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PROGRAM

Friday, April 2

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| 10:45 a.m. | Business Meeting, Animal Science Center |
| 11:45 a.m. to
1:00 p.m. | Lunch |
| 1:15 p.m. to
2:30 p.m. | General Session, Address by Breene M. Kerr, Deputy Assistant Administrator, NASA, Science-Engineering Building. |
| 2:00 p.m. to
5:00 p.m. | Joint Meeting — Oklahoma-Arkansas Section of the Mathematics Association of America and the Mathematics Section of the Arkansas Academy of Science, Science-Engineering Auditorium. |
| 2:15 p.m. to
4:00 p.m. | Junior Academy, Science-Engineering Building |
| 2:30 p.m. to
4:00 p.m. | Collegiate Academy, University Hall |
| 4:00 p.m. | Conference of Participating Scientists in NFS Visiting Scientist Program of the Academy, Home Economics Auditorium. |
| 5:30 p.m. to
7:00 p.m. | Academy Banquet, U-Ark Bowl |
| 7:00 p.m. to
8:00 p.m. | Science Fair Awards, U-Ark Bowl |
| 8:00 p.m. to
9:00 p.m. | "Scientific and Technological Frontiers of the Future"
Dr. Karl G. Harr, Jr., President
Aerospace Industries Association of America,
Science-Engineering Auditorium. |

Arkansas Academy of Science Proceedings

PROGRAM

Saturday, April 3

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| 7:30 a.m. to
9:30 a.m. | Arkansas Science Teachers Association Breakfast,
Holiday Inn Motel. |
| 9:00 a.m. to
10:00 a.m. | Address by Astronaut John Glenn,
Barnhill Fieldhouse. |
| 9:00 a.m. to
12:00 noon | Joint Meeting — Oklahoma-Arkansas Section of the
Mathematics Association of America and the Mathe-
matics Section of the Arkansas Academy of Science,
Science-Engineering Auditorium. |
| 10:00 a.m. to
11:00 a.m. | Science Talent Search Program, Chemistry Building |
| 10:00 a.m. to
11:30 a.m. | Section Meetings |
| 11:30 a.m. to
12:30 p.m. | Lunch |
| 12:30 p.m. to
1:30 p.m. | Business Meeting, Science-Engineering Building |
| 1:30 p.m. to
3:00 p.m. | Section Meetings |

SECTIONAL PROGRAM

BIOLOGY AND AGRICULTURE

Chairman: George E. Templeton
University of Arkansas

Session I

LIFE HISTORY OF THE DOTTED WOLF SPIDER, **LYCOSA PUNCTULATA** HENTZ (ARANEIDA: LYCOSIDAE). R. Eason and W. H. Whitcomb, University of Arkansas.

LIFE HISTORY OF THE GREEN LYNX SPIDER **PEUCETIA VIRIDANS** (HENTZ). W. H. Whitcomb, Maxine Hite, and R. Eason, University of Arkansas.

THE REARING OF WOLF AND LYNX SPIDERS IN THE LABORATORY (FAMILIES LYCOSIDAE AND OXYOPIDAE: ARANEIDA). W. H. Whitcomb and R. Eason, University of Arkansas.

COST ANALYSIS OF THE PRODUCTION OF EDIBLE SIZE CHANNEL CATFISH. Andrew H. Hulsey, Fisheries Division, State Game and Fish Commission.

SPECIALIZED WEATHER INFORMATION FOR ARKANSAS AGRICULTURE. Donald A. Downey, Agriculture Service Office, United States Weather Bureau.

PRELIMINARY OBSERVATIONS ON NUCLEAR DIVISION IN VEGETATIVE HYPHAE OF **CERATOCYSTIS FAGACEARUM**. Jim R. Aist and C. L. Wilson, University of Arkansas.

Session II

THE SWALLOWTAIL BUTTERFLIES OF ARKANSAS (PAPILLIONIDAE: LEPIDOPTERA). E. Phil Rouse, University of Arkansas.

A SYNOPSIS OF THE CICADIDAE OF ARKANSAS (HOMOPTERA). C. Ed McCoy, University of Arkansas.

THE BUMBLEBEES OF ARKANSAS (HYMENOPTERA). Leland Chandler and C. Edward McCoy, Jr., Purdue University and University of Arkansas.

EFFECTS OF DIETARY GALACTOSE VERSUS GLUCOSE WITH CORN OIL AND WITH HYDROGENATED COCONUT OIL ON VARIOUS METABOLIC FUNCTIONS IN RATS. Mabel Coleman, University of Arkansas.

EFFECTS OF SATURATED AND UNSATURATED LONG CHAIN FATTY ACIDS FED WITH AND WITHOUT ESSENTIAL FATTY ACID ON VARIOUS COMPONENTS OF LIPID AND CARBOHYDRATE METABOLISM. Joyce T. Burgess, University of Arkansas.

Arkansas Academy of Science Proceedings

THE INTERRELATIONSHIP OF CERTAIN METABOLIC RESPONSES TO THREONINE DEFICIENCY AND TO VARIOUS DIETARY CARBOHYDRATES IN THE WHITE RAT. Elizabeth Bright, University of Arkansas.

DECEMBER FOOD HABITS OF THE MALLARD (*ANAS PLATYRHYNCHOS* LINN.) IN THE GRAND PRAIRIE OF ARKANSAS. Billy J. Forsyth, University of Arkansas.

CHEMISTRY

Chairman: E. A. Provine
Ouachita Baptist College

Session I

THE ACTIVITY COEFFICIENTS AND THERMODYNAMICS OF HYDROBROMIC ACID IN METHANOL-WATER MIXTURES AND ANHYDROUS METHANOL FROM ELECTROMOTIVE FORCE STUDIES. Mrs. Sharon L. Melton and Edward S. Amis, University of Arkansas.

DISSOCIATION CONSTANTS OF CHLORANILIC ACID AND COMPLEXES OF THIS ACID WITH NICKEL II AND IRON III. Dale K. Cabbiness and Edward S. Amis, University of Arkansas.

THE TEMPERATURE COEFFICIENT OF COVALENT IODINE/IODIDE ION EXCHANGE IN ACETONE. Allen F. Robinette, E. A. Moelwyn-Hughes and Edward S. Amis, University of Arkansas and Cambridge University.

A GEOCHEMICAL STUDY OF GEYSERS — YELLOWSTONE NATIONAL PARK. Joe F. Nix, University of Arkansas.

CARBOXYLATION OF THIOESTERS. Milton O. Peacock, Arkansas A & M College.

DECAY OF Cd^{117} , Cd^{119} , and Cd^{121} . Miss Ann Gibbs, University of Arkansas.

Session II

DECAY OF Tb^{162} . H. Rodney Martin and Ronald A. Harlan, University of Arkansas.

THE UNDERGRADUATE CURRICULUM IN CHEMISTRY. Richard Porter, University of Arkansas.

ENERGY LEVELS OF Er^{168} FROM (d, p) REACTIONS. Ronald A. Harlan, University of Arkansas.

Arkansas Academy of Science Proceedings

GEOLOGY

Chairman: Tom Freeman
University of Missouri

PALEOZOIC ANALOGUES OF RECENT CARBONATES. Tom Freeman, University of Missouri.

SHALE-LIMESTONE ALTERNATION IN THE UPPER FAYETTEVILLE SHALE. Bruce Saunders, University of Arkansas.

STRUCTURAL GEOLOGY OF THE OUACHITA MOUNTAINS BETWEEN BENTON AND LITTLE ROCK, ARKANSAS. George Viele, University of Missouri.

GEOLOGY OF THE MARZARN SYNCLINORIUM. Larry Lee, University of Missouri.

REPORT ON SOME IRON AND NICKEL MINERALS FROM THE SOAPSTONE DEPOSITS OF SALINE COUNTY, ARKANSAS. Phillip Wicklein and Alden B. Carpenter, University of Missouri.

MONADNOCKS, DIVIDES, AND OZARK PHYSIOGRAPHY. James H. Quinn, University of Arkansas.

BASE-LEVEL CONTROL OF EROSION SURFACES. H. F. Garner, University of Arkansas.

NEW RARE AND SEMI-PRECIOUS MINERAL COLLECTING LOCALITIES IN CENTRAL ARKANSAS. Charles Stone, Arkansas Geological Commission.

HISTORY AND POLITICAL SCIENCE

Chairman: Keith S. Petersen
University of Arkansas

THE RELIGIOUS CLAUSES AND THE SUPREME COURT: AFTERMATH OF SHERBERT V. VERNER. Wayne Delavan, Henderson State Teachers College.

A HISTORY OF THE SELECTION AND TENURE OF SUPREME COURT JUDGES IN MISSOURI. Kay Collett, University of Arkansas.

JAUN LUIS VIVES AND HIS PLAN OF EUROPEAN UNION, 1522. Anne Vizzier, University of Arkansas.

PHYSICS

Chairman: Otto H. Zinke
University of Arkansas

Session I

A THEORY OF NUCLEAR RESONANCE LINESHAPES IN SOLIDS. Frank Biggs and Stephen M. Day, University of Arkansas.

Arkansas Academy of Science Proceedings

- A SEMI-CLASSICAL THEORY OF NUCLEAR RESONANCE BROADENING DUE TO PARAMAGNETIC IMPURITIES. Tin Hla Ngwe and Stephen M. Day, University of Arkansas.
- STUDY OF TRANSIENT DISSIPATIVE HEAT FLOW IN METAL FOILS. Paul B. Jacovelli, University of Arkansas.
- A NANOCENTIMETER TRANSDUCER. Otto H. Zinke, University of Arkansas.
- DISTINGUISHABILITY OF CLASSICAL PARTICLES. Jack G. Dodd, Arkansas Polytechnic College.
- CROSS-RELATION EFFECTS IN NaNO_3 . David J. Sloop and Stephen M. Day, University of Arkansas.
- THE EFFECT OF HIGH SPEED SAMPLE ROTATION ON NUCLEAR RESONANCE. Arthur C. Cunningham and Stephen M. Day, University of Arkansas.
- ATOMIC AND MOLECULAR FORM FACTORS FOR RADIAL DISTRIBUTION FUNCTIONS. Joe M. Guenter, Arkansas A & M College.
- GAS-KINETIC COLLISIONAL POPULATION OF 'D LEVELS IN HELIUM. Richard B. Kay, University of Arkansas.

Session II

- MEASUREMENT OF THE LAMB SHIFT IN THE $N=4$ LEVEL OF He^+ . Lynn L. Hatfield, University of Arkansas.
- THE INITIAL STAGES OF WIRE EXPLOSIONS. Arthur S. Hobson, University of Arkansas.
- X-RAY DIFFRACTION STUDIES OF CF_4 IN THE LIQUID STATE. Ronald W. Harris, University of Arkansas.
- A NUCLEAR RESONANCE STUDY OF CsF . Darrell K. Hutchins and Stephen M. Day, University of Arkansas.
- SPIN-LATTICE RELAXATION DUE TO PARAMAGNETIC IMPURITIES. Stephen M. Day, University of Arkansas.
- CHARACTERISTICS OF A PLASMA GUN. Charles K. Manka, University of Arkansas.
- ELECTRON CAPTURE INTO THE $N=4$ AND $N=3$ LEVELS OF H BY FAST H^+ IMPACT ON N_2 . Benny M. Doughty and Horace R. Dawson, University of Arkansas.
- X-RAY DIFFRACTION OF BROMINE IN THE LIQUID STATE. Robert W. Greubel, University of Arkansas.
- LINE WIDTH STUDY OF 9_{19} TO 8_{26} TRANSITIONS OF SO_2 BROADENED BY ACETYLENE. Charles E. Jones, University of Arkansas.

Arkansas Academy of Science Proceedings

MATHEMATICS

Chairman: Don Epperson
Medical School
University of Arkansas

The Mathematics Section met jointly with the Oklahoma-Arkansas Section of the Mathematics Association of America. Only papers given by Academy members are listed.

A STUDY OF CERTAIN FINITE RINGS. C. H. Harbison, Little Rock University.

INVERSION PROBLEMS FOR SOME WELL KNOWN MATRICES. T. Sekiguchi, University of Arkansas.

A GRID PROBLEM. M. C. Carter, University of Arkansas.

SCIENCE EDUCATION

Chairman: Irvin A. Wills
John Brown University

NEW DEVELOPMENTS IN COLLEGE SCIENCE AND MATHEMATICS PROGRAMS, A REPORT OF THE NASHVILLE, TENNESSEE CONFERENCE HELD IN NOVEMBER, 1964. Irvin A. Wills, John Brown University.