

1953

## 36th Annual Meeting, 1952. Program

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ARKANSAS ACADEMY OF SCIENCE

THIRTY-SIXTH ANNUAL MEETING

Arkansas State College, Jonesboro

April 25-26, 1952

FRIDAY MORNING, APRIL 25

10:00 Registration

11:15 Meeting Called to Order. Welcome by the President of the Arkansas Academy of Science.

FRIDAY NOON, APRIL 25

12:45 Luncheon

1:15 Address: Dr. Carl Reng, President, Arkansas State College.

FRIDAY AFTERNOON, APRIL 25

2:00 Sectional Meetings. Biology, Chemistry, Mathematics, Physics, Science Education, Psychology, Geology, History, Sociology.

FRIDAY EVENING, APRIL 25

6:00 Dinner

7:00 Address: "Operation Infinity," Russell S. Poor, National Science Foundation, Washington, D. C.

SATURDAY MORNING, APRIL 26

8:45 Business Meeting. Treasurer's report. Report of standing committees and special committees. Election of officers. Appointment of committees.

9:30 Selected Papers from Science Talent Search and Arkansas Junior Academy of Science; Supervised by J. A. Doughty, University of Arkansas, and Miss Ruth Armstrong, Ft. Smith Junior High School.

12:00 Official Adjournment

12:15 Informal Luncheon

SATURDAY AFTERNOON, APRIL 26

1:30 Botany Field Trip. Arranged by Dr. Delzie Demaree and Dr. D. M. Moore.

SECTIONAL PROGRAM

BIOLOGY SECTION

Chairman: W. C. Munn, Southern State College

- B-1-1* The Comparative Amount of Chlorophylls and Other Pigments in Plants Grown with Various Mineral Deficiencies, Jean Rosser Williams, Arkansas State College.
- B-2-2* Cationic Activities and the Exchange Phenomena of Plant Roots: I. A preliminary Report, E. O. McLean and F. E. Baker, University of Arkansas.
- B-3-3* Ionic Exchange in Soils: I. Measurement of the Exchange Reaction by Means of Ion Exchange Membranes (Preliminary Report), D. A. Brown, University of Arkansas.
- B-4-4* Rediscovery of the Bigleaf Magnolia in Arkansas, D. M. Moore, University of Arkansas.
- B-5-5* Heterosis in Maize Embryos, R. S. Fairchild, University of Arkansas.
- B-6-6* Prairie Vegetation in Northwest Arkansas, E. S. Ruby, University of Arkansas.
- B-7-7* Hyaluronidase in Tissues of Normal and Tumor Experimental Animals, Louis R. Fina, University of Arkansas.
- B-8-8* Interference Between St. Louis Encephalitis Virus and Western Equine Encephalomyelitis Virus Along a Neuronal Pathway, Carl E. Duffy and Harry M. Meyer, Jr., University of Arkansas, School of Medicine. (By Title)

- B-9-9 Length of Gestation Period in Dairy Cattle, James L. Cason, University of Arkansas.
- B-10-10 The Nutritive Value of Certain Lespedeza Hays for Wintering Dairy Heifers, E. D. Moore, L. Ratcliff, and J. L. Cason, University of Arkansas.
- B-11-11 Motility of Spermatozoa and Control of Bacteria in Bovine Semen Extenders Containing Sulfanilimide, Aureomycin, Terramycin, Bacitracin, Penicillin, and Streptomycin, H. K. McCartney and O. T. Stallcup, University of Arkansas.
- B-12-12 Effectiveness of Implanted Bacitracin on the Growth of Suckling Pigs, D. L. Tucker, P. R. Noland, and E. L. Stephenson, University of Arkansas.
- B-13-13 On New Species and New Distribution Records of Millipeds, Nell B. Causey, University of Arkansas. (By Title)
- B-14-14 Effects of Certain Cotton Insecticides on the Mourning Dove (*Zenaidura macroura*), Howard Young, Andrew Hulsey, and Robert Moe, University of Arkansas. (By Title)
- B-15-15 Additional Records of Arkansas Earthworms, I; Additional Records of Isopoda in Arkansas, II; David Causey, University of Arkansas. (By Title)
- B-16-16 Comments on the Bacillariophyceae of North Central Arkansas, Albert Robinson, Jr., Viola High School. (By Title)
- B-17-17 On Arkansas Microdrili, David Causey, University of Arkansas. (By Title)
- B-18-18 Toxicity to Bull Spermatozoa of Terramycin Hydrochloride and Its Use as an Antibacterial Agent in Semen Extenders, O. T. Stallcup and H. K. McCartney, University of Arkansas. (By Title)

## CHEMISTRY SECTION

Chairman: Morton Dworshak, College of the Ozarks

- C-1-19 Pharmaceutical Chemistry, R. O. Bachmann, University of Arkansas.
- C-2-20 Some Derivatives of Styrene, William K. Noyce, University of Arkansas.
- C-3-21 Application of Glass Blowing to Scientific Research, W. J. Wheeler, University of Arkansas.
- C-4-22 How to Prepare Copy for the Illustrator, J. R. Gray, University of Arkansas. (By Title)
- C-5-23 Abnormal Surface Energies Exhibited by Atomized Sodium Chloride, E. D. Jones, D. S. Burgess, E. S. Amis, University of Arkansas.
- C-6-24 Review Paper on Some Aspects of High Intensity X-Ray Irradiation, M. D. Peterson, P. K. Wang, M. Dworshak, *et al.*, College of the Ozarks. (By Title)
- C-7-25 Ceramic Uses of Arkansas Nepheline Syenite, Harry Reynolds, University of Arkansas.
- C-8-26 Chicken Feathers as the Basis of a New Arkansas Industry, Art W. McCloy, University of Arkansas.
- C-9-27 The Effects of Pressure on Heat Transfer Through Fabrics and Quilted Material, William G. Roberts, University of Arkansas.
- C-10-28 Simultaneous Spectrophotometric Determination of Iron (III) and Iron (II) with Orthophenanthroline, John A. Smart and Aubrey E. Harvey, University of Arkansas.
- C-11-29 Undergraduate Inorganic Chemistry, Robert W. Rowden, University of Arkansas.

## GEOLOGY SECTION

Chairman: N. F. Williams, Arkansas Resources and Development Commission

- G-1-30 The Eocene Flora of Northern Crowley's Ridge, Arkansas, Ellis Doyle Herron, Arkansas State College.
- G-2-31 Geologic Problems in the Arkansas Coal Basin, Norman J. Payne, University of Arkansas. (By Title)
- G-3-32 Geology of Eastern Logan County, Fred H. Downs, University of Arkansas. (By Title)
- G-4-33 Insoluble Residues of the Kessler Limestone, Jack D. Mussett, University of Arkansas. (By Title)
- G-5-34 Recently-recognized Details of Geologic Structure at Hot Springs, Arkansas, Robert H. Arndt and Raymond B. Stroud, University of Arkansas.

- G-6-35 Surface Radioactivity in the Granite Mountain Area, Pulaski County, Arkansas, Eugene L. Jones, University of Arkansas. (By Title)
- G-7-36 Distribution of Radioactivity in Uranium-bearing Rocks from Potash Sulphur Springs, Garland County, James W. Baxter, University of Arkansas.
- G-8-37 Geologic History of the Michigan Structural Basin, George V. Cohee, University of Arkansas. (By Title)

## HISTORY AND POLITICAL SCIENCES SECTION

Chairman: Georg G. Iggers, Philander Smith College

- HP-1-38 "Automatic" Reappointment for the Arkansas General Assembly, Franklin M. Bridge, University of Arkansas.
- HP-2-39 The Threat and the Promise of Power Politics, Ralph G. Jones, University of Arkansas.
- HP-3-40 Lamennais and Bazard. A Study in the Philosophies of History of Catholic Traditionalism in France and of Saint-Simonianism, Georg G. Iggers, Philander Smith College.
- HP-4-41 The Decline of the Florentine Republic from the Invasion of Henry VII to the Dictatorship of Walter of Brienne, Marvin Becker, University of Arkansas.

## MATHEMATICS SECTION

Chairman: J. R. Abernathy, Arkansas Polytechnic College

- M-1-42 Application of Mathematics to Chemical Engineering, C. W. Oxford, University of Arkansas. (By Title)
- M-2-43 Review of Mathematical Techniques Applied to Closed Loop Control, N. H. Barnette, University of Arkansas. (By Title)
- M-3-44 Modern Computing Machines and Some of Their Implications, Harold Shniad, University of Arkansas. (By Title)
- M-4-45 Error Considerations in Mechanical Integration, Stacy Hull, Oak Ridge, Tennessee. (By Title)

## PHYSICS SECTION

Chairman: M. L. Lawson, Arkansas State College

- P-1-46 Interferometric Determination of the Magnetostriction Constant of Bar-shaped Samples, Z. V. Harvalik, University of Arkansas.
- P-2-47 A Low Thermal Capacity Thermocouple By Evaporation Methods, R. W. Raible and R. M. Pierson, University of Arkansas.
- P-3-48 Diffusion Cloud Chamber, B. J. Good, University of Arkansas.
- P-4-49 Alpha Ray Spectrometer for Determination of Radioactive Gases, P. E. Damon and H. I. Hyde, University of Arkansas.
- P-5-50 Apparatus For Measurement of Atmospheric Attenuation of Light, John E. Lyon and R. D. Woolsley, University of Arkansas.
- P-6-51 A Simple Laboratory Thermoelectric Pyrometer, R. M. Pierson and B. S. Garrett, University of Arkansas.
- P-7-52 Preparation and Properties of Lead Sulfide Layers, J. A. Doughty, University of Arkansas.
- P-8-53 Artificial Reverberation Generator, C. C. Allen and J. P. Decker, University of Arkansas.

## PSYCHOLOGY SECTION

Chairman: Henry W. Sagesar, College of the Ozarks

- Ps-1-54 Alternation of Response as a Function of Work, Merrell E. Thompson, University of Arkansas. (By Title)
- Ps-2-55 Reaction Time as a Function of Energy and Luminosity of a Visual Stimulus, Emir H. Shuford, University of Arkansas. (By Title)
- Ps-3-56 The Zeigarnik Phenomenon with Groups, Frank P. Gatling, University of Arkansas. (By Title)
- Ps-4-57 Eye Preference and Color Preference and Their Effect on Color Band Location and Width, Z. V. Harvalik, University of Arkansas. (By Title)

ARKANSAS ACADEMY OF SCIENCE

SCIENCE EDUCATION SECTION

Chairman: Miss Marie Easterwood,  
Arkansas State College

- SE-1-58 The Use of MKS Units in Elementary Physics Instruction, L. B. Ham, University of Arkansas.
- SE-2-59 What Is the Role of Biology in Modern Education? Joseph F. Marics, University of Arkansas.
- SE-3-60 Report on the Pilot Course "Pattern of the Physical Sciences," Z. V. Harvalik, University of Arkansas.
- SE-4-61 Arithmetic for the Scientist and for the "Common Man", or Death and Transfiguration of Grocery-store Arithmetic, B. H. Gundlach, University of Arkansas.

SOCIOLOGY SECTION

Chairman: M. J. Daniels, Arkansas  
Polytechnic College

- S-1-62 The Probable Causes of Religious Apathy in Our Institutions of Higher Learning, and the Proposal of a New Naturalism, George G. M. James, A. M. and N. College, PineBluff.
- S-2-63 Progress Report on a Quantitative Study in the Sociology of Knowledge, Franz Adler, University of Arkansas.
- S-3-64 Some Anthropological Evidence Regarding the Possibility of Greater Social Control in the Economy of the Future, Paul F. Tjensvold, Arkansas Polytechnic College.
- S-4-65 A Comparative Analysis of the Contributions of Emil Durkheim and his Contemporaries to Social Theory, J. E. Blackwell, Shorter College.
- S-5-66 The Social Standing of 100 Occupations Evaluated by Southern State College Students, Norman F. Washburne, Southern State College.