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REPORT OF THE TWENTY-SIXTH ANNUAL MEETING OF THE OHIO ACADEMY OF SCIENCE.

The Twenty-sixth Annual Meeting of the Ohio Academy of Science was held at Ohio State University, Columbus, Ohio, on April 21 and 22, 1916, under the presidency of Professor G. D. Hubbard of Oberlin College. Fifty-five members were in attendance.

GENERAL PROGRAM.

FRIDAY, APRIL 21.

- 8:00 A. M.—Meetings of Committees.
- 9:00 A. M.—Business Meeting.
- 10:00 A. M.—Reading of Papers in General Session.
- 11:45 A. M.—Address by Prof. George D. Hubbard, President of the Academy: "What Has the Future for Geologists?"
- 12:15 P. M.—Lunch, Ohio Union.
- 1:30 P. M.—Reading of Papers in General Session.
- 3:00 P. M.—Reading of Papers, in Sectional Meetings.
- 5:45 P. M.—Dinner, Ohio Union, together with Ohio College Association and Affiliated Societies.
- 7:30 P. M.—Joint Session with Ohio College Association and Affiliated Societies.
 - Chairman, President Miner Lee Bates, of the Ohio College Association, Hiram College.
 - Address of Welcome, President W. O. Thompson, Ohio State University.
 - Address, Professor Charles H. Judd, University of Chicago: "The More Complete Articulation of Higher Institutions with the High Schools."
 - Informal Social Gathering of Members and Visitors.

SATURDAY, APRIL 22.

9:00 A. M.—Meeting of Ohio College Association—Symposium of Addresses by Representatives of Affiliated Societies.

“The Relation of the College to Research,” Professor Lewis G. Westgate, Ohio Wesleyan University, representing the Ohio Academy of Science.

“Academic Relationships in the Training of Teachers,” Dean H. C. Minnich, Miami University, representing the Ohio Society of College Teachers of Education.

“The Training of Science and Mathematics Teachers, Prospective and in Service,” Professor George R. Twiss, Ohio State University, representing the Association of Ohio Teachers of Mathematics and Science.

“Mathematics and the College Curriculum,” Professor A. D. Pitcher, Western Reserve University, representing the Ohio Section of the Mathematical Association of America.

10:45 A. M.—Reading of Papers in General Session.

11:45 A. M.—Adjourned Business Meeting.

MINUTES OF BUSINESS MEETINGS.

The first business session was called to order by President Hubbard at 9:00 A. M., on Friday, April 21. An adjourned session was held at 11:45 on the following morning.

The appointment of the following committees for the meeting was announced by the chair:

Committee on Membership—C. G. Shatzer, E. P. Durrant, Frank Carney.

Committee on Resolutions—L. B. Walton, Frank R. Elliott, A. B. Plowman.

Committee on Necrology—W. C. Mills, J. S. Hine, J. H. Schaffner.

The following Auditing Committee was elected by the Academy: C. G. Shatzer, W. R. Lazenby.

The following Nominating Committee was elected by the ballot of the Academy just before the close of the first business session: F. C. Blake, F. L. Landacre, Frank Carney.

Report of the Secretary.

The following report by the Secretary was received and ordered filed:

DELAWARE, OHIO, April 19, 1916.

The work of the Secretary since the last Annual Meeting has been largely routine.

A report of the Anniversary Meeting was printed in the *OHIO JOURNAL OF SCIENCE* and in *SCIENCE*; and notice of the present meeting

has been sent to the leading dailies in Columbus, Cincinnati, Cleveland and Toledo.

As directed by the Academy, letters containing the relevant portions of the report presented at the last meeting by the Committee on Resolutions were sent to the societies naming delegates to the Anniversary Meeting, to all delegates in attendance, and to other individuals and organizations mentioned in the resolutions.

The Secretary has also followed the instructions of the Academy in revising and reprinting the circular of information concerning the scope of the work of the Academy. The revised circular was mailed with the preliminary announcement of this meeting.

At the last meeting the Secretary reported correspondence with Dean Leutner, Secretary of the Ohio College Association, concerning the desirability of an active co-operation of the Academy with the College Association. The change in the date of the annual meeting of the Academy has made such co-operation possible and natural. Further correspondence and conferences with the members of the Program Committee and with Dean Leutner have resulted in the present arrangement of the program. It may be noted that a rather unusually small number of titles on the Academy program has facilitated this co-operation. A fuller program might well lead to complications. In view of this fact, it may be wise for the Academy to take action at this meeting, instructing next year's Secretary and Program Committee as to the desirability of continuing, extending, or restricting this affiliation with the Ohio College Association and other societies.

Respectfully submitted,

EDWARD L. RICE, *Secretary.*

Report of the Treasurer for the Year 1916.

The report of the Treasurer was received as follows, and referred to the Auditing Committee:

For the year since our last annual meeting, the receipts, including balance from last year, have amounted to \$547.70, and the expenditures to \$249.57, leaving a cash balance of \$298.13.

RECEIPTS.

Balance from last year.....	\$171.30
For sale of publications.....	98.40
Membership dues.....	278.00
	<hr/>
Total.....	\$547.70

EXPENSES.

Miscellaneous expenses.....	\$ 64.57
185 subscriptions to THE OHIO JOURNAL OF SCIENCE.....	185.00
Balance April 21, 1916.....	298.13
	<hr/>
Total.....	\$547.70

Respectfully submitted,

JAS. S. HINE, *Treasurer.*

Report of the Executive Committee.

The report of the Executive Committee was received as follows and ordered filed.

DELAWARE, OHIO, April 21, 1916.

Since the last Annual Meeting of the Academy two joint meetings of the Executive Committee and Publication Committee have been called—December 28, 1915, and April 21, 1916.

At the first meeting it was decided to hold the Annual Meeting of the Academy for 1916 in Columbus on April 21 and 22, in affiliation with the meeting of the Ohio College Association. The details of co-operation were left to the Program Committee for adjustment.

Owing to scanty attendance at this meeting, the consideration of the publication of the addresses presented at the Anniversary Meeting (referred by the Academy to the joint committees) was deferred. At the meeting of April 21 it was decided, after discussion, that the financial condition of the Academy will permit the publication of all the addresses in the Report of the Anniversary Meeting, and the Publication Committee was instructed to proceed with the publication.

Since the last Annual Meeting two applications for membership have been approved by the Executive Committee. These names will be presented to the Academy later for ratification.

Respectfully submitted,

EDWARD L. RICE, *Secretary.*

Report of the Emerson McMillin Research Fund.

The following report of the Trustees of the Research Fund was received and referred to the Auditing Committee.

For that part of the year 1915-16, dating from Nov. 25, 1915 to April 21, 1916.

RECEIPTS.

Unappropriated balance Nov. 25, 1915.....	\$264.91
Check from Emerson McMillin.....	250.00
	—————\$514.91

EXPENDITURES.

Dec. 4, 1915. L. B. Walton, for research.....	6.50
	—————\$508.41

ASSIGNMENTS FOR 1916-17.

S. R. Williams and W. H. Shideler.....	\$25.00
L. S. Hopkins.....	50.00
B. W. Wells.....	50.00
F. L. Landacre.....	75.00
	—————\$200.00

Leaving an unassigned balance in the Treasury, April 21, 1916. \$308.41

WILLIAM R. LAZENBY, *Chairman.*

Report of the Publication Committee.

The report of the Publication Committee was received as follows and ordered filed.

The committee has published no reports since the November meeting.

The committee recommends that after the publication of the reports of the 25th meeting, the Proceedings of the Academy be enlarged to the standard magazine size, 7 x 10 inches.

JOHN H. SCHAFFNER, *Chairman.*

Report of the Library Committee.

For the Library Committee, Professor Mills made an oral report, introducing Mr. Reeder, of the Ohio State University Library. The following report by Mr. Reeder was received and ordered filed.

To the Ohio Academy of Science:

The University Library begs to report that it has cared for all the accessions to the Library of the Academy which have been received since the November meeting, 1915. The deposit has been moved to Deck 5, in the book stack, on which floor is shelved the Library's file of reports and proceedings of scientific societies.

During the period covered by this report, publications of the Academy have been sold to the amount of \$22.00. This sum has been turned over to the Treasurer.

All correspondence, concerning the publications of the Academy and its exchanges, has been given prompt attention and is on file in the University Library.

Very respectfully,

C. W. REEDER.

April 21, 1916.

Report of the Committee on the Ohio Journal of Science.

The Committee on the Relation of the Academy to the Ohio Journal of Science presented a divided report. The majority favored the continuance of the present relation, modified somewhat in the direction of a closer affiliation; a minority recommended "that the present relationship of the Academy and the Ohio Journal of Science be terminated, and a committee be appointed to consider the question of some form of Academy publication, as ample and representative as our income will permit."

After extended discussion, the Academy took the following actions:

1. That the Committee on the Relation of the Academy to the Ohio Journal of Science be instructed to formulate more definitely the two plans, proposed respectively in the majority and minority reports, and to submit both to the membership of the Academy for an expression of opinion, this to be considered not as a formal ballot, but merely as a guide in the further consideration of the question by the next Annual Meeting.

2. That the Academy request the appointment upon the Editorial Board of the Journal of one representative from each organized section of the Academy. (Note—The Secretary has received notice of the cordial agreement of the management of the Journal to this request.)

3. That the detailed arrangements for the coming year be referred to the Executive Committee with power.

No formal report was presented by the Committee on Legislation. The Committee was continued.

Report of Committee on Catalog of Scientific Journals.

The following report was presented by Mr. Reeder, of the Ohio State University Library, for the Committee on Catalog of Scientific Journals. The report was received and ordered filed and the Committee continued to carry on the work.

April 21, 1916.

To the Ohio Academy of Science:

The Committee on the Union Catalog of Scientific Periodicals begs leave to submit the following report:

At a meeting held during the sessions of the American Association for the Advancement of Science, at the Ohio State University, December, 1915, it was decided to co-operate with the College Section of the Ohio Library Association in the preparation, not of a *purely scientific* catalog, but in a catalog of *all* periodical sets in Ohio Libraries. The College Section of the Library Association, at its annual meeting in October, 1915, appointed a committee consisting of Messrs. Miller (Ohio Wesleyan), Read (Cincinnati), and Reeder (Ohio State), to begin the preparation of a Union Catalog which would be of assistance to the Universities and Colleges in handling requests for the inter-library loan of books and volumes of sets. The Committee of the Academy felt that such a Union Catalog, if complete, would include the scientific and technical sets, and therefore duplicate the catalog planned by the Academy. It was decided that co-operation in this undertaking was

advisable. Mr. C. W. Reeder, representing both the Library Association and the Academy, was instructed to draw up a statement outlining in detail the plans of both organizations for the preparation of the joint union catalog. After considerable correspondence, the following statement, which was to be sent to libraries, was agreed upon:

UNION CATALOG OF PERIODICAL SETS IN OHIO LIBRARIES.

The Ohio Academy of Science and the College Section of the Ohio Library Association, jointly, propose to compile a Union Catalog of the periodical and scientific sets (except documents) in the libraries of the State. This catalog is to be made on cards, (Library Bureau No. 33030 or any 3 x 5 stock) and filed with the Ohio State University Library, the official depository of the Ohio Academy of Science. Ultimately the Academy hopes to print this union catalog for the benefit both of librarians and of scientists. However, until printed, it will be possible for any one to write directly to the Ohio State University Library and secure information concerning the location of any scientific set in the State.

The Library of Congress rules will be followed in main entry. If a series has ceased publication, or has not been continued, the closed entry will be used as v. 1-10, 1865-1874. If the series is being continued, the open entry will be used, as v. 1, 1900-.

When the cards are received at the University Library, they will be stamped with the name of the sending library, and filed in the Union Catalog. If desired, any library may add its classification marks to the catalog cards.

It is recommended that the deposit include all the periodical sets (except documents) in the possession of the co-operating libraries.

The Ohio Academy of Science has been working on such a proposition for several years, and much of preliminary data has been received. At the October, 1915, meeting of the Ohio Library Association, a committee was named to compile a Union Catalog of periodical sets, so that librarians might know where sets are when needed by them in the various universities and colleges.

Therefore this joint effort of the two associations as outlined above, will bring into existence a bibliographical tool, the value of which will be indispensable to the college librarians and to the scientists of the Ohio Academy.

You are urged to co-operate in this undertaking by sending to the Ohio State University Library, the card record of your periodical sets, excluding documents.

The next step consisted in the preparation of a list of the libraries which would be invited to submit the record of their periodical sets. After correspondence, the following thirty-nine institutional libraries were selected:

- Adelbert College Library.
- Akron Municipal University Library.
- Antioch College Library.
- Baldwin-Wallace College Library.
- Case Library (Cleveland).
- Case School of Applied Science Library.
- Cincinnati Public Library.
- Cincinnati University Library.
- Cleveland Public Library.
- Columbus Public Library.
- Dayton Public Library.
- Denison University Library.
- Hebrew Union Theological Seminary Library.
- Heidelberg University Library.
- Hiram College Library.

Kenyon College Library.
 Lake Erie College Library.
 Lloyd Library (Cincinnati).
 Marietta College Library.
 Mechanics Library, Cincinnati.
 Miami University Library.
 Oberlin College Library.
 Ohio State Library.
 Ohio State University Library.
 Ohio University Library.
 Ohio Wesleyan University Library.
 Ohio Archaeological & Historical Society Library.
 Otterbein College Library.
 St. Ignatius College Library.
 St. John's University Library.
 St. Mary's College Library.
 St. Xavier's College Library.
 Toledo University College Library.
 Toledo Public Library.
 Western College for Women Library.
 Western Reserve University College for Women Library.
 Wilberforce University Library.
 Wittenberg College Library.
 Wooster College Library.

Letters with enclosure of the statement of plans were sent out to these libraries on March 24 and 25, 1916. To date, favorable replies have been received from eighteen (18) as follows:

Adelbert College Library.
 Akron Municipal University Library.
 Antioch College Library.
 Case School of Applied Science Library.
 Cincinnati Public Library.
 Cleveland Public Library.
 Hiram College Library.
 Lloyd Library (Cincinnati).
 Mechanics Library (Cincinnati).
 Miami University Library.
 Oberlin College Library.
 Ohio State Library.
 Ohio State University Library.
 Ohio University Library.
 Ohio Archaeological and Historical Society Library.
 Ohio Wesleyan University Library.
 Toledo Public Library.
 Wittenberg College Library.

In two cases, the contributions have been sent in for the Union Catalog. Case School of Applied Science has printed a pamphlet giving the titles of sets and their completeness. Lloyd Library has issued as

Bibliographical Contribution, V. II, No. 1, "Catalogue of the Periodical Literature in the Lloyd Library," 104 pp. Two copies of these printed records have been secured, the entries have been clipped and pasted on cards, ready for filing.

It is not necessary to go into the detailed questions which are arising in connection with the preparation of these records in the various libraries. The points are numerous, but each is being given consideration so that this Union Catalog may approach, as far as possible, the acme of perfection.

Some letters reveal conditions which must be very disheartening to both the librarians and to the users, many of whom are members of the Academy.

"We do not have at present any separate list or catalogue of our periodical sets."

"A certain proportion of our periodical sets, just how large I cannot at present say, have never been classified or catalogued."

"Our periodicals have never been catalogued and we have only memorandum records at present."

The Committee recognizes that the request made upon the various libraries entails some work and perhaps some readjustment. If, however, this request will cause some libraries to straighten out the conditions surrounding the periodical sets, to make catalogs, to classify, to purchase or fill in missing volumes, and in general to improve the records, then at least one tangible result, with some attendant good, has been accomplished, not only beneficial to the libraries, but also to the members of the Academy and other users.

The Committee suggests that the members of the Academy, who come from institutions which have not yet signified their intention of joining this co-operative undertaking, should use their influence with the library authorities to prepare the data desired for the Union Catalog.

Very truly yours,

C. W. REEDER,

For the Committee.

Election of Officers.

From the double slate of nominations prepared by the Nominating Committee, the following officers for 1916-17 were elected by the ballot of the Academy:

President—Professor F. O. GROVER, Oberlin College, Oberlin.

Vice-President for Zoology—Professor STEPHEN R. WILLIAMS, Miami University, Oxford.

Vice-President for Botany—Professor E. L. FULLMER, Baldwin-Wallace College, Berea.

Vice-President for Geology—Professor AUGUST FOERSTE, Steele High School, Dayton.

Vice-President for Physics—Professor M. E. GRABER, Heidelberg University, Tiffin.

Secretary—Professor E. L. RICE, Ohio Wesleyan University, Delaware.

Treasurer—Professor J. S. HINE, Ohio State University, Columbus.

Elective Members of Executive Committee—Professor BRUCE FINK, Miami University, Oxford; Professor L. B. WALTON, Kenyon College, Gambier.

Member of Publication Committee—Professor J. A. CULLER, Miami University, Oxford.

Trustee of Research Fund—Professor M. M. METCALF, Oberlin College, Oberlin.

Member of Library Committee—Mr. C. W. REEDER, Ohio State University, Columbus.

Election of Members.

The Membership Committee reported fifteen names for election to membership, marked with * in the following list; two additional names already approved by the Executive Committee were also presented for ratification. The entire list was elected as follows:

- * Baker, Rollo C., Anatomy, O. S. U., Columbus.
- * Cole, Archie E., Zoology, Plymouth.
- * Cole, Margaret, Biology, Plymouth.
- * Forman, Johnathan, Pathology, Medical College, N. Park St., Columbus.
- Harmount, Geo. P., Geology, Archeology, 2290 Indianola Ave., Columbus.
- * Knouff, Ralph A., Anatomy, O. S. U., Columbus.
- * McCloy, James H., Physics, Westerville.
- * McPeck, Clayton, Physiology, 110 W. First Ave., Columbus.
- * Martin, Benj., Entomology, Zoology, Berea.
- * Okey, Catharine W., Anatomy, Zoology, O. S. U., Columbus.
- * Reed, Carlos I., Physiology, 97 Price St., Columbus.
- * Reeder, C. W., Library, O. S. U., Columbus.
- * Scott, Ernest, Pathology, Medical College, N. Park St., Columbus.
- * Stehle, Mabel E., Zoology, Entomology, 100 Mithoff St., Columbus.
- Stout, Harry O., Botany, Geology, Agriculture, Zoology, 1031 Alger St., Fremont.
- * Warren, James H., Anatomy, Medical College, N. Park St., Columbus.
- * Weston, William H., Jr., Botany, Zoology, Biological Laboratory, Adelbert College, Cleveland.

In view of the work of Mr. Reeder in connection with the library of the Academy, it was voted that his membership dues be remitted, as was formerly provided by the Constitution in case of the Librarian.

Report of the Committee on Resolutions.

The following report was presented by the Committee on Resolutions, and adopted by the Academy.

Resolved, That the Academy heartily thank the authorities of the State University and the members of the Local Committee for their efforts in making the 26th Annual Meeting one successful in every way.

Resolved, That the members of the Academy formally thank Mr. Emerson McMillin for his continued support of research work in Ohio.

Resolved, That the Academy express its appreciation of the work done by Mr. Reeder of the University Library for his efforts in connection with cataloging the scientific literature of Ohio.

(Signed),

L. B. WALTON,
FRANK R. ELLIOTT,
A. B. PLOWMAN.

The Report of the Committee on Necrology.

The following report was presented by the Committee on Necrology:

It becomes our painful duty, as Committee on Necrology, to report the death of two members of the Ohio Academy of Science. Professor F. M. Webster, of Washington, D. C., and Prof. John Royer, of Bradford, Ohio.

Prof. Webster's death came very unexpectedly. He came to Columbus during the holiday recess to attend the meeting of the American Association for the Advancement of Science. He arrived in the city on Monday and the Chairman of your Committee had the pleasure of meeting him at that time, and had quite a talk with him concerning old associations of the Academy. He expressed to me at that time, his regret that he was unable to attend the Quarter Centennial of the Academy but was glad to be back in Columbus and see the old places he knew in early days.

Prof. Webster was connected with the Bureau of Entomology, Washington, D. C. He died at Grant Hospital, Monday morning, January 3, 1916. He was taken ill on Wednesday evening preceding his death. After being stricken with his final illness, he felt sure of a speedy recovery, but as the days went by, he became worse and was taken to the hospital, where he passed away in a short time.

Prof. Webster was one of the most prominent of American entomologists and his death will be mourned by scientists in all parts of the world. His home was in Kensington, Md., and his office was at the Department of Agriculture in Washington.

Professor Webster was born at Lebanon, N. H., August 8, 1849. He received his degree of M. S. from the Ohio University in 1893.

From 1882 to 1884 he was State Entomologist for Illinois. Following the termination of his position, he was connected with the Government Agricultural Station until 1904, when he was placed in charge of cereal and forage-crop insect investigation for the U. S. Department of Agriculture. Professor Webster was one of the most prominent scientists in the Government service. He was sent to Melbourne, Australia, as special representative to the International Exposition held in that city in 1888-1891. He also was sent to Tasmania and New Zealand to study agricultural methods in these countries.

At the time of his death he was President of the Biological Society of Washington. Professor Webster was very active in the affairs of the

Academy in its early years and was elected as third President of the Academy in 1894; during all of the time of his connection with the Experiment Station at Wooster he was very active in Academy work, presenting many papers and taking an active interest in discussions.

He was ex-President of the Association of Economic Entomology, ex-President of the Society of Entomology at Washington, D. C., ex-President of the National Geographical Society, ex-President of the American Association of Naturalists, and an honorary member of many other scientific associations and societies of the country. His contributions to scientific publications, have been of special interest to scientists from all parts of the world; and in this way he made himself one of the most important men in the service of the government.

Professor John Royer died at Bradford, Ohio, October 13, 1915. He was born January 31, 1845.

Professor Royer was one of the early educators in Ohio, having spent more than forty years of his life as a teacher. He taught in the schools of Ansonia, Gettysburg, Versailles and Pleasant Hill, and was the first man to receive a certificate as a teacher in Darke County.

Professor Royer was the publisher of many books. Royer's Mental Arithmetic had a wide circulation, more than 120,000 of these books having been sold.

He also published Royer's Geography, which had quite a sale, as well as Royer's Course in English.

At one time Prof. Royer was editor of *The School Visitor*, which was published at Columbus and at Versailles, Ohio. He afterwards sold his interest in this publication to *The Ohio Teachers Magazine*, with which it was merged.

Professor Royer spent the last ten years of his life in retirement.

WM. C. MILLS,
JOHN H. SCHAFFNER,
J. S. HINE.

Report of the Auditing Committee.

The Auditing Committee presented the following report, which was accepted and ordered filed.

April 21, 1916.

The committee appointed by the Ohio Academy of Science to audit the books of the Treasurer, has examined the accounts and finds them as reported:

The committee appointed by the Ohio Academy of Science to audit the books of the Treasurer of the Emerson McMillin Research Fund, has examined the accounts and finds them as reported.

Respectfully,

C. G. SHATZER,
WILLIAM R. LAZENBY.

The meeting adjourned without determining the place of the next meeting.

SCIENTIFIC SESSIONS.

The complete scientific program of the meeting follows:

Presidential Address.

What Has the Future for Geologists? G. D. HUBBARD

Addresses in Joint Session with Ohio College Association and Affiliated Societies.

(See Page 69).

Papers.

1. Parthenogenesis in the Dandelion. 20 min. (Lantern). PAUL B. SEARS
2. Exploration of Tremper Mound. 30 min. (Lantern). W. C. MILLS
3. The Educational Value of Wood Study. 10 min. (Lantern). A. B. PLOWMAN
4. Botanizing in Porto Rico. 30 min. (Lantern). BRUCE FINK
5. Parallelism between the Cystid Agelacrinites (fossil) and the Holothurian Psolus (recent), with Demonstrations. 15 min. STEPHEN R. WILLIAMS
6. The Axial Rotation of Microorganisms and its Evolutionary Significance. 10 min. L. B. WALTON
7. A New Method for Marking Slides. 3 min. PAUL B. SEARS
8. Notes on Ohio Tingitidæ. 6 min. CARL J. DRAKE
9. Insect Population of Grasslands. 12 min. (Lantern). HERBERT OSBORN
10. Genitalia of the Bedbug, with special reference to a Unique Method of Copulation. 7 min, (Lantern). P. B. WILTBERGER
11. The Origin of the Gasserian and Profundus Ganglia in Rana. 5 min. RALPH A. KNOUFF, introduced by F. L. LANDACRE
12. The Fusion of the Gasserian and Profundus Ganglia in Plethodon. 5 min. KATHERINE OKEY, introduced by F. L. LANDACRE
13. The Origin of the Placodal Ganglia in Squalus. 7 min. C. I. REED, introduced by F. L. LANDACRE
14. Concerning Thyroid Glands in Amphibia. 10 min. (Lantern). R. A. BUDINGTON
15. Feeding Thymus and Thyroid Extracts. 5 min. E. P. DURRANT
16. Notes on Protozoa. (a) A Review of the Arcellidae. (b) Supplement to the Euglenoidina. 6 min. L. B. WALTON
17. Notes on Birds. 10 min. H. A. ALBYN
18. A New Three-Salt Nutrient Solution for Sand and Water Cultures. 10 min. A. G. MCCALL
19. An Adjustment of the Sliding Microtome for Cutting Lignified Tissue. 2 min. FOREST B. H. BROWN
20. Notes on the Structure and Function of the Green Layer of the Bark of Woody Plants. 8 min. (Lantern). FOREST B. H. BROWN
21. The Distribution of Fungi in Porto Rico. 10 min. BRUCE FINK
22. The Genus Physcia in Ohio. 10 min, MARTHA MCGINNISS, introduced by BRUCE FINK
23. Decrease of Permeability with Age (Preliminary Note). 5 min. H. M. BENEDICT
24. Methods of Spore Formation in the Zygnemales. 10 min. E. N. TRANSEAU

25. Notes on the Germination of Tree Seeds. 10 min. WILLIAM R. LAZENBY
 26. The Quince Leaf-Spot. 10 min. W. G. STOVER
 27. A Blade Blight of Corn. 10 min. W. G. STOVER and W. N. ANKENY
 28. The Occurrence of the Volutella Rot in Ohio. 5 min. GUSTAV A. MECKSTROTH
 29. Observations on the Ontogeny of the Gall of *Pachypsylla mama* Riley.
 30 min. (Lantern) B. W. WELLS
 30. On Wavemarks. 10 min. (Lantern) WALTER H. BUCHER
 31. The Northward Extension of the Physiographic Provinces of the United
 States. 20 min. W. N. THAYER
 32. Additions to the Anatomy of *Lepadocystis moorei*. 5 min. W. H. SHIDELER
 33. Resistance of Electrolytes by a modification of Kohlrausch's Method.
 12 min. M. E. GRABER
 34. Demonstration of Apparatus showing Analogy between Reactance
 Phenomena in Alternating Current Circuits and in Fluids. 15 min.
 F. C. CALDWELL
 35. Absorption of High Frequency X-rays. 15 min. S. J. M. ALLEN
 36. A Relative Score Method for Unmeasured Characters. 10 min. A. G. MCCALL
 37. The Revegetation of the Katmai District of Alaska. 35 min. (Lantern),
 ROBERT F. GRIGGS
 38. The Symbols used in Geometry JOHN H. WILLIAMS
 39. Crystals W. N. SPECKMAN

Demonstrations.

1. Certain Points in the Celloidin Method A. B. PLOWMAN
2. A Recent Ohio Specimen of Henslow's Sparrow EDWARD L. RICE

EDWARD L. RICE, *Secretary.*