

TWENTY FIFTH ANNUAL MEETING

The twenty-fifth annual meeting of the South Dakota Academy of Science was held at Dakota Wesleyan University, Mitchell, South Dakota, May 3-4, 1940. Dr. Walter V. Searight, President of the Academy presided at all of the sessions.

The first session of the Academy was called to order at 1:30 P. M. Vice-President Mathew D. Smith, of Dakota Wesleyan University gave a brief address of welcome which was followed by papers by members of the Academy.

President Searight appointed the following committees:

Auditing Committee—A. R. Kendall, Robert E. Toczek, M. Fowlds.

Resolutions Committee—Edwin H. Shaw, Jr., John A. Froemke, Oscar E. Olson.

The annual Academy dinner was held at 6:30 P. M. in the dining room of Graham Hall. Following the dinner President Searight asked the Secretary to read the names of the charter members of the Academy and presented each of those present with a certificate of membership. Dean Joseph B. Hallaway and Professor Richmond Gale gave a short musical program and Dr. A. V. Arlton, with an instrument of his own invention, imitated the songs of many of our common birds.

SECOND SESSION

The second session of the Academy, open to the public, was an address by Dr. Henry Gilman, professor of Organic Chemistry, Iowa State College, Ames, Iowa, on the subject "Chemistry in Medicine."

THIRD SESSION

The third session of the Academy, beginning at 9:00 A. M. Saturday, May 4, was devoted to the reading and discussion of papers by the members followed by the usual business meeting.

BUSINESS SESSION

The business meeting was called to order at 11:00 A. M. Since the minutes of the last meeting are printed in Vol. 19 of the Academy Proceedings the reading of them was omitted.

The Secretary-Treasurer gave his report which was accepted.

The resolutions Committee reported as follows:

Be it resolved:

1. The Academy wishes to express its appreciation to Dakota Wesleyan University for the splendid hospitality shown the Academy, to Vice-President M. D. Smith for his cordial welcome, to Dr. A. R. Kendall for the careful arrangements including a banquet of outstanding excellence, to Dean Joseph B. Hallaway and Professor Gale for the musical entertainment, and to Dr. A. V. Arlton for the demonstration of his interesting technic for the accurate imitation of bird calls.
2. The Academy wishes to thank Dakota Wesleyan University for providing our guest speaker, and Dr. Henry Gilman for his interesting and instructive address.
3. The Academy notes with regret the passing of Dr. H. V. Atkinson and Professor J. Gladden Hutton.
4. The Academy compliments President Walter V. Searight and Professor A. L. Haines for the efficient conduct of the meeting.

Edwin H. Shaw, Jr.
Oscar E. Olson
John A. Froemke

On motion the report of the resolutions committee was accepted.

By the unanimous vote of the Academy the following candidates were elected to membership:

Ben M. Mankowski -----Sioux Falls College
Wm. D. Duncan ----- Washington High School, Sioux Falls
H. E. Thurston----- Washington High School, Sioux Falls
Gerhard Toews -----Freeman College
Wayne W. Marshall -----University of South Dakota

Albert G. Hoyem ----- Augustana College
 Alvin Thompson ----- Sioux Falls College
 Harold I. Maggrett ---- Washington High School, Sioux Falls
 Orin M. Lofthus ----- Augustana College

The Auditing committee made the following report:

Approved by the auditing committee.

A. R. Kendall

Robert E. Toczek

It was moved, seconded and carried by a unanimous vote to declare all charter members of the Academy who are now active members, life members and that they be excused from further payment of annual dues.

An invitation from the Ohio Academy of Science to send an official delegate to their 50th anniversary to be held May 9-11, was read. It was moved and seconded that any member who might be able to attend be declared an official delegate. Carried.

President Searight appointed Dr. Ward L. Miller to prepare a short tribute to the late J. Gladden Hutton and Dr. Edwin H. Shaw, Jr. to prepare a tribute to the late Dr. H. V. Atkinson to be published in the Academy Proceedings.

On motion a committee consisting of Ward L. Miller, A. R. Kendall and H. Clyde Eyster was appointed to investigate the feasibility of using some of the balance in the Academy treasury for some worthy cause.

The nominating committee recommended the following candidates for officers of the Academy for the year 1940-41:

President—A. L. Moxon

First Vice-President—Henry Lowsma

Seconded Vice President—Edwin H. Shaw, Jr.

Secretary-treasurer—A. L. Haines.

On motion the candidates nominated by the committee were elected by a unanimous vote.

In the absence of the President elect, the First Vice-President was called to the chair.

The Secretary-Treasurer read an invitation from President I. D. Weeks, president of the State University to hold

the next meeting of the Academy at Vermillion. John A. Froemke extended an invitation from Augustana College to hold the next annual meeting at Sioux Falls. On motion Sioux Falls was chosen as the place of holding the next annual meeting.

It was moved, seconded and carried that the Secretary-Treasurer be instructed to send a letter of appreciation to President I. D. Weeks for his invitation to hold our next meeting at Vermillion.

On motion the publication committee was requested to publish a list of the active members of the Academy in the next volume of the proceedings.

On motion the Secretary-Treasurer was instructed to send a postal card to all members shortly before the annual meeting asking them to signify whether or not they intend to attend the annual Academy dinner.

Dr. E. P. Churchill was unanimously elected a member of the publication committee.

On motion the Academy adjourned.

A. L. Haines, Secretary-Treasurer.

MEMBERSHIP LIST FOR 1940

A. V. Arlton	Dakota Wesleyan University	Mitchell
Barbara Bailey	State College	Brookings
E. R. Binnewies	State College	Brookings
Eugene D. Burr	State College	Brookings
Max I. Bowman	Huron College	Huron
George L. Brown	State College	Brookings
E. P. Churchill	University	Vermillion
B. A. Dunbar	State College	Brookings
W. D. Duncan	Washington High School	Sioux Falls
A. M. Eberle	State College	Brookings
John K. Edwards	Sioux Falls College	Sioux Falls
Thelma Erickson	University	Vermillion
Gregg M. Evans	Yankton College	Yankton
H. Clyde Eyster	University	Vermillion
H. R. Fossler	University	Vermillion
M. Fowlds	Lebanon	Oregon
Guy H. Frary	State Food & Drug Dept.	Vermillion
John A. Froemke	Augustana College	Sioux Falls
R. W. H. Gillespie	University	Vermillion
Geo. I. Gilbertson	State College	Brookings
Raymond J. Greb	Huron College	Huron
Ernest Griswold	University	Vermillion
Lester S. Guss	State College	Brookings
A. L. Haines	University	Vermillion
Delbert Hanna	University	Vermillion
Evelyn Hesseltine	Spearfish Normal School	Spearfish
A. G. Hoymen	Augustana College	Sioux Falls
A. N. Hume	State College	Brookings
D. F. Jones	Jones Pharmacy	Watertown
W. H. Jordan	University	Vermillion
Minerva Kellogg	State College	Brookings
A. R. Kendall	Dakota Wesleyan University	Mitchell
A. P. Larrabee	Yankton College	Yankton
C. Larsen	State College	Brookings
Einar Liefson	University	Vermillion
C. C. Lipp	State College	Brookings
Orin M. Lofthus	Augustana College	Sioux Falls

Henry Lowsmia	Eastern State Normal	Madison
H. I. Maggrett	Washington High School	Sioux Falls
B. M. Mankowski	Sioux Falls College	Sioux Falls
John T. Manter	University	Vermillion
A. L. Moxon	State College	Brookings
Ward L. Miller	State College	Brookings
H. D. McEwen	University	Vermillion
Oscar E. Olson	State College	Brookings
J. C. Ohlmacher	University	Vermillion
A. M. Pardee	University	Vermillion
C. W. Pugsley	State College	Brookings
R. E. Reinhard	State College	Brookings
Morris Rhian	State College	Brookings
E. P. Rothrock	University	Vermillion
J. M. Saunders	State College	Brookings
Walter V. Searight	State College	Brookings
E. R. Serles	State College	Brookings
H. C. Severin	State College	Brookings
Edwin H. Shaw, Jr.	University	Vermillion
Leon C. Snyder	State College	Brookings
H. Morrow Sweeney	University	Vermillion
S. P. Swenson	State College	Brookings
H. M. Sutter	Indian Service	Flandreau
R. E. Toczek	Yankton High School	Yankton
Gerhard Toews	Freeman College	Freeman
Alva Thompson		Sioux Falls
H. E. Thurston	Washington High School	Sioux Falls
W. H. Waller	University	Vermillion
G. C. Wallis	State College	Brookings
W. P. Waltner	Freeman College	Freeman
V. S. Webster	State College	Brookings

IN MEMORIAM

HARRY VICTOR ATKINSON

The members of the South Dakota Academy of Science note with deep sorrow the passing of Professor Harry Victor Atkinson at Vermillion on May 7, 1939. He was born at Van Wert, Ohio, on February 12, 1887. Fundamentally trained in chemical engineering at Ohio State University (B. S., 1911), he continued in that field only three years, working with the E. I. du Pont de Nemours Co. and Parke, Davis and Co., where contact with the drug industry stimulated his interest in the biological field. Supported by an instructorship in physiological chemistry at the Northwestern University School of Medicine (1914-17), he undertook the study of physiology and allied sciences at that institution and at Rush Medical College. From 1917 to 1920, he was instructor of physiology at Cornell Medical College, a position that was interrupted by nine months service overseas in the Chemical Warfare Service. Working under an instructorship in pharmacology, he completed his work for the doctorate degree in pharmacology at the Medical School of the University of Illinois (1922).

His academic career reflects the esteem in which he was held by the members of his profession. He was successively, associate professor of pharmacology, Texas, 1924-26; associate professor of pharmacology, Iowa, 1926-28; and professor of physiology and pharmacology at the University of South Dakota from 1928 until his untimely death. Of his nineteen publications, he will be particularly remembered for his work on the conversion of protein to fat in the dog and his studies on the chemical changes in the blood during anesthesia, which have become classical quotations. He held membership in the American Society for Pharmacology and Experimental Therapeutics, the Society for Experimental Biology and Medicine, the American Association for the advancement of Science, the South Dakota Academy of Science and Sigma Xi. He held associate membership in the Yankton District Medical Society and the South Dakota State Medical Association.

In his eleven years at the University of South Dakota, Professor Atkinson made many lasting friendships among his colleagues, both at the University and throughout the state. A sincere and profound scholar, his active mentality found its outlet in the guidance of his students in the classroom and laboratory. His wide acquaintance in the field of medical education enabled him to help in the placement of many students in the clinical years of medicine, frequently with scholarships, loans or part-time work. On occasion he generously gave personal financial aid to worthy students.

His abundant energy found many outlets for service to the community in which he spent his last years. He was active in the American Legion, the Parent-Teachers Association, the Masonic Lodge, the School Board and the Congregational Church.

His widow, Bertha Hartmann Atkinson, and two daughters, Margaret and Constance, survive him. To them, the South Dakota Academy of Science expresses sincere sympathy and an appreciation of the many contributions made to the cause of science by Dr. Atkinson.

Edwin H. Shaw, Jr.

Vermillion
October 1, 1940

JOSEPH GLADDEN HUTTON

Man of Science

Joseph Gladden Hutton was born on a farm near Monticello, Indiana, November 3, 1873. He died in Brookings, South Dakota, September 23, 1940. His father was William Hutton, who was among those present on that memorable march "from Atlanta to the Sea," who saw it through and bore no malice. His mother was Mary Gladden, who had connection with an illustrious family. If it be true as someone has said that a man's education must begin with his parentage, it is certain that Mr. Hutton's training was instituted under worthy auspices. Moreover he lived not only to honor his father and mother in the land, but also to honor the land from whence he sprung.

Among thousands of citizens of our republic widely honored in this and even foreign countries, who are nevertheless actually bigger than their reputations, not many are so typically American as was the subject of this sketch. His early training and life endeavor as a common man and as a scientist served to emphasize the worthiest traditions of the past and the finest promise for the future in the United States of America, and the democratic way of life.

He came up through boyhood to manhood amid the usual surroundings of a typical midwestern small farm. He was a product of the common school, the district one-room school at that. Later he attended Indiana State Normal University, and graduated therefrom; received his degree from the University of Chicago, 1908; and his M. S. (Geology) degree from the University of Illinois, 1910. He served as Assistant in Biology at Indiana Normal 1898-1900; Principal and Superintendent of Schools at Beardstown 1901-8; Assistant in Geology, University of Illinois 1908-11; Associate Professor of Agronomy, in Charge of Soils at South Dakota State College and Experiment Station from 1911 until his death.

So it was that he drew his life from the folk of rural America, and secured educational and scientific training and deep inspiration from secondary and higher institutions of this

country entirely. He studied Biology at Woods Hole, in Massachusetts, worked on Geological Survey in Illinois, surveyed Soils in South Dakota and outlined Conservation work in the Great Plains.

Mr. Hutton was widely informed in matters scientific. He was well versed in biology, knew the fundamentals of meteorology, and was cooperative observer for many years with the United States Weather Bureau; he lectured acceptably on Astronomy; the facts of earth science were an open book to him. He was well acquainted with historic and structural geology. Such a foundation, broad and deep furnished a basis for the contribution which he considered his life-work, namely The Soil.

Dr. Gortner of Minnesota at one time pointed out that men of accomplishment may be found to have an intellectual ancestry. Without detracting from the originality of any great man, it will appear that he was inspired by some one or more than one in previous scientific generations. It is a quality of true science to beget followers. In the later months of his connection with the University of Illinois, Mr. Hutton came under the tutelage of the late Cyril G. Hopkins, who in turn was co-worker with Dean Eugene Davenport. These men pointed the way to "Soil Fertility and Permanent Agriculture." They caused Joseph Gladden Hutton to focus his attention and to bring his preparation to bear on the Soil. It occurred to him then that the Soil is the physical basis of my life. After that he never wavered from the idea that the way of life has to be founded upon the conservation of the soil. He was persuaded to come to South Dakota State College and Experiment Station in 1911, because it seemed there possible to contribute his ability to that integrated idea.

He learned here that the problems of soil in the Great Plains are indeed diverse and specialized. He took part in the National and International Soil Survey associations, was Vice President and President of the National Soil Survey Association (1929-30); Chairman of the Committee on Soil Color Standards, 1920-32. His original contribution to methods for measuring color were recognized. He presented reports at the

annual meetings regularly during the twelve-year period. During the years 1917-27, when South Dakota financed a State Soil Survey, Mr. Hutton was in direct charge. He cooperated with the then United States Bureau of Soils in surveying and mapping and making reports of nine South Dakota counties. Among his co-workers were the late C. F. Marbut, the late Thomas D. Rice, and W. I. Watkins; truly men of Soil Science. Others were hardly less noteworthy.

He was a member of American Society for Advancement of Science, the American Society of Agronomy, American Genetic Association, National Geographic Society, State academies of South Dakota, Indiana, and Illinois, International Society of Soil Science, Alpha Zeta, Sigma X, and Phi Beta Kappa. He served during the World War with the rank of Second Lieutenant.

One day in September, 1939, as he lay stricken, the shadows had grown long upon the earth and over the soil where he had lived. His friend, and the pastor of his church called at the door of his sick room but could not be admitted just then. Mr. Hutton upon learning that his visitor had been there said to one who was near; "Give him my appreciation, and tell him that I know there is something beside material—Now don't forget to tell 'Joe' (The Reverend Joseph Ewing) that—Tell him that material is not enough."

A. N. Hume

Brookings

October 16, 1940

A Partial List of Scientific Papers Published by J. G. Hutton

Hutton, J. G., "A Tornado at Watertown, S. D., June 23, 1914." Indiana Academy of Science, 1914

Hutton, J. G., "Funnel Clouds at a Great Altitude." S. D. Acad. Sci., Vol II 1917-18

J. G. Hutton, "One Year's Results from Fertility Investigations on Vermillion Experiment Field." S. D. Acad. Sci., Vol. V, 1920

Hutton, J. G., "Phosphorous and Food Production in South Dakota." S. D. Acad. Sci., Vol. III, 1918-19

Hutton, J. G., "Soil Color Standards," Science, Feb. 18, 1921

Hutton, J. G., "Soil Colors, Their Nomenclature and Description" First Internat'l Congress of Soil Science. Vol. IV, 1927

Hutton, J. G., "The Duty of the Teaching Scientist to the Freshman College Student." S. D. Acad. Sci., Vol. XIII, 1929-30

Hutton, J. G., "The Correlation of Certain Lesions in Animals with Certain Soil Types." ("Alkali Disease") (Abstract of illustrated paper read before the American Society of Agronomy, Chicago, Ill., Nov. 19, 1931) Journal American Society of Agronomy.

Hutton, J. G., In report of American Soil Survey Association Bulletins. "Report of Soil Color Standards Committee, J. G. Hutton, Chairman"

6. Bulletin 6, Vol. 2, 1925

7. Bulletin 7, Vol. 1, 1926

2. Bulletin 3, Vol. 1, 1922

8. Bulletin 11, Vol. 1, 1930

9. Bulletin 13, Vol. 1, 1932

1. Bulletin 1, Vol. 1, 1921

3. Bulletin 4, Vol. 2, 1923

4. Bulletin 5, Vol. 2, 1924.

"Color as a Factor in Soil Classification."

5. Bulletin 5, Vol. 2, 1924

"Report of Committee on Soil Conservation, J. G. Hutton, Chairman."

10. Bulletin 14, 1933

Hutton, J. G., "The Soil of South Dakota," S. D. Acad. Sci., Vol. X, 1925-26.

PROGRAM

The following program was presented:

- Address of Welcome** ----- Vice-President M. D. Smith
Dakota Wesleyan University
- Decomposition of Selenium-Cystine in
Electrodialysis and Acid Hydrolysis ----- Alvin L. Moxon
----- and Arnold E. Schaeffer
South Dakota State College
- pH Values of the Contents of the Gastro-Intestinal
Tracts of Some Farm Animals ----- Oscar E. Olson
South Dakota State College
- The Basicity of Water ----- L. S. Guss
South Dakota State College
- President's Address, Environments and
Life Development ----- Walter V. Searight
University of South Dakota
- The Solvent Effects of Some Acetates and Formates
on Potassium Bromide in Acetic
Acid** ----- Selmer Peterson and
----- Ernest Griswold
University of South Dakota
- Teaching Water Analysis ----- A. R. Kendall
Dakota Wesleyan University
- Chemical Composition of Some Range Plants** -----
----- Oscar E. Olson and Alvin L. Moxon
South Dakota State College
- The Postnatal Development of the Young Striped
Gopher or Ground Squirrel, *Citellus Tride-*
cemlineatus (or *Petunia's* Progeny) ----- Thelma S. Erickson
University of South Dakota
- Vitamin D Deficiency in the Rat ----- T. H. Sattler, M. Mar-
----- guiles and H. Douglas McEwen
University of South Dakota
- Geophysics, Geochemistry and Geology** ----- E. P. Rothrock
University of South Dakota

**Denotes papers not submitted for publication.

- Magnetic Map of South Dakota Based on Data
taken by the United States Coast and
Geodetic Survey ----- W. H. Jordan
----- University of South Dakota
- A Comparison of the Relative Value of Two Meth-
ods of Teaching Laboratory Work in High
School Chemistry ----- Arnold L. Stientjes and
----- Arthur M. Pardee
University of South Dakota
- Arsenic Content of Some South Dakota Plants** -----
----- L. L. Sisson, Alvin L. Moxon and Oscar E. Olson
South Dakota State College
- The Effect of a Potassium-Low Diet on the Survival
Time of Adrenalectomized Rats ----- Donald L. Alcott and
----- H. Douglas McEwen
University of South Dakota
- Diffusion of substances from Soaked Bean Seed -----
----- H. Clyde Eyster
University of South Dakota
- The Use of Kodachrome Slides in the Teaching
of Biology ----- Leon C. Snyder
South Dakota State College
- Sand and Gravel Deposits in South Dakota ----- Harold Buus
University of South Dakota
- The Linkage Relations of Sex Factors to Two Adjacent
Mutant Factors ----- Raymond J. Greb and
----- Magnhild T. Greb
Huron College
- The Ability of Certain Common Trees to Withstand
Drought in Southeastern South Dakota -----
----- Harold I. Maggrett
Sioux Falls High School
- Protocols for Dilution Series Based on Geometrical
Progressions ----- Edwin H. Shaw, Jr.
University of South Dakota

- Nitrate Content of Some South Dakota Plants-----
 -----Oscar E. Olson and Eugene Whitehead
 South Dakota State College
- Suggestions for Making and Filing Microfilm Records---
 -----John K. Edwards
 Sioux Falls College
- The Relationship Between Logic and Psychology-----
 -----H. R. Fossler
 University of South Dakota
- The Adsorption of Selenate and Selenite Selenium
 by Colloidal Ferric Hydroxide -----Oscar E. Olson and
 Curtis W. Jensen
 South Dakota State College
- Formation of Methemoglobin** -----Oscar E. Olson and
 R. L. Potter
 South Dakota State College
- Intermediates Between Fertile and Sterile Shoots
 in Equisetum Arvense -----John K. Edwards
 Sioux Falls College
- The Effect of the Choice of Various Aliphatic Carbinols
 as Solvents upon the Determination of the Saponification
 Number of Oils, Fats and Waxes-----
 -----Robert Toczek and Arthur M. Pardee
- The Goldenrods of South Dakota -----Anna V. Bray, Orlin
 Biddulph and H. Clyde Eyster
 University of South Dakota
- The Synthesis of Vitamin C by the Dairy Cow-----
 -----G. C. Wallis
 South Dakota State College
- Oxidation-Reduction Potentials of Cultures of Aerobacillus
 Species** -----R. W. H. Gillespie
 University of South Dakota
- Oxygen Consumption in Male and Female Fruit Fly
 Drosophila Melanogaster -----William G. Kucera
 Tyndall High School