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39th Annual Meeting, 1955. Program

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ARKANSAS ACADEMY OF SCIENCE

Thirty-Ninth Annual Meeting
Harding College, Searcy, Arkansas
April 22-23, 1955

Friday, April 22

- 8:00 a.m. Registration.
- 10:30 a.m. First Business Meeting, Miss Ruth Armstrong presiding. Welcoming address by L. C. Sears, Dean of Harding College. Committee reports, etc.
- 12:15 p.m. Luncheon, Mayfair Hotel Coffee Shop.
- 2:00 p.m. Sectional Meetings: Biology, Chemistry, Geography, Geology, History and Government, Mathematics, Medicine, Physics, Sociology.
Junior Academy Exhibits.
- 3:30 p.m. Tour and Tea for Wives. Tea at the home of Dr. and Mrs. Joe Pryor.
- 4:00 p.m. Open House.
- 6:00 p.m. Dinner: Robertson's Rendevous, Miss Ruth Armstrong Presiding. Presentation of Science Fair Awards by H. G. Dowling.
- 7:00 p.m. Annual Public Lecture: "The Forward Look in Science Education," by Bowen C. Dees, Program Director for Fellowships, National Science Foundation, Washington, D. C.
- 8:00 p.m. Organizational Meeting of the Arkansas Science Teachers Association.
The Bartered Bride, an opera by Smetana, presented by the Harding Music Department in cooperation with the Speech and Dramatic Department.
- 8:30 p.m. Junior Academy Exhibits.
Science Movies.

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Saturday, April 23

- 8:30 a.m. Coffee and Doughnuts: Emerald Room of Ganus Student Center.
- 9:00 a.m. Joint Meeting of Senior and Junior Academies of Science. Selected papers from the National Science Talent Search.
- 10:30 a.m. Second Business Meeting. Committee reports, election of officers, treasurer's report, location of next year's meeting, installation of officers, adjournment by new president.
- 12:15 p.m. Informal Luncheon. College Cafeteria.
- 1:30 p.m. Field Trip arranged by Dr. Dwight Moore.

SECTIONAL PROGRAM

Biology

Chairman: W. W. Nedrow, Arkansas State College

- B-1-1 A Plastic Mounting Technique for Herbaria. Albert Robinson, Arkansas State College.
- B-2-2 Mass Increase During Photosynthesis. E. A. Spessard, Hendrix College.
- B-3-3 Photoelectrons in Photosynthesis. Louis Gal- loway, Hendrix College.
- B-4-4 Notes on Selected Mississippi Plants. G. T. Johnson, University of Arkansas.
- B-5-5 Spinach Aphid Control by Ladybird Beetles. James E. Roberts, University of Arkansas.
- B-6-6 Botanical Illustration Through the Ages. H. H. Iltis, University of Arkansas.
- B-7-7 A Scheme of General Classification in the Phylum Chordata. Paul R. Harding, Jr., Hendrix College.
- B-8-8 Evidence of Seasonal Change in the Bacterial Flora of Southern Soils. Peter H. Matischeck, University of Arkansas.

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- B-9-9 Sixteen species of Reptiles from the Harding Farm, Hobo Island Area. Mary Burton Dunlap, Harding College.

Chemistry

Chairman: E. A. Provine, Ouachita Baptist College

- C-1-10 Recent Developments in High Energy Nuclear Reactions. Richard W. Fink, University of Arkansas.
- C-2-11 An Investigation of the Decay Scheme of Cr⁵¹. George W. Warren, University of Arkansas.
- C-3-12 The Polar Properties of the Solvent and the Conductance of Electrolytes at Infinite Dilution. Edward S. Amis, University of Arkansas.
- C-4-13 Ion Pair Formation in Low Dielectric Constant Solvents. P. H. Flaherty and K. H. Stern, University of Arkansas.
- C-5-14 Assaying of Some Arkansas Oil Shales. John H. Foreman, University of Arkansas.
- C-6-15 The Synthesis and Rearrangement of 2, 2-diphenylcyclopropylidiphenylcarbinol. F.M. Hornyak and H. M. Walborsky, University of Arkansas.
- C-7-16 Differential Thermal Analysis of Perchlorates and Chlorates. Rommy Rodgers, Marvin T. Edminson, and Aubrey E. Harvey, University of Arkansas.
- C-8-17 Fused Salt Electromotive Force Cells. Kurt Stern, University of Arkansas.

Geography

Chairman: O. Orland Maxfield, University of Arkansas

- G-1-18 The Establishment and Use of Determinative Criteria in Transportation Geography. James E. Vance, Jr., University of Arkansas.

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- G - 2-19 Plant Geography of Mexico. Albert Robinson, Jr., Arkansas State College.
- G - 3-20 The Nature of Southern Regionalism. O. Orland Maxfield, University of Arkansas.
- G - 4-21 Geography of the South as a Course. Group Discussion.

Geology

Chairman: Harlan B. Counts
Division of Water Supply, Little Rock

- G1-1-22 A Method of Study of Regional Seismicity. James E. Case, Lamar State College. (Read by K. C. Jackson.)
- G1-2-23 Studies of Artificial Recharge in the Grand Prairie Region, Arkansas. R.T. Sniegocki, U. S. Geological Survey, Little Rock, Ark.
- G1-3-24 Hydrologic Studies Aid in Control of Sand Flows in Bauxite Mines of Arkansas, Roy W. Ryling, U. S. Geological Survey, Little Rock, Ark.
- G1-4-25 A Heavy Mineral Study of the Hartshorne Sandstone in the Arkansas Valley. C. F. Piles and J. E. Sherman, University of Arkansas.
- G1-5-26 Heavy Mineral Study of the Atoka Formation from the Hamm Well Section 25 T9N R29W. F. B. Connelly, University of Arkansas.
- G1-6-27 An Integrated Curriculum in Earth Material. Kern C. Jackson, University of Arkansas.

History and Government

Chairman: G. G. Iggers, Philander Smith College

- HG-1-28 Mississippi Politics During the Progressive Period. Charles G. Hamilton, College of the Ozarks.
- HG-2-29 Russo-German Negotiations Leading to the Second World War. Richard F. Staar, Harding College.

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- HG-3-30 Wehrwirtschaft: An Aspect of Nazi Economic Theory. Amos E. Simpson, University of Arkansas.
- HG-4-31 St. John de Crevecoeur as a Diplomat, 1783-1790. James J. Hudson, University of Arkansas.
- HG-5-32 Segregation in Buses. M.M. Grossack, Philander Smith College.

Mathematics

Chairman: Lyle J. Dixon, Arkansas State College

- Ma-1-33 A Lesson from the History of Mathematics. B. H. Gundlach, University of Arkansas.
- Ma-2-34 A Theorem on Powers of Functions. John Stallings, University of Arkansas.
- Ma-3-35 What Can We Do for Our Good Students? Discussion led by H. Shniad, University of Arkansas.

Medicine

Chairman: Jacob Sacks, University of Arkansas

- Me-1-36 Nutritional Aspects of Use of Artificial Non-Nutritive Sweeteners in Foods and Beverages. Paul L. Day, University of Arkansas School of Medicine.
- Me-2-37 The Uptake of Iron-59 by Erythrocytes and Bone-Marrow of the Pigeon. Horace N. Marvin and I. Meschan. University of Arkansas School of Medicine.
- Me-3-38 Absorption Droplets in the Renal Tubules of the Fish. O.C. Jaffee, University of Arkansas School of Medicine.
- Me-4-39 Experimental Studies on the Prevention of Post-Operative Adhesions. James Langdon, University of Arkansas School of Medicine.
- Me-5-40 Ectopic Pregnancy. J.O. Porter, University of Arkansas School of Medicine.

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- Me-6-41 The Respiratory and Circulatory Effects of 6-Chloroquinoxaline Methiodode. Joe Bates, Lloyd D. Seager, and Carl T. Bahner, University of Arkansas School of Medicine.
- Me-7-42 The Pyrogenic and Respiratory Effects of Dicumarol in Experimental Animals. Max Cheney and Lloyd D. Seager, University of Arkansas School of Medicine.
- Me-8-43 Sodium Salts and Acid-Base Balance in Edema. Samuel A. Corson and Elizabeth O'Leary Corson, University of Arkansas, School of Medicine.

Physics

Chairman: L. B. Ham, University of Arkansas

- P-1-44 Effects of Mercury Switches in Condenser Discharge Circuits. H.M. Dumas, Jr., and Leo Paladino, University of Arkansas.
- P-2-45 Measurement of Gas Evolution in Vacuum by a Dynamic Method. Brian Miller, University of Arkansas.
- P-3-46 Direct Determination of Thermal Diffusivity Using Radial Unsteady Flow in a Ring-Shaped Specimen. R. C. McMillan, University of Arkansas.
- P-4-47 Methods of Working Physics Problems. Ronald A. McGee, Southern State College.
- P-5-48 The Ratio of L-Capture to K-Capture in Radioactive Decay. Berol L. Robinson and Richard W. Fink, University of Arkansas.
- P-6-49 Nuclear Isomersism in Tl^{204} . M. K. Rama-Swamy, University of Arkansas.
- P-7-50 Scintillation Spectrometer Studies of the Gamma-Radiation of Ba^{131} . William C. Beggs, University of Arkansas.
- P-8-51 Photographic Recording of Fast Events. The Use of Eastman Kodak's Tri-X Film with the Oscilloscope and the Electron Microscope. Ruth P. Rhoades, University of Arkansas.

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- P-9-52 Specular and Diffuse Reflection of Films Deposited in Vacuum. Z. V. Harvalik, University of Arkansas.
- P-10-53 The Production of High Energy Photons by Photon-Electron Collision. John S. Moore, Jr., Pangburn High School.

Sociology

Chairman: Fred Voget, University of Arkansas

- S-1-54 Social Participation: An Index of Interaction. Robert G. Schmidt, Southern State College.
- S-2-55 Arkansas Agricultural and Mechanical College's General Education Study. George S. Reuter, Jr., Arkansas A. & M. College.
- S-3-56 Relationship of Fossil Races to Living Man. J. L. Stone, Arkansas A. & M. College.
- S-4-57 The Sociology of Reconstruction. John E. Steely, Southern Baptist College.
- S-5-58 An Attempted Validation of the Strong Vocational Interest Test for Women. Donald Stewart, University of Arkansas.