

**MINUTES OF THE
THIRTY-THIRD ANNUAL MEETING
of the
South Dakota Academy of Science**

The thirty-third annual meeting of the South Dakota Academy of Science was held at the Huron College, Huron, South Dakota, May 7-8, 1948. President A. L. Haines presided at all of the sessions.

First Session

The first session was called to order by President A. L. Haines at 2:00 P.M. Friday, May 7. President G. G. Mc Dougall of Huron College gave a brief address of welcome, followed by the presentation of papers by members of the Academy. President Haines appointed the following committees:

Auditing Committee—

E. R. Binnewies, South Dakota State College.
F. L. Bennett, Black Hills Teachers College.
H. R. Fössler, University of South Dakota.

Resolutions Committee—

A. M. Pardee, University of South Dakota.
John A. Froemke, Augustana College.
Emerson G. Cobb, Dakota Wesleyan University.

Nominating Committee (previously appointed)—

Edwin H. Shaw, Jr., University of South Dakota.
Gregg M. Evans, Yankton College.
F. L. Bennett, Black Hills Teachers College.
O. M. Hofstad, Augustana College.
Alvin L. Moxon, South Dakota State College.

Second Session

The annual Academy banquet was held in the College Dining Room at 6:15 P.M. A number of the members of the Junior Academy of Science and a number of guests were present. This was followed by the introduction of our guest

speaker and officers of the Junior and Senior Academies. A brief program was presented under the auspices of the Speech Department of Huron College.

Third Session

At 8:00 P.M. in the Huron College Chapel, Dr. H. Vernon Price, State University of Iowa, addressed the Academy. The address was "Mathematics as a Part of General Education."

Fourth Session

The Saturday morning session opened at 9:00 A.M., May 8. Papers by members of the Academy were read.

Business Session

The meeting was called to order by President A. L. Haines, Vermillion. The report of the membership committee and the list of new members as approved were elected:

- G. Gordan Froiland, Instructor of Biology, Augustana.
- John W. Renner, Instructor in Physics, University.
- Eugene Walliser, Instructor in Mathematics, University.
- Keatha Krueger, Associate in Biochemistry, University.
- Hobart Paul Boles, Professor of Biology, Huron.
- Wayne W. Gutzman, Professor of Mathematics, University.
- Floyd S. Ulrich, Assistant Professor of Chemistry, Huron.
- Lawrey H. Chapin, Assistant Professor of Physics, Huron.
- W. W. Gauger, Associate Professor of Chemistry, University.
- Frances Moyer, Chemist, Exp. Station, State College.
- Harlan L. Klug, Biochemist, Exp. Station, State College.
- Chester R. Anderson, Student (Chem. Major), State College.
- Charles R. Estee, Professor of Chemistry, University.
- Victor P. Hoff, Instructor in Chemistry, University.
- John M. Erickson, Instructor in Mathematics and Chemistry, Brookings.
- Dave Harris, Game Warden, Deadwood.

Nathaniel Herz, Chief Metallurgist, Homestake Mine, Lead.

M. G. Richmond, Chemistry Teacher, Spearfish.

Edward Tullis, Professor of Geology, School of Mines.

Brewster Baldwin, Instructor in Geology, University.

The report of the Treasurer was approved and accepted.

The report of the Auditing Committee was approved and accepted.

On motion the Secretary-Treasurer's expenses to the annual meeting were allowed.

The report of the Resolutions Committee follows. Be it resolved:

1. That the South Dakota Academy of Science wishes to express its appreciation for the hospitality of Huron College in arranging this successful meeting, to Professor Boles, Chairman of the Entertainment Committee and to President McDougall for placing the facilities of Huron College at our disposal and for the arrangement of an excellent banquet.
2. The Academy listened with pleasure to the address of its guest Dr. H. Vernon Price in his presentation of the subject, "Mathematics as a Part of General Education".
3. The Academy was indeed honored by the able administration of its meeting by President Haines and was glad to have our Secretary-Treasurer of many years this time in the president's chair. Secretary Ekman ably assisted in making possible the presentation of the extensive program with efficiency and dispatch.

ARTHUR M. PARDEE

JOHN A. FROEMKE

EMERSON G. COBB

Report of the Publication Committee:

Edwin H. Shaw, Jr. reported on the work of the Publication Committee. In view of the increase in the files of the Proceedings of the South Dakota Academy of Science and of the publications received in exchange, he moved that the Library of the University of South Dakota be made the official depository of the files of the Proceedings of the South Dakota Academy of Science and of the exchange publications received by the secretary. Motion carried.

Report of the Nominating Committee: The Nominating Committee placed in nomination—

President, V. S. Webster
 First Vice-President, Emerson G. Cobb
 Second Vice-President, John A. Froemke
 Secretary-Treasurer, A. L. Haines
 Councillor, A.A.A.S., Raymond J. Greb
 Publication Committee, Edwin H. Shaw, Jr.

The above were duly elected.

A membership Committee was nominated and elected—

O. M. Hofstad, Augustana
 L. H. Chapin, Huron
 John Barstow, Vermillion
 K. Otis, Mitchell
 C. R. Estee, University

The nominating Committee for 1949-50 was appointed by President-Elect Webster—

Harlan Klug, Chairman, State College
 Hobart P. Boles, Huron College
 Mark Delzell, University
 S. W. Howell, Yankton College

Victor S. Webster (State College) reported on the Chicago meeting of the A.A.A.S. His report was accepted.

The invitation from State College as to the next place of meeting was read and accepted for the thirty-fourth annual meeting.

It was recommended and carried that the bulletin carry some of the publications of the South Dakota Junior Academy of Science. The members of the committee, John Barstow, W. L. Miller, and A. R. Grismer were nominated and reelected to serve on the committee of the Junior Academy.

The meeting adjourned at 12 noon, May 8.

WM. E. EKMAN,
 Secretary-Treasurer

**LIST OF PAPERS PRESENTED AT THE
THIRTY-THIRD ANNUAL MEETING**

Reagents for Extracting Glutathione and Precipitating Proteins from Biological Materials—Harlan L. Klug and George P. Lampson.

President's Address: The First Third of a Century of the South Dakota Academy of Science—A. L. Haines.

Construction of a Cathode Ray Oscilloscope and a Twelve Inch Newtonian Telescope Using War Surplus Materials—Warren L. Johnson, A. W. Palm, Jr., Vernon Kuehn, E. Stahl, J. Rawlings, R. W. Liem and Lawrey Chapin.

Expansion of Type Forms in Fourier Series—James A. Bender and William E. Ekman.

Composition of Missouri River Water Samples Taken at Monthly Intervals from May 15 to September 15, 1947—George F. Gastler and Alvin L. Moxon.

Time Series Analysis with Reference to the Business Activity Index of South Dakota—W. W. Gutzman and E. L. Walliser.

Methods of Testing in Science Courses—J. Verduin.

Preparation of Selenium Derivatives of Sulfhydryl Compounds—George P. Lampson and Harlan Klug.

Geology of the Sioux Quartzite—B. Baldwin.

A Comparison of Methods for the Determination of Arsenic in Biological Materials and in Organic Compounds—Harlan L. Klug and George P. Lampson.

Health in South Dakota—Donald Slaughter.

Emotion, Action and Values—H. R. Fossler.

The Use of Buffered Solutions in the Qualitative Test for Antimony—J. Reid and J. A. Froemke.

Standard Sodium Thiosulfate Solution—Kenneth Davison and W. H. Gauger.

Seasonal Variations in Water Content of Tree Trunks—Warren E. Engelhard.

The Viscosity of the Mixtures of Acetic Acid and Methyl Alcohol—R. DeLap and J. A. Froemke.

Academy Address: Mathematics as a Part of General Education—Dr. H. Vernon Price.

The Influence of Sodium Phenobarbital on the Polarographic Wave of Hydrogen Peroxide—Edwin H. Shaw, Jr.

Seasonal Changes in the Manganese Content of Grasses—Alvin L. Moxon and George F. Gastler.

The Distribution of Phosphatase in Certain Tumors of the Mouse and Human—W. L. Hard.

The Somatic Antigens of the Genus *Agrobacterium*—Kenneth R. Berquist and R. Perry Elrod.

Some Historical Observations of the "Gonads" of the Sexless Pheasant—Donald Peterson and Raymond Greb.

Lignin, Cellulose and Crude Fiber Changes in Maturing Grasses—Chester Anderson and Alvin L. Moxon.

A New and Simple Method of Precise Cryoscopy—LeRoy Gronholz, Charles Schwartz and Huntington Jackson.

A Report on a Survey by the State Nutrition Committee of the Nutritioned Habits of South Dakota School Children—Charles Schwartz.

Non-Protein Nitrogen Compounds in Fresh and Aged Pork and Beef—Harlan Olson and E. I. Whitehead.

Psychrometry Under Conditions of Reduced Air Flow—W. W. Grover.

SOUTH DAKOTA ACADEMY OF SCIENCE

Membership List 1948-1949

Anderson, Chester R.	Box 664 College Station, Brookings
Arlton, A. V.	Parkland, Washington
Bailey, Barbara	South Dakota State College Department of Home Economics
Baker, C. L.	University of South Dakota Geology Department
Baldwin, Brewster	University of South Dakota Geology Department
Barstow, John F.	Vermillion High School
Batson, William H.	University of South Dakota Department of Education
Bedwell, Thomas	Florida State University, Tallahassee Physics Department
Bennett, F. L.	Black Hills Teachers College
Binnewies, E. R.	South Dakota State College Chemistry Department
Boles, H. P.	Huron College Biology Department
Bolles, Myrick N.	818 Twelfth Ave., Brookings
Borenstein, M. K.	Washington University, St. Louis, Mo.
Buchholtz, W. F.	Iowa State, Ames
Busch, Karl	Augustana College Biology Department
Cash, Ray	Vermillion
Chapin, L. H.	Huron College Physics Department
Churchill, E. P.	University of South Dakota Zoology Department
Cobb, Emerson G.	Dakota Wesleyan University Chemistry Department
Coss, James A.	Sioux City, Iowa
Cramer, Paul	Huron College Physics Department
Crothers, H. M.	South Dakota State College Department of Electrical Engineering
Delzell, Mark	University of South Dakota Education Department
Devor, A. W.	South Dakota State College Chemistry Department
Duffey, George H.	South Dakota State College Chemistry Department
Dunbar, B. A.	South Dakota State College Chemistry Department

Eberle, A. M.	South Dakota State College Vice-Dean of Agriculture
Ekman, W. E.	University of South Dakota Mathematics Department
Emme, Earle E.	Western Kentucky State Teachers College Psychology Department Bowling Green
Eyster, H. Clyde	Ohio University, Yellow Springs Botany Department
Erickson, John M.	1112 Sixth St., Brookings
Estee, Charles R.	University of South Dakota Chemistry Department
Evans, Gregg M.	Yankton College Chemistry Department
Ford, Hadley W.	Chicago, Illinois
Fossler, H. R.	University of South Dakota Psychology Department
Fowlds, Mathew	Lebanon, Oregon
Frary, Guy G.	University of South Dakota State Chemist
Froemke, John A.	Augustana College Department of Chemistry
Froiland, S. Gordan	Augustana College Biology Department
Gantvoort, Noble C.	Huron College Mathematics Department
Gastler, George F.	South Dakota State College Station Chemist
Gauger, W. H.	Buffalo, New York
Greb, Raymond J.	South Dakota State College Entomology-Zoology Department
Greb, Magnhild, T.	South Dakota State College Chemistry Department
Gilman, L. C.	University of Miami Zoology Department
Grismer, A. R.	South Dakota State College Bacteriology Department
Griswold, Ernest	Kansas University, Lawrence Chemistry Department
Grover, W. W.	University of South Dakota
Gutman, Wayne W.	University of South Dakota Mathematics Department
Haines, A. L.	University of South Dakota Chemistry Department
Hansen, N. E.	South Dakota State College Horticulture Department
Hard, W. L.	University of South Dakota Anatomy Department
Harris, Hubert A.	South Dakota State College Botany Department

Harris, Dave	Game Warden, Deadwood
Harding, Albert S.	South Dakota State College Department of History and Political Science
Hertz, G. C.	Watertown High School Department of Physics and Biology
Hershberger, A. R.	Western Union College, LeMars, Iowa Department of Chemistry
Herz, Nathaniel	Homestake Mining Co., Lead Chief Chemist
Hoff, Victor P.	Augustana Collège Chemistry Department
Hobbs, Charles S.	South Dakota State College Animal Husbandry Department
Hofstad, O. M.	Augustana College Science and Mathematics Department
Howell, S. W.	Yankton College Mathematics Department
Hume, A. N.	South Dakota State College Department of Agronomy
Jackson, Huntington	University of South Dakota Chemistry Department
Jensen, H. J.	Northern State Teachers College Science Department
Johnson, Elmer R.	South Dakota State College Chemistry Department
Johnson, Leslie E.	South Dakota State College Animal Husbandry Department
Kellog, Minerva	South Dakota State College Department of Home Economics
Klug, Harlan L.	South Dakota State College Experiment Station, Chemistry Department
Larrabee, Austin P.	Yankton College Department of Biology
Larsen C.	South Dakota State College Dean, Division of Agriculture
Lipp, C. C.	South Dakota State College Professor of Veterinary Science
Lofthus, Orin M.	University of South Dakota Department of Zoology
McCrary, S. A.	South Dakota State College Horticulture Department
McMillan, Gladys L.	University of South Dakota Zoology Department
Miller, Ward L.	South Dakota State College Department of Botany
Moyer, Frances	South Dakota State College Experiment Station, Chemistry
Moxon, Alvin L.	South Dakota State College Experiment Station, Chemistry

Noteboom, Charlotte M.	University of South Dakota Education Department
Oehlmaier, J. C.	University of South Dakota Pathology Department
Olson, O. E.	South Dakota State College Station Analyst
Otis, K.	Dakota Wesleyan University Biology Department
Over, William H.	University of South Dakota Director of the Museum
Pardee, Arthur M.	University of South Dakota Department of Chemistry
Peterson, Donald F.	South Dakota State College Biochemistry Department
Petsch, Bruno	University of South Dakota State Geological Survey
Puhr, Leo F.	South Dakota State College Agronomy Department
Renner, John W.	University of South Dakota Physics Department
Rethke, R. V.	South Dakota State College Botany Department
Richmond, M. G.	Black Hills Teachers College
Rhian, Morris	South Dakota State College Chemistry Department
Robinson, W. Merle	Montezuma, Iowa Consultant, FAI
Rothrock, E. P.	University of South Dakota Geology Department
Shaw, Edwin H., Jr.	University of South Dakota Department of Biochemistry
Schultz, F. G.	South Dakota State College Dean of General Science
Schwartz, Charles	University of South Dakota Biochemistry Department
Searight, Walter V.	Rolla, Missouri Geological Survey
Severin, H. C.	South Dakota State College Department of Entomology-Zoology
Slaughter, Donald	University of South Dakota Dean of the School of Medicine
Snyder, Leon C.	South Dakota State College Horticulture Department
Swenson, S. P.	South Dakota State College Agronomy Department
Thurston, H. E.	Washington High School, Sioux Falls
Thompson, Lawrence R.	Augustana College Chemistry Department

Tulis, Edward	South Dakota School of Mines and Technology Geology Department
Ulrich, Floyd S.	Huron College Physics Department
Verduin, Jacob	Ohio State University, Put-In-Bay Biological Station
Viets, Frank G.	South Dakota State College Station Chemist
Walder, Orlin E.	South Dakota State College Mathematics Department
Wallis, G. C.	South Dakota State College Department of Animal Husbandry
Walliser, Eugene	University of South Dakota Mathematics Department
Waters, Russell	University of South Dakota Chemistry Department
Weaver, F. R.	Sioux Falls College Chemistry Department
Webster, V. S.	South Dakota State College Chemistry Department
Whitehead, E. I.	South Dakota State College Experiment Station
Williamson, E. R.	Northern State Normal Department of Mathematics and Physics
Wilson, J. W.	South Dakota State College Department of Animal Husbandry
Wilson, W. O.	South Dakota State College Poultry Department
Winter, John M.	University of South Dakota Botany Department
Worzelle, W. W.	South Dakota State College Agronomy Department

**MINUTES OF THE
SIXTH ANNUAL MEETING
of the
JUNIOR ACADEMY OF SCIENCE**

The meeting was called to order by Jean Shaw, President, at 2:00 P.M., Friday, May 7, 1948.

Mr. Bowles, Professor of Chemistry at Huron College, gave the address of welcome. President Jean Shaw gave her introductory speech, "Building for the Future of the Junior Academy".

Vern Smiley of Watertown gave an explanation of his equipment for transmitting sound by light, the Lichten-sprecher.

President Jean Shaw introduced the senior supervisors to the Junior Academy: Dr. Ward Miller and Professor A. R. Grismer of Brookings and Mr. John T. Barstow of Vermillion.

David Cowles, assisted by Bob Beatty, of Vermillion gave an explanation of the physics of photography using the pinhole camera as a simple example for the explanation.

Rodney Harrington, Vermillion, gave an explanation of the Quantum Theory. He used two polarized lenses as a demonstration.

Jim Richardson, Washington High School (Sioux Falls), gave an explanation of his work on using straw as insulation. For this particular experiment he used oats straw as a raw material. He made three types of insulation, thin sheets, light board, and fibers. He entered the Science Talent Search Contest and won a trip to Washington.

Dr. Estee of the University of South Dakota gave a demonstration and lecture on atomic energy. As equipment for his demonstration, he set up mouse traps so arranged as to go off in a chain reaction.

Ben Johnson of Huron gave a talk on the chemistry of photography. For examples in his demonstration, he showed negatives and prints of his own work.

Don Guss of Brookings read his essay on radio isotopes. He won first prize of \$40.00 for his essay in the American Chemical Society this year.

The president appointed Jim Richardson, Rodney Harrington and Dennis Gray to the Resolutions Committee and Jim Gossman, Don Anderson, Les Yetter, Bob Wexley and Bob Beatty to the Nominations Committee.

The Junior Academy and Senior Academy members attended the evening banquet. The members of both organizations also attended the evening address given by Dr. H. Vernon Price of the University of Iowa who spoke on the topic "Mathematics as a Part of General Education".

At the meeting on Saturday, May 8, Don Anderson of Watertown gave an explanation of the oscilloscope and spoke on the topic "Practical Applications of the Oscilloscope".

Bob Wexler of Watertown demonstrated the checking of blood types, explaining the four types under the general topic "Blood Analysis".

Jean Shaw of Vermillion gave a demonstration and explanation on the "Principles of a Homemade Microscope".

Dr. Ward Miller gave a demonstration of "Magic and Mathematics".

Secretary-Treasurer Don Dougherty of Sioux Falls read the minutes and financial report.

In the course of the business meeting it was decided that the Secretary-Treasurer should appoint a Publicity Chairman to work with him. The Publicity Chairman would have full responsibility for publicity of the Junior Academy throughout the state. It was suggested that all available means and methods be used for publicity.

Officers elected for the next meeting:

President: Dennis Gray, Watertown.

Vice President: Donald Barnett, Cathedral High School.

Secretary-Treasurer: Rodney Harrington, Vermillion.

Publicity Chairman: Wallace Paulson, Vermillion.