

# PROCEEDINGS

OF THE

# Indiana Academy of Science

1913

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H. E. BARNARD - - - - - EDITOR

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INDIANAPOLIS :  
WM. B. BURFORD, CONTRACTOR FOR STATE PRINTING AND BINDING  
1914



## TABLE OF CONTENTS.

	PAGE
Constitution .....	5
By-laws .....	7
Appropriation for 1913-1914.....	<b>9</b>
An Act for the Protection of Birds, Their Nests and Eggs.....	9
Public Offenses—Hunting Wild Birds—Penalty.....	10
Officers, 1913-1914 .....	11
Executive Committee .....	11
Curators .....	11
Committees Academy of Science, 1914 .....	12
Officers of the Academy of Science (A Table of).....	13
Members .....	14
Fellows .....	14
Active Members .....	22
Resolution of Sympathy to Charles W. Fairbanks.....	34
Minutes of Spring Meeting .....	35
Minutes of the Twenty-ninth Annual Meeting Indiana Academy of Science .....	37
President's Address: Work of the Indiana Academy of Science. Don- aldson Bodine .....	43
Wabash Studies, IV: The Flood of March, 1913, at Terre Haute. Charles R. Dryer.....	55
The Flood of March, 1913, Along the Ohio River and Its Tributaries in Southeastern Indiana. Glenn Gulbertson .....	57
The Wabash River Flood of 1913, at Lafayette, Indiana. R. L. Sackett	63
The Selective Action of Gentian Violet in Bacteriological Analysis. C. M. Hilliard .....	69
An Epidemic of Diarrhoea, Presumably Milk-borne. P. A. Tetrault...	75
On the Vertical Distribution of the Plankton in Winona Lake. Glen- wood Henry .....	77
A Simple Apparatus for the Study of Phototropic Responses in Seed- lings. George N. Hoffer .....	93
A Test of Indiana Varieties of Wheat Seed for Fungous Infection. George N. Hoffer .....	97
Pyropolyporus Everhartii (Ellis and Gall) Murrill as a Wound Para- site. George N. Hoffer.....	99
The Mosses of Monroe County, Indiana, II. Mildred Notnagle and F. L. Pickett .....	103

	PAGE
Ecological Notes on Certain White River Algae. Paul Weatherwax...	107
Aphanomyces Phycophilus De Bary. Paul Weatherwax .....	109
Inheritance of the Length of Life in <i>Drosophila Ampelophila</i> . Roscoe R. Hyde .....	113
The Germination of Seeds of <i>Arisaema</i> . F. L. Pickett .....	125
Studies of <i>Camptosorus Rhizophyllus</i> , an Abstract of the Development of the Prothallium of <i>Camptosorus Rhizophyllus</i> , and the Resist- ance of the Prothallia of <i>Camptosorus Rhizophyllus</i> to Desiccation. F. L. Pickett .....	129
Irish Potato Scab ( <i>Oospora Scabies</i> ) as Affected by Fertilizers Con- taining Sulphates and Chlorides. S. D. Conner .....	131
Wabash Studies, V. Topographic Map of the Terre Haute Area. Chas. R. Dryer .....	139
Center of Area and Center of Population of Indiana. W. A. Cogshall..	141
The Shrinkage of Photographic Paper. R. R. Ramsey .....	143
AcyI Derivatives of O-Aminophenol. J. H. Ransom and R. E. Nelson.	145
Boiling and Condensing Points of Alcohol Water Mixtures. P. N. Evans .....	151
On the General Solution and So-Called Special Solutions of Linear Non-homogeneous Partial Differential Equations. L. L. Steimley.	157
A Modified Permeameter. Edwin Morrison and B. D. Morris .....	159
Sanitary Survey of Indiana Rivers. Jay A. Craven, C. E.....	167
The Relation of Lakes to Floods, with Special Reference to Certain Lakes and Streams of Indiana. Will Scott.....	173
First Steps in Indiana Forestry. Stanley Coulter.....	189
The Taxation of Forest Lands in Indiana. H. W. Anderson.....	197
Forests and Floods. F. M. Andrews.....	203
The Relation of County Tuberculosis Hospitals to Conservation of Public Health. James Y. Welborn, M. D.....	213
Playgrounds and Recreation Centers as Factors in Conservation of Human Life. Dr. W. A. Gekler.....	215
Public Toilets, Public Drinking Fountains and Public Spitting in rela- tion to the Conservation of Human Life. C. M. Hilliard.....	219
Power Economy in the Southern Indiana Quarry Industry. G. C. Mance .....	223
Report of the Committee on "A List of the Scientific and Technical Serials in the Libraries of the State of Indiana".....	237
List of Scientific and Technical Serials in the Libraries of Indiana....	240

# CONSTITUTION.

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## ARTICLE I.

SECTION 1. This association shall be called the Indiana Academy of Science.

SEC. 2. The objects of this Academy shall be scientific research and the diffusion of knowledge concerning the various departments of science; to promote intercourse between men engaged in scientific work, especially in Indiana; to assist by investigation and discussion in developing and making known the material, educational and other resources and riches of the State; to arrange and prepare for publication such reports of investigation and discussions as may further the aims and objects of the Academy as set forth in these articles.

WHEREAS, The State has undertaken the publication of such proceedings, the Academy will, upon request of the Governor, or of one of the several departments of the State, through the Governor, act through its council as an advisory body in the direction and execution of any investigation within its province as stated. The necessary expenses incurred in the prosecution of such investigation are to be borne by the State; no pecuniary gain is to come to the Academy for its advice or direction of such investigation.

The regular proceedings of the Academy as published by the State shall become a public document.

## ARTICLE II.

SECTION 1. Members of this Academy shall be honorary fellows, fellows, non-resident members or active members.

SEC. 2. Any person engaged in any department of scientific work, or in original research in any department of science, shall be eligible to active membership. Active members may be annual or life members. Annual members may be elected at any meeting of the Academy; they shall sign the constitution, pay an admission fee of two dollars and thereafter an annual fee of one dollar. Any person who shall at one time contribute fifty dollars to the funds of this Academy may be elected a life member of the Academy, free of assessment. Non-resident members may be elected

from those who have been active members but who have removed from the State. In any case, a three-fourths vote of the members present shall elect to membership. Application for membership in any of the foregoing classes shall be referred to a committee on application for membership, who shall consider such application and report to the Academy before the election.

SEC. 3. The members who are actively engaged in scientific work, who have recognized standing as scientific men, and who have been members of the Academy at least one year, may be recommended for nomination for election as fellows by three fellows or members personally acquainted with their work and character. Of members so nominated a number not exceeding five in one year may, on recommendation of the Executive Committee, be elected as fellows. At the meeting at which this is adopted, the members of the Executive Committee for 1894 and fifteen others shall be elected fellows, and those now honorary members shall become honorary fellows. Honorary fellows may be elected on account of special prominence in science, on the written recommendation of two members of the Academy. In any case a three-fourths vote of the members present shall elect.

#### ARTICLE III.

SECTION 1. The officers of this Academy shall be chosen by ballot at the annual meeting, and shall hold office one year. They shall consist of a President, Vice-President, Secretary, Assistant Secretary, Press Secretary and Treasurer, who shall perform the duties usually pertaining to their respective offices and in addition, with the ex-presidents of the Academy, shall constitute an Executive Committee. The President shall, at each annual meeting, appoint two members to be a committee, which shall prepare the programs and have charge of the arrangements for all meetings for one year.

SEC. 2. The annual meeting of this Academy shall be held in the city of Indianapolis within the week following Christmas of each year, unless otherwise ordered by the Executive Committee. There shall also be a summer meeting at such time and place as may be decided upon by the Executive Committee. Other meetings may be called at the discretion of the Executive Committee. The past Presidents, together with the officers and Executive Committee, shall constitute the council of the Academy, and represent it in the transaction of any necessary business not especially provided for in this constitution, in the interim between general meetings.

Sec. 3. This constitution may be altered or amended at any annual meeting by a three-fourths majority of the attending members of at least one year's standing. No question of amendment shall be decided on the day of its presentation.

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## BY-LAWS.

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1. On motion, any special department of science shall be assigned to a curator, whose duty it shall be, with the assistance of the other members interested in the same department, to endeavor to advance knowledge in that particular department. Each curator shall report at such time and place as the Academy shall direct. These reports shall include a brief summary of the progress of the department during the year preceding the presentation of the report.

2. The President shall deliver a public address on the morning of one of the days of the meeting at the expiration of his term of office.

3. The Press Secretary shall attend to the securing of proper newspaper reports of the meetings and assist the Secretary.

4. No special meeting of the Academy shall be held without a notice of the same having been sent to the address of each member at least fifteen days before such meeting.

5. No bill against the Academy shall be paid without an order signed by the President and countersigned by the Secretary.

6. Members who shall allow their dues to remain unpaid for two years, having been annually notified of their arrearage by the Treasurer, shall have their names stricken from the roll.

7. Ten members shall constitute a quorum for the transaction of business.

### AN ACT TO PROVIDE FOR THE PUBLICATION OF THE REPORTS AND PAPERS OF THE INDIANA ACADEMY OF SCIENCE.

[Approved March 11, 1895.]

WHEREAS, The Indiana Academy of Science, a chartered scientific association, has embodied in its constitution a provision that it will, upon the request of the Governor, or of the several departments of the State

government, through the Governor, and through its council as an advisory board, assist in the direction and execution of any investigation within its province, without pecuniary gain to the Academy, provided only that the necessary expenses of such investigation are borne by the State; and,

WHEREAS, The reports of the meetings of said Academy, with the several papers read before it, have very great educational, industrial and economic value, and should be preserved in permanent form; and

WHEREAS, The Constitution of the State makes it the duty of the General Assembly to encourage by all suitable means intellectual, scientific and agricultural improvement; therefore,

SECTION 1. *Be it enacted by the General Assembly of the State of Indiana,* That hereafter the annual reports of the meetings of the Indiana Academy of Science, beginning with the report for the year 1894, including all papers of scientific or economic value, presented at such meetings, after they shall have been edited and prepared for publication as hereinafter provided, shall be published by and under the direction of the Commissioners of Public Printing and Binding.

SEC. 2. Said reports shall be edited and prepared for publication without expense to the State, by a corps of editors to be selected and appointed by the Indiana Academy of Science, who shall not, by reason of such service, have any claim against the State for compensation. The form, style of binding, paper, typography and manner and extent of illustration of such reports shall be determined by the editors, subject to the approval of the Commissioners of Public Printing and Stationery. Not less than 1,500 nor more than 3,000 copies of each of said reports shall be published, the size of the edition within said limits to be determined by the concurrent action of the editors and the Commissioners of Public Printing and Stationery: *Provided,* That not to exceed six hundred dollars (\$600) shall be expended for such publication in any one year, and not to extend beyond 1896: *Provided,* That no sums shall be deemed to be appropriated for the year 1894.

SEC. 3. All except three hundred copies of each volume of said reports shall be placed in the custody of the State Librarian, who shall furnish one copy thereof to each public library in the State, one copy to each university, college or normal school in the State, one copy to each high school in the State having a library, which shall make application therefor, and one copy to such other institutions, societies or persons as may be designated by the

Academy through its editors or its council. The remaining three hundred copies shall be turned over to the Academy to be disposed of as it may determine. In order to provide for the preservation of the same it shall be the duty of the Custodian of the State House to provide and place at the disposal of the Academy one of the unoccupied rooms of the State House, to be designated as the office of the Academy of Science, wherein said copies of said reports belonging to the Academy, together with the original manuscripts, drawings, etc., thereof can be safely kept, and he shall also equip the same with the necessary shelving and furniture.

SEC. 4. An emergency is hereby declared to exist for the immediate taking effect of this act, and it shall therefore take effect and be in force from and after its passage.

#### APPROPRIATION FOR 1913-1914.

The appropriation for the publication of the proceedings of the Academy during the years 1913 and 1914 was increased by the Legislature in the General Appropriation bill, approved March 9, 1909. That portion of the law fixing the amount of the appropriation for the Academy is herewith given in full:

For the Academy of Science: For the printing of the proceedings of the Indiana Academy of Science twelve hundred dollars: *Provided*, That any unexpended balance in 1913 shall be available in 1914, and that any unexpended balance in 1914 shall be available in 1915.

#### AN ACT FOR THE PROTECTION OF BIRDS, THEIR NESTS AND EGGS.

SEC. 602. Whoever kills, traps or has in his possession any wild bird, or whoever sells or offers the same for sale, or whoever destroys the nest or eggs of any wild bird, shall be deemed guilty of a misdemeanor and upon conviction thereof shall be fined not less than ten dollars nor more than twenty-five dollars: *Provided*, That the provisions of this section shall not apply to the following named game birds: The Anatidæ, commonly called swans, geese, brant, river and sea duck; the Rallidæ, commonly called rails, coots, mud-hens, gallinules; the Limicolæ, commonly called shore birds, surf birds, plover, snipe, woodcock, sandpipers, tattlers and curlew; the Gallinæ, commonly called wild turkeys, grouse, prairie chickens, quails and pheasants; nor to English or European house sparrows.

crows, hawks or other birds of prey. Nor shall this section apply to persons taking birds, their nests or eggs, for scientific purposes, under permit, as provided in the next section.

Sec. 603. Permits may be granted by the Commissioner of Fisheries and Game to any properly accredited person, permitting the holder thereof to collect birds, their nests or eggs for strictly scientific purposes. In order to obtain such permit the applicant for the same must present to such Commissioner written testimonials from two well-known scientific men certifying to the good character and fitness of such applicant to be entrusted with such privilege, and pay to such Commissioner one dollar therefor and file with him a properly executed bond in the sum of two hundred dollars, payable to the State of Indiana, conditioned that he will obey the terms of such permit, and signed by at least two responsible citizens of the State as sureties. The bond may be forfeited, and the permit revoked upon proof to the satisfaction of such Commissioner that the holder of such permit has killed any bird or taken the nest or eggs of any bird for any other purpose than that named in this section.

#### PUBLIC OFFENSES--HUNTING WILD BIRDS--PENALTY.

[Approved March 13, 1913.]

SECTION 1. *Be it enacted by the General Assembly of the State of Indiana,* That section six (6) of the above entitled act be amended to read as follows: Section 6. That section six hundred two (602) of the above entitled act be amended to read as follows: Section 602. It shall be unlawful for any person to kill, trap or possess any wild bird, or to purchase or offer the same for sale, or to destroy the nest or eggs of any wild bird, except as otherwise provided in this section. But this section shall not apply to the following named game birds: The Anatidæ, commonly called swans, geese, brant, river and sea duck; the Rallidæ, commonly known as rails, coots, mud-hens and gallinules; the Limicokæ, commonly known as shore birds, plovers, surf birds, snipe, woodcock, sandpipers, tattlers and curlews; the Gallinæ, commonly called wild turkeys, grouse, prairie chickens, quails, and pheasants; nor to English or European house sparrows, blackbirds, crows, hawks or other birds of prey. Nor shall this section apply to any person taking birds or their nests or eggs for scientific purposes under permit as provided in the next section. Any person violating the provisions of this section shall, on conviction, be fined not less than ten dollars (\$10.00) nor more than fifty dollars (\$50.00).

# Indiana Academy of Science.

## OFFICERS, 1913-1914.

PRESIDENT,  
SEVERANCE BURRAGE.

VICE-PRESIDENT,  
A. L. FOLEY.

SECRETARY,  
ANDREW J. BIGNEY.  
ASSISTANT SECRETARY,

H. E. ENDERS.

PRESS SECRETARY,  
FRANK B. WADE.

TREASURER,  
W. A. COGSHALL.

EDITOR,  
H. E. BARNARD.

### EXECUTIVE COMMITTEE:

ARTHUR., J. C.,	DRYER, CHAS. R.,	MOTIER, DAVID M.,
BIGNEY, A. J.,	EIGENMANN, C. H.,	MENDENHALL, T. C.,
BLATCHLEY, W. S.,	EVANS, P. N.,	NAYLOR, JOSEPH P.,
BODINE, DONALDSON,	DENNIS, D. W.,	NOYES, W. A.,
BRANNER, J. C.,	FOLEY, A. L.,	STUART, MILO H.,
BURRAGE, SEVERANCE,	HAY, O. P.,	WADE, F. B.,
BUTLER, AMOS W.,	HESSLER, ROBERT,	WALDO, C. A.,
COGSHALL, W. A.,	JOHN, J. P. D.,	WILEY, H. W.,
COULTER, JOHN M.,	JORDAN, D. S.,	WILLIAMSON, E. B.,
COULTER, STANLEY,	MEES, CARL L.,	WRIGHT, JOHN S.,
CULBERTSON, GLENN,	MOENKHAUS, W. J.,	

### CURATORS:

BOTANY.....	J. C. ARTHUR.
ENTOMOLOGY.....	W. S. BLATCHLEY.
HERPETOLOGY }.....	A. W. BUTLER.
MAMMALOGY }.....	
ORNITHOLOGY }.....	
ICHTHYOLOGY.....	H. C. EIGENMANN.

## COMMITTEES ACADEMY OF SCIENCE, 1914.

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### *Program.*

JOHN S. WRIGHT, Indianapolis  
 CHAS. STOLTZ, South Bend  
 W. M. BLANCHARD, Greencastle

### *Nominations.*

DONALDSON BODINE, Crawfordsville  
 J. W. BEEDE, Bloomington  
 EDWIN MORRISON, Richmond

### *State Library.*

W. S. BLATCHLEY, Indianapolis  
 STANLEY COULTER, Lafayette  
 AMOS W. BUTLER, Indianapolis

### *Biological Survey.*

C. C. DEAM, Bluffton  
 WILL SCOTT, Bloomington  
 GEO. N. HOFFER, Lafayette  
 U. O. COX, Terre Haute  
 J. A. NIEUWLAND, Notre Dame

### *Distribution of Proceedings.*

A. J. BIGNEY, Moores Hill  
 AMOS W. BUTLER, Indianapolis  
 P. N. EVANS, Lafayette  
 D. M. MOTTIER, Bloomington  
 JOHN S. WRIGHT, Indianapolis

### *Membership.*

F. M. ANDREWS, Bloomington  
 A. M. KENYON, Lafayette  
 FRED MILLER, Indianapolis

### *Auditing.*

JOHN C. DEAN, Indianapolis  
 L. J. RETTGER, Terre Haute

### *Restriction of Weeds and Diseases.*

J. C. ARTHUR, Lafayette  
 ROBERT HESSLER, Logansport  
 J. N. HURTY, Indianapolis  
 STANLEY COULTER, Lafayette  
 D. M. MOTTIER, Bloomington

### *Academy to State.*

R. W. McBRIDE, Indianapolis  
 GLENN CULBERTSON, Hanover  
 H. E. BARNARD, Indianapolis  
 AMOS W. BUTLER, Indianapolis  
 W. W. WOOLEN, Indianapolis

### *Publication of Proceedings.*

H. E. BARNARD, Editor, Indianapolis  
 C. M. HILLIARD, Lafayette  
 F. B. WADE, Indianapolis  
 C. R. DRYER, Terre Haute  
 M. K. HAGGERTY, Bloomington

OFFICERS OF THE INDIANA ACADEMY OF SCIENCE.

YEARS.	PRESIDENT.	SECRETARY.	ASST. SECRETARY.	PRESS SECRETARY.	TREASURER.
1885-1886	David S. Jordan.....	Amos W. Butler.....			O. P. Jenkins.
1886-1887	John M. Coulter.....	Amos W. Butler.....			O. P. Jenkins.
1887-1888	J. P. D. John.....	Amos W. Butler.....			O. P. Jenkins.
1888-1889	John C. Branner.....	Amos W. Butler.....			O. P. Jenkins.
1889-1890	T. C. Mendenhall.....	Amos W. Butler.....			O. P. Jenkins.
1890-1891	O. P. Hay.....	Amos W. Butler.....			O. P. Jenkins.
1891-1892	J. L. Campbell.....	Amos W. Butler.....			C. A. Waldo.
1892-1893	J. C. Arthur.....	Amos W. Butler.....	{ Stanley Coulter... W. W. Norman... }		C. A. Waldo.
1893-1894	W. A. Noyes.....	C. A. Waldo.....	W. W. Norman.....		W. P. Shannon.
1894-1895	A. W. Butler.....	John S. Wright.....	A. J. Bigney.....		W. P. Shannon.
1895-1896	Stanley Coulter.....	John S. Wright.....	A. J. Bigney.....		W. P. Shannon.
1896-1897	Thomas Gray.....	John S. Wright.....	A. J. Bigney.....		W. P. Shannon.
1897-1898	C. A. Waldo.....	John S. Wright.....	A. J. Bigney.....	Geo. W. Benton.....	J. T. Scovell.
1898-1899	C. H. Eigenmann.....	John S. Wright.....	E. A. Schultze.....	Geo. W. Benton.....	J. T. Scovell.
1899-1900	D. W. Dennis.....	John S. Wright.....	E. A. Schultze.....	Geo. W. Benton.....	J. T. Scovell.
1900-1901	M. B. Thomas.....	John S. Wright.....	E. A. Schultze.....	Geo. W. Benton.....	J. T. Scovell.
1901-1902	Harvey W. Wiley.....	John S. Wright.....	Donaldson Bodine..	Geo. W. Benton.....	J. T. Scovell.
1902-1902	W. S. Blatchley.....	John S. Wright.....	Donaldson Bodine..	G. A. Abbott.....	W. A. McBeth.
1903-1904	C. L. Mees.....	John S. Wright.....	J. H. Ransom.....	G. A. Abbott.....	W. A. McBeth.
1904-1905	John S. Wright.....	Lynn B. McMullen..	J. H. Ransom.....	G. A. Abbott.....	W. A. McBeth.
1905-1906	Robert Hessler.....	Lynn B. McMullen..	J. H. Ransom.....	Charles R. Clark....	W. A. McBeth.
1906-1907	D. M. Mottier.....	Lynn B. McMullen..	J. H. Ransom.....	G. A. Abbott.....	W. A. McBeth.
1907-1908	Glenn Culbertson....	J. H. Ransom.....	A. J. Bigney.....	G. A. Abbott.....	W. A. McBeth.
1908-1909	A. L. Foley.....	J. H. Ransom.....	A. J. Bigney.....	G. A. Abbott.....	W. A. McBeth.
1909-1910	P. N. Evans.....	Geo. W. Benton.....	A. J. Bigney.....	John W. Woodhams..	W. J. Moenkhaus.
1910-1911	C. R. Dryer.....	A. J. Bigney.....	E. B. Williamson..	Milo H. Stuart.....	W. J. Moenkhaus.
1911-1912	J. P. Naylor.....	A. J. Bigney.....	E. B. Williamson..	Milo H. Stuart.....	W. J. Moenkhaus.
1912-1913	Donaldson Bodine....	A. J. Bigney.....	C. M. Smith.....	F. B. Wade.....	W. J. Moenkhaus.
1913-1914	Severance Burrage..	A. J. Bigney.....	H. E. Enders.....	F. B. Wade.....	W. A. Cogshall.

## MEMBERS.\*

## FELLOWS.

- ††Abbott, G. A., Grand Forks, N. Dak. . . . . †1908  
 Professor of Chemistry, University of North Dakota.  
 Chemistry.
- Aley, Robert J., Orono, Me. . . . . 1898  
 President of University of Maine.  
 Mathematics and General Science.
- Anderson, H. W., 1 Mills Place, Crawfordsville, Ind. . . . . 1912  
 Professor of Botany, Wabash College.  
 Botany.
- Andrews, F. M., 744 E. Third St., Bloomington, Ind. . . . . 1911  
 Assistant Professor of Botany, Indiana University.  
 Botany.
- Arthur, Joseph C., 915 Columbia St., Lafayette, Ind. . . . . 1894  
 Professor of Vegetable Physiology and Pathology, Purdue University.  
 Botany.
- Barnard, H. E., Room 20, State House, Indianapolis, Ind. . . . . 1910  
 Chemist to Indiana State Board of Health.  
 Chemistry, Sanitary Science, Pure Foods.
- Beede, Joshua W., cor. Wall and Atwater Sts., Bloomington, Ind. . . . . 1906  
 Associate Professor of Geology, Indiana University.  
 Stratigraphic Geology, Physiography.
- Benton, George W., 100 Washington Square, New York, N. Y. . . . . 1896  
 With the American Book Company.

\* Every effort has been made to obtain the correct address and occupation of each member, and to learn what line of science he is interested in. The first line contains the name and address; the second line the occupation; the third line the branch of science in which he is interested. The omission of an address indicates that mail addressed to the last printed address was returned as uncalled for. Information as to the present address of members so indicated is requested by the secretary. The custom of dividing the list of members has been followed.

† Date of election.

†† Non-resident.

- Bigney, Andrew J., Moores Hill, Ind. . . . . 1897  
 Vice-President and Professor of Biology and Geology, Moores Hill  
 College.  
 Biology and Geology.
- Bitting, Catharine Golden, Washington, D. C. . . . . 1895  
 Microscopic Expert, Pure Food, National Cannery Laboratory.  
 Botany.
- Blatchley, W. S., 1558 Park Ave., Indianapolis, Ind. . . . . 1893  
 Naturalist.  
 Botany, Entomology and Geology.
- Bodine, Donaldson, Four Mills Place, Crawfordsville, Ind. . . . . 1899  
 Professor of Geology and Zoology, Wabash College.  
 Entomology and Geology.
- Breeze, Fred J., care American Book Company, New York, N. Y. . . . . 1910  
 With the American Book Company.  
 Geography.
- Bruner, Harry Lane, 324 S. Ritter Ave., Indianapolis, Ind. . . . . 1899  
 Professor of Biology, Butler College.  
 Comparative Anatomy, Zoology.
- Burrage, Severance, care Eli Lilly Co., Indianapolis, Ind. . . . . 1898  
 Charge of Biological Laboratory, Eli Lilly Co.  
 Bacteriology, Sanitary Science.
- Butler, Amos W., 52 Downey, Ave., Irvington, Ind. . . . . 1893  
 Secretary, Indiana Board of State Charities.  
 Vertebrate Zoology, Anthropology, Sociology.
- Cogshall, Wilbur A., 423 S. Fess Ave., Bloomington, Ind. . . . . 1906  
 Associate Professor of Astronomy, Indiana University.  
 Astronomy and Physics.
- Cook, Mel T., New Brunswick, N. J. . . . . 1902  
 Professor of Plant Pathology, Rutgers College.  
 Botany, Plant Pathology, Entomology.
- Coulter, John M., care University of Chicago, Chicago, Ill. . . . . 1893  
 Head Department of Botany, Chicago University.  
 Botany.
- Coulter, Stanley, 213 S. Ninth St., Lafayette, Ind. . . . . 1893  
 Dean School of Science, Purdue University.  
 Botany, Forestry.

- Cox, Ulysses O., P. O. Box 81, Terre Haute, Ind. . . . . 1908  
 Head Department Zoology and Botany, Indiana State Normal.  
 Botany, Zoology.
- Culbertson, Glenn, Hanover, Ind. . . . . 1899  
 Chair Geology, Physics and Astronomy, Hanover College.  
 Geology.
- Cumings, Edgar Roscoe, 327 E. Second St., Bloomington, Ind. . . . . 1906  
 Professor of Geology, Indiana University.  
 Geology, Paleontology.
- Davisson, Schuyler Colfax, Bloomington, Ind. . . . . 1908  
 Professor of Mathematics, Indiana University.  
 Mathematics.
- Dean, Charles C., Bluffton, Ind. . . . . 1910  
 Druggist.  
 Botany.
- Dennis, David Worth, Richmond, Ind. . . . . 1895  
 Professor of Biology, Earlham College.  
 Biology.
- Dryer, Charles R., 35 Gilbert Ave., Terre Haute, Ind. . . . . 1897  
 Professor of Geography and Geology, Indiana State Normal.  
 Geography, Geology.
- Eigenmann, Carl H., 650 Atwater St., Bloomington, Ind. . . . . 1893  
 Professor Zoology, Dean of Graduate School, Indiana University.  
 Embryology, Degeneration, Heredity, Evolution and Distribution of  
 American Fish.
- Enders, Howard Edwin, 105 Quincy St., Lafayette, Ind. . . . . 1912  
 Associate Professor of Zoology, Purdue University.  
 Zoology.
- Evans, Percy Norton, Lafayette, Ind. . . . . 1901  
 Director of Chemical Laboratory, Purdue University.  
 Chemistry.
- Foley, Arthur L., Bloomington, Ind. . . . . 1897  
 Head Department of Physics, Indiana University.  
 Physics.
- Golden, M. J., Lafayette, Ind. . . . . 1899  
 Director of Laboratories of Practical Mechanics, Purdue Uni-  
 versity.  
 Mechanics.

- ††Goss, William Freeman M., Urbana, Ill. . . . . 1893  
Dean of College of Engineering, University of Illinois.
- Haggerty, M. E., Bloomington, Ind. . . . . 1913
- Hathaway, Arthur S., 2206 N. Tenth St, Terre Haute, Ind. . . . . 1895  
Professor of Mathematics, Rose Polytechnic Institute.  
Mathematics, Physics.
- Hessler, Robert, Logansport, Ind. . . . . 1899  
Physician.  
Biology.
- Hilliard, C. M., Lafayette, Ind. . . . . 1913
- Hoffer, Geo. N., West Lafayette, Ind. . . . . 1913
- Hurty, J. N., Indianapolis, Ind. . . . . 1910  
Secretary, Indiana State Board of Health.  
Sanitary Science. Vital Statistics, Eugenics.
- †Huston, H. A., New York City . . . . . 1893
- Kern, Frank D., State College, Pa. . . . . 1912  
Professor of Botany, Pennsylvania State College.  
Botany.
- Lyons, Robert E., 630 E. Third St., Bloomington, Ind. . . . . 1896  
Head of Department of Chemistry, Indiana University.  
Organic and Biological Chemistry.
- McBeth, William A., 1905 N. Eighth St., Terre Haute, Ind. . . . . 1904  
Assistant Professor Geography, Indiana State Normal.  
Geography, Geology, Scientific Agriculture.
- †Marsters, V. F., Santiago, Chile . . . . . 1893
- Mees, C. L., Terre Haute, Ind. . . . . 1894  
President of Rose Polytechnic Institute.
- †Miller, John Anthony, Swarthmore, Pa. . . . . 1904  
Professor of Mathematics and Astronomy, Swarthmore College.  
Astronomy, Mathematics.
- Moenkhaus, William J., 501 Fess Ave., Bloomington, Ind. . . . . 1901  
Professor of Physiology, Indiana University.  
Physiology.
- Moore, Richard B., Denver, Colo. . . . . 1893  
With U. S. Bureau of Mines.  
Chemistry, Radio-activity.

- Mottier, David M., 215 Forest Place, Bloomington, Ind. . . . . 1893  
 Professor of Botany, Indiana University.  
 Morphology, Cytology.
- Naylor, J. P., Greencastle, Ind. . . . . 1903  
 Professor of Physics, Depauw University.  
 Physics, Mathematics.
- †Noyes, William Albert, Urbana, Ill. . . . . 1893  
 Director of Chemical Laboratory, University of Illinois.  
 Chemistry.
- Pohlman, Augustus G., 1100 E. Second St., Bloomington, Ind. . . . . 1911  
 Professor of Anatomy, Indiana University.  
 Embryology, Comparative Anatomy.
- Ramsey, Rolla R., 615 E. Third St., Bloomington, Ind. . . . . 1906  
 Associate Professor of Physics, Indiana University.  
 Physics.
- Ransom, James H., 323 University St., West Lafayette, Ind. . . . . 1902  
 Professor of General Chemistry, Purdue University.  
 General Chemistry, Organic Chemistry, Teaching.
- Rettger, Louis J., 31 Gilbert Ave., Terre Haute, Ind. . . . . 1896  
 Professor of Physiology, Indiana State Normal.  
 Animal Physiology.
- Rothrock, David A., Bloomington, Ind. . . . . 1906  
 Professor of Mathematics, Indiana University.  
 Mathematics.
- Scott, Will, 731 Atwater St., Bloomington, Ind. . . . . 1911  
 Assistant Professor of Zoology, Indiana University.  
 Zoology, Lake Problems.
- Shannon, Charles W., Norman, Okla. . . . . 1912  
 With Oklahoma State Geological Survey.  
 Soil Survey, Botany.
- Smith, Albert, 1022 Seventh St., West Lafayette. . . . . 1908  
 Professor of Structural Engineering.  
 Physics, Mechanics.
- ††Smith, Alexander, care Columbia University, New York, N. Y. . . . . 1893  
 Head of Department of Chemistry, Columbia University.  
 Chemistry.

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 Professor of Physics, Purdue University.  
 Physics.
- Stone Winthrop E., Lafayette, Ind. . . . . 1893  
 President of Purdue University.  
 Chemistry.
- ††Swain, Joseph, Swarthmore, Pa. . . . . 1898  
 President of Swarthmore College.  
 Science of Administration.
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 Assistant Professor of Botany, Indiana University.  
 Botany.
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 Thayer Professor Mathematics and Applied Mechanics, Wash-  
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 Mathematics, Mechanics, Geology and Mineralogy.
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 Entomologist, U. S. Department of Agriculture, Washington, D. C.  
 Entomology.
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 Professor of Mathematics, Purdue University.  
 Mathematics.
- Wiley, Harvey W., Cosmos Club, Washington, D. C. . . . . 1895  
 Professor of Agricultural Chemistry, George Washington Uni-  
 versity.  
 Biological and Agricultural Chemistry.
- Woollen, William Watson, Indianapolis, Ind. . . . . 1908  
 Lawyer.  
 Birds and Nature Study.
- Wright, John S., care Eli Lilly Co., Indianapolis, Ind. . . . . 1894  
 Manager of Advertising Department, Eli Lilly Co.  
 Botany.

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Zoology.

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Entomology, Sanitary Sciences.

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Hygiene, Embryology, Eugenics, Animal Behavior.

- Hay, Oliver Perry, U. S. National Museum, Washington, D. C.  
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 Vertebrate Paleontology, especially that of the Pleistocene Epoch.
- Hughes, Edward, Stockton, California.
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 Physiology, Histology.
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 Fish, Eugenics, Botany, Evolution.
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 Physics, Discharge of Electricity thru Gases.
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 Botany.
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 Physics, Chemistry.
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 Physics, "Engineering," Mathematics, Astronomy.
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 Mining Engineer.
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 Geology, Paleontology, Ethnology.

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 Physiology, Zoology.
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---

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Chemistry, Physics.
- Bryan, William Lowe, Bloomington.  
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Psychology.
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Officeman with William B. Burford.  
Botany, Psychology.

Carmichael, R. D., Bloomington.

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Mathematics.

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Chansler, Elias J., Bicknell.

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Ornithology and Mammals.

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Medicine.

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Cox, William Clifford.

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Chemistry and Physics.

Cutter, George, Broad Branch Road, Washington, D. C.

Retired Manufacturer of Electrical Supplies.  
Conchology.

Daniels, Lorenzo E., Rolling Prairie.

Retired Farmer.  
Conchology.

Davis, Melvin K., Anderson.

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Physiography, Geology, Climatology.

Deppe, C. R., Franklin.

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Entomology, Eugenics, Parasitology, Plant Pathology.

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Chemistry.
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Biology, Entomology.
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Merchant.  
Botany, Ornithology.
- Ewers, James E., Terre Haute.  
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Geology.
- Felver, William P., 325½ Market St., Logansport.  
Railroad Clerk.  
Geology, Chemistry.
- Fisher, Martin L., Lafayette.  
Professor of Crop Production, Purdue University.  
Agriculture, Soils and Crops, Birds, Botany.
- Frier, George M., Lafayette.  
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University.  
Botany, Zoology, Entomology, Ornithology, Geology.
- Fuller, Frederick D., 213 Russell St., West Lafayette.  
Chief Deputy State Chemist, Purdue Experiment Station.  
Chemistry, Microscopy.

- Funk, Austin, 404 Spring St., Jeffersonville.  
Physician.  
Diseases of Eye, Ear, Nose and Throat.
- Galloway, Jesse James, Bloomington.  
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Geology. Paleontology.
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- Glenn, E. R., 535 North Walnut St., Bloomington.  
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- Gottlieb, Frederic W., Morristown.  
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Archaeology, Ethnology.
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- Greene, Frank C., Missouri Bureau of Geology and Mines, Rolla, Mo.  
Geologist.  
Geology.
- Grimes, Earl J., Russellville.  
Care U. S. Soil Survey  
Botany, Soil Survey.
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Professor of Electrical Engineering, Purdue University.  
Mathematics, Physics, Chemistry.
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Zoology.
- Harvey, R. B., Indianapolis.
- Heimbürger, Harry V., 701 West Washington St., Urbana, Ill.  
Assistant in Zoology, University of Illinois.

- Hendricks, Victor K., 855 Benton Ave., Springfield, Mo.  
 Assistant Chief Engineer, St. L. & S. F. R. R.  
 Civil Engineering and Wood Preservation.
- Hennel, Cora, Bloomington, Ind.
- Hennel, Edith A., Bloomington, Ind.
- Hetherington, John P., 418 Fourth St., Logansport.  
 Physician.  
 Medicine, Surgery, X-Ray, Electro-Therapeutics.
- Hinman, J. J., Jr., University of Iowa, Iowa City, Ia.  
 Chemist, Dept. Public Health and Hygiene.  
 Chemistry.
- Hole, Allen D., Richmond.  
 Instructor, Earlham College.
- Hubbard, Lucius M., South Bend.  
 Lawyer.
- Hufford, Mason E., Bloomington, Ind.
- Hutton, Joseph Gladden, Prockings, South Dakota.  
 Associate Professor of Agronomy, State College.  
 Agronomy, Geology.
- Hyde, Roscoe Raymond, Terre Haute.  
 Assistant Professor, Physiology and Zoology, Indiana State Normal.  
 Zoology, Physiology, Bacteriology.
- Ibison, Harry M., Marion.  
 Instructor in Science, Marion High School.
- Jackson, D. E., St. Louis, Mo.  
 Assistant Professor, Pharmacology, Washington University.
- Johnson, A. G., Madison, Wisconsin.
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 State Chemist. Professor of Agriculture and Chemistry, Purdue University.  
 Chemistry, and general subjects relating to agriculture.
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 Professor of Mathematics, Purdue University.  
 Mathematics.

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President University of Ariz.
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Botany, Agriculture.
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Experimental Engineering in Steam and Gas.
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Mathematics.
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Lawyer.
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- McClellan, John H., Gary, Ind.
- McCulloch, T. S., Charlestown.
- Mance, Grover C., Bloomington, Ind.
- Markle, M. S., Richmond.
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Chemistry.
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Botany, Plant Breeding.
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Geology.
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Botany.
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Professor of Physics, Earlham College.  
Physics and Chemistry.

- Morrison, Harold, Indianapolis, Ind.
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 Cooperative work with Cornell University.  
 Biology, Plant Breeding.
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 Professor, Botany, Editor Midland Naturalist.  
 Systematic Botany, Plant Histology, Organic Chemistry.
- North, Cecil C., Greencastle.
- Northagel, Mildred Gary, Ind.
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 Graduate Student, Botany, Indiana University.  
 Botany.
- Orton, Clayton R., State College, Pennsylvania.  
 Assistant Professor of Botany, Pennsylvania State College.  
 Phytopathology, Botany, Mycology, Bacteriology.
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 Care Agricultural College.
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 Professor of Biology. (Retired.)  
 Biology.
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 Botany.
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 Instructor in Agriculture.  
 Botany, Plant Breeding, Plant Pathology, Bio-Chemistry.
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- Pickett, Fermen L., Bloomington.  
 Botany Critic, Indiana University Training School.  
 Botany, Forestry, Agriculture.

- Pipal, F. J., 11 S. Salisbury St., West Lafayette.
- Price, James A., Fort Wayne.
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Principal High School.
- Shriver, Dr. Will, Indianapolis, Ind.  
Director, State Laboratory of Hygiene.
- Shockel, Barnard, Professor, Terre Haute, Ind.
- Schultze, E. A., Laurel.  
Fruit Grower.  
Bacteriology, Fungi.
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Botany.
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- Smith, E. R., Indianapolis.  
Horticulturist.
- Snodgrass, Robert, Crawfordsville, Ind.
- Spitzer, George, Lafayette.  
Dairy Chemist, Purdue University.  
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 Merchant.  
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Zufall, C. J., Indianapolis, Ind.

Fellows .....	70
Members, Active .....	162
Members, Non-resident .....	27
	—
Total .....	259

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## INDIANA ACADEMY OF SCIENCE

IN JOINT SESSION WITH THE

### INDIANA CONSERVATION ASSOCIATION

WHEREAS, We have learned of the death of Mrs. Fairbanks, the wife of Hon. Charles W. Fairbanks, who was to have participated in this meeting, and the value of whose service in the cause of Conservation is well known: Therefore be it

*Resolved.* That we hereby express our sympathy with him and his family in this time of bereavement, and our regret at his unavoidable absence from our meetings, and direct that a copy of this resolution be sent to him, and that it be spread upon the minutes of the respective organizations.

A. W. BUTLER,

For the Indiana Academy of Science,

SEVERANCE BURRAGE,

For the Indiana Conservation Association.

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## MINUTES OF SPRING MEETING.

CRAWFORDSVILLE, INDIANA,

MAY 15, 16 AND 17, 1913.

The 1913 spring meeting of the Academy was held at Crawfordsville and the Shades May 15 to 17.

The scientific program consisted of a lecture Thursday, May 15, 8 p. m., by Professor G. Frederick Wright, of Oberlin, on "Thirty Years' Progress in Glacial Geology." The lecture was an attractive and instructive presentation of an interesting subject and was much enjoyed by those present.

Friday, May 16, was taken up with an excursion to the Shades of Death. This was of especial interest to geologists, botanists, and zoologists, but the natural grandeur of the place and the outing were appreciated by all. At noon the local committee served lunch at the Shades Hotel without cost to the members. Following the lunch a short business session was held, about forty members being present. The following were elected to membership: Charles H. Baldwin, Indianapolis; Francis Daniels and H. F. Ashby, Crawfordsville, and E. L. Marcum, Waveland. There was some discussion of the matter of the Donaldson Farm, which was to have been left to the State as a park but which has been in uncertain control on account of legal complications. It was moved that "It is the sense of this Academy that the Donaldson Farm should become the property of Indiana University, that the Academy use its influence to that end, and that the President of the Academy and Dr. C. H. Eigenmann constitute a committee to prepare a suitable memorial to present to the proper authorities." This was carried unanimously. It was moved that the thanks of the Academy be extended to Professor Wright for his lecture. Carried by a rising vote. President Bodine presided.

Friday evening after returning to Crawfordsville a very enjoyable dinner was served at the Crawford House, at 8:30, by the Academy without cost to the members. The dinner was followed by informal talks, Mr.

Amos Butler acting as toastmaster and responses being made by Messrs. Cogshall, Bodine, Macbeth, Kern, Culbertson, Barrett, Enders, J. S. Wright, Stoltz, Morrison and Eigenmann. Various items of interest relating to the trip to the Shades were brought out by the speakers.

Saturday morning, May 17, was taken up by field trips along Rock River (Sugar Creek) to the crinoid beds and other places of interest. Many members also took advantage of the opportunity to visit the Gen. Lew Wallace place.

FRANK D. KERN,  
Secretary, *pro tem.*

MINUTES OF THE TWENTY-NINTH ANNUAL MEETING  
INDIANA ACADEMY OF SCIENCE,

CLAYPOOL HOTEL, INDIANAPOLIS, INDIANA.

OCTOBER 24, 1913.

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The Executive Committee of the Indiana Academy of Science met in Parlor T and was called to order by the President, Donaldson Bodine of Crawfordsville. The following members were present: Donaldson Bodine, A. W. Butler, Severance Burrage, W. A. Cogshall, W. S. Blatchley, J. W. Beede, D. M. Mottier, G. Culbertson, C. R. Dryer, C. C. Deam, R. W. McBride, C. H. Eigenmann and A. J. Bigney.

The minutes of the Executive Committee of 1912 were read and approved.

The reports of the standing committees were then taken up. The program committee, J. W. Beede, chairman, reported the work completed as indicated by the printed program, with several additional papers.

The Treasurer, W. J. Moenkhaus, having gone abroad, left his work in charge of A. G. Pohlman, but he, not being able to be present, delegated his power to W. A. Cogshall, who reported as follows:

Balance from 1912 .....	\$273.38
Dues .....	148.00
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Total .....	\$421.38
Expenditures .....	166.60
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Balance.....	\$254.78

On motion W. A. Cogshall was appointed Treasurer *pro tem*.

The following auditing committee was appointed: Severance Burrage, C. R. Dryer, J. W. Beede.

The Editor, C. C. Deam, reported that the work had been completed and the copy was in the hands of the printer.

The nominating committee was appointed as follows: **A. W. Butler**, **W. A. Cogshall**, **G. Culbertson**.

The President stated he had received a letter from an Austrian scientist applying for a certain correspondence position in the Academy. Since such a position does not exist in our Academy the Secretary was directed to reply to that effect.

A letter was read from **Dr. Stultz**, of South Bend, inviting the Academy to hold its spring meeting in that city. It was referred to the program committee.

President **Bodine** suggested that the standing committees be appointed by the incoming president. After some discussion a motion was made and carried that the incoming president appoint his committees except those necessary for carrying on the business of the Academy, such as auditing, nominating, etc.

**Judge McBride**, of the committee on relations of Academy to the State, reported that they had succeeded in keeping the appropriation at \$1,200.

On motion **Mr. Butler** was appointed to act with a committee from the Conservation Association to draft suitable resolutions on the death of **Mrs. Fairbanks**, a copy to be sent to **Hon. C. W. Fairbanks** and a copy spread on the minutes.

On motion the Secretary was ordered to purchase a new secretary book and to have the old one bound.

On motion the Secretary and **A. W. Butler** were appointed to ask the State Librarian for permission to deposit the records of the Academy in his safe for security.

Adjournment.

**A. J. BIGNEY**, Secretary.

**DONALDSON BODINE**, President.

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PALM ROOM, CLAYPOOL HOTEL.

October 24, 1913.

The Indiana Academy of Science met in general session at 1:30 p. m. and was called to order by the President, **Donaldson Bodine**.

Business items were first taken up. **J. W. Beede**, of the Program Committee, reported work completed as printed.

**Severance Burrage** of the Auditing Committee reported the books of the Treasurer correct.

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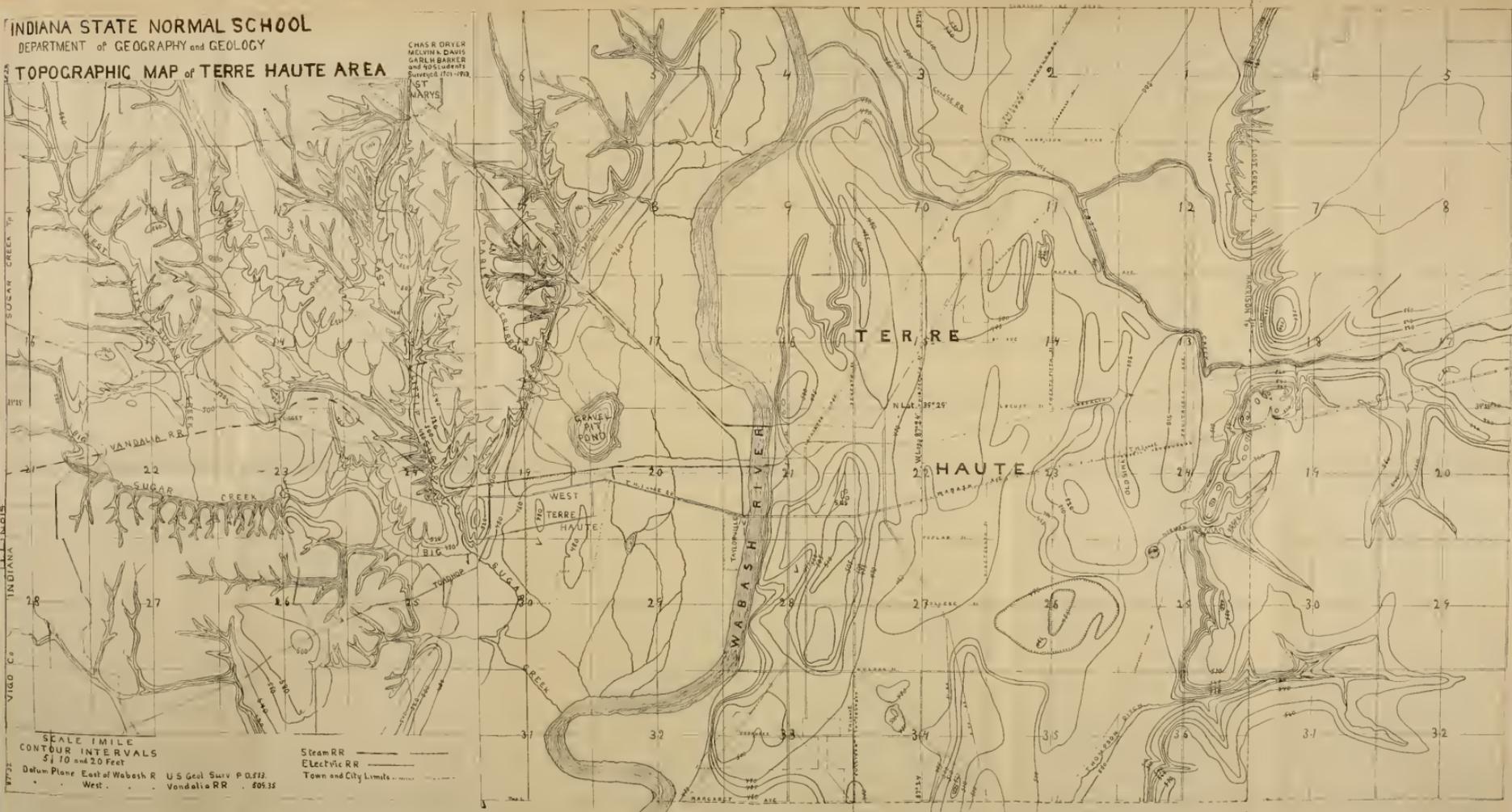
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INDIANA STATE NORMAL SCHOOL  
 DEPARTMENT of GEOGRAPHY and GEOLOGY  
**TOPOGRAPHIC MAP of TERRE HAUTE AREA**

CHAS R DRYER  
 MELVIN K DAVIS  
 GARLH BARKER  
 and ROBERT WELLS  
 Surveyed 1901-1902  
 1ST  
 MARYS



SCALE 1 MILE  
 CONTOUR INTERVALS  
 5, 10 and 20 Feet  
 Datum Plane East of Wabash R U.S. Geol. Surv. P.D. 513  
 West. Vandalia RR 605.35

Stream RR  
 Electric RR  
 Town and City Limits

The Editor, C. C. Deam, made a complete report of his work, and stated that the copy was in the hands of the state printer.

E. R. Cumings, of the Membership Committee, reported the following names for membership: Dr. Will Shimer, State House, Indianapolis; Elton Russell Clarke, Indianapolis; Harold Morrison, Indianapolis; Robert Snodgrass, Crawfordsville; Leonard Steimley, Bloomington; Dr. F. Payne, Bloomington; Ruth Wootery, Bloomington; Cora Hemmel, Bloomington; Edith A. Hemmel, Bloomington; C. J. Zufall, Indianapolis; Arthur L. Walters, Indianapolis; Mason E. Hufford, Bloomington; Henry DuBois, Bloomington; Hugh E. Brown, Bloomington; Mary Easley, Bloomington; John H. McClellan, Gary; R. B. Harvey, Indianapolis; L. B. Webster, Terre Haute; Don Cameron Warren, Bloomington; Paul Weatherwax, Bloomington; Prof. Bernard Shockel, Terre Haute; Grover C. Mance, Bloomington; Mrs. Eula Davis McEwan, Bloomington; Robert G. Gillum, Terre Haute; Mildred Northnagel, Gary; William Ray Allen, Bloomington.

On motion the persons named were elected members.

The Treasurer *pro tem*, W. A. Cogshall, reported as follows.

Balance from 1912.....	\$273.38
Dues .....	148.00
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Total .....	421.38
Expenditures .....	166.60
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Balance .....	\$254.78

Dr. C. H. Eigenmann made a brief report of the expedition of Messrs. Hemm and Wilson to Colombia that went out under his direction.

Dr. H. J. Banker reported that he had collected 268 pages of data on the scientific literature in the libraries in the State. Many difficulties had been encountered but progress had been made. He stated that he had incurred an expense of \$18.75 in this work.

On motion the Academy ordered the Treasurer to pay this bill and extend to Dr. Banker the thanks of the Academy for his efficient work. The committee was continued.

On motion the papers of the Conservation Association were ordered published in the Proceedings of the Academy.

The regular program was then taken up, beginning with President Bodine's address.

## PROGRAM.

## FRIDAY AFTERNOON, 1:30.

Presidential Address.....	Donaldson Bodine
The Flood of March, 1913:	
At Terre Haute.....	Charles R. Dryer
At Fort Wayne.....	L. C. Ward
On the Ohio River in Southeastern Indiana.....	Glenn Culbertson
On East and West Forks of White River.....	H. P. Bybee
The Wabash River Flood of 1913 at Lafayette, Indiana.....	R. L. Sackett

## SECTIONAL MEETINGS.

*Section A. Biology.*

The Selective Action of Gentian Violet in Bacteriological Analysis. .....	C. M. Hilliard
An Epidemic of Diarrhœa, Presumably Milk-borne.....	P. A. Tetrault
The Vertical Distribution of Plankton in Winona Lake....	Glenwood Henry
A Test of Indiana Varieties of Wheat Seed for Internal Fungous infection.....	George N. Hoffer
<i>Pyropolyporus everhartii</i> (E. & G.) Murrill, as a Wound Parasite.....	George N. Hoffer
A Simple Apparatus for the Study of Phototropic Responses in Seedlings.....	George N. Hoffer
Mosses of Monroe County, Indiana, II.....	Mildred Nothnagel
Observations on the Aquatic Plant Life in White River Following the Spring Flood of 1913.....	Paul Weatherwax
The Occurrence of <i>Aphanomyces phycophites</i> upon the Campus of Indiana University .....	Paul Weatherwax
Inheritance Length of Life in <i>Drosophila anpolophila</i> .....	Roscoe R. Hyde
Oral Respiration in <i>Amphiana</i> and <i>Cryptobranchus</i> .....	H. J. Bruner
Respiration and Smell in Amphibians.....	H. L. Bruner
General Outline of Trip of 1913 for the Purpose of Collecting the Fish Fauna of Colombia, S. A.....	Charles E. Wilson

*Section B. Miscellaneous.*

A Topographic Map of the Terre Haute Area.....	Charles R. Dryer
Center of Area and Center of Population of Indiana.....	W. A. Cogshall
On the Shrinkage of Photographic Paper.....	R. R. Ramsey
AcyI Derivatives of O-Aminophenol.....	J. H. Ransom

Boiling and Condensing Points of Alcohol- Water Mixtures.....	P. N. Evans
Additional Notes on an Almost Extinct Native Disease, Trembles.....	
.....	Robert Hessler
Race Suicide.....	Robert Hessler
A Psychologist's Investigation in the Field of Crime Among Adolescents	
.....	R. B. von KleinSmid
Agricultural Work in Southern Indiana.....	C. C. Phillips
Some Remarkable Wells in Bean Blossom Valley, Monroe County.....	
.....	J. W. Beede
On the General Solution and so-called Special Solutions of Linear, Non-	
homogeneous, Partial Differential Equations.....	H. L. Steimley
A Modified Permeameter.....	Edwin Morrison and B. D. Morris

## FRIDAY EVENING, 6.

Members of the Academy and Conservation Association so inclined will have dinner together at tables in the Claypool Hotel.

## FRIDAY EVENING, 7:45.

Business session of the Academy of Science.

Election of Officers, etc.

## PROGRAM.

The germination of <i>Arisaema dracontinus</i> . Lantern.....	F. L. Pickett
The Prothallium of <i>Camptosorus rhizophyllus</i> . Lantern.....	F. L. Pickett
Irish Potato Scab as Affected by Fertilizers Containing Sulphates and Chlorides. Lantern.....	S. D. Conner
Newly Discovered Phenomena Connected with the Electric Discharge in Air. Lantern.....	A. L. Foley

## JOINT CONFERENCE ON CONSERVATION.

SATURDAY, 8:30 TO 12:30.

*Water Conservation.*

A Sanitary Survey of Indiana Rivers.....	Jay Cravens, C. E.
The relations of the Lakes of Northern Indiana to Problems of Flood Control.....	Will Scott
(The papers on flood damage and control are listed under the regular program of the Indiana Academy of Science.)	

*Forest Conservation.*

First Steps in Indiana Forestry.....	Stanley Coulter
Taxation of Forest Lands.....	H. W. Anderson
Forests and Floods.....	F. M. Andrews

*Conservation of Human Life.*

County Tuberculosis Hospital as a Factor in the Conservation of Human Life.....	James Y. Welborn
Playgrounds and Recreation Centers as Factors in the Conservation of Human Life.....	W. A. Gekler
Public Toilet Facilities, Drinking Fountains and Public Spitting in Relation to the Conservation of Human Life.....	C. M. Hilliard

*Mineral Resources.*

Possible Dangers from Drilling for Oil and Gas in Coal Measures.....	Edward Barrett
Power Economy and the Utilization of Waste in the Quarry Industry.....	G. C. Mance

In the evening session the Membership Committee reported the following persons for election as Fellows of the Academy: George N. Hoffer, West Lafayette; C. M. Hilliard, Lafayette; M. E. Haggerty, Bloomington.

The Committee on Nominations reported the following for officers for the ensuing year:

President—Severance Burrage, Indianapolis.  
 Vice-President—A. L. Foley, Bloomington.  
 Secretary—A. J. Bigney, Moores Hill.  
 Assistant Secretary—H. E. Enders, Lafayette.  
 Press Secretary—F. B. Wade, Indianapolis.  
 Treasurer—W. A. Cogshall, Bloomington.  
 Editor—H. E. Barnard, Indianapolis.

On motion they were elected as reported.

The program was then completed.

Adjournment.

A. J. BIGNEY, Secretary.

DONALDSON BODINE, President.