

**MINUTES OF THE
FORTY-NINTH ANNUAL MEETING
OF THE
SOUTH DAKOTA ACADEMY OF SCIENCE**

The Forty-Ninth Annual Meeting of the South Dakota Academy of Science was called to order by President S. G. Froiland at 10:30 A.M. on Friday, April 24, 1964 in the Little Theater at Augustana College, Sioux Falls, South Dakota.

The Academy was welcomed to the campus by President L. M. Stavig of Augustana College.

The following committees were appointed by President Froiland:

Auditing Committee: Byron E. Harrell; Ralph K. Strong;
Ernest J. Huggins
Resolutions Committee: S. W. Howell; Edwin H. Shaw, Jr.

The Presidential Address, entitled "Are We Different?" was delivered by President S. G. Froiland and appears below.

The Annual Academy Address was presented in the Little Theater following the banquet which was held in the Commons on the Augustana campus. Dr. Richard L. Penney, Research Associate, Department of Pathology, School of Hygiene and Public Health, Johns Hopkins University, Baltimore, Maryland spoke on "The Behavior of the Adelle Penguin."

The annual business meeting was called to order by President Froiland at 10:30 A.M. on Saturday, April 25, in the Little Theater, Augustana College.

The Treasurer's report was presented and accepted. It appears below. The report of the Director of the National Science Foundation Grant project was given by Theodore Van Bruggen. He announced the grant of three projects for the 1964-1965 year. These were for (1) a Visiting Scientist Program, (2) a Junior Academy of Science Program, and (3) a Collegiate Section Program. The final report of the Director to the National Science Foundation for the 1962-63 South Dakota Academy of Science Grants No. 22480, 22481, 22482, and 22484 appears below.

The Academy voted to accept the new NSF grants for 1964-1965.

The report of the Junior Academy Advisory Committee was submitted and appears below.

President Froiland informed the membership that \$100 is again available from AAAS this year to be used as awards.

The prize-winning papers of the Junior Academy were presented to the Senior Academy by:

1. Bonnie Lievan, Brookings High School
2. Lee Snyder, Huron High School

The report of the Auditing Committee was presented by Byron E. Harrell. The committee found the accounts of the treasurer to be correct.

The report of the Membership Committee was read by the President for Richard J. Landborg. It appears below.

The report of the Collegiate Committee was presented by R. R. Kintner, Chairman, and appears below.

W. O. Read, editor for the Publications Committee, requested that all papers for publication be in the editor's office by June 15. He requested that all authors include their departmental address as well as their school or organizational address.

The report of the AAAS meeting was given by Charles M. Vaughn and appears below.

The report of the Resolution Committee was given by Shapleigh Howell and appears below.

The report of the Nature Conservancy Committee was given by Byron Harrell and appears below. The Academy voted to pay a balance of \$33.95 to the Altamont Prairie Project.

The Nominations Committee presented the following list of officers and elected committee members who were unanimously elected by voice vote. As required by the By-Laws, the names of Walter Morgan and Wilson Kleibacker were presented for the position of second vice-president. Walter Morgan was elected by ballot.

Officers for 1964-1965

President: George P. Scott, University of South Dakota
 President-elect: Marvin Hanson, Huron College
 1st Vice-President: Robert Sandvig, South Dakota School of Mines and Technology
 2nd Vice-President: Walter Morgan, South Dakota State University
 Editor: W. O. Read, University of South Dakota
 Secretary-Treasurer: Theodore Van Bruggen, University of South Dakota

Executive Council Members-at-Large

Jack Saunders, Northern State College
 Norman Tigner, Watertown, South Dakota

Elmer Johnson, South Dakota State University
 Charles Sidlo, Washington High School, Sioux Falls

Membership Committee

Marion M. Hilpert, Chm., Black Hills State College
 Roger Davis, University of South Dakota
 John Gaines, South Dakota School of Mines and Technology
 R. J. Landborg, Augustana College
 J. E. Woods, Northern State College

Collegiate Section Committee

W. J. Martin, Chm., South Dakota School of Mines and Technology
 Sister M. Veronica Fasbender, Mt. Marty
 Gerald A. Myers, South Dakota State University
 Edna Grieb, Black Hills State College
 James Schmulbach, University of South Dakota

Junior Academy Committee

James Martin, Chm., Belle Fourche
 John Landegent, Jr., Washington High School, Sioux Falls
 Guy O. Karnes, Brookings
 Roy Rissky, Mitchell
 Willard Rosine, Augustana College

The Executive Council consists of the officers listed above; the First Past-President, S. G. Froiland, and the Second Past-President, Morton Green.

A Subcommittee of the Council on Meetings composed of George Scott, Marvin Hanson, and R. L. Sandvig recommended the following:

1. That the invitation from President Jonas to hold the 1965 Annual Academy Meeting on the campus of Black Hills State College be accepted.
2. That the meeting dates be set for Friday and Saturday, April 23 and 24, 1965.
3. That an invitation from Yankton College for the year 1966 be strongly considered.

President Froiland read invitations from Yankton College, South Dakota State University, and Black Hills State College to hold the Fiftieth Annual Meeting of the Academy on their campus. A plurality vote was held to decide on one of the schools. As a result, the meeting will be held on the campus of Black Hills State College on April 23 and 24, 1965.

A motion was made and carried that the invitations from Yankton College and South Dakota State University be considered at the next Annual Meeting in 1965.

The newly elected President, George P. Scott, succeeded Past-President S. G. Froiland to the chair and appointed the following committees:

Director of the National Science Foundation—South Dakota Academy Project for 1964-65

Theodore Van Bruggen, University of South Dakota

Steering Committee—NSF State Academy Grants 1964-65

Walter Morgan, South Dakota State University

Elmer Johnson, South Dakota State University

Morton Green, South Dakota School of Mines and Technology

George Rapp, South Dakota School of Mines and Technology

Howard Coker, University of South Dakota

Robert Sandvig, South Dakota School of Mines and Technology

Charles Sidlo, Washington High School, Sioux Falls

Nature Conservancy Committee

Byron Harrell, Chm., University of South Dakota

Willard Rosine, Augustana College

Frank Jobes, Yankton College

Nominating Committee

John Willard, Chm., South Dakota School of Mines and Technology

John Landegent, Washington High School, Sioux Falls

Harlan Klug, South Dakota State University

Fred Steece, University of South Dakota

Sister Letitia Kilzer, Mt. Marty College

There being no further business to be considered, the Forty-Ninth Annual Session of the South Dakota Academy of Science was declared adjourned by President Scott.

Report of the Membership Committee

The Membership Committee is pleased to report the approval of the applications for membership in the Academy in the following categories: 23 from institutions of higher education and research, 2 from teachers of secondary education, 4 engaged in other pursuits, and 6 graduate students. The combined total for the year is 35 members.

Respectfully submitted,

Richard J. Landborg,

Chairman pro-tem

Report of the Collegiate Section Committee

The Collegiate Section Committee met on Thursday, November 7, 1963, for a planning meeting. All of the committee members and the student officers were present. The following concepts were reaffirmed or formulated:

- a. A journal, either *Scientific American* or *American Scientist* would be given in lieu of cash awards for award winning papers.
- b. Per diem allotments were made to the participants from colleges in South Dakota for the funds provided in the collegiate section grant from the National Science Foundation. If not spoken for, these allotments would be distributed on a first ask first receive basis after March 1st. There were 20 *per diem* allotments.
- c. A poster advertising the Collegiate Section's annual program would be printed and distributed to area colleges (in and out of the state).
- d. If another NSF grant is received by the Collegiate Section, the Committee strongly recommended a spring planning meeting in order to carry out the "Saturday Seminar" suggestion portion of the proposal in the fall.
- e. Closer liaison between the NSF proposal writer and the Collegiate Committee was urged in order to be sure the Collegiate Section would agree with what was asked for in the proposal.
- f. The Committee agreed to the following deadlines:
 First Call for Papers—February 15
 Deadline for Institutional Allotments—March 1
 Final Call for Papers—March 15
 Deadline for Receipt of Abstracts—April 15
 (Abstracts arriving after the deadline will be included if possible.)
- g. The Committee suggested that the following be asked for:
 Author, home address, title, category of paper, faculty advisor, name of institution, 4 copies of abstract.
- h. The papers should be classified as:
 Biological Science
 Physical Science
 Earth Science
 Mathematics
- i. The NSF grant will allow publication of the 12 most worthy papers. The authors of the outstanding papers (1, 2, 3 in each category) will be awarded a certificate of merit and journal subscription.

The Collegiate Committee next met on Friday evening, April 24 with Gerald Myers, Sister Veronica Fasbender, Robert Sandvig, Roy Kintner, and the outgoing and incoming student officers present.

The following awards were made: (The judges included: W. Rosine, W. Martin, M. Green, and R. Forman.)

Biological Science:

First Place—"The Bacteriostatic and Bactericidal Effects of Some Common Tranquillizers," Maria Novoa, Mount Marty College.

Second Place—"A Study of *gregarina rigida* in the Grasshopper of South Eastern South Dakota," Dorothy Steffen, Mount Marty College.

Third Place—"Determining the Level of Metabolic Wastes in Trout Raceways with Regard to Time of Feeding," Robert L. Andersen, Black Hills Teachers College.

Physical Science:

First Place—"Syn, Anti-Isomerism in Substituted 2, 4-Dinitrophenyl-hydrazone Benzophenones," I. Loren Tschetter, Augustana College.

First Place—"Syn, Anti-Isomerism in Substituted 2, 4-Dinitrophenyl-hydrazone Benzophenones," II. Erwin Reiman, Augustana College.

Second Place—"A Lead-Oxygen Complex in Potassium Chloride and Potassium Bromide Crystal," Douglas Hofer, University of South Dakota.

Third Place—"Reactions of Methacrylyl Chloride with Unsymmetrical Dimethylhydrazine," Douglas Mogler, South Dakota State College.

Mathematics:

First Place—"Using the Jordan Canonical Form in the Solving of a Matrix Differential Equation," Joseph Leean, Augustana College.

Second Place—"Eigenvalues and Eigenfunctions for $U'' + \lambda U = 0$," Linda Kay Kindt, Augustana College.

Third Place—"Solutions of Certain Systems of Differential Equations by the Eigenvalue-Eigenvector Method," Charles E. Frasier, Jr., Augustana College.

Earth Science:

First Place—"Composition of Garnets from the Black Hills and Big Badland of Western South Dakota," Gale A. Bishop, Theodore Mundt, South Dakota School of Mines and Technology.

Second Place—"The Mineralogy and Origin of Manganese Nodules in the Oacoma Zone of the Pierre Shale Near Chamberlain, South Dakota," Ross R. Grunwald, South Dakota School of Mines and Technology.

Third Place—"Unit Cell Determination of a Uraninite from the Black Hills," Kenneth L. Keester, South Dakota School of Mines and Technology.

Award Certificates and *Scientific American* subscriptions will be given all of the above winners.

The judges recommended that all thirteen of the award winning papers be published in the *Proceedings of the South Dakota Academy of Science*.

The Committee endorsed Mr. Myers' suggestion that a preliminary schedule of papers be published earlier next year and sent to the judges and the Committee members.

The Committee noted that serious consideration should be given to operating two sections of Collegiate papers next year with a total of six judges.

New officers elected were:

1. Chairman: Robert Andersen, Black Hills Teachers College
 2. Vice-Chairman: Alice Duenwald, Mount Marty College
- Robert Roy Kintner, Chairman
Collegiate Section Committee

Report of the Junior Academy Committee

The Junior Academy Committee supervised several projects that were organized for the purpose of improving science education, improving communications, and which would lead to more participation in science activities by secondary school students.

1. The second Science Field Trip, financed by the National Science Foundation grant, was held in June, 1963, for fifty-two selected students.

2. A series of Saturday Seminars was held on the campus of the South Dakota School of Mines and Technology and financed by a National Science Foundation grant.

3. A Brookings High School student, Ray Horn, represented South Dakota at the National Junior Academy of Science at Cleveland, Ohio, on December 26-28, 1963.

4. Six issues of the South Dakota Junior Academy NEWS were printed and distributed to school administrators, science teachers, and Junior Academy members. This was also financed by a National Science Foundation grant.

5. South Dakota business and industries were solicited for funds to finance a Science Field Trip for the summer of 1964. The response was such that the project had to be cancelled for this year.

6. The annual meeting of the Junior Academy was held on April 24-25, 1964 at Augustana College. The \$25.00 AAAS awards

were presented to Lee G. Snyder, Huron; Bonnie Lievan, Brookings; Janet Nichol, Mitchell; and Elaine Blair, Sturgis. Officers selected for 1964-65 are Jim Beitz, Huron; Ted Thorson, Sioux Falls; and Cathy Colwell, Vermillion.

7. Two National Science Foundation projects will continue in 1964-65. These are the Saturday Seminars at the South Dakota School of Mines and Technology and the publication of the Junior Academy newspaper.

Junior Academy Advisory Committee:
Charles Sidlo, Chm., Sioux Falls
Roy Rissky, Mitchell
Everette Follette, Sturgis
Guy O. Karnes, Brookings
Willard Rosine, Sioux Falls

Report of the Academy Representative to the AAAS Academy Conference and AAAS Council

The Academy Conference convened in Cleveland, Ohio with a National Junior Academy of Science Program on December 26, 1963. At the morning session on December 27, Dr. John D. Hopperton presented a summary of his final report on Junior and Collegiate Academies of Science (Dr. Hopperton heard our two winning Junior Academy papers on his visit to our annual Academy meeting in April, 1962), to the Directors of Junior Academies of Science. The business meeting followed as the afternoon session. The National Science Seminars held in conjunction with the National Science Fair-International were reported on by Dr. J. Teague Self. The Academy Conference requested the AAAS Board to join with the Academy Conference in taking proper action as necessary to sponsor and promote such seminars on an annual basis. Distinguished service awards were presented to T. Wayne Taylor, Michigan State University, and Clint L. Baker, Archivist of the Conference, Southwestern University, Memphis.

The AAAS Council met in two sessions on December 27 and 30, 1963. Dr. Laurence M. Gould, Chairman, Committee on Council Affairs, reported two study committees continued at the 1962 annual meeting had been inactive and discharged, namely the Study Committee on Graduate Science Education and Standards, and the Study Committee on Research in Small Colleges. The Study Committee technique was apparently not an effective means of handling such problems. The Study Committee on Natural Areas as Research Facilities completed its report and it is on file at AAAS. A complete report of action appears in *SCIENCE* Volume 143, No. 3608, Pages 829-831 and need not be repeated here.

Respectfully submitted,
Charles M. Vaughn,
Academy Representative

Report of the Resolutions Committee

- I. Be it resolved that the South Dakota Academy of Science extend its appreciation:
 - (1) To Dr. L. M. Stavig, President of Augustana College for his address of welcome, and for making the facilities of Augustana College available to the Academy for this meeting.
 - (2) To the Sioux Falls Chamber of Commerce for courtesies extended to Academy members.
 - (3) To the Pathfinder Atomic Power Plant personnel for their kindness in providing guided tours for Academy groups.
 - (4) To the First Lutheran Church of Sioux Falls for providing the facilities for the Junior Academy banquet.
 - (5) To Dr. H. M. Briggs, President of South Dakota State College for his address at the Junior Academy banquet.
 - (6) To Dr. Richard L. Penney, Johns Hopkins University, for his address as guest speaker for the Senior Academy.
 - (7) To Dr. S. G. Froiland and his various committees for their work in the organization of this session of the Academy.

- II. Whereas, Dr. John M. Winter, having been active for many years in the South Dakota Academy of Science, and having served as secretary of this organization from 1950 through 1961, at which time he left the country for a two-year visiting professorship in Turkey, and whereas, shortly after his return near the end of 1963 he suffered a fatal heart attack, he it therefore resolved that we herewith spread upon the minutes of the Academy an expression of appreciation for Dr. Winter's work and of the deep sorrow felt by the members at his loss.

- III. Be it resolved that the secretary be instructed to send a letter of thanks
 - (1) To President L. M. Stavig
 - (2) To Superintendent Les Bach
 - (3) To Dr. H. M. Briggs
 - (4) To Dr. Richard L. Penney
 - (5) To Dr. Froiland
 - (6) To Mrs. John M. Winter

S. W. Howell
Edwin H. Shaw, Jr.

Report of the Nature Conservation Committee

Last year the Academy voted to contribute the price of one acre to the Nature Conservancy campaign for the purchase of the Altamont Prairie; in addition to this numerous members contributed to the fund. That campaign is nearly completed; when \$33.95 more is received, the Conservancy will pay the remaining \$1000.00 of the

loan. The committee is interested in information on additional areas that should be preserved.

Respectfully submitted,
Byron Harrell, Chairman
Frank Jobes
Willard Rosine

**FINAL REPORT
NATIONAL SCIENCE FOUNDATION
SOUTH DAKOTA ACADEMY OF SCIENCE
VISITING SCIENTIST PROGRAM
1962 - 1963
GRANT NO. G-22482**

The South Dakota Academy of Science Visiting Scientist Program, supported by the National Science Foundation, has finished its third consecutive year of successful operation. A total of 128 visits to high schools in the state were made during the year. Of the 128 visits, 81 were to high schools that had enrollments of less than 100 students.

The program was carried out locally by an Associate director in each region of the state who arranged the staff members' visits to high schools.

Brochures explaining the program were distributed to all high schools in the state in early fall with instructions for application to receive the services of a scientist. During the year two follow-up letters were sent to remind them of the availability of a visiting scientist.

The response of high schools to visiting scientists and the rapport between visiting scientists and high school teachers was much improved over the preceding two years that the program was in operation.

There were many favorable responses from high school administrators regarding the helpfulness of visiting scientists. The members of the Academy are unanimous in their support of this program and feel it is very worthwhile.

A fiscal report covering the 1962-1963 duration of this grant was submitted on October 1, 1963.

Enclosure:

Brochure and other Visiting Scientist materials.

Respectfully submitted,
Theodore Van Bruggen, Director
South Dakota Academy of Science
NSF - G-22482
Department of Botany
University of South Dakota
Vermillion, South Dakota

**FINAL REPORT
NATIONAL SCIENCE FOUNDATION
SOUTH DAKOTA ACADEMY OF SCIENCE
JUNIOR ACADEMY PROGRAM
1962 - 1963
GRANT NO. G-22480**

During the 1962-1963 academic year the South Dakota Academy of Science sponsored a Junior Academy of Science Program which was supported by the National Science Foundation. The objectives of the program were to acquaint science teachers and administrators of high schools with the Junior Academy activities, as well as to increase the role of the Junior Academy in the scientific training and activities of high school students.

To accomplish this, two projects were carried out:

1. Eight issues of "Junior Academy News" were printed and distributed to all high school administrators and science teachers as well as high school students who were members of the Junior Academy.

The paper was completely "student planned" with the help of the Junior Academy Committee of the Senior Academy membership. The newspaper featured school science activities, specific projects of students at various schools, and in general publicized the Junior Academy Program. (Several copies of the newspaper are appended.)

2. A science field trip for 51 students having outstanding achievements in scientific work during the year was held during the week of June 10-15, 1963. The group was attended by field biologists, geologists, and a physics teacher. A carefully planned tour of five days in the Badlands and Black Hills, at power plants, earthen dams, and other scientific or technological areas was carried out. Participants were carefully selected after recommendation by a sponsoring science teacher.

The trip was particularly successful in that a nucleus of excellent students from various areas of the state are now instrumental in participating in scientific activities relating to the Junior Academy Program. (See appended field trip information.)

A fiscal report covering this grant, G-22480, for the 1962-1963 period was submitted on October 1, 1963.

Respectfully submitted,
Theodore Van Bruggen, Director
South Dakota Academy of Science
NSF - G-22480
Department of Botany
University of South Dakota
Vermillion, South Dakota

**FINAL REPORT
NATIONAL SCIENCE FOUNDATION
SOUTH DAKOTA ACADEMY OF SCIENCE
COLLEGIATE PROGRAM
1962 - 1963
GRANT NO. G-22481**

The members of the Senior Academy of Science carried out a program during the 1962-1963 school year to stimulate a greater participation of undergraduates of colleges and universities in scientific research activities. This program was supported by funds made available by the National Science Foundation. The Academy tried to accomplish these objectives with the following activities:

1. Travel funds were provided to 25 undergraduate students to attend the annual meeting of the South Dakota Academy of Science for the purpose of presenting research papers to the Collegiate Section of the Academy. In connection with this, an announcement publicizing the annual meeting was distributed to all institutions of higher learning. (See enclosure.)
2. A committee of the Senior Academy judged five papers by collegiate members to be worthy of publication in the Annual Proceedings. They were:
 - a. "Water Retention Capacity in Kaolinite and Montmorillonite." Lester A. Thompson. South Dakota State College, Brookings.
 - b. "Geometrical Isomerism: The System 4-Methylbenzophenone 2, 4-Dinitrophenylhydrazine." James F. May. Augustana College, Sioux Falls.
 - c. "A Laboratory Plant for a Controlled Nutrient Experiment." Roy W. Albin. Black Hills Teachers College, Spearfish.
 - d. "Thermal Stability of Organic Compounds." Dwayne Rehfeld. South Dakota State College, Brookings.
 - e. "Uniform Convergence of Certain Improper Integrals." LeRoy Benson. Augustana College, Sioux Falls.

Previously the superior papers, judged worthy of publication, could not be published because the costs were prohibitive.

A fiscal report covering the duration of this grant was submitted on October 1, 1963.

Respectfully submitted,
Theodore Van Bruggen, Director
South Dakota Academy of Science
NSF - G-22481
Department of Botany
University of South Dakota
Vermillion, South Dakota

**FINAL REPORT
NATIONAL SCIENCE FOUNDATION
SOUTH DAKOTA ACADEMY OF SCIENCE
TRAVELING SCIENCE KIT PROGRAM
1962 - 1963
GRANT NO. G-22484**

The Traveling Science Kit Program was instituted by the South Dakota Academy of Science in the 1959-1960 academic year with the introduction of 12 one-week portable Biology study units. In the 1960-1961 school year this program was expanded to include 12 General Science kits for intermediate grades 4, 5 and 6. These included demonstrable 1-week experiments in Physics and Chemistry. The following year, 1962-1963, these 12 kits were expanded to 24 by separating and enlarging each.

The kits were contained in heavy foot lockers having 3½ cubic feet of space. They were shipped from the University of South Dakota to the school via parcel post.

Included in the kits were detailed manuals for use by teachers and students for laboratory study and demonstrations for one week. Enough respectable equipment for experiments and demonstrations was included. We were careful to include sources of supply for all materials and suggested that the teacher order his or her own materials for permanent use. At the end of one week the kit was sent back to the University where part-time assistants replenished the expendable reagents, solutions, etc. This meant that the kits were used one week and replenished and shipped to another scheduled school the next week.

The objectives of this program were not to do the teacher's job of teaching or to provide them with any permanent scientific equipment but to demonstrate that these materials were available and of definite advantage for instruction in the sciences.

The General Science kits were used a total of 274 times or one-week periods during the 1962-1963 school year. During this same period the Biology kits were used 143 times while the Earth Science kits were used 63 times. We did not encourage their use in larger urban schools because we felt that these schools were adequately supplied both with scientific materials and teachers who were able to use these materials.

We feel that this program, although originally an experimental one, has been very worthwhile. We do not intend to continue it in the future and we hope that the teachers themselves, or their supervisors, will purchase their own materials.

Enclosed are three brochures describing the kit materials and instructions for their procurement.

A fiscal report covering this grant for the 1962-1963 period was submitted on October 1, 1963.

Respectfully submitted,
Theodore Van Bruggen, Director
South Dakota Academy of Science
NSF - G-22484
Department of Botany
University of South Dakota
Vermillion, South Dakota

TREASURER'S REPORT

For Fiscal Year Ended April 1, 1964

Balance on Hand, April 23, 1963 (as per report April 23, 1963)	\$2,656.47
Receipts:	
Memberships:	
Senior Academy	\$555.75
Collegiate Section	32.00
Junior Academy	43.50
	<u>631.25</u>
Interest of Certificate	24.00
Gift from C. M. Goethe	50.00
AAAS Junior Academy Award	100.00
Reprint Service	5.85
Sale of Pins	56.00
	<u>235.85</u>
Total Receipts	867.10
	<u>\$3,523.57</u>
Cash (April 23, 1963) & Receipts	\$3,523.57
Disbursements:	
Nature Conservancy	\$ 47.50
Collegiate Awards	75.00
AAAS Junior Academy Awards	100.00
Expenses of 1963 Meeting	45.52
Bank Charges	1.60
Academy Conference Membership	5.00
Junior Academy Pins	155.00
	<u>429.62</u>
	<u>\$3,093.95</u>
Expenditures and Cash (April 1, 1964)	\$3,523.57

Total Assets:	
Balance per bank statement April 1, 1964	\$3,093.95
Certificate of Deposit, due 5/24/64	600.00
Total	<u>\$3,693.95</u>

SOUTH DAKOTA JUNIOR ACADEMY OF SCIENCE

Cash Report for Fiscal Year Ended April 25, 1964

Balance April 23, 1963	\$ 93.89
Receipts:	
Dues	\$ 69.00
Sale of Junior Academy Pins	\$ 51.00
	<u>120.00</u>
Cash Available	\$213.89
Disbursements:	
Purchase of 100 Junior Academy Pins @ \$1.55	\$155.00
Bank Charges10
	<u>\$155.10</u>
Cash balance April 25, 1964	\$ 58.79

MINUTES OF THE COLLEGIATE SECTION OF THE SOUTH DAKOTA ACADEMY OF SCIENCE

The annual meeting of the Collegiate Section of the South Dakota Academy of Science was called to order by Mr. Jim May, Friday evening, April 24, 1964 in the chemistry lecture room on the campus of Augustana College, Sioux Falls, South Dakota.

The minutes of the previous meeting were read and approved.

The program of the Collegiate Section was discussed. It was noted that an NSF grant had been received for the support of next year's program. After this grant expires, however, a new one will have to be sought. The competition for the grant will be greater due to the fact that it will have to compete in another category.

There was a suggestion that serious consideration be given to offering two sections of papers next year in order to reduce the length of the Collegiate Section meeting.

The election of officers has held. Dr. Kintner noted that the meeting next year would quite likely be held at Black Hills State Teachers College, and that the arrangements would be facilitated if the chairman was from that institution.

Mr. Robert Andersen of Black Hills State Teachers College was placed in nomination for chairman. It was moved that nominations cease. Miss Alice Duendald of Mount Marty College was nominated for vice-chairman. It was moved that nominations cease. Mr. Robert Andersen is the new chairman for 1964-65, and Miss Alice Duendald is the new vice-chairman.

It was announced to the group that the results of the judging of the Collegiate Section papers would be announced at 11:00 A.M., Saturday after the Pathfinder Field Trip.

Respectfully submitted,
Erwin Reimann, Vice-Chairman

MINUTES OF THE SOUTH DAKOTA JUNIOR ACADEMY OF SCIENCE

Registration for the Junior Academy of Science began at 8:30 A.M., Friday, April 24, 1964 at Augustana College in Sioux Falls.

At 10:00 A.M. a welcome address was given by Junior Academy President, Lee Snyder.

At 11:00 A.M., presentation of papers was given. The projects on Friday are as follows:

- Gambling in Fun and Earnest Thomas Lawless, Huron
Division of the Cerebellum John McEnelly, Huron
Soils of Clay County Gayle Winters, Vermillion
An Experimental Nuclear Spectrometer for
Studying the Electron Spectra of
Radio-Nucleids Robert Gehring, Mitchell
The Effect of Sodium Selenite on the
Bone Development in Chickens Clair Johnson, Vermillion
Topology: Rubber Sheet Geometry Rosanne Parmeter, Huron
Multi-Purpose Electronic Counter David Beatty, Brookings
Tobacco-Minus Nicotine Carol Jorgenson, Vermillion
A Paleolistical Technique Christy Anderson, Vermillion
Gibberellic Acid—Its Effect on the
Fungus Penicillium Cathy Colwell, Vermillion
Production of Color and the Atom John Mattice, Sioux Falls
Washington
A Bone Study Technique Carolyn Wensel, Vermillion
Talk in Secrecy Will Williams, Vermillion
A Better Demonstration of
Electrolysis Elizabeth Bihlmeyer, Vermillion
Operation of the Heart Joseph Fergen, Sioux Falls O'Gorman
A Ground Effect Machine Jerry Berger, Flandreau
Biorhythms of High School Students Janet Nichol, Mitchell
Does Weather Affect Human Behavior? Janet Sellen, Sioux City
Antiseptic Effects of Toothpaste Cindy Cimple, Mount Marty
Growth Patterns of Crystals Jay Weigel, Flandreau
Diabetes Mellitus; As Concerned With
Action of Insulin, Treatments,
and My Experiments Paul Williams, Sioux Falls
Washington
A Study of the Growth of Sorghum Before and
During Pollination Ray Horn, Brookings
Deuterium Concentration by Germinating
Seeds Vincent Elder, Yankton
The Forgotten Child No Longer Clara Hurd, Winner
Ranking Metals' Electro-Chemical
Activity John Hasse, Vermillion

- Speeding Up the Growth of Algae for
Space Food and OxygenLynn McGregor, Vermillion
Fermentation of RaisinsThomas Parliaman, Sioux Falls
O'Gorman
- Regeneration and Learning of
PlanariaDouglas Schaefer, Sioux Falls
O'Gorman
- Hatchability of Chicken Eggs Under
Constant RotationDennis Ragans, Belle Fourche
Weather and Electricity in the AirPaul Rasmussen, Sioux City
Ceramic GlazesMary Peterson, Mitchell
The Effects of Alcohol on the Mobility of
White MiceCathy Campbell and
Ron Leraas, Flandreau
- Determination of the Effects of Radiation
of Semi-ConductorsJim Maresh and Ted Thorson,
Sioux Falls Washington
- Deposition of Phosphorus in
Growing ChicksNancy Morgan, Brookings
At 6:15 P.M., a banquet was given for the Junior Academy at the
First Lutheran Church Fellowship Hall. Afterwards, a lecture was
given by Dr. H. M. Briggs, President of South Dakota State Univer-
sity.
- Saturday the remainder of the papers were given from 8:30 to
10:30. They were as follows:
- Artificial HeartsRoger Nelson, Huron
Experiments in the Excitation of a Gas Laser
of Unknown QualityRobert Schueffler, Huron
Light ModulationGeorge Anderson, Sioux Falls
Washington
- The Weather and YouElaine Blair, Sturgis
The Isotope EffectPhil Doto, Huron
The Use of Seed Extract and Free Radical
Initiator Albn in Determining Plant
Radio-SensitivityBonnie Lievan, Brookings
A Study of the Diffusion of GasesJim Dickson, Huron
Soap FilmPatricia Eickman, Salem St. Mary's
Optical IllusionsBarb Plooster, Sioux Falls
Washington
- Nitrate FormationJim Beitz, Huron
Spontaneous and Induced Achromotosis
in PigeonsLee Snyder, Huron

The winners of the research papers who gave their papers be-
fore the Senior Academy were Lee Snyder of Huron and Bonnie
Lievian of Brookings.

At 10:45 the business meeting was opened by Lee Snyder. The

resolution committee report was read by chairman Jim Beitz of
Huron.

Nominating committee report:

President	Jim Beitz, Huron
Vice-President	Kris Heemstra, Yankton
Secretary-Treasurer	Cathy Colwell, Vermillion

Nominations from the floor:

President	None
Vice-President	Ted Thorson, Sioux Falls
Secretary-Treasurer	Jim Maresh, Sioux Falls Rosanna Parmeter, Huron Carol Jorgenson, Vermillion

New officers:

President	Jim Beitz
Vice-President	Ted Thorson
Secretary-Treasurer	Cathy Colwell

Old business: none

New business: none

The meeting was adjourned by Vice-President Ray Horn, April
25, 1964.

Secretary-Treasurer
Cathy Colwell,
Vermillion, South Dakota

RESOLUTIONS COMMITTEE REPORT, JUNIOR ACADEMY

We wish to thank:

1. Augustana College for the time, expense and excellent accommodations.
2. The Senior Academy Advisory Committee for their guidance.
3. The Senior Academy for providing the opportunities, supervision, and stimuli for the growth of the Junior Academy.
4. The high school teachers who have provided transportation, and have given their time and counsel.
5. Lee Snyder, Ray Horn, and Harold Bross, our officers, who have given much time and effort.
6. The 5 Academy judges:

Dr. Klibacker	Yankton College
Dr. Wellard	School of Mines and Tech. S.D.S.U.
Mr. Holden	School of Mines and Tech. U.S.D.
Dr. Green	
Dr. Coker	

7. The members and visitors of the Academy for their participation and interest.
8. The high schools which participated in the Academy.
9. The Washington High School Science Club for the help and accommodations at this meeting.

MEMBERSHIP LIST

1963-64

Senior Section

Abbott, Howard	Sioux Falls College
Allen, John	Minneapolis, Minnesota
Adams, James N.	University of South Dakota
Anderson, Paul H.	School of Mines
Anderson, Ronald K.	School of Mines
Backens, Vern W.	Black Hills State College
Bartels, Richard L.	School of Mines
Bauer, George	Yankton
Beaty, Marjorie	University of South Dakota
Bell, Thomas N.	St. Paul Park, Minnesota
Benson, Norman	Yankton
Bentley, Orville G.	South Dakota State University
Berry, Charles E.	Black Hills State College
Berry, Edward	South Dakota State University
Billey, John	Yankton College
*Binnewies, E. R.	South Dakota State University
Bishop, Gale	School of Mines
Bjork, Philip R.	School of Mines
Boldt, Charles	School of Mines
Brage, B. L.	South Dakota State University
Brandewein, Bernard J.	South Dakota State University
Briggs, H. M.	South Dakota State University
Brummel, Cletus	Bemidji State Teachers, Minnesota
Bryn, Milo F.	South Dakota State University
Burden, Robert H.	Hill City
Butler, John L.	Sioux Falls College
Byrne, Jeffrey	University of South Dakota
Calkins, H. E.	South Dakota State University
Carlson, Charles W.	South Dakota State University
Chace, G. Earl	Rapid City
Christensen, Alton R.	University of South Dakota
*Churchill, Edward P.	University of South Dakota
Claflin, Joseph W.	Watertown
Cohen, David	General Beadle State
Coker, Howard	University of South Dakota
Connors, Howard	University of South Dakota
Cope, J. H.	School of Mines
Cowell, Bruce C.	Yankton
Cox, Earl	Belle Fourche
Critz, Jerry B.	University of South Dakota
Danner, Edwin	Westmar College, Iowa
Davis, Briant L.	School of Mines
Delinger, William G.	Macomb, Illinois

* Lifetime member