

# Proceedings of the Iowa Academy of Science

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## Proceedings of the Twenty-Eighth Annual Session of the Iowa Academy of Science: Staff & Committee Reports; Program

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PROCEEDINGS OF THE  
**Twenty-Eighth Annual Session of the  
Iowa Academy of Science**

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REPORT OF THE SECRETARY.

*Fellows and Members of the Iowa Academy of Science:*

During the year the secretary has carried on the usual correspondence with the members, sending out three or four circular letters relative to the annual meeting, and on April 18 the printed program, of titles received to that date, was mailed. Since the printing of the program five other titles have been received, making a total of fifty-five, only three below the largest number ever presented before the Academy. Last year fifty-eight titles were presented.

Following out the instruction of the Academy at the 1913 meeting, addressed postal cards were sent to all fellows and associate members in a circular letter, asking for the educational positions occupied, or positions of honor, the information to be used in making up the lists of the members in the Proceedings. Something over ninety replies were received. This will make a beginning toward a more nearly complete directory.

The volume of the Proceedings for 1913 is the largest that has yet appeared; in fact, it is beyond the size allowed by the State. The ruling at the office of the Secretary of State is to the effect that all pages including blanks, but excepting the inserts, are to be counted toward the allotted 300. Such a ruling makes the number of pages in Vol. XX, fifty-six in excess of the number paid for by the State. The expense of this excess must be borne by the Academy. The number of pages included in the manuscript submitted cannot be determined until the type is set; and it is not practicable for the secretary to attempt to eliminate articles in order that the number may be kept within the 300. It is to be hoped that the committee appointed by the president to take up with the legislature the matter of increased number of pages may be successful in their work, and may obtain a removal of restriction or may secure an increase sufficient for years to come.

There are three groups of members in the Academy; one of these groups consists of "corresponding fellows, to be elected by vote from original workers in science in other states; also, any fellow removing to another state from this may be classed as a corresponding fellow." Those elected from original workers in other states are in reality elected to honorary fellowships, the honor, sometimes perchance, being to the Academy rather than to the one so elected. On April 29, 1911, an amendment to Sec. 4 was adopted reading as follows: "An annual fee of \$1.00 shall be required from each corresponding fellow." The requirement of such a fee may be justifiable but the secretary is at a loss to know upon what grounds. In his opinion the amendment should be modified or should be stricken out.

A portion of an amendment adopted May 1, 1909, reads: "A person may become a life member on the payment of \$7.00 after his election as a fellow, the transfer to be made by the treasurer." The secretary begs leave to suggest his belief that the life membership is too small, and that it should be increased to \$15.00 at least.

Would it be advisable on the part of the Academy to attempt to enlarge the scope of its work sufficiently to have sectional meetings at the annual meeting? Would it be possible to have a biological section, a chemical section, a physical section, geological, psychological, mathematical? Why not have the archeologists, mathematicians, and the psychologists of the state in the ranks of the Academy? Possibly the botanist might not find papers on mathematics of absorbing interest, and most certainly the mathematician can imagine things more interesting to him than papers on zoology. But in the sectional meeting a member would find that which is of interest on topics which he might feel fitted to discuss. Isn't the Academy established firmly enough to contemplate such an enlargement, and wouldn't its influence in the state be increased thereby? The work of the Academy should be known by every educated person in the state, and should appeal to every one interested in any phase of science.

Respectfully submitted,

L. S. Ross,  
*Secretary.*

## TREASURER'S REPORT.

## RECEIPTS.

Cash on hand April 26th, 1913.....	\$162.70
Dues and initiation fees from fellows and members.....	215.00
Life members fees .....	28.00
Sale of Proceedings .....	3.52
Interest on Deposits .....	4.00
Total .....	\$413.22

## EXPENDITURES.

Expense of Lecturer, 27th meeting.....	\$ 35.00
Postage, record book and stenographic work for treasurer.....	19.30
Programs, letter heads, post cards, etc., for Secretary.....	19.25
300 copies of Iowa Academy of Science Vol. XIX.....	221.27
Reprinting pages of Volume XIX.....	17.85
Cutting, stitching, pasting and trimming 100 copies, Vol. XIX.....	20.00
100 reprints of Vol. XIX.....	16.00
Wrapping and sending out Vol. XIX.....	10.00
Honorarium to Secretary .....	25.00
Postage, stamped envelopes, envelopes, etc., for Secretary.....	24.58
Cash on hand .....	4.97
Total .....	\$413.22

Respectfully submitted,

GEORGE F. KAY, *Treasurer.*

## REPORT OF COMMITTEE ON SECRETARY'S REPORT.

The committee on Secretary's report, mindful of the suggestions made by the secretary and the treasurer, beg leave to submit the following resolution: First; that the present annual fee for corresponding fellows be discontinued and that an amendment to this effect be submitted to the voting fellows before the next meeting in accordance with the provision of the constitution. Second; that an amendment raising the life membership fee from \$7.00 to \$15.00 be also submitted to the voting fellows of the Academy in accordance with the provision of the constitution. Third; that it is the sense of the Academy that hereafter the program of the Academy shall consist of two divisions; a general program Friday afternoon followed by sectional programs on Saturday morning or vice versa. That the president be authorized to appoint a committee, with full power to act, to determine the nature of these sections for next year. The report of the committee shall be provisional or tentative for the next meeting of the Academy. We would suggest that if the sectional plan be adopted, separate leaders be appointed by the president unless otherwise provided for, who shall have charge of the various sectional programs.

L. BEGEMAN,  
G. W. STEWART,  
S. F. HERSHEY,

*Committee.*

REPORT OF COMMITTEE ON MEMBERSHIP.

The Committee on Membership recommended the following:

*Transfers from list of members to list of fellows.*—P. A. Bond, Cedar Falls; Clifford H. Farr, Iowa City; W. Kunerth, Ames; Ellison Orr, Waukon; G. W. Walters, Cedar Falls; R. L. Webster, Ames; Francis M. Van Tuyl, Denmark.

*To be elected to membership.*—Miss Leona Armstrong, Spencer; A. C. Bailey, Steamboat Rock; Walter W. Bennett, Sioux City; Fred W. Berninghausen, Marble Rock; A. F. Bonney, Buck Grove; F. H. Broos, Boone; L. B. Carlisle, Eldora; Chas. L. Coffin, Iowa City; Ruth Cotton, Iowa City; L. E. Dodd, Iowa City; J. Wilbur Dole, Fairfield; H. Ray Eggleston, Storm Lake; Samuel F. Taft, Wauke; Jessie Finlayson, Des Moines; E. J. Fry, Iowa City; Wayne Hagen, Clinton; Elma May Hanson, Des Moines; W. J. Hayward, Sioux City; E. W. Johns, Kingsley; Inez Naomi King, Mt. Pleasant; Orren Lloyd-Jones, Ames; Otto F. Moeller, Cedar Rapids; G. C. Morbeck, Ames; E. L. Palmer, Cedar Falls; Herman E. Redenbaugh, Tabor; Orville Schultz, Ames; W. D. Shipton, Cedar Rapids; Arthur Smith, Little Rock; Wright Stacy, Iowa City; T. R. Truax, Ames; E. D. Verink, Cedar Rapids; E. E. Watson, Fairfield; Samuel Wifvat, U. P. Station, Des Moines; Arthur J. Williams, Iowa City; B. O. Wolden, Wallingford; Chas. A. Wylie, U. P. Station, Des Moines; J. F. Yothers, Toledo.

Report adopted.

L. S. ROSS,  
G. F. KAY,  
*Committee.*

INCOMPLETE LIST OF THOSE IN ATTENDANCE.

A. F. Aitchison, M. F. Arey, C. O. Bates, L. Begeman, F. C. Brown, E. J. Cable, H. S. Conard, Ira S. Condit, W. H. Davis, Clifford H. Farr, J. E. Guthrie, J. C. Jensen, H. M. Kelley, G. F. Kay, L. E. Kenoyer, W. Kunerth, C. N. Kinney, G. A. Larson, D. W. Morehouse, L. H. Pammel, H. J. Plagge, O. B. Read, L. S. Ross, E. W. Rockwood, Dayton Stoner, L. P. Sieg, G. W. Stewart, H. E. Summers, Mabel C. Williams, G. W. Walters, Fred Berninghausen, D. H. Boot, Nicholas Knight, J. N. Pearce, J. H. Lees, P. A. Bond, S. F. Hershey.

OFFICERS OF THE ACADEMY FOR 1914-1915.

President.....H. S. Conard, Grinnell  
 First Vice-President.....H. M. Kelly, Mount Vernon  
 Second Vice-President.....L. S. Ross, Des Moines  
 Secretary.....James H. Lees, Des Moines  
 Treasurer.....A. O. Thomas, Iowa City

ELECTIVE MEMBERS OF THE EXECUTIVE COMMITTEE.

E. J. Cable, Cedar Falls; A. G. Smith, Iowa City; C. O. Bates, Cedar Rapids.

## PROGRAM.

The meetings of the Academy were held in the General Assembly Room, Science Hall, Iowa State Teachers College, Cedar Falls, beginning at 1:30 p. m., Friday, April 24. A business meeting was called first, after which scientific papers were presented. The time Saturday forenoon was occupied with the remaining papers and with the final business meeting.

Dr. N. H. Winchell of the Minnesota Historical Society, gave the public address at 8:00 p. m. Friday. His subject was "The Antiquity of Man in America in Comparison With Europe."

A reception was given to the members of the Academy and friends after the address. Following the business session of Saturday forenoon a luncheon was served in the Gymnasium.

## TITLES OF PAPERS RECEIVED.

1. Sulfocication in Soils .....P. E. Brown  
Bact. Lab., Ia. State Coll.
2. The Des Moines Diphtheria Epidemic of 1912-13.....Chas. A. Wylie  
Bact. Lab., Drake Univ.
3. Bacterial Content of Desiccated Egg.....L. S. Ross  
Bact. Lab., Drake Univ.
4. An Incubator Opening to the Outside of the Building.....L. S. Ross  
Bact. Lab., Drake Univ.
5. U. S. Kelp Investigations in Alaska.....Robert B. Wylie  
Botan. Lab., S. U. I.  
Read by Title.
6. The Pollination of Vallisnaria .....Robert B. Wylie  
Botan. Lab., S. U. I.  
Read by Title.
7. Field and Forest Floras of Monona County.....David H. Boot  
Botan. Lab., S. U. I.
8. The Origin of the Cocklebur.....Clifford H. Farr  
Botan. Lab., S. U. I.  
Read but not offered for publication.
9. Notes on a Fossil Tree-Fern of Iowa.....Clifford H. Farr  
Botan. Lab., S. U. I.
10. The Myxomycetes of Puget Sound.....Thomas H. Macbride  
Botan. Lab., S. U. I.  
Read by Title.
11. Some Notes on the Ecology of Iowa Lichens.....Zoe R. Frazier  
Newton, Iowa.
12. Preliminary Report on the Flora of Linn County.....Ellis D. Verink  
Botan. Lab., Coe Coll.
13. The Male Gametophyte of Arisaema.....James E. Gow  
Botan. Lab., Coe Coll.  
Read by Title.

14. Sunflecks .....W. H. Davis  
Botan. Lab., Ia. State Teachers' Coll.
15. Some Observations on Sycamore Blight and Accompanying Fungi  
.....J. P. Anderson  
Botan. Lab., Ia. State Coll.
16. Weed Survey in Story County.....L. H. Pammel  
Botan. Lab., Ia. State Coll.
17. Alien Plants of Clear Creek Valley, Colorado.....L. H. Pammel  
Botan. Lab., Ia. State Coll.
18. Notes on Variation in *Micranthes Texana*.....L. A. Kenoyer  
Biol. Lab., Leander Clark Coll.
19. Barium in Tobacco and Other Plants.....Nicholas Knight  
Chem. Lab., Cornell Coll.  
Read by Title.
20. Colloidal Common Salt.....Nicholas Knight  
Chem. Lab., Cornell Coll.  
Read by Title.
21. Electromotive Forces and Electrode Potentials in Mixed Solvents  
.....J. N. Pearce  
Chem. Lab., S. U. I.
22. Equilibrium in the System—Mercuric Iodide-Anilin.....  
..... J. N. Pearce and E. J. Fry  
Chem. Lab., S. U. I.
23. Earth Movements and Drainage Lines in Iowa.....James H. Lees  
State Geol. Surv.
24. Some Evidences of Recent Progress in Geology.....G. F. Kay  
State Geol. Surv.
25. Siouan Mountains; An Iowan Triassic Episode.....Charles Keyes  
Des Moines, Iowa.
26. Serial Unit in Stratigraphic Classification.....Charles Keyes
27. Stratigraphic Position of Our Oldest Rocks.....Charles Keyes
28. On Precious Stones in the Glacial Drift.....Garrett A. Muilenburg  
Geol. Lab., S. U. I.
29. A New Section of the Railway Cut Near Graf, Iowa.....A. O. Thomas  
Geol. Lab., S. U. I.
30. The Surface Clay of Adair County (Second Paper).....James E. Gow  
Geol. Lab., Coe Coll.  
Read by Title.
31. Evidences of Sand Dune Formation in Cedar Rapids and Vicinity  
.....Washburn D. Shipton  
Geol. Lab., Coe Coll.  
Read by Title.
32. Indian Pottery of the Oneota or Upper Iowa River Valley.....Ellison Orr  
Waukon, Iowa.
33. Longitude by Wireless .....D. W. Morehouse  
Phys. Lab., Drake Univ.  
Read but not offered for publication.
34. Illuminating Power of Kerosenes Used in Iowa.....William Kunerth  
Phys. Lab., Ia. State Coll.
35. Certain Diffraction Experiments in Sound..Harold Stiles and G. W. Stewart  
Phys. Lab., S. U. I.

## ABSTRACT.

This paper describes three experiments in sound diffraction, viz., the shadow of a rigid sphere, the passage of sound through narrow slits, and the sound through circular apertures.

Previous theoretical investigations are verified to within a reasonable degree in all three experiments. The paper is published in full in the Physical Review for April, 1914.

36. The Variation of Sound Intensity with Distance from the Source;  
An Interesting Case of Deviation from the Inverse Square Law  
.....G. W. Stewart  
Phys. Lab., S. U. I.
37. Notes on the Construction of Selenium Bridges.....E. O. Dieterick  
Phys. Lab., S. U. I.
38. The Adaptation of Selenium to Measurements of Energy Too Small  
to be Measured by Other Devices.....L. P. Sieg and F. C. Brown  
Phys. Lab., S. U. I.
39. The Effect of Pressure on the Light-Sensibility of Metallic Selenium  
Crystals.....F. C. Brown and L. P. Sieg  
Phys. Lab., S. U. I.  
Read by title.
40. Sex Linked Factors in the Inheritance of Rudimentary Mammae  
in Swine.....Edward N. Wentworth  
Kansas Agri. College, Manhattan, Kansas.
41. The Effect of Calcium and Protein Fed Pregnant Swine Upon the  
Size, Vigor, Bone and Coat of the Resulting Offspring.....  
.....John M. Evvard, Arthur W. Dox and S. C. Guernsey  
Animal Husbandry, Ia. State Coll.
42. A Study of the Crow.....Frank C. Pellett  
Office State Inspec. of Apiaries.  
Read by title.
43. Butterflies of Chance Occurrence in Cass County.....Frank C. Pellett  
Office State Inspec. of Apiaries.
44. Nature and Birds.....Fred Berninghausen  
Eldora, Iowa.

## ABSTRACT.

Notes the failure of the oak *Quercus sessiliflora* to attain a vigorous development on account of its lack of adaptation to its environment and its inability to protect itself against its enemies. The characteristics and life habits of certain Iowa birds are described and their usefulness or harmfulness is discussed. The birds taken as illustrations are the kill-deer, the whippoorwill, the robin, the kingbird, the wren, the cat-bird, the screech owl, the quail, the blue jay, the horned owl and the flicker. The horned owl comes in for especial condemnation as a destroyer of our helpful singing birds.



45. Color Vision in Animals.....Mabel C. Williams  
 Psych. Lab., S. U. I.  
 Read but not offered for publication.
46. Effect of Low Temperature on the Oyster-Shell Scale, *Lepidosaphes ulmi* Linn.....R. L. Webster  
 Zool. Lab. Ia. State Coll.

ABSTRACT.

The effect of the low temperatures of January, 1912, on the eggs of the oyster-shell scale in Iowa. An account based on samples of scale sent in a year later. In most cases the eggs had been killed by the severe winter.

47. A Catalogue of the Lepidoptera of Linn County.....George H. Berry  
 Cedar Rapids, Iowa.
48. The Coleoptera of Henry County, Iowa.....Inez Naomi King  
 Zool. Lab., Iowa Wesleyan Univ.
49. An Observation on Longitudinal Division in Hydra.....L. S. Ross  
 Zool. Lab., Drake Univ.
50. A Convenient Table for Microscopic Drawing.....L. S. Ross  
 Zool. Lab., Drake Univ.  
 Read but not offered for publication.
51. Relation of Wind Velocity and Relative Humidity to Evaporation  
 .....D. H. Boot  
 Bot. Lab., S. U. I.
52. The Origin of Eskers.....A. C. Trowbridge  
 Geol. Lab., S. U. I.
53. Preliminary Report on Physiographic Studies in Northeastern Iowa  
 .....A. C. Trowbridge  
 Geol. Lab., S. U. I.
54. An Area of Wisconsin Drift further South in Polk County, Iowa, than  
 Hitherto Recognized.....John L. Tilton  
 Geol. Lab., Simpson College.
55. The Question of Electron Atmospheres.....L. E. Dodd  
 Phys. Lab., S. U. I.  
 Read by title.
56. The Butterflies of Woodbury County.....A. W. Lindsey  
 Zool. Lab., Morningside College.
57. Unusual Dolomites.....Nicholas Knight  
 Chem. Lab., Cornell College.
58. The Sand of Sylvan Beach.....Nicholas Knight  
 Chem. Lab., Cornell College.
59. Pleistocene Exposures in Cedar Rapids and Vicinity.....W. D. Shipton  
 Geol. Lab., Coe College.