

1967

## 51st Annual Meeting, 1967. Program

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## PROGRAM

ARKANSAS ACADEMY OF SCIENCE  
Fifty-First Annual Meeting  
Arkansas State University, Jonesboro, Arkansas

### Friday, April 7

- |                            |  |
|----------------------------|--|
| 9:00 a.m. to<br>4:00 p.m.  | REGISTRATION — Senior and Collegiate Academy   |
| 9:00 a.m. to<br>12:00 noon | REGISTRATION — Junior Academy  |
| 9:30 a.m.                  | EXECUTIVE COMMITTEE MEETING — Senior Academy<br>— Collegiate Academy   |
| 10:45 a.m.                 | BUSINESS MEETING — Senior Academy — Collegiate<br>Academy of Science   |
| 11:00 a.m.                 | MIXER  |
| 12:00 noon to<br>1:15 p.m. | LUNCHEON — Collegiate Academy of Science.<br>Speaker: Dr. Harry Day, Indiana University.<br>Topic: "Science and a Liberal Education" |
| 1:30 p.m. to<br>4:00 p.m.  | COLLEGIATE ACADEMY — Presentation of papers.   |
| 1:30 p.m. to<br>3:30 p.m.  | JUNIOR ACADEMY — Business Meeting and Presen-<br>tation of papers.   |
| 3:00 p.m. to<br>5:00 p.m.  | SCIENCE EDUCATION SECTION  |
| 4:00 p.m. to<br>5:30 p.m.  | SCIENCE FAIR   |
| 5:30 p.m. to<br>7:00 p.m.  | BANQUET — Combined Academies   |
| 7:00 p.m. to<br>8:00 p.m.  | SCIENCE FAIR AWARDS  |
| 8:15 p.m. to<br>9:15 p.m.  | ADDRESS — Dr. Harry Day — Indiana University —<br>"From Boron to Zinc in Nutritional Biochemistry"                                   |

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**PROGRAM**

**Saturday, April 8**

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|-----------------------------|---|
| 8:30 a.m. to<br>9:30 a.m.   | VISITING SCIENTIST — Conference for "Visiting Scientists" |
| 9:00 a.m. to<br>10:00 a.m.  | SCIENCE TALENT SEARCH PROGRAM                             |
| 10:00 a.m. to<br>12:00 noon | SECTION MEETINGS — Senior Academy                         |
| 12:00 noon to<br>1:00 p.m.  | LUNCH HOUR  |
| 1:00 p.m. to<br>2:00 p.m.   | BUSINESS MEETING — Senior Academy                         |
| 2:00 p.m. to<br>4:00 p.m.   | SECTION MEETINGS — Senior Academy                         |

**SECTIONAL PROGRAM**

## SCIENCE EDUCATION

Chairman: Roy C. Rom  
University of Arkansas

- "Utilization of Educational TV in Teaching of Science", by Mr. Lee Reaves, Arkansas Educational Television Commission, Conway, Arkansas.
- "The Audio-Tutorial Laboratory Program in General Botany at the University of Arkansas", by Dr. O. Meyers and Dr. L. Bailey, University of Arkansas.
- "Physical Science for the Nonscientist", by Mr. Denver Prince, State College of Arkansas.
- "The University of Arkansas Physical Chemistry Laboratory Program", by Mr. Allen Robinette, University of Arkansas.
- "Science Background for Non-Science College Students", by Mr. E. E. Hudson, Arkansas Polytechnic College.
- "A Proposal for a CUEBS Conference in Arkansas", by Dr. N. D. Buffaloe, State College of Arkansas.
- "AC<sub>3</sub> Programs for Improving Instruction in Chemistry", by Dr. Renfrew, Guest Speaker from Advisory Council on College Chemistry, Stanford University.

## BIOLOGY AND AGRICULTURE

## Session I

Chairman: Dr. Eugene B. Whitlake  
Arkansas State University

- "Thermal Resistance in the Ozark Minnow, **Dionda nubila** (Forbes)," by Claude Baker.
- "Survival of Bacteria in One-molar Sodium Chloride," by Robert E. Bowling.
- "Hormone Levels in the Nesting Robin, **Turdus migratorius**. Linnaeus," by Jay N. Dystra.
- "The Directions of Nocturnal Bird Migration Along the Northwestern Shore of the Gulf of Mexico," by Bill Forsyth.
- "Film Analysis of Agonistic Behavior in Ground Squirrels (Citellus)," by Gene Grubitz III.

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- "Nucleotide Composition of the Cowpea Strain of Southern Bean Mosaic Virus," by M. A. Haralson and H. J. Walters.
- "The Genus, *Lebia* (Carabidae), With Emphasis on Its Occurrence in Arkansas," by Robert C. Hemmenway, Jr.
- "Mating Behavior of the Brown Recluse Spider," by Maxine Hite.
- "Star-dependent Orientation in a Planetarium Exhibited by the White-throated Sparrow, *Zonotrichia albicollis* (Gmelin)", by Douglas James and Marvin D. Crabb.
- "Virus Induced Cataracts," by Ruth Jarman.
- "The Taxonomic and Ecological Status of the Meadowlark in Northeast Arkansas," by Robert Lowery and Earl L. Hanebrink.
- "*Penstemon wherryi* Pennell (Scrophulariaceae)," by Aileen L. McWilliam.

BIOLOGY AND AGRICULTURE

Session II

Chairman: Dr. Albert E. O'Donnell  
Arkansas State University

- "New Records for the Arkansas Flora V," by Dwight Moore.
- "Valerianella in Arkansas," by Dwight Moore.
- "A Taxonomic Separation of Larvae of the Genus *Setophilus* (Coleoptera: Circulionidae) by Head Capsule Morphology," by Albert E. O'Donnell and Paul D. Hunkapiller.
- "Predation Rates of Two Mites on Eggs of the Little House Fly, *Fannia canicularis*," by Albert E. O'Donnell and E. Lee Nelson.
- "Tularemia in Arkansas' Wildlife," by Leo J. Paulissen, R. R. Corey and D. Swartz.
- "How to Grow Bamboo," by Roy Prewitt.
- "The Problem of Insect Identification and the Reference Collection," by E. Phil Rouse.
- "Metabolic Changes Induced in Weanling Rats by Feeding Different Levels of Galactose with Two Levels of Corn Oil," by Carolyn Sharp.
- "Some Morphological Differences Between *Smilax bona-nox* and *Smilax rotundifolia* (Liliaceae)," by D. Freeman Thomas.
- "A Life History and Predatory Importance of the Striped Lynx Spider," by W. H. Whitcomb.

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"Shoot Growth of Dark-grown Corn Seedlings in Response to light Interruption of the Dark Period," by J. L. Wickliff.

"The Influence of a Low Protein Diet when fed with Various Sources and Proportions of Carbohydrate and Fat on Metabolic Functions in Rats," by Callie Ann Shull.

CHEMISTRY

Chairman: Dr. J. E. Bennett  
Arkansas State University

"Stereochemistry and Mechanism of the Vapor Phase Catalytic Hydrogenation of O-Xylene", by Samuel Siegel and Joseph R. West.

"A Novel Fragmentation Reaction in the Norbornane Ring System", by Laura Skillern and D. E. Gwynn.

"Chlorine Isotope Effects in the Hydrolysis of Benzoyl Chlorides", by Arthur Fry and Leslie T. Netherton.

"Vaporization Studies of Metal Phthalocyanines", by William McCall and J. E. Bennett.

GEOLOGY

Chairman: Henry N. Halberg  
U. S. Geological Survey

"Alcoa's Arkansas Mining Operation," by Robert L. Schell, Chief Mining Engineer, Arkansas Operations, Aluminum Company of America.

"Deep Stripping of Arkansas Bauxites," by Jack C. McFarlin, Surface Superintendent, Reynolds Mining Corporation.

"Technique of Exploration for Mineral Deposits in Arkansas," by J. Stewart Hollingsworth, Geologist, Mining and Metals Division, Union Carbide Corporation.

"Geomorphic Analogs and Climax Morphogenesis," by H. Filmore Garner, Associate Professor, University of Arkansas.

"Making Water Management Work—An Educational Process," by Leslie E. Mack, Governor's Representative for Water Resources.

"Ground-water Resources of the Red River Alluvium in Arkansas," by Augustine H. Ludwig, Hydraulic Engineer, Water Resources Division, U. S. Geological Survey.

"Occurrence of Small Fluorite Bearing Vein in Searcy County, Arkansas," by Benjamin F. Clardy and Mac B. Woodward, Geologists, Arkansas Geological Commission.

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- "Ground Magnetometer Survey of Hot Spring County, Arkansas," by Philip J. Sterling and Charles G. Stone, Geologists, Arkansas Geological Commission.

MATHEMATICS

Chairman: Dr. John W. Keesee  
University of Arkansas

- "Estimation of Variance Components in Multiway Classification, Mixed Model Situations", by Margie Place and James E. Dunn.
- "Characterization of the Bivariate Negative Binominal Distribution", by James E. Dunn.
- "Monte Carlo Study of Estimation Efficiency for Nonlinear Models Subjected to Linearizing Transformations", by Jeffre L. Kennington and James E. Dunn.
- "A Good Mathematics Curriculum for Small Colleges", by B. E. Rhoades, Indiana University (CUPM Consultant).

HISTORY AND POLITICAL SCIENCE

Chairman: Dr. Ronald L. Hayworth  
Arkansas College

- "Voting Machines in Arkansas", by Kay G. Collett, Westark Junior College.
- "William Hope Cain Harvey as a Figure in Richard Hofstadter's Histories", by William M. Baker, Texarkana College.
- "Conspiracy and Power Politics", by John E. Guendling, Arkansas Polytechnic College.

PHYSICS

Chairman: Dr. L. A. Mink  
Arkansas State University

- "Development of a Generally Covariant Wave Equation", by Alan Wray.
- "Premelt Variations of Current, Temperature, and Resistance in Exploding Wires", by Tom Atwood.
- "Production of Hydrogen Atoms in the  $3s$  State by Fast  $H_2^+$  and  $H_3^+$  Impact on Inert Gases", by Everett Stokes and Charles Stigers.
- "X-ray Diffraction Studies of Liquids Composed of Tetrahedral Molecules", by Glenn T. Clayton.

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- "Small-Angle Scattering of Monochromatic Light in Pulsed Kerr Cells",  
by James Sanchez and Jack G. Dodd.
- "Photo-Induced Changes in the Electric Susceptibility of Lead Azide",  
by Larry Rowton and Jack G. Dodd.
- "Holography with Low-Resolution Media: The Roles of Aperture and  
Grain", by Landy Doyel and Jack G. Dodd.
- "Emission of Potassium Ions by Heated Metal Surfaces: the Mobility  
of Potassium Ions in Air", by Ronald McMillan and Jack G. Dodd.