

1964

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PROGRAM

Friday, April 17

- 10:45 a. m. Business Meeting, Student Center Ballroom
- 12:00 Noon Lunch, ASTC Cafeteria
- 1:00 p. m. to
2:00 p. m. General Session with Junior and Senior Academies, Student Center Ballroom. Papers by Science Talent Search Winners.
- 2:15 p. m. to
4:30 p. m. Collegiate Academy, Student Center Ballroom
- 5:30 p. m. Academy Banquet, ASTC Cafeteria
- 6:30 p. m. Science Fair Awards Program, Student Center Ballroom
- 8:00 p. m. Illustrated Lecture, "Health and Fitness in the Modern World." Dr. R. T. Clark, Vice-President in Charge of Research, Harding College.

Saturday, April 18

- 8:30 a. m. to
10:00 a. m. Science Education Section, Student Center Ballroom
- 10:15 a. m. to
11:45 a. m. Section Meetings
- 12:00 Noon Lunch, ASTC Cafeteria
- 1:30 p. m. to
2:30 p. m. Business Meeting, Student Center Ballroom
- 2:30 p. m. to
4:00 p. m. Section Meetings

SECTIONAL PROGRAM

Biology and Agriculture

Chairman: Neal D. Buffaloe
Arkansas State Teachers College

Session I

NEW RECORDS FOR THE ARKANSAS FLORA, V.
Dwight M. Moore, Arkansas Polytechnic College.

IDENTIFICATION OF NINHYDRIN POSITIVE COMPONENTS IN ETHANOLIC EXTRACTS OF RICE PANICLES BY PAPER CHROMATOGRAPHY. C. I. Grable, J. E. Presley and G. E. Templeton, University of Arkansas.

QUANTITATIVE DIFFERENCES IN ALANINE IN RICE PANICLES OF VARIETIES RESISTANT AND SUSCEPTIBLE TO KERNEL SMUT. J. G. Goodman and G. E. Templeton, University of Arkansas.

IDENTIFICATION OF THE FREE AMINO ACIDS OF NEMATODE RESISTANT AND SUSCEPTIBLE SOYBEANS. J. R. Young and R. D. Riggs, University of Arkansas.

AN EVALUATION OF TWO GENERA OF COPEPODS: SALMINCOLA AND ACHTERES. Ray C. Kinser, Arkansas State Teachers College.

REGENERATION IN SALAMANDERS, DESMOGNATHUS FUCUS BRIMLOYROIUM (RAFINESQUE). Ruth A. Simpson and Henri Crawley, Arkansas Polytechnic College.

SOME VARIATIONS IN POISON IVY. Jewel E. Moore, Arkansas State Teachers College.

MATERNAL CARE AS EXHIBITED BY WOLF SPIDERS (LYCOSIDS). Ruth Eason, University of Arkansas.

Session II

BIG TREES IN ARKANSAS: SOME NEW AND OLD RECORDS. Dwight M. Moore, Arkansas Polytechnic College.

THE EFFECT OF SPACING AND LIME ON THE MORPHOLOGY AND YIELD OF OKRA. Leonard Pike, University of Arkansas.

THE LEARNING ABILITY OF THE BOBWHITE WHEN EXPOSED TO DDT IN THE DIET. Kenneth B. David, Jr., University of Arkansas.

EGGS AND NESTLINGS IN ORGANIZING THE NESTING ACTIVITIES OF THE ROBIN. Jay N. Dykstra, University of Arkansas.

THE SEASONAL OCCURRENCES OF ARKANSAS BIRDS. Douglas James and Frances James, University of Arkansas.

ARKANSAS AVIFAUNA: SOME SIGNIFICANT FINDINGS, 1960-1964. Douglas James, University of Arkansas.

DICALCIUM SILICATE (BROWN MUD) AS AN AGRICULTURAL LIMING MATERIAL. Lyell Thompson, University of Arkansas, and V. H. Ledbetter, Reynolds Metals Company.

Chemistry

Chairman: John E. Stuckey
Hendrix College

Session I

AN OXYGEN-18 EXCHANGE STUDY ON BENZOPINACOL DURING ITS REARRANGEMENT TO BENZOPINACOLONE. Bessie R. Sparks and Arthur Fry, University of Arkansas.

AN ISOTOPE EFFECT STUDY OF THE $Sn2'$ REACTION. Manfred Eberhardt, Arthur Fry, and A. Harold McKee, University of Arkansas.

SYNTHESIS OF 2-BENZOYLOXYBUTYRIC ACID AND ITS METHYL AND *tert*-BUTYL ESTERS. Milton O. Peacock, Arkansas Agriculture and Mechanical College.

INOSINE DIPHOSPHATE ACCUMULATION IN MUSCULAR CONTRACTION. Peter L. Pedersen and Jacob Sacks, University of Arkansas.

Session II

SEPARATION OF SEVEN AND EIGHT CARBON OLEFINIC KETONES BY PREPARATIVE GAS CHROMATOGRAPHY. Dennis Faulk, University of Arkansas.

PREPARATION AND GAS CHROMATOGRAPHIC SEPARATION OF SOME TEN CARBON OLEFINIC KETONES AND CYCLOBUTANONES. Walter H. Corkern, University of Arkansas.

ON THE MECHANISM OF 2, 3-DEHYDROGENATION OF *n*-OCTYLTHIOBUTRYATE. Milton O. Peacock, Arkansas Agriculture and Mechanical College.

A SPECTROPHOTOMETRIC STUDY OF THE NICKEL (II)-CHLORANILATE COMPLEXES IN AQUEOUS SOLUTIONS. Dale K. Cabbiness, University of Arkansas.

Geology

Chairman: Ronald H. Konig
University of Arkansas

- DIMENSION STONE IN ARKANSAS. Charles G. Stone and William J. Crouch, Arkansas Geological Commission.
- A NEW LENTIL IN UPPER FAYETTEVILLE FORMATION. John D. Taylor, Humble Oil and Refining Company.
- THE PITKIN AND ADJAMENT FORMATIONS IN NORTHERN ARKANSAS. James H. Quinn, University of Arkansas.
- PRELIMINARY REPORT ON THE PETROGRAPHY AND STRATIGRAPHY OF THE JOACHIM-FERNVALE INTERVAL, BATESVILLE AREA, ARKANSAS. Thomas J. Freeman, Arkansas Geological Commission.

History and Political Science

Chairman: Keith S. Peterson
University of Arkansas

- THE POLITICAL PHILOSOPHY OF SUPREME COURT JUSTICE DAVID J. BREWER. Wayne Delavan, Henderson State Teachers College.
- A COMPARATIVE ANALYSIS OF THADDEUS STEVENS. Floyd M. Clay, Arkansas Agricultural and Mechanical College.
- SOCIAL HISTORY AND STRATIFICATION IN THE ANTE-BELLUM SOUTH. Dean C. Taylor, Little Rock University.
- CHARACTERISTICS OF FOREIGN INVESTMENT IN RUSSIA. Marion L. Piotrowski, Henderson State Teachers College.

Physics

Chairman: Clark W. McCarty
Ouachita Baptist College

Session I

- AN APPLICATION OF ARCHIMEDES PRINCIPLE TO BIOLOGICAL RESEARCH. M. L. Lawson, Harding College.
- AN INSTRUMENT FOR MEASURING LOW ANGLE LIGHT SCATTERING. William Fitzgerald, Little Rock University and U. S. Time Corporation and John Petz, Little Rock University.

Arkansas Academy of Science Proceedings

ION FLUXES FROM PULSED PLASMAS. Charles Manka, University of Arkansas.

HEAT PULSES IN METAL FOILS. David Ross, University of Arkansas.

SLOW IONS FROM PULSED PLASMAS. Raymond Higdon, University of Arkansas.

TEMPERATURES IN MILLION DEGREE RANGE PRODUCED BY EXPLODING WIRES. Robert Owens, University of Arkansas.

A NOVEL RESISTANCE MEASURING DEVICE. Otto Henry Zinke, University of Arkansas.

Session II

RADIATIVE LIFE TIMES IN HELIUM. W. R. Pendleton, University of Arkansas.

PROPOSED MEASUREMENT OF THE FINE STRUCTURE OF THE N equals 4 LEVEL OF He plus BY MICROWAVE TECHNIQUES. L. L. Hatfield, University of Arkansas.

CONSTRUCTION OF A FAST ATOM-BEAM APPARATUS FOR SPECTROSCOPIC STUDIES. H. R. Dawson, University of Arkansas.

X-RAY DIFFRACTION STUDY OF CCL₂F₂ IN THE LIQUID STATE. Robert Graham and G. T. Clayton, University of Arkansas.

X-RAY DIFFRACTION STUDY OF LITHIUM-MERCURY ALMAGAM IN THE LIQUID STATE. Robert Gruebel and G. T. Clayton, University of Arkansas.

A SIMPLE FURNACE FOR GROWING METAL CRYSTALS. Charles Hendrickson and G. T. Clayton, University of Arkansas.

X-RAY DIFFRACTION STUDY OF C₂CL₄ IN THE LIQUID STATE. William Dixon, Ouachita Baptist College, and G. T. Clayton, University of Arkansas.

Mathematics

Chairman: John Keesee
University of Arkansas

DUALITY. John Keesee, University of Arkansas.

Science Education

Chairman: M. W. Lawson
Harding College

AN IN-SERVICE INSTITUTE IN COLLEGE PHYSICS FOR SCIENCE TEACHERS. Glen T. Clayton and Paul G. Sharrah, University of Arkansas.

- A PRELIMINARY STUDY OF THE RELATIONSHIP BETWEEN HIGH SCHOOL BIOLOGY AND ELEMENTARY COLLEGE BIOLOGY. Neal D. Buffaloe and Hoyt G. Rowden, Arkansas State Teachers College.
- INFECTION OF BACTERIAL PROTOPLASTS WITH SUB-VIRAL PARTICLES OF BACTERIOPHAGE T2. Bruce A. Holholt, Department of Microbiology, University of Arkansas Medical Center.
- ALTERATIONS IN MYELINOGENESIS, RESULTING X-IRRADIATION OF THE SPINAL CORDS OF NEONATAL RATS. Charles H. Rodgers, Department of Anatomy, University of Arkansas Medical Center.
- INFLUENCE OF TEMPERATURE ON THE RADIATION DEMADE TO THE LUCIFERASELUCIFERIN SYSTEM AND COLLAGEN. Charles F. Fowler, Department of Physiology, University of Arkansas Medical Center.