

1969

53rd Annual Meeting, 1969. Program

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P R O G R A M

ARKANSAS ACADEMY OF SCIENCE

Fifty-Third Annual Meeting

University of Arkansas

Fayetteville, Arkansas

Friday, April 11

- | | |
|-----------------------------|---|
| 9:00 a.m. to 4:00 p.m. | SENIOR COLLEGIATE ACADEMY—Registration |
| 9:00 a.m. to 12:00 noon | JUNIOR ACADEMY—Registration |
| 9:30 a.m. to 10:30 a.m. | COLLEGIATE ACADEMY—Executive Committee Meeting |
| 9:30 a.m. to 10:30 a.m. | SENIOR ACADEMY—Executive Committee Meeting |
| 9:30 a.m. to 10:30 a.m. | SENIOR ACADEMY—Editorial Board Meeting |
| 10:45 a.m. to 12:00 noon | SENIOR ACADEMY—Business Meeting |
| 11:00 a.m. to 12:00 noon | NASA SPACEMOBILE |
| 10:30 a.m. | JUNIOR ACADEMY—Mixer |
| 11:15 a.m. to 12:00 noon | COLLEGIATE ACADEMY—Business Meeting |
| 12:00 p.m. to 1:00 p.m. | LUNCH HOUR—Unscheduled |
| 2:30 p.m. to 4:30 p.m. | SEFOR FACILITIES TOUR |
| 1:00 p.m. to 4:00 p.m. | JUNIOR ACADEMY—Section Meetings Physical Science Biological Science General Science |
| 1:30 p.m. to 3:00 p.m. | SCIENCE BUILDING DEDICATION |
| 1:00 p.m. to 4:00 p.m. | OPEN HOUSE |

Arkansas Academy of Science Proceedings

- 2:00 p.m. to COLLEGIATE ACADEMY—Section Meetings
4:30 p.m. Physical Science Section
Biological Science Section
- 2:00 p.m. to EDUCATIONAL TV DISPLAY
5:30 p.m.
- 3:30 p.m. to SENIOR ACADEMY—Science Education Section
5:00 p.m.
- 4:00 p.m. to SCIENCE FAIR
5:30 p.m.
- 5:30 p.m. to JUNIOR ACADEMY—Picnic Dinner
7:00 p.m.
- 5:30 p.m. to SENIOR ACADEMY—Banquet
7:00 p.m.
- 7:00 p.m. to SCIENCE FAIR
9:30 p.m.
- 7:30 p.m. to SCIENCE FAIR AWARDS
8:30 p.m.

Saturday, April 12

- 7:30 a.m. to ARKANSAS SCIENCE TEACHERS ASSOCIATION—Breakfast
9:00 a.m.
- 8:00 a.m. to SCIENCE FAIR
11:30 a.m.
- 8:00 a.m. to SENIOR ACADEMY—Registration
10:00 a.m.
- 8:30 a.m. to SEFOR FACILITIES TOUR
10:30 a.m.
- 9:00 a.m. to SCIENCE TALENT SEARCH PROGRAM
10:00 a.m.
- 10:00 a.m. to SENIOR ACADEMY—Section Meetings
12:00 noon *Archeology and Anthropology
Biology and Agriculture
Chemistry
Geology
Mathematics
*Physics—Joint meeting with Arkansas-
Oklahoma-Kansas Section of American
Association of Physics Teachers

*Archeology and Anthropology Section and Physics Section begin at

Arkansas Academy of Science Proceedings

| | |
|---------------|------------------------------------|
| 12:00 noon to | LUNCH HOUR—Unscheduled |
| 1:00 p.m. | |
| 1:00 p.m. to | SENIOR ACADEMY—Business Meeting |
| 2:00 p.m. | |
| 2:00 p.m. to | SENIOR ACADEMY—Section Meetings |
| 4:00 p.m. | Biology and Agriculture Physics |

SECTIONAL PROGRAM

COLLEGIATE ACADEMY OF SCIENCE

PRESIDENT: Tom Goodwin
Ouachita Baptist University

PHYSICAL SCIENCES SECTION

PRESIDING: Tom Goodwin

- "Synthesis of and Hydrolysis Studies on 6,8-Dichloro-2-Methylbenzoxazinone." Pat Lyon
- "Synthesis and Reversible Inhibitory Effects of Some 1,1-Cycloalkyldicarboxylic Acids on Succinic Dehydrogenase." James Word
- "The Synthesis and Attempted Reductive Cyclization of 2-Pyridaldiacetophenone." Robert Higbee
- "Meteoritic Material from Hopewell Indian Burial Mounds: Investigation of Possible Sources." Sally P. Sedwick
- "Construction and Calibration of a Light Source for Prep-Scale Photochemical Reactions." H. Barager and T. D. Roberts
- "Features of the Lunar Surface." Robert F. George
- "Synthesis and Solvolytic Studies of Methylene and Dimethylene-Norbornyl Benzoates." Gene DeBons and D. E. Gwynn

BIOLOGICAL SCIENCES SECTION

PRESIDING: Harold Betton

- "Intraspecific and Interspecific Growth Patterns in 14 Members of the Genus, *Bacillus*." Harold B. Betton
- "Determination of the Contribution of Nitrogen Fixed by Nodules to Growth of Green-Snap Bean Variety, Richgreen." Harold B. Betton
- "Discrimination and Preference in Texture in Albino Rats." Darrell F. Brown

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SCIENCE EDUCATION SECTION

PRESIDING: Don England

Opening remarks by presiding officer.

"An Undergraduate Research Program at Philander Smith College."
James O. Wear

"A Survey of High School Chemistry in Northeast Arkansas and
Southeast Missouri." William H. Ponder

"The Uses of Educational Television." Richard R. Shurtz

Business Meeting

ARCHEOLOGY AND ANTHROPOLOGY SECTION

PRESIDING: Michael P. Hoffman

"Experiments in Aerial Photography." Dan Printup

"Controlled Surface Collections at the Spinach Patch Site, 3FR1."
Michael P. Hoffman

"Implications of Land and Fresh Water Gastropods in Archeological
Sites." John Clark

Coffee break.

"Preliminary Description of the Blue Snake Society." Diana
Weathersby

"Skeletal Analysis of Three Bluff Shelter Burials." Eugene Hickman

"The Type-Variety Concept: A Possible Indicator of Diffusion and
Culture Areas." John B. Huner

Business Meeting

BIOLOGY AND AGRICULTURE SECTION

CHAIRMAN: H. Jack Walters

ZOOLOGY SESSION—Presiding: Phil Rouse

"Analysis of Regurgitated Food from the Cattle Egret *Babulcus
ibis* and the Little Blue Heron *Florida caerulea* from the Luxora
Heronry in Mississippi County, Arkansas." Earl L. Hanebrink
and Gene Denton

"Electrophoretic Patterns of Plasma Proteins and Hemoglobin of the
Pigeon *Columba livia domestica*." Dale Snow, Earl L. Hanebrink,
and Bob Johnson

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- "Spiders Collected from Mud-Dauber Nests in Clark County, Arkansas." Peggy Rae Dorris
- "An Addition to the List of Spiders Collected in Clark County, Arkansas." Peggy Rae Dorris
- "Preliminary Study of the Small Mammals of Northeast Arkansas." J. Maxine Hite
- "Histochemistry and Ultrastructure of Some Elapid Venom Glands." Max A. Nickerson
- "Hemolysis by *Crotalus horridus atricaudatus* Venom." Franklin E. Byrd and Bob D. Johnson
- "A Survey of the Helminth Parasites of Selected Game Fishes of Lake Fort Smith, Arkansas." David A. Becker and Walter C. Houghton
- "Direct and/or Indirect Effects of Domestic and Oil Refinery Effluents on Meristic and Morphometric Characteristics of Three Cyprimid Fishes." John K. Beadles
- "The Oxygen Regime of Some Arkansas Reservoirs." Joe E. Nix
- "A Preliminary Investigation of the Siphonaptera of Craighead County, Arkansas." G L. McCrackin
- "The Pieridae of Arkansas." Phil Rouse
- "Metabolic Responses of White Rats to Glucose or Fructose Fed with two Safflower Oils Containing Different Proportions of Fatty Acids." Paula Lynn Yates
- Biology and Agriculture Section Business Meeting

BOTANY SESSION—Presiding: H. Jack Walters

- "Note on *Digitaria sanguinalis* and *D. adscendens* (Gramineae) in Arkansas." Albert Robinson, Jr.
- "A Morphological Study of the *Quercus stellata* (Fagaceae) Complex." Freeman Thomas
- "A Seed Study in a Section of the Genus *Penstemon* (Scrophulariaceae)." Aileen L McWilliams
- "A Survey of the Arkansas Campanulaceae (including the Lobeliaceae)." Edwin B. Smith
- "Growth Patterns in *Bacillus stearothermophilus*." Harold Betton
- "Notes on the Responses of *Perilla frutescens* (L.) Britt. var. *frutescens* to Controlled Environments." S. A. Covington

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- "Effect of Culture Environment upon Sporangium and Zoospore Production of three Species of *Phytophthora*." James L. Dale and J. P. Jones
- "The Forest Vegetation and Soils of Selected Sites near Lake Wedington, Washington County, Arkansas." John T. Youree
- "Some Noteworthy Species of the Arkansas Flora." Gary Tucker
- "Relationships of the Bean Leaf Beetle to Cowpea Strain of Southern Bean Mosaic Virus." Don Henry and H. J. Walters
- "The Geography of the Mosses of the Interior Highlands." Paul L. Redfearn
- "Correlations between Vegetation and Soil Factors in the Slymore District, Ozark National Forest, Stone County, Arkansas." Thomas L. Foti
- "The Fresh-Water Algae of Arkansas. I. Introduction and Recent Additions." Richard L. Meyer
- "A Study of the Herbaceous Vascular Plants from Selected Sites in Faulkner County, Arkansas." Sara Miles Barnett
- "Fossil Phylloxerid Plant Galls from the Lower Eocene." Eugene B. Wittlake
- "Dardanelle Reservoir Illinois Bayou Embayment Background Survey." Clarence B. Sinclair
- "Cattle Poisoning Related to the Blue-Green Alga *Polycystis aeruginosa* Kutz." Richard L. Meyer, John F. Brown, and Robert A. Gearheart
- "The South Arkansas Arboretum at El Dorado." Dwight M. Moore

CHEMISTRY SECTION

CHAIRMAN: Donald E. Gwynn

ORGANIC SESSION—Presiding: T. D. Roberts

- "The Hoffman-Woodward Rule and the Selective Reduction of Conjugated Dienes by Diimide." Samuel Siegel, Robert Fisher, and James Ray Cozort

Discussion of Paper.

- "On the Preparation and Properties of Some 1,1'-Diphenyl-*syn,trans*-Truxane Derivatives." Frank Setliff

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"A Kinetic Study of the Acid-Catalyzed Nitrogen-15 Exchange Between Substituted Benzamides and Ammonia." Charles Everly and Arthur Fry

Discussion of Paper.

"Studies on the Carbon-Hydrogen Insertion Reaction of Divalent Carbon Intermediates." Jerry D. Collins and Donald E. Gwynn

Discussion of Paper.

"A Carbon-14 Kinetic Isotope Effect Study of the Mechanism of the Oxidation of p-Substituted Acetophenones with m-Chloroperbenzoic Acid." Billy Palmer and Arthur Fry

Discussion of Paper.

"Total Synthesis of Hinokiol." Anthony W. McCollum and Walter L. Meyer

Discussion of Paper.

Chemistry Section Meeting

GENERAL SESSION—Presiding: Dale A. Johnson

"Subsite Mapping of Enzyme." Charles Brothers and John A. Thoma

Discussion of Paper.

"The Structures and Properties of $P_4S_3I_2$." Gary Hunt and A. W. Cordes

Discussion of Paper.

"Photochemical Nitro-nitrito Linkage Isomerization in Co(III) Complexes." Dale A. Johnson and Walter H. Delphin

Discussion of Paper.

"Lysozyme Catalysis." G. V. K. Rao and John A. Thoma

Discussion of Paper.

"Variation of the Strontium Isotope Ratios in the Atmosphere and Their Application in Tracer Studies." Wilson W. Cooper and P. K. Kuroda

Discussion of Paper.

"Determination of Sulfhydryl in Proteins Using an Ion Sensitive Electrode." Wilbur W. Everett and Leon Johnson

Discussion of Paper.

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GEOLOGY SECTION

CHAIRMAN: Orville A. Wise

"Biostratigraphy of the Morrow Group." J. H. Quinn

"Biostratigraphy of Peccary Cave." L. C. Davis

"Origin of Continental Granitic Crust—An Hypothesis." K. C. Jackson

"Facies Complexes in the Marble Falls Formation of Central Texas." D. L. Zachery

"Middle Archaic—Complex in N.W. Arkansas." M. A. Beckmon

"Water Resources of Arkansas." S. Keith Jackson

"Engineering Geology—Foundation Design, Excavation and Treatment of Concrete Dam Structures." Robert A. Anderson

Business Meeting

MATHEMATICS SECTION

CHAIRMAN: William R. Orton

"An Exact Test for Simple Correlation in Analysis of Dispersion." James E. Dunn

"Semi Groups." Mrs. Barbara Alexander

"The P-adics." William Coker

"Near-rings." Kathleen Stell

Business Meeting

PHYSICS SECTION

CHAIRMAN: Glenn T. Clayton

Joint Meeting with Arkansas-Oklahoma-Kansas Section of American Association of Physics Teachers.

"Computer Assisted Instruction." Guenter Schwarz

"The Introductory Laboratory." Robert B. Bennett

Coffee Break

"The Making of Short, 4 minute, Cartridged Films for Teaching" Guenter Schwarz

"Education and Manpower of the American Institute of Physics and the Society of Physics Students." Cecil G. Shugart

Business Meeting of AOK AAPT.

"Molecular Photo Dissociation." Charles J. Broncho

"A Distribution of Photo Electrons Above A Metallic Surface When Irradiated by Black Body Radiation." Hal E. McCloud

"Pulsed Magnetic Resonance in Cesium Fluoride." Darrell Hutchins

"What is Statistical Mechanics?" Arthur Hobson

"An Application of the Curie Principle to the Coupling Between Mass Transport and Chemical Reaction in an Open System." O. C. Mikulecky

"Optical-Ionization Excitation Functions of Mercury and Cadmium by Electron Impact." R. J. Anderson, J. Rowe, and J. Hester

"Production of H-Atoms in the 3s State by Fast Ground State H-Atom Impact." A. Filippelli and H. Petefish

Business Meeting