

PROCEEDINGS

of the

Indiana Academy
of Science

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P. D. EDWARDS, EDITOR

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Spring Meeting

TURKEY RUN STATE PARK

May 10 and 11, 1946

Sixty-Second Annual Meeting

INDIANA STATE TEACHERS COLLEGE

October 17, 18, and 19, 1946

Copies of the Proceedings may be purchased through the State Library, Indianapolis, Indiana, at \$3.00 per volume. All items sent in exchange for the Proceedings and all communications to officers of the Academy, when their names and addresses are not known, should also be sent to the State Library.

Reprints of certain parts of recent volumes of the Proceedings are available for distribution as follows: copies of the constitution and by-laws (Vol. 44), and complete membership list (Vol. 56), may be secured by members elected subsequent to the publication of those volumes; copies of the codified list of duties of officers (Vol. 48) may be secured by officers, divisional chairmen, and chairmen of committees; and copies of the necrology can be supplied to relatives and friends of the deceased members. Inquiries concerning these reprints should be addressed to the Secretary of the Academy, Dr. Winona H. Welch, DePauw University, Greencastle, Indiana.

Reprints of technical papers in recent volumes can often be secured from the authors. They cannot be supplied by the State Library nor by the officers of the Academy.

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OFFICERS AND COMMITTEES FOR 1946

OFFICERS

- President*, E. F. DEGERING, Purdue University.
Vice-President, N. E. PEARSON, Butler University.
Secretary, WINONA H. WELCH, DePauw University.
Treasurer, W. P. MORGAN, Indiana Central College.
Editor, R. C. CORLEY, Purdue University.
Press Secretary, C. M. PALMER, Butler University.
Trustees of Academy Foundation: J. S. WRIGHT, Eli Lilly & Company (term expires 1948), chairman; F. B. WADE, Shortridge High School (term expires 1947).
Committee for Bonding of Trustees: R. C. FRIESNER, Butler University, chairman; SCOTT MCCOY, Indianapolis.
Research Grant Committee: T. G. YUNCKER, DePauw University (term expires 1949), chairman; E. G. MAHIN, University of Notre Dame (term expires 1947); H. H. REMMERS, Purdue University (term expires 1950); PAUL WEATHERWAX, Indiana University (term expires 1946); J. S. WRIGHT, Indianapolis (term expires 1948); E. F. DEGERING, Purdue University (ex officio); WINONA H. WELCH, DePauw University (ex officio).

DIVISIONAL CHAIRMEN

- Anthropology*, W. B. ADAMS, Bloomington.
Bacteriology, F. A. MILLER, Eli Lilly & Co., Indianapolis.
Botany, J. E. POTZGER, Butler University.
Chemistry, E. F. DEGERING, Purdue University.
Geology & Geography, G. DAVID KOCH, Indiana State Teachers College.
History of Science, W. E. EDINGTON, DePauw University.
Mathematics, H. E. WOLFE, Indiana University.
Physics, K. W. MEISSNER, Purdue University.
Psychology, C. C. JOSEY, Butler University.
Zoology, H. H. VOGEL, Jr., Wabash College.

EXECUTIVE COMMITTEE

(Past Presidents, Officers, Divisional Chairmen,
and Chairmen of Standing Committees)

- W. B. Adams, C. A. Behrens, S. Burrage, O. B. Christy, W. A. Cogshall, R. C. Corley, E. R. Cumings, J. J. Davis, C. C. Deam, E. F. Degering, W. E. Edington, H. E. Enders, R. C. Friesner, W. G. Gingery, C. C. Josey, Theodor Just, J. D. Koch, Eli Lilly, J. F. Mackell, E. B. Mahin, C. A. Malott, M. S. Markle, E. S. Martin, K. W. Meissner, M. G.

Mellon, H. H. Michaud, F. A. Miller, W. P. Morgan, C. M. Palmer, F. Payne, N. E. Pearson, J. E. Potzger, R. R. Ramsey, W. E. Ricker, J. E. Switzer, H. H. Vogel, Jr., F. B. Wade, F. N. Wallace, Paul Weatherwax, Winona H. Welch, H. E. Wolfe, J. S. Wright, T. G. Yuncker.

BUDGET COMMITTEE

(President, Secretary, Treasurer, Editor, and Chairman of Committee on Relation of Academy to State, Program Committee, Library Committee, and Fifty-Year Index Committee)

E. F. Degering, *Chairman*; R. C. Corley, R. C. Friesner, W. G. Gingery, J. F. Mackell, W. P. Morgan, F. N. Wallace, Winona H. Welch.

STANDING COMMITTEES

(Appointed by the President, Chairman of each committee named first)

Auditing: E. S. Martin, Arsenal Technical H. S., Indianapolis; K. S. Means.

Biological Survey: W. E. Ricker, Indiana University; W. P. Allyn, H. O. Deay, R. M. Kriebel (deceased 3-15-1946), H. H. Michaud, B. E. Montgomery, C. M. Palmer, Dorothy Parker, Winona H. Welch.

Fifty-Year Index: R. C. Friesner, Butler University; Nellie M. Coats, W. P. Morgan, F. N. Wallace, Paul Weatherwax.

Invitations: C. M. Palmer, Butler University; A. R. Bechtel, R. M. Cable, Edward Kintner, Fred Loew.

Junior Academy: H. E. Enders and H. H. Michaud, Purdue University; W. P. Allyn, O. B. Christy, F. R. Elliott, M. S. Markle, C. L. Porter, F. B. Wade, M. M. Williams (deceased 4-14-1946), T. G. Yuncker.

Library: W. G. Gingery, Washington H. S., Indianapolis; Nellie M. Coats, R. C. Friesner.

Membership: J. E. Switzer, Indiana University; J. J. Davis, G. F. Hennion, W. E. Martin, J. E. Potzger.

Nominations: T. G. Yuncker, DePauw University; M. S. Markle, P. A. Tetrault.

Program: J. F. Mackell, Indiana State Teachers College; B. A. Howlett, G. D. Koch, R. McDougal, Bessie Noyes, Sister Ignatia.

Publication of Proceedings: R. C. Corley, Purdue University; P. D. Edwards, Paul Weatherwax.

Relation of Academy to State: F. N. Wallace, State Dept. of Conservation; E. Y. Guernsey, Eli Lilly, H. J. Reed, J. S. Wright.

Representative on Council of A.A.A.S.: H. E. Enders and E. F. Degering, Purdue University.

Resolutions: O. B. Christy, Ball State Teachers College; Theodor Just, Naomi Mullendore.

MINUTES OF THE SPRING MEETING

TURKEY RUN STATE PARK

MAY 10, 11, 1946

President Degering called the Executive Committee meeting to order at 4:30 p.m., May 10.

Dr. H. H. Michaud was elected to the chairmanship of the Junior Academy of Science committee to replace Dr. H. E. Enders on June 30, the date of his retirement from Purdue University. Dr. Ender's resignation from this committee was accepted with regret and deep appreciation of his many years of service and interest in the advancement of the Indiana Junior Academy of Science.

Miss Coats, Academy Librarian, requested that members return any duplicate Proceedings to the Academy Library to supply requests from numerous institutions. Miss Coats also wishes for the library the publications of Academy members other than those in the Proceedings.

Pres. Degering stated that the Indiana Academy approved the Magnuson Bill, based upon the returns from the letters circulated concerning this bill. Letters concerning the approval were sent to the Senate Committee on Commerce and the Senate Committee on Military Affairs.

Dr. Yuncker, Chairman of Research Grant Committee, announced that the committee had granted \$100.00 to Dr. J. E. Potzger for use in the continuation of his pollen studies.

Meeting adjourned at 5:30.

These minutes were read and approved at the business session preceding the evening program.

Following the dinner a very interesting lecture illustrated with kodachrome slides was presented by Frank Wallace, State Department of Conservation.

On Saturday May 11 four field trips were organized. These trips and the leaders follow:

- (1) Botanical hike led by R. D. Friesner and C. M. Palmer.
- (2) Bird trip led by Sidney R. Esten.
- (3) Conservation and Wildlife trip led by H. H. Michaud.
- (4) Geology trip led by O. W. Freeman.

PROGRAM OF THE WINTER MEETING

INDIANA STATE TEACHERS COLLEGE

October 17-19, 1946

THURSDAY, OCTOBER 17

7:30 P. M.

Meeting of the Executive Committee.

FRIDAY, OCTOBER 18

9:00 A.M. General Session

Address of Welcome. Dean J. E. Grinnell, Indiana State Teachers College.

Response. President E. F. Degering.

Business Session.

Necrology Report. W. E. Edington, DePauw University.

"The Uniform Turns to Science". Capt. M. J. Lawrence, Assistant Chief Research and Inventions, Washington, D. C.

1:00 P. M. Sectional Meetings

6:00 P. M. Annual Dinner

Business Session.

President's Address. "The Seven Freedoms". E. F. Degering, Purdue University.

SATURDAY, OCTOBER 19

9:00 A. M.

Meeting of Plant Taxonomists.

Junior Academy of Science.

1:00 P. M.

Junior Academy of Science.

MINUTES OF THE EXECUTIVE COMMITTEE

TERRE HAUTE, OCTOBER 17, 1946

The Executive Committee was called to order by President Degering in the Ballroom of the Student Union Building of Indiana State Teachers College, at 7:45 p.m. The reports of officers and committee representatives were presented and accepted as follows:

Academy Trustee. Report of John S. Wright, Frank B. Wade, and W. P. Morgan, Trustees of the Foundation Fund, Indiana Academy of Science for the year 1945-1946.

Balance from the previous year.....		\$332.62
Total receipts		151.00
Check from W. P. Morgan, Treasurer.....		25.00
		<hr/>
Total		\$508.62
Expenditures		
Union Trust Co. Fee 5% on \$151.00.....	\$7.55	
Purchase \$500. Series G Bonds.....	500.00	507.55
		<hr/>
Cash Balance at Union Trust Company.....		\$1.07
Assets in the Fund as of September 30, 1946		
(5) \$1,000.00 U. S. Savings Bonds Series "D" Cost.....		\$3,750.00
\$6,900.00 U. S. Treasury Bonds Series "G" Cost.....		6,900.00
(6) Shares Standard Oil of Indiana Common Stock Par.....		150.00
		<hr/>
TOTAL AT PAR OR COST.....		\$10,800.00

Treasurer. W. P. Morgan presented a tentative financial report for the period from January 1, 1946 to October 1, 1946. His final report, approved by the Auditing Committee at the end of the year, follows:

Receipts

Balance on hand January 1, 1946.....	\$2,343.48
Dues and initiation fees.....	1,053.00
Refund for research from A.A.A.S.....	100.00
Returned portion of research grant.....	46.35
Designated gift	12.50
Designated gift	250.00
Publications sold by Librarian.....	5.83
Author's reprints Vol. No. 52.....	4.16
Author's reprints Vol. No. 54.....	290.70
	<hr/>
	\$4,106.02

Disbursements

1—Program Committee	\$ 207.56
2—Editor Vol. No. 55.....	200.00
3—Expenses of Secretary.....	79.56

4—Expenses of Treasurer.....	73.00
5—Mailing Proceedings	42.00
6—Stationery	108.55
7—Surety Bond	25.00
8—Research grant to J. A. Potzger.....	75.00
9—Publication for library.....	2.00
10—*To S. S. Visher for copy American Men of Science	12.50
11—Returned checks	8.00
12—Cost of reprints Vol. No. 55.....	unpaid

\$ 833.17
\$3,272.85

**Balance on hand.....

\$4,106.02

* Paid from designated gift.

** Balance includes \$1,246.25 in gifts designated for the completion of work on the fifty-year index and the preparation for publication of the "Indiana Men of Science".

(Signed) W. P. MORGAN, *Treasurer.*

(Signed) ERSIE S. MARTIN,
KARL S. MEANS, *Auditors.*

Auditing Committee. E. S. Martin reported the accounts of the Academy Trustees and the Treasurer to be in good order.

Bonding Committee. R. C. Friesner reported that the cost of bonding the treasurer and trustees, \$25.00, had been paid to the Hartford Accident and Indemnity Company, Indianapolis, Indiana.

Editor and Publication of Proceedings. R. C. Corley reported that 1500 copies of the Proceedings and 5900 reprints had been ordered.

Research Grant. T. G. Yuncker reported two refunds which have been credited to the Research Fund; \$75.00 from the estate of Dr. Foley, an unexpended amount of a grant made previous to his death; and \$46.35 from Dr. William D. Gray, an unexpended portion of a grant which can not be used because of his out-of-state position.

Two grants have been made during the year: \$50.00 to Kenneth Wagner in connection with a study of the Hepaticae of Indiana; and \$100.00 to Dr. J. E. Potzger for a study of bogs in Maine.

Grants in progress or completed during the year: W. E. Martin, in progress; J. E. Potzger, completed project in Michigan; Kenneth Wagner, completed project in Indiana Hepaticae.

The following old grants have been checked and found to be completed: W. H. Headlee, C. M. Palmer, A. H. Meyer, S. S. Visher, I. T. Wilson, P. E. Martin, J. F. Mackell, Winona H. Welch.

Biological Survey. W. E. Ricker reported a continuation of the activities of the committee.

Fifty-Year Index. R. C. Friesner stated that the typing of the manuscript for the 50-year index was completed in January, 1946, and

that the checking of entries against volumes of the Proceedings has been in progress since that time.

Library Committee. Nellie M. Coats, Academy Librarian, presented the following report, October, 1945, to October, 1946:

By exchange arrangement 35 new serial titles were added to the list currently received. Reading Museum supplied several regional ornithological checklists and some items to fill in files of the publications of the Academy of Natural Sciences, Philadelphia, and of the Linnaean Society of New York; purchases consisted of Ohio State Academy of Science Special Paper No. 1 and MacLeay's Descriptive Catalogue of Australian Fishes; three Academy members have responded to the suggestion of supplying the library with copies of their own publications; a few duplicates were sold and a small credit established with the Faxon Company; twelve boxes of duplicates (upon which the State Library paid transportation charges) were given to the American Book Center at Washington, D. C., for shipment to war devastated libraries; the Library mailed the 1944 Proceedings to 872 members and distributed copies to Indiana libraries and to various exchange agencies. There are occasional requests for complete sets of the Proceedings and Miss Coats repeats the appeal that members return their duplicates to the library.

Press Secretary. C. M. Palmer stated that the publicity offices of Indiana State Teachers College and of Butler University have given their time and assistance in contacting newspapers and press associations concerning publication of news of the Academy meetings; copies of Academy program were very helpful in contacting newspaper editors; the photographs of former officers of the Academy, which are kept at the Indiana State Library, are in good condition; the collection includes not only the photographs of the presidents, but, at least for recent years, those of the other officers as well.

Membership. J. E. Switzer presented a tentative report.

Junior Academy of Science. H. H. Michaud, new chairman of the Junior Academy, stated that the 14th annual meeting would be held October 19; records show a total of 53 clubs but only 15 have responded for the 1946 program; the number of inactive clubs has resulted from shifting personnel among science teachers and the unstable conditions of the war years; the committee will attempt to develop the Indiana Junior Academy of Science to its effectiveness of pre-war days. The Executive Committee voted to include the Junior Academy chairman as a member of the Budget Committee.

The Indiana Academy pays tribute to the many years of devoted service that were given by Dean Howard E. Enders to the Junior Academy movement. He not only organized the Junior Academy of Science in Indiana but served continuously and faithfully until this year. His untiring efforts and special interest in the cause of science for children in our schools were responsible for a task well done and deserving of our highest praise.

Relation of Academy to State. F. N. Wallace reported that a request had been made to the State Budget Committee for an increase in our appropriation for publishing the Proceedings and binding our

reports from \$1500.00 to \$2500.00 per year. Mr. Wallace has been assured the co-operation of the Budget Committee. The committee has made a request also for a sum of \$2500.00 for publishing the 50-year Index, this amount to be made available in June, 1947.

Relation of Academy to A.A.A.S. Indiana was represented by Dr. E. F. Degering and Dr. C. L. Porter. Dr. Degering was elected President of the Academy Conference.

Membership Emeritus. Dr. E. R. Cumings, former Head of Department of Geology, Indiana University, was elected to Membership Emeritus.

Nominations Committee. Dr. Degering announced the members of the committee to be T. G. Yuncker, chairman, M. S. Markle, and P. A. Tetrault.

The following members were recommended for election as Fellows of the Indiana Academy of Science:—Jervis M. Fulmer, Chemistry, DePauw University; Dr. Willis D. Gatch, Dean of Indiana University School of Medicine, Indianapolis; Walter G. Gingery, Principal of Washington High School, Indianapolis; Arthur T. Guard, Botany, Purdue University; L. S. McClung, Bacteriology, Indiana University.

Old Business. W. E. Edington reported that the committee on Indiana Men of Science had made real progress in compiling data on History of Science in Indiana.

F. N. Wallace reported that a resolution had been adopted recommending that the matter of an addition to Turkey Run be made or a new park created, taking in the Shades, Pine Bluffs, and some new addition along Sugar Creek.

New Business. J. S. Wright read the following resolutions regarding sale of common stock in Foundation Fund:

WHEREAS the Foundation Fund of the Indiana Academy of Science includes a few shares of the common stock of the Standard Oil Company of Indiana and possibly may receive by gift additional shares of stock in other companies; therefore be it

RESOLVED, that the Trustees of the Foundation Fund be authorized to sell this stock and convert the proceeds into bonds or other securities as comply with rules and regulations governing the investment of the Foundation's funds, the same being those of the Indiana law governing the investment of the legal reserves of life insurance companies; further be it

RESOLVED, that the Trustees of the Foundation be empowered to use their judgment in timing the sale of stock for the best interests of the Foundation Fund.

R. C. Friesner and Scott McCoy were elected to succeed themselves as members of the committee on Bonding of Trustees.

Paul Weatherwax was elected to succeed himself as a member of the Research Grant Committee, term to expire in 1951.

A recommendation was made by the Executive Committee for the publication of the complete membership list in the next Proceedings.

The Indiana Academy of Science recognizes Dr. Martha Doan, Westfield, Indiana, as a member of fifty consecutive years, 1896-1946. The Secretary was instructed to write Dr. Doan a letter of congratulations and recognition. Because of Dr. Doan's distinguished career as scientist and her loyalty to the Academy she was made an Honorary Fellow of the Academy.

Because of the increased costs of printing, the account of the Program Committee has surpassed the amount allowed in the budget. The Executive Committee approved the complete bill.

A nominal sum of \$25.00 was recommended for expenditures by H. H. Michaud for the development of the Indiana Junior Academy of Science.

F. N. Wallace suggested that a letter of appreciation of the cooperation of the State with the Academy from Academy members to our Senators and Representatives would be an appropriate deed.

Adjournment, 9:15 p.m.

MINUTES OF THE GENERAL SESSION

INDIANA STATE TEACHERS COLLEGE

OCTOBER 18, 1946

Dean J. E. Grinnell, Indiana State Teachers College, delivered the Address of Welcome. President Degering responded in behalf of the Academy.

W. E. Edington presented the Necrology.

Minutes of the Executive Committee meeting of October 17, 1946, were read by the Secretary and approved by the Academy.

Following the annual dinner in the Student Union Building Ballroom, J. E. Switzer presented seventy-five applications for membership. The Secretary was instructed to cast an unanimous ballot for the seventy-five applicants.

T. G. Yuncker read the nominations of the committee as follows: *President*, J. F. Mackell, Indiana State Teachers College; *Vice-President*, A. R. Bechtel, Wabash College; *Secretary*, Winona H. Welch, DePauw University; *Treasurer*, W. P. Morgan, Indiana Central College; *Editor*, P. D. Edwards, Ball State Teachers College; *Press Secretary*, C. M. Palmer, Butler University.

The Divisional Chairmen elected in the sectional meetings for 1947 were announced as follows: *Anthropology*, Dr. Erminie W. Voegelin, Indiana University; *Bacteriology*, Dr. Stanley E. Hartsell, Purdue University; *Botany*, Dr. Noe Higinbotham, University of Notre Dame; *Chemistry*, Dr. Alvin Strickler, Evansville College; *Geology and Geography*, Dr. C. F. Deiss, Indiana University; *History of Science*, Dr. C. A. Behrens, Purdue University; *Mathematics*, Dr. J. C. Polley, Wabash College; *Physics*, Dr. B. A. Howlett, Rose Polytechnic Institute; *Psychology*, Dr. Alma Long, Purdue University; *Zoology*, Dr. A. E. Reynolds, Depauw University.

C. M. Palmer announced that the Invitations Committee had accepted the invitation from Ball State Teachers College, Muncie, for the 1947 Fall Meeting of the Academy.

Resolutions. Dr. Clyde A. Malott read the following resolution from the Geology and Geography Section, passed unanimously, October 18, 1946:

WHEREAS, the geographic data shown on a standard U. S. topographic map are essential to the study and development of all projects concerning highway construction, drainage and sewerage, flood control, conservation, and all other forms of land use, and,

WHEREAS, such topographic data are basic to the projection of regional, county and city planning now energetically promoted by the Indiana Economics Council, and

WHEREAS, the topographic mapping program in Indiana is far in arrears of that of all the neighboring states,

THEREFORE, be it resolved that the Indiana Academy of Science, meeting at Terre Haute, Indiana, October 18, 1946, petition the General Assembly of the State of Indiana to appropriate the necessary funds to complete the topographic mapping of the State at the earliest date practicable.

Adopted unanimously by the Indiana Academy of Science.

Dr. O. B. Christy, chairman, read the following report for the Academy Resolutions Committee:

The Indiana Academy of Science assembled at Terre Haute, October 17-19, 1946, at its sixty-second regular meeting, expresses its appreciation for the hospitality extended by the Faculty, Administration, and Student Body of the Indiana State Teachers College. The Academy feels deeply grateful for providing ample food and excellent provisions for the various meetings. Special thanks are offered to the program committee for its efficient work in arranging a program of merit. To these and all others who have helped to make this an outstanding meeting we again express THANKS.

In the absence of the Vice-President, N. E. Pearson, because of a family death, the President, E. F. Degering, was presented by the Secretary, Winona H. Welch. President Degering delivered a very thought provoking address on The Seven Freedoms.

The sixty-second annual meeting of the Indiana Academy of Science, with a general attendance of 250 and a dinner attendance of 150, was adjourned.

WINONA H. WELCH, *Secretary*

ENTOMOLOGISTS MEETING

G. E. LEHKER, Purdue, Chairman

The Entomologists held their meeting Friday along with the Academy sectional meetings. Dr. Arlo Vance, U. S. Department of Agriculture, Purdue University, was elected 1947 chairman.

TAXONOMISTS MEETING

A. T. GUARD, Purdue, Chairman

The Plant Taxonomists held their meeting Saturday morning at Indiana State Teachers College. Dr. R. C. Friesner, Butler University, was elected 1947 chairman.

JUNIOR ACADEMY OF SCIENCE



Officers for 1946

President: CHARLES GIFFIN, Phi-Chem Club, Elmhurst High School, Fort Wayne.

Vice-President: ROBERT REINHOLD, Junior Izaak Walton Club, Central High School, South Bend.

Secretary: ROBERT LOVETT, Science Club, Mishawaka High School, Mishawaka.

Members of the Council: James H. Otto (1942-1946), Prevo L. Whitaker (1943-1947), Roy McKee (1944-1948), Ruth Wimmer (1945-1949), Darl Wood (1946-1950).

PROGRAM OF THE FOURTEENTH ANNUAL MEETING

October 19, 1946

The Laboratory School, Indiana State Teachers College
Terre Haute, Indiana

9:00 A.M. Exhibits in the gymnasium

10:00 a.m. Morning Session

Sycamore Theatre, The Laboratory School

General session, Charles Giffin, presiding.

Greetings, Howard H. Michaud, State Sponsor.

Reading of minutes of 1945 meeting.

"The Family Tree of Birds", Louis E. Wuellner, Technical High School, Indianapolis.

"The Hoosier Trail as a Club Project", (illustrated) Robert Reinhold, Central High School, South Bend.

"Collecting Insects", Bill Kwolek, Lew Wallace High School, Gary.

"A Project Study of the Bacteria", John Repass, Technical High School, Indianapolis.

"Yearly Programs of Club Meetings", John Tuchek, Lew Wallace High School, Gary.

"The Liquefaction of SO₂ Gas", (demonstration) Richard Adams, State High School, Terre Haute.

1:00 p.m. Afternoon Session

Sycamore Theatre, The Laboratory School

"Chalk Talk—Insects", G. E. Lehker, Extension Entomologist, Purdue University, Lafayette.

Business Session—Election of Officers.

Motion Pictures, "Chemistry and a Changing World", "Sand and Flame". (From the film library of the Technical Extension Division, Purdue University).

"The Junior Academy Looks Ahead", Howard H. Michaud, State Sponsor, Department of Forestry, Purdue University.

MINUTES

The fourteenth annual meeting of the Indiana Junior Academy of Science was held Saturday October 19, 1946, in the Sycamore Theatre of the Laboratory School, Indiana State Teachers College, Terre Haute.

The president, Charles Giffin, Elmhurst High School, Fort Wayne, introduced the other officers, Robert Reinhold, vice president, of Central High School, South Bend, and Mary Nasser, State High School, Terre Haute. The latter served as secretary pro tem, due to the absence of Robert Lovett of Mishawaka.

Howard H. Michaud, State Sponsor of the Indiana Junior Academy of Science, and Assistant Professor in Conservation, Department of Forestry, Purdue University, greeted the members of the Junior Academy.

The president opened the meeting by calling for the minutes of the 1945 meeting held in Indianapolis. The minutes were read and approved.

The first number on the program was given by Louis E. Wuellner, Technical High School, Indianapolis, on "The Family Tree of Birds". He gave a very interesting talk on the classification of birds showing how birds were divided according to orders, families genera, and species. By using a blackboard he pointed out special structural differences among birds that are used as a basis for classification.

Robert Reinhold, Central High School, South Bend was called upon next to present "The Hoosier Trail as a Club Project". He explained how the Junior Izaak Walton Club of their school helped to plant trees, provide food and shelter for animals, and promoted other conservation activities on the Izaak Walton League property at South Bend. The special value of their project was for educational and recreational use. Kodachrome slides were used to illustrate his talk. It was presented in a stimulating manner and should encourage other clubs to carry on similar projects.

The president then called upon Bill Kwolek, Lew Wallace High School, Gary, to explain briefly his insect collection which was on display in the exhibit room. He said that his collection contained over

1800 specimens and also told how they were collected, and how his interest in insects began. It was especially noteworthy that Bill said he planned to go to college to continue in some kind of entomological study.

The next speaker called upon was John Repass, Technical High School, Indianapolis, who spoke on "A Project Study of the Bacteria". He used a colored chart showing the types of bacteria, and the methods used in culturing them. The development of new serums for the control of diseases was also discussed.

John Tucheck, Lew Wallace High School, Gary was called upon to speak on "Yearly Programs of Club Meetings". He spoke first of the method of organizing a science club in high school. He also mentioned the different kinds of activities and projects that could be carried on by clubs. Last, he mentioned the important factors that contribute to a successful club.

Russell McDougal, host sponsor, State High School, Terre Haute briefly expressed his appreciation for the cooperation of the various Junior Academy of Science Clubs for making the meeting a success.

The last speaker on the morning program, Richard Adams, State High School, Terre Haute, gave a demonstration on "The Liquefaction of SO_2 Gas". A brief discussion of molecular action and the temperatures of liquefaction and solidifying of different substances preceded the demonstration.

The meeting was adjourned for luncheon at 12:00 noon.

Afternoon Session

The afternoon session was held at 1:00 p.m. in the Sycamore Theatre of the Laboratory School, Terre Haute.

The president introduced Mr. G. E. Lehker, Extension Entomologist, Purdue University, who gave a chalk talk on "Insects". The speaker enumerated several reasons why there are more insects today than there were fifty years ago, and why it is a problem of serious concern today. Not only the talk, but the cartoon illustrations of many insects and insect problems proved very interesting to those assembled.

Business Session

The list of nominees selected by the council was read by Howard H. Michaud, State Sponsor, and the club members balloted for and elected the following officers for the year 1947: *President*, ROBERT REINHOLD, Junior Izaak Walton Club, Central High School, South Bend. *Vice President*, MARILYN LEECH, Science Club, William A. Wirt High School, Gary. *Secretary*, RAE SAFERIGHT, Science Club, Washington High School, Indianapolis.

Professor Michaud also announced the new council member Mr. Donald Klopp, Shortridge High School, Indianapolis, to succeed Mr. James Otto whose term expired in 1946.

The council announced its choice of Jeanne Hirsch of Fort Wayne and Louis E. Wuellner of Indianapolis as "best girl" and "best boy" respectively, to recommend for honorary membership in the American Association for the Advancement of Science.

The next part of the program included two motion pictures, "Chemistry and a Changing World", and "Sand and Flame", furnished by the Technical Extension Division of Purdue University.

Professor Michaud then spoke on "The Junior Academy Looks Ahead". He urged that we begin planning now for next year's meeting to be held at Ball State Teachers College, Muncie. Several plans were suggested to increase the activities of clubs and to increase membership in the Junior Academy. A news letter was mentioned as a means of informing clubs of Indiana what others were doing. Next year's program should be planned in time to send titles to the sponsor by the end of the 1946-47 school year. Enough papers should be ready so that only the best can be selected for the annual meeting. All of the sciences, especially physics, chemistry, and biology should be well represented to make a well balanced program.

It was also suggested that the Senior Academy committee in charge of the Junior Academy affairs might act as an impartial judge of best boy and best girl qualifications for the honorary award of the American Association for the Advancement of Science.

It was stated that the sponsors and clubs generally needed more information on current source materials in science for classroom and club projects.

About 125 members, sponsors, and friends attended the meeting. The meeting adjourned at 3:30 p.m.

EXHIBITS

Indiana Junior Academy of Science

October 19, 1946

GARY *William A. Wirt High School*

Unusual Insects from Devil's Island, South America by Harold Lundstrom

Lew Wallace High School

Collection of over 1800. Insects by Bill Kwolek

TERRE HAUTE *State High School, The Laboratory School, Indiana State Teachers College, by Science Club*

Faraday Coil

Floating Magnet

Cartesian Diver

Photo-electric Cell

Indiana State Teachers College, by Dr. W. P. Allyn

Snowy Owl (mounted)

Hummingbird in nest (mounted)

Three poisonous snakes of Indiana (preserved)

FORT WAYNE *Elmhurst High School* by the Phi Chem Club

Radio Frequency Induction Heater and Cotton Products Display

RENSELAER *St. Joseph's College* by Rev. John W. Baechle

Color photos of the Life History of the Cecropia Moth