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ARKANSAS ACADEMY OF SCIENCE

Thirty-Eighth Annual Meeting

University of Arkansas, Fayetteville

April 23-24, 1954

Friday, April 23

- 9:00 a.m. Registration
- 11:00 a.m. Meeting Called to Order, Dr. Z. V. Harvalik presiding. Welcoming address by Mayor Roy Scott of the City of Fayetteville, and Dr. Joe E. Covington, Acting President, University of Arkansas
- 12:30 p.m. Luncheon: Student Union
Address: Philosophy and Science, Dr. Harold D. Hantz, Chairman, Department of Philosophy, University of Arkansas
- 2:00 p.m. *Sectional Meetings: Agriculture, Biology, Chemistry, Geography, Geology, History and Government, Physics, Psychology, Mathematics, Medicine and Pharmacy, Sociology and Anthropology
- 2:15 p.m. Tour and Tea for Wives
- 4:00 p.m. -5:30 p.m. Open House
- 6:00 p.m. Dinner: Washington Hotel
- 7:00 p.m. Annual Public Lecture: Film, The Story of Mount Palomar, with comments by Dr. Bernard H. Gundlach, Mathematics Department, University of Arkansas.
- 8:30 p.m. -10:00 p.m. Science Fair
- 8:30 p.m. Film Short Subjects: Glass for Science
The Development of Entomology

Saturday, April 24

- 8:30 a.m. Coffee and Doughnuts
- 9:00 a.m. Joint Meeting, Senior and Junior Academies of Science
- 10:30 a.m. Second Business Meeting: Treasurer's Report
Report of Committees
Election of Officers
Adjournment
- 10:30 a.m. Modern Dance Preview (for wives)
- 12:00 m. Informal Luncheon: Student Union
- 1:30 p.m. Field Trip to Martin's Bluff on White River, arranged by Dr. Dwight Moore
- 1:30 p.m. Participation in Agri Day

* SECTIONAL PROGRAM

Agriculture Section

Chairman: J. L. Lancaster, University of Arkansas

- A-1-1 Relative Biological Value of the Proteins in Cereal Grains, Buckwheat, and Grain Sorghums. Barnett Sure, University of Arkansas.
- A-2-2 A Cladosporium Leaf Blight of Oats Apparently New to Science. H. R. Rosen, University of Arkansas.
- A-3-3 Modification of the Environment as a Factor in the Control of Cotton Diseases. V. H. Young, University of Arkansas.
- A-4-4 Methods for Estimating the Clay Mineral Content of Certain Arkansas Soils. C. E. Lee and C. L. Garey, University of Arkansas.
- A-5-5 Cowpea and Bean Weevils. W. D. Wylie, University of Arkansas.
- A-6-6 Measurement of Cation Exchange Between Soil Colloids and Plant Roots. D. A. Brown and J. C. Noggle, University of Arkansas.

- A-7-7 Cationic Activities and the Exchange Phenomena of Plant Roots; Relationship to Practical Problems of Nutrient Uptake. E. O. McLean, D. Adams, and F. E. Baker, University of Arkansas.
- A-8-8 The Quality of Water from the Arkansas River for Irrigation Purposes. Cecil Blackwell, University of Arkansas.
- A-9-9 The Control of White Tip of Rice by Seed Treatments. G. E. Templeton and E. M. Cralley, University of Arkansas.
- A-10-10 The House Fly Problem. J. L. Lancaster, University of Arkansas.

BIOLOGY SECTION

Chairman: Robert S. Fairchild, University of Arkansas

- B-1-11 Notes on Arkansas Amphibians and Reptiles. Herndon G. Dowling, University of Arkansas.
- B-2-12 Laboratory or Busywork? Albert Robinson, Jr., Arkansas State College.
- B-3-13 A Description of the Larvae of the Salamander *Ambystoma Annulatum*. Robert S. Chase, Jr., University of Arkansas.
- B-4-14 Preliminary Studies of the Rotifer Genus *Asplanchna*. Jack E. Atkins and Carl E. Hoffman, University of Arkansas.
- B-5-15 Observations on *Anemone* in Arkansas. Dwight M. Moore, University of Arkansas.
- B-6-16 Cytological Observations on Protaminobacter. Nelia Leurs, University of Arkansas.
- B-7-17 Physiological Studies on Slime Mold Plasmodia, George T. Johnson, University of Arkansas.
- B-8-18 Preliminary Report on Investigations of "Maternal Effects" in the growth of Hybrid Corn Embryos. Robert S. Fairchild, University of Arkansas.
- B-9-19 Evolution in the Western North American Cleomoideae. Hugh H. Iltis, University of Arkansas.
- B-10-20 The Vegetation of the White River Basin to be Affected by the Table Rock Dam and Reservoir. Dwight M. Moore, University of Arkansas.
- B-11-21 An Ecological Study of the Massard Prairie. Ruth Armstrong, Fort Smith Junior High School.
- B-12-22 An Annual Temperature Study of Five Northwest Arkansas Lakes. Carl E. Hoffman, Andrew Hulsey, Charles Nelson, Bobby Owen, and Buford Tatum, University of Arkansas.
- B-13-23 Some Chemical Changes Resulting from Industrial Waste Disposal in the Ouachita River. Carl E. Hoffman, University of Arkansas.
- B-14-24 A Study of the Cotton Rat in Northwestern Arkansas. John A. Sealander, Jr., University of Arkansas, and Barry Q. Walter, University of Arkansas and Western Reserve University.

CHEMISTRY SECTION

Chairman: Joseph E. Pryor, Harding College

- C-1-25 Partial Vapor Pressures and Classical Acid Constant of Hydrogen Chloride. C. W. McCarty, Ouachita College.
- C-2-26 The Possibility of Weak Alpha Branching in Radium D. B. R. Miccioli, R. R. Edwards, B. L. Robinson, and R. W. Fink, University of Arkansas.
- C-3-27 Large Carbon-Ring Compounds. L. I. Duiguid, Du-Good Chemical Laboratory, St. Louis.
- C-4-28 A Possible Role of Radioactivity in Petroleum Genesis. R. R. Edwards and P. K. Kuroda, University of Arkansas.
- C-5-29 Algebraic Relations for Property-Composition Curves of Binary Mixtures. Louis Frank, Philander Smith College.
- C-6-30 A Product Study of the Distribution of C^{14} Produced During Neutron Irradiation of Sodium Cyanide. Arthur Fry, University of Arkansas.

- C-7-31 Phase Equilibrium in the 1-Butene-Water System and Correlation of Hydrocarbon-Water Solubility Data. T. W. Leland, University of Arkansas.
- C-8-32 The Reaction of Triphenylsilane with Organolithium Compounds. H. W. Melvin, Arkansas A. M. and N. College.
- C-9-33 Radium Isotopes in Uranium Minerals. P. K. Kuroda and R. R. Edwards, University of Arkansas.
- C-10-34 Elementary Chemical Calculations. E. S. Amis, University of Arkansas.

GEOGRAPHY SECTION

Chairman: C. M. Strack, Henderson State Teachers College

- G-1-35 The use of Sales Tax Statistics in the Study of Economic Geography. William R. Brueckheimer, Southern State College.
- G-2-36 Geography of Arkansas: A Resource Unit. Clarence S. Williams, Arkansas State Teachers College.
- G-3-37 Urban Land Classification. Eric S. Lane, University of Arkansas.
- G-4-38 Delimitation and Analysis of the Little Rock Central Business District. James E. Vance, University of Arkansas.
- G-5-39 Spatial Associations of the 1948, 1952 Presidential Vote. C. M. Strack, Henderson State Teachers College.

GEOLOGY SECTION

Chairman: Kern C. Jackson, University of Arkansas

- G1-1-40 The Stratigraphy of the Monticello Ridge. Frank E. Onellion, University of Arkansas.
- G1-2-41 A Heavy-Mineral Study of the Latest Cretaceous and Earliest Tertiary Formations of Central Utah. Kwang-yuan Lee, University of Arkansas.
- G1-3-42 Carbonate Fillings in Solution Cavities of Pre-Atoka Age. Kern C. Jackson and James E. Case, University of Arkansas.
- G1-4-43 Stratigraphy of the Hale Formation in Madison, Newton, Boone, and Carroll Counties, Arkansas. Douglas Scougale, University of Arkansas.
- G1-5-44 The Establishment of the Presence of the Miocene on Crowley's Ridge, St. Francis County, Arkansas. Ellis Doyle Herron, University of Arkansas.
- G1-6-45 The Petrogenetic Significance of Quartz Twins. Kern C. Jackson, University of Arkansas.

HISTORY AND GOVERNMENT SECTION

Chairman: F. M. Bridge, University of Arkansas

- H-1-46 The *Cientificos* and the Collapse of the Diaz Regime: A Study of the Origins of Mexican Revolutionary Sentiment, 1903-1910, Walter N. Breyman, Southern State College.
- H-2-47 An Exceptional Decision: The Trial of Professor Richard T. Ely by the Board of Regents of the University of Wisconsin, 1894, Stanley R. Rolnick, Southern State College.
- H-3-48 The Idea of Progress in Recent Philosophy of History, Georg G. Iggers, Philander Smith College.
- H-4-49 Relationship of Planning and Zoning in the Arkansas Zoning Cases. Nathalie Georgia, University of Arkansas.
- H-5-50 The Know Nothings. Charles G. Hamilton, College of the Ozarks.

MATHEMATICS SECTION

Chairman: N. A. Goldsmith, Henderson State Teachers College

- M-1-51 Derivation and Integration of Functions of Intervals, William S. Orton, University of Arkansas.
- M-2-52 On Estimates of Error in Numerical Integration, Dorothy M. Hoover, University of Arkansas.

- M-3-53 A Newcomer's Views on the Teaching of Elementary College Mathematics, Lowell R. Tappan, University of Arkansas.
- M-4-54 Let's Give Them What They Need. T. M. Simpson, Henderson State Teachers College.
- M-5-55 A Report on the Summer Conference on Collegiate Mathematics, Lyle J. Dixon, Arkansas State College.

MEDICINE AND PHARMACY SECTION

Chairman: Dr. Jacob Sacks, University of Arkansas

- MD-1-56 The Problem of Common Fungus Infections. Dr. Calvin J. Dillaha, Little Rock.
- MD-2-57 Studies on the Metabolism of Chick Bone Marrow, Dr. James S. Dinning, University of Arkansas School of Medicine.
- MD-3-58 A Study of Eclampsia With an Appraisal of the Current Therapy. Dr. Donald E. Barlow, University of Arkansas School of Medicine.
- MD-4-59 The Preparation of Cell-free Enzymes from the Photosynthetic Bacterium *Rhodospseudomonas Gelatinosa*. Arthur A. Smith and Dr. Jack M. Siegel, University of Arkansas School of Medicine.
- MD-5-60 Energy Requirement in Bacterial Photosynthesis. Dr. Jack M. Siegel, University of Arkansas School of Medicine.

PHYSICS SECTION

Chairman: J. Robbins, Hendrix College

- P-1-61 The Electret, an Electrical Analogy to the Permanent Magnet, C. E. Jones, University of Arkansas.
- P-2-62 Applications of Atmospheric Radioactivity to Meteorological Problems, Paul E. Damon, University of Arkansas.
- P-3-63 The Design and Use of a Cosmic Ray Telescope, C. C. Allen, University of Arkansas.
- P-4-64 A New Condenser Method for Determining Amplitudes of Light Diaphragmatic Materials. Lloyd B. Ham, University of Arkansas.
- P-5-65 Reflectivity of Metal Films Deposited at Various Low Pressures. Zabo J. V. Harvalik, University of Arkansas.

PSYCHOLOGY SECTION

Chairman: Merrell E. Thompson, University of Arkansas

- PS-1-66 Reminiscence as a Joint Function of Directions and Distribution of Practice. Merrell E. Thompson, University of Arkansas.
- PS-2-67 The Effect of Time of Exposure to an Anxiety-Arousing Conditioned Stimulus, Robert S. Hicks, University of Arkansas.
- PS-3-68 The Medical College Admissions Test Score as a Criterion for Admission to Medical School. Edmond F. Erwin, University of Arkansas.
- PS-4-69 Directed Attention in Rote Serial Learning. Frank P. Gatling, University of Arkansas.

SOCIOLOGY AND ANTHROPOLOGY SECTION

Chairman: Fred W. Voget, University of Arkansas

- S-1-70 Patients in Arkansas State Hospital From Two Arkansas Counties. Leta Adler, University of Arkansas.
- S-2-71 Male Sex Behavior at a Southern University. L. R. Floerchinger, University of Arkansas.
- S-3-72 Land Tenure Process in the Arkansas Coastal Plain. J. L. Charlton, University of Arkansas.
- S-4-73 The American Indian in Transition. F. W. Voget, University of Arkansas.