.	Time (A.M.)	
261	10:30 - Noon	<b>Alveolar Type II Pneumocyte Response in Rats Exposed to High Levels of Diluted Diesel Exhaust.</b> H.J. White and B.D. Garg, <i>Biomed. Sci. Dept., General Motors Res. Labs., Warren, MI.</i> Sponsor: J.J. Vostal.
262		<b>Response of Alveolar Macrophages and Polymorphonuclear Leukocytes in Rats Exposed by Chronic Inhalation to Diluted Diesel Exhaust.</b> K.A. Strom, <i>Biomed. Sci. Dept., General Motors Res. Labs., Warren, MI.</i> Sponsor: J.J. Vostal.
263		<b>Lymphocyte Subpopulations in Guinea Pigs Exposed to Diesel Engine Exhaust.</b> D. Dziedzic, <i>Biomed. Sci. Dept., General Motors Res. Labs., Warren, MI.</i> Sponsor: J.J. Vostal.
264		<b>Aromatic Hydrocarbon Hydroxylase Activity Induced by Injected Diesel Particulate Extract Versus Inhalation of Diluted Diesel Exhaust.</b> K.C. Chen and J.J. Vostal, <i>Biomed. Sci. Dept., General Motors Res. Labs., Warren, MI.</i>
265		<b>Noninvasive Pulmonary Function Testing of Fischer 344 Rats Chronically Exposed to Diluted Diesel Exhaust for Fifteen Months.</b> K.B. Gross, <i>Biomed. Sci. Dept., General Motors Res. Labs., Warren, MI.</i> Sponsor: J.J. Vostal.
266		<b>Deposition and Clearance of Inhaled Diesel Particles in the Respiratory Tract.</b> T.L. Chan, P.S. Lee and W.E. Hering, <i>Biomed. Sci. Dept., General Motors Res. Labs., Warren, MI.</i> Sponsor: J.J. Vostal.
267		<b>Clearance of Inhaled Titanium Dioxide Dust in the Control and Diesel Exposed Rats.</b> P.S. Lee, <i>Biomed. Sci. Dept., General Motors Res. Labs., Warren, MI.</i> Sponsor: J.J. Vostal.

- 268 **Involvement of Nitro-Substituted Polycyclic Aromatic Hydrocarbons in the Mutagenic Activity Extracted from Diesel Exhaust Particles.** T.C. Pederson and J.-S. Siak, *Biomed. Sci. Dept., General Motors Res. Labs., Warren, MI.* Sponsor: J.J. Vostal.
- 269 **Mutagenicity of Particles Obtained from Alveolar Macrophages from Diesel Exposed Animals.** J.-S. Siak and K.A. Strom, *Biomed. Sci. Dept., General Motors Res. Labs., Warren, MI.* Sponsor: J.J. Vostal.
- 270 **Lipids in the Lung and Lung Gavage Fluid of Animals Exposed to Diesel Particulates.** C.D. Eskelson, R.L. Misiorowski and M. Chvapil, *Dept. Surg., Univ. of Arizona, Tucson, AZ,* and K.A. Strom and J.J. Vostal, *Biomed. Sci. Dept., General Motors Res. Labs., Warren, MI.*
- 271 **Collagen Parameters in the Lung of Rats Chronically Exposed to Diesel Particulates.** R.L. Misiorowski, L. Tillema and M. Chvapil, *Dept. of Surg., Univ. of Arizona, Tucson, AZ,* and K.A. Strom and J.J. Vostal, *Biomed. Sci. Dept., General Motors Res. Labs., Warren, MI.*
- 272 **Effect of Inhalation Exposure of Rats and Mice to Diesel Exhaust on Microsomal Enzyme Activity.** J.M. Benson, J.L. Mauderly and R.O. McClellan, *Lovelace Inhal. Tox. Res. Inst., Albuquerque, NM.*
- 273 **Effect of Subchronic Diesel Exhaust Exposure on Tracheal Mucous Clearance in Rats.** R.K. Wolff, R.H. Gray and F.F. Hahn, *Lovelace Inhal. Tox. Res. Inst., Albuquerque, NM.* Sponsor: R.O. McClellan.
- 274 **Acute Toxicity of an Aerosol of Diesel Fuel.** W. Dalbey and S. Lock, *Biol. Div., ORNL, Oak Ridge, TN,* and R. Holmberg, J. Moneyhun and M. Guerin, *Analyt. Chem. Div., ORNL, Oak Ridge, TN.*
- 275 **Acute and Subacute Inhalation Toxicity of Adiponitrile in Rats.** G.L. Kennedy, Jr. and L.W. Smith, *E. I. du Pont de Nemours and Co., Inc., Haskell Lab. for Tox. and Ind. Med., Newark, DE.*
- 276 **A Ninety Day Inhalation Toxicity Study of Decalin.** C.L. Gaworski, C.C. Haun and J.D. MacEwen, *Univ. of California, Toxic Hazards Res. Unit., Overlook Branch, Dayton, OH.*
- 277 **Inhalation Toxicity of Titanium Tetrachloride Atmospheric Hydrolysis Products.** D.P. Kelly, K.P. Lee and B.A. Burgess, *Haskell Lab. for Tox. and Ind. Med., E. I. du Pont de Nemours and Co., Inc., Newark, DE.* Sponsor: J.R. Gibson.
- 278 **Acute Inhalation Toxicity of Stannic Chloride (SnCl<sub>4</sub>): Lethality and Sensory Irritation in Rats.** B.A. Burgess and M.R. Brittelli, *Haskell Lab. for Tox. and Ind. Med., E. I. du Pont de Nemours and Co., Inc., Newark, DE.* Sponsor: G.L. Kennedy, Jr.
- 279 **Acute and Subacute Inhalation Toxicity of Para-Nitrophenol Sodium Salt in Rats.** L.W. Smith, *E. I. du Pont de Nemours and Co., Inc., Haskell Lab. for Tox. and Ind. Med., Newark, DE.* Sponsor: G.L. Kennedy, Jr.

- 280 **Determination of Toluene in Blood and Tissues by Vapor Phase Equilibrium Chromatography.** R.W. Wood, D.C. Rees, J.P. McCormick and R.W. Kilpper, *Environ. Health Sci. Center, Dept. Rad. Biol. & Biophys., Univ. Rochester Med. Center, Rochester, NY.*
- 281 **Inhalation Toxicity of Methyl N-Amyl Ketone (2-Heptanone) in Rats and Monkeys.** D.W. Lynch, T.R. Lewis, W.J. Moorman, H.B. Plotnick, R.L. Schuler, A.W. Smallwood and C. Kommineni, *Natl. Inst. for Occup. Safety and Health, Div. of Biomed. and Behavioral Sci., Cincinnati, OH.*
- 282 **Autoradiographic Localization of Metabolites of <sup>14</sup>C-Vinyl Chloride in Mice.** W.J. Waddell, C. Marlowe and W.T. Stott, *Dept. of Pharm. and Tox., Univ. of Louisville, Louisville, KY, and Tox. Res. Lab., Dow Chemical Co., Midland, MI.*
- 283 **Neuropathy Produced by Inhaled Methyl N-Butyl Ketone (MBK) in Hens.** K.M. Abdo, P.R. Timmons, D.G. Graham and M.B. Abou-Donia, *Depts. of Pharmacol. and Pathol., Duke Univ. Med. Center, Durham, NC.*
- 284 **Disposition of [<sup>14</sup>C]Formaldehyde in Fischer-344 Rats Following Inhalation Exposure.** T.Y. Chin and H. d'A. Heck, *Chem. Ind. Inst. of Tox., Research Triangle Park, NC.* Sponsor: J.E. Gibson.
- 285 **The Effects of Inhalation Exposure of Methyl Bromide in the Rat.** J.H. Roycroft, R.H. Jaskot, E.C. Grose and D.E. Gardner, *US EPA, HERL, ETD, and Northrop Services, Inc., Research Triangle Park, NC.*
- 286 **Acute and Subacute Inhalation Toxicity of Dimethyl Ether in Rats.** M.R. Brittelli and L.W. Smith, *Haskell Lab. for Tox. and Ind. Med., E. I. du Pont de Nemours and Co., Inc., Newark, DE.* Sponsor: G.L. Kennedy, Jr.
- 287 **The Effects of Inhalation Exposure to Hexachlorocyclopentadiene on Rats and Monkeys.** G.M. Rand and P.O. Nees, *Hooker Chemical Co., Niagara Falls, NY;* C.J. Calo, *Velsicol Chemical Co., Chicago, IL;* and J. Clark, *Huntingdon Res. Center, Huntingdon, UK.*
- 288 **Upper Respiratory Tract Sensory Responses to Volatile Chemicals.** L.C. Stone, G.T. Lawhorn, J.C. McKinney and M.S. McCracken, *Procter & Gamble Co., Miami Valley Labs., Cincinnati, OH.* Sponsor: E.V. Buehler.
- 289 **Microcomputers in Inhalation Toxicology.** M.S. McCracken, L.C. Stone, J.L. Russell and E.R. Fletcher, *Procter & Gamble Co., Miami Valley Labs., Cincinnati, OH.* Sponsor: E.V. Buehler.
- 290 **Pulmonary Effects of Chronic Exposure to Polyurethane Foam (PUF).** W.J. Moorman, J.B. Lal, R.E. Biagini and W.D. Wagner, *Natl. Inst. for Occup. Safety and Health, Div. of Biomed. and Behavioral Sci., Cincinnati, OH.*

- 291 **Subchronic Inhalation Toxicity of Diethylamine in the Rat.** D.W. Lynch, W.J. Moorman and T.R. Lewis, *Natl. Inst. for Occup. Safety and Health, Div. of Biomed. and Behavioral Sci., Cincinnati, OH.*
- 292 **The Selective Accumulation of Putrescine into Rat Lung and Brain Slices and its Relevance to the Toxicity of Paraquat.** L.L. Smith and I. Wyatt, *ICI Ltd., Central Tox. Lab., Alderley Park, Nr. Macclesfield, Cheshire, UK.* Sponsor: M.S. Rose.
- 293 **The Effect of Time After Death on the Accumulation of Paraquat and Putrescine into Mouse Lung Slices.** L.L. Smith and C. Elliot, *ICI Ltd., Central Tox. Lab., Alderley Park, Nr. Macclesfield, Cheshire, UK.* Sponsor: M.S. Rose.
- 294 **Preliminary Study of the Pulmonary Absorption of 4 Organophosphorous Pesticides.** J. Horton, J. Hemberger and M. Smith, *Univ. of California, Irvine, Toxic Hazards Res. Unit, Dayton, OH; Marion Lab., Kansas City, MO; Biol. Dept., Univ. of Missouri, Kansas City, MO.*
- 295 **The Effects of Paraquat on Circulating Plasma Levels of Arachidonic Acid, PGF<sub>2</sub>-alpha and PGE<sub>2</sub> in the Beagle.** D.B. Chandler and S.N. Giri, *Sch. of Vet. Med., Univ. of California, Davis, CA.*
- 296 **Effect of Heterocyclic Nephrotoxins on Excretion of N-Acetylglucosaminidase in the Mouse.** R.A. Wiley, H.-Y. Choo and G. Traiger, *School of Pharm., Univ. of Kansas, Lawrence, KS.*
- 297 **Subcellular Binding of <sup>203</sup>Pb in Rat Kidneys - Detection of a Low-Molecular-Weight Cytosolic Lead-Binding Component.** A. Oskarsson, K.S. Squibb and B.A. Fowler, *NIEHS, Research Triangle Park, NC.*
- 298 **A Subacute Study of Renal Toxicity of Inhaled Chlorotrifluoroethylene in Rats.** L.A. Buckley, A.J. Gandolfi, J.W. Clayton and R.B. Nagle, *Tox. Program, Univ. of Arizona, Tucson, AZ.*
- 299 **Evaluation of Renal Function in Neonatal Rats.** R.J. Kavlock and J.A. Gray, *Health Effects Res. Lab., US EPA, Research Triangle Park, NC.* Sponsor: L. Hall.
- 300 **Toxicity of Cadmium-Metallothionein in Rat Kidney Cell Culture.** K. Rodgers and M.G. Cherian, *Dept. of Pathol., Univ. of Western Ontario, London, Ont.*

## PLATFORM SESSION 10: Respiratory III

Tuesday Afternoon, March 3, 1981

Town and Country Room

**Chairman: R.T. Drew, Brookhaven National Lab., Upton, NY**

**Assistants: J. LaBauve, Stauffer Chemical Co., Farmington, CT**

**R.F. Phalen, University of California, Irvine, CA**

Paper No.	Time (P.M.)	
301	1:15	<b>Results of a 90-Day Acrylic Acid Vapor Inhalation Study With Rats and Mice.</b> R.R. Miller, J.A. Ayres, G.C. Jersey and M.J. McKenna, <i>Tox. Research Lab., Dow Chemical USA, Midland, MI.</i>
302	1:30	<b>Recovery From Chlorphentermine (CP)-Induced Phospholipidosis in Rat Alveolar Macrophages (AMs): Biochemical and Cellular Features.</b> M.J. Reasor, R.A. Koshut, E.R. Walker and V. Castranova. <i>West Virginia Univ. Med. Center and ALOSH/NIOSH, Morgantown, WV.</i> Sponsor: J.A. Thomas
303	1:45	<b>Organometallic Compounds Induce Clara Cell Necrosis.</b> W.M. Haschek <sup>1</sup> , P.J. Hakkinen <sup>2</sup> , H.P. Witschi <sup>1</sup> , R.P. Hanzlik <sup>3</sup> and G.T. Traiger <sup>3</sup> , <sup>1</sup> <i>Biol. Div., Oak Ridge Natl. Lab.,</i> <sup>2</sup> <i>Univ. of Tenn.-Oak Ridge Grad. Sch. Biomedical Sciences, Oak Ridge, TN,</i> <sup>3</sup> <i>Depts. of Medicinal Chem. and Pharmacol. and Toxicol., Univ. of Kansas, Lawrence, KS.</i>
304	2:00	<b>Distribution and Excretion of Inhaled Hydrogen Fluoride.</b> J.B. Morris and F.A. Smith, <i>Dept. of Rad. Biol. and Biophys., Univ. of Rochester, Rochester, NY.</i>
305	2:15	<b>Time-Varying Concentration Profile as a Determinant of the Inhalation Toxicity of CCL<sub>4</sub>.</b> E.W. Van Stee, G.A. Boorman, M.P. Moorman, <i>National Inst. of Environ. Health Sciences, Research Triangle Park, NC.</i>
306	2:30	<b>Changes in Rat Lung Collagen After Intratracheal Instillation of Silica.</b> T.W. Hesterberg, K.M. Reiser and J.A. Last, <i>Dept. of Internal Med. and California Primate Research Center, Univ. of California, Davis, CA.</i>
307	2:45	<b>Lifetime Studies in Rats and Mice Receiving Intravenously Injected Chrysotile Asbestos.</b> E.J.F. Spicer, E.I. Goldenthal, R.G. Geil and F.X. Wazeter, <i>International Research and Development Corp., Mattawan, MI.</i>

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## ANNUAL BUSINESS MEETING

Tuesday Afternoon, March 3, 1981

3:15 P.M.

Town and Country Room

SOT MEMBERS ONLY

**Perry J. Gehring, Presiding**

## POSTER SESSION 6: Biotransformation III

Tuesday Afternoon, March 3, 1981

Mission Ballroom (Rear)

**Chairman: R.C. Schnell, Univ. of Nebraska Med. Ctr., Omaha, NE**

**Assistant: F.N. Kotsonis, G. D. Searle Co., Skokie, IL**

Paper No.	Time (P.M.)	
308	1:30 - 3:00	<b>Metabolism of Acrylonitrile to Cyanide by Brain Tissue.</b> M. Abreu and A.E. Ahmed, <i>Dept. of Pharmacol. and Tox. and Dept. of Path., Univ. of Texas Med. Branch, Galveston, TX.</i> Sponsor: E.S. Reynolds
309		<b>Biotransformation and Biliary Excretion of 1-<sup>14</sup>C-Acrylonitrile in Rats.</b> B.I. Ghanayem and A.E. Ahmed, <i>Dept. of Pharmacol. and Tox. and Dept. of Path., Univ. of Texas Med. Branch, Galveston, TX.</i> Sponsor: W. Decker
310		<b>Metabolism of Acrylonitrile by Isolated Rat Liver Hepatocytes.</b> L.E. Geiger, L.L. Hogy and R.A. Neal, <i>Center in Tox., Vanderbilt Univ., Nashville, TN.</i>
311		<b>Acrylamide: The Pharmacokinetics and Metabolism in Rats.</b> M.J. Miller, D.E. Carter and I.G. Sipes, <i>Tox. Prog., Univ. of Arizona, Tucson, AZ.</i>
312		<b>Placental Transfer, Pharmacokinetics and Metabolism of Mephosfolan in the Mouse.</b> N.M. Bakry and M.B. Abou-Donia, <i>Dept. of Plant Protection, Faculty of Agriculture, Univ. of Alexandria, Egypt; Dept. of Pharmacol., Duke Univ. Med. Ctr., Durham, NC.</i>
313		<b>Toxicokinetics and Metabolism of a Single Dermal Dose of 2,2,-Dichloroethenyl Dimethyl Phosphate (Dichlorvos) in the Cat.</b> K. Sivarajah and M.B. Abou-Donia, <i>Dept. of Pharmacol., Duke Univ. Med. Center, Durham, NC.</i>
314		<b>Urinary Metabolites of Inhaled Methylcyclohexane.</b> E.H. Vernot, D.L. Pollard, <i>Univ. of California, Irvine, Toxic Hazards Research Unit, Overlook Branch, Dayton, OH.</i>
315		<b>In Vivo Kinetic Constants for the Metabolism of Inhaled Hydrocarbon Toxicants as Determined by Gas Uptake Methods.</b> R.L. Hilderbrand and M.E. Andersen*, <i>NMRI/TD and AFAMRL/TH*, Wright-Patterson AFB, OH.</i>
316		<b>Pulmonary Disposition of Drugs by Isolated Perfused Rat Lungs Following Subacute Chlorphentermine Treatment.</b> Y. Ohmiya, L.S. Angevine and H.M. Mehendale, <i>Univ. of Miss. Med. Ctr., Dept. of Pharmacol. and Tox., Jackson, MS.</i>
317		<b>Valproic Acid-Induced Choleresis in the Rat.</b> J.B. Watkins and C.D. Klaassen, <i>Dept. of Pharmacol., Univ. Kansas Med. Ctr., Kansas City, KS.</i>
318		<b>Elimination of [<sup>14</sup>C] Morphine (M) in the Isolated Perfused Liver of Pregnant (P), Estradiol-17<math>\beta</math> (E<sub>2</sub>) Treated and Nonpregnant (NP) Rats.</b> W. Brock, C. Montgomery

- and M. Vore, *Grad. Ctr. for Tox. and Dept. of Pharmacol., Univ. of Kentucky, Lexington, KY.*
- 319 **Elimination of [<sup>14</sup>C] Diethylstilbestrol (DES) In Isolated Perfused Liver From Pregnant (P) and Nonpregnant (NP) Hamster (H) and Rat (R).** C. Montgomery and M. Vore, *Dept. Pharmacol. and Grad. Center Toxicology, Univ., Kentucky, Lexington, KY.*
- 320 **Modulation of the Cholestatic Response to Estradiol-17 $\beta$  ( $\beta$ -D-Glucuronide) (Ez17G) by Bile Acids (BA) in the Rat.** M. Meyers and M. Vore, *Dept. Pharmacology, Univ. Kentucky, Lexington, KY.*
- 321 **Fate of Aflatoxin B<sub>1</sub> in the Gastrointestinal Compartment.** J.J. Wong, L. Kayashima and D.P.H. Hsieh, *Dept. of Environ. Tox., Univ. of California, Davis, CA.*
- 322 **In Vitro Metabolism of Aflatoxin-B<sub>1</sub> by Resistant and Susceptible Lines of Japanese Quail (Coturnix coturnix japonica).** D.W. Rice, P.B. Hamilton<sup>1</sup> and D.P.H. Hsieh, *Dept. of Environ. Tox., Univ. of California, Davis, CA and Dept. of Poultry Science, North Carolina Univ., Raleigh, NC.<sup>1</sup>*
- 323 **In Vitro Metabolism of Aflatoxin-M<sub>1</sub> and B<sub>1</sub> in the Mouse and Rat.** D.W. Rice and D.P.H. Hsieh, *Dept. of Environ. Tox., Univ. of California, Davis, CA.*
- 324 **An In Vitro Study on the Non-Protective Effects of Glutathione on Senecionine Inhibition of Hepatic Microsomal Aminopyrine N-Demethylase Activity.** J.M. Van Emon, D.F. Eastman and H.J. Segall, *Dept. Vet. Med. Physiol. Science, Univ. of California, Davis, CA.* Sponsor: G.M. Conzelman.
- 325 **Tissue Distribution and Covalent Binding to DNA and Protein by Senecionine.** D.F. Eastman, G.P. Dimenna and H.J. Segall, *Dept. V.M. Physiol. Sci., Univ. California, Davis, CA.* Sponsor: S.N. Giri
- 326 **Determination of Dehydroretronecine, A Pryrolizidine Alkaloid Metabolite by High Pressure Liquid Chromatography.** H.S. Ramsdell and D.R. Buhler, *Dept. of Biochem. and Biophys., Dept. of Agric. Chem. and Environ. Hlth. Sci. Ctr., Oregon State Univ., Corvallis, OR.*
- 327 **High Pressure Liquid and Gas Liquid Chromatographic Analysis of the Diazomethane Derivative of Penicillic Acid.** T.D. Phillips, G.W. Ivie, N.D. Heidelbaugh, L.F. Kubena, S.J. Cysewski, A.W. Hayes and D.A. Witzel, *Dept. of Vet. Pub. Hlth., Texas A&M Univ., College Station, TX., and USDA, SEA/AR, College Station, TX.*
- 328 **Sex Differences in the Metabolism of Phenytoin in Rats In Vivo and in Isolated Hepatocytes.** R.E. Billings, *Dept. of Pharmacol., Univ. of Texas Medical School, Houston, TX.* Sponsor: S.D. Murphy
- 329 **Distribution and Metabolism of the Pulmonary Toxin 4-Ipomeanol, In Control, Phenobarbital and 3 Methyl Cholanthrene-Treated Rats.** C.N. Statham and M.R. Boyd, *Clinical Pharmacol. Branch, NCI, Bethesda, MD.*

- 330 **Depletion of Mouse Hepatic Glutathione by the Narcotic Compounds Propoxyphene and Morphine.** R.C. James, D.R. Goodman, S. Harper and R.D. Harbison, *Dept. of Pharmacol., Vanderbilt Univ., School of Med., Nashville, TN.*
- 331 **Selective Changes in the Hepatic Microsomal Electron Transport System (HMETS) Following Repeated Oral Propoxyphene Administration in the Mouse.** J.E. Mack, L.W. Masten, *Dept. of Pharmacol., Univ. of Mississippi, University, MS.* Sponsor: W.M. Davis.
- 332 **Evaluation of C57BL/6N and C57BL/6J Substrains for 29 Enzymes of Liver or Brain.** R.J. Feuers, R.R. Delongchamp and J.B. Bishop, *Div. Mutagenesis Res., National Center for Toxicological Research, Jefferson, AR.* Sponsor: C.A. Kimmel
- 333 **Sex- and Dose-Related Differences in the Metabolism of Caprolactam in the Rat.** P.D. Unger and M.A. Friedman, *Corporate Medical Affairs, Allied Chemical Corp., Morristown, NJ.*
- 334 **Determination of Plasma Concentrations of Delta-9-Tetrahydrocannabinol Using High Pressure Liquid Chromatography with Electrochemical Detection.** K.E. Ferslew, J.E. Manno, B.R. Manno, J.J. Bowen and P.C. Jobe, *Section of Toxicology, Depts. of Pharm. & Therap. and Psychiatry, Louisiana State Univ. Med. Ctr., Shreveport, LA.*
- 335 **Vitamin E Binding to Microsomes of the Lung, Liver, Heart and Brain of the Rat.** D.J. Murphy and R.D. Mavis, *Dept. of Radiation Biology & Biophysics, Univ. of Rochester, NY.*
- 336 **Lethal Cyanogenesis by Sodium Nitroprusside.** B. Ballantyne, *Union Carbide Corp., South Charleston, WV.*
- 337 **Percutaneous Penetration of Dipyrithione in Man: Race Differences?** J.H. Wedig\* and H.I. Maibach, *Olin Corp., New Haven, CT\**; *University of California Sch. of Med., San Francisco, CA.*
- 338 **Disposition of 10-10' Oxybisphenoxarsine (OBPA) in Rats, Guinea Pigs and Rabbits.** J. Kronenberg and R. Hartung, *Dept. of Env. & Ind. Hlth., Univ. of Michigan, Ann Arbor, MI.*
- 339 **Metabolism of Ortho-Benzyl-Para-Chlorophenol (Santophen® 1) in the Male Sprague-Dawley Rat.** W. P. Rigley, M.O. Roulhac and M.W. Dietrich, *Monsanto Environmental Hlth. Lab., St. Louis, MO.* Sponsor: W.E. Ribelin
- 340 **Carbofuran II. Carbofuran Distribution and Metabolism in the Rat After Oral and Intravenous Exposures.** P.W. Ferguson, M.S. Dey, S.A. Jewell and R.I. Krieger, *Dept. of Environmental Toxicology, Univ. of California, Davis, CA.*
- 341 **The Importance of Tissue Carboxylesterase to Anticholinesterase Potency of Organophosphates, In Vitro.** S.D. Cohen and E.M. Ambelas, *Sch. of Pharmacy, Univ. of Connecticut, Storrs, CT.*

**Immunotoxicologic Evaluation of Tri-o-Tolyl Phosphate (TOTP) in Mice.** C.R. Brinkerhoff, D.R. Bourcier and R.P. Sharma. *Tox. Program, Utah State Univ., Logan, UT.*

### **SYMPOSIUM 3: Immunotoxicology**

Wednesday Morning, March 4, 1981

Town and Country Room

**Co-Chairmen: R.D. Irons, Chem. Ind. Inst. Tox., Research Triangle Park, NC**

**P.M. Newberne, Mass. Inst. of Technology, Cambridge, MA**

#### **Time (A.M.)**

8:30	<b>Introduction.</b> P.M. Newberne and R.D. Irons
8:40	<b>The Immune System: A Target Organ for Chemical Toxicity.</b> Q.N. Myrvik, <i>Chairman, Dept. of Microbiology and Immunology, Bowman Gray School of Medicine, Winston-Salem, NC.</i>
9:20	Discussion
9:30	<b>Approaches for the Assessment of Immunotoxicity.</b> J.H. Dean, <i>Immunobiology Section, Nat. Inst. of Environ. Health Sciences, Research Triangle Park, NC.</i>
10:10	Discussion
10:20	<b>The Lymphocyte as a Tool for Studying Mechanisms of Immunotoxicity.</b> R.D. Irons, <i>Dept. of Pathology, Chemical Ind. Inst. of Tox., Research Triangle Park, NC.</i>
11:00	Discussion
11:10	<b>Immunotoxicology of the Lung.</b> D.E. Bice, <i>Lovelace Biomedical and Environ. Res. Institute, Albuquerque, NM.</i>
11:50 - 12:00	Discussion

### **PLATFORM SESSION 11: General Toxicology III**

Wednesday Morning, March 4, 1981

San Diego Room

**Chairman: B.R. Manno, Louisiana State Univ. Medical School, Shreveport, LA**

**Assistants: D.J. Ashmore, Ind. Univ. Sch. Med., Indianapolis, IN  
R.C. Lindenschmidt, Ind. Univ. Sch. Med., Indianapolis, IN**

<b>Paper No.</b>	<b>Time (A.M.)</b>	
343	8:30	<b>A Unified One-Way Approach to Analysis of Toxicology</b>

- logical Data.** A.K. Thakur. *Hazleton Labs. America, Inc., Vienna, VA.* Sponsor: F.E. Reno
- 344 8:45 **Subchronic Inhalation Bioassay of n-Hexane.** S.C. Lewis<sup>1</sup> and P.S. Spencer<sup>2</sup>, <sup>1</sup>*Medical Dept., Exxon Corp., Franklin Township, NJ;* <sup>2</sup>*Inst. of Neurotoxicology, Albert Einstein College of Med., Bronx, NY.* Sponsor: E.G. Burtis
- 345 9:00 **The Industrial Toxicology Triangle: A Model for Differential Diagnosis.** K.S. Cohen, *Consulting Hlth. Services, Div. of TOXOS Corp., El Cajon, CA.* Sponsor: W.E. McCormick.
- 346 9:15 **Harmonization of Test Guidelines: U.S. and International Approaches.** J.R. Beall and N.P. Page, *Office of Hlth. and Environ. Res., Dept. of Energy, Washington, DC;* and *Office of Toxic Substances, USEPA, Washington, DC.*
- 347 9:30 **Comparative Toxicology of Mirex, Photomirex and Chlordecone After Oral Administration to the Mouse.** K. Fujimori, I.K. Ho and H.M. Mehendale, *Dept. Pharmacol. & Tox., Univ. Mississippi Med. Ctr., Jackson, MS.*
- 348 9:45 **A Four Week Intravenous Toxicity Study in Dogs with a 5:1 Combination of Sulfamethoxazole and Trimethoprim.** T.J. Hayes, R.M. McClain, S.E. Sadek, W.H. Niemann and C.W. Impellizzeri, *Dept. of Tox. and Path., Hoffmann-La Roche Inc., Nutley, NJ.*
- 349 10:00 **Assessment of the Toxicity of Cyclohexanone Administered Intravenously to Wistar and Gunn Rats.** Y. Greener, L. Martis and N.I. Redmond, *Travenol Labs, Inc., Morton Grove, IL.*
- 350 10:15 **Assessment of the Toxicity of Povidone Iodine (PVP-I) and Strong Iodine (SIS) Solutions Administered Intraperitoneally (ip) to Rats for 3 Months.** Y. Greener, E.J. Youkilis and N.I. Redmond, *Travenol Lab., Inc., Morton Grove, IL.*
- 351 10:30 **Effects of Paraquat on Angiotensin Converting Enzyme Activity in Mice Kidneys.** S.J. Kim, J.F. Roberts and J.O. Koo, *Dept. of Zoology, North Carolina State Univ., Raleigh, NC* and *NIEHS, Research Triangle Park, NC.* Sponsor: I.P. Lee.
- 352 10:45 **Comparative Acute Toxicity of Some Common Laboratory Vehicles in Rats and Mice.** E.T. Yau, V.M. Traina and R.M. Diener, *Dept. of Tox. and Path., CIBA-GEIGY Corp., Summit, NJ.*
- 353 11:00 **Cytotoxicity of Ammonium Metavanadate to Cultured Bovine Alveolar Macrophages.** C.I. Wei and H.P. Misra, *Lab. for Energy-Related Health Res., Univ. of California, Davis, CA.* Sponsor: S.N. Giri.
- 354 11:15 **Eleven Week Toxicology Studies of Parenterally Administered Levonantradol HC1 in the Dog and Rat.** S.W. Stadnicki, R.M. Jakowski and H.V. Levinsky, *Dept. of Drug Safety Evaluation, Pfizer Central Research, Groton, CT.*

- 355 11:30 **Evaluation of Behavioral Tests for CNS Depression: The Effect of Ethanol During the Absorptive Phase.** S.J. Baker, G.J. Chrzan and J.H. Saunders, *Bio-Medical Research, H&ES, The Dow Chemical Company, Midland, MI.* Sponsor: M.B. Chenoweth.
- 356 11:45 **Learning and Memory Impairment in Mice After Acute Exposure to Single-Carbon Chlorinated Compounds.** G. Alexeeff and W. Kilgore, *Dept. of Environmental Tox., Univ. of California, Davis, CA.*

## PLATFORM SESSION 12: Halogenated Hydrocarbons

Wednesday Morning, March 4, 1981

Golden West Room

**Chairman: I.G. Sipes, Univ. of Arizona, Tucson, AZ**

**Assistants: J.S. Bus, Chemical Industry Institute of Toxicology,**

**Research Triangle Park, NC**

**L.R. Phol, NIH, Bethesda, MD**

- | Paper No. | Time (A.M.) |  |
|-----------|-------------|--|
| 357       | 8:30        | <b>Investigation of the Mechanism of Methyl Butyl Ketone Potentiation of CHCl<sub>3</sub>-Induced Renal and Hepatic Toxicity.</b> R.V. Branchflower, J.W. George and L.R. Rohl, <i>NHLBI, Bethesda, MD.</i>  |
| 358       | 8:45        | <b>Induction of Hepatic Mixed Function Oxygenases by 2,5-Hexanedione in Male Mice.</b> J.D. Jernigan and R.D. Harbison, <i>Dept. of Pharmacol., Vanderbilt Univ., Nashville, TN.</i>   |
| 359       | 9:00        | <b>Potentiation of CHCl<sub>3</sub>-Induced Hepato- and Nephrotoxicity by Ketones.</b> W.R. Hewitt, E.M. Brown and G.L. Plaa, <i>Dept. of Vet. Anat-Physiol., Coll. of Vet. Med., Univ. of Missouri, Columbia, MO and Dept. De Pharmacol., Univ. De Montreal, Montreal, P.Q.</i> |
| 360       | 9:15        | <b>Potentiation of Haloalkane Hepatotoxicity of Brominated Analogs of CCl<sub>4</sub> by Chlordecone and Phenobarbital.</b> J.S. Klingensmith and H.M. Mehendale, <i>Dept. of Pharmacol. and Tox., Univ. of Miss. Med. Ctr., Jackson, MS.</i>                                    |
| 361       | 9:30        | <b>Evidence for Microsomal Bioactivation of 1,2-Dibromoethane Resulting in Mammalian DNA Damage.</b> R.D. White, I.G. Sipes, A.J. Gandolfi and G.T. Bowden, <i>Arizona Hlth. Sciences Ctr., Univ. of Arizona, Tucson, AZ.</i>  |
| 362       | 9:45        | <b>Fate of 1,2-Dichloroethane (EDC) in Rats After Gavage or Inhalation.</b> R.H. Reitz, T.R. Fox, J.Y. Domoradzki, J.F. Quast and P.G. Watanabe, <i>Dow Chemical USA, Midland, MI.</i>   |
| 363       | 10:00       | <b>Increased Bioactivation of <sup>14</sup>C-1,1,2 Trichloroethane Following Acetone Treatment.</b> J.R. MacDonald, A.J. Gandolfi and I.G. Sipes, <i>Tox. Program, Univ. of Arizona, Tucson, AZ.</i>   |

364	10:15	<b>Conjugation and Bioactivation of Chlorotrifluoroethylene and Trichloroethylene.</b> D.W. Bonhaus and A.J. Gandolfi, <i>Dept. of Pharmacol. and Tox. Program, Univ. of Arizona, Tucson, AZ.</i>
365	10:30	<b>Trichloroethylene Metabolism: An Examination of the Role of Trichloroethylene Oxide.</b> R.E. Miller and F.P. Guengerich, <i>Depts. of Pharmacol. and Biochem. and Ctr. in Environ. Tox., Vanderbilt Univ., Nashville, TN.</i>
366	10:45	<b>The Fate of Inhaled Methyl Chloroform (1,1,1-Trichloroethane) in Rats and Mice.</b> A.M. Schumann, T.R. Fox and P.G. Watanabe, <i>Dow Chemical USA, Midland, MI.</i>
367	11:00	<b>Profile of Urinary Radioactivity Following Exposure to <sup>3</sup>H/<sup>14</sup>C Halothane in the Hypoxic Model.</b> A.J. Gandolfi, R.C. Lind, I.G. Sipes, B.R. Brown and L.R. Pohl, <i>Dept. of Anesthesiology, Univ. of Arizona, Tucson, AZ and NIH, Bethesda, MD.</i>
368	11:15	<b>Binding of Chloroform to Mouse and Rat Hemoglobin as a Dose Monitor.</b> L. Chang and M.A. Pereira, <i>U.S. EPA, Health Effects Res. Lab., Cincinnati, OH.</i> Sponsor: R. Bull.
369	11:30	<b>The Effects of Ethylene Chlorohydrin on Fatty Acid Synthesis.</b> J.E. Andrews, K.D. Courtney and W.E. Donaldson, <i>EPA, ITB, ETD, HERL, Research Triangle Park, NC and Tox. Program, North Carolina State Univ., Raleigh, NC.</i>
370	11:45	<b>Chloroform Stimulation of Rat Hepatic Ornithine Decarboxylase Activity.</b> R.E. Savage Jr., C. Westrich, C. Guion and M.A. Pereira, <i>Health Effects Research Lab., U.S. EPA, Cincinnati, OH.</i> Sponsor: R. Bull.

## PLATFORM SESSION 13: Reproduction II

Wednesday Morning, March 4, 1981

California Room

**Chairman: R.M. McClain, Hoffmann-La Roche Co., Nutley, NJ**

**Assistants: J.L. Schardein, Parke Davis & Co., Ann Arbor, MI**

**T.J. Hayes, Hoffmann-LaRoche Co., Nutley, NJ**

Paper No.	Time (A.M.)	
371	8:30	<b>Recovery From DBCP Induced Alterations in Rats and Rabbits.</b> J.D. Burek, F.J. Murray, K.S. Rao, A.A. Crawford, J.A. John, T.J. Bell, J.S. Beyer, R.R. Albee, W.J. Potts, C.M. Parker and B.A. Schwetz, <i>Dow Chemical U.S.A., Midland, MI, and Tox. Lab., Shell Development Co., Houston, TX.</i>
372	8:45	<b>Effects of 1,2-Dibromo-3-Chloropropane (DBCP) on an Exposed Work Population.</b> J.M. Lanham, <i>Dow Chemical U.S.A., Pittsburg, CA.</i> Sponsor: B.A. Schwetz.

- 373 9:00 **Photomirex: Effects on Reproduction in the Rat.** I. Chu, D.C. Villeneuve, V.E. Secours, V.E. Valli and G.C. Becking, *Environ. Health Directorate, Health Protection Branch, Ottawa, Ont., and Biopath Analysts, Guelph, Ontario.*
- 374 9:15 **Effect of Polybrominated Biphenyls on the Reuctive Metabolism of Testosterone.** J.F. Newton, W.E. Braselton, Jr., L.F. Lepper, K.M. McCormack and J.B. Hook, *Center for Environ. Tox. and Dept. of Pharmacol. & Tox., Michigan State Univ., East Lansing, MI.*
- 375 9:30 **Subchronic and Reproductive Toxicology Studies on Acrylic Acid.** L.R. DePass, M.D. Woodside, R.H. Garman, R.R. Maronpot and C.S. Weil, *Bushy Run Research Center, Union Carbide Corp., Pittsburgh, PA.*
- 376 9:45 **Failure of Monoethylhexyl Phthalate (MEHP) to Affect Gonadal Zinc or DNA and RNA Levels in the Mouse.** K.A. Curto & J.A. Thomas, *Dept. Pharmacol. & Tox., West Virginia Univ. Med. Ctr., Morgantown, WV.*
- 377 10:00 **The Effect of Dermal Application of Poly(Dibromophenyleneoxide) on the Sperm and Testes of the Rabbit.** M. Eisler, D.E. Rodwell\*, M. Root and M.D. Memec\*, *R&D Dept., Velsicol Chem. Corp., Chicago, IL and \*International Research and Development Corp., Mattawan, MI.*
- 378 10:15 **A Reproduction/Teratology Study of Decaffeinated Coffees.** G.A. Nolen, *The Procter and Gamble Company, Cincinnati, OH.*
- 379 10:30 **Relationship Between Treatment Interval and Reproductive Function in Mice Exposed Prenatally to 9,10-Dimethyl-1,2-Benzanthracene (DMBA).** K. M. MacKenzie, J.A. McLachlan and G.W. Lucier, *Raltech Scientific Services, Madison, WI, and NIEHS, Research Triangle Park, NC.*
- 380 10:45 **The Functional Relationship Between Sperm Density and Toxic Substances.** S.-Y. Tang, D. Meeter<sup>1</sup>, D.W. Kuehl<sup>2</sup> and R.C. Dougherty, *Dept. of Chem. and <sup>1</sup>Dept. of Statistics, Florida State Univ., Tallahassee, FL; and <sup>2</sup>US EPA, Environ. Research Lab., Duluth, MN.*
- 381 11:00 **Effects of a Single Oral Dose of SCH 15698, A 1,4 Benzodiazepine, on Testicular Weight and Morphology and on Reproductive Performance in Rats.** L.E. Arthaud, G.J. Davis, H.E. Black and J. Heller, *Dept. Path. Tox., Schering-Plough Corp., Lafayette, NJ.* Sponsor: E. Schwartz.
- 382 11:15 **Characterization of a Specific, Cytoplasmic Estrogen Receptor (ER) in the Fetal Rat Uterus.** G.L. Kimmel and J.R. Harmon, *National Ctr. for Tox. Research, Jefferson, AR.* Sponsor: L. Fishbein.

## POSTER SESSION 7: Biochemical Toxicology III

Wednesday Morning, March 4, 1981

Mission Ballroom (Rear)

**Chairman: R.C. Schnell, Univ. of Nebraska Med. Center, Omaha, NE**

**Assistant: M. Ehrich, Virginia Tech. Univ., Blacksburg, VA**

Paper No.	Time (A.M.)	
383	8:30 - 10:00	<b>Inhibition of T Lymphocyte Proliferation by a Factor Secreted by Carrageenan-Induced Suppressor Macrophages.</b> F.R. Cochran <sup>1</sup> , J.A. Bash <sup>2</sup> and C.S. Baxter <sup>1</sup> , <sup>1</sup> <i>Dept. of Environ. Hlth., Univ. Cincinnati Med. School, Cincinnati, OH</i> and <sup>2</sup> <i>Dept. Pediatrics Georgetown Univ. Med. School, Washington, DC.</i> Sponsor: P.B. Hammond.
384		<b>Comitogenesis and Inhibition of Antibody Synthesis in Murine B Lymphocytes by Phorbol Diesters: Correlation with Tumor-Promotion.</b> L.A. Fish and C.S. Baxter, <i>Dept. of Environ. Hlth., Univ. of Cincinnati Med. Center, Cincinnati, OH.</i> Sponsor: P.B. Hammond.
385		<b>Inhibition of PHA-Stimulated Mitogenesis by Benzene Metabolites: Protection with Sulfhydryl Compounds.</b> R.W. Pfeifer and R.D. Irons, <i>Chem. Ind. Inst. of Tox., Research Triangle Park, NC.</i>
386		<b>An Assessment of Cellular and Biochemical Changes in Rat Bone Marrow Following Benzene Administration.</b> A.F. Wright and M.S. Rose, <i>ICI Limited, Central Tox. Lab., Alderley Park, Nr Macclesfield, Cheshire, UK.</i>
387		<b>Effect of Muconaldehyde, A Possible Toxic Intermediate of Benzene Metabolism, on Liver <i>In Vitro</i>.</b> G.S. Rao, G. Witz and B.D. Goldstein, <i>Dept. of Environ. and Comm. Med., CMDNJ-Rutgers Med. School, Piscataway, NJ.</i>
388		<b>Studies on the Mechanism of Chlorambucil Cytotoxicity, I. Alterations of Metal Contents in Human Tumor Cells.</b> H. Moawad, S. Barranco and A.E. Ahmed, <i>Dept. of Path. and Cell Biology, Univ. of Texas Med. Branch, Galveston, TX.</i> Sponsor: E.S. Reynolds.
389		<b>Differentiation of the Mechanisms of Oncogenicity of 1,4-Dioxane and 1,3-Hexachlorobutadiene in the Rat.</b> W.T. Stott, J.F. Quast and P.G. Watanabe, <i>Tox. Res. Lab., Dow Chemical USA, Midland, MI.</i>
390		<b>Mechanism of <i>In Vitro</i> Acute Toxicity of Dehydromonocrotaline, a Metabolite of the Pyrrolizidine Alkaloid Monocrotaline.</b> W.D. Johnson, <i>Food and Drug Research Lab., Inc., Waverly, NY</i> and <i>Dept. of Path., Univ. of Wisconsin Med. School, Madison, WI.</i> Sponsor: J.G. Babish.
391		<b>Pharmacokinetics of Acetaminophen Following Intra-gastric Administration to Rats Fed Rations Containing Dietary Fiber.</b> J.D. deBethizy and J.C. Street, <i>Tox. Graduate Program, Utah State Univ., Logan, UT.</i>

- 392 **Effect of Chronic Pyrrolizidine Alkaloid (PA) Intoxication on Induction of Ornithine Decarboxylase (ODC) and Tyrosine Amino Transferase (TAT).** D.J. Broderick, B.M. Krivak and F.N. Dost, *Dept. of Agricultural Chem., Oregon State Univ., Corvallis, OR.*
- 393 **Studies on the Inactivation of *Clostridium Difficile* Toxin Following *In Vitro* Incubations.** M. Ehrich, *Virginia-Maryland College of Vet. Med., Blacksburg, VA.*
- 394 **Butylated Hydroxytoluene Pretreatment Reduces Cytotoxicity and Covalent Binding of Aflatoxin B<sub>1</sub> in Primary Hepatocyte Cultures.** C.B. Salocks, D.P.H. Hsieh and J.L. Byard, *Dept. of Environ. Tox., Univ. of California, Davis, CA.*
- 395 **Effect of Dietary Antioxidants on GSH Mediated Detoxification Systems.** Y.C. Awasthi, D.D. Dao and C.A. Patridge, *Dept. of Human Biol. Chem. and Genet., Univ. of Texas Med. Br., Galveston, TX.*
- 396 **Role of Lipid Peroxidation in Acrylonitrile (ACN) Toxicity?** E.H. Silver, E. Maull, S. Szabo, *Dept. of Pathology, Harvard Med. Sch., Brigham & Women's Hosp., Boston, MA.* Sponsor: D.R. Brown.
- 397 **Isolation and Identification of Plasma Protein S-Sulfonates Following *In Vitro* and *In Vivo* Exposure to Sulfite.** R.E. Gregory and A.F. Gunnison, *Inst. Env. Med., New York Univ. Med. Ctr., New York, NY.*
- 398 **A Comparative Study of the Metabolism of Theobromine in Mammalian Species.** H. Cornish, M. Brabec, S. Tarka, G. Miller, L. Radulovic and R. DeWit, *Sch. of Pub. Hlth., Univ. of Michigan, Ann Arbor, MI and the Research Labs, Tech. Ctr., Hershey Foods Corp., Hershey, PA.*
- 399 **Excretion and Hepatic Covalent Binding of <sup>14</sup>C-2,4-Dinitrotoluene in Conventional and Axenic Fischer-344 Rats.** D.E. Rickert, R.M. Long and J.G. Dent, *Chem. Ind. Inst. Toxicol., Research Triangle Park, NC.*
- 400 **Enterohepatic Circulation and Biliary Excretion of 2,4-Dinitrotoluene Metabolites in Rats.** M. A. Medinsky and J.G. Dent, *Chem. Ind. Inst. of Tox., Research Triangle Park, NC.*
- 401 **Metabolism of 2,4-Dinitrotoluene by Mouse, Rat and Human Intestinal Microflora.** D. Guest, S.R. Schnell and J.G. Dent, *Eastman Kodak Co., Rochester, NY and Chem. Ind. Inst. Toxicol., Research Triangle Park, NC.*
- 402 **Metabolism of 2,4-Dinitrotoluene in Isolated Perfused Male and Female Fischer-344 Rat Livers.** J.A. Bond, M.A. Medinsky, J.G. Dent and D.E. Rickert, *Chem. Ind. Inst. Tox., Research Triangle Park, NC.*
- 403 **Reductive Metabolism of <sup>14</sup>C-2,4-Dinitrotoluene (2,4-DNT) by Isolated Rat Hepatocytes.** J.A. Bond and D.E. Rickert, *Chem. Ind. Inst. Tox., Research Triangle Park, NC.* Sponsor: J.E. Gibson.
- 404 **Biotransformation of 2-Methylnaphthalene (2-MeN) in Rats.** M.J. Melancon, D. Rickert and J.J. Lech, *Dept. of Pharm. & Tox., Med. Coll. of Wisconsin, Milwaukee, WI & CIIT, Research Triangle Park, NC.*

- 405 **Metabolism of 2-Methylnaphthalene to Isomeric Dihydrodiols by Hepatic Microsomes of Rat and Rainbow Trout.** R.K. Breger, R.B. Franklin and J.J. Lech, *Dept. of Pharm. and Tox., Med. College Wisconsin, Milwaukee, WI.*
- 406 **Biochemical Aspects of Propylene Hepatotoxicity.** R.B. Conolly and T.G. Osimitz, *Dept. of Env. & Ind. Hlth., Sch. of Pub. Hlth., The Univ. of Michigan, Ann Arbor, MI.*
- 407 **Inhibition of Hepatic Microsomal Heme Biosynthesis by Rubratoxin B in Male Mice.** M.Y. Siraj and A.W. Hayes, *Dept. of Pharmacol. Tox., Univ. of Mississippi Med. Ctr., Jackson, MS.*
- 408 **Automated Semi-Micro Procedures for Mixed-Function Oxidase Assays.** J.R. Udinsky, F.W. Deckert and J.M. Smith, *Tox. Dept., Rohm and Haas Co., Spring House, PA.* Sponsor: A.W. Hayes.
- 409 **Age-Related Difference in the Interaction Between Hyperoxia and the Cytotoxicity of Dihydroxyfumarate (DHF).** K.B. Wallace and A.P. Autor, *Tox. Ctr., Dept. of Pharmacol., The Univ. of Iowa, Iowa City, IA.*
- 410 **Inhibition of Formate Oxidation by Nitrous Oxide and Folate Deficiency and Reversal of Inhibition by Methionine.** J.T. Eells and T.R. Tephly, *The Tox. Ctr., Univ. of Iowa, Iowa City, IA.*
- 411 **Protection From Alloxan Toxicity in Isolated Hepatocytes by Sugars.** A.W. Harman and L.J. Fischer, *Dept. of Pharmacol., Tox. Center, Univ. of Iowa, Iowa City, IA.* Sponsor: T.R. Tephly.
- 412 **Specificity of Rat, Guinea Pig and Rabbit Hepatic Amidase for the Amide Bonds of Isoniazid (INH) and Acetylisoniazid (AcINH).** L.W. Whitehouse, L.T. Wong, B.H. Thomas, G. Solomonraj and C.J. Paul, *Drug Res. Labs. Health Protection Branch, Hlth. and Welfare Canada, Ottawa, Ontario.*
- 413 **Species Differences in Diphenylhydantoin (Phenytoin) Toxicity.** P. Kurtz, A. Peters, D. Donofrio, D. Cottrill and R. Chhabra, *Battelle Columbus Labs., Columbus, OH and National Inst. of Environ. Health Sciences, Research Triangle Park, NC.*
- 414 **Toxicology of Butyl Benzyl Phthalate.** B.G. Hammond, *Dept. Medicine Environ. Hlth., Monsanto Company, St. Louis, MO.* Sponsor: G.J. Levinskas.
- 415 **Studies on the Mechanism of Toxicity of Bromethalin, A New Rodenticide.** R.B.L. Van Lier and L.D. Ottosen, *Lilly Res. Labs., Eli Lilly and Co., Greenfield, IN.* Sponsor: D.G. Hoffman.
- 416 **Time Course of Atrophic Muscular Degeneration in Rats After Postnatal Treatment with 6-Mercaptopurine.** F.R. Alleva, L.J. Slaughter and T. Balazs, *Food and Drug Admin. and Howard Univ., Washington, DC.*
- 417 **The Effect of pH on the Irritancy Potential of Douche Formulations to the Vaginal Mucosa of the Albino Rabbit.** M. Kaminsky<sup>1</sup> and D.A. Willigan<sup>2</sup>, <sup>1</sup>*Beechman Products, Western Hemisphere Res. Parsippany, NJ;* <sup>2</sup>*Bound Brook, NJ.*

## POSTER SESSION 8: Metals II

Wednesday Morning, March 4, 1981

Mission Ballroom (Rear)

**Chairman: R.C. Schnell, Univ. of Nebraska Med. Ctr., Omaha, NE**

**Assistant: L. Cantilena, Univ. Kansas Med. Ctr., Kansas City, KS**

Paper No.	Time (A.M.)	
418	10:30 - Noon	<b>Induction of Gluconeogenesis by Cadmium in Female Rats.</b> K.D. Chapatwala, B. Rajanna, M. Hobson and D. Desai, <i>Div. of Nat. and Appl. Sci., Selma Univ., Selma, AL and Dept. Neurol., Univ. Miss. Med. Ctr. &amp; V.A. Med. Ctr., Jackson, MS.</i>
419		<b>Stimulation by Iron Chelates of N-Oxide Reduction by the Rat Microsomal Fraction and by Isolated Hepatocytes.</b> G. Powis, C. DeGraw and B.A. Svingen, <i>Mayo Clinic, Rochester, MN.</i>
420		<b>The Effects of Sub-Acute Administration of Dimethylthallium Chloride on the Mouse Erythrocyte.</b> J.M. Morgan, W.M. Davis, L.W. Masten, <i>Dept. of Pharmacol., Univ. of Mississippi, University, MS and R. Novak, Dept. of Pathology, Univ. of Tenn. Med. Units, Memphis, TN.</i>
421		<b>The Effect of Inorganic Heavy Metals on Globin Biosynthesis in Reticulocyte Lysates and Whole Cells.</b> T.G. Obrig, M.A. Chudyk and S. Mudzinski, <i>Dept. of Pharmacol. and Experi. Therapeutics, Albany Med. College, Albany, NY.</i> Sponsor: L.D. Loose.
422		<b>Comparative Actions of Cadmium on Pulmonary, Adrenal, and Hepatic Microsomal Mixed Function Oxidases (MFO) in Guinea Pigs.</b> H.D. Colby, P.R. Miles and J.U. Bell, <i>West Virginia Univ. Med. Ctr., Morgantown, WV.</i>
423		<b>Heavy Metal Interactions: Effect of Cadmium Pretreatment and Cadmium + Copper Chronic Exposure on the Distribution of Cadmium, Copper, Zinc and Iron in Tissue of Mice.</b> D.R. Bourcier, R.P. Sharma and C.R. Brinkerhoff, <i>Tox. Program, Utah State Univ., Logan, UT.</i>
424		<b>Organotin-Induced Alterations of Heme Metabolism in Rat Liver and Kidney.</b> D.W. Rosenberg, G.S. Drummond, H.C. Cornish and A. Kappas, <i>The Rockefeller Univ. Hosp., New York, NY.</i>
425		<b>Altered Regulation of Hepatic Heme Metabolism by Thallium.</b> J.S. Woods, G.T. Carver and B.A. Fowler, <i>NIEHS, Research Triangle Park, NC.</i>
426		<b>Rat Liver Uroporphyrinogen III Cosynthetase: Partial Purification, Properties and Inhibition by Lead Chloride.</b> R.P. Clement and W.N. Piper, <i>Dept. of Pharmacol. and Colleges of Medicine, UCSF, San Francisco, CA and Univ. of Nebraska, Omaha, NE.</i> Sponsor: R.C. Schnell.
427		<b>HPLC Analysis of <i>In Vivo</i> Inhibition of Pyrimidine-5'-Nucleotidase(P5N) in Rat Erythrocytes by Lead</b>

- Acetate. R. Rocco, J. Smart, D. Brown and J. Blumberg. *Program in Tox., College of Pharmacy and Allied Health Professions, Northeastern Univ., Boston, MA.*
- 428 **Age Related Difference in Gamma-Glutamyl Transpeptidase Inhibition by Lead *In Vitro*.** R. Scheri, F.C. Beuthin and R.T. Louis-Ferdinand, *College of Pharmacy and Allied Health Professions Wayne State University, Detroit, MI.*
- 429 **Comparative Effects of Zinc and Copper on the Hepatotoxicity of Pyrrolizidine (*Senecio*) Alkaloids in Rats.** C.L. Miranda, M.C. Henderson, R.L. Reed and D.R. Buhler, *Dept. of Agric. Chem. and Environ. Hlth. Sci. Ctr., Oregon State Univ., Corvallis, OR.*
- 430 **Interaction of Methylmercury with Microtubules.** P.R. Sager, R.A. Doherty and J.B. Olmsted, *Tox. Training Program, Environ. Hlth. Sci. Ctr., and Dept. of Biology, Univ. of Rochester, Rochester, NY.* Sponsor: T.W. Clarkson.
- 431 **Effect of Manganese on the Hepatic Microsomal Mixed Function Oxidase Enzyme System in the Rat.** M.J. Deimling and R.C. Schnell, *Dept. of Pharmacodynamics and Tox., Univ. of Nebraska Med. Ctr., Omaha, NE.*
- 432 **First Pass Effect of Manganous Chloride.** T. N. Thompson and C.D. Klaassen, *Dept. of Pharmacol., Univ. Kansas Med. Ctr., Kansas City, KS.*
- 433 **Effects of Calcium Ortho-Vanadate on Na<sup>+</sup>-K<sup>+</sup>Adenosine Triphosphatase Activities in the Chicken.** T.D. Phillips, B.R. Nechay, L.F. Kubena, N.D. Heidelbaugh, E.C. Shepherd, A.R. Stein, S.L. Neldon and D.A. Witzel, *Dept. of Vet. Pub. Hlth., Texas A&M Univ., and USDA, SEA/AR, College Station, TX and Dept. of Pharm. and Tox., Univ. Texas Med. Branch, Galveston, TX.*
- 434 **A Formalism for the Mathematical Analysis of Hair Data for the Recapitulation of Exposure and its Application to a Canadian Indian Population for Which There is an Apparent Seasonal Variation in Methylmercury Intake.** R.W. Kilpper and J.C. Smith, *Univ. of Rochester, Rochester, NY and Univ. of Cincinnati, Cincinnati, OH.*
- 435 **Synthesis and Pharmacological Study of the Metal Chelator N-Propionyl-D, L-Penicillamine (NPPA).** B.R. Jernigan, M.M. Jones and R.D. Harbison, *Depts. of Pharmacol. and Chem., Vanderbilt Univ., Nashville, TN.*
- 436 **Sexual Dimorphism in the Metabolism of Mercury Vapor in Mice.** Z.A. Shaikh, *Dept. of Radiation Biol. and Biophys., Univ. of Rochester School of Med. and Dent., Rochester, NY.*
- 437 **Biliary Mercurials in Rats Exposed to Methylmercury Chloride.** S.R. Morris and D.E. Carter, *Tox. Program, Univ. of Arizona, Tucson, AZ.*
- 438 **Effects of Metals on the Metabolism of Foreign Compounds by Alveolar Type II Cells.** P.R. Miles, L. Bowman, J.R. Wright, V. Castranova and H.D. Colby, *ALOSH/NIOSH and West Virginia Univ. Med. Ctr., Morgantown, WV.* Sponsor: D.E. Hinton.

- 439 **Effects of Metals on Lung Microsomal Lipid Peroxidation.** J.R. Wright, H.D. Colby, L. Bowman, V. Castranova and P.R. Miles. *West Virginia Univ. Med. Center and ALOSH/NIOSH, Morgantown, WV.* Sponsor: D.E. Hinton.
- 440 **Effects of Cadmium *In Vitro* on Benzo(A)Pyrene Metabolism by Rat Testicular and Hepatic Microsomes.** L.T. Wetzel, J.U. Bell and H.D. Colby, *West Virginia Univ. Med. Ctr., Morgantown, WV.*
- 441 **Effect of Selenium and Vitamin E on Inhibition of Cell Aggregation by Methylmercury.** S.J. Kleinschuster, M. Yoneyama and R.P. Sharma, *Tox. Program and Animal Tumor Program, Utah State Univ., Logan, UT.*
- 442 **Effect of Cortisol Treatment on Mercury Elimination in Mice.** R.D. McKee, R.D. Robinson and R.A. Doherty, *Tox. Training Program, Environ. Hlth. Sciences Ctr., Univ. of Rochester, Rochester, NY.* Sponsor: T.W. Clarkson.
- 443 **Comparative Hg Distribution Following Methyl Mercury Administration in Neonatal and Adult Rat.** D.J. Thomas<sup>1</sup>, H.L. Fisher<sup>2</sup>, L.L. Hall<sup>2</sup> and P. Mushak<sup>1</sup>, <sup>1</sup>*Dept. Pathol. Univ. North Carolina Sch. Med., Chapel Hill, NC;* and <sup>2</sup>*USEPA, Research Triangle Park, NC.*
- 444 **Interaction of Zinc and Cadmium in the Synthesis of Metallothionein in Rats.** S. Onosaka, A.M. Scheuhamer, K. Rodgers and M.G. Cherian, *Dept. of Pathology, Univ. of Western Ontario, London, Ontario.*
- 445 **Cadmium Toxicity of the Peripheral Olfactory System.** B.W. Johnson and G.P. Cooper, *Dept. Environ. Hlth., Univ. of Cincinnati Coll. Med., Cincinnati, OH.* Sponsor: J.C. Smith.
- 446 **Cadmium Disappearance From Plasma in Zinc Deficient Rats.** J.M. Frazier, *Dept. Environ. Hlth. Sci., Johns Hopkins Univ., Baltimore, MD.*
- 447 **Plasma Disappearance of Cadmium in Aging Rats.** U.S. Srivastava and J.M. Frazier, *Dept. Environ. Hlth. Sci., Johns Hopkins Univ., Baltimore, MD.*
- 448 **Cadmium-Induced Enhancement of Superoxide Anion Radical Production by Phagocytic Cells.** M.A. Amoruso, G. Witz and B.D. Goldstein, *Dept. of Environ. and Comm. Med., CMDNJ-Rutgers Med. School, Piscataway, NJ.*
- 449 **The Effect of Several Chelating Agents on the Excretion of Endogenous Metals.** L.R. Cantilena, Jr., C.A. Conry and C.D. Klaassen, *Dept. of Pharmacol., Univ. of Kansas Medical Ctr., Kansas City, KS.*
- 450 **Decreased Effectiveness of Chelation Therapy for Acute Cadmium Poisoning with Time.** L.R. Cantilena, Jr. and C.D. Klaassen, *Dept. of Pharmacol., Univ. of Kansas Med. Ctr., Kansas City, KS.*
- 451 **Determination of Urinary Metallothionein in Cadmium Exposed General Population.** C. Tohyama, Z.A. Shaikh, K. Nogawa\*, E. Kobayashi\* and R. Honda\*, *Div. of Toxicol., Univ. of Rochester, Rochester, NY;* \**Dept. of Hygiene, Kanazawa Med. Univ., Japan.*

## PLATFORM SESSION 14: Biochemical Toxicology IV

Wednesday Afternoon, March 4, 1981

San Diego Room

**Chairman: E.J. Massaro, Penn State Univ., University Park, PA**

**Assistants: A. Furst, Univ. of San Francisco, San Francisco, CA**

**D.J. Reed, Oregon State Univ., Corvallis, OR**

Paper No.	Time (P.M.)	
452	1:30	<b>Brain and Plasma Distribution of Chlordecone and Mirex in the Mouse.</b> I.K. Ho, K. Fujimori, T.P. Huang and H.M. Mehendale, <i>Dept. Pharmacol. &amp; Tox., Univ. Miss. Med. Ctr., Jackson, MS.</i>
453	1:45	<b>Hepatobiliary Dysfunction and Inhibition of Adenosine Triphosphatase Activity of Bile Canalicular Fractions Following <i>In Vivo</i> Mirex, Photomirex and Chlordecone Exposure.</b> L.R. Curtis and H.M. Mehendale, <i>Dept. of Pharmacol. &amp; Tox., Univ. of Miss. Med. Ctr., Jackson, MS.</i>
454	2:00	<b>Effects of Benzene Exposure <i>In Utero</i> on Erythropoietic Activity in the Fetal Mouse Liver.</b> M. Mizens, P. Ronan and H. Cornish, <i>Sch. of Pub. Hlth., The Univ. of Michigan, Ann Arbor, MI.</i>
455	2:15	<b>Biochemical Alterations on Metabolism of Thioacetamide S-Oxide (TAAO) by Isolated Rat Hepatocytes.</b> M.J. Gudzinowicz and R.A. Neal, <i>Ctr. in Tox., Vanderbilt Univ., Nashville, TN.</i>
456	2:30	<b>Enhanced Biologic Potency of Photolyzed PBBs.</b> L.W. Robertson, A. Parkinson, S. Bandiera, B. Chittim and S. Safe, <i>Sch. of Pub. Hlth., Univ. of Michigan, Ann Arbor, MI and Dept. of Chem., Univ. of Guelph, Guelph, Ont.</i> Sponsor: R. Hartung.
457	2:45	<b>Hydrocarbon Solvents: Effect on Calcium Mediated Aggregation of Phospholipid Membranes (Liposomes).</b> J. Danner, K.H. Marion and H. Resnick, <i>Nat'l. Inst. for Occup. Safety &amp; Hlth. &amp; Biochem. Dept., West Virginia Univ. School of Medicine, Morgantown, WV.</i> Sponsor: D.E. Hinton.
458	3:00	<b>The Metabolism-Mediated Activation of Cyclophosphamide to Cytotoxic Intermediates in Primary Cultures of Rat Hepatocytes.</b> D.B. Mitchell and D. Acosta, <i>Dept. of Pharmacol, The Univ. of Texas, Austin, TX.</i>
459	3:15	<b>Pathotoxicology of the Anti-Juvenile Hormone Precocene II in Rat Liver.</b> M.T.S. Hsia, S.J. Grossman and K.R. Schrankel, <i>Environ. Tox. Center and Dept. of Entomology, Univ. of Wisconsin, Madison, WI.</i>
460	3:30	<b>Effect of Heme, Tetrapyrroles and Metals on Rat Hepatic <math>\delta</math>-Aminolevulinic Acid Synthetase (ALAS) and Heme Oxygenase (HO) Activities.</b> K.T. Kitchin, <i>Toxic Effects Branch, USEPA, Research Triangle Park, NC.</i> Sponsor: W.F. Durham.

461	3:45	<b>Chlorphentermine-Induced Phospholipidosis in Adult Rat Lung: Protection by Phenobarbital.</b> S. Kacew, R. Narbaitz, J.A. Ruddick and D.C. Villeneuve, <i>Depts. of Pharmacol. and Anatomy, Univ. of Ottawa and Bureau of Chem. Hazards, Health Protection Branch, Ottawa, Ont.</i>
462	4:00	<b>Effects of Paraquat on Plasma Glucose, Catecholamines, Cortisol and Insulin in the Beagle.</b> S.N. Giri, D.L. Curry, G. Stabenfeldt, D.B. Chandler and M.J. Schiedt, <i>School of Vet. Med., Univ. of Calif., Davis, CA.</i>
463	4:15	<b>In Vivo Immunogenic Alterations by a Food Antioxidant, Butylated Hydroxyanisole (BHA).</b> K. Kangsadalampai, R.P. Sharma and D.K. Salunkhe, <i>Tox. Program, Utah State Univ., Logan, UT.</i>
464	4:30	<b>The Effect of Toxaphene Exposure on the Immune Response in Mice.</b> A.L. Allen and L.D. Koller, <i>Vet. Med., Univ. of Idaho, Moscow, ID.</i>
465	4:45	<b>Suppression of Antibody Production by Chrysotile Asbestos In Vivo and In Vitro.</b> K.L. White, Jr. and A.E. Munson, <i>Dept. of Pharmacol., Med. College of Virginia, Richmond, VA.</i>

## PLATFORM SESSION 15: Oncogenesis I

Wednesday Afternoon, March 4, 1981

Town and Country Room

**Chairman: D.H. Norback, Univ. of Wisconsin, Madison, WI**

**Assistant: Robert Weltman, Univ. of Wisconsin, Madison, WI**

Paper No.	Time (P.M.)	
466	1:30	<b>Induction of Nasal Tumors in Rats Exposed to Hexamethylphosphoramide (HMPA).</b> K.P. Lee, H.J. Trochimowicz and C.F. Reinhardt, <i>Haskell Lab. for Tox. and Ind. Med., E.I. du Pont de Nemours and Co., Inc., Newark, DE.</i>
467	1:45	<b>Results of a Chronic Toxicity and Oncogenicity Study in Rats Maintained on Water Containing Acrylonitrile for 24 Months.</b> J.F. Quast, C.G. Humiston, C.E. Wade, R.M. Carreon, E.A. Hermann, C.N. Park and B.A. Schwetz, <i>Dow Chem. H&amp;ES, USA, Midland, MI.</i>
468	2:00	<b>Chronic Toxicity and Risk Assessment in Mice Exposed to Benzidine Dihydrochloride.</b> N.A. Littlefield, C.J. Nelson and G. Schieferstein, <i>National Center for Tox. Research, Jefferson, AR.</i>
469	2:15	<b>Carcinogen Bioassay of Di(2-Ethylhexyl)Phthalate.</b> J.F. Douglas and W.V. Hartwell, <i>National Tox. Program/NCI, NIH, Bethesda, MD.</i>
470	2:30	<b>Induction of Skin Papillomas in the Sencar Mouse as a Tier 2 Carcinogenesis Bioassay.</b> R.J. Bull, M. Robinson, J. Glass, D. Cmehil and J. Orthoefer, <i>Hlth. Effects Res. Lab., USEPA, Cincinnati, OH.</i>

- 471 2:45 **Carcinogen Bioassays of Several Phthalic Acid Derivatives and Related Compounds.** W.V. Hartwell and J.F. Douglas, *Nat'l. Tox. Program/NCI, NIH, Bethesda, MD.*
- 472 3:00 **Carcinogenicity of Inhaled 1,2-Dibromoethane in Rats Treated with Disulfiram.** L.C.K. Wong, J.M. Winston and C.B. Hong, *Midwest Research Inst., Kansas City, MO.*
- 473 3:15 **Toxicological Evaluation of Carminomycin - An Antineoplastic Anthracycline Antibiotic.** R.A. Buroker, D.F. Johnson and H. Madisoo, *Dept. of Tox., Bristol Labs, Syracuse, NY.*
- 474 3:30 **Change in Hepatic Glutathione (GHS) Levels in Male and Female F344 Rats Treated with Low Protein and Dietary Aflatoxin (AFB<sub>1</sub>).** K.D. Mainigi and T.C. Campbell\*, *Inst. of Comparative & Human Tox., Albany Med. Col., Albany, NY and \*Div. of Nutr. Sci., Cornell Univ., Ithaca, NY.*
- 475 3:45 **Neoplastic Transformation Assay with BALB/c-3T3 Cells. Analysis of Results with 70 Coded Samples.** A. Sivak, A.M. Lobb, M.L. Sturgeon and A.S. Tu, *Arthur D. Little, Inc., Cambridge, MA.*
- 476 4:00 **Sex Difference in the Acquisition of Gamma-Glutamyl Transpeptidase (GGT) Positive Foci in the Liver of Sprague-Dawley Rats Fed Polychlorinated Biphenyls (PCB).** H.P. Cihla, R.H. Weltman, H.C. Pitot\* and D.H. Norback, *Wm. S. Middleton Memorial Veterans' Hosp., Univ. of Wisconsin, Dept. of Path. and \*McArdle Lab. for Cancer Res., Madison, WI.*
- 477 4:15 **Toxicological Implications of Hepatic Peroxisome Proliferation in Rodents: Possible Role of Oxygen Radical Toxicity in Hypolipidemic Drug-Induced Carcinogenesis.** J.K. Reddy and J.R. Warren, *Northwestern Univ. Med. Sch., Chicago, IL.*
- 478 4:30 **Phagocytosis and Subcellular Distribution of Nickel Compounds During the Early Stages of Neoplastic Transformation in Tissue Culture.** M. Costa, J. Simmons-Hansen and P.B. Harnett, *Div. of Tox., The Univ. of Texas Med. Sch. at Houston, Houston, TX.* Sponsor: S.D. Murphy.
- 479 4:45 **A Study of the Oncogenic Capacity of Inhaled Monomethylhydrazine.** E.R. Kinkead, C.C. Haun, E.H. Vernot and J.D. MacEwen, *Univ. of California, Toxic Hazards Research Unit, Overlook Branch, Dayton, OH.*
- 198 5:00 **The Fate of Di-(2-Ethylhexyl) Phthalate in Rats.** P.W. Albro, J.T. Corbett, J. Schroeder, S. Jordan and H.B. Matthews, *NIEHS, Research Triangle Park, NC.*

## POSTER SESSION 9A: General Toxicology IV

Wednesday Afternoon, March 4, 1981

Mission Ballroom (Rear)

**Chairman: R.C. Schnell, Univ. of Nebraska Med. Ctr., Omaha, NE**

**Assistant: R.P. Sharma, Utah State Univ., Logan, UT**

Paper No.	Time (P.M.)	
480	1:30 - 3:00	<b>Cardiac Glycoside Disposition in the Monarch Butterfly Larvae. Role of Monooxygenase Enzyme System.</b> M.A. Marty and R.I. Krieger, <i>Dept. Environ. Tox., Univ. of Calif., Davis, CA.</i>
481		<b>Potential of Cardiotoxic Effects of Isoproterenol and Aminophylline in Rabbits and Rats.</b> X. Joseph, V. Whitehurst and T. Balazs, <i>Bureau of Drugs, Food and Drug Admin., Washington, DC.</i>
482		<b>Drug-Induced Antinuclear Antibodies (ANA) in the Guinea Pig and the Mouse.</b> C.J.G. Robinson and T. Balazs, <i>FDA, Washington, DC.</i>
483		<b>Protective Effects of Butylated Hydroxyanisole Against Lethality and Hepatotoxicity of Pyrrolizidine (<i>Senecio</i>) Alkaloids.</b> C.L. Miranda, D.R. Buhler, H.S. Ramsdell, P.R. Cheeke and J.A. Schmitz, <i>Environ. Hlth. Sci. Ctr., Dept. of Agric. Chem., Dept. of Anim. Sci., and School of Vet. Med., Oregon State Univ., Corvallis, OR.</i>
484		<b>DNA and Protein Content of Rat Liver from Animals Fed RE7064 and HMR Carrageenans in the Diet.</b> D.W. Appleby, K.F. Benitz and N.H. Appleby, <i>Inst. of Exper. Path. and Tox., Albany Med. College, Albany, NY.</i>
485		<b>Detection of a Carrageenan in Rat Liver Homogenates After Feeding in Diet.</b> J. Chen, D.W. Appleby, P. Weber and R. Abraham, <i>Inst. of Exper. Path. &amp; Tox. and Dept. of Biochem., Albany Med. College, Albany, NY and Inst. of Health, Chinese Academy of Med. Sciences, The Peoples Republic of China.</i>
486		<b>The Effect of Chlorine Dioxide in Drinking Water on the Formation of Chloroform.</b> M.S. Abdel-Rahman, D. Couri and R.J. Bull, <i>CMDNJ-New Jersey Med. School, Newark, NJ.</i>
487		<b>Conversion of Lysine <math>\epsilon</math>-Amino Groups to Substituted Pyrrole Derivatives by 2,5-Hexanedione: A Possible Mechanism of Protein Binding.</b> A.P. DeCaprio and P. Weber, <i>Center for Exper. Path. and Tox., and Dept. of Biochem., Albany Med. College, Albany, NY.</i> Sponsor: R. Abraham.
488		<b>Synaptic Vesicle Associated ATPase: Stimulation by <math>Mn^{2+}</math> and Inhibition by Neurotoxic Pesticides.</b> J.D. Doherty, N. Salem, Jr., C.J. Lauter and E.G. Trams, <i>Haz. Evaluation Div., EPA, Arlington, VA and National Inst. of Hlth., Bethesda, MD.</i> Sponsor: A. Pallotta.

- 489 **Vanadium Induced Modification of Immunologic Responses.** R.P. Sharma, D.R. Bourcier, C.R. Brinkerhoff and S.A. Christensen, *Tox. Program, Utah State Univ., Logan, UT.*
- 490 **Disposition of Radioactivity in Rats After Acute Inhalation Exposure to <sup>14</sup>C-n-Hexane.** J.S. Bus, D. Deyo and M. Cox, *Chem. Ind. Inst. of Tox., Research Triangle Park, NC.*
- 491 **Dose-Dependent Uptake, Elimination and Metabolism of Inhaled n-Hexane in the Rat.** T.S. Baker and D.E. Rickert, *Chem. Ind. Inst. of Tox., Research Triangle Park, NC.* Sponsor: J.E. Gibson.
- 492 **Substance P Depletion in Rats Following Oral Capsaicin.** M.S. Miller, S.H. Buck, I.G. Sipes and T.F. Burks, *Dept. of Pharmacol., Arizona Health Sciences Center, Tucson, AZ.*
- 493 **Effects of Chlordecone and Mirex on Dopaminergic System.** K. Fujimori and I.K. Ho, *Dept. Pharmacol. & Tox., Univ. Mississippi Med. Ctr., Jackson, MS.*
- 494 **The Pharmacokinetics of Heptachlor Disposition in the Rat.** D.B. Tuey and H.B. Matthews, *Nat'l. Inst. of Env. Hlth. Sci., Research Triangle Park, NC.*
- 495 **Carbaryl Residues in Tissues and Cholinesterase Activities in Brain and Blood of Rats Receiving Carbaryl.** M.E. Mount, A.D. Dayton and F.W. Oehme, *Comparative Tox. Labs., Kansas State Univ., Manhattan, KS.*
- 496 **Hemoperfusion: A Possible Alternative Method for Treating Organophosphate Insecticide Poisoning.** D. Eigenberg, T. Pazdernik and J. Doull, *Dept. of Pharmacol., Univ. of Kansas Med. Ctr., Kansas City, KS.*

## POSTER SESSION 9B: Respiratory IV

Wednesday Afternoon, March 4, 1981

Mission Ballroom (Rear)

**Chairman: R.C. Schnell, Univ. of Nebraska Med. Ctr., Omaha, NE**

**Assistant: R.P. Sharma, Utah State Univ., Logan, UT**

Paper No.	Time (P.M.)	
497	1:30 - 3:00	<b>Ozone Inhibition of Tissue Cholinesterase in Guinea Pigs.</b> T. Gordon, B.F. Taylor and M.O. Amdur, <i>Dept. of Nut. and Food Sci., MIT, Cambridge, MA.</i>
498		<b>Microanalysis of Ozone Depression of Motor Activity.</b> J.L. Tepper and B. Weiss, <i>Dept. of Pharmacol. and Rad. Biol. &amp; Biophys., Univ. of Rochester School of Med. and Dent., Rochester, NY.</i>
499		<b>Interaction of Glutathione and Ascorbic Acid in Guinea Pig Lungs Exposed to Nitrogen Dioxide.</b> H.W. Leung and P.E. Morrow, <i>Dept. of Rad. Biol. &amp; Biophys., Univ. of Rochester School of Med. &amp; Dent., Rochester, NY.</i>

- 500 **Changes in Pulmonary Phospholipid Biosynthetic Enzymes After Nitrogen Dioxide Exposure.** E.S. Wright and R.D. Mavis, *Dept. of Rad. Biol. and Biophys., Univ. of Rochester Sch. of Med. and Dent., Rochester, NY.* Sponsor: P.E. Morrow.
- 501 **Influence of Nitrogen Dioxide or Formaldehyde on Incidence of Diethylnitrosamine-Induced Tumors in Hamster Respiratory Tract.** W. Dalbey<sup>1</sup> and P. Nette-sheim<sup>2</sup>, <sup>1</sup>*Biol. Div., ORNL, Oak Ridge, TN* and <sup>2</sup>*NIHRS, Research Triangle Park, NC.*
- 502 **Intratracheal Injection Correlated with Inhalation Effects of Air Pollutant Chemicals on a Model of Lung Bacterial Infection.** G.E. Hatch, R. Slade, E. Boykin, F.J. Miller and D.E. Gardner, *Environ. Tox. Div., USEPA, Research Triangle Park, NC.*
- 503 **The Effects of Restraint on the Acute Toxicity of Carbon Monoxide.** C.A. Lapin and B.A. Burgess, *Haskell Lab. for Tox. and Ind. Med., E.I. du Pont de Nemours and Company, Inc., Newark, DE.* Sponsor: G.L. Kennedy, Jr.
- 504 **Distribution and Clearance of Three Cigarette Smoke Constituents, Dotriacontane (DTC), Nicotine (NIC), and Benzo(A)Pyrene (BP), After Exposure of Mice to Whole Cigarette Smoke.** C.J. Henry A. Lopez, D.R. Dansie, M.D. Avery, C.E. Whitmire, J.E. Caton,\* J.R. Stokely,\* M.R. Guerin,\* R.D. Curren, and R.E. Kouri, *Microbiological Assoc., Bethesda, MD* and *\*Oak Ridge Nat'l. Lab, Oak Ridge, TN.* Sponsor: S. Green.
- 505 **The Genetic Toxicology of Inhaled Benzo(a)Pyrene.** A.L. Brooks, *Inhal. Tox. Research Inst., Albuquerque, NM.* Sponsor: R.O. McClellan.
- 506 **Gastrointestinal Absorption of Neutron Activated Coal Combustion Fly Ash in the Rat.** L.C. Griffis and M. Pino, *Lovelace Inhal. Tox. Research Inst., Albuquerque, NM.* Sponsor: R.O. McClellan.
- 507 **Deposition and Fate of Ethylene Glycol in the Rat Following Vapor Inhalation Exposure.** T.C. Marshall and Y.S. Cheng, *Lovelace Inhal. Tox. Research Inst., Albuquerque, NM.* Sponsor: R.O. McClellan.
- 508 **Acute Inhalation Toxicity of Phosphorus Pentoxide Smoke.** B. Ballantyne, *Union Carbide Corp., South Charleston, WV.*
- 509 **Lung Injury and Repair in the Mouse Following Cyclophosphamide.** P.J. Hakkinen<sup>1</sup>, J.W. Whiteley<sup>2</sup> and H.P. Witschi<sup>3</sup>, <sup>1</sup>*Univ. of Tenn., Oak Ridge Grad. Sch. Bio-medical Sciences;* <sup>2</sup>*Oak Ridge Assoc. Univs., Student, Summer 1980 from Sonoma State Univ., Rohnert Park, CA;* and <sup>3</sup>*Biology Div., Oak Ridge National Lab., Oak Ridge, TN.*
- 510 **Efficient Rodent Caging System for Long Term Inha-lation Studies.** G.V. Katz, J.L. O'Donoghue, R.S. DiGennaro and E.R. Renner, *Health, Safety and Human Factors Lab., Kodak Park, Eastman Kodak Co., Rochester, NY.*

- 511 **A Novel Size-Selective Mists Inhalation Chamber.** S. Tsuda, M. Iwasaki, M. Yoshida and Y. Shirasu, *Tox. Div., Inst. of Environ. Tox., Tokyo, Japan.*
- 512 **Deposition of Sulfuric Acid Mists in the Respiratory Tracts of Dogs, Rats and Guinea Pigs.** A.R. Dahl and M.B. Snipes, *Lovelace Inhal. Tox. Research Inst., Albuquerque, NM.* Sponsor: R.O. McClellan.
- 513 **Acute Inhalation Toxicity of Sulfuric Acid Mist in Rats in the Presence and Absence of Respirable Particles.** R.F. Henderson, R.H. Gray, F.F. Hahn and R.O. McClellan, *Lovelace Inhal. Tox. Res. Inst., Albuquerque, NM.*

## PLATFORM SESSION 16: Biotransformation IV

Thursday Morning, March 5, 1981

Town and Country Room

**Chairman: E. Hodgson, North Carolina State Univ., Raleigh, NC**  
**Assistants: C.F. Wilkinson, Tox. Program, Cornell Univ., Ithaca, NY**  
**A.P. Kulkarni, Sch. Pub. Hlth., Univ. of Michigan, Ann Arbor, MI**

Paper No.	Time (A.M.)	
514	8:30	<b>Comparative Metabolism of Stilbene Oxides by Primary Hepatocyte Cultures.</b> S.S. Gill, B.D. Hammock and J.L. Byard, <i>Depts. Entomol. and Environ. Tox., Univ. of California, Davis, CA.</i>
515	8:45	<b>Epoxide Hydrolase Activity in the Mitochondrial Fraction of Mammalian Liver.</b> S.S. Gill and B.D. Hammock, <i>Depts. Entomol and Environ. Tox., Univ. of California, Davis, CA.</i>
516	9:00	<b>Sulfur-Containing Metabolites of Epoxides.</b> M.G. Horning, K. Nakatsu, K. Lertratanangkoon, K. Halpaapwood and W.G. Stillwell, <i>Inst. for Lipid Research, Baylor College of Med., Houston, TX.</i>
517	9:15	<b>Species and Substrate Specificity of Sugar Conjugation Reactions in Mammals.</b> J.D. Webb and H.W. Dorough, <i>Graduate Center for Tox., Univ. of Kentucky, Lexington, KY.</i>
518	9:30	<b>Glutathione Reductase and Glutathione-S-Transferase Activities in Hepatic and Extra Hepatic Tissues of Mice with Age.</b> S.J. Stohs, W.A. Al-Turk and C.R. Angle, <i>Depts. of Biomed. Chem. &amp; Peds., Univ. of Nebr. Medical Ctr., Omaha, NE.</i>
519	9:45	<b>Comparative Sensitivity of Acetylcholinesterases From Different Species to Organophosphate Compounds.</b> C. Wang and S.D. Murphy, <i>Div. of Tox., Univ. of Texas Med. Sch., Houston, TX.</i>
520	10:00	<b>The Role of Hepatic Microsomal Hexose-6-Phosphate Dehydrogenase in Monooxygenase Reactions.</b> E.

- Hodgson and A.P. Kulkarni, *Interdepartmental Tox. Program, North Carolina State Univ., Raleigh, NC.*
- 521 10:15 **The Use of Ligand Binding for Characterization of Cytochrome P-450 in Intact Microsomes.** C. F. Wilkinson and H.K. Hetnarski, *Dept. Entomol., Cornell Univ., Ithaca, NY.*
- 522 10:30 **Xenobiotic Metabolism by Plants: p-Chloro-N-Methylaniline Demethylation in the Avocado Pear.** D.R. Dohn and R.I. Krieger, *Dept. Env. Tox., Univ. of California, Davis, CA.*
- 523 10:45 **Differentiating Esophageal Epithelial Cells in Culture as a Model System for Metabolism of Benzo(a)Pyrene.** R. Heimann and R.H. Rice, *Harvard Sch. of Pub. Hlth., Boston, MA.* Sponsor: J.L. Whittenberger.
- 524 11:00 **Accumulation of Acetaldehyde During Ethanol Metabolism in Rats Treated with Moxalactam and Related Cephalosporins.** M.K. Buening and J.S. Wold, *Toxicol. Div., Lilly Res. Labs., Eli Lilly and Co., Greenfield, IN.*
- 525 11:15 **The Effect of Secobarbital on the Enterohepatic Circulation of Bishydroxycoumarin in the Rat.** M. Hulse, J.V. Bruckner and S. Feldman\*, *Dept. of Pharmacol., Univ. of Texas Hlth. Science Ctr., Houston, TX and \*Dept. of Pharmaceutics, Univ. of Houston, Houston, TX.*
- 526 11:30 **Single and Multiple Oral <sup>14</sup>C Absorption Studies on a 2.25 CPS Polymeric Hydroxypropyl Methylcellulose in Rats.** S.J. Gorzinski, S.M. Unger, E.O. Madrid, G.H. Hurst, L.S. Harris, W.H. Braun and B.A. Schwetz, *Tox. Research Lab., H&ES, Dow Chem. U.S.A., Midland, MI.*
- 527 11:45 **Biological Effects of Graded Levels of Lead Exposure During Pre and Postnatal Periods: A Rat Study.** U.S. Srivastava and M.L. Thakur, *Dept. of Nutrition, Univ. of Montreal, Montreal, P.Q.* Sponsor: J.M. Frazier.

## PLATFORM SESSION 17: Teratology II

Thursday Morning, March 5, 1981

Golden West Room

**Chairman: J.S. Bus, Chemical Industry Institute of Toxicology,  
Research Triangle Park, NC**

**Assistants: S.D. Kornbrust, Chemical Industry Institute of  
Toxicology, Research Triangle Park, NC**

**M.M. Preache, Chemical Industry Institute of Toxicology,  
Research Triangle Park, NC**

- | Paper No. | Time (A.M.) |  |
|-----------|-------------|--|
| 528       | 8:30        | <b>Spontaneous Ocular Anomalies in Sprague-Dawley Rats.</b> M.P. Lund, K.P. Altera, G.T. Thacker and M.W. Reeder, <i>Depts. of Tox., Path. and Biostatistics, Syntex Research, Palo Alto, CA.</i> Sponsor: D.W. Hallesy. |

- 529 8:45 **Fetal Exposure to Plutonium.** B.J. Kelman and M.R. Sikov, *Pacific Northwest Lab., Richland, WA.*
- 530 9:00 **Behavioral and Morphological Sequelae of Acute Prenatal Carbon Monoxide Exposure.** W.C. Daughtrey and S. Norton, *Dept. of Pharmacol., Univ. of Kansas Med. Ctr., Kansas City, KS.*
- 531 9:15 **Embryotoxic Effects of 3,3',4,4'-Tetrachloroazobenzene and 3,3',4,4'-Tetrachloroazoxybenzene in Chick Embryos.** K.R. Schrankel, B.L. Kreamer and M.T. Stephen Hsia, *Dept. of Entomology and Environ. Tox. Ctr., Univ. of Wisconsin, Madison, WI.*
- 532 9:30 **Evaluation of Inhaled Allyl Chloride and Ethyl Acrylate for Embryotoxic and Teratogenic Potential in Animals.** J.A. John, M.M. Deacon, J.S. Murray, J.A. Ayres, R.R. Miller and K.S. Rao, *Tox. Research Lab., Dow Chemical U.S.A., Midland, MI.*
- 533 9:45 **A Comparison of the Effects of Methylxanthine-Containing Foodstuffs on Reproductive Capability in Rats.** S.M. Tarka, Jr., P.G. Keeney and J.F. Borzelleca, *Dept. of Food Sci., The Pennsylvania State Univ., University Park, PA and Dept. of Pharmacol. and Tox., Med. College of Virginia, Richmond, VA.*
- 534 10:00 **Stereoselective Dissociation of Hydantoin Fetal Toxicology from Maternal Pharmacologic Activity in Mice: Evaluation of Mephentoin and Its Metabolite, Nirvanol.** P.G. Wells\*, A. Kupfer, J.A. Lawson and R.D. Harbison, *\*Faculty of Pharmacy, Univ. of Toronto, Toronto, Ont.; and Dept. of Pharmacol., Vanderbilt Univ., Nashville, TN.*
- 535 10:15 **Purified and Commercial Diet and Cadmium Exposure: Trace Metal and Behavioral Studies in Rat Nonates.** H. Choudhury, L. Hastings and G.P. Cooper, *Dept. Env. Hlth., Univ. of Cincinnati, Coll. Med., Cincinnati, OH.* Sponsor: J.C. Smith.
- 536 10:30 **Teratogenic Potential of Ca-and ZnEDTA in Rats.** C.F-G. Brownie, M. Haluska and A.L. Aronson, *Dept. Physiol., Biochem. & Pharmacol., N.Y.S. College of Vet. Med., Cornell Univ., Ithaca NY and Dept. Anatomy, Physiol. Sci. & Radiol., School of Vet. Med., North Carolina State Univ., Raleigh, NC.*
- 537 10:45 **Effects of Prenatal Exposure to Carbofuran, Diazinon or Chlordane on Postnatal Endocrine Function: Evaluation over the Lifespan.** J.M. Cranmer, D.L. Avery and M.F. Cranmer, *Div. of Interdiscip. Tox., Univ. of Arkansas Med. Sci. and Jefferson Professional Services, Little Rock, AR.*
- 538 11:00 **Teratogenic Evaluation of Methyl Cyclopentadienyl Manganese Tricarbonyl (MMT) in Rats.** T.J. Benyz, G. Ter Haar, E.I. Goldenthal, and D.E. Rodwell, *Ethyl Corp., Dept. of Tox. and Ind. Hyg., Baton Rouge, LA and Int. Res. and Dev. Corp., Mattawan, MI.*
- 539 11:15 **Acute Ethanol Exposure to Pregnant Rats.** T. Hoffman, R. Mankes, R. Lefevre, K.F. Benitz and R. Abraham, *Inst. of Exper. Path. & Tox., The Albany Med. College, Albany, NY.*

- 540 11:30 **Genotoxic and Teratogenic Potential of CN-88,823-2, A New Antihypertensive Agent.** J.L. Schardein, R.S. Lake, D. Brusick, J.E. Fitzgerald and F.A. de la Iglesia, *Dept. of Tox., Warner-Lambert/Parke-Davis, Pharm. Res., Ann Arbor, MI; Litton Bionetics, Kensington, MD.*
- 541 11:45 **The Transplacental Transfer of <sup>14</sup>C-Toxaphene in the Rat.** G.A. Pollock and R. Hillstrand, *Vet. & Comparative Anatomy, Pharmacol./Tox., and Physiology, Univ. of Idaho, Moscow, ID.* Sponsor: L.D. Koller.

## POSTER SESSION 10A: General Toxicology V

Thursday Morning, March 5, 1981

Mission Ballroom (Rear)

**Chairman: R.C. Schnell, Univ. of Nebraska Med. Ctr., Omaha, NE**

**Assistant: J.R. Means, G. D. Searle Co., Skokie, IL**

- | Paper No. | Time (A.M.)  |   |
|-----------|--------------|---|
| 542       | 8:30 - 10:00 | <b>A Ninety Day Dietary Feeding Study of Sodium Persulfate in Rats.</b> T. Cascieri, M.J. Fletcher and M.S. Weinberg, <i>FMC Corp., Princeton, NJ and Booz, Allen, and Hamilton, Inc., Florham Park, NJ.</i>  |
| 543       |              | <b>Subchronic Dermal Toxicity of Trifluoropropylmethylcyclotrisiloxane in Rabbits.</b> W.H. Siddiqui and E.J. Hobbs, <i>Tox. Dept., Dow Corning Corp., Midland, MI.</i>   |
| 544       |              | <b>Acute and 21-Day Oral Toxicity of Chloropropanol.</b> R.D. Phillips and R. DuBois, <i>Exxon Corp. Res. Environ. Hlth. Div., East Millstone, NJ.</i> Sponsor: R.A. Scala.   |
| 545       |              | <b>A Sensory/Neuro Screen for Use in Industrial Toxicology.</b> S.C. Gad, <i>Corporate Med. Affairs, Allied Chemical Corp., Morristown, NJ.</i>   |
| 546       |              | <b>One-Year Chronic Toxicity Study of Dichloromethylene Diphosphonate in the Dog.</b> R.A. D'Amato, L. Flora, S.L. Francis and H.M. Olson, <i>The Procter &amp; Gamble Co., Cincinnati, OH.</i> Sponsor: E.V. Buehler.  |
| 547       |              | <b>Subchronic Toxicity of Fyrol® CEF in Rats.</b> N.B. Jones, D.W. Frank, M.W. Sauerhoff, D.R. Saunders, G.M. Zwicker, <i>Stauffer Chemical Co. Environ. Hlth. Center, Farmington, CT.</i>  |
| 548       |              | <b>Probable Mechanism of LAAM-Induced Damage to the Rat Bladder and Kidney.</b> R.S. Nair, L.W. Masten and I.W. Waters, <i>Dept. of Pharmacol., Univ. of Mississippi, University, MS.</i> Sponsor: W.M. Davis.  |
| 549       |              | <b>Comparative Effects of Polybrominated Biphenyl Congeners on Lipoproteins and Selected Serum and Hepatic Microsomal Drug-Metabolizing Enzymes.</b> M.B. Thompson, S.D. Sleight, J.D. Krehbiel and S.D. Aust, <i>Depts. of Path. and Biochem., Michigan State Univ., East Lansing, MI.</i> |

- 550 **Spermatotoxic Response of the Rat to Various Xenobiotic Insults.** R.M. Goldsmith, S.J. Tepe, H. Zenick and J. Manson, *Dept. of Env. Health, College of Med., Univ. of Cincinnati, Cincinnati, OH.* Sponsor: P.B. Hammond.
- 551 **Neurophysiological Evaluation of Prenatal n-Hexane Toxicity.** W.E. Howell and G.P. Cooper, *USEPA, Neurotoxicology Div., Research Triangle Park, NC and Dept. of Environ. Hlth., Univ. of Cincinnati Medical College, Cincinnati, OH.*
- 552 **Measurement of Erythrosine (FD&C RED #3) by Reverse Phase HPLC with Fluorescence Detection: Preliminary Toxicokinetic Results.** D.M. Niedzwiecki and R.B. Mailman, *Depts. of Pharmacol. and Psychiatry, Univ. North Carolina School of Med., Chapel Hill, NC.*
- 553 **A Comparison of an Automated On-Line Data Collection System and Manual Collection of Data for Inhalation Toxicology Studies.** F.L. Cavender and P.V. Churukian, *Dept. of Inhal. Tox., ToxiGenics, Inc., Decatur, IL.* Sponsor: E.J. Gralla.
- 554 **D.O.L.P.H.I.N. (Data On-Line Programmed Historical Information Network) an Automated Data Collection System for Toxicology.** R.V. Preiksaitis and R.C. Wetter, *Dept. of Management Information Systems, ToxiGenics, Inc., Decatur, IL.* Sponsor: E.J. Gralla.

## POSTER SESSION 10B: Oncogenesis II

Thursday Morning, March 5, 1981

Mission Ballroom (Rear)

**Chairman: R.C. Schnell, Univ. of Nebraska Med. Ctr., Omaha, NE**

**Assistant: J.R. Means, G. D. Searle Co., Skokie, IL**

- | Paper No. | Time (A.M.)  |   |
|-----------|--------------|---|
| 555       | 8:30 - 10:00 | <b>Expression of Neonatal Imprinting of Carcinogen Metabolism in Adult Male Rats.</b> R.A. Faris and T.C. Campbell, <i>Div. of Nutr. Sci., Cornell Univ., Ithaca, NY.</i>   |
| 556       |              | <b>A Mutant Mouse for Carcinogenicity Testing of Low Dose Levels of Chemicals.</b> G.L. Wolff, <i>National Ctr. for Tox. Research, Jefferson, AR.</i> Sponsor: T.J. Haley.  |
| 557       |              | <b>Spontaneous Tumors in the Adrenal Medulla of Long-Evans Rats.</b> N.A. Wilson-Martino, K.J. McCarthy, R.F. Mankes and K.F. Benitz, <i>Inst. of Exper. Path. and Tox., The Albany Med. College, Albany, NY.</i>   |
| 558       |              | <b>Study on the Transplacental and Postnatal Model of Carcinogenesis in Mice.</b> L. Rossi, J.R.P. Cabral and G. Della Porta, <i>Div. of Exper. Oncology A, Istituto Nazionale per lo Studio e la Cura dei Tumori, Milano, Italy.</i> Sponsor: P. Shubik. |
| 559       |              | <b>Comparison of Hepatic Carcinogen Initiation-Promotion Systems.</b> T.B. Leonard, J.G. Dent, M.E. Graichen, and J.A. Popp, <i>Chem. Ind. Inst. Tox., Research Triangle Park, NC.</i>  |

- 560 **Dermal Carcinogenesis Bioassays of Several Components of Photocurable Coatings.** L.G. Peterson, L.R. DePass, R.R. Maronpot and C.S. Weil, *Bushy Run Res. Ctr., Union Carbide Corp., Pittsburgh, PA.*
- 561 **Progression Into "Deep" Resting States Required for Carcinogenic Transformation in Cultures of C3H/10T $\frac{1}{2}$  Cells.** D. Miska and H.B. Bosmann, *Univ. of Rochester, Sch. of Med. and Dent., Rochester, NY.*  
Sponsor: F.A. Smith.
- 562 **Binding Patterns of Carcinogenic and Non-Carcinogenic Nickel Particles to Various Cellulose Papers.** M.P. Abbracchio, J. Bonura, R.M. Caprioli and M. Costa, *Div. of Tox. and the Analytical Chem. Ctr., The Univ. of Texas Med. Sch. at Houston, Houston, TX.*  
Sponsor: S.D. Murphy.
- 563 **Effect of Age at Start of Diethylstilbestrol (Des) Treatment on Mammary Tumor Induction in C3H Mice.** D.L. Greenman<sup>1</sup>, A. Cameron<sup>1</sup>, B. Highman<sup>2</sup>, C.H. Frith<sup>2</sup> and M.J. Norvell<sup>3</sup>, <sup>1</sup>*NCTR, Jefferson AR;* <sup>2</sup>*Univ. Arkansas Med. Sci., Little Rock, AR;* and <sup>3</sup>*Tox. Div., Mobil Oil Co., Princeton, NJ.*
- 564 **Initiation/Promotion Assay for Chemical Carcinogens in Rat Liver.** M.A. Pereira<sup>1</sup>, S.L. Herren<sup>1</sup>, A.L. Britt<sup>2</sup> and M. Khoury<sup>2</sup>, <sup>1</sup>*Hlth. Effects Research Lab., USEPA, Cincinnati, OH;* and <sup>2</sup>*Dept. Lab. Animal Med., Univ. of Cincinnati, OH.* Sponsor: R. Bull.

## POSTER SESSION 11A: Neurotoxicity II

Thursday Morning, March 5, 1981

Mission Ballroom (Rear)

**Chairman: R.C. Schnell, Univ. of Nebraska Med. Ctr., Omaha, NE**

**Assistant: M.J. Deimling, Univ. Nebraska Med. Ctr., Omaha, NE**

Paper No.	Time (A.M.)	
565	10:30 - Noon	<b>Automated Method for Determining <i>In Vitro</i> Cholinesterase Inhibition by Experimental Insecticide Candidates.</b> B.H. Chin and N. Spangler, <i>Diamond Shamrock Corp., T.R. Evans Research Ctr., Painesville, OH.</i>
566		<b>An Automated Kinetic Determination of Nonspecific Esterase Activity in Serum Using the Centrifichem.</b> S.A. Soliman, E. Charlet* and A. Curley*, <i>Faculty of Agric., Alexandria Univ., Alexandria, Egypt;</i> and * <i>Toxic Effects Branch, ETD, USEPA, Research Triangle Park, NC.</i>
567		<b>Practical Considerations Concerning the Storage of Hen Brain Neurotoxic Esterase.</b> M.L. Barth, C.S. Davis, B.R. Dudek and R.J. Richardson, <i>Sch. of Pub. Hlth., The Univ. of Michigan, Ann Arbor, MI.</i>

- 568 **Time Course for Neurotoxic Esterase Inhibition in Hens Given Multiple Diisopropyl Fluorophosphate Injections.** G.L. Sprague and L.L. Sandvik, *Stauffer Chem. Co., Tox. Dept., Richmond, CA*. Sponsor: T.R. Castles.
- 569 **Neurotoxic Esterase Activity in Diverse Species.** P.E. Gurba, B.R. Dudek and R.J. Richardson, *Sch. of Pub. Hlth., The Univ. of Michigan, Ann Arbor, MI*.
- 570 **The Scaleless Hen: An Animal Model for Acute and Delayed Neurotoxicity of Organophosphates.** C.M. Cisson, D.I. Yabusaki and B.W. Wilson, *Dept. of Avian Sciences, Univ. of California, Davis, CA*. Sponsor: R.I. Krieger.
- 571 **Neurotoxicity of Two Organophosphorous Step Flame Retardants in Hens.** G.L. Sprag, L.L. Sandvik, M.J. Brookins-Hendricks and A.A. Bickford, *Stauffer Chemical Co., Tox. Dept., Richmond, CA and Univ. of Missouri-Columbia, Columbia, MO*. Sponsor: T.R. Castles.
- 572 Paper Cancelled
- 573 **Affinity and Phosphorylation Constants for the Inhibition of Neurotoxic Esterase by Mipafox.** S.A. Soliman, R. Novak\* and A. Curley\*, *Faculty of Agric., Alexandria Univ., Alexandria, Egypt; and \*Toxic Effects Branch, ETD, USEPA, Research Triangle Park, NC*.
- 574 **Neurotoxic Esterase in the Developing Chick Embryo Brain.** B.R. Dudek, R. DeGrandchamp and R.J. Richardson, *Sch. of Pub. Hlth., The Univ. of Michigan, Ann Arbor, MI*.
- 575 **Specific and Non-Specific Esterase Activities of Purified Myelin and Microsomal Preparations Isolated From Chicken Central and Peripheral Nerve Tissues.** S.A. Soliman and A. Curley\*, *Faculty of Agriculture, Alexandria Univ., Alexandria, Egypt; and \*Toxic Effects Branch, ETD, USEPA, Research Triangle Park, NC*.
- 576 **Is Delayed Neuropathy A Property of All Organophosphorus Compounds?** A. Curley, S.A. Soliman\* and J. Farmer, *Toxic Effects Branch, ETD, USEPA, Research Triangle Park, NC; and \*Faculty of Agric., Alexandria Univ., Alexandria, Egypt*.
- 577 **In Vivo and In Vitro Inhibition of Chicken Brain Neurotoxic Esterase (NTE) by Leptophos and Cyanofenphos.** A. Curley<sup>1</sup>, N.S. Ahmed<sup>1</sup>, A.H. El-Sebae<sup>2</sup> and S.A. Soliman<sup>3</sup>, *<sup>1</sup>Toxic Effects Branch, ETD, USEPA, Research Triangle Park, NC; <sup>2</sup>Plant Protection Dept., Alexandria Univ., Alexandria, Egypt; and <sup>3</sup>Faculty of Agric., Alexandria Univ., Alexandria, Egypt*.

## POSTER SESSION 11B: Aquatic Toxicology

Thursday Morning, March 5, 1981

Mission Ballroom (Rear)

**Chairman: R.C. Schnell, Univ. of Nebraska Med. Ctr., Omaha, NE**

**Assistant: M.J. Deimling, Univ. Nebraska Med. Ctr., Omaha, NE**

Paper No.	Time (A.M.)	
578	10:30 - Noon	<b>Role of Metabolism in the Differential Toxicity of the <i>Trans</i> Isomer of Permethrin, A Pyrethroid Insecticide, to Rainbow Trout and Mice.</b> A.H. Glickman, S.D. Weitman and J.J. Lech. <i>Dept. of Pharmacol. and Tox., Med. Coll. of Wisconsin, Milwaukee, WI.</i>
579		<b>Effects of Toxaphene on Collagen Synthesis in Fish Tissue: Studies in Organ Culture.</b> C.F. Luke and J.C. Street, <i>Tox. Program, Dept. of Animal, Dairy, and Vet. Sciences, Utah State Univ., Logan, UT.</i>
580		<b>Cadmium Induced Histopathological Changes in the Gills of the Brown Bullhead <i>Ictalurus Nebulosus</i> (Lesueur).</b> E.A. Blickens <sup>1</sup> and H.I. Hirshfield <sup>2</sup> , <sup>1</sup> <i>Medical Research Div., American Cyanamid Co., Pearl River, NY;</i> and <sup>2</sup> <i>Biology Dept. and Environ. Med. Dept., New York Univ., New York, NY.</i> Sponsor: J.F. Noble.
581		<b>Effect of a DMSO Extract of Tia Juana Medium Crude Oil on the Hepatic Microsomal Monooxygenase System of Rainbow Trout.</b> M.J. Vodicnik, W. Penrose and J.J. Lech, <i>Dept. of Pharm. and Tox., Med. College of Wisconsin, Milwaukee, WI &amp; Argonne Nat'l. Labs., Argonne, IL.</i>
582		<b>Chemical Interactions with Hepatic Cytochrome P-450 From Freshwater Fish and the Subsequent Inhibition of Benzo(a)Pyrene Metabolism by Fish Anesthetics.</b> D.L. Fabacher, <i>Columbia National Fishery Res. Lab., FWS, USDI, Columbia, MO.</i>
583		<b>Disposition of Benzoic Acid and Four para-Substituted Homologs in Marine Mussel <i>Mytilus Californianus</i> Under Stress Conditions.</b> L.O. Lim, S.J. Gee and R.I. Krieger, <i>Dept. Environ. Tox., Univ. of Calif., Davis, CA.</i>
584		<b>Inhibition of Aldrin Epoxidation in Marine Mussels by Sesamex, A Methylenedioxyphenyl Compound and SKF 525A.</b> S.J. Gee, R.I. Krieger and L.O. Lim, <i>Dept. Environ. Tox., Univ. Calif., Davis, CA.</i>
585		<b>Paralytic Shellfish Poisoning in a Human and Follow-up in Mussels and Some Other Marine Invertebrates.</b> R.I. Krieger, M.S. Dey, I.A. Flores, S.J. Gee, Y.H. Kim, J. Leong, L.O. Lim and B. Stone, <i>Dept. Environ. Tox., Univ. of California, Davis, CA and Coroner's Office, Co. of Sacramento, CA.</i>

## **OPEN FORUM: ED<sub>01</sub> Report**

Thursday Morning, March 5, 1981

Town and Country Room

8:30 A.M.

**Chairman: W.W. Carlton, Purdue Univ., West Lafayette, IN**

For the past year an SOT ad hoc committee has reviewed the ED<sub>01</sub> study as reported by the U.S. Food and Drug Administration (National Toxicology Program). The results of this review will be presented by the committee. The meeting is open to all attendees.

## **SYMPOSIUM 4:**

### **Mechanisms of DNA Repair**

Jointly with Environmental Mutagen Society

Thursday Afternoon, March 5, 1981

Town and Country Room

**Chairman: S.D. Aust, Michigan State Univ., East Lansing, MI**

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|------|--|
| 1:30 | <b>Introduction.</b> S.D. Aust, <i>Environmental Toxicology Center, Michigan State Univ., East Lansing, MI.</i>  |
| 1:45 | <b>The Enzymology of DNA Repair.</b> S.M. Linn, <i>Dept. of Biochemistry, Univ. of California, Berkeley, CA.</i>   |
| 2:15 | <b>Discussion</b>  |
| 2:30 | <b>The Distribution of DNA Repair Within the Genome.</b> M. Lieberman, <i>Dept. of Pathology, Washington Univ. School of Medicine, St. Louis, MO.</i>              |
| 3:00 | <b>Discussion</b>  |
| 3:15 | <b>Reflection of DNA Damage in Human Chromosomes.</b> A.A. Sandberg, <i>Roswell Park Memorial Inst., Buffalo, NY.</i>  |
| 3:45 | <b>Discussion</b>  |
| 4:00 | <b>The Relationship of DNA Damage to Mutagenesis and Carcinogenesis.</b> J.J. McCormick, <i>Carcinogenesis Laboratory, Michigan State Univ., East Lansing, MI.</i> |
| 4:30 | <b>Discussion</b>  |

**SPECIAL**  
**Symposium on Prophylaxis and Treatment of**  
**Organophosphate Poisoning**

Regency Ballroom

The symposium will be held in the Town and Country Motel in San Diego on Friday, March 6, 1981. The papers to be presented have been invited from investigators in foreign research establishments and in the United States. The symposium will be jointly sponsored by the Department of Pharmacology and Toxicology, Indiana University School of Medicine, the Society of Toxicology, and the U.S. Army Research and Development Command.

There will be *no registration fee* and the symposium will be open.

It is essential that you preregister (see form with conference packet) and that you reserve a hotel room through March 6.

For further information, contact:

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