

**A History of the Biological Survey Committee
of The Indiana Academy of Science**

1891-1976

Part I: 1891-1935¹

Introduction

This history of the Biological Survey Committee was prepared by the members of the Committee, 1976, in response to a request made by John S. Patton, President of the Academy, 1975-76. At the annual meeting of the Academy, October 31, 1975, Butler University, he proposed that, "an office entitled Historian-Archivist be established in the Indiana Academy of Science in order that we may have a formal method of assembling archival material and compiling historic information about the Academy and its activities." The Academy accepted President Patton's proposal, and information relative to it was received by Jack R. Munsee, Chairman of the Biological Survey Committee, in a form letter from Patton dated December 30, 1975. The request was for archival items relative to the history of the Committee; such items to be forwarded to the John Shepard Memorial Library at Indianapolis.

Because of the paucity of records of past activities, the attempt has been made to assemble a history of the Committee using information obtained chiefly from the Proceedings of the Academy. (The first meeting of the Academy was in 1885; however, the first volume of the Proceedings was not published until 1891. Therefore, the titles of all papers prior to 1891 were included in Volume 1.) Each of the nine members of the present committee was asked to prepare a document based on information concerning the Committee as given in the Proceedings. Each document covered a nine-year segment as represented by the dates of publication of the Proceedings. The chairman prepared the document covering the last five years of the Committee's history.

The members of the Committee and the years reported by each were: Theodore J. Crovello, University of Notre Dame (1891-1899); James R. Gammon, DePauw University (1900-1908); Morris Levy, Purdue University (1909-1917); Gayton C. Marks, Valparaiso University (1918-1926); Victor Riemenschneider, Indiana University, South Bend (1936-1944); David S. Woodruff, Purdue University (1945-1953); Willard F. Yates, Jr., Butler University (1954-1962); Frank N. Young, Jr., Indiana University (1963-1971); and Jack R. Munsee, Chairman, Indiana State University (1972-1976). The period 1927-1935 was reported by Irene Horner, student at Indiana State University, since J. W. Reising, committee member, was unable to prepare this segment of the history.

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Report prepared by the Biological Survey Committee under the direction of Jack R. Munsee.

A committee was formed early in the history of the Academy, whose functions have apparently always dealt with aspects of the flora and the fauna of Indiana. Reports prepared by the Committee appear in most issues of the Proceedings, however, no reports were forthcoming in some years. Occasionally, the need for such a committee has been questioned by members of the Academy; nevertheless, it has survived as evidenced by the account of its history which follows. Among the names of many who have served on the Committee will be recognized those of well-known Indiana biologists whose works laid the foundation for understanding and appreciating the wealth of diversity of living things to be found in Indiana.

1891-1899 (T. J. Crovello)¹

(Major dates, e.g., 1891, refer to information obtained from the Proceedings with *that* date on its cover, although it might not have been published until a subsequent year.)

1891

The closest committee to the Biological Survey Committee was that on the Legislation for the Restriction of Weeds. It consisted of J. C. Arthur, J. M. Coulter, and W. H. Evans and was in effect in 1890-91. Also related to the Biological Survey Committee was the Committee on Legislation for the Protection of Native Birds (1887-91). It consisted of A. W. Butler, D. S. Jordan, and B. W. Evermann.

1892

In the published summary of the spring meeting of the Academy held at Terre Haute, May 12-19, 1893 [sic], is included a report from "the Committee on State Biological Survey," by its only member, L. M. Underwood. He was charged "to appoint two other members to serve on the committee with him and to present plans at this meeting for carrying on the work." Later in the meeting, three "directors" were approved: L. M. Underwood, C. M. Eigenmann, and V. F. Marsters.

Of interest is the listing of Curators (of the Academy?) along with the Academy's officers. The Curators were:

Botany	John M. Coulter
Icthyology	Carl H. Eigenmann
Ornithology	Amos W. Butler
Herpetology	O. P. Hay
Entomology	F. M. Webster
Mammalogy	E. R. Quick

While they may have been Curators of the Academy, they were not all located in one city. For example, Coulter's address is given as Lake Forest, Illinois. [Also, the first sentence on page 14 of the 1893 Proceedings indicates certain collections were to serve as official depositories.]

¹ Although the entire substance of each committee member's report is used, where necessary, minimum editing was done in order to effect cohesion among the separate reports.

Papers read at the Winter Meeting at Indianapolis (Dec. 28-29, 1892) include one given (title only) by L. M. Underwood (page 48), "A State Biological Survey—A Suggestion for Our Spring Meeting."

1893

Almost 200 pages of the approximately 275 pages of the 1893 Proceedings (published in August, 1894) are devoted to the Biological Survey. In addition, the list of Committees for 1893-94 record two relevant entries:

1. Biological Survey (BSC): L. M. Underwood, A. W. Butler, J. M. Coulter.
2. Directors of Biological Survey: L. M. Underwood, C. H. Eigenmann, V. F. Marsters.

Nowhere is it clearly stated what the different functions of these two might be. However, on page 13, Lucien M. Underwood, Director of the State Biological Survey, does provide this glimpse of purpose of the two:

"The Indiana Academy of Science at its spring meeting originated the State Biological Survey by the appointment of three directors who were instructed to organize the survey and prepare for the winter meeting a Bibliography that would show the present status of the knowledge of the state flora and fauna, recording in accessible form what had been already written concerning them. It was further thought desirable to outline certain features of new work that could be reasonably attempted during the season of 1893. In order to make known the purposes of the survey the following general statement was published and somewhat widely distributed through the state in July last:"

Biological Survey of Indiana

Circular No. 1

"At the last meeting of the Indiana Academy of Science, at Terre Haute, a Biological Survey was established for the State of Indiana, and the undersigned were appointed Directors to organize the survey and outline the preliminary work ordered by the Academy."

"It is the purpose of the survey: (1) To ascertain what has already been accomplished in the direction of making known the character and extent of the life of the state, and to this end to prepare a complete bibliography of materials bearing on the botany, zoology, and palaeontology of Indiana, to be published by the Academy. (2) To associate the various workers throughout the state, and so correlate their labors that all will work together towards a definite end, and ultimately accomplish the main purpose of the survey, namely, the making known of the entire fauna and flora of Indiana, its extent, its distribution, its biological relations, and its economic importance. (3) To stimulate the teachers of biology throughout the state to encourage in their pupils the accumulation of material, which shall make known the local extent and distribution of life-forms, and thus contribute facts that will be useful in the survey and at the same time develop acute observers for continuing the

study of the natural resources of the state. It is thus intended that the colleges and secondary schools will form with the survey a mutually helpful relation. (4) Ultimately to secure for the Academy a collection that will illustrate the biology of the state. Until such collection can be otherwise provided for, the Academy will designate certain public or private collections where accumulated material may be deposited temporarily. Material sent to the directors will be thus held for the future disposition of the Academy."

"It is earnestly requested that all persons interested in any department of biological work will place themselves in relation with the directors of the survey at once, in order that their work may be made to contribute the most effectively to the public good, and in order that the directors may know on whom they may depend for gaining information from various portions of the state. All contributions from persons interested will be properly credited in the reports of the survey. Correspondence is solicited with the director of the particular branch in which any one is interested, and such directions in regard to collecting and sending material will be given on application. By the assistance of the Smithsonian Institution, the directors are able to send printed directions for collecting to such as apply for them. (In ordering these it will be necessary to specify in what particular branch information is desired.)"

LUCIEN M. UNDERWOOD, Greencastle, Ind.
 Division of Botany
 CARL H. EIGENMANN, Bloomington, Ind.
 Division of Zoology
 VERNON F. MARSTERS, Bloomington, Ind.
 Division of Palaeontology
 Directors of the Biological Survey of
 Indiana

1 July 1893.

So perhaps the Directors of the Survey were the formal, administrative organizers, and the BSC were the people who really knew the Biota of the State, or would do the fieldwork.

Pages 13-204 relate to the Biological Survey. Its major sections were as follows (numbers in parentheses are Proceedings' page numbers), and in the exact order of the Proceedings' pages:

1. *Botany* (14-19)—provides background information for the following plant sections.
2. Bibliography of Indiana Botany (20-30)—also includes information on early collectors, the stimulus provided by the publication of the *Botanical Bulletin* in 1875, later changed to the *Botanical Gazette*.
3. List of Plants (30-67)
 - a. Cryptogams (30-64)—includes host information.
 - b. Bryophyta (64-67)

4. *Zoology* (67-70)—provides background information on the following zoological sections.
5. Bibliography of Indiana Fishes (71-76)
6. The Fishes of Indiana (76-108)
7. Bibliography of Indiana Ornithology (108-116)
8. Notes on Indiana Birds (116-120)
9. Bibliography of Indiana Mammals (120-124)
10. Preliminary List of Indiana Mammals (124-139)
11. Mollusca (140-142)
12. Bibliography of Mollusca (142-145)
13. Species [of Mollusca] Described from Indiana (145-147)
14. General List of Mollusca (148-156)
15. *Geology*: Bibliography (156-191)
16. Suggestions for the Biological Survey (191-193)—Abstract [of a talk?] by John M. Coulter. It deals specifically with Phanerogams, but is also of general value. He recognized the existence of two categories of plants: indigenous and introduced. He suggests that each has its own unique collecting problems. He suggested that collectors be trained, and that their work be of two types: to collect all species growing in their district; and to carry out detailed studies of those most interesting plants. He stated that, "in work of this kind the following points must be made out:
 1. Mass distribution [abundance] . . .
 2. Topographical distribution . . .
 3. Geological distribution . . .
 4. The effect of man's presence . . ."
17. The Phanerogamic Flora of Indiana (193-199)—An article by Stanley Coulter about the form and content that a phanerogamic flora of Indiana might take.
18. Relation of Indiana High Schools to the Biological Survey—A stimulating article by W. S. Blatchley, parts of which are still germane today.

1894

The two committees and members remained unchanged from last year.

Papers read at the meeting (pages 27-143) included many that deal with the biological survey of Indiana.

The Biological Survey's Report (pages 144-178) was restricted only to plants. It was divided as follows (page numbers in parentheses):

- Botany (144-147)
- Appendix A: List of additions to State Flora (147-153)
- Appendix B: Host plants of fungi (153-154)
- Appendix C: Notes on the species reported previously (154)
- Appendix D: List of Parasitic Fungi (154-156)
- Flora of Hamilton and Marion Counties, Indiana (156-176).

1895

The Proceedings included publication of a two-page Act for the Protection of Birds, Their Nests and Eggs. Approved March 5, 1891 [but by what body?].

A plea for State support for publishing the Proceedings was made. While the list of Committees for 1895-96 retains the, "Directors of Biological Survey" (consisting of Eigenmann, Marsters, and Arthur), no listing is given for the earlier, separate committee, "Biological Survey."

A relevant paper read by John S. Wright at the winter meeting was, "Botanical Literature of the State Library."

The State Biological Survey Report actually consisted of 29 papers (pages 135-296), four of which are presented in title only. Eighteen dealt only with Turkey Lake (or Lake Wawasee), Kosciusko County, the site of Indiana University's Biological Station.

1896

Membership of the committee of Directors of Biological Survey remained unchanged. Thirty-four papers on botanical or zoological subjects were read, many of which related to the State's biota. In addition, 11 papers were separated as the second report of the Biological Station on Turkey Lake.

No meeting reports, in which the Biological Survey Committee was discussed, were included in these and the Proceedings of the last few years.

1897

Membership of the committee of Directors of Biological Survey remained unchanged.

Thirty-three papers were read on botanical or zoological subjects, many of which concerned the State's biota.

No mention or contribution concerned the Biological Survey Committee specifically.

1898 and 1899

Membership of the committee of Directors of Biological Survey remained unchanged.

Papers were read on botanical or zoological subjects, many of which concerned the State's Biota.

No mention or contribution concerned the Biological Survey Committee specifically.

Comments by the Author on the Beginning of Biological Surveys by the Indiana Academy of Science: 1891-1899

As we obtain a feeling for the multifaceted purposes and accomplishments of the first nine years of the Biological Survey Committee, one cannot help being struck by the great similarity with needs of our

society today, and the resurgence of interest in the Biological Survey Committee today. In recent decades the Committee concentrated on assembling a bibliography of articles on the biota of the State. But in the last few years, spurred on by increased concern for the environment (and laws to enforce this concern!) and by projects such as Flora North America, the need for a Biological Survey that does more than keep track of relevant literature has become more apparent. In fact, interestingly enough, what is needed is nothing more than the original set of purposes of the Committee, as stated in the 1893 Report (see its reproduction above, under 1893)! The proposal for a computerized Flora Indiana Project adopted in the fall, 1975, by the Academy really is a step towards satisfying the original goals of the Committee, even down to involving high school teachers and students in it!

1900-1909 (James R. Gammon)

In none of the documents were there any reports of this committee. In each volume of the Proceedings there were papers that seemed to be pertinent to the Biological Survey, and those thought appropriate for the activities of the committee are listed.

1900

Directors of the 1900 Biological Survey were: C. H. Eigenmann, D. Bodine, V. F. Marsters, M. B. Thomas, J. C. Arthur, and S. Coulter.

- J. T. Scovell—The Flora of Lake Maxinkuckee. A very good description of the lake at that time, the various kinds of plants and the abundance and location of these plants.
- S. Coulter—Addition to the Flora of Indiana. There seemed to be at that time a lot of notes on this; it was a period when the corners were being filled in as to what was in the state of Indiana.
- T. Large—The Methods and Extent of the Illinois Ichthyological Survey. This paper discussed what was to become a rather extensive and ambitious work over in our neighboring state. This did not have anything to do with Indiana, but it was presented in the Proceedings.

1901

Directors of the Biological Survey were: C. H. Eigenmann, D. Bodine, M. B. Thomas, J. C. Arthur, and S. Coulter.

Listed are papers that were written from reports at the Biological Station at Winona Lake, a Series of, "Reports from the Biological Station" under the direction of C. H. Eigenmann.

- A. A. Norris wrote two of the reports—Maps of Winona, Pike, and Center Lakes and The Mollusca of Winona Lake.
- E. B. Williamson—The Dragonflies of Winona Lake.
- H. W. Clark—The Flora of Eagle Lake and Vicinity.
- Lucy Youse—Plant Ecology of the Winona Lake Region.

These were extensive papers with many photographs of the area.

1902

C. H. Eigenmann, D. Bodine, M. B. Thomas, J. C. Arthur, and S. Coulter served as Directors of the Biological Survey.

Amos Butler reported some rare birds, including some that we do not think of as ever having been in Indiana: the White Pelican on the White River in Knox County; Wood Ibis at Montezuma; Little Blue Heron found near Bainbridge; and the Passenger Pigeon near Larrel, Indiana. These were few in number and were shot by various hunters. There seemed to be much shooting in those days and there were no game laws. Birds that were shot were brought to the attention of Amos Butler himself.

Reports from the Indiana University Biological Station at Winona Lake under the direction of Dr. Eigenmann follow:

W. J. Moenkhaus reported a new species of darter.

F. Mutchler—The Myxomycetes of Lake Winona.

Chancey Juday—The Plankton of Winona Lake. (The author is now familiar with Juday's work and suspects that, "The Plankton of Winona Lake" may have been his first paper. Further, he did a great deal more work in Indiana before joining Dr. E. A. Birge at Wisconsin. The two of them working with others laid the foundation of modern limnology in this country.)

C. H. Kennedy provided a list of the dragonflies of Winona Lake.

1903

Directors of the Biological Survey were: C. H. Eigenmann, S. Coulter, M. B. Thomas, C. R. Dryer, and M. T. Cook.

The President's Address was presented by W. S. Blatchley, who has an honored place in Indiana. The address was entitled, "The Indiana of Nature; Its Evolution." In this paper he went from practically the formation of the earth in very broad strokes to a look at Indiana through the ages up to the present time. He referred more than once to man as that "prince of parasites." He described man as, "the greatest devastator that nature has ever known." At the end he described white man's devastation of the biota and decried what he regarded as a greedy waste of limited natural resources such as oil and natural gas.

The year's papers included:

Herman B. Dorner—Additions to the Flora of Indiana.

Charles Piper Smith—Bird Notes from the Indiana State Forester Reservation. (The author believes he was a student at Purdue at this time and that he provided notes and brief descriptions for several years after. Not all of his notes and brief descriptions got into print, but he did report them at meetings.)

T. J. Headlee and J. Simonton—Ecological Notes on the Mussels of Winona Lake. There were very good photographs of the species collected and a map of the lake showing where the species were found. This paper was well done and could be referred to today.

Amos W. Butler—Conditions Effecting the Distribution of Birds in Indiana. He mentioned the disappearance of the Ivory-billed woodpeckers and a great scarcity of many other species which were formerly abundant.

1904

Directors of the Biological Survey were C. H. Eigenmann, S. Coulter, C. R. Dryer, M. B. Thomas, and J. C. Arthur.

Most of this volume consisted of Waldo Lee McAtee's paper entitled, "Ecological Notes on the Birds Occurring within a Radius of 5 Miles of the Indiana University Campus." This included migratory records and photos of nests and of birds found in the Bloomington area at that time.

The only other paper that would have been of interest to the Biological Survey was Mr. S. Coulter's list, "The Poisonous Plants of Indiana." This paper did not provide any information on distribution but, nevertheless, might be of interest.

1905

The Directors of the Biological Survey remained unchanged.

Four papers contributed information about distributions, flora, and fauna.

C. P. Smith—Notes upon some little known members of the Indiana Flora. (There were a lot of notes published in those days.)

G. W. Wilson—Notes on some new or little known members of the Indiana Flora.

Charles Deam—Additions to Indiana Flora. (Mr. Deam was a scientist of some regard at that time.)

Will Scott—The Leesburg Swamp. (Scott would later go on to become a member of the Indiana University Zoology Department and work on fish and aquatics.)

1906

C. H. Eigenmann, S. Coulter, C. R. Dryer, M. B. Thomas, and J. C. Arthur continued to serve as Directors of the Biological Survey.

Papers of interest follow:

F. D. Kern—Parasitic Plant Diseases Reported for Indiana.

Charles C. Deam—Additions to Indiana Flora No. 3.

Amos W. Butler—Some notes on Indiana Birds. Most of this paper consisted of records of Snowy Owls, which during the previous year had been found with considerable abundance through much of Indiana. It may have been a cold winter. These and all the other birds he reported on, or at least a great deal of them, were brought to the attention of scientific people by hunters. Apparently, at that time, there was much random shooting of anything that moved.

1907

The same Directors continued their work in Biological Survey.

Two papers qualify for inclusion as topics of interest to the Survey, which do not have personal appeal.

G. W. Wilson—The Peronosporales of Indiana. These are fungi parasitic on higher plants.

M. T. Cook—The Insect Galls of Indiana. At the time, apparently not much work on insects was being done.

1908

C. H. Eigenmann, S. Coulter, C. R. Dryer, M. R. Thomas, and J. C. Arthur were the Directors of the Biological Survey.

There were only two papers given, which seems to indicate a distinct drop in activity.

A. G. Johnson—On the Heteroecious Plant Rusts of Indiana.

Robert Hessler—Notes on the Flora of Cass County.

1909-1917 (Morris Levy)

During the period 1909-1917, the Biological Survey Committee was composed of many of the historically most eminent biologists that Indiana has nurtured. The chairmanship saw the consecutive four-year tenures of Stanley F. Coulter and Charles C. Deam, and the initial year of service by Herbert S. Jackson. Coulter, Deam, and Jackson were joined by Carl H. Eigenmann, Joseph C. Arthur, and James M. Van Hook to form the nucleus of monographers on the committee. Ecosystem analysts, Charles Dryer and Will Scott; systematists, Mason B. Thomas, Ulysses O. Cox, J. A. Nieuwland, H. W. Anderson, George N. Hoffer, Richard N. Holman; and an ecologist, M. S. Markle, comprised the balance of the membership. The majority of members were botanically oriented.

While the Academy members published voluminous reports in celebration of the twenty-fifth anniversary of the Academy (held in 1909) and the Century of Science in Indiana (1916), the Biological Survey Committee published only one official report during the period, in 1916. In this report, Chairman Deam presented the list of monographs of Indiana biota previously published by Indiana biologists. The list, which included new compendia for mammals, coleopterans, scale insects, fungi, and trees, was completed during 1909-1916. Deam emphasized that previous survey work on Indiana biota was exceedingly fragmentary. Faunistic surveys had concentrated on the conspicuous vertebrates (especially fish, reptiles, birds, and mammals), molluscs and selected insect groups (dragonflies, butterflies, orthopterans, coleopterans, and coccids). Surveys of herpetofauna and several economically important insect groups (especially moths, dipterans, and hymenopterans) had been conspicuously absent. Similarly, floristic surveys had concentrated on trees, ferns, shrubs, herbs, and various fungal groups and had largely ignored aquatic plants, bryophytes, lichens and mosses.

Papers published in the Proceedings by members of the Committee during 1909-1917 exhibit the flavor of most of the biological survey research conducted to this time, i.e., domination by biogeographic and taxonomic perspectives. The autecology, life history, and economic features of the biota were generally ignored or treated in anecdotal, empirical fashion; albeit with some notable exceptions in commercially important taxa. Chairmen Coulter and Deam pointed up the need for holistic approaches to the biological survey; but, pessimistically concluded that such an approach would be possible only when active support, both financial and professional, was forthcoming from the Indiana Legislature and State departments. The Committee recommended that a resolution be adopted by the Academy to present the rationale and organization which would achieve the desired goals of a state-wide biological survey to the Legislature and the Governor. There is no record that such a resolution or action was undertaken.

1918-1926 (Gayton C. Marks)

1918

The year was an unusual year for the Academy. The spring meeting was held jointly with the Illinois Academy of Science in the new state park at Turkey Run on May 24 and at the Shades on May 25. At this meeting, Professor S. H. [sic] Jackson reported on species of rusts found (in Indiana) and made a special appeal for the eradication of the barberry. This was now a war-time measure undertaken by every state in the Union.

Professor Herbert Spencer Jackson (1883-1956), Chief of Botany at the Agricultural Experiment Station of Purdue, was chairman of the Biological Survey Committee. Other members of the Committee were Richard M. Holman of Wabash (1886-1935), professor of botany; Millard S. Markle (1883-1968), professor of botany at Earlham; and Will Scott (1877-1937), assistant professor of zoology at Indiana University.

The 1918 fall meeting was canceled because of the influenza epidemic. The business meeting was conducted in early December in the Claypool Hotel in Indianapolis. The president of the Academy that year was Edward Bruce Williamson (1877-1933), cashier, and then president of the Wells County Bank of Bluffton. Williamson was later to serve on many committees, including the Biological Survey Committee. He had served as assistant secretary to the Academy 1910-1912 and again in 1915-1916. Among his other talents, he served as associate curator of Odonata at the University of Michigan from 1916-1928. A symposium was held on important contributions of science to military efficiency. Professor Holman was the leader for botany. The Committee on Biological Survey reported that, "a number of investigations are in progress." In the regular business meeting a motion was made and passed to appoint a committee to confer with a senator and a representative appointed by the governor to frame a bill for the naming of a state conservation commission. Among papers submitted that year were those of Paul Weatherwax, Charles Deam, and M. S. Markle.

1919

Members of the Committee on Biological Survey remained the same for 1919. The spring meeting was held at the State Forestry Reserve in Henryville. E. B. Williamson again served as President of the Academy. The bill establishing the State Conservation Committee went into effect April 1, 1919. The winter meeting was held on December 5 at the Claypool Hotel, Indianapolis. The Committee on Biological Survey reported through Chairman Jackson that its work throughout the year was chiefly to stimulate activity on the part of the persons engaged in work of the state biota. It had thus secured the promise of two papers for this meeting.

Two interesting resolutions were the product of the winter meeting of 1919. The first resolution was that the Academy go on record as favoring the blossom of the tulip tree as the state flower, rather than the carnation, which was made state flower by a state law enacted in 1913. The second resolution placed the Academy on record as "favoring and urging the compulsory use of the metric system in the United States at once and that the Secretary of the Academy be instructed to send a copy of these resolutions to the President of the United States."

The State Legislature at its 1919 session failed to appropriate anything for publication of the Proceedings for 1919 and 1920. Earlier law (1895) provided \$600 annually for the Proceedings to be published in the quantity of not less than 1,500 nor more than 3,000 copies. Later the amount of support was doubled with the State providing \$1,200 annually for the publication of the Proceedings. Among papers presented that year were those of Scott, Jackson, and Deam.

1920

Colonel Richard Lieber of the State Conservation Commission replaced M. S. Markle on the Biological Survey Committee in 1920. Lieber (1869-1944), known as the father of the Indiana State Parks, died at McCormick's Creek. Richard M. Holman served as Assistant Secretary of the Academy in this year. E. B. Williamson served on two committees, Nominating and Auditing. The spring meeting was held in the vicinity of Spencer with business session convening in the Christian Church.

At the winter meeting held in the Claypool Hotel, Indianapolis, the secretary reported for Chairman H. S. Jackson of the Biological Survey Committee that "no specific steps have been made to gain the cooperation of the State Conservation Commission in a systematic survey." A paper was presented by Charles Deam on plants new to Indiana, and some notes on termites were given by Harry F. Dietz (1890-1954). The latter was to serve as Assistant Secretary in 1921 and on many committees thereafter, including the Biological Survey. Dietz was an entomologist, first with the U.S. government, then later, Assistant State Entomologist. Three papers were delivered by H. S. Jackson at this meeting.

1921

In 1921, John J. Davis (1885-1965) of the Agricultural Experiment Station of Purdue replaced Holman on the Biological Survey Committee.

He was also to serve as Editor for the years 1922, 1923, 1924, 1925, and 1926. The May 27 and 28 Spring Meeting of the Academy was held jointly with the Indiana Audubon Society and the Nature Study Club of Indiana, in Fairview and Holiday Parks, Indianapolis. Fort Benjamin Harrison was visited on the second day. The business session was conducted at Ma-Lo Place in Indianapolis. After the business session, E. B. Williamson entertained with a large number of lantern slides of the country in South America where he had been collecting dragonflies.

In the Winter Executive Committee Meeting at the Claypool Hotel, Chairman Jackson of the Biological Survey Committee revised his previous announcement concerning the relationship of the Committee to the Conservation Commission. He announced that Mr. Lieber of the Commission had been made part of the Biological Survey Committee. Apparently after some discussion, the desirability of making a State Biological Survey prompted an effort by the Academy to obtain a special appropriation for this work. Jackson urged that a committee of more influential members should be selected to go before the State Legislature for this purpose. The following were members selected to represent the Biological Survey: Robert W. McBride (1842-1926), a former member of Lincoln's personal body guard; Frank B. Wynn (1860-1922), an active member of the Academy and an officer of the AMA; Amos William Butler (1860-1937), founder and Past President of the Academy and seven years its secretary; and M. S. Stanley Coulter, born in China and later known as "Stanley." He was Past President and Acting Assistant Secretary in 1892-1893. Stanley Coulter, the last remaining charter member of the Academy, died in 1943. His maternal grandfather was the founder of Hanover College. His older brother, John is well known for his botanical work at the University of Chicago. Both brothers served for many years on the Executive Committee of the Indiana Academy of Science.

Past, present, or future members of the Biological Survey Committee to hold executive posts of the Academy or to serve on other committees were: Harry F. Dietz, Assistant Secretary and Membership Committee; and E. B. Williamson, Nominating, Auditing, and Interstate Meetings Committees. Judge McBride announced that, at the request of the Academy, the tulip tree became the state flower. Papers submitted at the winter meeting of the Academy included those by Deam, Jackson, Scott, and John J. Davis. At the regular business session Mr. Lieber called the attention of the Academy to the very poor facilities of the State Museum. It was resolved that a portion of the proposed Soldier's Memorial should be devoted to the State Museum.

1922

The membership of the Biological Survey Committee remained the same for 1922. The spring meeting was held at French Lick in mid-May and the winter meeting at the Lincoln Hotel, Indianapolis. There was no report of the Biological Survey Committee that year.

Editor of the Proceedings was John J. Davis; Assistant Secretary was Harry F. Dietz. Dietz also served on the Membership and Publica-

tions Committees. Among those to submit papers that year were Markle, Deam, Jackson, and Marcus W. Lyon, Jr., Frank Barbour Wynn, M.D., long active in much of the work of the Academy, died on July 22.

1923

While the membership of the Biological Survey Committee remained the same in 1923, Will Scott replaced H. S. Jackson as Chairman. The spring meeting in May was held in Brookville, Indiana, the birthplace of the Academy. At this meeting a special committee was appointed to investigate and propose means most feasible for the preservation of wild flowers of the State. The committee consisted of David Myers Mottier (1864-1940), M. W. Lyon, Jr., H. S. Jackson, and C. C. Deam.

The 39th Annual Winter Meeting was held at DePauw University, December 6-8. The Biological Survey Committee had no report. Chairman D. M. Mottier reported for the committee appointed to investigate feasible methods for protection of wild flowers of the state that it was the concensus of the Committee that certain wild plants should be conserved and protected. Laws of Illinois and Vermont were cited and a law was proposed for Indiana. It was decided to read the report at the business session the next day. When presented to the general session, it was moved and carried that this special committee be empowered to call in such aid as it saw fit.

Papers submitted that year included the work of Deam, Weatherwax, Lyon, J. J. Davis, and Will Scott.

1924

Charles Clemon Deam (1865-1953) became President of the Academy in 1924. His Presidential address dealt with the flora of Indiana. He was also State Forester and had been Program Chairman for the Academy. Editor of the Proceedings was John J. Davis. Press Secretary Dietz served on the State Library and Membership Committees. M. S. Markle also served on the Membership Committee. On the Advisory Council was E. B. Williamson.

The new Biological Survey Committee was composed of Harry Dietz, Chairman, of Indianapolis; C. C. Deam, and E. B. Williamson, both of Bluffton. The spring meeting was held at the Opera House in Marengo, Indiana, in mid-May. The weather was ideal and Secretary Flora Anderson reports, "this is the best spring meeting the Academy ever had."

The 1924 winter meeting of the Academy was held at Purdue University December 4-6.

Chairman Dietz of the Biological Survey Committee reported on a meeting of that Committee on November 6, in Bluffton, and a list of projects drawn up at that time. An effort was to be made to secure companion volumes to Deam's *Trees of Indiana*, *Shrubs of Indiana* and Evermann and Clark's *Fishes of Lake Maxinkuckee*.

One of the most desirable projects was to replace Butler's *Birds of Indiana*, which had been out of print for 15 years. Mr. Mannfield of the Division of Fish and Game of the Department of Conservation was aware

of the need for such a publication and in a report to the Director of the Department urged that steps be taken to secure it.

Richard Lieber, formerly of the Biological Survey Committee and now Director of the Department of Conservation, informed the Chairman that negotiations were under way to secure the help of Dr. Butler in preparing this publication. For this purpose \$1,500 a year for two years would be allowed by his department. A need for other publications was expressed. This included *The Mammals of Indiana*, and *Batrachians and Reptiles of Indiana*. Two thousand dollars for each publication was to be set aside. The problem seemed to be in securing a qualified Indiana scientist for each of these tasks. "The one thing the Biological Survey Committee [needs] more than anything else is some real manuscripts that are ready for the press."

A paper of general interest was presented on, "City 'Smogs' in Periods of General Fair Weather" by J. H. Armington of the U.S. Weather Bureau at Indianapolis. It is worthwhile to include two short quotes from this paper: "Smoke and fog combinations, recently called 'smog'", and "At Indianapolis, however, smog of the most aggravated type occurred, beginning in the latter part of the night as smoke which later combined with fog and became so dense by the early morning hours as to necessitate the full complement of electric lights in the down-town office buildings." Papers delivered at the divisional meetings included those by Jackson, Weatherwax, and B. Elwood Montgomery.

1925

The 1925 Biological Survey Committee was changed only in that it included a fourth member, Marcus Ward Lyon, Jr. (1875-1942), a naturalist and pathologist of South Bend. Lyon served as treasurer of the Academy from 1927-1932 and President in 1933. Chairman Dietz also served on the State Library Committee; Markle on the Membership Committee; and Williamson on the Research Committee.

The spring meeting was held in Madison, Indiana at the Clifty Inn on May 14-16. C. C. Deam was unable to attend because of illness. Telegrams were sent to both Deam and E. B. Williamson. At the Executive Committee Meeting that winter, held at Hotel Deming at Terre Haute, Chairman Dietz stated that, "although the Biological Survey Committee had been active during the year, there was little to add to the report of last year."

J. J. Davis moved that the Committee determine through questionnaires to members of the Academy, the survey work being done in the state, and that a complete report be presented at the next meeting. This motion was carried. The divisional meetings were held at the Indiana State Normal School and the Rose Polytechnic Institute. Papers given were by Charles Deam, Winona Welch, J. J. Davis, M. W. Lyon, Jr., and Will Scott.

1926

The 1926 spring meeting was held at the Hotel Spaulding, Dunes Park, Michigan City, May 20 and 21. Professor Henry Chandler Cowles

(1869-1939) and Dr. M. W. Lyon gave interesting talks on the physiographic features and the biota of the dunes.

Harry Dietz served as Press Secretary and as a member of the Membership and State Library Committees. J. J. Davis, Editor of the Proceedings, also served on the Program Committee as did M. W. Lyon, Jr. C. C. Deam was a member of the Research Committee that year. The Biological Survey Committee remained unchanged.

At the winter meeting held at Ball State Teacher's College, December 2-4, Chairman Dietz reported a number of survey papers recently published and others in the process of publication by members of the Academy, including Blatchley's *Heteroptera of the Eastern United States*, Montgomery's *Studies of Indiana Dragonflies*, Deam's *Grasses and Sedges of Indiana*, and Myer's *Reptiles of Indiana*.

The Committee was asked to take action on the survey questionnaire requested in the previous annual meeting.

Papers given that year were authored by Lyon, J. J. Davis, and Scott.

Judge Robert Wesley McBride, soldier, attorney, naturalist, and taxidermist, died on May 15, 1926. He became a member of the Academy at its founding in 1885. He remained active as an Academy member and helped to found the Indiana Audubon Society.

1927-1935 (Irene Horner)

1927

The Committee membership totaled four: Harry F. Dietz, chairman; Charles C. Deam; E. B. Williamson; and M. W. Lyon, Jr. Their main concern was promoting survey studies of biological taxa. Chairman Dietz noted with satisfaction that much survey work was being conducted in the state; among them were those reported in the Proceedings: Amos W. Butler on birds; Stewart Springer on reptiles and amphibians; Albert A. Hanson on weeds; Charles C. Deam on rare plants; F. M. Andrews on lichens and flowering plants; J. M. Van Hook on fungi; Otto Behrens on ferns; K. D. Doak on insects; J. J. Davis on insects; Samuel E. Perkins, III, on birds; and F. H. Test on birds. Dietz urged other members of the Academy to prepare articles in the following areas: Mammals, birds, reptiles, amphibians, fishes, insects, and molluscs of the state, similar to the articles by Deam on the trees and shrubs of Indiana and by Evermann and Clark on the fishes of Lake Maxinkuckee. The Committee recommended that Deam continue the study of flowering plants and ferns. They also stressed the need to study mosses, liverworts, and the larger fungi.

Two articles appeared in the 1927 Proceedings that proved to be prophetic. Louis A. Test and Frederick H. Test reported sighting the starling in Indiana, which was introduced to the United States in 1890 when 80 birds were freed in Central Park, New York. The Tests observed: "It will be interesting to note what effect they have upon the native wild birds. . . . So far, they seem to be confined to the open country and to avoid the town."

In the second article Mrs. Louise S. Swain reported her sightings of starlings, then quoted Mrs. Mable Osgood Wright of Connecticut:

"Here in Connecticut starlings were not conspicuous until 1900, but now they are a serious menace both to the summer resident birds, whose nesting sites they appropriate and to the winter food supply of our most beneficial resident birds. . . .

"Connecticut has done wisely in placing the starling on the list of unprotected birds, side by side with the English sparrow, but a concentrated country-wide effort must be made if the starling is to be kept in check. . . .

"If starlings were but few in number, their melodious spring whistle . . . would make them more interesting guests, but as conditions are they are another warning of the foolishness of importing birds to another habitat than their own. Nature resents this meddling and the innocents pay for the mistakes of the rash."

At the spring session at New Harmony the Academy adopted a resolution presented by Dr. Lyon. The resolution was against changing the International Rules of Zoological Nomenclature, unless the Zoological Commission unanimously recommended the change to the International Zoological Congress.

In their report to the Academy, the Biological Survey Committee recommended the establishment of an Academy-supported collection of specimens for research and study of the state's biota. Such a collection would be housed at a state university or at Indianapolis. They also believed that the high schools should maintain labelled collections of local biota.

Plans for the coming year included mailing out a questionnaire to the Academy members to determine what fields of biology were being studied and the relation of such studies to the biological survey.

1928

Membership in the Biological Survey Committee included the four from the previous year, in addition to Sidney R. Esten. Under the direction of Chairman Dietz, the questionnaire had been mailed, and results were to be compiled in a report at a later date.

Survey papers published in the Proceedings included ones by Winona Welch, C. Mervin Palmer, J. M. Van Hook, J. J. Davis, and B. E. Montgomery.

1929

No changes occurred in the membership of the Committee. Because of the absence of Chairman Dietz, no report was submitted. The Academy appointed Stanley A. Cain, Editor, to tabulate the results of the survey for publication in the 1929 Proceedings.

Pages 15-17 presented the results of the questionnaire, listing the Academy membership under the following divisions: Conservation; popular science writing; botany; bacteriology (as related to public health); zoology; and paleontology. The members indicated whether they: 1)

keep a bibliography of papers on the special fields listed, with references to the Indiana biological survey; 2) maintain a collection open for inspection; or 3) have published on the subject.

Survey papers presented included those by: F. M. Andrews; Winona H. Welch and Gladys Price; J. M. Van Hook; F. H. Test; R. F. Daubenure; H. J. Lee; E. R. Cumings; J. J. Davis; and B. E. Montgomery.

1930

Chairman Dietz's resignation from the committee brought Charles C. Deam in as chairman. He headed a committee composed of E. B. Williamson; M. W. Lyon, Jr.; S. R. Esten; plus new members, J. J. Davis and J. M. Van Hook. Under the enlarged group's direction, new policies and emphases emerged.

In line with their interest in Indiana flora and fauna, the Biological Survey Committee urged the State Conservation Department to continue its commendable policy of preserving original tracts of land, which would maintain important ecological habitats. They also approved the Department's establishment of a museum of local natural history and geology at Turkey Run Park.

Among their other concerns was the use of common names in the nomenclature. One case noted concerned the common name of *Quercus muhlenbergi*. Since "Pigeon oak" was in use in the literature and since *Q. muhlenbergi* was the preferred food of the extinct passenger pigeon, the Committee recommended official recognition of "Pigeon oak" as the common name for this species to the Botanical Society of America and to the American Forestry Association.

Because most of the material representing the flora and fauna of Indiana was privately owned or in out-of-state museums, the Committee volunteered to prepare a bibliography of publications dealing with the taxonomy and distribution of the past and present flora and fauna of Indiana. In view of this situation, they reiterated their previous recommendations for establishing a research museum supported by the state for the preservation of specimens.

The Committee considered sending out a new questionnaire to the members of the Academy to be reported on at the next annual meeting. This questionnaire apparently intended to update the information received in the one sent out in 1928.

Surveys published in the Proceedings included ones by F. M. Andrews, Rexford F. Daubenure, C. C. Deam, C. Mervin Palmer, Winona Welch, Helene L. White, Willard Berry, F. M. Baumgartner, J. J. Davis, S. R. Esten, B. H. Grave, B. E. Montgomery, and Jean Piatt.

1931

In view of the Biological Survey Committee's interest in promoting student participation in biology, 1931 was a notable year. A committee was formed to organize a junior academy of science, drawing participants from high school science clubs.

This year was an active year for the Committee, with a sizable turnover in membership. The chief work of the Committee was preparing the bibliography of the state's flora and fauna. M. W. Lyon, Jr., presided as chairman. Sidney R. Esten was in charge of compiling a bibliography of vertebrates and invertebrates, except arthropods; Paul Weatherwax, the flora; and B. E. Montgomery, the arthropods. T. C. Yunker and C. F. Adams also served on the Committee. The Academy allowed the Committee \$200 for clerical aid to assemble the work. Titles followed the form used in *Biological Abstracts* and were listed with notations by the compiler. The plan was to publish the bibliography in taxonomic sequence and give each compiler authorship credit.

In addition to work on the bibliography, the Committee re-endorsed the State Conservation Department's policy of habitat preservation and urged the state universities to provide adequate facilities for organizing and permanently housing specimens of Indiana habitats. This latter proposal marked a departure from endorsing an Academy-supported collection.

1932

B. Elwood Montgomery replaced Dr. Lyon as chairman, but the membership remained essentially unchanged. The Committee appeared to be occupied wholly with the bibliography and requested an additional \$100 for its compilation costs.

Again, the Biological Survey Committee urged the state universities to provide facilities to preserve specimens of the state's flora and fauna.

Survey papers published in the Proceedings were authored by: M. E. Britton and B. H. Smith, C. C. Deam, Louise M. Lover, Robert L. Rogers, J. E. Potzger, John M. Amos, J. J. Davis, Howard O. Deay, and L. A. Test and F. H. Test.

1933

M. W. Lyon, B. E. Montgomery, S. R. Esten, and P. Weatherwax remained on the Committee, in addition to C. F. Adams and Clyde Malott. Dr. Lyons again became chairman. The bibliographical work had progressed as follows: The Arthropoda was completed except for two orders of the Insecta; the Mammalia, Reptilia, and Amphibia were completed with Aves and Pisces partly done; the Algae, Bryophyta, Pteridophyta, and Spermatophyta were completed, but no work was done on the Fungi.

The Biological Survey Committee recommended to the Academy that its influence be used to insure publication of manuscripts dealing with Indiana biota. The Committee also wanted the Academy to encourage younger students in their pursuit of research and scientific writing.

Among the survey studies published in the Proceedings were those by C. C. Deam, J. E. Potzger, J. J. Davis, B. E. Montgomery, and L. A. Test and F. H. Test.

1934

Emphasis continued on compiling the bibliography of Indiana flora and fauna. The Committee consisted of B. E. Montgomery, Winona

Welch, and C. M. Palmer, chaired by M. W. Lyon. They reported little work having been completed. However, Dr. Malott had nearly finished a bibliography of fossil biota, while Dr. Montgomery was the only "collaborator" to make progress in the work on the Arthropods.

The morale of the committee for their work appeared to be waning, as attested by these statements included in their annual report:

"The different members of the committee and the collaborators, not seeing any immediate outlet for publication, are not very enthusiastic about doing work which must remain unprinted for an indefinite period of time. Bibliographic work is of such a nature that additions have to be made from time to time as new titles appear."

Regarding the final deposition of the work, the Committee suggested that arrangements be made with the state library to house the bibliography and to keep an account of those who would retain parts of it.

In a more positive vein, the Academy authorized publication of the bibliography by Barton W. Everman, assisted by Dr. W. S. Blatchley. The work appeared in the forty-fourth volume of the Proceedings on pages 39-42. A botanical section contributed by M. S. Markle followed on pages 43-44.

The Committee recommended that a fireproof museum be built to store specimens collected in the state, noting that that would prevent loss of specimens currently being sent to out-of-state museums.

C. C. Deam, J. M. Van Hook, M. E. Britton and B. H. Smith, A. R. Bechtel, J. E. Potzger, J. J. Davis, Will Scott, L. A. Test and F. H. Test, B. E. Montgomery, Howard Deay, and George E. Gould contributed survey studies to the Proceedings.

1935

The same four members remained on the Committee. The tone of their report remained essentially the same as that of 1934. The bright spots were that a report of Indiana mammals with a complete bibliography was in press for the *American Midland Naturalist*, Volume 17, No. 1, 1936; and that Deam's flora of Indiana was near completion. There was still emphasis on the survey role of the Committee, as evidenced by the above report.

The Committee reported that the most complete and up-dated bibliography was on insects, which was maintained by Dr. Montgomery. Dr. Welch was keeping the bibliography of the bryophytes. Plans were being considered to keep the work in the state library and to keep an account of those who retain parts of it.

This recurring cry of the nine-year period seems to be a fitting end to this part of the Biological Survey Committee's history: "A great deal of valuable material has been sent out of the state to other museums for lack of a suitable place for its preservation here. Some of our sister states, notably Illinois and Michigan, have excellent facilities for the care of scientific specimens."