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* President and Secretary serve as ex-officio members of the Research Grants Committee.

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SPRING MEETING

MINUTES OF THE EXECUTIVE COMMITTEE MEETING

April 28, 1978

The meeting was called to order by President Jerry J. Nisbet at 4:00 p.m. in Brooks Hall in the Mary Gray Bird Sanctuary, Connersville, Indiana, with Janice A. Nisbet serving as Secretary *pro tem*. The minutes of the Executive Committee and of the General Session of the Fall 1977 Meeting were approved.

TREASURER'S REPORT

Treasurer Stanley L. Burden presented a financial report for the period January 1 through April 22, 1978, a summary of which follows:

	Academy Accounts	Administered Accounts	Totals
Balance: January 1, 1978	\$6,082.23	\$11,690.11	\$17,772.34
1978 Income	3,080.87	5,500.00	8,580.87
1978 Expenditures	5,385.54	2,190.05	7,575.59
Balance: April 22, 1978	\$3,777.56	\$15,000.06	\$18,777.62

The Treasurer's report also indicated that there are 566 paid-up members, including 263 senior members, on file. The Treasurer's report was approved.

ELECTED COMMITTEE REPORTS

Academy Foundation Committee. William A. Daily, Chairman, reported that the market value of the J.S. Wright Fund had increased from \$442,243 on September 30, 1977 to \$471,934 on March 31, 1978.

Research Grants Committee. Ralph A. Llewellyn, Chairman, reported that 19 proposals had been received and that five were funded in full, while 13 were partially funded; a total of \$4802 was granted. The committee has requested AAAS funding for secondary school students and will work jointly with the Youth Activities Committee to prepare guidelines and process proposals for AAAS-funded projects.

Director of Public Relations. Walter A. Cory, Director, reported on news releases for the Spring Meeting. A questionnaire to solicit information from the membership is being included in copies of the Newsletter.

The reports of elected committees were approved.

PRESIDENTIAL APPOINTIVE COMMITTEES

Academy Representative to AAAS and AAS. Earl A. Holmes reported that Section X has voted a moratorium on AAAS fellows. He also reported on AAS discussions to raise the assessment for state academies from \$0.05 to \$0.10

per member. The AAAS procedure for dispersal of funds for secondary school students is being revised. Holmes recommended that the Academy consider sending a Junior Academy student to AAAS meetings to present a paper.

Youth Activities Committee. Keith Hunnings, Director of the Junior Academy, reported on proposed project activities. Walter A. Cory, Director of the Indiana Talent Search, reported that 13 winners were selected and honored at an awards banquet at the conclusion of the competition. He also reported that most Science Fairs had been held despite the energy shortage and that 24 delegates would attend the National Science Fair competition in Anaheim, California. The Indiana Science Education Fund, Inc., is providing \$1,000 scholarships for 2-4 Indiana Science Fair award winners; the recipients will be selected at Anaheim.

Library Committee. William A. Daily, reporting for the committee, stated that Volume 86 of *Proceedings* has been mailed. The Volume 87 printing requisition, with 800 hard cover copies, has been processed. The State appropriation for *Proceedings* support was \$8,000 for the year.

Program Committee. Robert H. Cooper, Chairman for the Spring Meeting, reported on arrangements for field trips and other aspects of the program. John D. Goodman, Chairman for the Fall Meeting, distributed materials for section chairmen.

Publications Committee. William R. Eberly, Chairman, distributed guidelines and editorial policies for *Proceedings*, prepared by Editor Benjamin Moulton.

Motion: To continue to have an Index Committee whose purpose is to prepare a 10-year Index on schedule. The Editor is to be chairman of the committee, whose members are to be appointed by the Publications Committee.

Seconded and *carried*.

Suggestions for possible special publications for the Centennial Year include revision of *Indiana Scientists*, a history of the Indiana Academy, and separate volumes in Biological and Geological History similar to the Geological Survey.

Invitations Committee. Jerry J. Nisbet reported that Butler University has extended an invitation to host the Academy for the Centennial Year 1985.

Motion: To accept the Butler University invitation for the 1985 Centennial Year.

Seconded and *carried*.

William R. Eberly reported that preliminary planning was under way for the 1979 meetings at Manchester College.

Motion: To accept the dates of October 18-19 for the 1979 Fall Meeting.
Seconded and *carried*.

Science and Society Committee. John Patton reported that this year's special project has been to underwrite the preparation of a report entitled "Policy Recommendations from the Study: Environmental Policy Decisions, A Case Study of PCB's in Indiana." Holcomb Research Institute has prepared this

report with input from the Science and Society Committee. On January 24, 1978, three representatives of the Academy (Jerry J. Nisbet, Donald E. Henderson, and Charles E. Wier) met with Governor Otis Bowen and his staff to express Academy interest in supporting the establishment of a formal Science Advisory apparatus in Indiana.

The reports of Presidential Appointive Committees were approved.

SPECIAL COMMITTEE REPORTS

Biological Survey Committee. A written report from Theodore J. Crovello, Chairman, was distributed. The committee is developing a computerized literature bank, working with the Department of Natural Resources to create a list of rare plant species of the state, working on an update of Deam's "Trees of Indiana," and developing a people-power register.

Emeritus Membership Selection Committee. Robert H. Cooper, Chairman, reported that the following individuals have requested and are eligible for, Emeritus membership status (initial membership year shown in parentheses):

LOLA M. LEMON (1929)

HAROLD D. WEBB (1930)

ROBERT N. MCCORMICK (1931)

Preservation of Natural Areas Committee. James H. Keith, Chairman, reported that the state nature preserves system now contains 46 areas with a total of 7,037 acres. The most recent addition was made on November 16, 1978, with the dedication of the 304-acre Hoosier Prairie Nature Preserve.

Speaker-of-the-Year Committee. John B. Patton, Speaker of the Year, reported that he presented lectures at Indiana State University at Evansville, St. Joseph College, Indiana Geological Survey at Bloomington, Indiana University at Kokomo, Huntington College, Purdue University at Westville, and Indiana University at Bloomington.

Reports of special committees were approved.

The meeting was adjourned at 6:00 p.m.

Respectfully submitted,
ROBERT E. VAN ATTA, Secretary

SPRING MEETING

MINUTES OF THE GENERAL SESSION

April 28, 1978

The meeting was called to order by President Jerry J. Nisbet at 7:30 p.m. in Brooks Hall in the Mary Gray Bird Sanctuary, Connersville, Indiana, with Janice A. Nisbet serving as Secretary *pro tem*.

Erich Klinghammer, Purdue University, presented a fascinating illustrated lecture on "Wolves in Captivity and the Wild."

Stanley L. Burden presented a brief summary of committee reports received by the Executive Committee on April 28, 1979.

Howard R. Youse, Chairman of the Resolutions Committee, presented the following:

RESOLUTION:

WHEREAS: The Indiana Academy of Science is deeply grateful to the Indiana Audubon Society for the use of the Mary Gray Bird Sanctuary and its facilities during Spring Meeting; and

WHEREAS: Mr. and Mrs. Denzel Barricklow, managers of the facilities, have been most helpful in arranging this meeting,

RESOLVED: That the Academy members and guests here assembled express their sincere appreciation to the Indiana Audubon Society for the use of these facilities during this meeting.

We express our thanks to Dr. Goodman and Dr. Cooper, co-chairmen of the Program Committee, who worked with Mr. and Mrs. Barricklow in arranging this meeting.

We wish to thank Professor Erich Klinghammer for his very interesting address on wolves.

We also wish to extend our appreciation to all the leaders of the field trips.

Motion: That the resolution presented by the Resolutions Committee be approved.

Seconded and *carried*.

The meeting was adjourned at 9:30 p.m.

A meeting for Section Chairmen and Chairmen-Elect was held immediately following the General Session. Handouts pertaining to aspects of the 1978 Fall Meeting were distributed from the Secretary, Treasurer, Editor, Director of Public Relations, and the Program Committee.

Respectfully submitted,

ROBERT E. VAN ATTA, Secretary

94th ANNUAL FALL MEETING

MINUTES OF THE EXECUTIVE COMMITTEE MEETING

November 2, 1978

The meeting was called to order by President Jerry J. Nisbet at 7:05 p.m. in Room 101, Hartung Hall at Anderson College, Anderson, Indiana. The minutes of the Executive Committee and of the General Session of the Spring 1978 meeting were approved.

TREASURER'S REPORT

Treasurer Stanley L. Burden presented a financial report for the period January 1, 1978 through October 18, 1978, summarized as follows:

	Academy Accounts	Administered Accounts	Totals
Balance: January 1, 1978	\$6,082.23	\$11,690.11	\$17,772.34
1978 Income	9,382.05	11,592.50	20,954.55
1978 Expenditures	5,629.28	7,799.55	13,428.83
Balance: October 18, 1978	\$9,835.00	\$15,463.06	\$25,298.06

The Treasurer's report listed 769 currently paid-up members, including 416 senior members, with 74 new member applications; 122 members and clubs were dropped for non-payment of dues.

STANDING COMMITTEE REPORTS

Academy Representative to AAAS and AAS. No report.

Auditing Committee. No report.

Youth Activities Committee. Walter A. Cory, reporting for Chairman Donald R. Winslow, stated that the Indiana Science Talent Search and 12 Regional Science Fairs were completed in spite of severe weather problems. The committee recommended that the President of the Academy designate one member of the Youth Activities Committee as *Assistant Chairperson* and another as *Assistant Coordinator of Science Fairs* to better deal with the complexity of committee activities. The recommendation was noted and called to the attention of President-Elect J. Daniel Webster.

Science Fairs Coordinator Karl L. Kaufman reported that four \$1000 scholarships were awarded from among 17 finalists and that distinctive jackets had been presented to Indiana participants in the International Science Fair in California. He further reported that a \$30,000 grant from Lilly Endowment has been received to sponsor a series of 20 teacher-pupil workshops to be held within the largest school corporations throughout the state.

Junior Academy of Science Director Keith Hunnings reported that 14

papers were presented before 75 members at the Junior Academy meeting at Indianapolis and indicated that the Junior Academy is emphasizing the preparation and presentation of papers resulting from student research.

Library Committee. W. A. Daily, reporting for Chairwoman Lois Burton, stated that Proceedings Volume 86 had been distributed to approximately 500 agencies. Thirty-seven new titles have been received by the Library and 151 volumes from the Library's journals have been bound. Use of the Library's materials has increased greatly, due to on-line access through the OCLS data base.

Nominations Committee. Donald J. Cook, Chairman, presented the committee report and made the following motion:

Motion: That the slate of candidates presented by the Nominations Committee be accepted and presented to the membership at the General Session Meeting.

Seconded and *carried*.

Program Committee. John D. Goodman, Co-chairman, presented an interim financial report for committee activities and made several announcements pertaining to operations during the current meeting.

Publications Committee. William R. Eberly, Chairman, reported that no new monographs are currently under consideration, although it was pointed out that the study, "Endangered and Threatened Vertebrates of Indiana," financed by a 1976 Academy grant, may soon be ready for publication. He reported that two commitments for the "Centennial Series" have been made and that others for this series are being considered. The suggestion was made that the Budget Committee might consider establishing an administered account for financing future publications.

Science and Society Committee. Robert E. Henderson, Chairman, reported on the January meeting with Governor Otis Bowen and the Governor's suggestions in response to the Committee presentation. The committee will continue to support legislative efforts to create a science advisory agency. He also reported the committee report, "PCB's in Indiana: A Study in the Transfer of Chemical Information," was completed in June and that copies are now available.

Membership Committee. J. Daniel Webster, Chairman, recognized the decline in membership during the past year. It was suggested that the new membership brochure to be produced next year may be of assistance.

Fellows Committee. Richard L. Conklin, Chairman, presented the committee report and made the following motion:

Motion: That the following persons, recommended by the Fellows Committee, be elected as Fellows of the Academy.

RALPH J. GREEN, JR.

JON R. HENDRIX

WILTON N. MELHORN

ROBERT W. MEYER

DARRELL W. NELSON

BERNARD S. WOSTMANN

HAROLD L. ZIMMACK

Seconded and *carried*.

Resolutions Committee. No report.

Invitations Committee. The report of the committee, transmitted by telephone, was given by Jerry J. Nisbet for Chairman Philip A. St. John. Manchester College and St. Joseph's College will be the sites of the 1979 and 1980 Fall meetings, respectively. The site of the 1979 Spring meeting, scheduled for April 27, has yet to be selected. Offers to host the 1981 and 1982 Fall meetings have been received; the following motion was presented:

Motion: That invitations to host the Fall meetings indicated be accepted:
 1981—Wabash College
 1982—University of Notre Dame

Seconded and *carried*.

Necrologist. No report.

Parliamentarian. No report.

The reports of the standing committees were approved.

ELECTED COMMITTEE REPORTS

Academy Foundation Committee. William A. Daily, Chairman, presented a very complete and detailed report, summarized as follows:

I. *Foundation Account*

Balance as of September 22, 1977	\$ 320.36
Income as of September 30, 1978	1,189.88
Disbursements to Academy	300.00
Transferred to Principal (9/22/77)	300.00
Cash Balance as of September 30, 1978	910.24

II. *John S. Wright Fund*

Balance as of September 30, 1977	\$ 20,000.00
Income as of September 30, 1978	22,945.94
Cash balance as of September 30, 1978	6,923.40
Disbursements from Invested Income Account:	
Research Grants	5,000.00
Indiana National Bank Fee	2,250.00
IAS Proceedings, Vol. 86	5,500.00
Cash Balance	1,119.34
Balance in Invested Income Accounts:	\$ 36,000.00

III. *Market Value of all Securities*

Mr. Daily also reported that the committee expects to provide the Academy Budget Committee with a good estimate of anticipated income for 1979.

Bonding Committee. No report.

Research Grants Committee. R. A. Llewellyn, Chairman, reported that 28 research proposals had been received, of which seven were funded in full and 19 in part. A total of \$8,882 was awarded in grants ranging from \$125 to \$1400. In addition, six Secondary School grants funded by the AAAS were awarded.

A new brochure describing the Academy research grant program, along with new guidelines for proposal preparation, will be sent to all members after

the first of the year. The committee expects to consider larger grant requests more favorably in the future.

Editor's Report. Benjamin Moulton, Editor, reported that publication of Proceedings, Volume 87, will be delayed until after January 1, due to the change in publishers, and that the cost of reprints will be 7-10% higher.

Director of Public Relations. Walter A. Cory, Director, summarized current activities of his office and his continuing efforts to place Academy information in local newspapers. Suggestions were offered for bringing Academy activities to public notice, including use of the American Chemical Society "Men and Molecules" taped series.

The reports of the elected committees were approved.

SPECIAL COMMITTEE REPORTS

Biological Survey Committee. Theodore J. Crovello, Chairman, presented a detailed report summarizing the committee activities for the year. Included were reports on the current status of the Literature Project, the Endangered Species Project, the Flora Indiana Project, the Indiana Vascular Plant Atlas, Indiana Trees, Indiana Environmental Impact Statements, Indiana Vegetation Map Project, and the People Power Project. Mr. Crovello outlined current tasks of the committee and briefly discussed the Indiana Natural Heritage Program. He also asked that all interested persons complete the BSC Activity Form and the 1978 Indiana Biota Literature and Activity Survey form which have been prepared by the committee.

Emeritus Member Selection Committee. Robert H. Cooper, Chairman, presented the following persons for Emeritus Membership (initial membership year shown in parentheses):

HILLIS L. HOWIE (1935)

HOWARD H. MICHAUD (1934)

FRANK J. WELCHER (1934)

Motion: That the persons presented be elected to Emeritus Membership. Seconded and *carried*.

Preservation of Natural Areas Committee. James Keith, Chairman, reported that the State Nature Preserves system now contains 49 areas, totalling 7204 acres. Crooked Lake, Spicer Lake, and Fogwell Forest Natures Preserves were dedicated this year. A survey of the Indiana Coastal Zone (Lake Michigan shore line) has indicated 20 sites suitable for consideration as nature preserves.

Speaker-of-the-Year Committee. John A. Ricketts, Chairman, reported that Speaker-of-the-Year Dr. Samuel N. Postlethwait has completed appearances at Indiana University-Purdue University-Indianapolis and at Manchester College. Other engagements are scheduled at Vincennes University and DePauw University, with one date remaining to be filled.

Academy Representative on Indiana Natural Resources Commission. Damian V. Schmelz presented an informative summary of the function and recent activities of the commission.

The reports of the special committees were approved.

NEW BUSINESS

President Jerry J. Nisbet announced that he had appointed a committee to respond to an invitation from the Indiana Department of Public Instruction for the Academy to participate in support of the "Perspectives" program.

Motion: That the Academy support the "Perspectives" program in ways to be developed by the committee.

Seconded and *carried*.

The Budget Committee meeting was set for Saturday, November 18, 1978 in Indianapolis by President-Elect J. Daniel Webster.

The meeting was adjourned at 10:15 P.M.

Respectfully submitted,
ROBERT E. VAN ATTA, Secretary

94th ANNUAL FALL MEETING

MINUTES OF THE GENERAL SESSION

November 3, 1978

The Business Session of the 94th Annual Meeting of the Academy was called to order by President Jerry J. Nisbet at 10:30 a.m. in Byrum Hall at Anderson College, Anderson Indiana.

Dr. Robert H. Reardon, President of Anderson College, welcomed the Academy on behalf of the college.

President Nisbet introduced the Academy Speaker-of-the-Year, Dr. Samuel N. Postlethwait, Professor of Biology at Purdue University. Dr. Postlethwait presented an interesting and inspirational slide-illustrated lecture entitled "Investigating Teaching Alternatives."

The Business Meeting was recessed at 12:00 noon and reconvened at 1:30 p.m. in Byrum Hall.

The Secretary of the Academy presented a summary of committee reports and informed the membership of official actions taken by the Executive Committee on November 2, 1978.

The names of individuals who were elected 1979 Divisional Chairmen and Chairmen-Elect include:

ANTHROPOLOGY

Chairman: CHARLES P. WARREN
Chairman-Elect: ERNST VON RAHL

BOTANY

Chairman: ANNE SUSALLA
Chairman-Elect: GARY DOLPH

CELL BIOLOGY

Chairman: MARY F. ASTERITA
Chairman-Elect: STANLEY N. GROVE

CHEMISTRY

Chairman: JOHN A. RICKETTS
Chairman-Elect: EDWARD MILLER

ECOLOGY

Chairman: H. E. McREYNOLDS
Chairman-Elect: HERBERT W. SENFT

ENGINEERING

Chairman: MILTON E. HARR
Chairman-Elect: RAMACHANDRA A. RAO

(No 1978 election held; 1977-78 officers carry over to 1979.)

ENTOMOLOGY

Chairman: ALAN C. YORK
 Chairman-Elect: MICHAEL SINSCO

GEOLOGY & GEOGRAPHY

Chairman: JOHN H. CLEVELAND
 Chairman-Elect: KENNETH R. BREHOB

HISTORY OF SCIENCE

Chairman: WILLIAM BLOOM
 Chairman-Elect: PATRICK H. STEELE

(No 1978 election held; 1978 officers carry over to 1979.)

MICROBIOLOGY & MOLECULAR BIOLOGY

Chairman: CARL E. WARNES
 Chairman-Elect: DONALD A. HENDRICKSON

PHYSICS

Chairman: RALPH A. LLEWELLYN
 Chairman-Elect: GERALD P. THOMAS

PLANT TAXONOMY

Chairman: DONALD L. BURTON
 Chairman-Elect: JOHN BACONE

SCIENCE EDUCATION

Chairman: H. MARVIN BRATT
 Chairman-Elect: WILLIAM G. WERT

SOIL & ATMOSPHERIC SCIENCES

Chairman: GARY C. STEINHARDT
 Chairman-Elect: DONALD P. FRANZMEIER

ZOOLOGY

Chairman: RICHARD O. MCCrackEN
 Chairman-Elect: ROBERT R. PINGER

The Secretary presented the following motions:

Motion: That the individuals who have applied for membership in the Academy be elected to the types of memberships for which they have applied.

Seconded and *carried*.

Motion: That the individuals recommended by the Emeritus Member Selection Committee and approved by the Executive Committee be elected to Emeritus Membership.

Seconded and *carried*.

Motion: That the individuals recommended by the Fellows Committee and approved by the Executive Committee be elected as Fellows of the Academy.

Seconded and *carried*.

WHEREAS: The amount of work to be done both on an immediate and long-term basis is great, and requires the integrated cooperation of all workers; then

RESOLVED: That the Indiana Academy of Science, in support of the Natural Heritage Problem, endorses continued integrated cooperation between its Biological Survey Committee and the Indiana Natural Heritage Program.

RESOLUTION:

WHEREAS: The Indiana Academy of Science is deeply grateful to Anderson College for their invitation to hold its 94th annual meeting on their campus; and

WHEREAS: Administration, faculty, and students alike have cooperated in providing us their facilities for this meeting; be it

RESOLVED: That the Academy members here assembled express their sincere appreciation to President Dr. Robert H. Reardon for all the courtesies that Anderson College has extended to the Academy during the meeting.

We are especially grateful to Dr. John D. Goodman and his committee for the arrangements of the entire program and the comfort and conveniences provided the membership. We also express our sincere thanks to Dr. Sam N. Postlethwait, Indiana Academy Speaker of the year, for his address, *Investigating Teaching Alternatives*.

Motion: That the resolutions presented by the Resolutions Committee be approved.

Seconded and *carried*.

Steve Justham requested the floor for the purpose of making a presentation. After some discussion, President Nisbet ruled that the proposal must be presented to the Executive Committee prior to General Session action.

The meeting was recessed at 2:15 p.m. and reconvened at 6:00 p.m. with President-Elect J. Daniel Webster presiding at the annual banquet held in Kane Dining Room of the Olt Student Center.

Following introduction of Academy officers and spouses at the speaker's table, Dr. Webster introduced President Jerry J. Nisbet, who presented the annual Presidential Address, entitled "The Brain, the Beauty of Science and Learning."

The meeting was adjourned at 7:25 p.m.

Respectfully submitted,
ROBERT E. VAN ATTA, Secretary

FINANCIAL REPORT
JANUARY 1-DECEMBER 31, 1978

I. ACADEMY ACCOUNTS

	Income	Budgeted	Expenditure	Budgeted
Dues	\$ 7,593.00	\$ 6,640.00	.....	.....
Reprints: Vol. 86	2,485.96	.....	.....	.....
87	* 0.00	3,100.00	* 0.00	\$ 3,000.00
Interest	941.58	1,000.00	.....	.....
Miscellaneous.....	20.00	.....	.....	.....
Secretary.....	469.24	500.00
Treasurer	320.21	400.00
General Office	169.00	250.00
Travel, AAAS Dues, etc.....	194.50	225.00
Membership Committee.....	0.00	200.00
Transfer to Administered Accounts	3,450.00	3,450.00
Junior Academy (\$1,000.00)
Science and Society (\$500.00)
Natural Areas (\$0.00)
Library Binding (\$1,200.00).....
Proceedings: Publication (\$750.00)....
Proceedings: Mailing (\$0.00)
Publications: Clerical
President's Fund	0.00	100.00
Newsletter	500.00	500.00
Speaker of the Year Honorarium.....	500.00	500.00
Program Committee	***220.30	1,000.00
Publications Editor's Expenses	500.00	500.00
Youth Activities.....	0.00	50.00
Biological Surveys Committee	1,000.00	1,000.00
Representative to AAAS Meeting	300.00	300.00
Public Relations	35.00	100.00
Section Chairman Expenses	0.00	50.00
CPA Fees for Tax Return Preparation	0.00	400.00
Lawyer's Fees.....	** 0.00	150.00
Miscellaneous.....	97.45	210.00
	\$11,040.54	\$10,740.00	\$7,755.70	\$12,885.00

* Unexpectedly low because printing of Proceedings Vol. 87 was unusually slow and no billing was received by 12/31/78.

** Unexpectedly low because no billing for tax return preparation was received by 12/31/78.

*** No bills for 1978 Fall Meeting were received by 12/31/78.

II. ADMINISTERED ACCOUNTS

	January 1 Balance	1978 Income	1978 Expenditures	December 31 Balance
Junior Academy	\$ 502.49	\$ 1,000.00	\$ 692.29	\$ 810.20
Science Talent Search.....	272.80	2,050.00	2,157.05	165.75
Science and Society	2,476.29	500.00	244.20	2,732.09
Research	(-3,649.40)	6,057.00	9,468.00	*(-7,060.40)
Natural Areas	0.00	0.00	0.00	0.00
J.S. Wright Library	134.28	0.00	0.00	134.28
Lilly III Library.....	2,632.76	0.00	0.00	2,632.76
Lilly V Library	4,513.20	0.00	0.00	4,513.20
Library Binding	1,196.85	1,200.00	0.00	2,396.85
Science Fairs	0.00	0.00	0.00	0.00
Publications:				
Proceedings	800.89	788.00	00.00	1,588.89
Mailing of Proceedings	779.43	0.00	72.39	707.04
Monographs	1,530.52	328.50	0.00	1,859.02
Natural Features	0.00	0.00	0.00	0.00
Clerical	500.00	0.00	0.00	500.00
	<u>\$11,690.11</u>	<u>\$11,923.50</u>	<u>\$12,633.93</u>	<u>\$10,979.68</u>

* No draws from trust funds were made to allow greater interest earnings. Payments for research grants were made from Academy operating funds. Transfer can be made later if Academy funds become low.

III. SUMMARY

	Academy Accounts	Administered Accounts	Total
Balance: January 1, 1978.....	\$ 6,082.23	\$11,690.11	\$17,772.34
1978 Income	11,040.54	11,923.50	22,964.04
1978 Expenditures.....	7,755.70	12,633.93	20,389.63
Balance: December 31, 1978	9,367.07	10,979.68	20,346.75

IV. BANK BALANCES

Upland United Bank, Upland, Indiana	\$ 3,905.19
Great Western Savings and Loan, Los Angeles, California	6,332.42
First Western Savings and Loan, Las Vegas, Nevada.....	10,109.14
	<u>\$20,346.75</u>

V. SUMMARY OF TRUST FUNDS

A. Foundation Account (00430-00-0)			
Income cash balance (1/1/78).....		\$	-39.34
Total dividends and interest for 1978.....			1,497.36
Disbursements for 1978			
Research grants	\$	300.00	
Transfer to principal cash		1,000.00	
	<u>\$</u>	<u>1,300.00</u>	<u>-1,300.00</u>
Income cash balance (12/31/78).....		\$	158.02
		\$	158.02

Principal cash balance (1/1/78)	53.40	
Total receipts for 1978	1,000.00	
Total disbursements for 1978	-1,000.00	
	<hr/>	
Principal cash balance (12/31/78)	53.40	\$ 53.40
Market value of investments (12/31/78)		\$24,058.30
		<hr/>
Total value of account (12/31/78)		\$24,269.72*
*Carrying value is \$25,389.89		

B. John S. Wright Fund (00430-01-9)

Income cash balance (1/1/78).....	\$ 3,961.50	
Total dividends, interest, and other income for 1978.....	21,606.26	
Disbursements for 1978		
INB fee	\$ 2,250.00	
Transfer to 00430-02-8	21,461.09	
Transfer to Principal Cash.....	0.00	
	<hr/>	
	\$23,711.09	-23,711.09
Income cash balance (12/31/78).....	1,856.67	\$ 1,856.67
Principal cash balance (1/1/78)	210.33	
Total receipts for 1978	20,000.00	
Total disbursements for 1978	-19,995.95	
	<hr/>	
Principal cash balance (12/31/78)	\$ 214.38	\$ 214.38
Market value of investments (12/31/78)		\$531,568.40
Total value of account (12/31/78)		533,639.45*
*Carrying value is \$335,314.70		

C. John S. Wright Invested Income Account (00430-02-8)

Income cash balance (1/1/78).....	\$ 179.69	
Total interest for 1978	2,250.83	
Disbursements for 1978		
Transfers to principal	\$ 2,000.00	
	<hr/>	
	\$ 2,000.00	-2,000.00
Income cash balance (12/31/78).....	\$ 430.52	\$ 430.52
Principal cash balance (1/1/78)	538.91	
Total receipts for 1978	23,461.09	
Disbursements for 1978		
Purchase of investments.....	\$19,000.00	
Research grants	0.00	
Proceedings, Vol. 87	5,000.00	
	<hr/>	
	\$24,000.00	-24,000.00
Principal cash balance (12/31/78)	0.00	\$ 0.00
Market value of investments		\$ 41,000.00
		<hr/>
Total value of account		\$ 41,430.52

VI. NOTES

Membership Dues:

According to the Treasurer's records, the current status may be summarized as follows:

902 paid (261 member, 444 senior member, 52 student, 8 family member, 24 senior family

member, 18 sustaining member, 2 senior family sustaining, 4 life, 1 honorary, 75 emeritus, and 13 club members).

182 on file from 1977 but not paid for 1978.

110 new members for 1978 (included in above totals).

8 previous members reinstated during 1978 (included in above totals).

122 members and clubs dropped for nonpayment of 1977 dues.

Dues Structure for 1978:

\$ 2.00 for student memberships

5.00 for memberships and club memberships

10.00 for senior memberships

25.00 for sustaining memberships

2.00 additional for family memberships

300.00 for life memberships

150.00-500.00 corporate memberships

50.00-100.00 institutional memberships

1.00 initiation/reinstatement fee (\$2.00 for family membership)

Savings

The treasurer, from the total assets of both Academy and Administered accounts, has maintained sufficient funds in the checking account to pay current bills throughout the year; the remaining funds have been invested in savings certificates.

Certificates redeemed in 1978

None

Certificates current

- *1. (GWSL) \$5,919.10 invested at 6.75% October 1977; 30 September value \$6,332.42; Maturity at April, 1980.
2. (FWSL) \$3,000.00 invested at 6.75% October 1976; 25 December value \$3,494.84; Maturity at April 1979.
3. (FWSL) \$2,000.00 invested at 6.50% April 1978; 25 December value \$2,204.46; Maturity at April 1979.
4. (FWSL) \$1,000.00 invested at 6.50% June 1978; 25 December value \$1,102.46; Maturity at June 1979.
5. (FWSL) \$1,000.00 invested at 6.50% June 1978; 25 December value \$1,102.46; Maturity at June 1979.
6. (FWSL) \$1,000.00 invested at 6.50% June 1978; 25 December value \$1,102.46; Maturity at June 1979.
7. (FWSL) \$1,000.00 invested at 6.50% June 1978; 25 December value \$1,102.46; Maturity at June 1979.

Total	\$16,441.56
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* Fourth quarter report was not received from GWSL before books for 1978 were closed.

Reprints:

Reprint charges to authors for Vol. 84 are being collected with 1 billing outstanding for a total of \$150.48 (William R. Eberly) and will give a net profit to the Academy (1975, 1976, 1977 and 1978) of \$223.81 in excess of printing costs when all bills have been collected. Reprint charges to authors for Vol. 85 are being collected with 1 billing outstanding for a total of \$149.44 and will give a net profit to the Academy of \$225.93 when all bills have been collected. Reprint charges to authors for Vol. 86 are being collected with 5 billings outstanding for a total of \$362.58 and will give a net profit to the Academy of \$290.62 in excess of printing costs when all bills have been collected. No billings have been made for Vol. 87 because printing has not yet been completed.

Attorney Fees:

Ice, Miller, Donadio & Ryan of Indianapolis have been advising the Academy in matters concerning the reprinting and roles of various publications. The executive committee voted at the Fall Meeting of 1973 to delay the transferring of \$4,226.87 for attorney fees concerning the tax

classification problems to the Academy operating funds from the J.S. Wright fund until these funds are needed for operating expenses.

Research Grants:

Funds totaling \$9,468.00 have been awarded to: Galen Weaver (Goshen), Clarence Dineen (St. Mary's), Peter Bretting (I.U.-Bloomington), James E. Shields (Indianapolis), Mohinder S. Jarial (Ball State), Richard Rowlands (I.U.-Bloomington), Timothy J. Decker (Ball State), Robert A. Hunchberger (Ball State), Robert R. Pinger (Ball State), Jeffrey E. Ehrenzeller (Indiana State), Lawrence Mordan (Notre Dame), G. Philip Robertson (I.U.-Bloomington), Vincent A. DiNoto (Indiana State), Douglas Soltis (I.U.-Bloomington), James J. Tobolski (I.U. Purdue-Ft. Wayne), Dixon H. Landers (I.U.-Bloomington), Keven Strunk (I.U.P.U.I.), Paul MacMillan (Hanover), Jennifer Lackman & Nevin Longenecker (John Adams High School), Frank Smietana & Richard Flickinger (Paul Harding High School), Paul Stark & Virginia Rhodes (East Noble High School), Wendy Rhodes & Virginia Rhodes (East Noble High School), Lynda S. Rhodes & Virginia Rhodes (East Noble High School), Allen L. Volina & Milton Sprunger (Twin Lakes High School), Sylvia P. Brehm (Indiana State), Paul D. MacMillan (Hanover), K. B. Kipkowitz & T. W. Cutshall (I.U.P.U.I.), Eric R. Johnson (Ball State), John E. Oliver (Indiana State), Greg Brodie (Purdue), James Sweigard (Goshen), Denni M. Zodda (Notre Dame).

Publications:

Sales to date during 1978 have been \$328.00 for Monographs. The total cost of publishing Vol. 87 of the *Proceedings* is unknown as of December 31, 1978 because of late printing but the State of Indiana is expected to pay \$8,000.

VII. BUDGET FOR 1979

The following budget was approved by the Budget Committee in a meeting on November 18, 1978:

Academy Accounts

Anticipated Income

Dues, Initiation and Reinstatement Fees	
(55 @ \$2, 400 @ \$5, 500 @ \$10, 100 @ \$0) ...	\$ 7,110.00
Interest on Savings.....	1,000.00
Reprint Charges to Authors.....	3,400.00
	\$11,510.00

Budgeted Expenditures

Secretary	\$ 500.00
Treasurer	400.00
General Office.....	250.00
Officer Travel, AAAS Dues	225.00
Membership Committee	250.00
President's Contingency Fund	150.00
Newsletter	500.00
Speaker of the Year Honorarium	500.00
Program Committee	1,300.00
Publication Editor's Expenses (including \$200 for 1/2 of 2 yr. index)	700.00
Youth Activities Committee	50.00
Biological Surveys Committee (including Endangered Plant Species and Flora Indiana Project Committees)	2,300.00
Representative to AAAS Meeting.....	300.00
Reprint Charges to Academy.....	3,000.00
Public Relations (including "Men & Molecules" Program for 1 yr.)	250.00
Section Chairmen Expenses	50.00
CPA Fees for Tax Return Preparation	400.00
Lawyer's Fees	100.00

Miscellaneous (including \$110 for library books)		100.00	
Transfers to Administered Accounts			3,450.00
Junior Academy	\$ 1,000.00		
Science and Society Committee	500.00		
Natural Areas Committee	0.00		
Library Binding	1,200.00		
Proceedings: Publication	750.00		
Proceedings: Mailing	0.00		
Proceedings: Clerical	0.00		
Special Publications (Centennial)	0.00		
			<hr/>
			\$14,775.00
 Endowment Funds			
Anticipated Income			
IAS Foundation		\$ 1,500.00	
J.S. Wright Investment Income		21,900.00	
Invested Income Carry-over			36,000.00
			<hr/>
			\$59,400.00
 Budgeted Expenditures			
Bank Fee		\$ 2,700.00	
Research Grants (\$12,000—\$350 AAAS)		11,650.00	
Publications			
Proceedings, Vol. 87 (\$15,000—\$8,000 Ind.—\$750 transfer)			6,250.00
Special Publications (\$5,000 for Centennial Publication Acct.)			5,000.00
			<hr/>
			\$25,600.00
 Restricted Accounts			
Anticipated Income			
Research Grants Committee (AAAS)		\$ 350.00	(part)
Science Talent Search (Tri Kappa)		2,000.00	
Publications			300.00
Proceedings	\$ 50.00		
Monographs and Nat. Feat.	250.00		
			<hr/>
			\$ 2,650.00
 Budgeted Expenditures			
Research Grants Committee		\$ 350.00	(part)
Science Talent Search		2,000.00	
Publications			300.00
Proceedings	\$ 50.00	(part)	
Monographs	250.00	(part)	
			<hr/>
			\$ 2,650.00

Respectfully submitted,

STANLEY BURDEN, Treasurer

We, the undersigned, have audited the Treasurer's records for the Indiana Academy of Science for the year 1978 and have found them to be accurate and in order.

January 19, 1979

TIMOTHY J. BURKHOLDER
WILSON B. LUTZ

THE INDIANA JUNIOR ACADEMY OF SCIENCE

MINUTES OF THE FORTY-SIXTH ANNUAL MEETING

November 3, 1978

The Forty-Sixth annual meeting of the Indiana Junior Academy of Science was held on Friday, November 3, 1978, on the campus of Anderson College, Anderson, Indiana. President Bryon Stephens, of Highland High School, opened the meeting and introduced the candidates for next year's officers. He also introduced Mark Rollen a representative of Anderson College, who welcomed the academy to the campus.

The minutes of the forty-fifth meeting of the Junior Academy were moved not to be read because of a shortage of time.

After the short business meeting, students in both the junior and senior division presented papers on their research. Students in the senior division were also interviewed for "Outstanding Junior Scientist for the State of Indiana." There was also a paper airplane contest and a glass blowing demonstration, for those not involved in any of the above mentioned activities.

A new innovation, the science club polemic was held. A four member team from each school participated in the polemic, which was a written test of both Knowledge and Logic.

After lunch a business meeting took place where elections were held, a new idea for science fiction papers was brought up and awards were presented.

Mark Lagle of Brown County High School read his science fiction story on the Calaban as an example for next years science fiction category.

Mr. Lee Moss, of Lew Wallace in Gary, presented awards to the following people for their achievements in the paper airplane contest:

JUNIOR DIVISION

Third Place

Brad Wolfe, St. John the Baptist, Ft. Wayne

Second Place

Bill Toler, Brown County Jr. High, Nashville

First Place

Bill Finoglier, St. John the Baptist, Ft. Wayne

SENIOR DIVISION

Third Place

Paul Miller, Lew Wallace, Gary

Second Place

Kevin Aodanas, Marquette, Michigan City

First Place

John Brand, New Haven, New Haven

Mrs. Cheryl Mason, of Highland, then presented awards to the following teams for the club Polemic:

JUNIOR DIVISION

Third Place

Farland Jr. High, Farland

Second Place

Brown County Jr. High, Nashville

First Place

Marquette, Michigan City

SENIOR DIVISION

Third Place

Highland High, Highland

Second Place

Franklin High, Indianapolis

First Place

Marquette High, Michigan City

Mrs. Leota Skirvin of Brown County, presented the awards for the Junior Division Papers to the following people:

Third Place

Jill Walicki, St. John the Baptist, Ft. Wayne

Second Place

Lisa Newlin, Paoli Jr. High, Paoli

First Place

Jody Lynn Sibbitt, Paoli Jr. High, Paoli

Mrs. Jane Tucker, Ft. Wayne, presented awards to the following people for Senior Division papers.

BIOLOGICAL SCIENCES

Third Place

Steve West, Paoli High, Paoli

Second Place

Scott Rathgaber, New Haven High, New Haven

First Place

Lynda Rhodes, East Noble High, Kendallville

PHYSICAL SCIENCES

Third Place

David DiGiola, Marquette High, Michigan City

Second Place

Christopher L. Purcell, Marquette High, Michigan City

First Place

Gregory Rondot, Bishop Leurs High, Ft. Wayne

Mrs. Carrol Ritter, of Paoli, presented the awards to the following people for being named outstanding Junior Scientist for the State of Indiana:

Lynda Rhodes—East Noble High, Kendallville

Cheryl Barbati—Highland High, Highland

The traveling trophy for the top club was presented to the following clubs:

JUNIOR DIVISION

St. John the Baptist, Ft. Wayne

SENIOR DIVISION

Marquette High, Michigan City

Next year's meeting is to be held at Manchester College with the following officers: Cheryl Barbati of Highland High School, President; Scott Rathgaber of New Haven High School, Vice-President; and Jamie Sibbitt of Paoli High School, Secretary.

Bryon Stephens adjourned the forty-sixth annual meeting of the Indiana Junior Academy of Science at 2:00.

Respectfully submitted,
CHERYL BARBATI, Secretary

NEW LITERATURE AND WORKS IN PROGRESS
ABOUT THE BIOTA OF INDIANA

1978 ANNUAL REPORT
OF THE BIOLOGICAL SURVEY COMMITTEE (BSC)
OF THE INDIANA ACADEMY OF SCIENCES

BSC Members for 1978:

THEODORE J. CROVELLO, Chairman, Department of Biology
University of Notre Dame, Notre Dame, Indiana 46556
Phone: 219/283-7496 SUVON: Your access code + 3011

JOHN BACONE	Indiana Department of Natural Resources
WILLIAM CRANKSHAW	Ball State University
JAMES GAMMON	DePauw University
JACK MUNSEE	Indiana State University, Terre Haute
VICTOR RIEMENSCHNEIDER	Indiana University, South Bend
JOHN WHITAKER, JR.	Indiana State University, Terre Haute
DAVID WOODRUFF	Purdue University, Lafayette
FRANK YOUNG, JR.	Indiana University, Bloomington

The goal of the Literature Subcommittee of the Academy's Biological Survey Committee is to accumulate and maintain published and unpublished references on the biota of the State. While in the past the BSC Literature Project has presented its findings in conventional printed form, in addition we now simultaneously add these contributions to the Indiana Academy's computerized literature and works in progress register. It provides updated, integrated bibliographies on particular topics in response to specific requests. Contact Professor Crovello for further details, or to submit literature or project information to the data bank. The data bank contains more information about each reference than is presented in this printed summary. Items omitted include: Higher taxa (common names) to which organisms belong; Classes or orders of organisms; Families; Genera or species; Subjects describing each work; and name, address and telephone number of person to contact for further information on each entry.

The following literature references and works in progress were obtained by circulating requests and questionnaires to chairpersons of 69 life science departments throughout the State, and to participants at the Academy's Fall Meeting. Next year's report also will include the results of a search of the computerized files of Bioabstracts from 1969 to the present. The Committee welcomes suggestions on ways to increase the number of contributions to this annual survey, and to increase awareness of its customized computer search capabilities.

Each literature reference or work in progress may contain the following, separated by semicolons: author(s); date; title; citation; and Indiana counties in which the work was performed. If any of these are absent, the contributor did

not provide it. Counties are abbreviated by using their first five letters. The exception is Saint Joseph, which is abbreviated StJoe. An "ALL" in the county field indicates that the work applies to all 92 Indiana counties. A "MANY" indicates the work applies to many counties. In both cases up to five of the most important counties also may be included.

Each citation begins with a letter which has one of the following meanings:

- P: Formal Publication
 I: In Press in a formal publication
 T: Thesis
 O: Other (semi) published work, e.g., park checklists, maps.
 E: Environmental Impact Statements
 W: Work In Progress
 PIAS: In a citation, PIAS refers to the Proceedings of the Indiana Academy of Science.

ATCHISON, G. J., B. R. MURPHY, W. E. BISHOP, A. W. MCINTOSH, and R. A. MAYES; 1978; Trace metal contamination of bluegill (*Lepomis macrochirus*) from two Indiana lakes; P: Trans. Am. Fish. Soc., 106(6), 637-640.

AUSTAD, S. N.; 1978; Mating strategies and the distribution of male aggression in space and time of the bowl and doily spider; T: Purdue—Dr. P.M. Waser; Tippe.

BACONE, J. A. and T. J. CROVELLO; 1978; Endangered and threatened vascular plant species of Indiana; W: DNR, Division of Nature Preserves; ALL.

BAUSS, S.; 1977; A waterfowl survey along the Ohio River from Madison to Vevay; T: B.A. Thesis—Hanover College—Prof. J.D. Webster; Jeffe, Switz.

CHURCHILL, C. M. and H. TAMAR; 1978; Chemotaxis of *Halteria grandinella*; T: Indiana State University, Dr. Tamar; Vigo, Vande, Warwi, Sulliv.

DENNER, M. W.; 1978; Field survey of chemical components and parasites, algae and trees of Posey and Vanderburg counties; W: Department of Biology, Indiana State University Evansville; Vande, Posey.

DOLPH, G. E. and R. L. KIRKPATRICK; 1979; Leaf size variation in Cook's Woods; I: PIAS; Miami.

DORAN, M. J. and R. R. HLAVEK; 1978; Investigations of the fish populations of the Indianapolis Waterway Canal System; W: Marian College Independent Study; Mario.

ERICKSON, H. T. and M. LITTLE; 1979; Cleistogamous and chasmogamous flower production in *Viola papilionaceae* in response to photoperiod; W: Purdue Prof. Erickson; Tippe.

FAHEY, T.; 1977; The biology of *Coprinus radians ozonium* and *oidium* and their interrelationships; O: Indiana State University J.D. Schoknecht; ALL Vigo.

FEUER, W. A. and G. S. BAKKEN; 1978; Thermal ecology of the communal nests of the eastern tent caterpillar, *Malacosoma americanum*, and the fall webworm, *Hyphantria cunea*; W: Indiana State University—Bakken; Vigo.

FINNI, G., J. D. WEBSTER and J. GAMMON; 1978; Environmental impact statements for additional units on PS7 power plants near Princeton and Cayuga.

FRAZER, D. A., and C. M. KIRKPATRICK; 1978; Parental and brood behaviour of emperor geese in Alaska; P: Wildfowl; Gibson, Vermi.

GAMMON, J. R. and M. D. JOHNSON; 1978; Study of biotic community (benthos and fish) of two Indiana creeks. Under EPA contract; W: EPA Grant; MANY Morga.

GOFF, R. J.; 1973; Intraspecific variation and its taxonomic implications in the parasitic mite, *Androlaelaps fahrenheitzi* (Acarina: Laelapidae); T: Ph.D. in progress, Indiana State University, John O. Whitaker, Jr.; MANY, Vigo, Tippe, Newto, Sulli, Clay, Parke, Posey, Marsh, StJoe (in order of decreasing importance).

- GOODMAN, J. D.; 1978; Systematics, ecology and parasitology of trematodes and molluscs; W: Prof. J. Goodman, Anderson College; Madis, Others = Southern Indiana Counties.
- HALE, A. M.; 1978; Chestnut blight in Porter County, Indiana; W: Valparaiso University, G. Hicks; Porte.
- HUNT, L-M.; 1979; Observations of the habits of *Lygaeus Kalmii angustomarinatus* (Hemiptera: Lygaeidae) in Southern Michigan; I: Great Lakes Entomologist.
- JOHNSON, G. D., A. W. MCINTOSH, and G. J. ATCHISON; 1978; The use of periphyton as a monitor of trace metals in two contaminated Indiana lakes; P: Bull. Environ. Contam. Toxicol., 19, 733-740.
- KLEMME, R.; 1978; An econometric yield response and forecasting model for corn in Indiana; T: Dept. of Ag. Econ., Marshall Martin; ALL.
- KNISLEY, C. B. and W. MOORE; 1977; The Cicindelidae (tiger beetles) of Indiana. Part 1. Collections in 1977 from various natural areas; O: Research Report to Dept. of Natural Resources on Research; MANY Porte, Lapor, Jaspe, Brown.
- KREKELER, C. H.; 1978; The biota of the Indiana Dunes National Lakeshore; W: School of Public and Environmental Affairs; IU Northwest, Mark Reshkin; Porte, Lake, LaPor.
- LISTER, R. M.; 1978; Application of the enzyme-linked immunosorbent assay to detecting viruses in soybean seed and plants; P: Phytopathology. October 78.; Tippe.
- MARTIN, M., B. MCCARL; 1978; The economic impacts of the possible withdrawal of pesticides as it relates to a typical Indiana farm; W: Martin, Purdue; MANY.
- MAYES, R. A., A. W. MCINTOSH, and V. C. ANDERSON; 1977; Uptake of cadmium and lead by a rooted aquatic macrophyte (*Elodea canadensis*); P: Ecology 58, 1176-1180.
- MCINTOSH, A. W., B. K. SHEPARD, R. A. MAYES, C. J. ATCHISON, D. W. NELSON; 1978; Some aspects of sediment distribution and macrophyte cycling of heavy metals in a contaminated lake; P: J. Environ. Qual., 7(3), 301-305.
- MORGAN, D. W.; 1978; A study of the effect of the Nipsco Michigan City Generating Station on salmonid migrations in Trail Creek, Indiana—fourth report and final report; E: Notre Dame's ABL for NIPSCO; LaPor.
- MUNSEE, J. R.; 1977; *Simithistruma filitalpa* W. L. Brown, an Indiana dacetine ant (Hymenoptera: Formicidae). P: PIAS 86:253-6; Vermi.
- PEYTON, T., A. MCINTOSH, V. ANDERSON and K. YOST; 1977; Aerial input of heavy metals into an aquatic ecosystem; P: Water, Air and Soil Pollution 5(4), 443-451.
- PINGER, R. R.; 1978; Vector biology of Culicidae (mosquitoes); Delaw Grant.
- RIEMENSCHNEIDER, V.; 1978; Computer data bank for storage of floristic data on Swamp Rose and Spicer Lake Nature Preserves; StJoe.
- RIEMENSCHNEIDER, V.; 1978; Flora and plant communities of Spicer Lake Nature Reserve; I: PIAS; StJoe.
- ROMANO, R. R., A. W. MCINTOSH, W. V. KESSLER, V. ANDERSON, and J. M. BELL; 1977; Trace metal discharges of the Grand Calumet River; P: J. Great Lakes Res., 3, 144-147.
- SCHILLING, E. E., JR.; 1978; A systematic study of the *Solanum nigrum* complex in North America; T: Indiana Univ. Charles Heiser; MANY.
- SEVER, D. M.; 1978; Female cloacal anatomy of *Plethodon cinereus* and *P. dorsalis* (Amphibia, Urodela, Plethodontidae); P: J. Herpetology 12:397-406; Parke, Montg.
- SEVER, D. M.; 1978; Male cloacal glands of *Plethodon cinereus* and *P. dorsalis* (Amphibia; Plethodontidae); P: Herpetologica 34: 1-20; Montg. Parke.
- STORMER, F. A., C. M. KIRKPATRICK, and T. W. HOEKSTRA; 1978; Hunter inflicted wounding of white-tailed deer; I: Wildlife Society Bulletin; Marti.
- SULLIVAN, J. F., B. R. MURPHY, G. J. ATCHISON, and A. W. MCINTOSH; 1978; Time dependent cadmium uptake by fathead minnows (*Pimephales promelas*) during field and laboratory exposure; P: Hydrobiologia 57(1), 65-68.
- SULLIVAN, J. F., G. J. ATCHISON, D. J. KOLAR, and A. W. MCINTOSH; 1978; Changes in the predator-prey behavior of fathead minnows (*Pimephales promelas*) and largemouth bass (*Micropterus salmoides*) caused by cadmium; P: J. Fish Res. Board Can. 35(4), 446-451.

TAMAR, H.; 1978; The movement groups of saltatory ciliates; P: J. of Protozoology, 25, 23A; ALL.

WEBSTER, J. D.; 1978; Winter Bird-population Study #14—Mixed pine and deciduous forest; P: American Birds, 32(1):27-28; Jeffe.

WENTSEL, R., A. MCINTOSH, and G. ATCHISON; 1977; Sublethal effects of heavy metal contaminated sediment in midge larvae (*Chironomus tentans*); P: Hydrobiologia 56(2), 153-156.

WENTSEL, R., A. MCINTOSH, and V. ANDERSON; 1977; Sediment contamination and benthic macroinvertebrate distribution in a metal-impacted lake; P: Environ. Poll. 14, 187-193.

WENTSEL, R., A. MCINTOSH, and W. P. MCCAFFERTY; 1978; Emergence of the midge (*Lironomus tentans*) when exposed to a heavy metal contaminated sediment; P: Hydrobiologia 57(3), 195-196.

WENTSEL, R., A. MCINTOSH, W. P. MCCAFFERTY, G. ATCHISON, and V. ANDERSON; 1977; Avoidance response of midge larvae (*Chironomus tentans*) to sediments containing heavy metals; P: Hydrobiologia 55(2), 171-175.

WILSON, K. S.; 1978; Orchidaceae of Indiana; W: Purdue—Calumet; ALL.

NECROLOGY

FAY KENOYER DAILY, Butler University

LLOYD BEESLEY

Near Cedar Grove, Indiana
April 9, 1911

Cincinnati, Ohio
April 23, 1977

Mr. Lloyd Beesley was born on a farm a mile from Cedar Grove, Indiana, April 9, 1911. He walked to grade school at Cedar Grove and attended White Water High School in Franklin County, Indiana. He could not afford college during the depression and went directly into farming. He had been interested in natural history and wildflowers from childhood, so after meeting a wildflower photographer about fifty years ago, he took up the hobby, too. His farm near Cedar Grove contained some beautiful woodland where he and his wife spent many hours studying and photographing wildflowers and wildlife.

Mr. Beesley's photography was excellent and his work reached the attention of authors and teachers. He and his wife gave illustrated lectures at Ohio and Indiana public schools, colleges, P.T.A. meetings and clubs. His work was used to illustrate lectures and articles in newspapers, magazines and books. Dr. Rickett's *Wildflowers of the U.S.*, Esther Kellner's *Out of the Woods*, William Thomas' *The Swamp and Rivers of the U.S.* are examples of these works.

Mr. Beesley joined the Indiana Academy of Science in 1965 on a family membership with his wife, Adele. That spring, they gave a beautifully illustrated lecture at the general meeting on *Wildflowers of Indiana*. A note in the program explained that Mr. Beesley took the pictures while Mrs. Beesley did the research and lecturing. Several papers were given jointly by them at fall paper sessions, too. They found over 100 species of wildflowers not previously reported for Franklin County, Indiana. These were color photographed. Over 500 species altogether were found in the county. An article in the *Indianapolis Star Magazine*, May 8, 1966, paid tribute to their accomplishments.

Mr. Beesley died April 23, 1977, of leukemia at Christ Hospital in Cincinnati, Ohio. He had enjoyed a good life, was a beloved husband and was well-liked by friends and neighbors. He lived by the Golden Rule.

PAUL ERNEST KLINGE

Indianapolis, Indiana
September 4, 1918

Bloomington, Indiana
April 25, 1978

Mr. Paul E. Klinge was a science educator born in Indianapolis, Indiana, September 4, 1918, of German ancestry. His education was obtained in Indianapolis where he attended Shortridge High School and received an A.B. degree from Butler University in 1939. He also attended Indiana Central College.

His teaching and professional career began in and around Indianapolis. After a brief stint as Library Assistant at Arsenal Technical High School from 1941 to 1942, he began teaching history at Ben Davis High School from 1942 to 1943. He was a biology teacher at Thomas Carr High School 1943 to 1957. In 1957 Mr. Klinge moved to Bloomington, Indiana, to serve as coordinator for school science at Indiana University, a program designed to help teachers better prepare students for college studies. Besides that work, he held a number of other administrative positions at the university through the years as well as being an assistant professor and later professor of education. He was associate director of science in the Indiana University Aerospace Center from 1963 to 1967; assistant dean and later associate dean for undergraduate development 1966 to 1969; assistant dean of research from 1965 to 1968; associate dean for research and advanced studies from 1969 to 1971; executive associate of the Indiana University Foundation from 1963 to 1972; and associate dean for administration for the Bloomington campus from 1969 to 1972. He was assistant to three presidents of Indiana University: Elvis J. Stahr in 1965, Herman B. Wells while he was interim president in 1968, and John W. Ryan from 1972 until 1978 when Mr. Klinge died.

Mr. Klinge received numerous honors and official positions in various organizations. He was a Ford Foundation Fellow from 1953 to 1954 and conducted a high school study institute at Indiana University in 1956. He served as editor of the *American Biology Teacher* from 1954 to 1969 and was president of the National Association of Biology Teachers in 1959 and was given a rare honor when he was made honorary member. He received the National Science Teachers Association outstanding teacher award in 1952 and was regional director in 1954 and on the board of directors in 1956 to 1958. He was a member of the American Institute of Biological Science Executive Committee from 1962 to 1964 and president of a Phi Kappa Phi local alumni chapter in 1960. He was a member on the executive committee of the Biological Science Curriculum Study from 1958 to 1963; consultant to the U.S office of Education Conference on Gifted Science Students in 1952. He was also fellow of the American Association for the Advancement of Science. He belonged to several other organizations: Kappa Delta Pi, national honorary society; Indiana Historical Society; National Education Association; Academy of Political and Social Science; Central Association of Science and Mathematics Teachers; and Association for Education of Teachers in Science. His research interests were in anthropology and mycology. He was the author of some educational films in biology and

authored or co-authored several books and numerous articles in biology and education. He was editorial director of Compton's *Dictionary of Natural Science* in 1966; co-editor of *Pollution*, published by the National Association of Biology Teachers in 1973; author of *Biology's Bright Future* in the *American Biology Teacher* (1, 1960); and author of *Newer Resources for Improving Instruction in Biology* (from the Department of Health, Education and Welfare Bul. OE 29039, 1963). Mr. Klinge is listed in *American Men and Women of Science*, *Indiana Lives*, *Leaders in Education* and *Who's Who in American Education*.

Mr. Klinge joined the Indiana Academy of Science in 1938. He presented an interesting paper at the fall meeting of 1951 on the potentialities for using physical anthropology or "somatotyping" in the classification of students according to associated temperament. It was hoped that this would be a way to appraise a child in order to improve his public education. From 1954 to 1972 hardly a year passed without Mr. Klinge's service on one or more of the following committees: Junior Academy, Science Education, Youth Activities, Indiana Science Fairs, Relation of the Academy to State and Science and Society. He was the Director of Public Relations from 1969 to 1972.

Paul Klinge died April 25, 1978, in Bloomington, Indiana. His health had deteriorated after October, 1977, when he suffered a heart attack. A statement by Indiana University President John W. Ryan pointed out that Paul Klinge had devoted a lifetime to the improvement of education and praised him as follows: "Those of us who knew him and who had the privilege of working with him will not forget his example of excellence. But more importantly, he will long be remembered for his steadfast service to his host of friends and to Indiana University."

BLANCHE MCAVOY

Mitchell, Indiana
September 11, 1885

Tulsa, Oklahoma
October 22, 1976

Dr. Blanche McAvoy was a retired ecologist and author at her death October 22, 1976. She was born at Mitchell, Indiana, September 11, 1885. She attended public school in Norwood, Ohio. She received an A.B. degree from the University of Cincinnati in 1909, M.A. from Ohio State University in 1912 and a Ph.D. degree from the University of Chicago in 1930. She spent the summer of 1916 at Columbia University.

Dr. McAvoy's professional service began with teaching assignments in Ohio Public Schools from 1909 to 1911. Then she returned to Ohio Public Schools to teach from 1914 to 1921 after serving as teaching fellow at Ohio State University from 1911 to 1914. Most of the schools in which she taught were in suburban Cincinnati.

Dr. McAvoy came to Indiana to teach at Ball State Teacher's College in 1921 where she taught until 1925. In 1925, she was also a teacher at Western College for Women, now an affiliate of Miami University of Ohio. She then went to Illinois State Normal College in 1926 and taught until retiring in 1954 as Professor Emeritus. A scholarship has been established there in her memory.

Dr. McAvoy joined the Indiana Academy of Science in 1921, the year she moved to Muncie, Indiana, to teach at Ball State Teacher's College. She presented three papers before the Academy meetings in 1923 and 1924. These were on *An Ecological View of Wet Waste Land*; lichens from Delaware County, Indiana; new material on teaching botany. She was also interested in cytology and taxonomy of spermatophytes. Dr. McAvoy was a member of our society for 55 years even though she was out-of-state most of the time (Emeritus Member at death).

Other societies to which Dr. McAvoy belonged were: American Association for the Advancement of Science (fellow), American Botanical Society, Ecological Society of America, Illinois Academy of Science, Sigma Xi, Sigma Delta Epsilon, Gamma Beta Upsilon (National Secretary-Treasurer) and Delta Kappa Gamma (local chapter president 1941 to 1943). She is listed in *American Men of Science*, *Visher's Indiana Scientists* and *Who's Who in the Midwest*.

When Dr. McAvoy retired in 1954, she returned to Cincinnati, but soon moved to a retirement home in Tulsa, Oklahoma. At that time, she presented part of her rose collection to the city rose gardens in Ault Park, Cincinnati, where a sign was erected in appreciation of the gift. She grew 300 different kinds of roses and was particularly fond of the old-fashioned varieties.

Dr. McAvoy was 91 years old when she died at Tulsa, Oklahoma. The success of her years is well recorded above. She was modest, kind and extended a helping hand to all.

DARL F. WOOD

North Manchester, Indiana
November 12, 1892

Mishawaka, Indiana
March 17, 1978

Mr. Darl F. Wood was born in North Manchester, Indiana, November 12, 1892. He was educated in this state and graduated from Chester Township, Wabash County, Indiana, High School in 1910. He received an A.B. degree from Indiana University in 1923 and an M.S. degree from Notre Dame in 1936.

Mr. Wood taught mostly chemistry and physics in high school. His teaching experience began in Kosciusko County, Indiana, from 1911 to 1912; continued in Wabash County, Indiana, 1912 to 1913; Syracuse, Indiana, from 1913 to 1915; Burket, Indiana, from 1915 to 1917; Casey, Illinois, from 1917 to 1919; Jerseyville, Illinois, from 1919 to 1921; Hammond, Indiana, 1921 to 1924; and Mishawaka High School at Mishawaka, Indiana, from 1924 to 1959 (36 years).

At Mishawaka, he became Science Department Chairman. He also organized the Mishawaka High School Marching Band in 1925. He was a member of the Masonic Lodge and Ancient Accepted Scottish Rite, recipient of the Boy Scout Beaver Award, and was a ham radio operator since 1919.

Mr. Wood joined the Indiana Academy of Science in 1934 and was an Emeritus member at death. His interests were in Geology, Physics and Chemistry Sections. He was the only sponsor ever listed in the *Proceedings of the Indiana Academy of Science* for the Mishawaka High School Club, member of the Junior Academy, which dropped its membership at his retirement. He was also a member of the Junior Indiana Academy of Science Council for several years. The Mishawaka High Science Club was active and brought exhibits to the Junior Academy meetings.

Mr. Wood died after a long and useful life of a brief illness in Mishawaka, Indiana, March 17, 1978. A living memorial at the Masonic Home in Franklin, Indiana, will be established in his name.

INDIANA ACADEMY OF SCIENCE NEW MEMBERS—1978

- MR. SCOTT ADAMS, 140 Coddington, West Lafayette, IN 47906
MR. TOM ALDRED, Box 483, Lapel, IN 46051
MR. BRIAN D. ANDERSON, Department of Biology, University of Louisville
MR. LLOYD A. ANDERSON, 307 North Pennsylvania Street, Indianapolis Newspapers, Indianapolis, IN 46206
MR. CURTIS H. AULT, 611 North Walnut Grove, Indiana Geological Survey, Bloomington, IN 47401
MR. ROBERT L. BALL, Rt. 14, Box 253, Bedford, IN 47421
MR. STEPHEN D. BARNARD, 635 Bloor Lane, Zionsville, IN 46077
MISS SUE BECKER, 424 Raines Street, Plainfield, IN 46168
DR. WILLIAM BERANEK, JR., Holcomb Research Institute, Butler University, Indianapolis, IN 46208
MR. JAMES C. BIDDLE, North White High School, Monon, IN 47959
MISS CHARLENE BLACK, 2001 Roosevelt Street, Gary, IN 46404
MR. R. MICHAEL BRATTAIN, 3206 Longlois Drive, Lafayette, IN 47904
DR. KENNETH R. BREHOB, 121 Earth Sciences, Notre Dame, IN 46556
DR. RANDALL E. BROWN, Department of Biology, Huntington College, Huntington, IN 46750
DR. CHRIS BUETHE, Department of Secondary Education, Indiana State University, Terre Haute, IN 47809
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