Proceedings of the Iowa Academy of Science

Volume 70 | Annual Issue Article 6

1963

Reports - The Board of Directors; Financial Statement; Staff Reports; Committee Reports; Presidential Address: The Iowa Academy, Past and Future

The following names were announced as the section chairmen for 1964:

Botany: C. C. Bowen, Ames
Chemistry, Inorganic and physical: David Crichton, Pella
Chemistry, Organic and Biological: W. H. Coppock, Des Moines
Conservation: Karl Goellner, Cedar Rapids
Geology: Walter L. Steinhilber, Iowa City
Mathematics: C. H. Lindahl, Ames
Physics: David T. Nelson, Decorah
Psychology: Earl Scott, Mt. Vernon
Zoology: Irving Fishman, Grinnell

The business meeting adjourned at 5:15 p.m.

The Academy reconvened at 8:00 p.m. to hear the annual Academy Address, "Biological Research on Space Travel Problems", delivered by Dr. G. Dale Smith of NASA, from the Ames Research Center, Moffatt Field, California.

Dr. Robert M. Steward, Jr., Professor of Electrical Engineering and Physics, Iowa State University, Ames, Iowa, presented on Saturday forenoon an invited address entitled, "The Automatic Computer — Slave or Master?"

D. C. FOLEY, *Secretary*

Report of the Board of Directors

A special meeting of the Board of Directors was called to order by President Leu in Iowa City on December 15, 1962. The Board, desiring to utilize resources of the Academy for maximum benefit of science, unanimously approved the following motions:

Moved that beginning June 1, 1963 we attach to the Secretary-Treasurer office a person, chosen by the Secretary-Treasurer after consultation with the President of the Academy, whose obligation will be to promote science in Iowa. Moved that we appropriate a sum of $8,000 (maximum) to implement the above program.

The regular meeting of the Board was called to order by President Leu at 3:20 p.m., April 17 at Iowa State University, Ames, Iowa. All Board members were present.

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

The following motions were passed:

1. That we establish on a trial basis a Science Teaching Section.

2. Provided that the State of Iowa Publishes the Annual Proceedings, the Academy will provide financial support up to $550

to the Science Teaching Committee for the purpose of establishing a science teaching journal.

3. Make available funds for research grant awards to High School Science Teachers from proposal submitted by November 1, 1963.

The Board approved the following meeting dates and places:

1964 Decorah, April 17-18
1965 Dubuque
1966 Pella

A budget for 1963 was adopted.

The Board adjourned at 10:20 p.m.

D. C. FOLEY, *Secretary*

Financial Statement

December 31, 1962

General Operating Fund Receipts		
Carried forward from December 31, 1961		$ 3,089.48
Receipts:		
Dues	$ 2,775.65	
Exchange of scientific documents	178.58	
Gifts	4.00	
AAAS grants	415.00	
Interest on bonds	103.50	
Interest on savings	225.92	
Total		$ 3,702.65
Parrish Memorial Fund		
Carried forward from December 31, 1961		$ 1,172.83
Rent on farm	4,140.00	
Iowa Mutual (roof insurance)	50.75	
Total		$ 4,190.75
General Operating Fund Expenditures		
Board of Directors expenses	174.33	
Freight expenses	137.22	
Bank charges and returned checks	16.19	
Academy Conference	32.76	
Postage	376.14	
Printing	1,018.04	
Secretary's supplies	28.89	
Dr. T. E. Roger, honorarium	100.00	
Editorial expenses	150.98	
D. C. Foley, honorarium	100.00	
D. C. Stroud, honorarium	50.00	
Clerical help	41.50	
Reprints	498.99	
Telephone	23.72	
Overpayment of dues	11.00	
Section expenses and speakers	147.03	
Talent search (J. D. Woods)	100.00	

Sister Mary Ammumciata McManus AAAS	315.00	
Sister Alice Marie Fox AAAS	100.00	
AAAS Meeting delegate expense	135.65	
Junior Iowa Academy	150.00	
Transferred to savings	2,225.92	
		$5,933.36

Parrish Memorial Fund Expenditures

Management fee	$ 414.00	
Telephone	6.18	
Insurance	33.66	
Taxes	816.11	
Fire protection	15.00	
Travel	33.80	
Maintenance	124.10	
Additions and alterations	4,359.27	
Total		5,802.12
Balance on hand, Union Story Trust & Savings Bank, Ames		420.23
		$12,155.71

STATEMENT OF ASSETS

U. S. Savings Bonds, series K	$ 3,000.00
Savings Account, Ames Building & Loan	4,219.70
Savings Account, Union Story Trust & Savings	2,212.24
Checking Account, Union Story Trust & Savings	420.23
December 31, 1962 Total	9,852.17
Total assets on December 31, 1961	11,468.33
Reduction in assets during 1962	1,616.16

FUND DISPOSITION

Reserve Fund	$ 2,000.00	
Endowment Fund	7,081.94	
Herbert Osborn Revolving Fund	350.00	
Operating Fund	420.23	
		9,852.17

The financial report of National Science Foundation Grant G2245 to support the Visiting Scientists Program will be made after August 30, 1963, the termination date.

D. C. Foley
Secretary-Treasurer

Report of the Auditing Committee

We have examined the Iowa Academy of Science financial records and the financial statement for December 31, 1962, and find the accounts in good order. We have personally viewed all assets.

Clarence H. Lindahl
Jean L. Laffoon

Report of the Librarian

The Library of Iowa State University is responsible for the distribution of the *Proceedings* of the Iowa Academy of Science. The following statistics give the details relative to the distribution of Volume 69 for 1962:

Sent to members	1,385
Sent on exchange	429
Sent on subscription	31
Gifts to libraries, government agencies, and abstracting journals	35
Total copies distributed	1,880

Report of the Editor

On April 15, 1963, 1,960 copies of Volume 69 of the Proceedings of the Iowa Academy of Science for the year 1962 were released. They were printed by the Graphic Publishing Company, of Lake Mills, Iowa. The practice of supplying 100 free reprints for authors was continued.

The editor is indebted to the section chairmen and the members of the editorial staff for their contributions to the volume, and should like to express the apreciation of the Iowa Academy of Science to the State of Iowa for their financial contribuition and to Mr. S. E. Tennant, State Superintendent of Printing, for his assistance.

PAUL A. MEGLITSCH, *Editor*

Report of the Committee on Science Talent Search

A brochure announcing the Seventeenth Iowa Science Talent Search was sent to all the high school science teachers in the state on April 5, 1962. In November a second brochure was mailed announcing the financial support of this program by Collins Radio Company, Cedar Rapids, Iowa.

Collins Radio Company appropriated $1500 in cash scholarships for seven Iowa Honorees to be presented unon their entering the college of their choice. The Iowa Academy of Science supports the administrative costs of the Talent Search Committee.

During 1962, science teachers in 43 high schools secured 269

sets of examination materials for participation in the national and state competition, and 44 reached Washington, D. C. before the deadline, December 27. Four entrants from Iowa received honorable mention in the national contest.

On February 25 the entires were returned to Iowa. After individual examination of the papers the Science Talent Search Committee met at Grinnell College, March 30, and selected seven Honorees for 1963. The Seventeenth Iowa Honor Roll is as follows:

1st place—$500—John Charles Tietz, 603 West 11th Street, Cedar Falls, Iowa; Title, "Polyfocloids-Ellipses with more than Two Focal Points"; sponsor, Oliver W. Eason, Cedar Falls High School, Cedar Falls, Iowa.

2nd place—$300—Francis Paul Doerder, R.R. #3, Boone, Iowa; Title "Winter Birds and Breeding Bird Populations on 13.8 Acres of Creek Pasture in Iowa: A Report of 1959-1962 Censuses"; sponsor, Kenneth E. Frazier, United Community High, Boone, Iowa.

2nd place—$300—Frances Mary Roller, R.R. #1, Box 194, Bettendorf, Iowa; Title; "Selective Refraction of Sound"; sponsor, Donald A. Schaefer, Bettendorf High School, Bettendorf, Iowa.

3rd place—$100—Richard Lowell Olson, 319 1st Street, South East, Mason City, Iowa; Title, "High Temperature Plasma Techniques Necessary for a Controlled Thermo-Nuclear Reaction"; sponsor, Vern Gunderson, Mason City High School, Mason City, Iowa.

3rd place—$100—Charles David Decker, 638 31st Street, Des Moines 12, Iowa; Title, "Experimental Verification of Universal Gravitation"; sponsor, Herman K. Kirkpatrick, Roosevelt High School, Des Moines 12, Iowa.

3rd place—$100—Daniel Boyd Hansard, 1430 2nd Avenue, South, Fort Dodge, Iowa; Title, "Research In Ferrite Properties and Production"; sponsor, Sister Mary Generosa, St. Edmond High School, Fort Dodge, Iowa.

3rd place—$100—Jennifer Ellen Griffith, 2805 Terrace Drive, Des Moines 12, Iowa; Title, "Soap Film Analysis and Application"; sponsor, Herman K. Kirkpatrick, Roosevelt High School, Des Moines 12, Iowa.

The Honorees were entertained at the Collins Radio Company in Cedar Rapids on April 18. On Friday, April 19 they were taken to the meeting of the Iowa Academy of Science where each received a certificate of his award.

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.

Collins Radio Company has announced that they will continue their support next year.

The Committee wishes to thank Collins Radio Company for financial support of the Seventeenth Iowa Science Talent Search. Science Clubs of America furnishes 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 constestants. Thanks also go to Mr. William Oelke, Grinnell College, for his aid in judging of papers.

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

Report of the High School Relations Committee

The executive council of the Junior Academy of Science composed of student officers and their voting sponsors met during the fall of 1962 to discuss and plan J.A.S. activities. Plans for the club officer's meeting (Webster City, January 19, 1963) were completed with Mr. William Babcock accepting the responsibility of arrangements. Plans for the April meeting at Ames were also outlined and specific areas designated to the appropriate sponsors. The council adjourned to meet jointly with the members of the High School Relations Committee.

The High School Relations Committee presented a proposal for group discussion, modilication and / or approval. The proposal stressed the weaknesses in the services offered to science teachers and high school students by the Academy of Science and the Junior Academy of Science. The proposal also outlined how adequate utilization of the talents of a "Field Service Officer" retained by the Academy of Science would strengthen the Academy and the Junior Academy throughout Iowa. A discussion and question period followed and an unanimous approval was expressed by the members present.

A special meeting of the Board of Iowa Academy of Science was called by President C. Chester Leu to consider the proposal of the High School Relations Committee. It was resolved that the president and the secretary-treasurer should attempt to retain the right man to serve as a field assistant for a trial period of one year. Final decisions were to be made at the April meeting of the Board.

The Junior Academy of Science honored Mr. D. C. Stroud at a banquet Friday, April 19, for his years of service as the execu-

tive secretary of the Junior Academy. Frank W. Starr of East High School in Waterloo, will assume the duties of the Junior Academy Executive Secretary in addition to his present duties as chairman of the High School Relations Committee.

Over thirty science clubs are presently enrolled as members of the Junior Academy of Science. Approximately 700 high school students are members of these Junior Academy Clubs. Each club displays their projects and scientific papers at the spring meeting. The Junior Academy is sponsoring travel expenses for two sophomores to New Mexico where they will participate as observers at the National Science Fair. While at the site of the fair the students will be sponsored by the Junior Academy of New Mexico. Mrs. Ruth Mahan, Director of Exhibits, will accompany the students to New Mexico.

Approximately $580.00 in the present account of the Junior Academy is expected to be reduced to $200.00 by the end of May. This will be carried over to the work beginning in the fall of 1963. The sum of $150.00 from the Academy of Science will make a working account for the 1963-1964 school year of approximately $350.00. This should be adequate at the present time.

A list of awards and clubs will be made available following the April meeting in Ames.

It is recommended by the High School Relations Committee that the Academy of Science:

1. Continue the appointments of the present members of High School Relations Committee.
2. Continue the present Junior Academy appointments of Walter Gohman as Director of Publications, Ruth Mahan as Director of Exhibits, Sister Mary Martina, CHM as Director of Essays.
3. Approve the Junior Academy appointments of William Babcock as Senior Counselor, ... * as Junior Counselor, and Frank Starr as Executive Secretary.
4. Continue its grant of $150.00 to the work of the Junior Academy.
5. Allocate certain funds to be used in research areas by Junior Academy sponsors and/or students as approved by the High School Relations Committee.
6. Continue its policy of encouraging and providing the opportunity for its members to visit with the exhibitors of the Junior Academy at the annual spring meeting.

* Unknown at this time

CLIFFORD MCCOLLUM
T. R. PORTER
ROBERT YAGER
VERN GUNDERSON
D. MCCALLEY
WM. AZBELL
FRANK STARR, *Chairman*

Report of the Science Teaching Committee

The Science Teaching Committee has been reorganized during 1963. Since some of the goals are new and some of the committee members have only recently been appointed, no formal meetings of the committee have been held during the year. Such meetings are awaiting action of the Board of Directors concerning certain specific recommendations that the committee has formulated at the close of this report.

Three informal meetings have been held with the existing Iowa Science Teachers Association. There has been exploration of a possible direct affiliation of this group with the Iowa Academy of Science as well as consideration for organizing a separate group of teachers who desire greater association and contact with the state's scientific community.

The fourteen hundred secondary science teachers have been contacted by means of special letter and a questionnaire and their interests in such an organization investigated. There appears to be a core of about two hundred teachers who are most enthusiastic concerning this direct affiliation with the Academy provided that this affiliation will benefit them in their classroom work. They have endorsed section status for science teachers. In addition, they have requested sponsorship of a state journal to provide a means of communication in the state which would parallel similar efforts in such states as Minnesota and Florida.

The teachers of Iowa also request additional information concerning resource persons for themselves and their students. They have requested sponsorship for regional conferences and possible assistance from the scientific community with research projects for high ability students.

A committee meeting is planned immediately following the annual convention of the Academy (Saturday P.M.) where the action of the Board will be reported to a group of science teachers who have been specially invited. About seventy-five teachers who expressed considerable interest as well as the Executive Board of the Iowa Science Teachers Association plan to be present. It is hoped that this meeting will provide a specific organizational structure for Iowa Science Teachers which will provide a workable framework for the general improvement of science teaching in the state. This Academy committee would hope to work as an advisory group to the teachers and serve as the Academy's official contact with the rather large group with rather specialized functions. It is anticipated that the committee would formulate specific proposals to granting agencies for the group in the name of the Iowa Academy of Science.

RECOMMENDATIONS

Recommendation #1: Section status for Science Teachers — to be called the Science Education Section
a. Section meetings arranged to provide blocks of time for teacher attendance in other section meetings
b. Part of the sessions to be of discussion type
c. Formal papers for publication in the **Proceedings** limited (suggestion of five as number distributed in various sections during 1963)
d. Section program to be printed as part of the yearly convention program.

Recommendation # 2: Financial support for science teaching journal
a. Proposed cost for four issues: $550
b. Support for one year from Academy: $400 (remainder to come from special section dues)
c. Postage to come from secretary's general mailing funds for sending journal to all teacher-members
d. Proposed search for advertising support for journal

Recommendation #3: Formal academy endorsement of committee exploration of possible NSF and other financial support for special programs for high school students of high ability and their teachers, for state and regional conferences, workshops, symposia, etc. for students and teachers as well as for other activities suggested by the science teachers of Iowa.
a. Overhead funds from such projects to be used to support other activities endorsed by the committee and the Academy Board of Directors.
b. Ideas from all members to be utilized for the general improvement of science teaching in Iowa.

DONALD L. BIGGS
JOHN R. BOLTE
DELMA HARDING
LELAND WILSON
ROBERT E. YAGER, *Chairman*

Report of Iowa Visiting Scientist Program

This past year has been the most successful one for the Iowa Visiting Scientist Program since its inception in 1960. There have been fewer problems of communications and both the schools and the scientists have a better understanding of the program and its offerings. New scientists have been recruited by those already participating and no scientists have resigned from the program except if they were taking a leave or changing positions. Many schools are now familiar with this program and rely upon it for additional help and enrichment of their science and mathematics programs. Many of the schools participating in the Visiting Scientist Program for the first time are doing so because of favorable reports received from other schools.

There have been two schools who were unhappy with the scientists' visits to their schools. In one case, the scientist did not hold a pre-visit planning session and so communications were not good and there was a misunderstanding which was not serious but might have been avoided. In the second case, the scientist forgot to go to the school as scheduled and did not make amends for some time. An apology was extended this school.

A. *General Information*

Number of scientists participating	103
Number of scientists who have made visits	94
Number of one day visits made as of April 8, 1963	263
Number of visits arranged but not completed	33
Number of requests pending	17
Number of schools visited	166
Number of visits cancelled	4

Additional requests for scientists are coming daily so it is expected that approximately 325 visits will have been made by the end of May.

Contacts made

High school students	16,681	
Junior high school students	2,158	
Elementary school students	1,588	
Junior College students	20	
High school teachers	321	
Elementary teachers	96	
Parent groups	250	
Special groups	3	science fairs
School Board members	5	

The treasurer of the Iowa Academy will issue a financial statement as to the amount of money spent, approximate cost per visit (including operating cost, honorarium, and travel expenses for scientist), and any other information the Board of Directors of the Iowa Academy of Science wishes.

B. *Evaluation of Program*

1) High interest in the Visiting Scientist Program on the part of both the scientist and the schools continued. A number of schools are participating in this program for the first time this year.
2) The scientists have expressed an interest in this program because they feel it gives them an excellent opportunity to see what is happening in the high schools in science and mathematics.
3) Scientists continue to enlist the help of other scientists which is an indication of their value of this program.
4) Many scientists have been requested to return to schools to participate in local science fairs and other activities.

C. *Publicity*

1) The News and Information Service of the State University of Iowa has again done an outstanding job in publicizing this program throughout the state.

2) Newsletters were sent to the principals of all secondary schools in the state.

D. *New Areas*

1) The greatest number of special requests was for help in curriculum revision. It is anticipated that interest will increase in this area next year with the publication of the new Iowa Science Curriculum Guides.

2) An effort was made to include and emphasize psychology this year. Personal letters to selected junior colleges were sent informing them of the availability of an experimental psychologist. No response or acknowledgment was made by the schools contacted.

E. *Comments*

1) *High School Principal*: I believe the preliminary planning session helped make this a very effective program and gave us time to publish the schedule in our Parent-O-Gram a week before and let the pupils know what was to be presented to them.

2) *High School Teacher*: I particularly want to thank you for your consultation with the junior college student planning to transfer next fall; for your philosophical approach in beginning each discussion; for the way you coordinated the high school assembly program both during the brief planning session and during the program itself.

3) *Scientist*: I have found that one of the most favorable aspects of these visits is a meeting with the students in small groups or individually to discuss their interests in science, science fair projects and future plans for education after high school. These meetings allow me to become better acquainted with the individual problems facing the students and to give them information that will help solve their problems.

4) *Comment by scientist who visited Annie Wittenmeyer Home School*: To be able to get the response that I did from these "unwanted" children – they are a real challenge but we made it!

5) *Student*: It keeps everyone on their toes when he asked questions. Very good. You know what you can expect in college.

6) *Student*: I thought he was very smart and used very easy to understand examples.

7) *Comment by teacher at school where scientist did not appear*: My bitter disappointment with the Visiting Scientist Program was seeing the potential of a Visiting Scientist fade away. The feeling that elementary science was slighted because 'after all it is *only* elementary science'.

The National Science Foundation is again to be complimented on the way it handled its part of this program. The freedom allowed the director makes it possible to meet the various needs of each school. It is hoped that the coming year will bring even greater success and enthusiasm for the Visiting Scientist Program.

T. R. PORTER, *Director*

Report of the Membership Committee

On January 1, 1963 there were 1600 members in the Iowa Academy of Science. During the year ending April 20th, the membership committee elected 88 new associates and 179 new student associates. At the spring business meeting the Academy approved 4 transfers from life fellows to emeritus fellows, 24 transfers from fellows to emeritus fellows, 7 transfers from associates to fellows, and elected 21 new fellows. The resulting membership of 1888 consists of 1 honorary fellow, 67 emeritus fellows, 10 life fellows, 590 fellows, 766 associates, and 452 student associates.

The names of the honorary fellow, emeritus fellows, life fellows, transfers from associates to fellows, and new members of all classes are listed below:

HONORARY FELLOWS

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

EMERITUS FELLOWS

Aikman, J. M. (28G) ..... Iowa State University, Ames
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
Barnes, M. E. (32G) ..... State University, Iowa City
Bartsch, Paul (1895F) ..... Lorton, Virginia
Biester, H. E. (38FG) ..... Iowa State University, Ames
Boyd, Mark F. (07F) ..... Rockefeller Foundation, Tallahassee, Florida
Bryan, Alvin W. (35FG) ..... State University, Iowa City
Buchanan, R. E. (02G) ..... Iowa State University, Ames
Cable, E. J. (06E) ..... State College, Cedar Falls
Chittenden, E. W. (20A) ..... Washington, D. C.
Cornog, Jacob (23C) ..... State University, Iowa City
Coss, James A. (19C) ..... Morningside College, Sioux City
Crosthwait, David N., Jr. (35BC) ..... Michigan City, Indiana
Culbertson, J. B. (22C) ..... Cornell College, Mt. Vernon
Dodd, L. E. (14B) ..... Port Angeles, Washington
Erwin, A. T. (1900G) ..... Des Moines, Washington
Evans, John E. (22I) ..... Iowa State University, Ames
Gaessler, William G. (16C) ..... Iowa State University, Ames
Geiser, S. W. (15F) ..... Southern Methodist University, Dallas, Texas
Getchell, R. W. (07C) ..... State College, Cedar Falls
Giese, Henry (29B) ..... Iowa State University, Ames
Gilkey, H. J. (39ABE) ..... Iowa State University, Ames
Gilman, Henry (20C) ..... Iowa State University, Ames
Gilman, J. C. (21G) ..... Iowa State University, Ames

Gouwens, Cornelius (21A) ..... Iowa State University, Ames
Graber, M. E. (20AB) ..... Morningside College, Sioux City
Gwynne, Charles S. (27E) ..... Iowa State University, Ames
Hartzell, Albert (18F) ..... Boyce Thompson Institute, Yonkers, N. Y.
Hawk, Grover C. (17F) ..... Hedrick, Iowa
Heitkamp, George W. (17BG) ..... Loras College, Dubuque
Hissong, R. D. (31FG) ..... Sioux City
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 Department of Health, Honolulu, Hawaii
McKelvey, Joseph V. (21A) ..... Iowa State University, Ames
Martin, George W. (24G) ..... State University, Iowa City
Martin, John (12G) ..... Iowa State University, Ames
Melhus, Irvin E. (16G) ..... Iowa State University, Ames
Meyer, Alfred W. (25B) ..... Coe College, Cedar Rapids
Moots, Elmer E. (23A) ..... Whittier, California
Morrison, John W. (07G) ..... Alta
Newell, W. S. (16I) ..... Coe College, Cedar Rapids
Paddock, F. B. (24F) ..... Iowa State University, Ames
Palmer, E. Laurence (14G) ..... Ithaca, New York
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
Runner, J. J. (20E) ..... State University, Iowa City
Sanders, W. E. (01FG) ..... Tucson, Arizona
Schoewe, Walter H. (17E) ..... Lawrence, Kansas
Sherman, L. P. (20C) ..... Grinnell
Smith, Helen F. (35A) ..... Iowa State University, Ames
Trowbridge, Arthur C. (12E) ..... State University, Iowa City
Van Tuyl, Francis M. (11E) ..... Golden, Colorado
Wellhouse, W. H. (22F) ..... Iowa State University, Ames
Wilson, Ben H. (17F) ..... Joliet, Illinois
Willson, L. H. (21B) ..... Iowa State University, Ames
Witschi, Emil (30F) ..... State University, Iowa City
Wolden, B. O. (09G) ..... Estherville
Woods, Roscoe W. (31A) ..... State University, Iowa City
Wylie, C. C. (26A) ..... Springfield, Missouri
Zabel, H. E. (39) ..... Deer Creek, Minnesota

Life Fellows

Burton, Mrs. Vernon Devine (46G) ..... Mankato, Minnesota
Jones, David T. (26F) ..... Bourbonnais, Illinois
Kopf, Kenneth (31G) ..... San Francisco, California
Kreider, Orlando C. (32A) ..... Iowa State University, Ames
Miller, Wayne L. (57C) ..... Burlington
Palmer, Edward C., Jr. (47I) ..... Sioux City
Pilicer, Abraham (57CF) ..... Cedar Rapids
Wenberg, Edwin H. (38E) ..... Caracas, Venezuela
Wilson, L. R. (35EG) ..... University of Oklahoma, Norman
Yos, David A. (53G) ..... Burlington

Transfers from Associate to Fellows

Broseghini, Albert L.
Norton, Don C.
Peterson, Peter A.
Porod, Robert J.
Tallman, Russell W.
Uhlaner, J. E.
Wickliff, James L.

New Fellows

Buchanan, E. B., Jr., State University, Iowa City
Bunce, Donald F. M., Des Moines
Calsyn, Morris, St. Ambrose College
Cuany, Robin L., State University, Iowa City

DeLisle, Donald G., Simpson College, Indianola
Durkee, L. H., Grinnell College, Grinnell
Frantzen, Karl H., Omaha, Nebraska
Gerrish, Everett E., Grinnell
Hammond, Earl G., Iowa State University, Ames
Haskin, Dorothy, St. Ambrose College
Knight, Kenneth L., Iowa State University, Ames
Koch, Donald Leroy, Iowa City
Logan, Alan F., St. Ambrose College, Davenport
Marshall, Franklin N., Indianapolis, Indiana
Reilman, Rev. Thomas J., St. Ambrose College, Davenport
Reitan, Phillip J., Luther College, Decorah
Remley, Frank M., Grinnell
Rosinski, Martin A., State University, Iowa City
Sister Mary Edith Oldham, R.S.M., Cedar Rapids
Smith, Stanley Galen, Iowa State University, Ames
Wiedmeier, Tom, St. Ambrose College, Davenport

New Associates

Alberding, Herbert, Simpson College, Indianola
Albertson, Roger D., Cylinder
Andershok, Norbert F., Hampton
Anderson, Arthur R., Jr., Ames
Anderson, Lyle R., Waterloo
Backsen, Lee B., Iowa State University, Ames
Bahr, Vernon H., Luther College, Decorah
Bahrenfuss, Keith, Webster City
Boertje, Stanley B., Dordt College, Sioux Center
Boos, Clarence E., Underwood
Bowman, Leo H., Parsons College, Fairfield
Burton, Donald J., State University, Iowa City
Buttrey, Benton W., Iowa State University, Ames
Cain, Thomas M., Sumner
Capallen, Jennings, Ames
Cater, E. David, State University, Iowa City
Corneliussen, Roger, Luther College, Decorah
Cram, Sheldon L., Westmar College, LeMars
Curtis, Waldo, Simpson College, Indianola
Daftsios, A. C., Charles City
Dickinson, Henry J., Maquoketa
Erickson, Luther E., Grinnell College, Grinnell
Ewing, Douglas R., Ames
Fechtner, Fredrick R., Rockford, Illinois
Fisher, Josep A., Des Moines
Flickinger, Gertrude S., Mount Pleasant
Floyd, Gary L., Grinnell
Friedell, Rev. John C., Loras College, Dubuque
Gerstein, Bernard C., Iowa State University, Ames
Griffore, Terrance P., Iowa Lutheran Hospital, Des Moines
Hallauer, Arnel R., Iowa State University, Ames
Hampton, David C., Wartburg College, Waverly
Hare, Robert, Waterloo
Hawes-Davis, Denzil, University of Dubuque, Dubuque
Hodgin, David M., Cedar Rapids
Huttemann, Thomas J., Jr., Ames
Kelley, Alden G., Parsons College, Fairfield
Kenney, C. R., Des Moines
Kirkpatrick, Herman H., Des Moines
Klein, Arthur H., Ames
Krehbiel, Howard E., Mt. Pleasant
Kunkle, George R., Iowa City
Kuraishi, Susumu, State University, Iowa City
Licklider, Leslie L., Cherokee
Lindsay, Charles M., Coe College, Cedar Rapids
Ludley, Everett A., Webster City Junior College, Webster City
Lyon, Marie Isabelle, Iowa State University, Ames
Marple, Leland W., Iowa State University, Ames
Masat, Francis E., Fayette
McGee, Thomas D., Iowa State University, Ames
McMahon, W. R., Ames Laboratory, Ames
Medcalf, William, University of Dubuque, Dubuque
Merritt, James L., Fort Madison
Mills, Delbert, Runnells
Mortenson, Robert A., Algona
Mowrey, James A., Clear Lake
Murdoch, Arthur R., Sioux City
Murphy, Francis H., Charter Oak
Myers, Hugh I., Parsons College, Fairfield
Oberheu, Theodore, Sumner
Pankratz, H. Stuart, Iowa State

University, Ames
Peterson, William R., Sioux City
Pietrzyc, Donald J., State University, Iowa City
Rila, C. Clinton, Parsons College, Fairfield
Ritchie, Alfred E., Ames
Rober, Norlin, Luther College, Decorah
Robinson, Paul E., Iowa City
Sanders, Rodney A., Ottumwa
Schmude, K. E., Parsons College, Fairfield
Scott, Earl, Cornell College, Mt. Vernon
Sister Mary Imelda Hippler, Mt. Mercy College, Cedar Rapids
Sister Mary Maurine Gearen, B. V. M., Iowa City
Sister Columban O'Toole, Sioux City
Slater, Carmon, Iowa City
Spratt, Roger L., Algona
Stockdale, Harold J., Iowa State University, Ames
Swift, F. J., Jr., Maquoketa
Tang, Helen, Marycrest College, Davenport
Taylor, Charles E., University of Dubuque, Dubuque
Thompson, Thomas L., State University, Iowa City
Tjostem, John L., Luther College, Decorah
Tweedie, Stephen W., University of Dubuque, Dubuque
Underfer, Jerry L., Fonda
Vuagniaux, M. D., Iowa Lutheran Hospital, Des Moines
Wernsman, Earl A., Iowa State University, Ames
Wildman, William C., Iowa State University, Ames
Williams, Donald E., Ames
Zimmerman, Dean R., Wartburg College, Waverly

New Student Associates

Ralph O. Allen, Richard D. Allen, Wayne I. Anderson, Willis Anderson, Jr., Fred H. Athey, Paul Allan Barks, Nick Baumgartner, Robert J. Bauske, Reldon F. Beck, Jerry D. Berlin, Ted Bianco, Richard Bogan, George W. Borden, Fred Bowen, Thomas L. Bowen, John D. Buckley, Robert J. Buenker, Bruce A. Burton, Eleanor Ann Brookens, Marian Capen, Benjamin Lester Carroll, Curt Caslavka, Christopher Chapler, Joseph W. Chatfield, James E. Clapp, Charles G. Cleary, Nancy J. Cooke, Richard E. Crang, Robert Crow, Glenn H. Crum, Ray Culver, James E. Dahl, Douglas Dahlman, Michael E. Dahmus, John Decker, Madelon Dodd, Lois Dougherty, Deanna Dumer, Leo F. Englert, Jr., Hertha J. Farmer, James S. Fish, Jr., Michael P. Fox, James F. Frank, Richard A. Fuller, Jeanne Gagle, Paul Gauer, David W. Gauger, Gordon Lynn Gibbs, Brian M. Gifford, Harris Goldstein, Jim Grier, Terry Lee Guerin, Ronald G. Gunther, Daniel R. Gustafson, Bettie Gutmann, Hubert D. Haensel, Ross James Hale, Robert Hanselman, Stephen L. Hanson, Walter L. Harmer, James A. Harrington, David C. Harris, Douglas Ross Heath, Peter C. Held, Robert E. Henshaw, Richard A. Herd, Bernard J. Hickey, Lubon Hiszczynskyj, H. P. Hostetter, E. George Huedepohl, Terry H. Irvine, Bob Ivins, Roger N. Jacobs, James C. Johnson, James H. Johnson, Richard Dean Johnson, Richard T. Johnson, Robert Joel Johnson, Paul K. Jones, James R. Karr, Robert Keck, Steven C. King, Richard D. Klotz, George Knaphus, John F. Koser, Rudolf R. Kraus, Timothy Kvberski, Kenneth D. Laser, Robert Lick, Frank A. Lindsey, Kathleen A. Link, Ken V. Loats, Robert A. Lohnes, Patricia L. Looney, Howard Larson, Sr., Gary E. Lucas, Ross A. Madden, Mickey O. Marlowe, Lloyd McAtee, Mike McCarthy, William McClain, Patrick McClelland, Richard McGeough, George McKinzie, Jim McKiveen, Gary McVicker, Andria L. Meeks, Linda R. Meisels, Carl R. Miller, Marcus Eugene Milling, John E. Moeding, Hans Lloyd Mogensen, David Frank Morehouse, Clarence H. Morris, Steven Morrison, James Mortimer, John E. Mrochek, Loren O. Muench, Martha G. Mullican, Donald Murphy, Carole H. Nelson, Eugene Nolting, Larry Nemmers, Philip T. Northen, Dennis R. Parker, Robert C. Paulson, Jr., Geoffrey Peak, David E. Pedersen, Neals Pedersen, Ronald Henry Peters, Beverly Peterson, Gary E. Petrowski, Gerald Pfeiffer, David A. Pierce, Joseph E. Plamondon, Martha Preston, John C. Raich, Ben A. Raines, Nancy Lee Reimers, Edward Resnick, Thomas A. Rettig, James B. Reynolds, John L. Richard, Gerald Rigler, Michael C. Roberts, Richard Robinson, Norman Rohrig, Richard Saunders, Judith A. Savadge, Gary G. Schultz, Leslie Segner, Melvin F. Seifert, Dale Lee

Shahan, W. Randall Shobe, Margaret Shumaker, Phillip W. Simms, Gerald D. Skoog, Victor M. Solomon, Leslie Edward Spanel, Sander Stern, Andrew Stevenson, Michael J. Story, Frederick James Swift, III, Dwane J. Sykes, Carole Teresavich, Adel M. Throckmorton, Donald Lee Troyer, Margery Anne Underberg, James Van Abbema, Angela Vellocci, P. H. Walker, Peter D. Wallace, Philip M. Wargo, Jill D. Welch, Harold W. Wengert, Harold J. Wilson, Robert J. Wilson, Tadeus Winiecki, Dana Wayne Zimmerli.

ARTHUR J. BOSCH
H. L. DEAN
KARL E. GOELLNER
B. F. GRAHAM
IRA J. GWINN
CHARLES W. JONES
O. C. KREIDER
HAROLD SWANSON
MARY M. VINJE
W. J. POPPY, *Chairman*

Report of the Committee on Conservation

CONSERVATION IN IOWA, 1962

Resources for outdoor recreation received increased attention in 1962 in Iowa and in the county as a whole. The Soil Conservation Service, Bureau of Sport Fisheries and Wildlife, and several other federal agencies have been given authority to promote the development and preservation of outdoor recreation facilities, following the recommendations of the Outdoor Recreation Resources Review Committee.

Iowa State parks and preserves had a big increase in camping activities, 311,404 camper days, a 28% increase over 1961. The number of visitor days to the parks and preserves exceeded 7.25 million. Significant progress was made in improvement and maintenance of the parks and preserves but increased funds will be needed from the 60th General Assembly to meet the expanded use of these resources.

The J. N. "Ding" Darling Foundation was formed to further the work of Iowa's most famous conservationist. Preservation and development of areas along the Lewis and Clark Trail is one project which has been undertaken by the Foundation. In addition to the death of J. N. Darling, we mourn the loss of Dr. Paul Errington, world authority on wildlife populations and predation, and Dr. Dorothy Matala, leader in conservation education.

Favorable weather conditions brought artificial and natural lakes to desirable levels and maintained fairly adequate flows in most streams throughout the year.

Studies indicated that thermal and chemical stratification of the artificial lakes greatly affect angler success, fish growth and depth distribution. Walleye fishing has been maintained in Green Valley Lake by annual fry stocking. Two artificial spawning reefs have been created and observations will be made to determine

whether these result in natural reproduction into several artificial lakes and plans have been made to introduce spotted bass.

At least 9 new oxbow lakes have been formed by the channelization of the Missouri River by the U.S. Corps of Engineers. Impervious levees are being constructed to prevent siltation from the river and to maintain the lake conditions for as long as possible.

Rough fish populations continue to dominate in most streams of the state. Carpsuckers, however, failed to bring off a successful hatch in 1962, the first failure in 18 years. Walleye reproduction also failed in the streams, for a second year, and smallmouth bass reproduction was poor. The State Conservation Commission supplemented the latter with plantings of bass fingerlings. A creel census, as part of the Upper Mississippi River Conservation Committee program, indicated that pools 11 and 18 on the Mississippi provided about 290,000 hours of fishing from April 1 to October 31st.

Iowa's marshes are in excellent condition from a habitat standpoint. The muskrat peak or near peak in 1962 is a noteworthy indicator of the dry to wet ecological sequence and follows Dr. Errington's forecast of muskrat highs during the years ending with one, two and three.

Muskrats received much attention in the newspapers and there were requests for bounties and relaxed restrictions on trapping. Paying bounties is not believed to be an effective method of population control by most conservationists.

The January, 1963 inventory of waterfowl within the Mississippi Flyway indicated the dabbling duck populations were still below the 10-year average. Despite a 37% increase over the previous year, mallard populations were still 27% below the 10-year average and at the second lowest count in a decade. Relief from the prolonged drought (1959-1961) in parts of the breeding grounds aided production but drought still continues in many areas. Diving duck population indicated numerical strength only among the scaup. Closed seasons continued on redheads and canvasbacks. Canada and white-fronted geese populations within the Flyway were highest on record, but blue and snow geese numbers were somewhat below these peaks.

Iowa is cooperating and encouraging the habitat committee of the Mississippi Flyway Council to establish the proposed "Little Sioux Waterfowl Breeding Refuge" along the headwaters of the Little Sioux River in Dickinson County, Iowa and Jackson County, Minnesota. This refuge area could have major significance as a means of perpetuating progeny of waterfowl nesting in nearby areas, and assist in the re-establishment of the Giant

Canada goose, *Branta canadensis maxima,* (a subspecies recently presumed extinct) as a nesting bird in northwest Iowa from a parent flock located at the Round Lake Waterfowl Station, Round Lake, Minnesota.

Several woodcock surveys were run in the spring on potential singing grounds, primarily in northeastern Iowa. These revealed more of this species in the state than commonly believed. The ruffed grouse population in northeast Iowa, the bulk of which is in Allamakee County, remains at about the same level as in 1961, perhaps with slight increases in a few local areas. Seven grouse, three males and four females, were live-trapped in the fall and transplanted to Shimek State Forest in extreme southeastern Iowa. Further efforts in this direction are planned in an attempt to re-establish this species in parts of its former range in the state.

Several small flocks of wilk turkeys are known to have wintered on and around the Yellow River State Forest, and are known to equal in number the 39 released in 1960-61. At least 51 turkeys entered the 1962 breeding season, and several broods were sighted during the summer and fall. A new game bird, the Reeves pheasant, (10 cocks and 12 hens) was released in the Stephens State Forest in Lucas County northeast of Chariton. This was a preliminary test of this species' survival ability under Iowa conditions, with larger releases planned for next year. The Reeves pheasant is a bird of hilly timbered areas, as are found in much of southern Iowa, and it is hoped this native of China will fill the void which has never been populated to any significant extent by the ring-necked pheasant common to much of the rest of the state.

During the past year, 1,225 ringnecked pheasants were released at a single location in northeastern Henry County. This was the first step in a program aimed at establishing huntable populations of this species in the southeastern part of the state, an area with a large fraction of Iowa's hunters but few pheasants. These birds were wild-trapped or first or second generation pen-raised stock from southwestern Iowa near the Union-Adair county line, an area where pheasants have increased remarkably in the past decade. It is hoped these birds of southern Iowa origin will prove more adaptable than have earlier stockings of pheasants from northern Iowa stock. Some of the released birds were a cross between this southern Iowa stock and the Iranian black-necked pheasant—a native of the southern fringe of the pheasants' Asian range–which is hoped will likewise prove more adaptable to southern Iowa environs.

In the main pheasant range, the ringnecked again showed their

hardiness in the winter of 1961-2, the most severe since 1935-6. Favorable weather during the nesting season resulted in a good population and hunting conditions were favorable in the fall.

Last fall, one small flock of prairie chickens was reported in Mills County. This area was once the site for fall concentrations and the birds may be from northern Kansas or southern Nebraska.

The 1962 quail population was highest in southeastern Iowa where it was near the 5-year average. There has been recovery since 1960 when the harsh winter brought about the lowest quail population in many years. Loss was greatest in the south-central portion of Iowa. In addition to the severe winter, the loss of brush (200 or more acres annually per county) contributed to the down trend. The 1963 winter was favorable, with only a brief period of severe cold and no heavy snowfall. This was fortunate, since for the first time in several years, more than 90% of the beans and corn were harvested and thus the only grain in most fields was on the ground where it would have been difficult to find in deep snow.

Both cottontail and jackrabbit populations were low in 1962. The severe 1961-2 winter was believed to have reduced the populations, and production of cottontails was low probably due to a breeding season delayed by the late spring. Highest populations occurred in the extreme south-central and southeast counties. Squirrel populations appeared to be about normal but hunting was reduced because of the abundance of mosquitoes.

Deer populations continued the upward trend they have exhibited since 1958, with a total winter population of 14,155 estimated in the 1961 winter deer census. This was an increase of about 8% over the estimate for the previous year, and was 25% greater than the mean population estimate for the preceding five years. Iowa deer hunters had the most successful season on record in 1961, with a total of 5,364 deer harvested. Conservation Officers reported an additional 839 deer had been killed by traffic, illegal hunting, miscellaneous causes, and dogs in 1961. Traffic accidents accounted for 638, or about 81%, of the deer killed outside of legal hunting in 1961.

Chemicals are being increasingly used in the control of insects, weeds and other pests. Conservationists must be continually alert to the direct effects of the chemicals on desirable wildlife and to elimination or damage of habitat which so easily results from the widespread use of pesticides.

The forestry programs of the Conservation Commission include cooperative woodland management, forest fire protection, state forest management, production of nursery stock and the Iowa tree farm system. Graduate foresters located at Adel, Anamosa, Chari-

ton, Denison, Fairfield, Independence, Elkader and Wapello assist in these programs in the various regions of the state. The state forest areas are managed primarily for demonstrating good woodland practices, production of forest products and multiple types of recreation including picnicking, primitive camping, hunting, fishing and trail riding. The trees and shrubs grown in the state nursery are sold at nominal cost so that landowners may be encouraged to provide forest, erosion control and wildlife plantings throughout the state.. Approximately 2,500,000 woody plants of 25 different species including multiflora rose and various species of pine were distributed. To become a tree farmer, a landowner must take reasonable precautions to prevent woodland fires. He must apply sound cutting practices to existing timber and must plant areas that will not re-seed naturally. The Iowa tree farm movement is sponsored by the Iowa Retail Lumberman's Association, the Iowa Bankers Association, American Forest Products Industries, Inc., and the State Conservation Commission. Presently there are 123 landowners, involving 9,041 acres of woodland, qualified as tree farmers in Iowa.

During the past year the State Soil Conservationist of the Soil Conservation Service, working in collaboration with Iowa State University, Iowa State Experiment Station and Iowa Cooperative Extension Service, developed an acceptable technique of pasture evaluation and pasture cost and return data for use by Soil Conservation Service technicians in assisting district cooperators to develope their soil and water conservation farm plans. Improvements have been made in the Universal Soil Loss Equation for predicting soil loss in Iowa.

The passage of the Agricultural Act of 1962 brought new authority and responsibility to the Soil Conservation Service, including authorization to cost-share the total installation cost of any structure to meet the anticipated future demands or needs for municipal or industrial water and for recreation and wildlife features. Recreation is now recognized as a landuse with the Service being requested to provide technical assistance for Income Producing Recreation Enterprises.

Water resources are receiving additional attention as the supplies in many areas of the country become critical. Iowa is blessed with adequate water at most times but maintenance of quality and proper distribution is essential for continued development of Iowa. The State University of Iowa and Iowa State University both expanded programs related to water resources and quality during the year.

The Fifteenth International Congress of Limnology in August,

1962, cited West Okoboji Lake as a unique aquatic environment which should be preserved in as nearly a natural state as possible.

A chapter of the Nature Conservancy is being organized to work toward the preservation of natural undisturbed areas, essential for the survival of many species of plants and animals. The Iowa Academy of Science activities have led to the preservation of several prairie areas. We welcome the organization of this Nature Conservancy chapter and believe that cooperation between the Academy and the Nature Conservancy can lead to a more effective program in this important area.

The Conservation Source Book, developed by the Iowa Conservation Education Association and sponsored in part by the Iowa Academy of Science, has been widely accepted for use in schools and various youth organizations. The first printing of 3,000 copies already is almost exhausted and a second printing is planned.

Conservation is not finally attained but must be continually achieved. The Iowa Academy of Science with its broad basis of membership and its promotion of interdisciplinary cooperation has a special responsibility in maintaining Iowa's natural resources.

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*

Presidential Address

G. CHESTER LEU

The Iowa Academy, Past and Future

Members and Friends of the Iowa Academy:

By this time many of you have probably noted that we are celebrating our Diamond Jubilee. At least this is the 75th session of the Iowa Academy of Science. What an excellent excuse I could have to hold you for the next couple of hours while I review the history of our organization. But I will not for two reasons; a, because neither you nor I could take it, and b, I have no ghost writer to collect the data for me.

If any of you have tried to present a substantial major in any lab science – alone – you know that the one-armed paperhanger had nothing on you. Fortunately for me this condition has changed. However, I have enjoyed this past year if only to be pried

out of the lab and forced to meet some of the fine people I have wanted to know better for a long time.

Also, being president has given me an opportunity to learn something about the Academy that the handshaking can not do, as important as that is. More of you should have the experience but I do not know how it could be done. In fact, one of the biggest problems in making progress is the short time that one is in office. One just about gets the picture when the canvas is handed to a successor to paint. We do have the president-elect system operating quite well to aid at this point, but some of us are still not satisfied this is the best solution.

Although I will not bore you with many historical details I feel I should try to bring you up to date on relatively recent developments. Until a few years ago the presidential address was usually a well developed report on the progress of the speaker's research project and often only one major invited address was presented and that in the evening and open to the public. For the last several years the presidents have either had more non-research interests or more concern for the progress of the Academy and the scientific papers have been presented by more invited speakers. For my part I would enjoy spending this time discussing the merits of various laboratory procedures or the implications of the results of exploding wires but I believe other things are more important at this time.

During these last several years you have had quite a number of hopes, proposals and plans presented in these addresses, many of which had considerable merit, but what happened to them? As inferred before, the truth of the matter is that many of us have not had an opportunity to fully comprehend the situation before it was time to throw the problems in the next fellow's lap.

Every year the Academy receives reports from some of the standing committees that certain things ought to be done but the usual one Board meeting a year does not allow time for a complete analysis of each proposal. This past year we tried to move a step further by holding an extra session last fall. It is the result of that meeting which I would like to present to you today.

At this meeting we reviewed some of the proposals made in recent years:

> We should have an Industrial Research Institute or Center, or at least a Panel of Iowa Scientists for consultation.
> We should encourage more high school teachers to become Academy members and take an active part.
> We should consider a Science Teaching Section that is aimed primarily at the high school teacher.
> We should encourage more participation in Science Fairs and try to standardize their operations.

We should encourage more students to enter the Science Talent Search Program.
We should assist science teachers in their laboratory problems.
We should publish a monthly or quarterly science bulletin.
We should encourage a larger number of scientists in general to take an active part in running the Academy.
We should try to communicate more with the public.

This list is almost endless and the only solution which seemed possible was to find some capable person with some extra time and who did not need a lot of money. Yes, we went on record to find a person who could do these things and even on a half-time basis if necessary to get things started.

Then when it looked like our hopes might be realized, a dark cloud arose on the horizon. Iowa has always been proud of its reports, the *Proceedings*, and it goes all over the world in exchange for other Journals. As all of you must know the small dues we pay does not begin to cover the cost of even the printing of our *Proceedings*. For about 65 years this has been done by the State. In the last couple of years there has been some agitation against continuing this subsidy, although the State stands to gain much by its cooperation. If this agitation should take away the funds for our printing, then we will either have to take drastic steps to change our printing policy or give up the idea of a continuous field secretary to carry out our plans and dreams.

I feel sure you would like our Academy, with the third largest membership in the nation, to continue to grow in quality as well as quantity, and the permanent secretary would be necessary for this.

And if you have been pleased with our publication maybe you can help us to retain the funds necessary for its printing. Within the next week or so the State Legislature will be acting on the Appropriation bill which has normally carried this item in the past but which has not been replaced so far this year. If you encourage your legislators to give this item thoughtful consideration it may still be saved and our program can go on. Many of the "we shoulds" will hinge on how well we convince our legislators of our desires.

If we go back a minute to some of our recent changes you will recall that we have added a new section on Conservation. We have established an Editorial Board to assist the Editor. We have acquired a farm which will be a fine source of revenue when it is sufficiently modernized so that we can keep most of the rent. We have a very active Visiting Scientist Program—the grant for which has been renewed for the coming year. We have a new sponsor for our Science Talent Search, the Collins Radio Company as you learned a short time ago. We have voted to

hire a field worker or Executive Secretary like many of the other large Academies have done.

About here it looks as though we were coming along quite well but there are still other things that we could profitably do. When thinking about what areas of scientific progress are most vital to Iowa, it occurred to me that this is precisely the major problem of the National Science Foundation for the entire United States of America. Since N.S.F. has been operating for the past ten years we could probably benefit from their findings. This made me feel that many of you might be interested in a report of the N.S.F. meeting held on April 10 in Canton, Missouri, where educators from several states assembled. I know several of you were there. Before the meeting was over I felt I knew why so many attended—their success in obtaining money was not any better than mine. If you will bear with me for several minutes maybe I can give you enough of the picture as it was presented to us so that it might be beneficial to you.

The main speaker was Dr. Kelson, an assistant deputy director in the Special Projects Division of Science Education. Briefly, Dr. Kelson pointed out N.S.F. was a *government agency* formed by an Act of Congress and not actually a foundation. Starting operations in 1952 this Agency was given the commission to "strengthen basic research and science education." Most of what was done came as a result of their own devices—very few guidelines were offered. Their aim was to support whatever was good and know what they might particularly want. They chose the "Man-Idea" vs the institutionalized approach. The man and his idea was to be paramount wherever he may be found. But one automatically expects that many of the best men with many of the best ideas will be found in the universities.

Dr. Kelson then gave us a breakdown on the N.S.F. structure, pointing out that of the four divisions, three were for basic research and the fourth for support of science education and personnel. He was a member of this fourth division, whose policy centered about subject matter rather than methods, and having a national point of view, the division chose a policy which was concerned with the needs of potentially valuable individuals and not that of any school.

In the attempt to provide more and better science education throughout the nation in an over-all program a number of principal problems were recognized, and these might profitably be studied for our own state:

1. More teachers are needed at all levels and in their development the subject content of their courses should be emphasized.
2. To have top quality scientists, one should start with high school and undergraduate students with ability and not attempt to sup-

port everyone—thus the second problem is how to give adequate training to the gifted student.

3. For the advanced scholar who can utilize additional training, a *Fellowship* program was developed.
4. Better quality of teaching materials were needed—modern textbooks and equipment. An example of what has been done here is the PSSC textbook and laboratory materials; also the Undergraduate Instructional Scientific Equipment Program, and instructional materials at the college level are being investigated.
5. Building facilities were often badly needed but the expense and involvements precluded much chance for help here.
6. A lack of understanding of science on the part of the public was recognized and something should be done here. Four grants totaling $124,000 have recently been made for this purpose by N.S.F. for seminars and public information service. The TV series "Exploring the Universe" is another example of N.S.F.'s attempt to bring science and the public together. Other foundations have offered sizeable sums for similar programs.

Dr. Kelson then gave us a picture of how proposals sometimes turn into grants. If you have not received a grant some of his suggestions might be of interest.

In the first place N.S.F. will not ask you to ask them for money—if you are not interested enough to initiate the proposal, you do not deserve it. Proposals are reviewed by panels and specialists. Usually funds are available for only 25 percent of the proposals. To warrant special consideration your project should indicate prospects for definite *improvement* in teaching procedure and not merely more status-quo. Dr. Kelson said, "It is hoped that mutations from hostile environment will show strains of quality and improvement." At least *strains*, I am sure.

A few remarks were made about the evolution of existing programs. For example, how the Research Participation program will extend into the following academic year with support going to one's own institution in about half of the cases. In spite of forty separate programs N.S.F. is still open to suggestions for anything that can be done to further science and its teaching, even if it does not fit into one of the existing categories.

The main criterion is how successfully does it do the job of assisting someone else—one who has that spark which could flame into greatness. The only program which is intended directly to aid the proposer is the Undergraduate Instructional Scientific Equipment Program, and this on a matching funds basis.

It was at this point where audience participation and controversy arose. Apparently many of the colleges represented had applied for support under this program last year when funds were unusually short. Since the large schools ended up with the majority of the funds, many of the small schools took this as a rebuff and did not reapply this year when funds were more plentiful. Next year a much larger fund is being requested so that many more schools may be able to participate. Even with this

increase the watchwords will be progress and improvement. Need alone will not be sufficient to qualify one. Emphasize the nature of improvement expected and apply several times if necessary until your mutation shows qualities of progress.

Many questions of judgment and partiality were raised and all types of possible human error were acknowledged but these must be endured until someone comes up with a better method of evaluation. Many times the errors lie in incomplete proposals or ambiguity.

In spite of disappointments and the frustration of apparently wasted time, one appreciates the humanity and problems of the N.S.F. and unconsciously does a little soul searching which often provides its own reward. If you are an educator, consider another try.

Many of you probably received the N.S.F. brochure last week and if you look at it carefully you will note that the 7th basic project in the science education program is entitled State Academies of Science. It is under this project that the Iowa Academy operates the Visiting Scientist Program. Although this is a fine program, it does not have to be the only one sponsored by N.S.F. As a member of the Iowa Academy, perhaps you know of some way that the Academy can better serve the people of Iowa, either with or without N.S.F. assistance. If so, pass it on to your officers and committes.

Or just sit down and try to work out a new method to create sparks, or to keep them alive. You might begin your thinking by perhaps dreaming what you would do if you had plenty of money. After all, a really sound idea could possibly conjure up the needed funds. Maybe your idea is the one that will place Iowa right on top. We have made considerable progress in the recent past and with your cooperation Iowa could have a brilliant future.