

Proceedings of the Iowa Academy of Science

Volume 69 | Annual Issue

Article 5

1962

Reports - The Board of Directors; Financial Statement; Staff Reports; Committee Reports; Changes in By Laws

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Recommended Citation

(1962) "Reports - The Board of Directors; Financial Statement; Staff Reports; Committee Reports; Changes in By Laws," *Proceedings of the Iowa Academy of Science*, 69(1), 14-37.

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Botany—Waldo Walker, Grinnell
 Chemistry, inorganic and physical—E. B. Buchanan, Iowa City
 Chemistry, organic and biological—Kenneth Kraus, Dubuque
 Conservation—Earl Rose, Des Moines
 Geology—D. Biggs, Ames
 Mathematics—Lyle E. Pursell, Grinnell
 Physics—Gordon Danielson, Ames
 Zoology—Margaret Watson, Indianola
 Psychology—George G. Karas, Ames

President Leu called for adjournment at 2:05 p.m.

The Academy reconvened at 8:00 a.m. to hear the annual Academy Address, "The Fringes of Science," delivered by Dr. Mason R. Boudrye, Executive Secretary of the Minnesota Academy of Science.

Dr. Adrian Daane, Atomic Energy Commission Ames Laboratory, presented on Saturday forenoon an invited address entitled, "The Rare Earth." The 1962 meeting was closed with a report by the Director of the Iowa Visiting Scientist Program, Dr. T. R. Porter, State University of Iowa.

D. C. FOLEY, *Secretary-Treasurer, pro-tem*

Report of the Board of Directors

The Board of Directors met with representatives of Wartburg College at Waverly, Iowa, on October 26, 1961 to organize the program of the seventy-fourth session. At this meeting Dr. Paul F. Romberg resigned as Secretary-treasurer of the Academy. Dr. Romberg has since left Iowa State University to become Dean of Instruction at Chico State College. The Board of Directors elected D. C. Foley as Secretary-treasurer pro tem.

The regular meeting of the Board was called to order by President Hulbary at 3:05 p.m., April 12, 1962, at Wartburg College, Waverly, Iowa. All Board members were present.

Reports of the Secretary-treasurer, Auditing Committee, Librarian, Editors, and the six standing committees were read and accepted.

The following actions were taken by the Board:

1. The Interim Committee for management of the Parish Farm was authorized to make further improvements and repairs as needed.

2. Recommended that the changes, suggested by Editors T. E. Rogers and Elizabeth Rogers, in Article III and V of the by-laws be presented at the annual business meeting for approval by the members.

3. Authorized the Science Talent Search Committee to proceed with 1963 program assuming sponsorship by the Iowa Academy of Science.

4. A proposed budget was adopted.
 5. Approved the following meeting dates and places—
 1963 Ames, April 19-20
 1964 Decorah
 1965 Pella
 6. A motion that the Science Teaching Section not be reactivated at this time was passed.
- The Board adjourned at 9:20 p.m.

PAUL F. ROMBERG, *Secretary*
 D. C. FOLEY, *Secretary pro tem*

Financial Statement

December 31, 1961

Checking Account

GENERAL OPERATING FUND	
Carried forward from December 31, 1960	\$ 2,236.08
Receipts	3,313.55
Dues	\$ 2,505.00
Exchange of scientific documents	316.65
Interest on bonds	100.90
Gift	1.00
AAAS Grants	390.00
Total	\$ 5,549.63
EXPENDITURES	
Postage	236.24
Secretary's clerical help	120.75
Freight	2.30
Printing	609.00
Expenses on reprints	125.88
Iowa Junior Academy of Science	75.00
Refund on exchange of scientific documents	12.00
Telephone calls	20.80
Clarence H. Lindahl, Honorarium	66.67
Dean C. Foley, Honorarium	33.33
D. C. Stroud, Honorarium	50.00
Shipping bags	18.35
Mileage	155.49
1961 AAAS delegate expenses	100.00
1961 Academy meeting	203.50
Science Teaching Committee expense	85.70
Section expenses	119.40
Academy Conference	30.20
J. L. Carter—AAAS Research Grant	300.00
Sister Alice Marie Fox—AAAS Research Grant	90.00
Bank charges	2.25
Secretary's supplies	3.28
Total	\$ 2,460.15
Balance	\$ 3,089.48
PARISH MEMORIAL FUND	
Carried forward from December 31, 1960	\$ 793.91
Rent on farm	3,600.00
Total	\$ 4,393.91

EXPENDITURES

Taxes	433.92
Remodeling of house	1,008.41
New garage	1,194.00
Maintenance	135.82
Telephone calls	17.70
Mileage	39.13
Attorney's fee	360.00
Insurance on farm buildings	32.10

Total	\$ 3,221.08
Balance	\$ 1,172.83

Total in Checking Account \$4,262.31

(Balance on Dec. 31, 1961, in Academy Account,
Union Story Trust and Savings Bank, Ames, Iowa.)

Bonds and Savings

BONDS

U. S. Savings Bonds, Series G	\$ 2,000.00
U. S. Savings Bonds, Series K	3,000.00

Total \$ 5,000.00

SAVINGS

Balance in Savings Account, Dec. 31, 1960	\$ 2,141.32
Interest to Dec. 31, 1961	64.70

Balance, Dec. 31, 1961 \$ 2,206.02
Total of Bonds and Savings \$7,206.02

Breakdown of Total Assets

CHECKING ACCOUNT

General Operating Fund	\$ 3,089.48
Parish Memorial Fund	1,172.83

BONDS AND SAVINGS

Reserve Fund	2,000.00
Endowment Fund	4,856.02
Herbert Osborn Revolving Fund	350.00

Total \$11,468.33
Total assets, Dec. 31, 1960 10,171.31

Gain during fiscal year 1961 \$ 1,297.02

D. C. FOLEY, *Secretary-Treasurer, pro tem*
PAUL F. ROMBERG, *Secretary-Treasurer*

Report of the Auditing Committee

We have examined the Iowa Academy of Science financial statement for period ending December 31, 1961 and find the accounts in good order. We have personally viewed the assets.

ARTHUR M. GOWAN
FRED ROBERTSON

Report of the Editor

On March 12, 1962, copies of Volume 68, of the Proceedings of the Iowa Academy of Science for the year 1961, were placed in the mail for distribution. Graphic Publishing Company, of Lake Mills, Iowa, printed the 1,920 copies. The practice of providing one hundred free reprints for authors from additional unbound copies of the book was continued this year at a somewhat greater cost than in previous years. It is suggested that the Board of Directors consider whether or not they wish to continue this procedure.

The editor wishes to express his appreciation to Dr. Clarence Lindahl, Dr. D. C. Foley, and Mr. S. E. Tennant, State Superintendent of Printing, as well as to authors and section chairmen, for their contributions to the publication of this volume.

T. EDWIN ROGERS, *Editor*

Report of the Librarian

In 1935 an agreement was made between the Iowa Academy of Science and the Library of Iowa State University through which the Library became the distributor of the *Proceedings* and the depository for material received in exchange for the *Proceedings*.

As an indication of the increased interest in the *Proceedings* and the Academy since that time, volume 43 for 1936 was distributed to 620 members, 158 exchanges, and 12 subscribers for a total of 790 copies; while 25 years later, volume 68 for 1961 has been distributed to 1,433 members, 403 exchanges, and 29 subscribers which with the 31 gifts makes a total of 1,896 copies.

Thirty-one copies of volume 68 have been sent as gifts—mainly to Iowa libraries. However, a few copies are sent to indexing journals either as gifts or, where possible, on an exchange basis. *Mathematical Review*, *Physics Abstracts*, *Chemical Abstracts*, *Biological Abstracts*, *Psychological Abstracts*, *Bibliography of Agriculture*, and perhaps other journals regularly include abstracts from the *Proceedings*.

Copies of volume 68, 1961, were very late in arriving from the printer this spring, and distribution was not completed until early April whereas it is usually done in late December. Moreover, the number of copies received was not sufficient to fulfill all commitments. Sixteen institutions on the Library's exchange list have not yet received copies because of this shortage, and there is, of course, no reserve stock available for filling future orders and exchange requests. It is hoped that those members who are willing to do so would return their *Proceedings* to

the University Library at Ames where they would be invaluable in helping overcome the shortage.

The following statistics indicate the distribution of volume 68, 1961:

Sent to members	1,433
Sent on exchange	403
Sent on subscription:	
Standing orders	20
Special orders	9
Gifts to libraries, government agencies, and abstracting journals	31
Total copies distributed	1,896

ROBERT W. ORR, *Librarian*

Report of the Committee on Finance and Endowment

The financial statement shows a gain of \$1,297.02 in total assets. The amount itself is correct, but, on its face, it is apt to be quite misleading, as a scrutiny of the statement reveals.

First, the expenditures do not include those usually made in connection with the publication of the *Proceedings*: Editor's honorarium, expenses of the Editor's office, outlay for reprints, etc. Encumbrances for 1961, on December 31, totaled \$984.00. (They remained unpaid because of a change in printers and a consequent delay in the date of publication.) Further, a gain of \$378.92 (from \$793.91 to \$1,172.83) occurred in the Parish Memorial Fund. Finally, the interest on savings was \$64.70. Thus, a *loss* (deficit) of \$130.61 in the General Operating Fund is indicated.

This deficit is accepted by the Committee with complacency. It signifies that the Academy, after several years of accumulating surpluses, has begun to spend an amount commensurate with its regular annual income from dues, interest, and the like.

The management of Academy's farm and of income from it meets with full approval. The balance of \$1,172.83 in the Parish Memorial Fund, despite the spending of over \$3,400.00 to renovate the house and build a new garage, signifies that special efforts must soon be made by the Board of Directors to devise ways of spending the net income from the farm (around \$2,400.00 per year) fruitfully, in behalf of science.

VICTOR W. BOLIE
IRVING H. GERKS
LELAND P. JOHNSON
ROY A. NELSON
FRANK C. PENNINGTON
DON LEWIS, *Chairman*

Report of the Membership Committee

On January 1, 1962, there were 1775 members in the Iowa Academy of Science. These included 1 honorary fellow, 31 emeritus fellows, 15 life fellows, 688 fellows, and 1,040 associates and student associates. During the year ending April 14, 1962, the committee elected 63 associates and 134 student associates. The following were nominated by the committee and approved by the Academy: 1 transfer from life fellow to emeritus fellow, 8 transfers from fellow to emeritus fellow, 4 transfers from associate to fellow, and 13 elected as fellows.

The names of honorary fellows, emeritus fellows, life fellows, and new members of all classes are listed below:

HONORARY FELLOWS

Conrad, Henry S. (07G) Lake Hamilton, Florida

EMERITUS FELLOWS

Aitchison, Allison E. (08E)	State College, Cedar Falls
Allen, Edward S. (31A)	Grinnell College, Grinnell
Baker, J. Allen (09C)	Simpson College, Indianola
Bakke, Arthur L. (11G)	Iowa State University, Ames
Bartsch, Paul (1895F)	Lorton, Virginia
Boyd, Mark F. (07F)	Rockefeller Foundation, Tallahassee, Fla.
Buchanan, R. E. (02G)	Iowa State University, Ames
Cable, E. J. (06E)	State College, Cedar Falls
Chittenden, E. W. (20A)	Washington, D. C.
Coss, James A. (19C)	Morningside College, Sioux City
Culbertson, J. B. (22C)	Cornell College, Mt. Vernon
Dodd, L. E. (14B)	Port Angeles, Washington
Doty, H. S. (12EC)	Simpson College, Indianola
Erwin, A. T. (1900G)	Des Moines, Washington
Evans, John E. (22I)	Iowa State University, Ames
Caessler, William G. (16C)	Iowa State University, Ames
Geiser, S. W. (15F)	Southern Methodist University, Dallas, Texas
Gilman, J. C. (21G)	Iowa State University, Ames
Gouwens, Cornelius (21A)	Iowa State University, Ames
Getchell, R. W. (07C)	State College, Cedar Falls
Graber, M. E. (20AB)	Morningside College, Sioux City
Gwynne, Charles S. (27E)	Iowa State University, Ames
Hawk, Grover C. (17F)	Hedrick, Iowa
Heitkamp, George W. (17BG)	Loras College, Dubuque
Jacques, H. E. (16F)	Iowa Wesleyan College, Mount Pleasant
Kemmerer, Mrs. Mabel C. Williams (04I)	Claremont, California
Knight, Harry H. (25F)	Iowa State University, Ames
Lantz, C. W. (22G)	State College, Cedar Falls
Levine, Max (25G)	Territorial Dept. of Health, Honolulu, Hawaii
Martin, John (12G)	Iowa State University, Ames
Morrison, John W. (07xG)	Alta
Newell, W. S. (16I)	Coe College, Cedar Rapids
Paddock, F. B. (24F)	Iowa State University, Ames
Patterson, T. L. (20F)	Kerckhoff Marine Laboratory, Corona del Mar, California
Peterson, Ben H. (21C)	Coe College, Cedar Rapids
Plagge, Herbert J. (13B)	Iowa State University, Ames
Sherman, L. P. (20C)	Grinnell
Wellhouse, W. H. (22F)	Iowa State University, Ames
Witschi, Emil (30F)	State University, Iowa City
Wylie, C. C. (26A)	Springfield, Missouri

LIFE FELLOWS

Barnes, M. E. (32C)	State University, Iowa City
Burton, Mrs. Vernon Devine (46G)	Mankato, Minnesota
Hartzell, Albert (18F)	Boyce Thompson Institute, Yonkers, New York
Jones, David T. (23F)	Bourbonna's, Illinois
Kopf, Kenneth (31G)	San Francisco, California
Kreider, Orlando C. (32A)	Iowa State University, Ames
Martin, G. W. (24G)	State University, Iowa City
Miller, Wayne L. (57C)	Burlington
Palmer, Edward C., Jr. (47I)	Sioux City
Pilicer, Abraham (57CF)	Cedar Rapids
Smith, Helen F. (35A)	Iowa State University, Ames
Wenberg, Edwin H. (38E)	Caracas, Venezuela
Wilson, L. R. (35EG)	University of Oklahoma, Norman
Yos, David A. (53G)	Burlington

TRANSFERS FROM ASSOCIATE TO FELLOWS

Hanson, Roger J.	Jeske, Walter E.
Hutton, Edward L.	Mateos, Manuel

NEW FELLOWS

Barnes, Robert, Jr., William Penn College, Oskaloosa	Robertson, Timothy J., Cornell College, Mt. Vernon
Baron, Robert R., Dr. Salsbury's Laboratory, Charles City	Roth, L. E., Iowa State University, Ames
Coble, Ronald W., State University, Iowa City	Smith, May Alice, William Penn College, Oskaloosa
Graves, Donald J., Iowa State University, Ames	Staniforth, David W., Iowa State University, Ames
Horowitz, Jack, Iowa State University, Ames	Swenson, Jack S., Grinnell College, Grinnell
Laufersweiler, Joseph, Drake University, Des Moines	Willingham, Haskell E., Dr. Salsbury's Laboratory, Charles City
Olofson, Charles, Oskaloosa	

NEW ASSOCIATES

Adams, Doyle D., Sumner	Dodge, Christopher H., State University, Iowa City
Adams, Richard D., Upper Iowa University, Fayette	Erdmann, Gayne G., Iowa State University, Ames
Anderson, Orieda H., Clinton	Frazier, Kenneth E., Boone
Aspelmeier, William H., Wapello	George, Glenn M., Nashua
Barrigar, John, Marshalltown	Glenn, George R., Iowa State University, Ames
Bedish, John W., Iowa State University, Ames	Goss, Robert C., State College, Cedar Falls
Beneke, R. J., Dr. Salsbury's Laboratory, Charles City	Graves, Wayne H., Marion
Brady, Eugene R., Perry	Gunnink, Elwin J., Rockwell City
Brown, Maybelle, Decorah	Harmon, Donald A., Aplington
Buckley, Robert A., Webster City	Hase, Donald H., State University, Iowa City
Cagle, Joseph W., Jr., State University, Iowa City	Heilsch, Charles W., Iowa State University, Ames
Calderwood, F. Wayne, Iowa State University, Ames	Hofer, Robert J., Ames
Calvert, Calvin L., New Hartford	Hughes, Arthur E., Waterloo
Campbell, William L., Mason City	James, Donald D., Iowa State University, Ames
Celander, D. R., Des Moines	Jensen, Jens A., State College, Cedar Falls
Chapman, Orville L., Iowa State University, Ames	Kenaston, Richard R., Spencer
Cooper, William C., Simpson College, Indianola	Kent, Neil D., Grinnell College, Grinnell
Cox, A. H., Newton	
Daane, Calvin, J., Tempe, Arizona	
Darland, George W., Herrin, Illinois	

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| Klapper, Gilbert J., State University
Iowa City | Schaefer, Donald A., Bettendorf |
| Landers, Roger Q., Iowa State
University, Ames | Schoumacher, Roger, Independence |
| McDermott, Jerome F., Greenc | Seifert, George, Iowa State Univer-
sity, Ames |
| McGill, James J., State Center | Sister Marion, R.S.M., Burlington |
| Meyer, John S., Wartburg College,
Waverly | Sister Mary Paschal Hocum, Clinton |
| Moorman, Robert B., Iowa State
University, Ames | Sloan, Raymond Lee, Cedar Falls |
| Nagel, Margaret, Waterloo | Southern, William E., Northern
Ill. Univ., DeKalb, Illinois |
| O'Connell, Robert G., Dubuque | Timmer, Pete E., Greene |
| Pippert, David L., Upper Iowa
University, Fayette | Voigts, Larry, Garner |
| Reeves, Ralph R., Winterset | Ware, Kenneth D., Iowa State
University, Ames |
| Roderick, Gilbert L., Iowa State
University, Ames | Welker, Bill D., Onawa, Iowa |
| Rosa, Dean M., Goldfield | Whitford, Stanley D., Jr., Joliet,
Illinois |
| Sandin, Roger J., Des Moines | Worf, Gayle L., Iowa State Univer-
sity, Ames |

NEW STUDENT ASSOCIATES

Gary S. Anderson, Bonnie Lou Baker, Romaine H. Barber, Harlan L. Bell, John D. Birong, Bruce B. Black, Dean Blinn, Samuel P. Bowen, Herbert P. Brisham, David Brockman, Barbara Z. Buchwald, Neal E. Busch, James E. Carter, David Castaner, Marjorie Christiansen, George William Claus, Dennis Corwin, Roger L. Crane, Glenn K. Detro, Phillip R. Dice, Richard A. Dirks, Robert G. Dorothy, Patrick J. Doyle, Ryan W. Drum, Lawrence Eickstaedt, Sue Etheridge, Daniel C. Fahrlander, Raymond F. Finn, Paul Kregloh Flood, Robert Frazier, Leigh H. Fredrickson, Barton D. French, Joan Fruscher, Theodore Frostman, Sister Mary Sharon Geraghty, RSM, Ken Gill, Lois C. Grant, James Gray, Joseph S. Grimes, Bernard Griswold, Rozetta Rae Hallcock, Spenser L. Harnack, Bud Harris, Mary Helen Hart, Judith E. Heady, John B. Hervey, LaVerne Herzmann, Edward J. Hill, Richard S. Hoodley, Virgil K. Howe, Tseng-Chieng Huang, Kempton L. Huehn, Robert Huelskamp, Jack L. Janousek, Richard H. Jensen, Lloyd A. Johnson, Robert W. Johnson, Penelope Jones, Vernetta Jonson, David C. Kane, Larry Kappers, Gerald Kaufman, Buddy L. Kintz, Gene D. Knight, Darwin Knochenmus, Dennis J. Koopman, Rolland Krieger, Monte Kruse, Galen Kuhens, James F. Kunkel, Eivind B. Lillehoj, David O. Lomen, Alexander MacDonald, Allen MacKnight, Ross A. Madden, Charles N. Mahlman, Kesaree Malati, Jerry J. Marley, Jackson Marr, David A. McBlain, Harold L. McConnell, Jack D. McConnell, A. Kenneth Moore, Ronald W. Moses, Jr., Alan Munson, Patricia Ann Oliver, O. Frederick Onasch, Ralph E. Otto, Glen G. Penniman, Terry Penniman, Donald M. Perry III, Angeline Petersen, Edward A. Peterson, Gaylon Avron Peyton, Damian R. Pieper, James R. Pilson, Richard Pletcher, Dean D. Preston, Jr., Arlo Raim, Sandra Reiners, Karl V. Rinehart, Darwin Rosenquist, Jon Ryan, Donovan F. Sanderson, Janice Sarsgaard, Jeffrey Schabillon,, Gene Schaeffer, John Edward Schlicher, Michael Schulhof, Patricia Schwirian, John Shehan, Robert Sherman, Arden R. Shindoll, Martin Sievers, Jr., David L. Sirois, Joseph J. Snoble, Roslind Spooner, Daniel Steffenson, Paulette Steiner, Gary L. Stellmach, Robert V. Stevens, Beverly Stockton, Eugene F. Stoermer, Gary L. Strohmeier, Walter V. Thomas, L. W. Thompson, Richard Tonnesen, David L. Trauger, Larry A. Walters, William E. Walther, Shirley Ann Wehde, Russell Wiley, James Wolfson, Steve J. Zyzanski.

ARTHUR J. BOSCH
H. L. DEAN
KARL E. GOELLNER
B. F. GRAHAM
IRA J. GWINN

GEORGE HORTON
O. C. KREIDER
HAROLD SWANSON
MARY M. VINJE
WILLARD J. POPPY, *Chairman*

Report of the Committee on Science Talent Search

On April 1, 1961, notices of the Sixteenth Iowa Science Talent Search were sent to all the high school science teachers in the state. In November a second notice was mailed along with the Iowa Science News Letter, in cooperation with the Iowa Junior Academy of Science. During 1961, science teachers in 72 schools secured 276 sets of examination materials for participation in the national and state, and 69 completed entries reached Washington, D. C., before the deadline, December 27. Six entrants from Iowa received national honorable mention.

On February 18 the entries were returned to Iowa. After individual examination of the papers the Science Talent Search Committee met at Grinnell College, March 24, and selected fourteen honorees for 1962. The Sixteenth Iowa Honor Roll is as follows:

- *1st place—\$300—Gary Paul Wolfsberg, 2348 Linden Drive, S.E., Cedar Rapids, Iowa; sponsor, Dwight A. Anderson, Washington High School, Cedar Rapids, Iowa.
- *2nd place—\$200—David William Mineck, 133 21st St. S.W., Cedar Rapids, Iowa; sponsor, Joseph A. Stolar, Thomas Jefferson Sr. High, Cedar Rapids, Iowa.
- *2nd place—\$200—David Frank Morehouse, 300 Blunt St., Charles City, Iowa; sponsor, John Narveson, Charles City Comm. High School, Charles City, Iowa.
- *2nd place—\$200—Joan Brooks Wallace, 147 Tonawanda Drive, Des Moines 12, Iowa; sponsor, Rex T. Morrison, Roosevelt High School, Des Moines 12, Iowa.
- *3rd place—\$100—Betty Olga Birney, 429 51st St., Des Moines 12, Iowa; sponsor, Rex T. Morrison, Roosevelt High School, Des Moines, Iowa.
- *3rd place—\$100—Clarence Ray Burns, R.R. No. 3, Marion, Iowa; sponsor, Thomas Dochterman, Linn-Mar High School, Marion, Iowa.
- 3rd place—\$100—William Richard Tucker, 1524 Fairlane Drive, Bettendorf, Iowa; sponsor, Donald A. Schaefer, Bettendorf High School, Bettendorf, Iowa.
- 3rd place—\$100—Michael Lee Wonie, 1904 Central Ave., Bettendorf, Iowa; sponsor, Donald Schaefer, Bettendorf High School, Bettendorf, Iowa.
- 3rd place—\$100—David Lee Worcester, Route No. 2, Marion, Iowa; sponsor, Donald J. Tandy, Linn-Mar High School, Marion, Iowa.
- 4th place—\$ 25—Thomas Martin Bellaire, 3023 Nebraska St., Sioux City 4, Iowa; sponsor, Sister Mary Cecilia, O.S.F., Heelan High School, Sioux City, Iowa.
- 4th place—\$ 25—Frederick Charles Damm, 1440 25th St., Marion, Iowa; sponsor, Donald J. Tandy, Linn-Mar High School, Marion, Iowa.
- 4th place—\$ 25—James Henry Johnson, 716 College St., Cedar Falls, Iowa; sponsor, Oliver W. Eason, Cedar Falls High School, Cedar Falls, Iowa.
- 4th place—\$ 25—Lureta Jessene Kahler, R. R. No. 3, Oxford, Iowa; sponsor, Raymond B. Loecke, Oxford Community School, Oxford, Iowa.

4th place—\$ 25—Fred James Swift, 807 West Summit, Maquoketa, Iowa; sponsor, Henry J. Dickinson, Maquoketa Comm. High School, Maquoketa, Iowa.

* Honorable Mention in National Science Talent Search

Each recipient was presented with a certificate of his award on April 13 at a joint meeting of the Iowa Junior Academy of Science at Wartburg College, Waverly, Iowa. The cash scholarships will be paid when the recipients are enrolled in the college of their choice. All honorees have selected the school they hope to attend next year. Recommendations were sent to these schools pointing out that these students are worthy of scholarships and other concessions made to students who show exceptional promise in science.

The Clinton Corn Processing Company, who has financed this program for several years, has announced that they will discontinue their support at the completion of this Sixteenth Search. The Science Talent Search Committee and the Finance and Endowment Committee are seeking means of continuing this Talent Search program.

The Committee wishes to thank Clinton Corn Processing Company, a division of Standard Brands Incorporated, for financial support of the several Talent Searches including this, the Sixteenth Iowa Science Talent Search. Their support has greatly aided in establishing this program. Science Clubs of America furnished the examinations and other materials by which the contestants were judged. The Committee also thanks the science teachers who gave their time and energy to sponsor the contestants.

JOE D. WOODS, *Chairman*
 CHARLES F. ALLEGRE
 R. V. DREXLER
 GRANT O. GALE
 G. CHESTER LEU
 JOSEPH C. ROUTH

Report of the High School Relations Committee

The activities of the Iowa Junior Academy of Science for 1961-1962 began with the annual fall meeting of the Executive Council which met at East High School, Waterloo, on Saturday, October 7. The following were present.

Donald Gilson, President—Marshalltown
 David Morehouse, Vice-President—Charles City
 Dan Coon, President Elect—Washington
 Shirley Crowe, Secretary—Waterloo

Gary Barton, Treasurer—Des Moines
 David McCalley, Jr., Counselor—Cedar Falls
 Ruth Mahon, Director of Exhibits—Cedar Falls
 Frank Buxton, Senior Director Essays—Cedar Falls
 Walter Gohman, Director Publications—Cedar Falls
 Joan Fenner, Editor Newsletter—Cedar Falls
 Linda Hott, Assistant Editor—Cedar Falls
 D. C. Stroud, Executive Secretary—Des Moines
 Frank Starr, Chairman High School Relations—Waterloo

Ronald Gilson called the meeting to order with the reading of the secretary's and treasurer's reports. Two different funds are available for use of the Junior Academy and total approximately \$550. A general discussion followed concerning how these funds should be used in the years to come. Several ideas were suggested and the chairman of High School Relations Committee was directed to work out the details and submit to the Senior Academy. (See the recommendations at the end of this report.)

It was voted to increase the number of newsletters per year and to make subscriptions available to every member of each club free of charge. It was also moved and passed that mileage of 7 cents and one meal be paid to officers attending executive council meetings.

The 1961-1962 memberships of clubs enrolled in the Iowa Junior Academy of Science is as follows: (To be obtained at the Waverly meeting from the executive secretary, Dean Stroud.)

The total reported membership of students in the Iowa Junior Academy of Science exceeds four hundred and should be more at the time of the Waverly meeting because many clubs do not pay their dues until then.

The second mid-year conference of club officers and executive council members was held at State College of Iowa on January 6, 1962. Dr. James Culbertson of Cornell College, Mt. Vernon, gave the address, "D.N.A. Molecules," which was well received. Discussion groups were organized and valuable suggestions concerning the questions "How can the services of the I.J.S. be more effective to each club and individual club members?" and "How can club activities be more meaningful and important to club members?" were presented to the I.J.S. executive council.

A list of awards and clubs will be made available following the Waverly meeting to be included in this report. Members of the High School Relations Committee who continue to be active are Floyd Sturdevant of Ames, Dean Stroud of Des Moines and Frank Starr of Waterloo.

RECOMMENDATIONS:

1. That the Senior Academy approve the following appointments for 1962.

Senior Counselor, David McCalley—Cedar Falls
Junior Counselor, William Babcock—Webster City
Senior Director Essays, Sister Mary Martina, CHM—Des Moines

Director Publications, Walter Gohman—Cedar Falls

Director Exhibits, Ruth Mahon—Cedar Falls

Executive Secretary, Dean Stroud—Des Moines (last year to make 31 years. of service)

Assistant Executive Secretary, Frank Starr—Waterloo

2. That the Senior Academy approve the following appointments to the High School Relations Committee. This should enable the committee to function more effectively in services offered to the Junior Academy of Science.

Clifford McCallum, State College of Iowa (Ch. pro tem)

T. R. Porter, University of Iowa

Robert Yager, Iowa City

Vern Gunderson, Mason City

3. That the Senior Academy of Science increase its grant to \$150 for the financial support of the proposed increase of services which Junior Academy of Science must do for its members.

- (a) Relay requests for specific consultants to T. R. Porter who could then by either direct contact or by correspondence help students with their research problems.

- (b) Contact commercial companies, etc., for lists of surplus or outdated equipment which might be made available to members of the Junior Academy and to publish such a list in the J.A.S. Newsletter.

- (c) To arrange a field trip to something of a scientific interest in which several clubs could go by bus and visit and study together. A visiting scientist could conduct lessons, for instance, on geology or soils, etc., right in the field.

4. That the Senior Academy be commended for its policy of encouraging and providing the opportunity for its members to visit with the exhibitors at the annual spring meeting.

CLIFFORD MCCOLLUM, *Chairman*

D. C. STROUD

FRANK STARR

Report of the Committee on Conservation

Conservation in Iowa, 1961

When progress of our conservation programs in Iowa is viewed in light of overall needs, we must recognize that we have a tremendous job ahead. We believe, however, that 1961 can be viewed with considerable satisfaction.

Groundwater levels throughout most of the State continued the upward trend started in the fall of 1958. Some observation wells established new highs for a 20-year period of record. The water table at the end of 1961 was from one to three feet higher than it was at the beginning of the year. This higher water table is reflected by the increased levels in Iowa's lakes.

The increased stream flows were not entirely beneficial. Snowfall was particularly heavy in February and March, 1961, with many localities reporting the wettest March of record. Total snow depths ranged up to 27 to 28 inches. Rapid snow melt coupled with showers and a saturated soil produced serious flooding throughout most of north and central Iowa in late March and early April. On the Cedar, Shellrock, and Winnebago Rivers the worst floods of record occurred, and urban areas of Mason City, Charles City, Cedar Falls, Waterloo, Evansdale and Cedar Rapids were seriously flooded. Other communities suffered to lesser extent, and flood damages were quite severe to both primary and secondary roads and in rural areas where farmsteads were flooded. Much of the area was declared a disaster area by the Federal government to receive emergency Federal assistance. Localized thunderstorms in eastern Iowa in July and heavy precipitation amounts during the fall especially in southern Iowa caused additional localized flooding in those areas.

Two notable occurrences of flash floods were experienced during the year. On June 30th, six inches of rain fell in a 4-hour period on the Mad Creek drainage in Muscatine County. Three persons drowned and total damage was estimated in excess of a million dollars, mostly in Muscatine. On August 8th, in Cherokee County, up to 13 inches of rain fell in a 6-hour period. Local tributaries of the Little Sioux River, including Ashton Creek and Stratton Creek produced flash floods that drowned two persons and severely damaged local transportation routes, farmsteads and croplands.

The Iowa Natural Resources Council continued active in its field of water resources management. Additional storage studies were performed for low-flow augmentation by the proposed Red Rock, Saylorville and Rathbun Reservoirs. A preliminary flood hazard study was completed for the City of Bedford. Additional

coordination is being fostered to include flood hazard considerations and flood plain regulations in comprehensive city and county planning. The year was notable for the increased number of Federal water resource projects referred to the Resources Council (Table 1).

TABLE I

Proposed Water Resource Projects by Corps of Engineers, U. S. Army--
Referred to the Iowa Natural Resources Council, 1961

<i>Location</i>	<i>Stream</i>	<i>Type</i>	<i>Purpose</i>
Hawarden	Dry Run Creek	Levees and channel diversion	Flood control
Red Oak	East Nishnabotna River	Levees	Flood control
Guttenberg	Mississippi River	Levees	Flood control
Council Bluffs	Indian Creek	Reservoir	Flood control
Council Bluffs*	Carter Lake	Dredging	Recreation and navigation
Dubuque	Mississippi River (Dubuque to LeClaire)	Levees and flood walls	Flood control
Akron to Sioux City	Big Sioux River	Channel improvements	Flood control
Middle Decatur Bend to near Onawa	Missouri River	Oxbow development	Recreation and navigation
Van Meter	A tributary to Racoon River	Levee and channel improvement	Flood control
Bellevue, Clinton, Davenport and Keokuk	Mississippi River	Small boat harbors	Navigation and recreation

* No Federal participation recommended.

Hearings on the proposed straightening of the Big Sioux River permitted evaluation of wildlife and recreational values, which lead the Natural Resources Council, early in 1962, to refuse approval of this project.

Adequate rainfall throughout the growing season, except for June, reduced the need for irrigation in 1961. Streamflow was less than the protected flow in one small area in northwestern Iowa and irrigators had to cease withdrawing from streams in that area under the terms of their permit. Fortunately, the deficient flows occurred late in August and crop damages were small. Lack of adequate basic data on ground water and stream flow remains the greatest problem in administering the Water Rights Law.

Soil Conservation Service technicians, with the assistance of State Aids, are now servicing over 81,000 farmers in Iowa's 100 Soil Conservation Districts. Over 73,000 farmers are now district cooperators, 4,700 of whom were added during 1961. Soil and water conservation practices increased 30 percent over the previous year. Most of these increases were on permanent type practices. The increased volume of applied soil and water con-

ervation of farmers has been accomplished with less than a 2 percent increase in number of Soil Conservation Service technicians and aids.

The watershed protection program, which began in 1946 with the Little Sioux Flood Prevention Project, had 7 projects under construction in 1961 and approved 7 new projects. Iowa is now among the 7 top states in this activity.

The Soil Conservation Service has set up a radiological monitoring station in each county as part of a nation-wide study of radioactive fallout. Field trials were also initiated on the following plants as erosion control agents: (1) brown top millet, a summer annual for wild duck food; (2) blackwell switchgrass, a valuable waterway and wildlife cover plant; (3) field brome, a winter annual having good possibilities of a cover crop seeded after the last cultivation of corn; (4) intermediate wheat grass as a drought resistant species for waterways and areas of low fertility; (5) emerald crownvetch, a valuable bank stabilization plant that shows promise on droughty and calcareous soils for pastures; (6) autumn olive, a woody plant for wildlife; and (7) western sand cherry, a wildlife food plant.

An inventory of soil and water conservation needs, completed in 1961, showed that Iowa now has 27,000,000 acres of cropland, over 4,000,000 acres of pasture and over 2,000,000 acres of forest land. Of the cropland 2.97 million acres, or 11 percent, is Class I land with no problems which limit use. Over 15,000,000 acres of cropland have a dominant problem of erosion. Almost 11,000,000 acres of this, or 72 percent, are in need of treatment. 8,000,000 acres of cropland have a dominant problem of excess water of which 4.7 million acres, or 58 percent, need drainage treatment. Over 1,000,000 acres have a problem of unfavorable soil conditions of which 64 percent need treatment.

The following treatment is needed on 2.8 million acres of pasture: establishment or re-establishment of vegetative cover, 21 percent; improvement of pasture cover, 33 percent; erosion control measures, 8 percent.

Over 50 percent of the forest land needs stand improvement, 75 percent needs insect and disease protection, and about 3 percent is in need of erosion control measures.

Continued interest by farmers in woodland management was evident in that over 700 requests for assistance were received by State Conservation Commission district foresters. A new forestry project was established in Western Iowa with headquarters at Denison, Iowa, bringing the total number of field foresters to seven. To determine which species of pine is best suited for the loess soil, 5 species were planted on each of 29 experimental

plots in 14 western Iowa counties. Educational programs in forest and grassland fire prevention were most satisfactory. Due to favorable weather conditions and a successful program, as carried on by rural firemen, radio stations, newspapers, schools, youth and civic groups, and other agencies, there were only 9 reportable fires throughout the year. These fires burned only 22 acres of State and private lands.

Nineteen sixty-one was a banner year for Iowa's State Parks and Preserves. There were 7,304,929 visitor days estimated during the 1961 calendar year. This is an all time high for visitors to the 92 State Parks and Preserves. The greatest increase in activities occurred in the area of camping where 240,000 camper days were registered compared to 166,000 in 1960. An appropriation from the 59th General Assembly permitted much needed repairs and improvement of park and camping facilities.

Water levels in most of the natural lakes returned to near normal by mid-June of 1961, followed by slight to heavy losses by evaporation during the late summer. Spirit Lake and Storm Lake each entered the fall season about 30 inches below crest. In spite of the heavy snows during the late winter of 1961-62 only slight fish losses are expected. Only a small handful of marginal lakes were opened to promiscuous fishing due to low oxygen.

Routine lake surveys by the Conservation Commission indicated that fish populations were rather unsettled in a number of lakes that suffered extreme low water levels in the late 1950's. Some of these lakes will require several years of high water before more permanent fish populations can be expected. The major lakes appear to have normal to excellent fish populations with good reproduction of the important species. Surveys in Spirit Lake, for instance, indicated the second highest hatch and/or survival of walleye fry in the past 21 years, and that young and sub-adult perch are more abundant in West Okoboji Lake than at any time in the past 15 years. Iowa Cooperative Fisheries Research Unit studies at Clear Lake noted an increase in the length-weight condition of bullheads and an increase in insect larvae in the bottom muds. At least some of the muskellunge stocked in 1960 survived in both Clear and West Okoboji Lakes.

The need for better water quality for recreational uses has brought more problems in aquatic weed and algae control. During 1961 an enlarged program for the treatment and control of blue-green algae was initiated, financed largely through legislative appropriation. Nearly 40,000 pounds of copper sulfate were applied to about 6,500 acres of natural lakes during the months of July and August of 1961. A considerable expansion of

this program is foreseen for 1962. Experiments indicated that good control of rooted aquatic weeds in small areas can be secured by covering the surface with black polyethylene plastic.

Annual fishery inventories of the artificial lakes of southern Iowa were expanded in 1961 to include at least 3 sampling periods, spring, summer, and late fall. As a result of studies on effects of severe thermal stratification on fish and fishing, the location of the thermocline and depth of oxygen depletion are posted weekly at Red Haw Lake. Although this program is still in its infancy, the 5 percent of the anglers that used this information caught 8 times more fish than those who ignored the service. Tag returns through the first year of the study at Green Valley Lake revealed that anglers catch about 15 percent of the adult walleyes annually. The walleye has surpassed the largemouth bass in abundance and in numbers caught by anglers.

The Iowa Falls impoundment, from which fish were completely eradicated in 1960, was found to have higher game and commercial fish populations and lower forage fish population than prior to eradication. High water allowed commercial fish, especially carp, to invade the area in large numbers, bringing off a tremendous 1961 hatch. There was a heavy survival of the largemouth bass stocking, and the bluegills spawned in 1961. Net sets in Backbone Lake showed that crappies taken in the nets averaged 9.1" for white crappies and 8.7" for black crappies. These lengths compared with averages of 7.6" in 1956, before crappies were netted from the lake in an attempt to remedy an over-crowded condition.

Stream flows in central and western Iowa streams were notably above normal during 1961. Due to these high stages, winter fish losses were at a minimum even though the winter of 1961-62 has been abnormally severe. Rough fish, including carp, carp-suckers, and suckers made up 90 to 95 percent of the population and continued to have a depressing effect upon the well-being and numbers of game species. Channel catfish, most small and slow-growing, continue as the most abundant game species. Walleye pike populations appear below normal; smallmouth bass populations at approximately the same level as for 1960.

Studies have been inaugurated in the Missouri River and its tributaries, to determine major changes in the composition of the fish populations that may occur as a result of the Army Corps Engineers' channel stabilization work currently in progress. A number of important "cut-off" or "ox-bow" type lakes are being created in the Missouri River bottoms. These lakes range from 400 to 1,000 acres in size, and are created when broad sweeping curves of the river are cut off as the Engineers relocate

the channel. Most of the newly created lakes will be in the Iowa counties of Woodbury, Monona, and Harrison with a few being located on the Nebraska side of the channel. It is believed that these areas will be of great importance to anglers and waterfowlers of western Iowa.

On the Mississippi River, test netting, electro fishing and creel census continued according to schedule. Frequency analysis of lengths of walleyes and saugers indicated that there has been successful reproduction with no missing year classes. Attempts to find spawning grounds were unsuccessful, however. A small spotted gar, *Lepisosteus productus*, was collected by Thomas Wenke in the Mississippi River north of Keokuk during studies of the degree to which fish feed on mayfly naiads and caddisfly larvae. This is the first record of this species being collected this far north in the Mississippi, though its presence in state waters was suspected by Bailey (1956).

Serious drought in the Canadian prairies in 1959, 1960, and in 1961 have resulted in poor production of many species of wild ducks. The January 1962 inventory of waterfowl within the Mississippi Flyway indicated the mallard population was 38 percent below that of January, 1961, and 43 percent below the 12-year average. Four years ago more than twice as many mallards were recorded during the inventory. Canvasbacks made a slight gain this year, but remain at levels 46 percent below the long-term average. Lesser scaup and wood duck populations are considered normal or above, while the numbers of most miscellaneous species have declined. Geese populations are numerically in excellent shape with only a slight decline evident in some population segments. The production or survival of goslings was below average in 1961 in the far north. A new method of censusing wood duck populations through counts of birds at roosting areas is being developed and tested by the Iowa Cooperative Wildlife Research Unit.

Although quail populations were low because of the destructive 1959-60 winter and poor production in 1960, the 1960-61 winter was favorable and survival was better than the previous winter. In spite of a late, cold 1961 spring which delayed nesting, quail production was fairly good. Summer whistling-quail counts and the fall flush counts of quail indicated an increase of over 20 percent since 1960.

Spring population counts indicated that the 1961 brood stock of pheasants increased in the western half of the range and decreased slightly in eastern Iowa. Nesting activity in north central Iowa was delayed by cool temperatures during early spring. Pheasant production was normal or above normal in the south-

ern and western districts, but somewhat below normal in north central and eastern Iowa. Results of the statewide survey in August indicated an eight percent decline in the fall population. It was estimated that 1,100,000 cocks were harvested during the 35-day season.

Pinnated grouse or prairie chickens have not nested in Iowa since 1954. There are resident flocks in all adjoining states and occasional strays come into Iowa. The ruffed grouse population found in a few northeastern Iowa counties has apparently exhibited only minor fluctuations over the past few years. Drumming counts in Allamakee, Winneshiek and Clayton counties last spring indicated a population comparable to that found in average Wisconsin or Minnesota grouse range, one to three drums per 4-minute stop being heard on several of the better routes. Since the population remains relatively stable year after year, a limited hunting season might be held with no ill effect on the population.

In the winter of 1960-61, 39 wild turkeys, consisting of 19 gobblers and 29 hens, were stocked in the Yellow River State Forest in Allamakee County. These were wild-trapped birds of the Rio Grande subspecies from Texas. At least seven broods with 58 young were raised during the past summer. Most of the surviving birds banded into one large flock numbering around 45 birds during the winter of 1961-62. Wild turkeys are not new to Iowa, having been present in wooded areas when white men began settling the state, but they became extinct many years ago. No open hunting season is contemplated at present.

Cottontail rabbit populations remained relatively stable during 1961. The roadside index was 4.8 rabbits per 10 miles, with a 12-year average (1950-61) of 4.6. The age ratio of 2.3 juveniles per adult, which was below the 12-year average (2.6), indicated relatively poor production in 1961. Breeding was recorded for February 14 and 15, 1961, earlier than in previous years, doubtlessly reflecting favorable weather conditions during late winter. The jack rabbit population showed little change, and marketing of jack rabbits continued in northwest Iowa. Four white-tailed jack rabbits were taken near New Virginia in Warren County, extending the known range.

Squirrel hunting was better than normal in most parts of Iowa in 1961. Hunting conditions were generally good, with a minimum of windy and rainy days. Mast in the form of nuts and acorns were produced in all portions of the state.

A deer population of 14,155 was reported in the winter of 1961, with 1,155 in Pottawattamie County. This 1961 population was about 8 percent above the 1960 estimate and 25 percent

greater than the mean estimate for the preceding 5 years. Approximately 23,000 deer were present in fall 1961. Hunters harvested 5,364 deer in 1961, exceeding the previous record of 4,269 in 1960. An additional 832 deer were reported killed by traffic, illegal hunting, dogs, and miscellaneous agents in 1961. Traffic accounted for 677 of the deer. Studies by the Iowa Co-operative Wildlife Research Unit indicate that reproductive success of deer in Iowa is high. Three-fourths of the fawn does breed the first year, averaging 1.25 young per doe. Older does average 1.94.

A wild cat was reported from the Big Sioux Bottom north of Sioux City.

The Conservation Source Book, developed by the Iowa Conservation Education Association, for use in schools and by leaders in many youth organizations was turned over to the publisher, Iowa State University Press, and should be available for use by summer, 1962. The Iowa Academy of Science helped to sponsor the Source Book.

The Iowa Conservation Camp at Springbrook State Park held 3 three-week sessions in 1961 to provide primary and secondary school teachers with information and techniques in conservation education. Many agencies cooperated in the instruction. Two chapters of the Izaak Walton League (Anne Ken Chapter, Davenport, and Phil Fox Chapter, Fort Dodge, awarded scholarships to students in the fish and wildlife curriculum at Iowa State University, Ames. Enrollment in this new curriculum reached 85 in the fall of 1961. A Conservation Section was established in the Iowa Academy of Science after 55 to 60 persons attended each of the three sessions held as an experiment at the 1961 meetings. This section permits greater communication between various disciplines conceived with conservation.

For a number of years the Committee on Conservation has been concerned with the preservation of natural areas in the State, particularly the preservations of the remnants of virgin or near-virgin prairie. The number of prairie reserves under State Conservation Commission ownership and management was increased to four in 1961 with the purchase of the Cheeder Prairie in Guthrie County. The 25-acre tract is a remnant of the native prairie which developed on exposed Kansan till bordering drainages. The vegetation is about equally divided between lowland and upland prairie. The lowland prairie shows no evidence of disturbance, but the upland prairie shows some evidence of disturbance along its upper border. The tract differs from the other reserves in the parent material from which the soil was developed and in its location in another climatic region of the

state. It is within easy driving distance from Spring Brook Park, the location of the Iowa Conservation Summer School.

Management programs, based on research on Iowa prairies, have been in effect on the Hayden Prairie in Howard County and the Kalsow Prairie in Pocahontas County since their purchase in 1945 and 1948. Both of these prairies required a period of complete protection following their purchase, but for different reasons. The chief concern in the Hayden Prairie was the invasion of quaking aspen and pussy willow and an overabundance of prairie willow. These plants were killed by spraying while the prairie was left unmowed. The period of complete protection of the Kalsow Prairie was considered advisable because of the greater degree of disturbance of the prairie vegetation. Litter and duff accumulated on the two prairies during complete protection until they exceeded in dry weight the annual yield of the prairie vegetation and experiments showed that the growth of the vegetation was becoming retarded. The Hayden Prairie was burned in February, 1955 and the Kalsow Prairie after the snow melted in March, 1959. The vigor of the prairie plants, increased by the one complete burning, has been maintained at a high level on the Hayden Prairie by mowing and hay removal. A similar program is in effect on the Kalsow Prairie. Care is being taken that the frequency and season of hay removal be adjusted so that the management plan will be as favorable as possible for the development of animal wildlife as well as for the permanent maintenance of the prairie vegetation.

Permanent management plans for the Caylor and Cheeder prairies do not include burning, chiefly because their recovery does not necessitate a prolonged period of complete protection. The committee is continuing its program of locating available prairie areas, making preliminary studies and recommending to the Conservation Commission the purchase of the most suitable as reserves representative of the other principal soil associations and climatic regions of the state. The purchase of the Cheeder Prairie may be considered to be a precedent for the procurement of smaller reserves representative of regions of soil and climatic differences where larger tracts are not available or if funds are not sufficient for larger purchases.

State College of Iowa has secured a small prairie area to be maintained as a study area—the Butler Center Cemetery. Establishment of the first Iowa natural area under the Nature Conservancy in Warren County is reported elsewhere in this volume by Jack Carter.

The committee also points out that the term “Biological Monument” could appropriately apply to virgin or near-virgin wet-

lands as well as to prairies and other natural and irreplaceable features. Marshes were once a characteristic feature of the Iowa landscape providing valuable habitat for waterfowl and other animals and plants. Few untampered glacial marshes remain in the State. These should be set aside as preserves before they are lost forever.

Conservation is not something that is finally achieved—rather it is a goal for which we must always strive. Increased human population pressures, increased industrialization, increased urbanization, increased transportation and travel present a strong challenge to the preservation of wildlife, of clean waters, of fertile soil, of marshes, prairie, and woodland, of unique and interesting plants or animals in their natural environment, of areas where man can commune with nature and refresh his soul. Yet, we hold these values are essential in the fuller life which industrialization and increased opportunity for leisure activities helps make possible. Research, planning, wise management and continued vigilance are necessary if these resources are to be maintained against the increasing tide of human population pressures. The Iowa Academy of Science with its broad basis of membership and its opportunity for interdisciplinary cooperation has a special responsibility in this Conservation. All Iowa has a vital responsibility.

J. M. AIKMAN
 R. D. BULLARD
 M. A. ELLERHOFF
 H. G. HERSHEY
 F. H. MENDELL
 E. P. POLDER
 E. B. SPEAKER
 K. D. CARLANDER, *Chairman*

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Report of the Resolutions Committee

1. BE IT RESOLVED that the Iowa Academy of Science express its thanks to Professor Elmer W. Hertel and to the other members of the local Committee on Arrangements and to Wartburg College for the excellent accommodations and hospitality provided for this meeting.
2. BE IT RESOLVED that the Iowa Academy of Science express its appreciation to its president, Professor Robert

- L. Hulbary, and the members of the Board of Directors for their careful preparation for this meeting.
3. BE IT RESOLVED that the Iowa Academy of Science express its thanks to all officers, section chairmen, and discussion leaders and to those presenting lectures and papers, for their efforts in preparing and presenting the excellent program of this meeting.
 4. BE IT RESOLVED that the Iowa Academy of Science express its appreciation to Professor T. Edwin Rogers and the Editorial Board for their fine work in the publication of Volume 68 of the *Proceedings of the Iowa Academy of Science* and to all standing and special committees for their contributions to the work of the Iowa Academy of Science.
 5. BE IT RESOLVED that the Iowa Academy of Science express its gratitude to the Clinton Food Processing Company, Division of Standards Brands, Inc., for the support it has given the Iowa High School Scholarship Award Program and to Professor J. D. Woods, Drake University, and his committee, for carrying on the Iowa Science Talent Search.
 6. BE IT RESOLVED that the Iowa Academy of Science express its thanks to the scientists who have participated in the Iowa Visiting Scientist Program, to the institutions and industries who have supplied these scientists, and to Professor T. R. Porter, Director of the Iowa Visiting Scientist Program, for his efficient administration of this project.
 7. BE IT RESOLVED that the Iowa Academy of Science express its appreciation to the Iowa section of the American Chemical Society and to the industry of Iowa for its support of the Iowa Science Teachers Award.

H. L. DEAN

W. S. WALKER

C. G. McCOLLUM, *Chairman*

Changes to Article III (Sections) of the By-laws

Sections of the Academy shall be organized as follows: Botany; Chemistry, inorganic and physical; Chemistry, organic and biological; Conservation; Geology; Mathematics; Physics; Psychology; Zoology. Allied subjects should find place with the section most closely related. Each section shall hold sessions during the annual meeting of the Academy. Each section shall elect annually a chairman, who shall hold office until a successor is elected. The chairman of each section shall preside at the meetings of the section, and arrange its program. Each section may elect a secretary, who shall perform the duties customary for that office.

Article V. (Editorial Committee of Revised By-laws, 1959

The editor shall edit papers which are presented for publication, and shall have the right to correct, revise, or reject these papers. The Editor upon approval of the Board of Directors shall appoint a section editor from each section to assist him. Section Editors will ordinarily be appointed for 4-year terms. Each Section Editor shall have the duty of recommending publication or rejection of each paper submitted to his section and correcting or revising such manuscripts as he recommends for publication.