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ARKANSAS ACADEMY OF SCIENCE

THIRTY-SEVENTH ANNUAL MEETING

The College of the Ozarks, Clarksville

April 24-25, 1953

FRIDAY, APRIL 24

- 9:00 a. m. Registration.
- 11:00 a. m. Meeting Called to Order. Dr. Delbert Swartz Presiding.
- 12:45 p. m. Luncheon.
- 2:00 p. m. Sectional Meetings. Biology, Chemistry, Mathematics, Psychology
Geology, History, Sociology. Physics.
- 6:30 p. m. Dinner.
- 7:30 p. m. Annual Public Lecture. John Tyler Caldwell, President, University
of Arkansas.

SATURDAY, APRIL 25

- 9:00 a. m. Business Meeting. Treasurer's Report. Report of Standing Com-
mittees. Election of Officers. Appointment of Committees.
- 10:00 a. m. Selected Papers from Science Talent Search and Arkansas Junior
Academy of Science. Supervised by J. A. Doughty, University of
Arkansas.
- 12:00 p. m. Installation of Officers and Adjournment.
- 12:15 p. m. Informal Luncheon.
- 1:30 p. m. Field Trip to Pilot Knob and Fort Douglas. Arranged by Dr. Dwight
Moore.

SECTIONAL PROGRAM

BIOLOGY SECTION

Chairman: R. S. Fairchild, University of Arkansas

- B-1-1 An Apparatus for the Quantitative and Qualitative Control of Gases in
Pure Culture, Delbert Swartz, University of Arkansas.
- B-2-2 An Ultra Light Apparatus for the Study of Respiratory Metabolism,
Richard V. Ganslen, University of Arkansas.
- B-3-3 An Antibiotic Substance Produced by *Rhizopus nigricans* Ehrenberg,
B. J. Williams, University of Arkansas.
- B-4-4 Rapid Identification of Urinary Calculi Through the Use of X-ray Anal-
ysis, W. J. Smothers and L. H. Siegel, University of Arkansas.
- B-5-5 The Biosyntheses of Some Relatively Complex Organic Compounds by
Certain Molds, George T. Johnson, University of Arkansas.
- B-6-6 Micro-organisms and Sanitation in the Carbonated Beverage Industry,
Kenneth Mace, Pepsi Cola Company.
- B-7-7 Prussic Acid Poisoning in Common Vetch, E. S. Ruby, J. Beasley, and
E. L. Stephenson, University of Arkansas.

- B-8-8 Preliminary Observations on the Cave Bats of Arkansas, J. A. Sealander and H. Young, University of Arkansas.
- B-9-9 Preliminary Study of Trace Mineral Deficiencies in Arkansas, Paul R. Noland, University of Arkansas.
- B-10-10 Carcass Quality of Inbred and Crossbred Uark Poland China Swine, M. C. Heck and E. S. Ruby, University of Arkansas.
- B-11-11 A Study of the Contamination of Rural Water Supplies, Clinton B. Rushing, University of Arkansas.
- B-12-12 The Effects of Insufficient Nutrients During Seedling Stage on Growth and Yield of Cotton Plants, F. W. Snyder and Robert D. Riggs, University of Arkansas.
- B-13-13 The Development of the Bran Layer of the Rice Caryopsis, Ralph Scott, University of Arkansas.
- B-14-14 Water Stable Soil Aggregates Formed by Polyelectrolytes, C. L. Garey, University of Arkansas.
- B-15-15 Red Clover Hays vs. Korean Lespedeza Hay for Wintering Dairy Heifers, Charles T. Hickman, L. Ratcliff and O. T. Stallcup, University of Arkansas.
- B-16-16 Branchiobdellidae of Arkansas, David Causey, University of Arkansas.
- B-17-17 A Pictorial Key to Diagnostic Skull Remains of Edible Arkansas Mammals, Robert S. Chase Jr., University of Arkansas.
- B-18-18 The Normal Histology of Brown Fat of Certain Arkansas Bats, P. M. Johnston and J. A. Sealander, University of Arkansas.
- B-19-19 Sample Numbers for Forage Production Determinations, E. S. Ruby, University of Arkansas.

CHEMISTRY SECTION

Chairman: W. K. Noyce, University of Arkansas

- C-1-20 Making Organic Functional Groups Forceful and Vital, Jean Rosser Williams, Arkansas State College.
- C-2-21 Consideration of Ion Exchange Equilibria, James L. Pauley, University of Arkansas.
- C-3-22 Some Aspects of the Hot Atom Chemistry of Bromine, Thomas C. Hoering, University of Arkansas.
- C-4-23 The Vapor Pressure of Saturated Solutions of Some Lithium Salts, Hyman Chessin, University of Arkansas.
- C-5-24 Influence of High School Mathematics on Grades in General Chemistry at State College, R. H. Austin, Arkansas State College.
- C-6-25 Instrumentology -- A Proposed New Division of Science, Edward S. Amis, University of Arkansas.

GEOLOGY SECTION

Chairman: D. W. Sprouse, Southern State College

- G-1-26 The Brentwood Limestone of Madison County, Arkansas, Vance O. Cook, University of Arkansas.
- G-2-27 Geology of Devils Den State Park, James E. Case and Francis B. Connelly University of Arkansas.

HISTORY AND POLITICAL SCIENCE SECTION

Chairman: Walter N. Breyman, Southern State College

- HP-1-28 Non-recognition of Red China: Reasons and Rationalizations, Keith S. Peterson, Arkansas State Teachers College.
- HP-2-29 Organizing the Freedman's Bureau in Mississippi, Clifton L. Ganus Jr., Harding College.
- HP-3-30 Existentialist Philosophies and Political Decline, William A. Bultman, Arkansas State Teachers College.
- HP-4-31 The Cientificos: Critics of the Diaz Regime, 1892-1903, Walter N. Breyman, Southern State College.

PHYSICS SECTION

Chairman: N. F. Bolling, Arkansas State Teachers College.

- P-1-35 Variable Self-Pulsing Blocking Oscillator, J. A. Doughty, University of Arkansas.
- P-2-36 Some Optical Properties of Vapor Deposited Films of Arsenic, Antimony, and Bismuth, Z. V. Harvalik, University of Arkansas.
- P-3-37 A Simple Ultrasonic Generator, J. A. Doughty, H. Chessin, and D. W. Irby, University of Arkansas
- P-4-38 Heat Transmission Through Fabrics as a Function of Thickness, R. J. Heaston, University of Arkansas.

PSYCHOLOGY SECTION

Chairman: H. N. Peters, Veterans Administration Hospital
North Little Rock

- Ps-1-39 An Investigation of Directional Orientation in Mazes Without Goal-pointing Blinds, Merrell E. Thompson, University of Arkansas.
- Ps-2-40 Alpha Rhythm and Farm Perception, O. D. Murphree, Veterans Administration Hospital, North Little Rock.
- Ps-3-41 Objective and Projective Measures of Withdrawal Behavior, Edmond F. Erwin, University of Arkansas School of Medicine.

SOCIOLOGY SECTION

Chairman: Norman E. Washburne, Southern State College

- S-1-42 The Role of Religion in Crow Indian Culture and Society, Fred W. Voget, University of Arkansas.

- S-2-43 The Reactions of Jesus Toward Economic Institutions, George T. Blackman, Ouachita College.
- S-3-44 The "Spiritualists": Described and Analyzed, J. Edward Blackwell, Grambling State College.
- S-4-45 A Note on the Ecology of Mental Illness in Arkansas Donald D. Stewart, Carl W. Backman, and Gay Swift, University of Arkansas.
- S-5-46 A Report on the Urbanization of Counties in Arkansas, Norman F. Washburne, Southern State College.

ARKANSAS ACADEMY OF SCIENCE

SECRETARY'S REPORT

Thirty-seventh Annual Meeting
The College of the Ozarks, Clarksville
April 24-25, 1953

President Delbert Swartz opened the meeting in Science Hall with comments on past activities of the Academy and with emphasis upon those after its reactivation 29 years ago by nine persons who met in the Hotel Lafayette in Little Rock. The business meeting then was called by the President.

The minutes of the last annual meeting were approved as shown in Volume VI of the proceedings. The following committees were appointed:

Nominations---Professors W. C. Munn, D. M. Moore, and T. L. Smith.

Resolutions---Professors Z. V. Harvalik, H. Iltis, and J. W. Sears.

Audit---Professors I. T. Beach, W. W. Nedrow, and C. V. Robinette.

Meeting Place---Professors R. H. Austin, W. C. Munn, and W. J. Smothers.

It was explained that Southern State College was unable to be host for the Academy meeting; therefore, it was necessary that the Executive Committee choose another meeting place. Upon receipt of an invitation from Dr. T. L. Smith of The College of the Ozarks, the committee voted to accept this invitation.

Professor W. W. Nedrow brought to the attention of the Academy the desire of the Deans of the Colleges of Arkansas that State meetings which involved faculty be held jointly rather than at different times and locations. It was pointed out by President Swartz that participation in the Academy is open to all who are interested in science. The history of the change in name of the organization from Arkansas Academy of Science, Arts, and Letters to its present name was reviewed by President Swartz and D. M. Moore. Dr. Norman Payne moved that the Academy consolidate its meetings with other groups but retain the identity of the Arkansas Academy of Science, if the Academy were approached officially by the Deans. The motion passed.

The secretary announced that Professors P. M. Johnston and J. A. Sealander of the University had been selected by the research committee to receive the grant given by the American Association for the Advancement of Science for support of their project, "Studies on the Brown Fat of Arkansas Bats."

Changes in the constitution discussed by the Executive Committee during the past year were presented for discussion by the Academy. Preliminary approval of several changes was obtained, subject to final action at the next meeting.

Z. V. Harvalik moved that the names of prospective new members be read at the luncheon Friday. The motion passed.

After a discussion of the publication cost of the Proceedings, it was moved by Professor N. F. Washburne that advertising be solicited. The motion passed.

The business meeting was adjourned at 12:30 p. m.

At the second business meeting, the changes in the constitution and by-laws as