# TRANSACTIONS

George It. De Vries

## of the

## AMERICAN SOCIETY

## for

## NEUROCHEMISTRY

<u>C O N T E N T S</u>

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This publication presents the program and abstracts of papers presented at the first meeting of The American Society for Neurochemistry. The host for the meeting was the University of New Mexico School of Medicine and it was held in Albuquerque, New Mexico, March 16, 17 and 18, 1970.

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### SCIENTIFIC PROGRAM

MONDAY, MARCH 16, 1970 - MORNING

	Symposium: The Role of Cyclic AMP in the Nervous System. Heritage Room Chairman: G. Alan Robison
9:00 a.m.	Introductory Remarks: Cyclic AMP as a Second Messenger. G. Alan Robison.
9:20 a.m.	Studies on the Mechanism of Action of Cyclic AMP. Paul Greengard.
9:50 a.m.	Adenyl Cyclase in the Developing Rat Brain. Michael J. Schmidt.
10:15 a.m.	Coffee Break.
10:35 a.m.	Properties of Brain Phosphodiesterase. Wai Y. Cheung.
11:05 a.m.	The Role of Cyclic AMP in the Cerebellum. George R. Siggins.
11:35 a.m.	A Role of Cyclic AMP in the Release of Acetylcholine at the Neuromuscular Junction. Joshua J. Singer.
	cancelled

Free Communicat	ions Session I - Heritage Room
	MONDAY, MARCH 16, 1970 - AFTERNOON
	Cyclic AMP (continued); Barriers and Transport
	Chairmen: Paul Greengard Antonio Lorenzo
1:30 p.m.	Factors Affecting Cyclic AMP Formation in Brain. Use of Slices Pre-labelled by Incubation with Adenine- <sup>14</sup> C. H. Shimizu, C. R. Creveling and J. Daly.
1:45 p.m.	The Control of Brain Adenyl Cyclase Activity. J. P. Perkins.
2:00 p.m.	Effect of Drugs on Cyclic AMP Formation in Rat Hypothalamus in vitro.
	G. C. Palmer, J. W. Dobbs, F. Sulser and G. A. Robison.
2:15 p.m.	Cyclic 3',5'-Nucleotide Phosphodiesterase in Developing Brain. Saeed Gaballah.
2:30 p.m.	In <u>Vivo</u> Perfusion of the Brain Cortex. The Effect of the 'Sink' Action on Transport Processes. Emanuel Levin and Charles R. Kleeman.
2:45 p.m.	Clearance of C-14 Xanthine from Feline CSF. Antonio V. Lorenzo and Richard D. Berlin.
3:00 p.m.	Coffee break.
3:15 p.m.	Dibasic Amino Acid Transport from Feline CSF. Robert W. P. Cutler.
3:30 p.m.	Effects of Quabain and Metabolic Inhibitors on Divalent Cations in Brain Slices. William L. Stahl and Phillip D. Swanson.
3:45 p.m.	Energy Requirements for Concentrative Uptake of Amino Acids into Mouse Brain Slices. Miriam Banay-Schwartz and Abel Lajtha.
4:00 p.m.	Uptake of Amino Acid Derivatives into Mouse Brain: Effect of Sodium Acetrizoate. Ellen G. Archer.
4:15 p.m.	131I-Triiodothyronine Transport in Rat Cerebral Cortex Slices. Donald H. Ford.
4:30 p.m.	Characteristics of Lipid Activation of Na <sup>+</sup> ,K <sup>+</sup> ,Mg <sup>++</sup> - Activated Adenosine Triphosphatase (ATPase) from Bovine Cerebral Cortex. Ryo Tanaka, Terufumi Sakamoto and Yumiko Sakamoto.

Free Communications Session II - New Mexico Room MONDAY, MARCH 16, 1970 - AFTERNOON Chemical Neuropathology Chairmen: Roscoe Brady John Menkes 1:30 p.m. Brain Sphingoglycolipids in Globoid Cell Leucodystrophy. Yoshikatsu Eto and Kunihiko Suzuki. Deficiency in a Degradative Enzyme System in Globoid 1:45 D.m. Leucodystrophy. Michael J. Malone. Biochemical Studies of a Case with Congenital Failure of 2:00 p.m. Myelinization. Larry Schneck, Masazumi Adachi and Bruno W. Volk. 2:15 p.m. A Study of Proteins in Old Multiple Sclerosis Plaques. L. F. Eng, B. Gerstl and J. J. Vanderhaeghen. 2:30 p.m. Cyanide Effects on Myelin Metabolism. Marion Edmonds Smith. Sphingomyelinases in Niemann-Pick Disease. 2:45 p.m. J. A. Lowden and M. A. La Ramee. 3:00 p.m. Coffee break. 3:15 p.m. Inherited Abnormalities in Pyruvic Acid Metabolism in Fibroblasts from Patients with Neurologic Diseases. J. P. Blass, J. D. Schulman, B. W. Uhlendorf and D. Lonsdale. 3:30 p.m. Brain Fatty Acid Elongation in Dementia. Frank Yatsu and Sylvia Moss. 3:45 p.m. Altered Regional Serotonin Metabolism in Experimental Amino Acidurias. Arthur Yuwiler and Edward Geller. Experimental Vitamin B12 Deficiency. 4:00 p.m. P. M. Dreyfus. 4:15 p.m. Ethanol Ingestion and Synaptosomal NA-K Activated ATP Phosphohydrolase of Mouse Brain. Albert Y. Sun. 4:30 p.m. The Course of Biochemical Alterations in the Anoxic-Ischemic Lesion of Rat Brain. N. Allen, N. R. Clendenon, T. Komatsu and W. Gordon.

Free Communications Session III - Taos Room

MONDAY, MARCH 16, 1970 - AFTERNOON Development

Chairmen: Arthur Yuwiler Blake Moore

1:30 p.m. Changes in Glucose Metabolism During Postmatal Development of Mice Retinas. Richard N. Lolley.

1:45 p.m. Carbohydrate Changes in Developing Rat Brain. J. H. Allison and M. A. Stewart.

2:00 p.m. Alteration in Ribosomal Activity During Early Postnatal Development of Mouse Brain. Michael Lerner, Liang Chou and Terry Johnson.

2:15 p.m. Changes in Chromatin Components in the Developing Rat Brain. D. A. Rappoport, R. R. Fritz and J. L. Myers.

2:30 p.m. Accumulation of "S-100" Protein in Chick Embryo Retinae. Byron S. Wenger and Harvey P. Friedman.

2:45 p.m. Changes in Microtubular Protein Concentration in Various Regions of the Mouse Brain During Postnatal Development. S. Lawrence Twomey and Charles R. Wyttenbach.

3:00 p.m. Coffee break.

3:15 p.m. Glycoprotein Metabolism in Developing Mouse Brain. Gary R. Dutton and Samuel H. Barondes.

3:30 p.m. Multiple Forms of Monoamine Oxidase in Developing Brain. Jean Hung-Chen Shih and Samuel Eiduson.

3:45 p.m. The Probable Function of Mouse Brain UDP-Galactose-4-Epimerase During Development. Elie A. Shneour and Idell M. Hansen.

4:00 p.m. Brain Enzyme Activity in Developing Neonatal Rat Reared in High O<sub>2</sub> Levels. K. S. Brown and J. Harris.

4:15 p.m. Triphosphopyridine Nucleotide (TPN<sup>+</sup>) Dependent Enzymes in the Developing Spinal Cord of the Rabbit. V. N. Luine and F. C. Kauffman.

4:30 p.m. Effects of X-Radiation on Free Amino Acid Content in the Developing Rat Brain. T. Valcana, D. B. Hudson, A. Vernadakis and P. S. Timiras.

### TUESDAY, MARCH 17, 1970 - MORNING

Symposium: Fractionation of Neurons and Glia Heritage Room

Chairman: William T. Norton

- 9:00 a.m. The Preparation and Some Properties of Neuronal Soma, Neuroglia and Myelin-free Axons. William T. Norton, Shirley E. Poduslo and Julienne M. Turnbull.
- 9:30 a.m. Electrolyte Metabolism in Dissociated Brain Cells. R. A. Snyder, R. S. Bourke and R. O. Brady.
- 10:05 a.m. In Vivo and Enzymatic Studies with Bulk-isolated Nerve Cell Bodies and Neuroglial Cells. O. Z. Sellinger and J. M. Azcurra.
- 10:40 a.m. Coffee Break.
- 11:00 a.m. Amino Acid Incorporation into Neuronal and Glial Cell Enriched Fractions. Anders Hamberger.
- 11:35 a.m. Neuronal and Glial Perikarya Preparations: An Appraisal of Present Methods. Patricia V. Johnston and Betty I. Roots.

#### AFTERNOON

1:30 p-m- Beuronal and Glial Separation Methods: A Critical Review. Steven P. R. Rose. Free Communications Session IV - Heritage Room

TUESDAY, MARCH 17, 1970 - AFTERNOON

Fraccionation of Neurons and Glia (continued); Axonal Transport; Synaptosomes.

Chairmen: Bruce McEwen Carl Cotman

1:30 p.m. Neuronal and Glial Separation Methods: A Critical Review. Steven P. R. Rose.

2:00 p.m. Subcellular Fractionation of Glial Cells. C. W. Cotman, H. Herschman, D. Flansburgh.

- 2:15 p.m. Isolation of Two Classes of Neuroglial Nuclei from Central White Matter. D. E. Slagel.
- 2:30 p.m. RNA Metabolism in Cellular Fractions of Rat Brain Separated by Zonal Centrifugation. A. L. Flangas and R. E. Bowman.
- 2:45 p.m. Rapidly Transported Protein (RTP) in the Goldfish Optic Nerve. J. S. Elam and B. W. Agranoff.

3:00 p.m. Coffee break.

3:15 p.m. Metabolic Control of Fast Transport of Labelled Materials in Mammalian Nerve Fibers. S. Ochs, M. I. Sabri, D. Hollingsworth and E. Helmer.

3:30 p.m. Disruption of Axonal Transport by Vinblastine. H. L. Fernandez and F. E. Samson, Jr.

3:45 p.m. Isolation of Synaptic Complexes in a Cesium Chloride Density Gradient Using a Zonal Rotor. S. Kornguth, A. Flangas and G. Scott.

4:00 p.m. Synaptosomal Potassium, Retention and Exchange at 2<sup>0</sup> C. Howard Weinstein and Kinya Kuriyama.

4:15 p.m. Cation Control of Mitochondrial Respiration in Synaptosomes. M. Anthony Verity.

4:30 p.m. Intracellular Localization of Sialidase in Cow Brains. C. L. Schengrund and A. Rosenberg. Free Communications Session V - New Mexico Room

TUESDAY, MARCH 17, 1970 - AFTERNOON Nucleic Acids and Proteins

Chairmen: Edwin Eylar Claire Zomzely-Neurath

1:30 p.m. Isolation of RNA with Properties of Messenger RNA from Cerebral Polyribosomes. C. Zomzely-Neurath, S. Roberts and S. Peache.

1:45 p.m. Hybridization of Rat Brain RNA: Failure to Confirm Reports of New Species of RNA Induced with Learning. Kern von Hungen.

2:00 p.m. Effect of Light Deprivation and Stimulation on the Total RNA Content of Isolated Retinal Ganglion Cells. Iris W. M. Barbato and Libero M. Barbato.

2:15 p.m. The Determination of DNA in Preserved Brains and Brain Sections. S. Zamenhof, L. Grauel, R. A. Stillinger and E. van Marthens.

-2:30 p.m. ADP-Ribosylation of Nuclear Macromolecules in Rat Brain.-P. Caradzas, R. Anderson and S. G. A. Alivisatos.

2:45 p.m. A Selective in Vitro Incorporation of Labeled Amino Acids into Some Basic "Structural" Proteins of Ribosomes from Brain and Liver. Stanley S. Levinson and Claude F. Baxter.

3:00 p.m. Coffee break.

3:15 p.m. Sequence Specific Binding of Nucleic Acids to a Basic Brain Protein. H. Kubinski and S. Kornguth.

3:30 p.m. In Vivo Turnover of the Brain Specific Protein, S-100. Theodore J. Cicero and Blake W. Moore.

3:45 p.m. Partial Characterization of the ATP-Binding Protein Complex Isolated from Bovine Brain Grey Matter. H. M. Sarau and L. G. Abood.

4:00 p.m. Actomyosin-Like Protein Isolated from Mammalian Brain. S. Berl and S. Puszkin.

4:15 p.m. Brain Microtubular Protein (Tubulin) D. R. Dahl, D. A. Redburn and F. E. Samson, Jr.

4:30 p.m. A Complement Fixing Antibody Against Microtubule Protein from Vertebrate Brain. S. Lawrence Twomey, M. F. Ruscha and F. E. Samson, Jr.

Free Communications Session VI - Taos Room

TUESDAY, MARCH 17, 1970 - AFTERNOON

Lipids

Chairmen: Kunihiko Suzuki George Rouser

- 1:30 p.m. Cerebroside Biosynthesis. Norman S. Radin.
- 2:00 p.m. Synthesis of Sulfatides in Myelinating Explants of Rat Cerebellum. Donald H. Silberberg, Joyce Benjamins, Norbert Herschkowitz and Guy M. McKhann.
- 2:15 p.m. The Cerebral Synthesis of Cytidine Diphosphocholine. Marcus V. Gomez, Edward F. Domino and Otto Z. Sellinger.
- 2:30 p.m. Fatty Acid Metabolism in Brain Tissue Explants. John H. Menkes.
- 2:45 p.m. Lipid Biosynthesis in Normal and Neoplastic Neuroglial Cultures. G. Hauser, J. Eichberg and H. M. Shein.

3:00 p.m. Coffee break.

- 3:15 p.m. Studies on the Mobility of Cholesterol. David R. Whikehart and Marjorie B. Lees.
- 3:30 p.m / Ganglioside Analysis with the Sulfo-Phospho-Vanillin Reaction. A. Saifer and N. I. Feldman.
- 3:45 p.m. Determination of Ganglioside Structure by Mass-Spectrometry. Glyn Dawson and Charles C. Sweeley.
- 4:00 p.m. Factors Affecting the Brain Free Fatty Acid (FFA) Pool. Nicolas G. Bazan, Jr.
- 4:15 p.m. Metabolism of Palmitic Acid in the Subcellular Fractions of Mouse Brain. Grace Y. Sun.
- 4:30 p.m. Ganglioside Content and Turnover in Brains of Rats After Swim-Escape Training. Louis Neal Irwin and Frederick E. Samson, Jr.

Free Communications Session VII - Heritage Room

WEDNESDAY, MARCH 18, 1970 - MORNING

Proteins

Chairmen: Sidney Roberts Steven Kornguth

- 9:00 a.m. Glycopeptides Derived from Brain Glycoproteins. Eric G. Brunngraber.
- 9:15 a.m. Metabolism of Glycoproteins and Gangliosides in Developing Rat Brain. R. H. Quarles and R. O. Brady.
- 9:30 a.m. The Metabolism of Encephalitogenic Protein from Rat Brain. J. G. Wood, N. L. King and R. S. Shapira.
- 9:45 a.m. Modification of the Biological Properties of the Al Protein from Myelin. E. H. Evlar, Juanita Caccam and Jesse Jackson.
- 10:00 a.m. Modification of Tryptophan Residue in the Encephalitogenic Protein. Li-Pen Chao and Elizabeth Roboz Einstein.
- 10:15 a.m. Acid Phosphatase Measurements in Single Neurons During Chromatolysis. Hilde E. Hirsch and Theodore Obenchain.
- 10:30 a.m. Coffee break.
- 10:50 a.m. Tryptic Activity and its Inhibition by Brain Tissue According to Brain Region and Time of Day. George F. Buletza, Jr. and Wilbur B. Quay.
- 11:05 a.m. Inhibitors of Cerebral Exo- and Endopeptidases. B. D'Monte, N. Marks, A. Lajtha and P. Mela.
- 11:20 a.m. Protein Breakdown in Mouse Brain Slices. A. Neidle, J. Kandera and M. Chedekel.
- 11:35 a.m. Activation of Brain Glutaminase by Phosphate Esters
  and Polyphosphates.
  H. Weil-Malherbe.
- 11:50 a.m. Chromogranin as the Substrate for Transglutaminase. I. J. Wajda, I. Hanbauer, I. Manigault and A. Lajtha.
- 12:05 p.m. Composition of Native Protein Effluxed from Superfused Olfactory Nerve, and Factors Governing its Release. Dexter M. Easton and John F. Hines.

### Free Communications Session VIII - New Mexico Room WEDNESDAY, MARCH 18, 1970 - MORNING

Transmitters

#### Chairmen: Richard McCaman Morris Aprison

9:00 a.m. Studies on the Release of Glycine in the Isolated Spinal Cord of the Toad. M. H. Aprison.

9:15 a.m. Effect of Tetanus Toxin on the Content of Glycine, GABA, Glutamate, Glutamine and Aspartate in the Rat Spinal Cord. R. P. Shank and A. A. Fedinec.

9:30 a.m. A Possible Explanation for Activity of Excitatory and Inhibitory Amino Acids. N. M. van Gelder.

- 9:45 a.m. Differential Localization of Two Forms of L-Glutamic Acid Decarboxylase (GAD) in Mouse Brain. B. Haber, K. Kuriyama and E. Roberts.
- 10:00 a.m. Subcellular Distribution of Pyridoxal Phosphate in Mouse Brain. R. Tapia and M. Pérez de la Mora.
- 10:15 a.m. Cengenital Pyridoxine Deficiency and Evoked Cortical
  Potentials.
  V. Havlicek, M. C. Stephens and K. Dakshinamurti.
- 10:30 a.m. Coffee Break.
- 10:50 a.m. A Possible Role for CABA in Hydrazide Induced Seizures. J. D. Wood and Dawne E. Abrahams.
- ll:05 a.m. Intraretinal Distribution of GABA. L. T. Graham, Jr.

11:20 a.m. Choline Acetylase, Choline Esterase and Catechol-O-Methyl
Transferase in Individual Neurones of Aplysia.
Richard E. McCaman and Susan A. Dewhurst.

- 11:35 a.m. Acetylcholine Receptors and Enzymes in Cortical Membranes. William McBride, Walter J. Moore, Fredric P. White and Joel B. Yudkovitz.
- 11:50 a.m. Non Catalytic Binding Sites on Acetylcholinesterase. G. Kato, J. Yung and M. Ihnat.

12:05 p.m. Simultaneous Determination of Acetylcholine (ACh) and Choline (Ch) by an Enzymatic Method. J. K. Saelens, M. P. Allen and J. P. Simke.

#### WEDNESDAY, MARCH 18, 1970 - MORNING

FREE COMMUNICATIONS SESSION IX - TAOS ROOM

Lipids: Hormones

Chairmen: Marjorie Lees Otto Sellinger

9:00 a.m. Structure of Sulfatides Biosynthesized <u>in Vitro</u>, Pierre Stoffyn, Anne Stoffyn and George Hauser.

9:15 a.m. Distribution and Disappearance <u>Post Mortem</u> of Polyphosphoinositides in Anatomical Regions of Rat Brain. Joseph Eichberg and George Hauser.

- 9:30 a.m. Inositide Labelling in Vagus Nerve and Superior Cervical Ganglion of Rat. G. L. White and M. G. Larrabee.
- 9:45 a.m. Biosynthesis of Cholesterol by Subcellular Fractions of Adult Rat Brain.

Robert B. Ramsey, John P. Jones and Harold J. Nicholas.

- 10:00 a.m. Influence of the Thyroid Hormone on the Lipids in the Developing Rat Brain. Kanu B. Dalal, Elizabeth Roboz-Einstein, Paola S. Timiras and Theony Valcana.
- 10:15 a.m. Essential Fatty Acid Incorporation into Phospholipids of Adult Feline Central Nervous System in <u>Vivo</u>. Joseph Bernsohn, Leo M. Stephanides and Harold Norgello.
   10:30 a.m. Coffee Break.
- 10:50 a.m. The Incorporation of 1-<sup>14</sup>C-Acetate and <sup>3</sup>H-Acetate into the Lipids of Brain Subcellular Fractions During Insulin Produced Convulsions. Libero M. Barbato and Iris W. M. Barbato.
- 11:05 a.m. Effect of Intracerebrally Injected 4-Methoxymethyl-pyridoxine (4-MMP) on the Concentrations of Gangliosides and Cholesterol in Mouse Brain. George D. Cherayil.
- 11:20 a.m. Sensitivity of Hypothalamic Tissue to Cortisol and Estradiol <u>in Culture</u>. Antonia Vernadakis.
- 11:35 a.m. Cytophotometric Evidence for Hormone Changes in Rat Pituitaries Exposed to Releasing Factors <u>in Vitro</u>. Sally B. Fand, James C. Mittler, Andrew V. Schally and Richard H. Holland.

11:50 a.m. Corticosteroid Binding Factors in Brain: Cytoplasmic and Nuclear Macromolecules. Bruce S. McEwen.

12:05 a.m. The Alkylation of Brain Corticosteroid Acetyltransferase. Robert H. Purdy, Sandra Y. Weinstein and Connie G. Flores.

Free Communications Session X - New Mexico Room WEDNESDAY, MARCH 18, 1970 - AFTERNOON Transmitters Chairmen: John Wood Claude Baxter The Mechanism of the Selective Depletion of Tissue Norepinephrine by  $\prec$  ,  $\backsim$  ! Dipyridy1. 1:30 p.m. J. S. Bapna, P. Thut, N. H. Neff and E. Costa. 1:45 p.m. An Indole(ethyl)amine N-Methyltransferase in Human Brain. Arnold J. Mandell and Merrily Morgan. Psychic and Behavioral Effects of Dopa. 2:00 p.m. William G. Clark. Effects of Chronic Treatment with Parachlorophenylalanine 2:15 p.m. (PCPA) on Brain Amine Levels, Sleep and Behavior in the Cat. Jack Barchas and William Dement. 2:30 p.m. Precursors of the Acetyl Moiety of Acetylcholine in the Rat Brain In Vivo. S. Tucek and S .- C. Cheng. Effect of Gamma-Hydroxybutyrate on the Synthesis Rate 2:45 p.m. of Brain Monoamines. P. F. Spano, N. H. Neff and E. Costa. Coffee break. 3:00 p.m. 3:15 p.m. Novel Aspects of Neurotransmitter Metabolism: Aldehyde Binding and Alkaloid Formation. Michael J. Walsh, Y. Yamanaka and Virginia E. Davis. The Release of Thiamine from Excitable Membranes. 3:30 p.m. J. R. Cooper and Y. Itokawa. 3:45 p.m. Brain Aminoacyl-tRNA Synthetase and tRNA Binding in the Presence of Narcotic Drugs. R. K. Datta and W. Antopol. Isolation of a Behavior-inducing Peptide from Brain. 4:00 p.m. G. Ungar, I. K. Ho and L. Galvan. A Biochemical Investigation of Chemoreception in Marine 4:15 p.m. Organisms. J. S. Kittredge and Michelle Terry. 4:30 p.m. Evidence for Charge-transfer Energy Transduction in Chemoreception by Insects. Dale M. Norris, Stephen M. Ferkovich, James E. Baker and Thomas K. Borg.

Free Communications Session XI - Heritage Room

WEDNESDAY, MARCH 18, 1970 - AFTERNOON

Proteins; Metabolism

Chairmen: Lawrence Eng Soll Berl

1:30 p.m. Comparison of Mitochondrial Monoamine Oxidases from Bovine Brain and Liver Using Antibody to Purified Liver Monoamine Oxidase. H. Hidaka, B. Hartman and S. Udenfriend.

1:45 p.m. Acidic Lipoproteins and Proteins in Cerebral and Hepatic Nuclei; Isolation, Characterization, Biosynthesis, <u>In</u> <u>Vivo</u> Binding of Actinomycin D and Basic Dyes. Harold Koenig and C. Y. Lu.

2:00 p.m. Incorporation of <sup>3</sup>H-Leucine into Brain Nuclear Proteins. A. R. Dravid, J. A. Burdman and K. Haglid.

2:15 p.m. Chick Brain Metabolism After Removal of a Single Eye. Stephen C. Bondy and Frank L. Margolis.

2:30 p.m. Concentration and Incorporation of Amino Acids into Proteins of Normal and Sympathetically Decentralized Submaxillary Glands. A. D. Kidman, B. Weiss and E. Costa.

2:45 p.m. Sulfhydryl (SH) Groups and CNS Stimulation. George L. Ellman and George L. Gan.

3:00 p.m. Coffee break.

3:15 p.m. A Loosely Bound Mitochondrial Protease Maximally Active at pH 5. David W. Pumplin and William O. McClure.

3:30 p.m. Inhibition of Glutamate Supported Mitochondrial Respiration. T. A. Elsmore and J. J. O'Neill.

3:45 p.m. Metabolic Characteristics of Rabbit Brain Mitochondria. R. W. Von Korff and Annemarie S. Welch.

4:00 p.m. Subcellular Distribution of Potassium and Sodium in Rabbit Cerebral Cortex. Ruth C. Hanig.

4:15 p.m. Inhibition of Citric Acid Cycle Metabolism in Brain <u>in Vitro</u>. <u>D. D.</u> Clarke, W. J. Nicklas and S. Berl.

4:30 p.m. Changes in Visual Acuity, Neurochemistry and Cellular Ultrastructure after Proton Irradiation of the Brain in the Squirrel Monkey. L. Hsu and H. Bose.