

1952

## 35th Annual Meeting, 1951. Program

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ARKANSAS ACADEMY OF SCIENCE

THIRTY-FIFTH ANNUAL MEETING

University of Arkansas, Fayetteville

April 27-28, 1951

FRIDAY MORNING, APRIL 27

- 10:00 Registration
- 10:30 Meeting Called to Order. Welcome by the President of the Academy. Welcome by the Honorable Powell Rhea, Mayor of Fayetteville
- 10:40 First Business Meeting
- 11:15 Address: The Mascope -- A New Analytical Instrument, W. H. Bennett, University of Arkansas.

FRIDAY NOON, APRIL 27

- 12:15 Luncheon

FRIDAY AFTERNOON, APRIL 27

- 1:00 Address: Science in the Service of the People, Lewis Webster Jones, President, University of Arkansas.
- 2:00 Sectional Meetings. Biology, Chemistry, Geology, Physics, Psychology, Economics, History, Political Sciences, Mathematics, Sociology and Science Education Divisions.

FRIDAY EVENING, APRIL 27

- 6:15 Dinner
- 8:00 Address: Art as Education in Freedom, Irwin Edman, Columbia University. (Joint meeting with Regional Art Conference.)

FRIDAY AFTERNOON, 2:00 P.M.

SECTIONAL PROGRAM

BIOLOGY SECTION

Chairman: E. A. Spessard, Hendrix College

- B-1-1 Virus Diseases in Arkansas Strawberries, J. P. Fulton, University of Arkansas.
- B-2-2 The Larval Stages of the Milliped *Brachycybe Lecontei* (Wood) (Polyzoniidae: Colobognatha), R. Stewart, University of Arkansas.
- B-3-3 A Check List of the Milliped of Arkansas, N. B. Causey, University of Arkansas.
- B-4-4 New Additions to the Flora of Arkansas, L. G. K. Carr, Hendrix College.
- B-5-5 Nuclear Phenomena and the Formation of Motor Organelles During Mitotic Division in the Englenoid Flagellates, J. H. Fribourgh, Little Rock Junior College.
- B-6-6 Poisonous Plants in Arkansas, D. M. Moore, University of Arkansas.
- B-7-7 A Study of the Plankton of Lake Fort Smith, Arkansas, C. E. Hoffman, University of Arkansas.
- B-8-8 Physiology of Leaf Abscission, J. M. Jackson, University of Arkansas.
- B-9-9 Breeding Cereal Crops for the Control of Diseases, H. R. Rosen, University of Arkansas.
- B-10-10 Effect of Different Ionic Ratios of Nutrients on the Growth Response of Young Cotton Plants, F. W. Snyder, University of Arkansas.

CHEMISTRY SECTION

Chairman: T. E. McEver, Arkansas Polytechnic College

- C-1-11 A Preliminary Report on the Spectrophotometric Determination of Magnesium with Eriochrome Black T, G. M. Wyatt, A. E. Harvey, University of Arkansas.
- C-2-12 Some Raw Materials that Might Support Arkansas Industries, M. E. Barker, University of Arkansas.
- C-3-13 The Preparation of Various Types of Sericea Paper Pulp, J. Byrd, University of Arkansas.
- C-4-14 Wallboard: How It Is Made from Arkansas Raw Materials, S. Griffith, University of Arkansas.
- C-5-15 Conversion of Sericea Pulp into Chemical Derivatives, J. DePagter, University of Arkansas.
- C-6-16 Heat Transfer to Boiling Liquids, C. M. Gamel, University of Arkansas.
- C-7-17 Co-Separation of Sulphate Ion with Barium Chromate, M. Dworshak, College of the Ozarks.
- C-8-18 Investigation of the Dropping Mercury Electrodes for Alkali Determination, W. J. Smothers, University of Arkansas.
- C-9-19 Flotation of Graphite from Arkansas Ores, Z. V. Harvalik, University of Arkansas.
- C-10-20 A Laboratory Experiment in the Determination of Formal Oxidation Potentials, D. L. Manning, A. E. Harvey, University of Arkansas.

ECONOMICS SECTION

Chairman: E. C. Harvey, University of Arkansas

- E-1-21 Methods and Problems in the Measurement of Economic Change in States, R. M. Soldofsky, University of Arkansas.
  - E-2-22 The Construction of a Balance of Payments for an Intranational Region, V. Q. Alvis, University of Arkansas.
  - E-3-23 Financing the Development of Industry in Arkansas, A. P. Thompson, University of Arkansas.
  - E-4-24 The Contribution of Automobile Travelers in the Arkansas Tourist Industry, E. C. Harvey, University of Arkansas.
- Meeting of the Society of Arkansas College Teachers of Economics and Business.

GEOLOGY SECTION

Chairman: R. C. Baker, U. S. G. S., Little Rock

- G-1-25 Fault System of the Curry Field, J. O. Staggs, U. S. G. S.
- G-2-26 Rapid Density Determination of Powdered Minerals and Ceramic Materials, T. Dziemianowicz, University of Arkansas.
- G-3-27 Detailed Stratigraphy at Norfork Dam, Baxter County, Arkansas, R. E. Whitla, Corps of Engineers.
- G-4-28 Pennsylvanian Stratigraphy of Johnson County, Arkansas, M. E. Hopkins, University of Arkansas.
- G-5-29 Structural Control of Topography as Exemplified Along Pine Creek, Southeastern Benton County, Arkansas, J. M. Graves, University of Arkansas.
- G-6-30 Areal Distribution of Surface Radio Activity in the Potash Sulphur Springs Complex, Garland County, Arkansas, R. H. Arndt, P. E. Damon, R. B. Stroud, University of Arkansas.
- G-7-31 Reinterpretation of Structure and Stratigraphy of the Sedimentary Rocks Surrounding the Potash Sulphur Springs Complex, Garland County, Arkansas, W. G. Pittman, University of Arkansas.
- G-8-32 Geologic Guide to Prospecting for Radio Active Materials in Arkansas, R. H. Arndt, University of Arkansas.
- G-9-33 Mineralogy of a Uranium-Bearing Rock from Potash Sulphur Springs, Garland County, Arkansas, J. W. Baxter, University of Arkansas.

## PROGRAM

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## HISTORY AND POLITICAL SCIENCES SECTION

Chairman: R. Hostetter, University of Arkansas

- HP-1-34 The Planning Agency in State Governments, W. S. Bonner, University of Arkansas.
- HP-2-35 The Separation of Powers Revisited--Its Impact on Administrative Law, R. Parker, University of Arkansas.
- HP-3-36 World Leadership by Indirection--A Tentative Estimate of Some Sources of America's Present Position in World Affairs, R. G. Jones, University of Arkansas.
- HP-4-37 The Establishment of a Dictatorship in Florence, Italy in 1342, M. B. Becker, University of Arkansas.
- HP-5-38 Europe and the Peace, B. C. Shafer, University of Arkansas.  
Discussion of Papers.

## MATHEMATICS SECTION

Chairman: D. P. Richardson, University of Arkansas

- M-1-39 A Note on two Quadratics, D. M. Seward, Ouachita College.
- M-2-40 Measure Preserving Transformations in the Tensor and Spinor Calculus, G. S. Hewitt, University of Arkansas.
- M-3-41 What Is a Riemannian Manifold?, F. Griffin, Philander Smith College.
- M-4-42 On the Pendulum Problem, S. L. Hull, University of Arkansas.
- M-5-43 An Inversion Problem in Scattering Theory, H. M. Schwartz, University of Arkansas.
- M-6-44 Probability Distribution Functions Arising from Weighted Sums, H. Shniad, University of Arkansas.
- M-7-45 Grades and Statistics, R. V. Simpson, University of Arkansas.
- M-8-46 Mathematics in General Education, J. R. Abernethy, Arkansas Polytechnic College.  
Discussion of General Papers.

## PHYSICS SECTION

Chairman: P. C. Sharrah, University of Arkansas

- P-1-47 X-ray Investigations of Arkansas Graphites, J. A. Doughty, University of Arkansas.
- P-2-48 Theory of the Electron, G. S. Hewitt, University of Arkansas.
- P-3-49 Design of Proposed Beta Spectrometer at the University of Arkansas, A. J. Saur, University of Arkansas.
- P-4-50 Development of a Proportional Counter Radio Activity Well-Logging Instrument, P. E. Damon, M. Wilkinson, P. Winters, University of Arkansas.
- P-5-51 Eliminating Cook-Book Procedures in General Physics Laboratory, O. C. Estes, Henderson State Teachers College.
- P-6-52 Loop Line Windowless Flow Geiger Counter, P. E. Damon, University of Arkansas.
- P-7-53 Argon-Tetramethyl-Lead-Methane Proportional and Geiger Counters, P. E. Damon, R. F. Overman, University of Arkansas.  
Discussion of Papers.

## PSYCHOLOGY SECTION

Chairman: M. E. Thompson, University of Arkansas

- Ps-1-55 50% Versus 100% Punishment in the Modification of Position Habits, J. P. Crumpler, University of Arkansas.
- Ps-2-56 Can Stimulus-Response Learning Theory Explain Abnormal Fixations, H. C. Wilcoxon, University of Arkansas.
- Ps-3-57 Techniques for Reducing Skewness, R. H. Burros, University of Arkansas.
- Ps-4-58 Flight of Colors from a Monochromatic Light, J. L. Fletcher, University of Arkansas.

- Ps-5-59 A Nonintellectual Personality Inventory Scale for the Prediction of College Achievement, C. N. Cassidy, University of Arkansas.
- Ps-6-60 Reaction Time in Word Associations, H. W. Sageser, College of the Ozarks.  
Discussion of General Papers.

SOCIOLOGY SECTION

Chairman: T. C. Cothran, A., M. & N. College

- S-1-61 The Place of the Sociologist in a Rural Health Program, H. Robinson, University of Arkansas.
- S-2-62 UNESCO: Its Program and Significance, J. L. Stone, A., M. & N. College.
- S-3-63 Manifest and Latent Function in the Theory of Malinowski, M. J. Daniels, Arkansas Polytechnic College.
- S-4-64 Negro-White Differential Marital Fertility, M. A. Lawson, Philander Smith College.
- S-5-65 The State: A Sociological or Juridical Entity, R. Parker, University of Arkansas.  
Discussion of Papers.

SCIENCE EDUCATION SECTION

Chairman: B. H. Gundlach, University of Arkansas

- SE-1-66 A Science Area Course in Action--A Report, E. Clairborne, College of the Ozarks.
- SE-2-67 Demonstration and Operation of a Continuous Cloud Chamber Built from Simple Equipment, P. B. Horton, University of Arkansas.
- SE-3-68 A Simple Laboratory Power Supply, C. Allen, University of Arkansas.
- SE-4-69 Demonstration Techniques with Home-Built Equipment, J. A. Doughty, University of Arkansas.
- SE-5-70 Chemistry as a Social Study and as a Disciplinary Subject, E. S. Amis, A. S. Humphreys, University of Arkansas.
- SE-6-71 Values to Be Instilled in Pupils of Secondary School Science, J. D. Henry, University of Arkansas.
- SE-7-72 General Education, the Teacher and the Community, D. P. Richardson, University of Arkansas.
- SE-8-73 Preliminary Report on a Pilot Course in Physical Sciences, (Applied Approach), Z. V. Harvalik, University of Arkansas.
- SE-9-74 Preliminary Report on a Pilot Course in Physical Sciences, (Philosophical Approach), B. H. Gundlach, University of Arkansas.  
Discussion on Organization of a Junior Academy of Science as Head Organization of Science Clubs in Arkansas.

SATURDAY MORNING, APRIL 28

- 8:45 Second Business Meeting. Treasurer's Report  
Report of Standing Committees  
Report of Special Committees  
Election of Officers  
Appointment of Committees  
Location of next year's meeting  
New business
- 9:30 Symposium. Resources of Arkansas.  
*Agriculture*, Dean L. S. Ellis, University of Arkansas.  
*Industrial*, W. W. Shepherd, Arkansas Power & Light Company.  
*Mineral Resources*, J. N. Payne, University of Arkansas.  
*Education*, C. F. Byrns, Southwestern American.  
*Research*, F. Soday, Lion Oil Company.  
*Social Resources*, H. S. Ashmore, Arkansas Gazette.
- 12:00 Arkansas Academy of Science, 35th Annual Meeting adjourned.

PROGRAM

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SATURDAY NOON, APRIL 28.

12:15 Informal luncheon

SATURDAY AFTERNOON, APRIL 28

1:30 Field trip to "the Narrows" of White River east of Springdale. Arranged by D. M. Moore, Professor of Botany, University of Arkansas.

1:30 Participation in Agri Day.

Officers of the Academy: President: R. H. Austin  
Vice-President: H. B. Foxhall  
Secretary: W. W. Grigorieff  
Treasurer: T. L. Smith  
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