

Proceedings of the Iowa Academy of Science

Volume 66 | Annual Issue

Article 6

1959

Reports: The Secretary-Treasurer; Financial Statement; The Board of Directors; Staff Reports; Committee Reports

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Recommended Citation

(1959) "Reports: The Secretary-Treasurer; Financial Statement; The Board of Directors; Staff Reports; Committee Reports," *Proceedings of the Iowa Academy of Science*, 66(1), 42-66.

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Report of the Secretary-Treasurer

There were 1,456 members in the Academy on January 1, 1959, including 2 honorary fellows, 24 emeritus fellows, 14 life fellows, 498 fellows, and 918 associates and student associates.

President Elmer W. Hertel appointed the following new committee personnel:

High School Relations—Floyd Sturtevant.

Membership—G. C. Leu, Willard J. Poppy.

Science Talent Search—C. F. Allegre, J. D. Woods.

Science Teaching—K. E. Goellner.

Auditing—M. F. Fritz, J. L. Laffoon.

Nominating—J. J. L. Hinrichsen, Chairman; H. G. Hershey, B. H. Peterson.

Publicity—L. C. DeVol, Chairman; N. C. Baenziger, M. J. Ulmer.

Resolutions—A. W. Swenson, Chairman; J. A. Bath, W. E. Nye.

Visiting Scientists—C. G. McCollum, Chairman; W. A. Bragonier, J. O. Chellevoid, J. B. Culbertson, L. P. Johnson, W. F. Loehwing, F. C. Pennington.

The Secretary attended the meetings of the Academy Conference and the AAAS Council in Washington, D. C., in December, 1958. Representatives of the state academies reported briefly on the activities of their academies. The Secretary also appeared on a panel which discussed the activities and problems of junior academies. It was gratifying to learn of the renewed interest in the junior academy by senior members. That the Iowa Academy is held in high esteem nationally is attested to by the fact that a representative has already been invited to speak at the 1959 meeting in Chicago on the problem of getting good attendance at the annual paper sessions of the state academy. It is interesting to note that for the year 1959 the AAAS academy research grants are being doubled, allowing \$1.00 for each academy member who also belongs to the AAAS.

Arrangements with the Iowa Section of the American Chemical Society are being continued to give that group time during our annual meeting to present an "Iowa Science Teachers Award." This annual award is financed by Iowa industries and is presented to an outstanding Iowa high school science teacher.

Our 1958 financial statement appended to this report again shows a net gain in assets and indicates that the Academy can give even greater financial support to projects aimed at promoting the interest of science in Iowa.

CLARENCE H. LINDAHL, *Secretary-Treasurer*

Financial Statement

December 31, 1958

Current Expense Account

RECEIPTS

| | |
|---|-------------------|
| Balance on hand January 1, 1958..... | \$1,581.34 |
| 1956 dues at \$2.00 per year..... | 8.00 |
| 1957 dues at \$1.00 per year..... | 5.00 |
| 1957 dues at \$2.00 per year..... | 94.00 |
| 1958 dues at \$1.00 per year..... | 216.00 |
| 1958 dues at \$2.00 per year..... | 2,020.00 |
| 1959 dues at \$2.00 per year..... | 22.00 |
| 1960, 1961, 1962 dues at \$2.00 per year..... | 6.00 |
| Fellows' fees | 34.00 |
| Life fellows' fees..... | 100.00 |
| Interest on U. S. bonds..... | 132.80 |
| Sales of Proceedings..... | 187.79 |
| AAAS grants | 240.10 |
| Gift | 2.00 |
| Postage refunds | .64 |
| Total receipts | <u>\$4,649.67</u> |

EXPENDITURES

| | |
|--|-------------------|
| Stationery and printing..... | \$ 429.82 |
| Postage (includes two volumes of the Proceedings).... | 653.68 |
| Freight on Proceedings (two volumes)..... | 72.22 |
| Jiffy bags for Proceedings (two volumes)..... | 76.42 |
| Secretary's miscellaneous expenses..... | 24.28 |
| Secretary's clerical help..... | 79.50 |
| Editor's office expenses (Volume 65)..... | 72.33 |
| Editor's clerical help..... | 75.00 |
| C. H. Lindahl, honorarium..... | 100.00 |
| T. Edwin Rogers, honorarium..... | 100.00 |
| D. C. Stroud, honorarium..... | 50.00 |
| E. W. Hertel, mileage | 11.00 |
| 1958 AAAS delegate, railway ticket..... | 71.72 |
| Support of 1958 Section programs..... | 84.40 |
| L. R. Caswell, AAAS research grant..... | 127.55 |
| M. D. Huffman, AAAS research grant..... | 127.55 |
| 1958 Academy speaker, honorarium..... | 35.00 |
| Academy Conference, contribution..... | 28.00 |
| Iowa Junior Academy of Science..... | 75.00 |
| Bank charges | 19.61 |
| Total expenditures | <u>\$2,313.08</u> |
| Balance on hand, December 31, 1958, on deposit, Union Story Trust and Savings Bank, Ames, Iowa..... | <u>\$2,336.59</u> |

Savings Account

RECEIPTS

| | |
|---|-------------------|
| Balance on hand January 1, 1958..... | \$ 995.61 |
| Interest on Savings Account..... | 31.88 |
| Balance on hand December 31, 1958, on deposit, Union Story Trust and Savings Bank, Ames, Iowa..... | <u>\$1,027.49</u> |

Bonds

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

Total value of bonds held December 31, 1958.....\$5,000.00

Statement of Total Assets

| | |
|---|-----------|
| Herbert Osborn Revolving Publication Fund (part of Savings Account)..... | \$ 350.00 |
| Endowment Fund (bonds and part of Sav. Acct.).. | 5,677.49 |
| Current Expense Account (checking account)..... | 2,336.59 |

Total assets, December 31, 1958.....\$8,364.08

Total assets, January 1, 1958.....7,576.95

Gain in assets during fiscal year.....\$ 787.13

CLARENCE H. LINDAHL, *Secretary-Treasurer*

Report of the Auditing Committee

We have examined the Iowa Academy of Science financial records and the Financial Statement for December 31, 1958, and find the accounts in good order. We have personally viewed all assets.

MARTIN F. FRITZ

JEAN L. LAFFOON

Report of the Board of Directors

The Board of Directors met at 3:00 p.m. on April 16, 1959, in the John Wesley Holland Student Union Building at Iowa Wesleyan College. All members of the board were present. President Elmer W. Hertel presided.

Reports of the Secretary-Treasurer, Auditing Committee, Editor, and Librarian were accepted.

The cost of providing reprints was discussed, and the editor was instructed to explore possibilities of reducing the expense (to the authors) of reprints.

The report of the Finance and Endowment Committee was presented and accepted. In accordance with the recommendations of that committee the proposed budget for 1959 calling for an expenditure of \$3,757.41 was adopted, and the Secretary-Treasurer was directed to deposit \$1,000.00 of the current expense account in the savings account.

Reports of the Membership, Conservation, and Science Talent Search committees were accepted.

The High School Relations Committee and Science Teaching Committee reports were presented and accepted. These committees were instructed to investigate the possibilities of the extension of

the program of high school science seminars in the state with a view toward application for financial aid from the National Science Foundation. A motion was adopted that the Academy give some financial aid toward interesting high school teachers in initiating more such seminars.

President Hertel was instructed to consult with other specialists and to act on applications for research grants provided by the AAAS.

It was agreed that the Visiting Scientists Committee be continued.

The 1960 meeting of the Academy will be held at the State University of Iowa on Friday and Saturday, April 22 and 23. The 1961 meeting will be held at Simpson College and the 1962 meeting at Wartburg College. Invitations for future meetings are requested.

After setting Thursday, April 21, 1960, at 3:00 p.m. as its next regular meeting date, the Board adjourned at 10:10 p.m.

CLARENCE H. LINDAHL, *Secretary*

Report of the Editor

Copies of Volume 65 of the *Proceedings of the Iowa Academy of Science* were placed in the mail for distribution to libraries on November 20, 1958. A total of 1,820 copies was printed by the Wallace Homestead Company of Des Moines. Their excellent workmanship and the help graciously extended to a new editor were very much appreciated.

Volume 65 consists of 591 pages. A new section at the back of the book entitled "Information for Contributors" is intended to make more readily available detailed instructions concerning the submission of manuscripts and illustrations. This section is included with the hope of alleviating the editorial burden, and also in order to establish a minor change in form. This change involves the publishing of an abstract at the beginning of each article, a practice which is consistent with procedures currently followed by leading journals. Members of the Editorial Policies Committee were in accord as to the desirability of this change.

The editor wishes to express appreciation to all those whose efforts and cooperation contributed to this volume. The retiring editor, Dr. David G. Mobberley, the secretary-treasurer, Dr. Clarence Lindahl, the section chairmen, the authors, and the State Printing Board should all be recognized. The friendly advice and cooperation of the late Mr. Sherman W. Needham, State Superintendent of Printing, will long be remembered.

T. EDWIN ROGERS, *Editor*

Report of the Librarian

DISTRIBUTION OF THE PROCEEDINGS OF THE IOWA ACADEMY OF SCIENCE

The following statistics indicate the details of the distribution for Volume 65 of the *Proceedings of the Iowa Academy of Science*:

| | |
|---|-------|
| Sent to members | 1,324 |
| Sent on exchange | 331 |
| Sent on subscription (as of December 31, 1958)..... | 19 |
| Gifts to libraries, government agencies, and abstracting journals.. | 42 |
| <hr/> | |
| Total number of copies distributed..... | 1,716 |
| Remaining copies available for exchange..... | 104 |

Report of the Iowa Academy of Science sales fund:

| | |
|--|------------|
| Balance on hand, December 31, 1957..... | \$ 976.32 |
| Sale of <i>Proceedings</i> , plus postage (does not include sale of Volume 65)..... | 187.79 |
| <hr/> | |
| Total funds available | \$1,164.11 |
| Disbursements (postage) | 11.06 |
| <hr/> | |
| Balance on hand, December 31, 1958..... | \$1,153.05 |

ROBERT W. ORR, *Librarian*

Report of the Committee on Finance and Endowment

The financial statement for fiscal year 1958 shows a one-year gain in total assets of \$787.13—from \$7,576.95 to \$8,364.08. This gain, while smaller than the one for either 1957 or 1956, indicates that the Academy has not yet begun giving the fullest possible financial support to projects aimed at promoting the interests of science.

The balance of \$2,336.59 shown in the Current Expense Account as of December 31, 1958, is probably larger than necessary for the efficient management of the Academy's financial affairs. It is recommended, therefore, that the Secretary-Treasurer be instructed by the Board of Directors to transfer from the Current Expense Account to the Savings Account an amount believed by him to be in excess of what is needed to keep the Current Expense Account continuously solvent.

The proposed budget for fiscal year 1959, submitted to the Board of Directors by the Secretary-Treasurer, calls for expenditures greater by \$457.41 than the amount of expected income. This possible over-spending is viewed with equanimity by members of the Committee. Perhaps, by spending in excess of income for a year or two, the Academy can gradually organize its efforts so as to

keep the annual intake and outgo of money approximately balanced. Such balancing will be especially advantageous when income from the operation of the Parish Farm becomes part of total receipts. In any event, a deficit of \$457.41 for the year (should it actually occur) will still leave total assets more than \$300 above the total at the end of fiscal year 1957.

The National Science Foundation, in the fall of 1958, invited state Academies of Science to request financial support of projects designed to improve the status of science and mathematics education. Two general types of projects were suggested as possibilities:

- (1) The development of collaborative efforts by academic and industrial scientists, on the one hand, and high school teachers of science and mathematics, on the other, to improve instruction at the high school level.
- (2) The inauguration of various procedures for arousing and sustaining interest in science among young persons of pre-college age, and providing opportunities for their participation in scientific activities.

The full cost of such ventures in Iowa would be borne by NSF.

Because the Iowa Academy does not have a full time paid secretary who might administer a grant from NSF, the suggested policy is to have several selected colleges and universities of the state sponsor programs in the areas of their individual locations. Any participating institutions should be given full support by Academy officials for any reasonable projects which they might propose. In view of the likelihood that individual scientists on the faculties of the colleges and universities of the state will not take the initiative in developing programs and requesting NSF funds through the Academy, the Board of Directors of the Academy should take decisive action aimed at encouraging participation by as many colleges and universities as is deemed desirable.

IRVIN H. GERKS
LELAND P. JOHNSON
ROY A. NELSON
FRANK C. PENNINGTON
DON LEWIS, *Chairman*

Report of the Membership Committee

The committee elected 45 student associates and 23 associates during the past year, ending April 17, 1959.

The following persons are presented for election to membership, or for change in status of membership, in the Iowa Academy of Science:

Transfer from fellow to emeritus fellow (3): L. E. Dodd, John E. Evans, William G. Gaessler.

Transfer from associate to fellow (6): Alan H. Coogan, John H. Fossum, James Hodges, Francis A. Pray, A. Nagaraja Rao, Dorothy Simrall.

Election as fellow (12): William Battin, Arthur J. Bosch, James Case, Gerald D. Errion, James P. Erwin, Charles E. Hamilton, Walter R. Hearn, William F. Herrin, Joseph B. Hoffert, T. R. Porter, Robert W. Schmidt, Stanley R. Watkins.

The committee reports the passing of the following members:

Louis Begeman, L. L. Buchanan, Edmund W. Cheng, S. W. Edgecomb, J. G. Goggin, M. P. Moon, Edwin H. Silver, Frank A. Stromsten, O. R. Sweeney.

R. W. GETCHELL
K. E. GOELLNER
I. J. GWINN
O. C. KREIDER
G. CHESTER LEU
W. C. OELKE
WILLARD J. POPPY
W. A. TEPPERT
MARY M. VINJE
H. L. DEAN, *Chairman*

Report of the High School Relations Committee

The activities of the Iowa Junior Academy of Science for 1958-59 began with the annual meeting of the Executive Council. It was held at Iowa State Teachers College on Saturday, September 20. The entire membership of the Council was present, namely:

| | |
|---|------------------------------------|
| Mary Hazard, Iowa City..... | President |
| Thomas Hesselmann, Dyersville..... | Vice-President |
| Mary Sue Wilson, Cedar Falls..... | Secretary |
| Raymond Trausch, Carroll..... | Treasurer |
| Ralph Dillon, Oskaloosa..... | Senior Councilor |
| Sister Mary Janela, B.V.M., Waterloo..... | Senior Director of Essays |
| D. B. Converse, Grinnell..... | Junior Director of Essays |
| Walter Gohman, Cedar Falls..... | Director of Publications |
| Ruth Mahon, Cedar Falls..... | Director of Exhibits |
| Lynda Anderson, Cedar Falls..... | Editor-in-Chief, |
| | Iowa Science News Letter |
| J. W. Kercheval, Cedar Falls..... | Chairman, High School Relations |
| | Committee, Iowa Academy of Science |
| Dean C. Stroud, Des Moines..... | Executive Secretary |

Minutes of the 1957 meeting of the Council were read and approved. The treasurer reported a revolving fund of \$355.05 and a working fund of \$130.88. These reports were accepted as presented.

Mr. Gohman presented the question as to how many issues of the *Iowa Science News Letter* should be published during 1958-59. It was decided to have the usual three, and a fourth issue if a sponsor could be found. The rate of twenty-five cents for a single

subscription, and ten cents per subscription to a club for ten or more subscriptions, was continued. It is interesting to note that from a total of 752 members in the twenty-four clubs reporting their membership for this year, we had a *Newsletter* subscription list of only 215 members. One club did not give its total membership but did order ten copies of the *Newsletter*.

At a previous Council meeting it had been recommended that individual recognition be given to projects as well as the usual club recognition. Because of the large number of projects to be judged in a limited time, it was impossible for the judges to give individual ratings. As a consequence, none was given at the 1958 convention. It was left to Dr. Kercheval and Mrs. Mahon to determine if individual recognition could be given at the 1959 convention.

New applications for membership in the Junior Academy came from Allerton, Marshalltown, and Onawa. Several clubs that had membership did not enroll this year, some of them being among the oldest clubs in terms of years of membership. Several letters to the clubs regarding their membership did not bring an enrollment. The 1958-59 membership is as follows:

| City | Club—School |
|-------------------|--|
| Albia..... | Bi-Phy-Chem Club, Junior High |
| Albia..... | Albia Theta Sigma, Senior High |
| Allerton..... | S. O. S. Club, ACL Community School |
| Carroll..... | Knights of Kuemper, Kuemper High School |
| Cedar Falls..... | Alpha Beta Kappa, City High School |
| Cedar Falls..... | TCHS Science Club, T. C. High School |
| Clear Lake..... | PC ₂ Club, High School |
| Denison..... | Ye Atomic Powers, High School |
| Des Moines..... | General Science Club, Amos Hiatt Junior High |
| Des Moines..... | Math and Science Club, Roosevelt High School |
| Dubuque..... | Students of Science, St. Joseph Academy |
| Dyersville..... | Xavier Science Club, Xavier High School |
| Forest City..... | Tomorrow's Scientists Today, Junior High School |
| Fort Dodge..... | Science Club, St. Edmond High School |
| Iowa City..... | Chi Beta Phi, City High School |
| Iowa City..... | Science Club, University High School |
| Marshalltown..... | Science Club, High School |
| Mason City..... | Science Club, City High School |
| Newton..... | Biology Club, Community High School |
| Onawa..... | Science Club, High School |
| Oskaloosa..... | Senior Science Club, Senior High School |
| Sioux City..... | Heelan Science Club, Heelan High School |
| Stacyville..... | Visitation Science Club, Visitation School |
| Waterloo..... | Phi Beta Chi, East High School |
| Waterloo..... | O.L.V.A. Scientists, Our Lady of Victory Academy |

We have continued our regular affiliation with Science Clubs of America, an organization that renders service to our clubs. We greatly appreciate this affiliation.

The Executive Council voted to cooperate with the North Central Branch of Bacteriologists by sending them the names of club members who have done outstanding work in bacteriology. Those so named will receive a special recognition from the Bacteriological

Society. A recommendation of importance by the Executive Council this year was that the outstanding student in any affiliated science club be recognized by an award in the form of a monogram modeled after the Junior Academy state pin. This monogram has a gold felt background in the shape of the State of Iowa with blue felt and chenille running diagonally from upper left to lower right. On this are set the letters "IJAS" in gold chenille. Each club has the privilege of nominating one member for this award. A second member may be nominated if the club membership exceeds twenty by eleven or more.

The 1959 convention of the Iowa Junior Academy of Science was held on the campus of Iowa Wesleyan College in Mount Pleasant on April 17. Registration of approximately 278 members of fourteen clubs was made, with visitors registered from Callender, Sigourney, and Mount Pleasant. One hundred fifty exhibits were set up in the college gymnasium under the supervision of Mrs. Ruth Mahon of Cedar Falls, Director of Exhibits for the Junior Academy. At 10:30 a.m. the group attended the meeting in the college chapel, at which time the awards to the winners in the Iowa Talent Search (Clinton Foods) were made.

A "first" this year was the presentation of the monogram awards to representatives chosen by club members for outstanding leadership in the club during the school year. Those recognized were:

Bruce Gronen, Our Lady of Victory Scientists, Waterloo
 David Ecklein, Alpha Beta Kappa, Cedar Falls
 Dick Abel, Science Club, Allerton
 Edward Saulvester, Senior High Science Club, Marshalltown
 Bob Walton, Senior Science Club, Oskaloosa
 Raymond Bradt, Science Club of St. Edmond High School, Fort Dodge
 Larry Jurgensen, General Science Club, Amos Hiatt Junior High, Des Moines
 Carl Deaton, General Science Club, Amos Hiatt Junior High, Des Moines
 Mary Kay Rahe, Xavier Science Club, Dyersville
 Ruth Ann Wedewer, Xavier Science Club, Dyersville
 Jim Cook, Phi Beta Chi, East High School, Waterloo
 Lynda Anderson, Science Club, Malcolm Price Laboratory School, Cedar Falls
 Zike Florins, Science Club, Malcolm Price Laboratory School, Cedar Falls

At one o'clock the Junior Academy members convened in Fellowship Hall of the First Methodist Church for a demonstration lecture by Dr. Van Berjeik of the Bell Telephone Company, who spoke on the subject, "A Comparison of a Telephone System with the Human Nervous System."

Between the hours of 2:00 and 5:00 p.m. exhibits were displayed in the gymnasium. At 4:00 p.m. the official voting delegates held the annual business meeting under the direction of the president, Miss Mary Hazard of Iowa City. Thomas Hesselmann of Xavier

High School, Dyersville, the vice-president for 1958-59, was selected as the new president for 1959-60. The Visitation Science Club of Stacyville was chosen to name the new vice-president, David Bush. The Science Club of the City High School, Iowa City, named the new treasurer, James P. Robbie; and Our Lady of Victory Scientists of Waterloo selected the secretary, Bruce G. Gronen. It was explained that a new Catholic school, Columbus High School, would be opened this fall in Waterloo, and Bruce will represent that school as secretary.

The members of the Senior and Junior Academies enjoyed a joint dinner meeting in the Student Union Building. This was followed by a demonstration lecture for Junior Academy members in the Social Hall of the Student Union. J. R. Walter, of the Westinghouse Company, spoke on the subject, "A Blueprint for Prosperity."

At the dinner the awards to clubs for exhibits were announced by the Director, Mrs. Ruth Mahon. They were as follows:

SUPERIOR

| | |
|---|------------|
| Senior High School, Marshalltown..... | Biological |
| Newton High School, Newton..... | Biological |
| Malcolm Price Laboratory School, Cedar Falls..... | Biological |
| Iowa City High School, Iowa City..... | Biological |
| Roosevelt High School, Des Moines..... | Physical |
| St. Edmond High School, Fort Dodge..... | Physical |
| Senior High School, Marshalltown..... | Physical |
| Senior Science Club, Oskaloosa..... | Physical |
| Malcolm Price Laboratory School, Cedar Falls..... | Physical |
| City High School, Cedar Falls..... | Physical |

EXCELLENT

| | |
|--|------------|
| City High School, Cedar Falls..... | Biological |
| East High School, Waterloo..... | Biological |
| Albia High School, Albia..... | Physical |
| Amos Hiatt Junior High School, Des Moines..... | Physical |
| City High School, Iowa City..... | Physical |
| Senior High School, Newton..... | Physical |
| East High School, Waterloo..... | Physical |

HONORABLE MENTION

| | |
|--|------------|
| Visitation High School, Stacyville..... | Biological |
| Senior High School, Allerton..... | Biological |
| Our Lady of Victory Academy, Waterloo..... | Biological |

Sister Mary Janela, B.V.M., Director of Essays for the Junior Academy, presented award cards to those whose essays were judged as Superior or Excellent. The winners were:

SUPERIOR

- Edward Saulvester, Senior High School, Marshalltown
- David Ecklein, City High School, Cedar Falls
- Kenneth Barber, East High School, Waterloo
- Joseph Homan, Heelan High School, Sioux City
- Jane Bader, City High School, Iowa City

Raymond Bradt, St. Edmond High School, Fort Dodge
David de Holl, Heelan High School, Sioux City
David Bush, Visitation High School, Stacyville

EXCELLENT

Thomas Glaser, St. Edmond High School, Fort Dodge
Carla Stolzenberg, Visitation High School, Stacyville
Virginia Kresbach, Visitation High School, Stacyville
Madonna Davis, Leland Community School, Forest City
Gerald Feierfeil, Heelan High School, Sioux City
Judith Wolf, Visitation High School, Stacyville
Kathy Koenig, Kuemper High School, Carroll
Karen Feller, St. Joseph Academy, Dubuque
Kay Connors, Kuemper High School, Carroll
Elizabeth Heiberger, St. Joseph Academy, Dubuque
Larry Bock, Kuemper High School, Carroll
Carolyn Trott, City High School, Iowa City

HONORABLE MENTION

Donald Loeffelholz, Kuemper High School, Carroll
Shirlee Ehlers, Onawa High School, Onawa
Sylvia Jefson, Leland Community School, Forest City
Dorothy Sondgeroth, Kuemper High School, Carroll
Mary Messink, St. Joseph Academy, Dubuque
Karen Vize, Leland Community School, Forest City
Mary Holtan, Leland Community School, Forest City
Donna Gahan, Leland Community School, Forest City
Rita Frey, St. Joseph Academy, Dubuque
Barbara Harry, St. Joseph Academy, Dubuque
Patty Landstad, Leland Community School, Forest City
Gary McEnelly, Leland Community School, Forest City
Sharol Holland, Leland Community School, Forest City
Margie Zoller, St. Joseph Academy, Dubuque
Ronald Ladd, Leland Community School, Forest City

Recommendations of the High School Relations Committee to the Iowa Academy of Science are as follows:

1. That the appointment of the following persons as adult sponsors be made:

Senior Councilor, Frank Starr, East High, Waterloo
Junior Councilor, Verne Gunderson, Mason City
Senior Director of Essays, Sister Mary Janela, O.L.V.A., Waterloo
Junior Director of Essays, N. F. Dessel, University High, Iowa City
Director of Publications, Walter Gohman, Campus School, Cedar Falls
Director of Exhibits, Ruth Mahon, Campus School, Cedar Falls
Executive Secretary, Dean C. Stroud, Amos Hiatt Junior High, Des Moines

2. That the Iowa Academy of Science continue the policy of encouraging its members to visit the Junior Academy exhibits and discuss the exhibits with the exhibitors.

3. That a grant of \$75 be continued for the financial support of the work of the Junior Academy for 1959-60.

D. D. MILLSPAUGH

W. J. POPPY

D. C. STROUD

FLOYD STURDEVANT

A. F. VOIGT

J. W. KERCHEVAL, *Chairman*

Report of the Science Teaching Committee

The Science Teaching Committee had no formal meeting during 1958-59. With the announcement of funds available to Academies from NSF for use in science teaching improvement projects, consideration was given to what the Iowa Academy might do. Several suggestions have been made but no definite plans proposed.

The major item of activity of the committee was the planning of the general session for the 1959 meeting. Three high school science teachers presented their opinions of what are the major problems in secondary school science teaching. Among the suggestions made were: conferences where secondary school and college teachers could get acquainted and share problems; lecture series that would help bring teachers up to date; help in getting equipment; help in answering questions.

The funds from NSF will probably be available again in 1960. The committee, along with other committees of the Academy, will welcome any suggestions for projects and will help any school in developing its ideas.

H. S. APOSTLE
K. E. GOELLNER
P. A. MEGLITSCH
DOROTHY M. MATALA, *Chairman*

Report of the Committee on Science Talent Search

On April 10, 1958, a letter and a two-color poster were sent to science teachers in every high school listed in the Iowa Educational Directory. These announced the Thirteenth Iowa Science Talent Search and the Clinton Science Scholarships. The fall number of the *Iowa Science News Letter* (the official publication of the Iowa Junior Academy of Science) contained a notice of the Thirteenth Iowa Science Talent Search and included as a supplement a copy of the two-color poster. During the fall of 1958, science teachers in 87 high schools requested 478 sets of entrance blanks, and 85 completed entries reached Washington, D. C., before the deadline late in December. Six of the entrants from Iowa won national honorable mention.

About March 1, the entries were returned to Iowa. After individual examinations of the papers, the Science Talent Search Committee met in Iowa City on March 28, and selected and ranked the

fourteen honorees for 1959. The Thirteenth Iowa Honor Roll is as follows:

- 1st place—\$300—David Stephen Ecklein, 2009 Oakland Ave., Cedar Falls; sponsor, Anton Hofstad, Cedar Falls High School.
- 2nd place—\$200—Gerald Feierfeil, 619 Center St., Sioux City; sponsor, Sister Mary Cecelia O.S.F., Heelan High School.
- 2nd place—\$200—Joseph Michael Homan, 1911 Douglas, Sioux City; sponsor, Sister Mary Cecelia O.S.F., Heelan High School.
- 2nd place—\$200—Phoebe Welt, 602 Fifth Ave., Iowa City; sponsor, Harry A. Mauseth, Iowa City High School.
- 3rd place—\$100—Sidney Alan Coon, Ainsworth; sponsor, Lynn L. Disney, Ainsworth Consolidated High School.
- 3rd place—\$100—Richard Arnold Davis, 718 Fourth Ave., S.E., Cedar Rapids; sponsor, Iola Tillapaugh, Washington High School.
- 3rd place—\$100—Margaret Ann Hardin, 715 South Summit, Iowa City; sponsor, John R. Bolte, Iowa City High School.
- 3rd place—\$100—Roger Clarke Johnsen, 1010 South Mulberry St., Sioux City; sponsor, A. L. Steinjes, East High School.
- 3rd place—\$100—Ned William Strain, 220 27th St. Dr., S.E., Cedar Rapids; sponsor, Wes Thompson, Washington High School.
- 4th place—\$ 25—Stanley Burton Altman, 48 Riverview Park Drive, Bettendorf; sponsor, Donald A. Schaefer, Bettendorf High School.
- 4th place—\$ 25—Ronald Wilson Moses, R. 2, Ames; sponsor, Floyd Sturtevant, Ames High School.
- 4th place—\$ 25—Jerry Wayne Snow, R. 1, Lime Springs; sponsor, Wade Arend, Lime Springs High School.
- 4th place—\$ 25—William Ray Soth, 636 21st St., Bettendorf; sponsor, Donald A. Schaefer, Bettendorf High School.
- 4th place—\$ 25—Carolyn Marie Trott, 331 South Summit St., Iowa City; sponsor, Arthur L. Campbell, Iowa City High School.

Certificates were awarded on April 17 in the Chapel Auditorium of Iowa Wesleyan College, Mount Pleasant, before a joint meeting of the Iowa Academy of Science and the Iowa Junior Academy of Science. The cash scholarships will be paid when the recipients are enrolled in college. Thirteen of the honorees have selected the schools they hope to attend next year (recommendations have been written by the committee), and several have already been awarded scholarships by the schools.

The day before the awards were made, the honorees were invited to visit the plant of the Clinton Corn Processing Company in Clinton, Iowa. Competent guides led small groups through the plant and explained the processes. Transportation to Mount Pleasant was provided. All expenses incurred in making the visit to the plant and attending the meetings of the Academy were paid by Clinton Corn Processing Company.

Announcements for the Fourteenth Iowa Science Talent Search

were sent to about 900 teachers of science in Iowa high schools on March 25, 1959. Clinton Corn Processing Company, a Division of Standard Brands Incorporated, has granted \$2,500 to pay expenses of the announcements, the entertainment of the honorees, and the fourteen Clinton Science Scholarships for the seniors of 1960.

The committee could not operate effectively without the financial support of Clinton Corn Processing Company, the papers received from Science Clubs of America, the advantage of a favorable place on the programs of the Iowa Academy of Science and the Iowa Junior Academy of Science, the sponsoring of students by already overworked high school teachers, and the publicity freely given by radio, television and newspapers. We are truly grateful to all of these and to the many individuals who have given vital assistance in our science talent searches. We wish to thank Dr. E. R. Becker, who has resigned from our committee, and Dr. LeRoy Eyring, who is on leave, for their efficient hard work on this committee.

CHARLES F. ALLEGRE
R. V. DREXLER
GRANT O. GALE
J. V. MCKELVEY
JOSEPH I. ROUTH
JOE D. WOODS
F. E. BROWN, *Chairman*

Report of the Committee on Conservation

Ground water levels and stream flow, generally below normal in 1958, were closely correlative with the pattern and amount of precipitation. Ground water levels were slightly above average throughout the year in the southern half of the state and were highest in the southwest, the only area to receive above average precipitation. In the half of the state north of a line from Sioux City to Davenport, the ground water levels were below normal and were much below in the northwest where the rainfall deficiency was 12.32 inches. All streams were considerably below normal at the beginning of 1958 and a few were at record lows. During May, June, July and part of September, streams in southern and western Iowa were near normal with the exception of a few areas in which record breaking floods occurred. However, streams in northern Iowa continued at record breaking low flows throughout the year.

Comparatively steady progress was made throughout 1958 in application of needed soil and water conservation measures to the land. Reduction in the quantity of some practices was noted in comparison with 1957, because of weather conditions and shifting of agricultural programs and farmers' intentions. At the end of the year,

66,799 farmers were cooperating with their local soil conservation districts, a gain of more than 5,000 over last year. This number comprised slightly more than one-third of Iowa's farmers. In the 100 soil conservation districts, 3,371 soil and water conservation farm plans were developed and started. Now a total of 45,571 district cooperators have basic soil and water conservation farm plans, representing a total of 7,594,699 acres. Some of the more important practices represented in the basic plans and applied to the land to date include: contour farming, 2,930,331 acres; pasture planting, 328,500 acres; tree planting, 26,985 acres; hedgerow planting as part of a wildlife practice, 352,361 rods. Structural measures involving engineering assistance include: farm pond construction, 18,176; terraces, 33,249 miles; waterway development, 94,756 acres; tile drainage, 500,643,961 lineal feet. Many farmers are applying improved practices of their own accord which often do not get on the official records.

Watersheds making application under Public Law 566 include: Troublesome Creek, Three-Mile Creek, Pony Creek, Ryan-Henschal Creek, Pierce Creek No. 1, Clayton, and Moulton. Field construction was completed on the Harmony Creek Watershed in the Harrison County Soil Conservation District during the past year. The work in the Rocky Branch Creek Watershed in the Jefferson County Soil Conservation District and the Simpson Creek Watershed in the Fremont County Soil Conservation District is progressing satisfactorily, and construction of works for improvement is underway. It is anticipated that the improvement works will be completed in the Simpson Creek Watershed during 1959. In the Rocky Branch Watershed the work will undoubtedly continue through 1960. The Watershed Work Plan Party, in cooperation with the local soil conservation districts and other organizations, developed a work plan for the Crooked Creek Watershed lying in the Cass, Audubon, and Guthrie County Soil Conservation Districts, which has been approved and awaits construction. Work plans have been developed by the Soil Conservation Service personnel, district commissioners, and County Boards of Supervisors for the Big Creek Watershed in the Crawford County Soil Conservation District. Presently, work plans are developing for clearance and approval by the local folk and the U. S. Department of Agriculture for the Indian Creek Watershed in West Pottawattamie County Soil Conservation District, Mill-Picayune Creek Watershed in the Crawford, Shelby, and Harrison County Soil Conservation Districts, along with starts on the Badger Creek Watershed in the Madison, Dallas, and Warren County Soil Conservation Districts, and the David's Creek Watershed in the Audubon and Guthrie County Soil Conservation Districts.

The Conservation Reserve phase of the Soil Bank Program con-

tinued to create an interest in the expansion of the wildlife program as it relates to food and cover for wildlife. As in previous years, several wildlife practices again were provided in the Iowa Docket for the calendar year 1958.

The Conservation Needs Inventory for which the Soil Conservation Service has been assigned the leadership responsibility, working in cooperation with other agencies of the U. S. Department of Agriculture and State agencies interested in contributing to the overall field of conservation, is progressing quite well. The soil survey work in the field to obtain statistical information regarding soil type, slope, and erosion and land use has been completed in 97 counties, and the remainder will be completed by July, 1959. At present, 84 of the soil conservation district statistical samples, expanded by the Statistical Laboratory at Iowa State College, are in the field for use by local county committees. For the remainder broad data measurement is progressing for use in expansion by the Statistical Laboratory. The entire inventory for the state will be completed by December, 1959.

Considerable progress can be reported by the editorial committee of the Iowa Conservation Council, with which the Soil Conservation Service is cooperating in the preparation of a source book on conservation which will furnish local materials lacking in textbooks of general nature. Specialists to prepare material in their fields have been selected, with hope that a first draft will be ready by June, 1959.

Textbooks containing general conservation information are used widely in the schools of the state. Because few teachers are experienced in field studies, little is done with their students outdoors. To remedy this lack of experience, summer field camps are valuable. A total of 97 teachers attended the Iowa Teachers Convention Camp at Springbrook State Park in the summer of 1958. Of these, ten were secondary school teachers, and the remainder were elementary school teachers. The camp held three sessions as in previous years, again securing the services of outstanding resources specialists. Soil Conservation Districts and many local groups of sportsmen and conservationists contributed a new high total of \$4,606.77 in scholarship assistance to campers.

As the result of increased interest in tree planting and woodland management, farm foresters of the Iowa State Conservation Commission were unable to keep up with the many requests for technical assistance. Although 17 to 20 technically trained foresters are needed to help woodland owners in their farm forestry management problems, because of insufficient funds only five foresters are available.

A total of 520 woodland owners were assisted by these farm for-

esters, and 16,316 acres of woodlands were improved by the owners. In addition, 196 sawmill operators and processors were provided information and assistance in procuring timber, veneer logs, lumber logs, and pulpwood. Cooperating woodland owners netted a gross sum of over \$102,800 as a result of applying forest management practices to their woodlands.

A summary of the Blister Rust Control Project, protecting white pine trees from infection, showed that 425 acres were covered and over 25,133 *Ribes* plants were destroyed. The program of forestry research, sponsored jointly by the Conservation Commission and the Iowa State College, included projects on oak wilt, rehabilitation of forest areas now in very low state of productivity, species determination, bottom-land hardwood management, and rate of decay of forest trees. The State Conservation Commission Nursery provided trees and shrubs at a nominal cost to landowners for forestry, erosion control, soil bank, and wildlife plantings. Approximately 2,516,000 woody plants of 16 species, including multiflora rose and various species of pine, were dispensed. Forest fire and grassland educational programs were most satisfactory. Rural firemen, radio and television stations, schools, youth and civic groups, and sportsmen's clubs cooperated to make the programs highly successful.

The Iowa State Parks' attendance continued to climb during 1958 to an all time high of 6,653,000 visitors. The use of the state park camp grounds increased 30 percent over 1957. This in itself indicates the growing importance of the state parks to family recreation. The trend in the use of state parks will continue upward, inasmuch as the factors influencing this trend continue to grow stronger. Some of the most noticeable factors affecting recreation are the shorter work week, greater number of paid vacations, better transportation facilities, improved and greater varieties of outdoor recreational equipment, and the desire to escape from increasing urban pressures. There are, of course, many other factors exerting an undeterminable effect upon this increase in state park use. These factors add materially to the growing importance of state parks as a part of the well-being of our people.

The importance of water recreation in Iowa may be pointed out by the 1,000 percent increase in motorboat registrations during the past ten-year period. Of about 94,000 motorboats, one-third have been purchased in the last three years. As the state's artificial lakes returned to near normal water levels last year, their recreational use increased greatly.

Very few major capital improvements were made during the past year in state parks inasmuch as no funds were available. A new parking area, boat landing, and comfort building were constructed at Viking Lake State Park; a new camping area was constructed

at Lake of Three Fires State Park; and over a mile of water main was installed at Stone State Park. Increased public interest in state parks and waters stimulated increased financial support through recent legislative action.

The number of County Conservation Boards has increased to 50, showing growth in interest in local recreation through local support.

The number of prairie reserves under State Conservation Commission ownership and management was increased to three in 1958 with the purchase of the Cayler Prairie in Lakesville Township, Dickinson County. This tract, the most varied and most intensively studied remnant of rolling prairie in northwestern Iowa, is about a mile north and three miles west of the Iowa Lakeside Laboratory. The new reserve of 120 acres lies within the Wisconsin drift area but very close to its western boundary. None of the tract has been broken by plow and the greater portion, 104 acres, has been protected from grazing. The remaining 16-acre portion of the tract, grazed for only 10 to 12 years, affords an excellent opportunity for the study of the effects of grazing on the prairie and for the study of recovery of grazed prairie under protection. A published report of a preliminary study of this hilly, morainal prairie tract, made up chiefly of Clarion and Storden soils, is available at the Lakeside Laboratory.

Management programs for the other prairie preserves, the Hayden Prairie in Howard County and the Kalsow Prairie in Pocahontas County, have been in effect since their purchase in 1945 and 1948. The Hayden Prairie, following a period of complete protection, had one complete burning in 1954 and 1955, except for a few check areas. Experiments on small areas in this prairie have shown that one burning following protection is all that is necessary to institute a permanent management system of mowing and hay removal as required. Experiments have also shown that where litter and duff deposits are not excessive, mowing and hay removal with modern equipment can be used almost as effectively in instituting a program of intermittent mowing following complete protection. The chief difference is that seed production is increased to a much higher degree by burning than by mowing alone. However, experimental results in 1958 showed that vigor of the prairie plants, increased by burning in 1955, was maintained at a very high level for the next three years by mowing and hay removal. The seedstalks of the grasses alone increased, in thousands per acre, from 64 for no hay removal for three years after burning in 1955, to 92 for removal the first year only, 128 for removal for two years, and 180 for removal all three years. Because of evidence that annual mowing has some harmful effects on the animal wildlife of the prairie, it has

been decided to mow and remove the hay from only about one-half of the tract each year in a pattern that will afford the most wildlife protection over a period of years.

The Kalsow Prairie has been under complete protection since its purchase in 1948, with the exception of a few small experimental plots. This was considered to be advisable because of its later purchase and the higher degree of disturbance of its prairie vegetation as compared to the Hayden Prairie. It was determined, on the basis of studies made during this period of protection, that the vegetation of this prairie was sufficiently recovered for the initiation in 1959 of a permanent management program similar to that of the Hayden Prairie. These studies also showed that the quantity of litter and duff had increased to about 2.5 tons per acre on the upland prairie portion of the tract and to 4 tons on the lowland prairie portion. This amount of organic matter, in general, exerted harmful effect on the development of the prairie. It was, therefore, considered advisable to initiate a permanent program of mowing and hay removal as required with a complete burning of the tract. The entire prairie tract was burned in March, 1959, as soon as the vegetation was sufficiently dry following the melting of the snow. The degree of removal of organic matter was very even over the entire tract. It is anticipated that the vigor, homogeneity, and seed production of the vegetation will be increased by burning to a degree similar to that in the Hayden Prairie.

During the past year in the Federal Aid Program of the Iowa State Conservation Commission, 251 acres of land were purchased in eight counties, mostly for access to fishing sites. In seven counties 1,771 acres of wetland were acquired to be developed primarily for the welfare of waterfowl. For combined fish and wildlife management 605 acres were obtained in three counties. At 10 areas improvements, such as wells, managers' residences, service buildings, parking areas, fences, roads, bridges, signs and boundary markers, and water impoundment repairs were accomplished. Cover improvements of grasses and 177,900 planted trees and shrubs were made at 75 areas containing 215 acres on private farms.

A new Ten-year Conservation Program prepared for the Iowa State Conservation Commission by the Wildlife Management Institute urges purchase and development of wetlands and large recreational areas more speedily.

In fisheries surveys trout and smallmouth bass streams had smaller standing crops in 1958 than in previous years, because of reduced stream flow. The northern tier of counties exhibited average smallmouth reproduction, whereas the central and southern streams in the smallmouth range had a low reproduction index. Creel checks on the lower reaches of the Cedar, Iowa, Des Moines, and Wapsipini-

con rivers indicated that the average angler spent about \$60 on travel and equipment, and spent about two hours to take a fish. As the result of a combination of low water, heavy snow, thick ice, and organic pollution, large portions of the Wapsipinicon, Cedar, and Iowa rivers suffered heavy winter kills. This same phenomenon was expected in the tributary and trout streams which froze to the bottom in many areas.

Surveys on the Mississippi River indicated that the average angler had over \$100 invested in his equipment and caught about one fish an hour. The second year of a tagging project repeated the results of the first, with Mississippi River anglers creeling about 15 to 20 percent of the adult walleye pike and sauger in the river. Two electro-fishing survey crews added to the mass of statistics accumulating on the sport fishery of the Mississippi within the framework of the five-state cooperative, the Upper Mississippi River Conservation Committee.

Stream fish populations during 1958 followed a pattern quite normal for Iowa streams. The numbers, in ratio to the habitat, were dominated by rough fish including carp, quillback, and other suckers. Rough fish, as much as 95 percent of the total population, continued to have a depressing effect on the welfare and numbers of game species. The channel catfish, mostly small and slow-growing, was the most abundant game species. The numbers of walleye pike in streams that normally carry the species continued at about the same level as in the past three years; smallmouth bass populations were down. Because many streams in central and western Iowa entered the winter with deficient flows, winter fish losses were severe. More extensive studies of the Missouri River and the streams in the "western slope" of Iowa have been initiated with the assignment of a fisheries biologist to work full time in the area. A large part of the initial work in this area will be directed toward obtaining basic data such as water chemistry, angler utilization, and fish populations. First year projects include a fisheries survey of the entire area with particular emphasis on existing habitat conditions. Other major projects are concerned with the source and degree of pollution, creel census, collection and observation on food organisms, commercial fish studies, growth studies, food habits, and studies of population abundance of fishes of the Missouri River.

Drouth conditions in the northern lakes area continued throughout the year to cause declining lake levels and manifold associated biological problems. Suitable fish habitat was seriously reduced in all bodies of water, especially in the smaller, shallower lakes. Aquatic vegetation choking former open water areas required extensive chemical control in public recreation sites. Numerous lakes with low dissolved oxygen tensions were opened to promiscuous

fishing methods during the winter of 1958-59. Fish losses were extremely severe in most of the lakes and many streams.

Routine lake surveys were conducted on all northern fishing lakes, and quantitative creel censuses were taken on representative lakes. New quantitative creel census methods have been devised whereby angler interview data are processed by an electronic computer which provides calculated total angling pressures and harvest statistics. The new process was given nation-wide recognition by the Sports Fishing Institute. Basic data from the census in 1958 include: number of lakes studied, 12; total acres of fishing water, 22,330; total number of fishing trips, 383,607; total hours of recreation, 1,178,299; hours of fishing per acre of water, 53; and fishing success, 1.1 fish per hour.

In an attempt to discover some basic factors involved in fish population dynamics, two lakes in northern Iowa were treated with chemicals to eliminate the resident mixed populations. Silver Lake in Palo Alto County will be restocked with walleyes and minnows, and Center Lake in Dickinson County with largemouth bass and bluegills. These will be known as "test production lakes." The goal is maximum angling success under the best conditions that can be provided.

Hatchery studies were continued with emphasis placed on the use of carp pituitary injections to insure the spawning of female catfish and northern pike.

The state-owned artificial lakes and city reservoirs continued to provide good fishing, especially for panfishes. A creel census on two lakes revealed that the average angler took home slightly more than four fish. A vast population of stunted fishes was chemically eradicated from Thayer Lake in Union County. The lake will be stocked and managed on a test fish production basis in the near future. Initial steps to renovate the fishery in Lake Keomah were also completed in 1958. Over 40,000 pounds of rough fish were removed by a complete chemical treatment. Studies on how to improve the quality of fishing in Williamson Pond, Lucas County, continued during the year. Approximately 32 percent of the adult bluegill population was removed by treating portions of the lake with toxic chemicals. Immediate results indicate a general increase in the average weight of fishes caught. Preliminary investigations on the effects of chemical and thermal stratification of waters on the depth distribution, growth, and physical condition of fishes were started by gill-netting under the ice.

Drought in the northern prairies of the continent reduced the waterfowl nesting habitat in 1958. The diving ducks, especially the canvasback and the redhead, suffered a setback. The legal bag of these species was reduced from four to two birds, and the analysis

of banding data indicated a reduced harvest of these species. The wood duck population trend within the Mississippi flyway is again stable, perhaps upward. Congress has earmarked the funds accruing from the \$1.00 increase in duck stamp costs beginning in 1959 for purchase and lease of wetlands essential to waterfowl.

Part I of the Mississippi Flyway Waterfowl Management Plan, delineating problems, principles, policies, objectives, and guidelines in management, has been published by the Flyway Council; part II, listing projects and programs on a priority basis, has been completed for publication.

Although in 1958 the spring pheasant population was higher than normal, nearly all of the increase came from the excess of roosters carried over from the previous year. Crowing activity increased 53 percent, but the spring hen index was only 6 percent higher than in 1957. As the pheasant reproduction was above normal in 1958, a larger fall population, plus favorable cover conditions, brought an excellent open season. The average hunter required only 3.1 hours to bag a bird compared with 3.7 hours in 1957. Crippling loss was about average. Shooting hours, extended to give hunters more time in the field, were set from 10 a.m. to 4:30 p.m. each day and the possession limit was increased to 6 cock birds. Later sex ratio counts indicate a more favorable harvest of the male pheasant than in the previous season.

Bobwhite quail were reported from every county in late summer, 1958. Harvestable numbers were found as far north as Story County and in the rough lands bordering the Mississippi and Missouri rivers. Bobwhites have been numerous for several years, and reproduction last year was very good. Hunting parties found coveys at the rate of one per 1.7 party hour, and took birds at the rate of 1.3 man hours per bird. Although the 1958-59 winter was cold, deep snow and ice were not on the ground long enough in any period to destroy cover or deprive quail of food.

Reports by conservation officers indicated that ruffed grouse have declined from a recent high. This species, resident in at least five northeastern counties, is most numerous in Allamakee County. Only one brood of prairie chickens was reported in 1958, and that in the vicinity of Fayette. No resident flocks were known to exist. For several seasons no birds have been observed on the last known booming grounds near Centerville.

Required reports from three-fourths of the fur buyers of the state to the Conservation Commission suggest an increased take of beaver, muskrat, mink, badger, foxes and weasels, and less of opossum, raccoon and skunks in the 1958-59 season than in the previous one. The latest available reports indicate declining claims for bounties on the larger predatory mammals.

Cottontail rabbits appeared to increase over 1957 numbers, most notably in southwest counties. Rabbit abundance continued in southeast and south-central areas and excellent hunting was reported from all of the southern counties. July roadside counts have revealed a continuous upswing in cottontail populations since 1953. The roadside index of 6.9 cottontails to a mile in 1958 was higher than in any previous year. The summer age ratio of 2.7 juveniles seen to an adult was lower than in 1957, but higher than the eight-year average of 2.6. Although tularemia was not found, outbreaks of diseases in cottontails were reported from various southern counties and were said to have wiped out the rabbits in a few small areas, particularly in the Chariton area. Jackrabbits remained abundant in the northwest where about 20,000 of them were marketed in season.

Squirrel hunters reported a successful season in 1958, with little change noted from recent years. In the statewide failure of mast production, the shortage was most severe in northern counties and affected all mast bearers, except some of the black oak group. Effects of this mast shortage should be revealed by hunting success during 1959.

The annual February deer census in 1958 found that all counties had deer, with populations for the individual counties ranging from 850 in Clayton County to two in Grundy County. A total population of 10,643 deer was reported for the state, essentially the same as estimates for each of the past three years. Apparently, the population is relatively stable with reproduction equalling losses. A sample of the deer population, obtained during the 1958 hunting season, indicated that 1.74 fawns were produced for each adult doe. This comparatively high figure is probably not excessive, for Iowa's land provides an abundant and nutritious food supply. Projection of the February, 1958, population estimate and the fawn production rate indicates Iowa had about 15,430 deer prior to the 1958 hunting season. Of this number, 2,295 were harvested, 2,131 by gun hunters and 164 by bow hunters. A study indicated that 438 deer met accidental or illegal deaths, with automobiles accounting for 314.

In 1958, the first known recorded social bat, *Myotis sodalis*, for Iowa was taken. Of three specimens observed in a Dubuque County cave, two were collected by Ted Muir, and one specimen is possessed by Professor Emmett Polder of Loras College, Dubuque. The woodchuck has been reported from Lyon County by Conservation Officer Jack Meggers. As yet, there are no reports of the wood-

chuck from Sioux, O'Brien and Osceola counties. A 40-pound wild-cat was reported to have been killed in Scott County in the fall of 1958.

Respectfully submitted,

J. M. AIKMAN
M. A. ELLERHOFF
H. G. HERSHEY
F. H. MENDELL
E. B. POLDER
E. B. SPEAKER
G. W. WORLEY
G. O. HENDRICKSON, *Chairman*

Report of the Resolutions Committee

1. Be it resolved that the Iowa Academy of Science express its gratitude to Professor D. D. Millspaugh, the members of the local arrangements committee, and to Iowa Wesleyan College for the hospitality, accommodations, and excellent dining service provided for this meeting.
2. Be it resolved that the Iowa Academy of Science express its appreciation to all members, past and present, of the various standing and special committees for the service they have rendered the Academy.
3. Be it resolved that the Iowa Academy of Science express its thanks to the Clinton Corn Processing Company for its continued support to science in making available scholarships for promising high school students and to Professor F. E. Brown for his long-standing and enthusiastic service in administering the selection of worthy candidates.
4. Be it resolved that the Iowa Academy of Science express its appreciation to the Iowa Section of the American Chemical Society for its support of the Iowa Science Teachers Award.
5. Be it resolved that the Iowa Academy of Science extend its appreciation to the public relations offices of the Iowa Wesleyan College, the State University of Iowa, and Iowa State College for the publicity relative to the seventy-first session of the Iowa Academy of Science and the various activities of the Academy.
6. Be it resolved that the Iowa Academy of Science express its appreciation to all of the out-going officers and discussion leaders, and to those presenting papers, for their efforts in preparing a meeting of high caliber.

7. Be it further resolved that the secretary of the Iowa Academy of Science be instructed to communicate the above resolutions to the above mentioned individuals and organizations.

J. A. BATH

W. E. NYE

A. W. SWENSEN, *Chairman*