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of the

Indiana Academy of Science

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PAUL WEATHERWAX, Editor

Field Meeting held at
Taylor University, Upland
May 15-16, 1936

Fifty-second Annual Meeting
Central Normal College, Danville
November 5-7, 1936

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OFFICERS AND COMMITTEES FOR 1936

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Physics, G. W. HORTON, Wabash College.
Psychology, E. S. CONKLIN, Indiana University.
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(Officers, past presidents, divisional chairmen, and chairmen of standing committees)

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STANDING COMMITTEES

(Appointed by the president; first named on each committee is chairman)

- Archeological Survey**: E. Y. Guernsey, Eli Lilly, W. N. Logan, Glenn A. Black, C. A. Malott, R. A. Esarey.
Auditing: E. S. Martin, William Johnson.
Biological Survey: B. E. Montgomery, Winona Welch, C. M. Palmer, S. R. Esten, M. W. Lyon, Jr.
Library: J. E. Potzger, Will Scott, W. E. Edington, Glenn A. Black.

Membership: S. W. Witmer, F. E. Beghtel, M. S. Markle, L. J. Rettger, Winona Welch, G. Don Klopp, O. B. Christy, Wm. Thornbury, E. R. Martin, Theodore Just, A. R. Bechtel, C. F. Deppe, R. E. Girton, Edward Kintner, F. R. Elliott, W. J. Tinkle, Henry Nester.

Program: Leslie I. Steinbach, J. C. Nelson, J. E. Williams, W. J. Tinkle, G. H. Evans.

Publication of Proceedings: J. J. Davis, C. A. Behrens, E. R. Smith, F. B. Wade, M. E. Hufford, Paul Weatherwax.

Relation of Academy to State: F. N. Wallace, J. S. Wright, Stanley Coulter, Will Scott.

Research: A. L. Foley, J. S. Wright, E. G. Mahin, W. E. Edington, R. B. Abbott.

Representative on A.A.A.S.: H. E. Enders.

Nominations: (To be announced later.)

Junior Academy: H. E. Enders, F. B. Wade, O. B. Christy, W. P. Allyn.

MINUTES OF COUNCIL MEETING

At the call of President Friesner, the Council of the Academy met in the Purdue Union, Lafayette, March 15, 1936, at 1:45 P. M. Those present were: Abbott, Behrens, Bruner, Cogshall, Davis, Enders, Foley, Friesner, Johnston, Kintner, Malott, Mellon, Montgomery, Morgan, Potzger, Steinbach, Test, Wade, and Weatherwax.

Dr. Weatherwax, as editor, reported that the cost of the Proceedings for 1935 would be \$1300 besides the editor's expenses. He moved that the Council authorize the expenditure of not more than \$600 to supplement the \$1000 provided by the State. The motion carried.

The Secretary read a letter from General Secretary Caldwell, of the A.A.A.S. relative to research grants, and this question was discussed. It was suggested by Dr. Enders that the research grant of approximately \$125 be supplemented by funds taken from the endowment fund sufficient to make a total of \$200. Action on this was deferred until November.

A motion that the awarding of research grants this year be left to the research committee was amended to include the President and Secretary of the Academy on the committee and then carried.

President Friesner read an invitation from the Botanical Society of Edinburg to send a delegate to the centenary of the Society to be held July 1, 1936. It was taken by consent that the President appoint as delegate anyone who would probably attend the meeting.

A communication from the World Calendar Association regarding calendar reform was referred to a committee consisting of Dr. Cogshall and Dr. Edington to report in November.

In a discussion of the meeting of the A.A.A.S. in Indianapolis in 1937, President Friesner reported that within less than a mile of the Circle there were 16 rooms available for meetings of groups of 125 or more and 40 rooms holding from 60 to 100. The possibility of securing churches and other auditoriums was also mentioned. The appointment of the following committee to assist Dr. Ward in making arrangements for the meeting was announced: Frank Wallace, Stanley Coulter, A. W. Butler, John S. Wright, Glenn Black, Tom Hendricks, H. T. Davis, Peter Reilly, Christopher Coleman, Eli Lilly, James Stewart, Hilton Brown, Richard Lieber, William Book, Hugh Landon, Leo Rappaport, J. W. Putnam, Frank Wade, Evans Woollen, Paul Stetson, W. P. Morgan, Virgil Simmons, Mayor Kern, Merle Sidener, Arthur Baxter, Charles Lynn, and H. E. Enders. The date of the meeting was announced as December 27, 1937, to January 2, 1938.

Dr. Weatherwax spoke of some of the problems of the editor. He suggested that the publication committee consider the question of papers published from year to year as parts of series, with the idea of curtailing series which had outlived their usefulness. He explained his method of sending to authors printed suggestions for the preparation of manuscript and of returning manuscripts to authors for revision. His action in requiring that an author's dues to the Academy be paid before his papers were eligible for publication was approved, as was the

plan of paying one-fourth of the cost of the first 100 reprints ordered by each author. Other editorial problems were referred to the committee on publication.

Dr. Potzger, reporting for the Library Committee, said that an effort was being made to complete some broken sets. His suggestion that an effort be made to begin binding the unbound material was referred to the November meeting for discussion. He reported that the committee was endeavoring to arrange for exchanges with all the academies in the country.

Dr. Steinbach reported that arrangements were being made for the spring meeting at Taylor University, May 15 and 16, and the fall meeting at Central Normal College, November 5-7.

Mr. Johnston's suggestion, that copies of the Proceedings be sent to the libraries of the larger newspapers of the State, was referred to the Library Committee.

L. A. Test, *Secretary*.

MINUTES OF THE SPRING MEETING

TAYLOR UNIVERSITY, UPLAND

May 15 and 16, 1936

The first session of the spring meeting was called to order in the College Chapel, by President Friesner, on May 15, at 7 p. m. In the absence of President Stuart, Dr. Tinkle gave a short address of welcome.

Dr. J. E. Potzger spoke briefly of the plants about Dollar and Galatia Lakes, and Mr. Harold A. Zimmerman spoke of the birds of the vicinity. Dr. Marcus W. Lyon, Jr., gave a short address, illustrated by lantern slides, on "Elephants. Past and Present."

At a short business session the Treasurer of the Academy was designated as the official to whom the research grant from the American Association was to be paid. Dean Stanley Coulter was announced as the chairman of the committee in charge of arrangements for the A.A.A.S. meeting to be held at Indianapolis in 1937. Announcement of the trips for Saturday were made.

Saturday was spent in trips as scheduled on the program, beginning with a visit to Walker Museum. Visits to the places where skeletons of extinct elephants have been found were the principal feature of the field trips.

At the noon luncheon on Saturday, ten new members were elected; a report of the Resolutions Committee, expressing the appreciation of the Academy for the fine hospitality shown by Taylor University, was adopted; and an appropriation was made for compensation to the farmers on whose land the field trips had been made.

L. A. Test, *Secretary*.

PROGRAM OF THE WINTER MEETING

Central Normal College, Danville

November 5-7, 1936

THURSDAY, NOVEMBER 5

7:30 p. m. Meeting of Executive Committee, Administration Building.

FRIDAY, NOVEMBER 6

9:30 a. m. General Session, Administration Building.

Address of Welcome—President Carl H. Griffey, Central Normal College.

Business Session.

Necrology—Read by Dean Emeritus Stanley Coulter, Purdue University.

J. B. Burris

J. P. Kerr

Hal H. Coffel

J. A. Nieuwland

S. D. Conner

George Spitzer

A. F. Foerste

Mrs. Etta Wilson

W. A. Guthrie

D. D. Van Osdal

Otis S. Roberts

“Regional contrasts in soil erosion in Indiana.”

S. S. Visher, Indiana University.

“Our versatile atmosphere.” F. J. Allen, Purdue University

“Observations on the Proceedings of the Indiana Academy of Science.” (Read by title)

Robert Hessler, Indianapolis.

11:00 a. m. Sectional Meetings. For programs of the sections see: archeology, p. 46; bacteriology, p. 65; botany, p. 78; chemistry, p. 100; geology and geography, p. 142; mathematics, p. 171; physics, p. 179; psychology, p. 192; zoology, p. 202.

12:00 m. Luncheon.

1:30 p. m. Sectional meetings continued.

4:30 p. m. Tea for members of the Academy and their guests through the courtesy of the Faculty of the College.

6:30 a. m. Annual Dinner.

Final business session.

President's Address: “Indiana as a critical botanical area.”
Ray C. Friesner, Butler University.

Moving pictures: “Indiana snakes.”

W. P. Allyn, Indiana State Teachers College.

SATURDAY, NOVEMBER 7

- 9:00 a. m. Junior Academy of Science, Business meeting and exhibits.
See page 254.
- 9:00 a. m. Systematic botanists' meeting. See page 256.
- 9:00 a. m. Entomologists' meeting. See page 256.
- 1:00 p. m. Program of Junior Academy. See page 254.
- 3:00 p. m. Football game—Central Normal College vs. Oakland City
College. Members of the Academy and Junior Academy
were invited to the game as guests of the College.

MINUTES OF THE EXECUTIVE COMMITTEE

The fifty-second annual meeting of the Executive Committee was held in the Recreation Room of the Administration Building of Central Normal College, November 5, 1936. The meeting was called to order by President Friesner at 7:30 P. M. with about 35 members of the Committee and Academy present. The minutes of the Council meeting of March 15 were read and approved. Reports of officers and committees followed.

Academy Foundation. John S. Wright presented the following report:

The Trustees of the Academy Foundation recommend that the income of the Foundation Fund be administered by a committee composed of the following Fellows:

Five-year term—Chairman, A. L. Foley, Physics; four-year term—Howard E. Enders, Zoology; three-year term—Charles C. Deam, Botany; two-year term—John S. Wright, Business; one-year term—E. G. Mahin, Chemistry.

The trustees wish to explain that the only reason for not recommending a continuation of all the members of the old Research Committee is that, under the requirements of the original grant, no two members of the Committee shall be from the same branch of science.

The financial statement of the Trustees is as follows:

Receipts

| | |
|---|------------|
| Balance from previous year..... | \$ 430.00 |
| Interest on investments..... | 229.97 |
| From Treasurer of Academy (Acct. A.A.A.S.)..... | 90.50 |
| From a friend of the Academy..... | 500.00 |
| | \$1,250.47 |
| Total | \$1,250.47 |

Expenditures

| | |
|--|------------|
| Withdrawal for purchase of \$1000 par value Consolidated Federal Farm Loan | |
| Bond of 1944-46 (plus interest, \$2.89)..... | \$1,085.39 |
| Balance in bank, November 1, 1936..... | 165.08 |

Present Assets at Par Value

| | |
|--|------------|
| United States Treasury Bonds..... | \$4,200.00 |
| Consolidated Federal Farm Loan Bonds..... | 1,500.00 |
| Muncie Masonic Temple Association Preferred Stock..... | 200.00 |
| Standard Oil Company of Indiana Common Stock..... | 150.00 |
| Balance in Bank..... | 165.08 |
| | \$6,215.08 |

Archeological Survey. Mr. E. Y. Guernsey, Chairman of the Committee, made the following report:

While field operations during 1936 have not been as successful as was anticipated, two very important conclusions may be established as a result of the field work of Mr. Black and your chairman.

In Allen County, as studied by Mr. Black, it has been determined that this section, which is rich in Indian history and tradition, has been influenced very slightly by prehistoric peoples. A careful survey of the county reveals the fact that the known village sites generally represent late, historic occupation and that the region is disappointingly barren of earlier landmarks and remains.

In Harrison, Crawford, Lawrence, and Orange Counties your chairman has continued his preliminary survey of aboriginal quarry sites; it may be concluded that

southern Indiana comprised one of the most prolific sources east of the Mississippi of materials used for the fabrication of projectile implements. Within a region roughly 500 square miles in area, several hundred quarry sites exist, and it has been ascertained that the distribution of this material has been considerably more extensive than was hitherto believed.

During the year Mr. Black's excellent report on the excavation of the Nowlin Mound, Dearborn County, was published by the Indiana Historical Society. Our own report covering the survey and excavation of various aboriginal sites in the vicinity of the Ohio Falls is nearing completion. This has been delayed because of the numerous complexities involved and the abundant material recovered from these sites. It is believed that these several allied sites represent the most extensive occupational center so far studied in Indiana.

Auditing Committee. The report of this committee was postponed until the end of the fiscal year. At that time the Treasurer's report was audited and found correct.

Biological Survey. The committee reported progress during the year, as follows:

1. Lyon's "Mammals of Indiana" appeared in print as Vol. 17, No. 1, of the American Midland Naturalist in January, 1936. This monograph includes a thorough systematic treatment and notes on life history for each of the species of Pleistocene and recent mammals for which there are trustworthy Indiana records. It is well illustrated, containing 125 figures (photographs, drawings, and diagrams of the various animals, or of such anatomical structures as are of special taxonomic significance, of habitats, etc.) and 85 maps showing distribution of Indiana records.

2. Deam's flora of Indiana is near completion.

3. Miss Welch has continued her work on the mosses of Indiana, and this report is now in an advanced stage of preparation.

4. Deay and Gould's "Gerridae of Indiana" was published in Vol. 17, No. 4, of the American Midland Naturalist. This is the first part of a proposed monographic revision of the Hemiptera of the State.

5. The same authors have a paper on the Cicadidae of Indiana in the program of the present meeting. This, likewise, is a part of a proposed similar treatment of the Homoptera, a group which, except for the scales, has been almost entirely neglected in the State.

6. Montgomery's Odonata of Indiana has received very little attention during the year. The manuscript is, however, practically complete, and it is expected that the entire report will be finished within three or four months.

7. The status of the bibliography of the Indiana biota is unchanged from last year. As pointed out at that time, little further progress can be expected until there is some prospect of publication. Members of the committee and collaborators cannot develop much enthusiasm in the preparation of a manuscript which must wait indefinitely for publication and which, in the meantime, requires constant revision to include new titles as they appear.

The Committee suggests that the bibliography in its present form may be made more or less available by the preparation of a list of the monographs, catalogues, lists, general works and summaries, together with notations concerning the status and location of the bibliographies of the different systematic groups. Such a list has been prepared for the insects and related groups. A copy of this list is included in this report for the files of the Academy. It will be read by the chairman of this Committee before the Entomologists' Meeting Saturday morning.

The Committee recommends, as in previous years, the desirability of building a fire-proof museum for the storage of scientific specimens which have been collected in Indiana, either at one of the state universities or in Indianapolis. Many of our sister states, notably Illinois, Ohio, and Michigan, have excellent facilities for the care and study of scientific specimens. Much valuable material has been sent out of the state because of the lack of a suitable place for its preservation here. This loss of specimens will continue until an adequate museum is established.

Bonding Committee. Dr. Bruner, Chairman of the Committee, reported that the bond of \$2000 for the Treasurer and \$2500 for each Trustee of the Academy Foundation had been renewed with the Hartford Accident and Indemnity Company.

Editor. Dr. Weatherwax, as Editor, reported as follows:

Volume 45 of the Proceedings was ready for distribution to members about August 10. It consisted of 345 pages, as compared with 284 pages in the preceding volume; but the increase in scientific and historical material was approximately 80 pages. The size of the edition was the same as of Volume 44; of the 1500 copies printed, 1000 were bound in cloth.

The net cost of manufacturing the volume was \$1,396.67. The Editor's expenses and the cost of reprints charged to the Academy brought the total cost to \$1,531.48. After the deduction of \$1000 appropriated by the state, the total cost to the Academy was \$531.48. The net cost per printed page was \$4.05. This is somewhat higher than last year, the difference being due to the greater amount of illustration and the terms of the new state contract.

Authors' orders for reprints were handled as last year, one-fourth of the cost of the first 100 being charged to the Academy. The cost of this item to the Academy was \$56.49. The printer's scale of prices for reprints, although essentially lower than that quoted at the time at which the orders were taken, was not fully equitable to all authors. A better arrangement is promised for another year.

In editing the material for this volume it was necessary to reject a few papers because they did not comply with the editorial policy adopted in 1934. Many of the papers published were returned to their authors for various kinds of revision or condensation, and a few were withdrawn when the need of such revision was pointed out. General directions for the preparation of manuscript and illustrations have been sent to the authors of papers listed in the program of this meeting.

Library. The Committee on Library, with Dr. Potzger as Chairman, reported as follows:

Your committee, working in conjunction with Miss Coats of the State Library, had two meetings during the past year to discuss the needs of our library. The services of Mr. Leland Smith of the Butler Library were again engaged to carry out some necessary clerical work. Exchanges sent and received were checked, and addresses of all institutions and societies who did not respond with exchange publications were removed from our addressograph list. Work is now in progress toward arranging for exchanges with all other state academies.

On the shelves of our library were numerous incomplete sets of periodicals, many represented by but one copy. Upon the suggestion of Miss Coats, the members of your committee, augmented by professors Mallott and Switzer of Indiana University and Mr. Wade of Shortridge High School, checked this incomplete aggregation of periodicals for possible valuable single copies to be retained for the library. Lists of the rejected material were sent to various second-hand booksellers for an offer. No offer was made.

In order to correct the mailing list, mimeographed reply cards were placed in all copies of the Proceedings sent out, and all recipients who did not reply were addressed in a special letter by Miss Coats.

The Committee recognizes as one of the greatest needs of the library the binding of periodicals, and it recommends that an appropriation for this purpose be made annually.

Dr. Edington has placed in care of the library all slides, films, pictures, and other historical material which he has collected.

The Committee asks for instructions as to the disposal of the incomplete sets and single numbers of periodicals and on the suggestion that copies of the Proceedings be sent to newspapers of the State.

After a discussion it was voted that the Committee be empowered to use \$100 from the funds of the Academy for binding periodicals.

Membership. A brief statement was made by the Chairman, Dr. Witmer, and the complete report was deferred until the business meeting on Friday evening.

Press Secretary. Mr. T. R. Johnston, Press Secretary, reported as follows:

The Press Secretary has endeavored to give publicity to the meetings of the Academy by providing suitable publicity in advance of the meetings, newspaper coverage while the meetings are in progress, and proper reports at their close.

Some difficulty has been experienced because of his inability to attend the meetings and because only a few of the speakers have supplied extracts of their papers in advance. Those who have sent them in have helped to give adequate reports of the meetings to the press and to radio stations, but too few of the features on the program have received publicity.

It was proposed some months ago that the Proceedings, when printed, be sent to editors of certain newspapers with a letter explaining why they were sent. This was done this year and was partly successful in keeping the work of the Academy before the public. In the opinion of the Press Secretary this policy should be continued with some variation from year to year.

Program Committee. Dean Leslie I. Steinbach presented the printed program as the report of his committee and supplemented this with a brief explanation of the plan of the meeting.

Publication of Proceedings. Chairman, J. J. Davis, reported as follows:

The Committee on Publication of Proceedings has functioned, as in the past, in an advisory capacity to the Editor. As a guide for the future, your committee makes the following recommendations:

1. Inasmuch as authors of memorials often wish a few copies to send to friends, but seldom more than a half dozen, it is recommended that the Academy pay for 100 reprints of the combined memorials and that these be parceled out to the authors.

2. Until a few years ago cuts used in the Proceedings were returned to authors on payment of postage. It is recommended that cuts having a historical value, such as portraits, buildings, etc., be properly stored in the State Library for possible future use; that other cuts be returned to the authors who wish them and will pay the cost of transportation; and that if cuts are not requested within one year after use in the Proceedings, they may be sold or destroyed.

3. Keys, notes on distribution, and other annotated lists are permissible in papers on fauna and flora; also full descriptions of new species and definitely improved descriptions of other species. However, it is recommended that the Editor may refuse to publish descriptions merely copied or similar to those already published.

Relation of Academy to State. In the absence of Chairman Wallace an informal report of the work of the committee was given. Following a general discussion of the work of this committee, a motion was passed that the Academy ask the State Legislature for an appropriation of \$3000 per year for the publication of the Proceedings, for the binding of material received in exchange by the State Library, and for the publication of additional scientific material.

Research. The report presented by the Chairman, A. L. Foley, was as follows:

The activities of the Research Committee of the Indiana Academy of Science for the year 1935-36 may be summarized as follows:

The Committee has made a plea for funds for needy students, and for the establishment of scholarships and fellowships,—particularly for grants to encourage and to aid research. The appeal has centered around the memorial idea, that a fellowship or research fund given in the name of some loved one would be, and would continue to be, a living, enduring memorial which, unlike a block of marble, would be of service, not only to the recipient, but to the cause of education and science down through the years. After marshalling the arguments for such gifts, and assigning them amongst

the members of the Committee, each member wrote a communication,—an appeal, and these were published week after week in the INDIANAPOLIS STAR, in regular sequence. It is hoped that the seeds thus sown many in due time bear fruit.

A second job for the Committee was the drafting of a set of regulations governing all future applications for aid from the Research Fund of the Academy. Copies of these regulations, as now drawn, are in the hands of each member of the Executive Committee (Published at the end of this report.) Suggestions for the improvement of the proposed regulations are invited.

Lastly, understanding that certain allowances made by the American Association for the Advancement of Science would lapse if not used promptly, and having received several applications for grants from the fund, the Committee recommended grants to the following:

Professor C. M. Palmer, Butler University, Indianapolis, Indiana, Professor R. E. Martin, Hanover College, Hanover, Indiana, Mr. Scott McCoy, 3444 N. Illinois Street, Indianapolis, Indiana.

The regulations under which these grants were made are as follows:

Applicants for grants from the Research Fund of the Indiana Academy of Science, or from that portion of the Research Fund of the American Association for the Advancement of Science that has been allotted by the Association to the Indiana Academy, should include in their application a full statement of their academic training and career, of the character of their research problem and their proposed methods of attack, and of the use to which they wish to apply the grants requested. Applicants should include written statements from responsible workers in the field in which the applicant wishes to work, certifying as to the importance of the investigation, to the applicant's ability to prosecute it to a definite conclusion, and to the reasonableness of the estimate of the cost.

Applicants are reminded that the research funds of the Academy are quite small and that they should make their requests as definite or as moderate as possible. Other things being equal, the Committee will favor small grants to a larger number of applicants, rather than large grants to a very few.

The recipient of a grant is required to submit semi-annually an expense account covering the funds placed at his disposal, together with a statement of the work accomplished. The mid-year report may be brief. The final report should be reasonably complete and should be filed with the Research Committee not fewer than ten days in advance of the regular annual fall meeting of the Academy.

The Indiana Academy of Science shall have first call on the publication of any paper or papers reporting results of investigations for which the Academy has borne any part of the expense.

Applications for grants may be made at any time, but to insure prompt action they should be submitted to the Committee at least ten days before the regular fall meeting of the Academy.

While a grant for a second year (but no longer) may be made, no preference will be shown any applicant because of his previous award. Each applicant for a second grant must file a second application, including an account of the disposition of the first grant, what was accomplished by it, and for what purpose a second grant is requested.

When a grant, or any portion thereof, is used for the purchase of equipment, such apparatus or equipment is to remain the property of the Indiana Academy of Science to be loaned, awarded, or retained, as the Academy may direct.

Treasurer. The complete report was deferred until the end of the fiscal year, December 31. The following report was later made by Treasurer Morgan and approved by the Auditing Committee:

Receipts

| | |
|--|----------|
| Balance on hand January 1, 1936..... | \$956.87 |
| Dues and initiation fees collected..... | 887.00 |
| A.A.A.S. Refund for Research Grants..... | 100.00 |
| Sale Proceedings Vol. No. 45..... | 3.00 |
| Author's Reprints Vol. No. 42..... | 4.10 |
| Author's Reprints Vol. No. 43..... | 19.35 |
| Author's Reprints Vol. No. 44..... | 26.37 |
| Author's Reprints Vol. No. 45..... | 222.38 |

\$2,219.07

Disbursements

| | | |
|---|----------|------------|
| 1—Program Committee..... | \$205.34 | |
| 2—Expenses of Editor..... | 87.32 | |
| 3—Expenses of Secretary..... | 54.16 | |
| 4—Expenses of Treasurer..... | 30.50 | |
| 5—Mailing Proceedings..... | 89.85 | |
| 6—Academy Library..... | 54.75 | |
| 7—Stationery | 59.90 | |
| 8—Indianapolis Engraving Co..... | 261.20 | |
| 9—Fort Wayne Printing Co..... | 429.35 | |
| 10—Junior Academy Bulletins..... | 20.00 | |
| 11—Surety Bonds and Safety Deposit Box..... | 20.50 | |
| 12—Research Grants..... | 150.00 | |
| 13—Checks Returned..... | 3.00 | |
| | | \$1,465.87 |
| Balance in Bank..... | | 753.20 |
| | | \$2,219.07 |

Junior Academy. The following report was submitted by Dr. H. E. Enders, Chairman:

Your Committee on the Junior Academy of Science has continued in touch with the 17 member clubs of last year and has endeavored to stimulate them by correspondence and by circulation of the SCIENCE CLUB SERVICE, published by Louis Astell and made available by a grant of \$20 from the Academy.

The chairman of your Committee visited 14 schools in March and April and spoke to more than 2000 pupils in clubs or before the schools.

At this time we have six new clubs to recommend for membership, making a total of eleven accessions for the year. The total number of clubs now affiliated is 28, and their aggregate membership equals that of the Academy.

We have reason to believe that the Academy has rendered a valuable service by cooperating with the Illinois Academy of Science and several other academies in the publication of the SCIENCE CLUB SERVICE. We recommend that the Indiana Academy continue its appropriation of \$20 per year to assist in this work.

The program of the Junior Academy is scheduled for Saturday morning and afternoon. All members of the Academy are urged to attend these meetings and to view the exhibits of the clubs. Last year 14 clubs were represented, and 140 members and sponsors were present.

The Executive Committee voted to continue the appropriation of \$20 for the SCIENCE CLUB SERVICE.

A.A.A.S. Dr. H. E. Enders, the Academy representative in the Council of the American Association for the Advancement of Science, made a brief informal report.

Nominations. Chairman Mahin reported the recommendation of E. Y. Guernsey for fellow in the Academy.

Special Committee. W. A. Cogshall, reporting for the Committee on Calendar Reform, recommended the calendar which divided the year into four equal quarters.

New Business. The following committee was appointed to receive invitations and make recommendations for the place of the next regular fall meeting of the Academy: W. E. Edington, Chairman, S. R. Esten, J. C. Nelson, W. J. Tinkle, and A. R. Bechtel.

A Committee on Resolutions was appointed, consisting of Paul Weatherwax, C. M. Palmer, and Theodore Just.

At the request of Professors Behrens and Tetrault, a separate section of Bacteriology was recognized.

After a discussion of various features of the program, two regulations were passed:

1. In the future no papers are to be accepted to be "read by title", the implication being that the author should be present or should designate someone to present his paper.
2. Before a paper can be placed on the program, an abstract must be sent to the chairman of the section before which the paper is to be presented.

MINUTES OF THE GENERAL SESSION

The meeting was called to order on Friday morning by President Friesner. Dean Steinbach introduced President Griffey, of Central Normal College, who gave an address of welcome. President Friesner responded in behalf of the Academy.

The minutes of the Executive Committee were read and approved. Dr. Enders made a brief report on the Junior Academy, and Dr. Friesner made a few remarks relative to the meeting of the American Association for the Advancement of Science at Indianapolis in 1937. The general program followed.

Following the annual dinner on Friday evening a brief business session was held. Dr. Witmer, Chairman of the Membership Committee, announced 54 applications for membership, including six high school organizations for the Junior Academy. All were elected.

The Committee on Resolutions moved a vote of thanks to Central Normal College, the people of Danville, and a number of individuals, all of whom had been responsible for the success of the meeting. The motion carried.

Dr. Edington reported the recommendation of the Committee on Invitation that the fall meeting of the Academy in 1937 be held at Manchester College. The recommendation was adopted.

Dr. Mahin, of the Nominating Committee, nominated the following for officers for 1937, and all were unanimously elected.

President, WILL E. EDINGTON, DePauw University.

Vice-President, C. A. MALOTT, Indiana University.

Secretary, L. A. TEST, Purdue University.

Treasurer, WILL P. MORGAN, Indiana Central College

Editor, PAUL WEATHERWAX, Indiana University.

Press Secretary, M. W. LYON, JR., South Bend.

Academy Trustee, JOHN S. WRIGHT, Indianapolis.

The following were announced as having been elected divisional chairmen by the various sections: Archeology, Glenn A. Black; Bacteriology, H. M. Powell; Botany, C. L. Porter; Chemistry, Paul D. Wilkinson; Geology and Geography, LeRoy Perkins; Mathematics, C. K. Robbins; Physics and Astronomy, Leslie I. Steinbach; Psychology, P. R. Hightower; and Zoology, W. P. Allyn.

Louis A. Test, *Secretary*.