

THE OHIO JOURNAL OF SCIENCE

Vol. XXIII

SEPTEMBER-OCTOBER, 1923

No. 5

REPORT OF THE THIRTY-THIRD ANNUAL MEETING OF THE OHIO ACADEMY OF SCIENCE

The Thirty-third Annual Meeting of the Ohio Academy of Science was held at Oberlin College, Oberlin, March 30 and 31, 1923, under the Presidency of Professor Albert P. Weiss. Fifty-five members were registered as in attendance; twenty-five new members were elected.

The annual excursion of the Section for Geology was held on May 25, 26 and 27, under the general management of Professor J. Ernest Carman, Vice-President for 1923-24. The party gathered fifty strong at Newark, Ohio. The first day was devoted largely to archeology, in the study, under the guidance of Dr. W. C. Mills, of the earthworks near Newark and the flint quarries of Flint Ridge. Mr. Wilber Stout directed the remainder of the trip, which was planned for the observation of the Pennsylvanian and Permian rocks, the Quaternary molding sand deposits, and the topography of Muskingum County.

GENERAL PROGRAM.

FRIDAY, MARCH 30.

- 9:30 A. M.—Business Meeting.
- 11:00 A. M.—Reading of Papers in General Session.
- 12:30 P. M.—Luncheon.
- 2:00 P. M.—Illustrated Lecture by Professor Henry C. Cowles, of the University of Chicago, on "Trees as Witnesses in Boundary Disputes; and Instance of Applied Ecology."
- 3:00 P. M.—Reading of Papers in Sectional Meetings.
- 6:30 P. M.—Dinner.
- 8:00 P. M.—Address by the President of the Academy, Professor Albert P. Weiss, of Ohio State University, on "The Aims of Social Evolution."

SATURDAY, MARCH 31.

- 9:00 A. M.—Adjourned Business Meeting.
 10:30 A. M.—Reading of Papers in General Session.
 12:30 P. M.—Luncheon.
 2:00 P. M.—Demonstrations.
 2:30 P. M.—Reading of Papers in Sectional Meetings.

FRIDAY, MAY 25, TO SUNDAY, MAY 27.

Excursion of Section for Geology, Muskingum County.

MINUTES OF BUSINESS MEETINGS.

The first business session was called to order by President Weiss at 9:30 A. M., on Friday, March 30; an adjourned session was held at 9:00 A. M. on the following day.

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

Committee on Membership—W. M. Barrows, Lynds Jones, E. L. Fullmer.

Committee on Resolutions—C. H. Kennedy, R. C. Osburn, G. D. Hubbard.

Committee on Necrology—T. C. Mendenhall.

The following *Auditing Committee* was elected by the Academy: Stephen R. Williams, M. M. Metcalf.

The following *Nominating Committee* was elected by the ballot of the Academy: R. C. Osburn, E. Lucy Braun, G. D. Hubbard, T. C. Mendenhall, C. G. Rogers, A. P. Weiss.

Report of the Secretary.

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

March 30, 1923.

To the Ohio Academy of Science:

The work of the Secretary for the last year has been almost entirely routine. The following items may be reported for the sake of record.

A brief report of the Thirty-second Annual Meeting was sent to *Science*, and appeared in the number for September 8.

The Secretary was present to represent the Academy in the Council of the American Association for the Advancement of Science at the Boston Meeting.

The certificate of election to fellowship has been mailed, as directed by the Academy, to the fellows elected in 1920 and 1921, as well as to those elected in 1922.

Respectfully submitted,

EDWARD L. RICE, *Secretary.*

Report of the Treasurer for the Year 1922-1923.

The report of the Treasurer was received as follows and referred to the Auditing Committee, whose report is appended.

RECEIPTS.

| | |
|--|-------------------|
| Balance April 12, 1922, as previously reported..... | \$ 617.52 |
| Librarian's sales of publications, 1921-1922..... | 37.00 |
| Librarian's sales of publications, 1922-1923..... | 23.45 |
| Membership dues, A. A. A. S. and the Ohio Academy..... | 1,311.00 |
| Total receipts..... | <u>\$1,988.97</u> |

DISBURSEMENTS.

| | |
|--|-------------------|
| American Association for the Advancement of Science..... | \$693.00 |
| The Ohio Journal of Science..... | 350.00 |
| Spahr and Glenn, printing..... | 75.00 |
| E. L. Rice, Secretarial expenses..... | 33.10 |
| Independent Print Shop..... | 45.50 |
| Lynds Jones, for expenses, executive committee..... | 12.32 |
| B. V. Bevin..... | 2.00 |
| Eunice Evans, stenographic work..... | 10.00 |
| Returned check..... | 2.00 |
| Total disbursements..... | <u>\$1,222.92</u> |
| Balance on hand, 1922-1923..... | <u>\$ 766.05</u> |

A. E. WALLER, *Treasurer.*

The accounts herewith and vouchers checked over and found to be correct.

STEPHEN R. WILLIAMS,
MAYNARD M. METCALF,
Auditing Committee.

The following financial statement of Mr. L. H. Tiffany, manager of the Ohio Journal of Science, while not strictly a part of the Treasurer's Report, is appended for the information of the Academy.

FINANCIAL STATEMENT OF THE OHIO JOURNAL OF SCIENCE.
(Volume XXII, 1921-22. The Ohio Journal of Science).

RECEIPTS.

| | |
|---|-----------------|
| Ohio State University Allowance..... | \$500.00 |
| A. E. Waller, Treasurer, Ohio Academy of Science..... | 250.00 |
| Reprints, extra copies of Journal..... | 218.40 |
| Total receipts..... | <u>\$968.40</u> |

EXPENDITURES.

| | |
|---|------------|
| Bucher Engraving Company..... | \$ 58.18 |
| Stenographic Work..... | 3.50 |
| Postoffice Deposit..... | 3.89 |
| Stamps, mailing and stationery..... | 64.47 |
| | <hr/> |
| Total expenditures..... | \$130.04 |
| | <hr/> |
| Balance on hand 1921-22..... | \$838.36 |
| | <hr/> |
| Estimated cost of the Journal, 1921-22..... | \$1,000.00 |
| Cash on hand, 1921-22..... | 838.36 |
| | <hr/> |
| Deficit for 1921-22..... | 161.64 |
| Deficit for 1920-21..... | 447.31 |
| | <hr/> |
| Total deficit..... | \$ 508.95 |

Report of the Executive Committee.

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

March 30, 1923.

To the Ohio Academy of Science:

A meeting of the Executive Committee was held in Columbus, October 21, 1922. All members were present.

At this meeting the invitation to hold the Thirty-third Annual Meeting at Oberlin College was accepted, and the meeting was set for March 30 and 31.

The Secretary was instructed to arrange, if practicable, for the publication in the Ohio Journal of Science of a brief obituary notice of Mr. Emerson McMillin, in anticipation of a more adequate memorial to be presented at this meeting. The late appearance of this notice (in the January-February number) was unavoidable, because of the readjustment of the dates of publication of the Journal.

The Secretary presented a letter of June 10 from President Charles D. Walcott, of the Spencer Fullerton Baird Memorial, announcing plans for the celebration of the one-hundredth anniversary of the birth of Spencer Fullerton Baird, February 3, 1923, and inviting the Academy to designate a representative on the national committee. The letter closes with these paragraphs:

"Among the suggestions that have been made for a permanent national memorial are (1) a bust, statue, mural or open-air fountain, or bronze mural tablet to be provided by voluntary subscriptions and erected in the grounds of the Smithsonian Institution or the National Zoological Park, and (2) a fishery museum or exhibit, with public aquarium, embracing both the scientific and applied features of fishery problems, to be established by Congress under the auspices of the Smithsonian Institution.

"It has been suggested also that there be established a Baird Memorial Medal to be awarded periodically to persons performing noteworthy original or meritorious work in science, and that there be published during 1923, preferably under the auspices of the National Museum or the Smithsonian Institution, a memorial volume to be made up of original papers on scientific subjects contributed by Baird's associates, colleagues, and immediate followers.

"In advising me that your organization will be represented on the national Baird memorial committee, will you kindly communicate your views on the general subject of the memorial?"

The action of the Executive Committee is shown in the following quotation from the reply to Dr. Walcott's letter:

"Our committee was enthusiastically in favor of such a memorial and appointed Dr. Raymond C. Osburn, of Ohio State University, as our representative. As to the particular form of memorial, the consensus of opinion was in favor of the fountain or aquarium, rather than the other alternatives suggested in your letter. Dr. Osburn was, however, left without formal instructions."

On the suggestion of the Treasurer, it was voted to allow to each new member the option of receiving the back numbers of the Ohio Journal of Science from January to the time of election or of commencing the Journal with the following January, as he may prefer.

A second meeting of the Committee was held in Oberlin on March 29, 1923. All members present.

In accordance with the instructions of the last Annual Meeting, the Committee has prepared a series of amendments to the Constitution, establishing the Committee on State Parks and Conservation as a standing committee of nine members, and providing for the election of three members each year for a term of three years. These amendments will be presented for adoption later in the session. The expiration of the term of office of the committee membership was determined by lot, as follows: Herbert Osburn, Chairman, 1925; E. Lucy Braun, 1924; J. E. Carman, 1924; Bruce Fink, 1926; E. L. Fullmer, 1925; E. R. Hayhurst, 1926; F. H. Herrick, 1925; C. G. Shatzer, 1924; E. N. Transeau, 1926.

The Committee voted to recommend that the Academy heartily endorse the efforts of the Ohio College Association toward the securing of uniformity in date of the spring vacation of the colleges of Ohio, as facilitating attendance at meetings of the Ohio College Association, Ohio Academy of Science, and other societies consisting largely of college men.

The Committee also voted to recommend to the Academy an amendment of the By-Laws providing an annual honorarium of one hundred dollars for the Secretary, this honorarium to include expenses for clerical assistance.

Sixteen applications for membership have been approved, subject to final ratification by the present meeting.

Respectfully submitted,

EDWARD L. RICE, *Secretary.*
For the Committee.

Report of the Publication Committee.

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

The Annual Report of the Thirty-second Meeting, Proceedings, Vol. VII, Part 7, contained 36 pages and was published March 1, 1923.

The report minus the membership list was also published in the Ohio Journal of Science 23 : 1-24, 1923.

Respectfully submitted,
H. C. SAMPSON, *Chairman.*

Report of the Library Committee.

The following report of the Library Committee was received and ordered filed.

March 29, 1923.

To the Ohio Academy of Science:

The Library Committee begs to report that all the duties devolving upon it have been discharged as promptly as possible.

The sale of publications during the year amounted to \$23.45. This amount has been turned over to the Treasurer of the Academy.

The Proceedings of the Thirty-second Annual Meeting, 1922, were received from the printer on March 12, 1923. Copies were mailed immediately to all persons on the membership roll, and to all institutions on the exchange list.

The publications which have been received on exchange have been added to the others previously filed in the University Library. The University Library would like to see more use made of these exchanges and other scientific sets by the members of the Academy who are non-resident in Columbus. The University Library annually renews its offer to lend to the members of the Academy, through their home libraries, the scientific publications needed in their research work.

The writer of this report desires to call the attention of the Academy to Section 3 in House Bill No. 400, "A bill relative to state recognition of the Ohio Academy of Science" now before the 85th General Assembly. On page 2, lines 28, 29 and 30, read as follows: "All exchanges received shall be kept available to the citizens of the state through the Ohio State Library, or such other channel as may be determined." . . . While not wanting to say anything to affect the cordial relations existing between the Ohio State Library and the Ohio State University Library, yet be it said that if an individual library is to be specified in the bill, it ought to be the library which is at present, and has been for eight years handling the exchanges of the Academy, namely, the Ohio State University Library. If the bill should be made to read that exchanges were to be kept at such a place as may be determined by the Academy, no objection could be made, because the question of the disposition of its property is a right inherent in the organization.

Furthermore, it may not be known to the members of the Academy, but the facts are that the State Library and the University Library are dividing the field between the two institutions, whereby the technical and scientific literature is to be developed by the University Library. In accordance with this plan, it would naturally fall to the University Library to handle and make available any scientific literature received by the Academy.

Section 3 of this bill also needs redrafting, especially as it relates to the distribution of the publications of the Academy. As drafted, it provides that one copy of the Proceedings shall be sent to each public library and museum, university, college, normal school and first grade high school. It also provides that one copy of the Ohio Journal of Science shall be sent to each university and college. Then, it provides that "not less than one hundred copies of each publication shall be distributed through the Ohio State Library." Since the provision is made specifically for the distribution of the publications, to whom is the State Library to send its one hundred copies?

Furthermore, the Academy does not control the Ohio Journal of Science. If such is the case, can this bill, which relates to the Academy, provide for the distribution of the Journal, for the handling of its exchanges, and for grant of one hundred copies to the Ohio State Library?

The Ohio State University has been paying to the Ohio Journal of Science \$500.00 a year, for which sum 250 copies of each issue have been allotted the University Library for exchanges. Under the proposed legislation, some complications are likely to occur if such exchanges are to be deposited in the Ohio State Library.

These statements are made with the friendliest of feelings, but with the purpose of pointing out some features in Section 3 which need more study, in order to keep the Academy from difficulties into which it may unknowingly place itself.

This bill was introduced into the House by Mr. Riggs on February 21st; was read the second time on February 28th, and then referred to the Committee on State and Economic Betterment. It was reported out on March 23d.

If the Academy feels that these points are of importance, it may be proper to instruct its Legislature Committee to seek the desired changes in the bill, either as amendments on the floor, or in the Senate committee, should the bill pass the House.

Respectfully submitted,

By C. W. REEDER,
For the Library Committee.

Report of the Trustees of the Research Fund.

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

To the Ohio Academy of Science:

The Trustees of the Research Fund submit the following Report for the period from March 29th, 1922, to March 30th, 1923.

RECEIPTS.

| | | |
|------------------------------------|------------|------------------|
| Cash on hand March 28th, 1922..... | \$1,090.20 | |
| Interest on bonds..... | 36.12 | |
| | | <hr/> \$1,126.32 |

EXPENDITURES.

| | |
|---|-----------|
| May 8th, 1922, Postage..... | \$ 2.00 |
| June 12th, L. B. Walton..... | 35.80 |
| July 24th, Francis H. Herrick..... | 99.75 |
| August 19th, L. H. Tiffany..... | 47.71 |
| September 16th, James E. Kindred..... | 75.00 |
| December 8th, E. L. Stover..... | 16.20 |
| March 13th, 1923, Raymond A. Dobbins..... | 26.30 |
| | \$ 302.76 |

ASSETS.

| | |
|------------------------------------|------------|
| Cash on hand March 29th, 1923..... | \$823.56 |
| Liberty Bonds at par..... | 600.00 |
| | \$1,423.56 |

LIABILITIES.

| | |
|--|-----------|
| Balance on grants to: | |
| L. H. Tiffany..... | \$ 2.29 |
| R. A. Dobbins..... | 73.70 |
| E. L. Stover..... | 33.80 |
| Francis H. Herrick..... | 25 |
| | \$ 110.04 |
| Excess of cash assets above liabilities..... | \$ 713.52 |

Vouchers are submitted herewith.

T. C. MENDENHALL, *Chairman*,
 GEO. D. HUBBARD,
 HERBERT OSBORN,

Trustees.

Books audited and found correct.

STEPHEN R. WILLIAMS,
 MAYNARD M. METCALF,
Auditing Committee.

Report of the Committee on State Parks and Conservation.

The following report of the Committee on State Parks and Conservation was received and ordered filed.

To the Ohio Academy of Science:

Your Committee can not report any very extensive activity during the past year, but there are several matters of interest which it will be proper to mention.

The final acquisition and dedication of the Roosevelt Park in southern Ohio establishes an extensive and very desirable tract as a permanent game refuge in which we can be assured of the preservation of the natural conditions; and it would appear a very satisfactory arrangement for control between the Fish and Game Commission and State Forester, both of whom, no doubt, will accept suggestions concerning biological features that may be of service.

Under the Silver Bill the State Forester has secured additional tracts for State Forestry purposes, and these, of course, are distinct advances in the matter of preservation of the native flora and fauna.

The present Legislature has enacted or will probably enact a Bill accepting the Bryan farm near Yellow Springs, a tract of something over 500 acres, which was given to the State for preservation as a game refuge, and experiment farm, and under the conditions provided in the present act, will doubtless furnish an additional valuable tract for the preservation of natural conditions.

The transfer of a tract of fifty-seven acres, including the Harness Mounds from the United States Government to the State, under the control of the State Archeological Society, gives us another interesting tract as a public park.

Failure of the National Congress to pass the bill to provide for national game reserves, which would have made possible the preservation of swamp areas and other suitable breeding grounds for migratory fowl, makes it, of course, more desirable that the State should set aside a number of such tracts within our borders for the purpose of conserving wild life dependent upon such conditions. It seems therefore that one of the early movements of the Academy should be to secure, through the Fish and Game Commission or such other channel as may be available, certain reservations of this character.

The waterways project now being considered by the National Government, which would provide a waterway from the Lake to the Ohio River, is a matter of very distinct interest to the members of the Academy, especially in reference to its features of conservation and utilization of water resources in the State. Such a waterway with its reservoir system would make some very important additions to the water areas and utilization, and your Committee will endeavor to keep in close touch with progress in this line.

Respectfully submitted,

HERBERT OSBORN, *Chairman*,
FRANCIS H. HERRICK,
E. N. TRANSEAU,
J. ERNEST CARMAN,
C. G. SHATZER.

Report of the Committee on Legislation.

The following report, presented by the Committee on Legislation, was received as a report of progress, and the Committee was continued. In view of the questions raised in the Report of the Library Committee with reference to the bill for State recognition of the Academy, Mr. Reeder was added to the Committee on Legislation.

The Committee is able to report that a bill for the recognition of the Ohio Academy has been introduced in the Legislature, and two members of the Committee had a conference with the Committee to which the bill was referred. It received a very cordial consideration, and so far as this Committee is concerned, it appears that the bill will

have cordial support. Just what fate it may have in the House we cannot say. Furthermore, the bill will have to be acted upon by the Senate, and considering the lateness of the session, we are somewhat in doubt as to the outcome.

The bill as drafted was changed in two particulars from the bill as agreed upon in the Academy, but the changes made, we believe, will not defeat the objects of the proposed relation to the State. If passed, it should enable the Academy to extend its usefulness and to secure modifications if necessary in the future.

We recommend that the Committee be continued or a new Committee appointed with authority to adjust the constitution and make any arrangement of details necessary in the carrying out of the provisions of the bill.

Respectfully submitted,

HERBERT OSBORN, *Chairman*,
T. C. MENDENHALL,
W. H. ALEXANDER,
EDWARD L. RICE,
MAYNARD M. METCALF.

Election of Officers.

The following officers and committee members for 1923-24 were elected by the ballot of the Academy.

President—Professor K. F. Mather, Denison University, Granville.

Vice-Presidents:

Zoology—Professor W. M. Barrows, Ohio State University, Columbus.

Botany—Professor H. H. M. Bowman, Toledo University, Toledo.

Geology—Professor J. E. Carman, Ohio State University, Columbus.

Physics—Mr. W. C. Devereaux, U. S. Weather Bureau, Cincinnati.

Medical Sciences—Professor B. M. Patten, Western Reserve University, Cleveland.

Psychology—Professor H. A. Aikins, Western Reserve University, Cleveland.

Secretary—Mr. W. H. Alexander, U. S. Weather Bureau, Columbus.

Treasurer—Dr. A. E. Waller, Ohio State University, Columbus.

Elective Members of Executive Committee—Professor A. P. Weiss, Ohio State University, Columbus; Professor E. L. Rice, Ohio Wesleyan University, Delaware.

Member of Publication Committee—Professor L. B. Walton, Kenyon College, Gambier.

Trustee of Research Fund—Professor Herbert Osborn, Ohio State University, Columbus.

Member of Library Committee—Professor F. O. Grover, Oberlin College, Oberlin.

Representatives on Editorial Board of Ohio Journal of Science:

Zoology—Professor R. A. Budington, Oberlin College, Oberlin.

Botany—Professor Bruce Fink, Miami University, Oxford.

Geology—Professor G. D. Hubbard, Oberlin College, Oberlin.

Physics—Professor S. J. M. Allen, University of Cincinnati, Cincinnati.

Medical Sciences—Professor F. C. Waite, Western Reserve University, Cleveland.

Psychology—Professor H. A. Aikins, Western Reserve University, Cleveland.

Election of Members.

The Membership Committee reported nine names for election to membership; sixteen additional names, previously approved by the Executive Committee and marked with (*) in the following list, were presented for ratification. All were elected, as follows:

*BANGHAM, RALPH V.; Zoology, Anatomy; Dept. of Zoology and Entomology, Ohio State University, Columbus.

BEAM, J. ALBERT; Zoology; 174 Greenfield St., Tiffin.

*BØHSTEDT, G.; Animal Nutrition and Genetics; Ohio Agricultural Experiment Station, Wooster.

*BRYANT, WILLIAM L.; Vertebrate Paleontology, American Anthropology; 1231 Elmwood Ave., Buffalo, N. Y.

CULP, VERNON L.; Chemistry, Biology, Physiography; 837 Berwyn St., Akron.

*DEAM, CHARLES C.; Botany, Forestry; Bluffton, Ind.

*DEAN, FOREST W.; Forestry, Botany, Entomology; Ohio Agricultural Experiment Station, Wooster.

*FREER, RUSKIN S.; Botany; East Liberty.

*GILMOR, GRACE; Plant Physiology, Botany; R. D. No. 1, Wooster.

HARTZELL, ALBERT; Entomology, Zoology; Dept. of Zoology and Entomology, Ohio State University, Columbus.

*HITCHCOCK, FRED A.; Zoology, Physiology; 1254 Wesley Ave., Columbus.

*INMAN, ONDESS L.; General Physiology; Antioch College, Yellow Springs.

IRWIN, N. MILDRED; Botany; 6405 Roe St., Cincinnati.

*JOHNSON, HOWARD W.; Botany; Dept. of Botany, Ohio State University, Columbus.

JONES, EDWARD S.; Psychology; 79 S. Cedar St., Oberlin.

McEWEN, ROBERT STANLEY; Zoology; 208 Forest St., Oberlin.

PAINTER, DONALD H.; Geology; 318 Grand Ave., Dayton.

*PHILLIPS, T. G.; Chemistry, Botany; Dept. of Agricultural Chemistry, Ohio State University, Columbus.

*SWINNERTON, ALLYN C.; Geology; Antioch College, Yellow Springs.

VANHORN, JESSE LOWER; Chemistry and Physics; 1490 Roycraft Ave., Lakewood.

*WERNER, WILLIAM C.; Botany; 422 N. St. Clair St., Painesville.

*WHIPPLE, RALPH W.; Geology, Mineralogy, Paleontology, Anthropology; Marietta College, Marietta.

*WILLARD, C. J.; Agronomy, Botany; Ohio State University, Columbus.

WILSON, HERRICK E.; Geology, Zoology, Medicine; 224 W. College St., Oberlin.

*YOUNG, W. J.; Botany; Ohio Agricultural Experiment Station, Wooster.

Report of the Committee on Election of Fellows.

The following report of the Committee on Election of Fellows was accepted and ordered filed.

March 30, 1923.

To the Ohio Academy of Science:

A meeting of the Committee on Election of Fellows was held last evening in Oberlin. Six members of the committee were present; three were represented by duly authorized proxies; two were absent without representation.

Of the candidates considered eight received the necessary nine favorable votes and were declared elected. The fellows elected will be personally notified, and the list will be published in the Proceedings.

Respectfully submitted,

EDWARD L. RICE, *Secretary,*
For the Committee.

The list of members elected to fellowship is as follows:

WILLIAM LETCHWORTH BRYANT
WALTER C. KRAATZ
PAUL MARSHALL REA
SEPTIMUS SISSON

WARREN N. THAYER
ROY CURTIS THOMAS
LEWIS HANFORD TIFFANY
EDWARD L. WICKLIFF

Resolutions.

The following resolutions were adopted by the Academy:

1. The Ohio Academy of Science hereby extends its cordial thanks to the Local Committee and the authorities of Oberlin College for the careful arrangements and many courtesies which have made possible this most successful meeting.

2. The Academy desires also to thank Professor Henry C. Cowles, of the University of Chicago, for the fascinating address on "Trees as Witnesses in Boundary Disputes: an Instance of Applied Ecology," and for his participation in the symposium on "Geographical Distribution of Plants and Animals."

3. The Academy further expresses to Professor Rice its gratitude for his years of service as secretary, a service involving much sacrifice on his part; and we record our appreciation of the fact that the increasing strength of the Academy during the last decade has been due in considerable measure to his influence.

Report of the Committee on Necrology.

The report of the Committee on Necrology consisted of a memoir of Emerson McMillin, 1844-1922, prepared and read by Dr. T. C. Mendenhall. The report was adopted by the Academy. By action of the Executive Committee and Trustees of the Research Fund for 1923-24, to whom, as a joint committee, the matter was referred with power, this memoir has already appeared in the Ohio Journal of Science for May-June, 1923, and is omitted from the Annual Report.

Amendments of Constitution.

ART. IV, SECTION 6a. *Committee on State Parks and Conservation.* New section, to be renumbered on reprinting of Constitution. The Committee on State Parks and Conservation shall consist of nine members elected in accordance with the provisions of Section 16.

ART. IV, SECTION 15a. *Duties of Committee on State Parks and Conservation.* New section, to be renumbered on reprinting of Constitution. The Committee on State Parks and Conservation shall consider the various possibilities in the formation of State Parks in areas of scenic, geologic, or biologic interest, and other effective methods for the preservation of the native fauna and flora and for the conservation of the natural resources of the State; it shall co-operate in all possible ways with other societies, institutions, and State officers in the promotion of these objects.

ART. IV, SECTION 16. *Terms of Office.* Amended to read: The President, Vice-Presidents, Secretary, Treasurer, and elective members of the Executive Committee and Publication Committee shall be elected annually at the annual meeting, and shall be eligible to re-election without limitation, with the exception of the President, who shall not be elected for successive terms. The Trustees of the Research Fund, the members of the Library Committee, and the members of the Com-

mittee on State Parks and Conservation shall be elected for a term of three years, one Trustee, one member of the Library Committee, and three members of the Committee on State Parks and Conservation being elected each year.

Amendment of By-Laws.

CHAPTER II, SECTION 3. *Honorarium of Secretary.* New section. The Secretary shall receive an annual honorarium of one hundred dollars, from which he shall pay for any clerical help employed.

McMillin Prize.

A recommendation was presented by Dr. T. C. Mendenhall, for the Trustees of the Research Fund, that the research fund of the Academy be invested as a permanent endowment, and that the interest derived from the same be devoted to a prize bearing the name of Mr. Emerson McMillin.

The general plan was endorsed by the Academy, and the working out of details was referred to the Executive Committee and the Trustees of the Research Fund for report at the next annual meeting. For the year 1923-24 the use of the income of the research fund was referred to the Trustees with power.

Uniform Spring Vacation.

On the recommendation of the Executive Committee, it was voted that the Ohio Academy of Science heartily endorse the efforts of the Ohio College Association toward the securing of uniformity in the date of the spring vacation of the colleges of Ohio, as facilitating attendance at meetings of the Ohio College Association, Ohio Academy of Science, and other societies consisting largely of college men.

Scientific Sessions.

The complete scientific program of the meeting follows:

PRESIDENTIAL ADDRESS.

The aims of social evolution..... A. P. WEISS

PUBLIC LECTURE.

Trees as witnesses in boundary disputes: an instance of applied ecology,
HENRY C. COWLES

SYMPOSIUM ON GEOGRAPHICAL DISTRIBUTION OF PLANTS
AND ANIMALS.

Geological factors in animal and plant distribution..... G. D. HUBBARD
Some factors in plant distribution..... H. C. COWLES
The distribution of vegetation in relation to physiographic provinces,
E. LUCY BRAUN
The places of origin of the several families of Anura..... M. M. METCALF
Factors which determine local distribution of spiders..... W. M. BARROWS
Some problems in the distribution of dragonflies. (Lantern),
CLARENCE H. KENNEDY

SYMPOSIUM ON CURRENT PROBLEMS OF OHIO GEOLOGY.

Early Paleozoic stratigraphy..... W. H. SHIDELER
Middle Paleozoic stratigraphy..... J. ERNEST CARMAN
Stratigraphy of the Carboniferous formations..... J. E. HYDE
Paleozoic faunas and their correlation..... A. F. FOERSTE
Some work yet to be done in Ohio physiography..... GEO. D. HUBBARD
Economic geology..... J. A. BOWNOCKER
Structural geology..... W. H. BUCHER

PAPERS.

1. Weather and human conduct. (30 min., lantern).. WILLIAM H. ALEXANDER
2. Some Old World botanic gardens. (25 min., lantern)..... A. E. WALLER
3. Some features of the Park Area of the Cleveland Metropolitan Park
District. (20 min., lantern)..... E. L. FULLMER
4. The Cleveland Museum of Natural History. (25 min.)..... P. M. REA
5. An "eagle" observatory at Vermilion; results obtained in 1922. (40 min.,
lantern)..... FRANCIS H. HERRICK
6. A contribution to our knowledge of the life history and physiology of
Euglena. (15 min.)..... W. J. KOSTIR
7. The so-called allelocatalytic effect in the reproduction of Protozoa.
(5 min.)..... W. J. KOSTIR
8. The persistence of archaic parasites through many geologic periods.
(10 min., opaque projection)..... MAYNARD M. METCALF
9. The origin of American opalinids. (15 min., opaque projection),
MAYNARD M. METCALF
10. Two new cestode parasites in black bass of Ohio; life history, distribution,
etc. (10 min.)..... RALPH V. BANGHAM
11. Life history studies of Homoptera. (10 min., lantern)... HERBERT OSBORN
12. Jumping mouse, *Zapus hudsonius*, in Ohio. (10 min.)..... H. A. GOSSARD
13. The geographic distribution of Arctic Bryozoa. (10 min., lantern),
RAYMOND C. OSBORN
14. The inheritance of the nail-biting habit. (10 min., lantern), W. M. BARROWS
15. A case of extra digits in the manus of the pig. (10 min., lantern),
STEPHEN R. WILLIAMS
16. On the origin of some embryonic abnormalities. (10 min.)... R. A. BUDINGTON

17. Comparative physiology as an undergraduate study. (15 min.),
CHAS. G. ROGERS
18. Physiological evidences of animal relationship. (15 min.).. CHAS. G. ROGERS
19. Lorain County Polyporaceae. (5 min.)..... F. O. GROVER
20. The vegetation of Ohio. (Lantern)..... E. N. TRANSEAU
21. Studies on the genus *Ampelopsis*. (15 min., lantern)..... GRACE GILMOR
22. Variations in the root system of the common everlasting *Gnaphalium polycephalum*. (10 min.)..... HELEN GUHMAN
23. Soil reactions and plant succession. (15 min.),
E. LUCY BRAUN AND SYLVIA GEISLER
24. Importance of resistance of the host in the control of plant diseases.
(20 min.)..... W. J. YOUNG
25. Observations on the sexual state of various plants. (15 min.),
J. H. SCHAFFNER
26. The time of sex determination in plants. (12 min.)..... J. H. SCHAFFNER
27. Some chemical changes accompanying growth and reproduction in
Spirogyra. (15 min.)..... L. H. TIFFANY
28. Flora of the muck land of Delaware County, Indiana. (10 min.),
BLANCHE MCAVOY
29. Notes on the distribution of sea grasses. (10 min., lantern),
H. H. M. BOWMAN
30. Prairie openings on the Little Miami River. (20 min., lantern),
M. MILDRED IRWIN
31. Concerning some ostracoderms from Ohio. (15 min., lantern),
J. ERNEST CARMAN
32. The temperature and brightness of tungsten lamps. (20 min), W. E. FORSYTHE
33. Effect of tension on change of resistance and thermoelectromotive force
by transverse magnetization..... ALPHEUS W. SMITH

DEMONSTRATIONS.

1. Methods of recording bird migration..... LYNDS JONES
2. Drawings of penes of dragonflies..... CLARENCE H. KENNEDY
3. Preserved skin specimen of jumping mouse, *Zapus hudsonius*. H. A. GOSSARD
4. A cent found in the pharynx of a cat from the comparative anatomy
laboratory..... STEPHEN R. WILLIAMS
5. Microscopic slides illustrating paper 13, on cestode parasites of black bass,
RALPH V. BANGHAM
6. Roots of the common everlasting *Gnaphalium polycephalum*; variations
described in paper 25..... HELEN GUHMAN
7. Thorns of honey locust, *Gleditsia triacanthos*..... F. E. BEGHTEL
8. Twigs as a basis for winter tree study; a method of mounting,
E. LUCY BRAUN
9. Rainfall and vegetation map of Asia..... GEO. D. HUBBARD
10. Drawings of opalinids..... MAYNARD M. METCALF
11. Distribution maps of opalinids and their hosts, illustrating papers 8 and 9
and contribution to symposium on geographical distribution,
MAYNARD M. METCALF