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PROGRAM**Friday, April 1**

- 11:00 a.m. Business Meeting, State Room
- 12:00 noon to Lunch
1:30 p.m.
- 12:30 p.m. to Junior Academy, Forum Room, Court Room, and
4:00 p.m. Rendezvous Room
- 1:00 p.m. to Collegiate Academy Luncheon. Guest speaker — Dr.
2:00 p.m. Frank A. Brown, Professor of Biology, Northwestern
University.
- 2:00 p.m. to Collegiate Academy, Assembly Room and East Room
4:00 p.m.
- 4:00 p.m. to Conference of Participating Scientists in NSF Visiting
5:00 p.m. Scientist Program of the Academy, State Room
- 4:00 p.m. to Science Talent Search Program, Forum Room
5:30 p.m.
- 5:30 p.m. to Academy Banquet, Continental Room.
7:00 p.m. "History of the Arkansas Academy of Science," Dr.
Dwight Moore, Arkansas Polytechnic College
- 7:00 p.m. to Awards Program, Forum Room
8:30 p.m.
- 8:30 p.m. to "Biological Rhythms and Clocks," Dr. Frank A. Brown,
9:30 p.m. Professor of Biology, Northwestern University.

PROGRAM

Saturday, April 2

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| 8:00 a.m. to
9:30 a.m. | Arkansas Science Teachers Association Breakfast,
State Room. |
| 8:00 a.m. to
12:00 noon | Arkansas-Oklahoma-Kansas Section of the American
Association of Physics Teachers, Assembly Room. |
| 9:30 a.m. to
12:00 noon | Section Meetings |
| 12:00 noon | Lunch — Arkansas-Oklahoma-Kansas Section of the
American Association of Physics Teachers Luncheon,
East Room. |
| 12:30 p.m. to
1:30 p.m. | Business Meeting, Court Room. |
| 1:30 p.m. to
3:30 p.m. | Section Meetings |

SECTIONAL PROGRAM**BIOLOGY AND AGRICULTURE**

Chairman: William Evans
 Little Rock University

Session I

- AGRONOMIC EVALUATIONS OF AN ARKANSAS ROCK PHOSPHATE. Lyell Thompson, University of Arkansas.
- VEGETATIVE NUCLEAR BEHAVIOR OF **NEUROSPORA CRASSA** SHEAR AND DODGE. Charles L. Wilson, John A. Brushaber, and James R. Aist, University of Arkansas.
- CENTRAL NEURAL REGULATION OF RELEASE OF NEUROHYPOPHYSIAL HORMONES (OXYTOCIN AND ADH). Lucille H. Aulsebrook, William H. Woods, and Robert C. Holland, University of Arkansas School of Medicine.
- OBSERVATIONS ON OCCURRENCE AND RANGE OF THREE SPECIES OF **DENTARIA** (CRUCIFERAE) IN THE OUACHITA MOUNTAINS. Miss Aileen L. McWilliam, Mena High School.
- ADDITIONAL INFORMATION ON **BASICLADIA CRASSA**, HOFFMAN AND TILDEN. Clarence B. Sinclair, Little Rock University; and Robert G. Anderson, University of Missouri at Kansas City.
- MODIFICATION OF THE KNOTTED LEAF MUTANT IN **ZEA MAYS** WITH GROWTH HORMONES. Billy B. Rhodes and Oval Myers, Jr., University of Arkansas.
- PERSISTANT VIRAL INFECTION OF A STABLE MAMMALIAN CELL LINE. Mrs. Ruth Jarman, University of Arkansas School of Medicine.
- A SUSPECTED INTERGENERIC HYBRID IN THE FRINGILLIDAE: PROBABLY WHITE-THROATED SPARROW (**ZONOTRICHIA ALBICOLLIS**) X SLATE-COLORED JUNCO (**JUNCO HYEMALIS**). Douglas James, University of Arkansas; and Mr. and Mrs. M. L. Jones, Dover, Arkansas.
- DECOY-NETTING OF NESTING ROBINS, **TURDUS MIGRATORIUS** L. Jay N. Dykstra, University of Arkansas.
- THE EFFECTS OF HYDROXYUREA ON CULTURED SOMATIC CELLS OF THE CHINESE HAMSTER, **CRICETULUS GRISEUS**. Charlotte Neill, University of Arkansas.

Session II

- HEAT RESISTANCE EXPERIMENTS WITH LONGEAR SUNFISH, **LEPOMIS MEGALOTIS** (RAFINESQUE). William H. Neill, Jr., Kirk Strawn, and James E. Dunn, University of Arkansas.

- GROWTH RATES AT VARIOUS TEMPERATURES OF THE ORANGE-THROAT DARTER, **ETHEOSTOMA SPECTABILE** (AGASSIZ). Boyce W. West, University of Arkansas.
- A STUDY OF THE "KILLING PHENOMENON" IN ISOLATED GROUPS OF **ETHEOSTOMA SPECTABILE** (AGASSIZ). Thomas M. Buchanan, University of Arkansas.
- DEFECT PLASMOPTYSIS: A MECHANISM OF POLYENE DAMAGE TO FUNGUS CELLS. Dwight E. Talburt and G. T. Johnson, University of Arkansas.
- GROWTH AND PIGMENTATION OF **PSEUDOMONAS CHLORORAPHIS**. James C. Hill and G. T. Johnson, University of Arkansas.
- BIOLOGICAL CONTROL IN ARKANSAS ROW CROPS. J. W. Steward and W. H. Whitcomb, University of Arkansas.
- SOME PARASITES OF ARKANSAS WOLF AND LYNX SPIDERS. Ruth Eason and W. H. Whitcomb, University of Arkansas.
- TRANSPIRATION CHANGES IN OAT PLANTS INFECTED WITH CROWN RUST. Purushottam Amatya and John P. Jones, University of Arkansas.
- A CURSORY EXAMINATION OF THE CHIRONOMIDAE OF ARKANSAS (DIPTERA: INSECTA). Anthony J. Iovino, University of Arkansas.
- THE VEGETATION OF DEVIL'S DEN STATE PARK, WASHINGTON COUNTY, ARKANSAS. Edwin H. Bullington and Edward E. Dale, Jr., University of Arkansas.
- THE ROOT HABITS OF BROOMSEDGE (**ANDROPOGON VIRGINICUS L.**). Byron Van Dover and Edward E. Dale, Jr., University of Arkansas.
- THE LABIATAE OF ARKANSAS. James M. Lang, University of Arkansas.
- ENHANCED PHAGOCYTOSIS OF BACTERIA WITH HYPOAGGLUTINATING MOUSE ANTISERA. Jack Lockhart and Leo J. Paulissen, University of Arkansas.

CHEMISTRY

Chairman: W. J. Broach
Little Rock University

Session I

- AN OXYGEN-18 TRACER STUDY OF THE QUESTION OF ACID-AND BASE-CATALYZED EXCHANGE BETWEEN WATER AND p-SUBSTITUTED NITROBENZENES. Martha Lusser and Arthur Fry, University of Arkansas.

Arkansas Academy of Science Proceedings

- A STUDY OF THE REARRANGEMENT OF PHENYL-C¹⁴ BENZHYDRYL KETONE USING FRIEDEL-CRAFTS CONDITIONS. Glenn H. Bennett, Franz A. Drahowzal and Arthur Fry, University of Arkansas.
- KINETIC AND OXYGEN-18 EXCHANGE STUDIES OF THE REARRANGEMENT OF BENZOPINACOL TO BENZOPINACOLONE. Willoughby F. Meek, Bessie R. Sparks and Arthur Fry, University of Arkansas.
- A COMPARISON OF THE STEREOCHEMISTRY OF DIIMIDE REDUCTIONS OF CYCLOOLEFINS WITH CATALYTIC HYDROGENATION. Samuel Siegel and Deborah Johnson, University of Arkansas.
- DIMERIZATION CONSTANTS OF ORGANIC ACIDS BY THE METHOD OF DISTRIBUTION. Dan Mathews, Graduate Institute of Technology.

Session II

- THE MAGNETIC SUSCEPTIBILITY ISOTHERM OF CHROMIA ON SILICA-ALUMINA CRACKING CATALYSTS. Don Brown and Alcuin F. Gremillion, Graduate Institute of Technology.
- A NEW MAGNETIC SUSCEPTIBILITY ISOTHERM OF CHROMIA-ALUMINA CATALYSTS. Earl Adkins and Alcuin F. Gremillion, Graduate Institute of Technology.
- REACTIVATION OF REDUCED RIBONUCLEASE BY ALLOXAN. Larry Rudel, University of Arkansas Medical Center.
- EFFECT OF VITAMIN E DEFICIENCY ON **IN VITRO** INCORPORATION OF ¹⁴C-LABELED AMINO ACIDS INTO MUSCLE PROTEIN. George Nichoalds, University of Arkansas.
- EFFECTS OF VITAMIN E DEFICIENCY AND DENERVATION ON THE PERMEATION OF THIOUREA IN SKELETAL MUSCLE. Robin R. Jones, University of Arkansas Medical Center.

GEOLOGY

Chairman: Don E. Williams
U. S. Forest Service, Hot Springs

Session I

- ECONOMIC GEOLOGICAL OUTLOOK FOR ARKANSAS. Norman F. Williams, Arkansas Geological Commission.
- POTENTIAL DEVELOPMENT OF GROUND-WATER RESOURCES FROM PALEOZOIC AQUIFERS IN ARKANSAS. G. M. Hogenson, U. S. Geological Survey, Water Resources Division.
- GEOLOGY OF THE ARKANSAS BAUXITE AREA. Benny F. Kidd, Reynolds Metals Company.

Arkansas Academy of Science Proceedings

GEOLOGICAL METHODS AND PROBLEMS IN THE SITING AND CONSTRUCTION OF DAMS IN ARKANSAS. C. J. Wells, Geology and Materials Section, Little Rock District Corps of Engineers.

Session II

PITKIN REEFS AND ASSOCIATED SEDIMENTS. Kern C. Jackson, University of Arkansas.

ALLUVIUM AND AQUIFER OCCURRENCE ALONG MOUNTAIN FORK CREEK, CRAWFORD COUNTY, ARKANSAS. H. Filmore Garner, University of Arkansas.

AN ELECTRIC-LOG STUDY OF THE AQUIFERS AT STAMPS, ARKANSAS. John J. Chapman, Southern State College.

OZARK FRONTAL FAULT. Albert H. Giles, Arkansas Polytechnic College.

HISTORY AND POLITICAL SCIENCE

Chairman: Keith S. Petersen
University of Arkansas

SELECTED STUDIES IN TRANSITIONS IN TWENTIETH CENTURY POLITICAL THOUGHT. Charles M. Evans, Arkansas State Teachers College.

THE INTELLECTUALS: A CRITIQUE. Leon J. Apt, University of Arkansas.

CARL BROWNE, SOME NOTES ON A RADICAL OF THE POPULIST WORLD. Wayne Delavan, Henderson State Teachers College.

THE INVIOABILITY CONTROVERSY IN THE TRIAL OF LOUIS XVI. Ronald Hayworth, Arkansas College.

PHYSICS

Chairman: John Petz
Little Rock University

Session I

TEMPERATURE DETERMINATIONS OF PLASMA PRODUCED BY EXPLODING WIRES. D. P. Ross, University of Arkansas.

SOME PRELIMINARY RESULTS IN THE INVESTIGATION OF A SIMPLE PLASMA GUN. J. R. Crawford, University of Arkansas.

SHOCK PHENOMENA IN METALS. C. E. Canada, University of Arkansas.

INVESTIGATIONS OF REAL FOIL SURFACES. O. H. Zinke, University of Arkansas.

Session II

CURRENT VIEWS ON EXTRA TERRESTRIAL COMMUNICATION. Dave S. Warren, Graduate Institute of Technology.

POSSIBLE MECHANISMS FOR THE ACCELERATION OF PLASMA. D. W. Collier, University of Arkansas.

Arkansas Academy of Science Proceedings

ACTIVATION CROSS-SECTIONS AND MASS ASSIGNMENTS FOR 14.7 MeV NEUTRON INDUCED REACTIONS ON Dy AND Gd ISOTOPES. Philip H. Merrell and R. A. Harlan, University of Arkansas.

INTRODUCTION TO FLUID AMPLIFIERS. P. McCloud, Graduate Institute of Technology.

MATHEMATICS

Chairman: Bill Attebery
University of Arkansas

Session I

Speaker from Committee on the Undergraduate Program in Mathematics.
Panel on mathematics program for first two years of college.

Session II

A SINGULAR MATRIX OF FIBONACCI NUMBERS AND ITS RELATED LAMBDA FUNCTION. Curtis McKnight, Harding College.

Panel on Advanced Calculus.

SCIENCE EDUCATION

Chairman: Irvin A. Wills
John Brown University

Session I

REPORT OF SCIENCE TEACHING IMPROVEMENT COMMITTEE. Sponsored by the Arkansas Academy of Science and the Arkansas Science Teachers Association. Roy Rom, University of Arkansas.

THE OUTDOOR LABORATORY AS AN AID TO TEACHING BIOLOGY IN THE SECONDARY SCHOOLS. Edward E. Dale, Jr. University of Arkansas.

UNDERGRADUATE EDUCATION IN THE BIOLOGICAL SCIENCES. Earl D. Hanson, Chairman CUEBS, Shanklin Laboratory of Biology, Wesleyan University, Conn.

THE UNDERGRADUATE CURRICULUM IN CHEMISTRY. Lester C. Howick and Richard Porter, University of Arkansas.

REPORT OF EXPERIMENTAL COURSES IN ENGINEERING PHYSICS. Glen Clayton, University of Arkansas.

UNDERGRADUATE RESEARCH PARTICIPATION PROGRAM IN THE DEPARTMENT OF PLANT PATHOLOGY, UNIVERSITY OF ARKANSAS. John P. Jones, University of Arkansas.

Session II

Panel Discussion — THE COOPERATIVE USE OF COMPUTERS ON A STATE-WIDE BASIS. W. Everett, Chairman, Ouachita Baptist University.