

1981

Annual Report of the Iowa Academy of Science 1980-81

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Annual Report of the Iowa Academy of Science 1980-81

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PREFACE

Continuing the practice of writing a running history of the Academy begun in 1975 following the completion of the 100-year history by this author, this Annual Report highlights the most important activities of the Academy during 1980-81 to provide for the future a record of our concerns.

The committee reports and Board minutes that provide the basis for this Annual Report are on file in the Academy office at the University of Northern Iowa. Older Academy records are catalogued in the Special Collections section of the Iowa State University Library in Ames.

THE 93RD SESSION

The year's activities culminated at the Annual Meeting held on the Coe College campus in Cedar Rapids on April 24-25, 1981. A visit to the campus in July 1980 preceded a meeting there in September of many Section Chairs and the Annual Meeting Committee. Certain constraints on scheduling were noted because of classrooms not being available till late on Friday, and the blocking of symposia, general sessions, and section meetings took these constraints into consideration.

In addition to the contributed paper sessions the eventual program included the following:

Friday, April 24

- 9:00 - 10:30 a.m. JUNIOR ACADEMY POSTER PAPERS
- 10:30 - 11:15 a.m. BUSINESS SESSION
Brief reports and parliamentary procedures.
- 11:15 a.m. - 12:15 p.m. GENERAL SESSION I
President D.M. Huffman, presiding
Welcome: Leo Nussbaum, President, Coe College
Speaker: Leon Kazmierczak, Sun Company, Philadelphia "Energy Supplies: the Need for Conflict Resolution"
- 12:30 - 2:00 p.m. AWARDS LUNCHEON
President D.M. Huffman, presiding
This served luncheon honored groups and individual students who had performed in an exemplary manner in science activities throughout Iowa. Several individual awards were presented. Several teachers were honored as they received the Iowa Academy's Excellence in Science Teaching Award.
- 2:15 - 3:15 p.m. GENERAL SESSION II
President D.M. Huffman, presiding
Speaker: Clifford Mynatt, Bowling Green State University, Ohio.
"The Psychology of Science"
- 3:30 - 5:30 p.m. CONCURRENT SESSIONS

- A. "Biogeography of Iowa"
(Sponsored by the Botany, Conservation, and Zoology Sections and the Conservation and Preserves Committee.)
- B. "Chemistry of Metal-Organic Compounds with their possible Biological Implications"
(Sponsored by the two Chemistry Sections and the Chemical Education Section.)
- C. "The Crisis in Science Education — Iowa's Response"
(Sponsored by the Science Teaching Section.)
- D. "Engineering Opportunities in Iowa"
(Sponsored by the Engineering Section.)
- E. JOINT MEETING: Mathematics/M.A.A./A.S.A./S.I.A.M.
- F. Psychology Section (Contributed Papers)

6:30 - 7:15 p.m.

SOCIAL HOUR/RECEPTION
Host: Clifford McCollum, Past-president

7:30 - 8:45 p.m.

PRESIDENT'S BANQUET
President D.M. Huffman, presiding
Presentation of Iowa Academy Awards (Distinguished Fellow, Distinguished Iowa Scientist, Distinguished Service Award.)
Installation of new president and remarks by outgoing President Huffman.
Response by President-elect Stanley Grant.

Saturday, April 25

- 8:00 - 11:15 a.m. CONCURRENT SESSIONS
Agricultural Science
Anthropology
Botany
Cell Biology
Chemistry: Inorg., Analytical, Phys.
Chemistry: Organic & Biological
Conservation
Engineering
Geology
*History & Philosophy of Science
Mathematics/M.A.A.
Physics/A.A.P.T.
*Psychology
*Science Teaching
Zoology
*(Joint Meeting)
- 8:30 - 11:00 a.m. SYMPOSIUM: "Science, Historical, Philosophical, and Psychological Perspectives"
(Sponsored by the Psychology, Science Teaching, and the History & Philosophy of Science Sections.)

¹Executive Director

11:15 a.m. -
12:15 p.m. **GENERAL SESSION IV**
President Stanley Grant, presiding
Speaker: John L. Stanford, Department of Physics, Iowa State University.
"Thunderstorms and Tornadoes" (illustrated)

1:00 p.m. **CONCURRENT SESSIONS**
Agricultural Sciences A and B

1:15 p.m. Geology

1:30 p.m. Anthropology
Symposium: "Understanding the Significance of Creationism: Historical and Cultural Perspectives"
Botany
Conservation
History and Philosophy of Science
Physics/ A.A.P.T.
Science Teaching

Six poster papers, in addition to 12 Junior Academy poster papers were exhibited in the registration area. The sections represented were Botany, Chemistry (organic and biological), Conservation, Science Teaching, and Agricultural Sciences.

The new section on Agricultural Sciences had the largest number of papers of all sections with a total of 26.

Section attendance and number of papers are displayed in Table I, along with other attendance counts.

Table 2 summarizes registered attendance in 1981. Actual attendance is estimated as about 15% above registration counts.

Table 2. Registered Attendance, 1981

Category	Pre-registered		Walk-in		Total
	Papers*	Others	Fri.	Sat.	
Members:					
Regular	72	134	55	37	298
Student	31	13	1	4	49
Sub-total	103	147	56	41	347
Non-members:					
Regular	22	10	4	5	41
Student	42	9	2	14	67
Sub-total	64	19	6	19	108
Guests, etc.	—	—	56	—	56
Total	167	166	118	60	511

* Presenters of contributed papers only; some presented more than one paper.

The Awards Luncheon

Space limitations required that the Awards Luncheon be limited to 180 persons. Governor Ray expressed his regrets that he had a conflict that day and could not be present to make awards to students. The Academy's Excellence in Science Teaching Award was presented to the following teachers by David McCalley of UNI, coordinator of the program:

- Peggy L. Steffen (Biology), Fremont Community Schools
- G. Henry Veldhuis (Chemistry), Sheldon High School
- Richard A. Worm (Earth Science), Hempstead High School, Dubuque

Table 1. Attendance Summary, 93rd Session - 1981

Section	No. of Papers	Attendance	Relative Section Interest (%)*
Agric. Sci	26	40	4.5
Anthropology	6	16	2.6
Botany	20	77	20.0
Cell Biology	7	**	6.1
Chem. Educ.	—	19	6.8
Chemistry C	8	32	13.6
Chemistry D	9	24	9.8
Conservation	13	48	15.9
Engineering	9	26	5.6
Geology	15	54	12.1
Hist. & Phil. of Science	2	**	2.9
Physics	9	68	9.1
Physiology	5	15	8.5
Psychology	10	25	3.4
Science Tchg.	13	46	29.4
Zoology	7	14	18.4
Other:			Attendance
General Session I — Kazmierczak			250
General Session II — Mynatt			150
General Session IV — Stanford			400
Symposium: "Science, Historical, Philosophical and Psychological Perspectives"			35
Symposium: "Understanding the Significance of Creationism: Historical & Cultural Perspectives"			100+
"Biogeography of Iowa"			103
"Chemistry of Metal-Organic Compounds with their Possible Biological Implications"			36
"Crisis in Science Education — Iowa's Response"			78
"Engineering Opportunities in Iowa"			14
Annual Business Session			90
Awards Luncheon			180
Banquet			130

* "Relative Section Interest" is based on percent of total members indicating a particular interest. Percents are not additive.

** Count not available

- Marlene Gaston (Elementary Science), Mid-Prairie Community Schools, Kalona
- Linda J. St. Clair (Junior High Science), Pekin Middle School, Packwood
- Charles W. Windsor (Physics), Ames High School

Four secondary school students who had been invited to present poster papers were chosen to represent Iowa at the meeting of the American Junior Academy of Science to be held in Washington, DC in January 1982. Two of the Students (as indicated below) will serve as alternates:

- Padma Kavuru, Columbus High School, Waterloo
- Christine Radandt, Orange City Christian High School
- Doug Grier, Marshalltown High School (Alternate)
- Randy Beckett, Central High School, Argyle (Alternate)

All of the following activities were recognized and the directors of such programs were commended by their work with students:

The American Cancer Society Scholarship
 The Cedar Valley Science Symposium
 The Drake Physics Prize
 The Eastern Iowa Science and Engineering Fair
 The Thomas Edison-Max McGraw Scholarship Program
 The Greater Quad-Cities Area Science and Engineering Fair
 The Hawkeye Science Fair
 The Iowa Lakes Science Symposium
 The Iowa Science, Engineering & Humanities Symposium
 The Iowa State Science Talent Search
 The Iowa State University High School Energy Research Program
 The National Youth Science Camp
 The Northeast Iowa Science and Engineering Fair
 The State Physics Olympics
 The University of Iowa 1980 SSTP Program
 The UNI Science Symposium

Two students selected by a special committee appointed by the Governor's office were named to attend the National Youth Science Camp sponsored by the State of West Virginia:

Jay Robinson, Baxter High School
Linda Waggoner, Central High School, Davenport
 Alternates:
Kurt Hansen, Sentral High School, Fenton
Mark Schneider, Newman High School, Mason City

The President's Banquet

Additional awards were presented after the banquet on Friday evening. President Donald Huffman introduced **Verner Jensen**, Chairman of the **Recognition and Awards Committee**, who announced awards to ten persons. The "Distinguished Service Award" was presented to:

Bernard Clausen, University of Northern Iowa
Lynn W. Glass, Iowa State University
Leland P. Johnson, Drake University
Clifford McCollum, University of Northern Iowa

The award called "Distinguished Iowa Scientist," created in 1980, was presented to:

Wallace E. Akin, Drake University
Roger Bachmann, Iowa State University
Ray W. Fisher, Iowa State University
Edward Fletcher, John Deere Product Engineering Center
 and the award "Distinguished Scientist" was presented to:
Matilde Macagno, The University of Iowa
Daniel J. Zaffarano, Iowa State University

Two more Iowa scientists were named "Distinguished Fellow of the Academy," bringing the number who have received the Academy's highest honor to 14. The recipients in 1981 were **William L. Brown**, chief executive officer of Pioneer HiBred International for his contributions in the field of grain genetics and for his many leadership roles and for his service in the United States and abroad extending knowledge of plant breeding and germplasm conservation, and **Harvey Diehl** of Iowa State University, for his long and distinguished career in analytical chemistry, for his devotion as a master teacher, and for his contributions to scientific inquiry.

Dr. Norman Borlaug was scheduled to be the speaker following the President's Banquet, but a few weeks prior to the Annual Meeting he sent his regrets that he would not be able to come. No replacement for him as a speaker was sought and the attendance at the banquet was therefore appreciably reduced.

Future Meetings

Iowa Central Community College will host the 1982 meeting of the Academy, April 17-18, in Fort Dodge. Other future meetings have

been scheduled through 1985:

1983: Luther College, Decorah
 1984: University of Iowa (April 27-28)
 1985: Graceland College, Lamoni

MINUTES OF THE ANNUAL BUSINESS SESSION

April 24, 1981

The meeting was called to order at 10:15 a.m. by President Donald M. Huffman in Sinclair Chapel at Coe College, Cedar Rapids, with about 90 persons present.

President Huffman introduced Executive Director Hanson, who then read his "Report of the Board of Directors." (See elsewhere in this Annual Report for the text.)

Frank Starr presented the Treasurer's report, indicating that as of March 31, 1981, the Academy's cash assets included the following:

Checking account	\$ 1,051.61
Passbook savings	850.00
Money market fund	10,441.00
Gulf Power Bonds	6,140.00
Certificate of Deposit	10,000.00
	<hr/>
	\$28,482.61

Starr explained that this figure did not include the depreciated value of an automobile, several items of office equipment, and the farm. He emphasized that expenses continue to erode our savings.

George Knaphus presented the report of the Membership Committee, reporting that the following persons had been promoted to Fellow:

Dr. Jack Gerlovich, Department of Public Instruction
 Dr. Dennis Warren, Iowa State University

Knaphus read the names of the Following members who had died during the year and asked the audience to rise for a moment of silence in their behalf:

Dr. Cameron Christensen — Webster City
 William G. Bennett — Eagle Grove
 Jim Culbertson — Mount Vernon
 H. Stuart Kuyper — Knoxville
 Dr. Peter Loesch — Ames
 Dr. Leo P. Sherman — Grinnell
 Dr. Erma Smith — Wichita, KS
 Dr. Pearl Swanson — Ames
 Dr. John Weilgart — Decorah

Clifford McCollum presented the report of the Election Committee indicating that the following had been elected for 1981-82:

Directors: Kenneth Cook, Coe College
 Luther Erickson, Grinnell College

President-elect: Harry T. Horner, Iowa State University

McCollum also reported that all the Constitution and Bylaws changes that were included in the election mailing were approved by the membership. (These changes are reproduced here for the record.)

Constitution

Article III, Section 1: Change "Corporate Associates" to "Corporate Sponsors."

Article III, Section 1e: Change "Bona fide students" to "students."

Article III, Section 1f: Change "Corporate" to "Corporate Sponsors."

Article IV, Section 1, last sentence: Change "a Member or Fellow, properly qualified, appointed by the Board of Directors." to "the President-elect."

Article IV, Section 1, first sentence: Change "be" to "be a Fellow." Second sentence: Delete "adjournment of the." Third sentence: Change "a Member or Fellow . . ." to "the Immediate Past-president."

Article IV, Section 5: First sentence: Delete "at its Annual Meeting."

Article IV, Section 6: Delete entire section.

Article V, Section 2: Change section to read as follows:

Section 2. Membership. The voting members of the Board of Directors shall be the President, President-elect, the immediate Past-president, and the Treasurer, plus six Fellows to serve three year terms, two to be elected annually. None of the six elected Directors shall be a chairperson of a Standing Committee. The Executive Director shall be an ex-officio non-voting member of the Board.

Article VI, Section 4: Last sentence: Change "Conservation or scientific" to "conservation, education, or scientific."

Bylaws

Article IV. Delete entire Section 1 and substitute the following new version and alter Section 2 by changing "Standing Committees" to "committees except those specified by the Board of Directors."

Section 1. Duties. The Executive Director shall supervise the central office and all business operations of the Academy, except those delegated to others by the Board, acting as the Academy's registered agent, receiving and disbursing all monies related to Academy business according to policies established by the Board, and shall implement the decisions of the Board, coordinating the work of all Officers, Directors and Committees to enhance and extend the effectiveness of the Academy in attaining its goals. Specific duties may include, by mutual agreement:

- 1a. Preparing the agenda for each meeting of the Board.
- 1b. Assisting the Finance Committee in the preparation of the budget of income and expenditures for the next fiscal year for presentation to the Board of Directors for approval or amendment.
- 1c. Preparing the federal and state income tax returns.
- 1d. In cooperation with the Membership Committee, maintaining accurate membership records, compiling an annual membership roster, and assisting with recruitment.
- 1e. Coordinating the plans and arrangements for the Annual Meeting.
- 1f. Serving as editor of the Academy's newsletter.
- 1g. Serving as managing editor of all Academy publications.
- 1h. Preparing an Annual Report of Academy activity.
- 1i. Serving as a delegate to the National Association of Academies of Science.

Article V. Delete entire Article V and renumber remaining articles accordingly.

Article VI (new V), Section 9a. Last sentence: Change "shall be an ex-officio non-voting member" to "and the Science Education Consultant of the Iowa Department of Public Instruction shall be ex-officio non-voting members."

Article IX (new VIII). Substitute the following:

Section 1. Definition. The publications of the Academy shall include the PROCEEDINGS OF THE IOWA ACADEMY OF SCIENCE, the IOWA SCIENCE TEACHERS JOURNAL, and any other special publications defined and initiated as such by the Board of Directors.

Section 2. Official Organ. The official organ of the Academy shall be the PROCEEDINGS OF THE IOWA ACADEMY OF SCIENCE.

- 2a. The PROCEEDINGS shall include such scientific papers as are offered and accepted for publication and such organizational and informational material as is deemed of importance and is not transmitted to members by other methods.
- 2b. Papers from nonmembers shall be accepted for publication at the discretion of the Editor.

Section 3. The IOWA SCIENCE TEACHERS JOURNAL shall be published for members and special subscribers and shall be open to all persons interested in science education; preferential consideration shall be given to Academy members. The editor shall be appointed by the Board of Directors.

Section 4. Editorial Supervision. The content of each Academy publication shall be supervised by an editor appointed by the Board of Directors. The editor of each publication shall be assisted by an Editorial Committee consisting of Academy Members or Fellows and approved by the Board of Directors.

- 4a. The Editor of the PROCEEDINGS shall be appointed by the Board of Directors for a four year term.
- 4b. The editor of the IOWA SCIENCE TEACHERS JOURNAL shall be appointed by the Board of Directors and shall continue in office until resignation or replacement.

Section 5. Distribution. Subscription to the PROCEEDINGS and the IOWA SCIENCE TEACHERS JOURNAL shall be included in the dues required in all categories, but receipt of either or both may be declined. All Academy publications shall be made available to nonmembers by subscription or purchase or may be offered on an exchange basis or without charge at the discretion of the Board of Directors.

Section 6. Management. One or more Managing Editor(s) shall be appointed by the Board of Directors to supervise the production and distribution of each Academy publication. Prices and page-charge policies shall be set by the Board of Directors in consultation with the Managing Editor(s).

Those elected were asked to rise and be recognized.

President Huffman asked Hanson to present the following proposed change in the Bylaws that had been approved the day before by the Board of Directors:

"That the Publications Committee be dropped as a Standing Committee." Hanson explained that the Constitution and Bylaws changes adopted by mail ballot in effect obviated the need and function of this committee.

On voice vote the amendment passed without dissent.

Before adjournment at 11:00 a.m., President Huffman extended the Academy's appreciation to Clifford McCollum and Sister Marguerite Neumann for their terms on the Board. (Horner continues as President-elect.)

Submitted by R.W. Hanson, Executive Director

REVIEW OF ACADEMY ACTIVITY IN 1980-1981

Executive Director Hanson read the following "Report of the Board of Directors" at the Annual Business Session on April 24, 1981, at Coe College. It briefly covers the more important Academy activities from July 1, 1980, through April 23, 1981.

At the end of the 92nd session in 1980, only one new Director joined the Board, succeeding Lois Tiffany. William L. Brown succeeded himself, having completed the last year of Leland Wilson's term, while Stan Grant continued on the Board as President-elect. The new Board normally meets in June, but conflicts precluded a meeting of the Board until November 1.

Prior to that November meeting, the Board conducted some important business by mail, particularly the budget for 1980-81. A total of six mail canvasses of the Board during the months of May, July, September, and October were recorded. Two of the more important matters other than the budget were the matter of annual meeting registration fees and the approval of the Joint Steering Committee as the Board's agent on matters concerning the book "Iowa's Natural Heritage."

The reports received by the Board in November dealt with (1) the creation/evolution resource panel and its availability mechanism (this was turned over to the Social Implications Committee for development); (2) the Academy's diminishing assets due to inflation and lack of corresponding increases in income (the Finance Committee was urged to pursue aggressively a campaign to raise support from business and industry); (3) the revision of Article IX of the Bylaws dealing with Publications (which revision was sent on to the membership for vote along with the others approved in January of 1981); (4) the possibility of having a joint meeting with the Minnesota and Wisconsin academies in 1983 at Luther College; (5) the scheduling of the 1985 meeting at Lamoni and the 1984 meeting at Iowa City; (6) the relationship of the Iowa Section of the M.A.A. to the Academy's Math Section; (7) the creation of a Long Range Planning Committee to study the future directions of the Academy and its financial base; (8) the concern about the safety and suitability of the house on the Parish Farm for rental purposes; (9) a recommendation from the Finance Committee that the tillage acres of the farm be sold if a court order setting aside the alienation clause in the bequest could be obtained (the recommendation was referred to the new Long Range Planning Committee for study); (10) the resignation of Joe Moore as Director of the Iowa Junior Academy of Science, effective at the end of this Annual Meeting (a new Director has been appointed as of yesterday and I'll announce that in a few minutes).

In December the Social Implications Committee met and decided to turn the matter of implementing guidelines for the availability of the Creation/Evolution Resource Panel over to the Panel itself. A meeting of the Panel was arranged for January and a Board meeting was scheduled shortly thereafter to deal with that matter and the Bylaws and Constitution changes that were under consideration.

Nine Board members met on January 31 and considered a preliminary draft of an Academy position statement on creation/evolution written by some members of the Creation/Evolution Resource Panel, based on several hours of discussion by that 15-member panel in Marshalltown two weeks earlier. As you know, the Board-approved statement went out to the voting membership in February by first class mail. The response was heavily in favor of the statement. The actual vote was reported to the voting membership with the election mailing.

Other business considered by the Board on January 31 included the Constitution and Bylaw changes that subsequently went to the membership for vote. (They were all approved and are currently in effect. A revised copy of the Constitution and Bylaws will be printed this summer.) An offer to purchase and move the mobile classroom building was considered and a counter offer made. (The building has been sold and will be moved by June 1.)

The Board of Directors met yesterday at 2:30 p.m. going back to the practice of many years that was discontinued a few years ago. The travel cost of a separate meeting two weeks before the Annual Meeting was considered a luxury we can no longer afford. The agenda was shortened by not considering the budget. Reports were heard from most committees, but they were fairly non-controversial and carried no momentous recommendations that required long discussion.

The appointment of Mary Sievert of Davenport as Director and Don Murphy of Des Moines as Associate Director of the Junior Academy were approved.

The Board certified the election of two new Directors and the President-elect. Cliff McCollum will present the election report and will introduce the newly elected members of the Board.

(The election report is contained in the Minutes of the Annual Business Session.)

The Board did not meet again prior to the end of the fiscal year, but a mail canvass of the Board dealt with the Finance Committee's recommendations on the budget for 1981-82 and the question of waiving page charges for certain papers for the *Proceedings*.

Committee Activity

The work of the **Annual Meeting Committee** culminated in the Annual Meeting itself. The committee met once in September of 1980 with many of the Section Chairs. In a workshop setting, the group blocked the 1981 meeting after evaluating the 1980 meeting and considering the constraints of the Coe College campus and administration.

The **Conservation and Preserves Committee** chaired by Daryl Smith of UNI was given *ad hoc* status for three years when it was formed in 1978. Its only meeting of record was held at the University of Northern Iowa in November 1980. The notice of the meeting, addressed "Dear Natural Historian" indicated that the State Preserves Advisory Board and the Academy's Committee on Conservation and Preserves was sponsoring a workshop on November 15. The topic was "Biogeography of Iowa," the same title used for a symposium at the 1981 Annual Meeting. The notice mentioned a 30 minute meeting of the committee, followed by an organizational meeting of the Iowa Natural History Association, plans for which were made at a similar workshop held in November 1979. The notice came from Dean Roosa, State Ecologist. Although no minutes are on file for either of these meetings, a subsequent letter from Roosa described the formation of the Iowa Natural History Association as an entity with a dues and membership structure.

The Board, meeting in April of 1981, voted to remind the Conservation and Preserves Committee of their temporary status and requested the chairman to inform the Board of the committee's own view of its future. The committee has functioned to provide the Governor's office

with nominations for appointment to the State Preserves Advisory Board, since the Code of Iowa stipulates that the "conservation committee" of the Academy shall make such nominations.

The **Election Committee**, chaired by Past-president Clifford McCollum, met by conference telephone and mail early in the fall to select a slate for the election mailing that went out early in March. For director, the committee offered **Joseph E. Kapler** of Loras College, **Richard S. Wacha** of Drake University, **Luther E. Erickson** of Grinnell College, and **Kenneth M. Cook** of Coe College. The latter two were elected.

For President-elect, the committee proposed **G. Edgar Folk, Jr.**, of the University of Iowa and **Harry T. Horner**, of Iowa State University. Horner was elected and, having been on the Board as a Director, will continue for another three years.

Nels Lersten, Editor of the PROCEEDINGS, brought the Associate Editors together for a dinner meeting in Marshalltown on October 29, 1980. Not entirely a social gathering, the group discussed reviewing procedures and some possible minor format changes in the PROCEEDINGS.

As noted earlier, Board and Academy action removed the Editor of the PROCEEDINGS as a member of the Board. This was done following a request and recommendation from Lersten, who had discussed this possibility for a number of years. Part of the rationale was that the Editor is appointed by the Board and also has a fairly heavy responsibility getting the PROCEEDINGS out.

Other changes in the Bylaws, under discussion by the Board for a couple of years, removed the **Publications Committee**. The Board will henceforth serve in that capacity as the need arises, and each publication, so defined by the Board, will have an editorial committee and a managing editor. (At the present time, the Executive Director serves as Managing Editor of all Academy publications.)

The **Finance Committee** met at the Executive Director's home on October 20, 1980. After reviewing the Academy's continually eroding assets, the committee studied the possible advantages of converting the farm to other kinds of investments, provided it could be sold. (This would require a court order setting aside an alienation clause in the bequest that stipulates that the Academy not sell the farm for 75 years, i.e., keep it until at least 2035 A.D.) On the basis of their comparison of the yield from an investment of \$400,000 (a conservative estimate of the farm's net value) with current yield from a crop-sharing lease, the committee recommended to the Board of Directors that at least the tillage acres of the farm be sold, if possible.

The Board discussed the Finance Committee recommendation at their fall meeting and decided to refer the recommendation to a new Long Range Planning Committee that the Executive Director had recommended. This new committee did not meet during 1980-81 and has made no further study of the farm matter.

The Finance Committee continued during the year to develop plans for a fund-raising campaign directed at business and industry. Contact with Pioneer HiBred International resulted in their offer to support the Academy's Student Programs budget of \$3300. Other contacts were not fruitful but the committee plans to continue efforts to raise Academy support from this source.

The appropriation request for 1981-82 was a simple letter requesting \$6000 per year of state aid for general expenses to be used at the Academy's discretion. Near the end of the 1981 legislative session, an appropriation equal to that of the past biennium was voted.

The **Farm Committee**, chaired by Paul Christiansen, had an active year. Along with usual farm management concerns, they responded to two Board of Directors requests — one that the farm house be razed and another regarding the Finance Committee's recommendation concerning the possible sale of the farm. Christiansen reviewed Farm Committee activity in a memorandum dated 20 October 1980, as follows:

Following the Spring meeting of the Board of Directors and upon notification of the Board's action asking the Farm Committee to concur in a decision to raze the tenant house, the Farm Committee was polled by telephone. On July 10, 1980, I notified President Huffman of the unanimous decision by the Farm Committee to resist the Board's request.

Two tile outlet terraces totaling 1,250 feet were constructed on the east 80 in the spring of 1980. Work was completed in time to plant a soybean crop following construction. The Academy share of the cost, 50%, was \$1,125.

About 100 acres each of corn and soybeans were planted in the spring of 1980. Crops were not severely damaged by summer drought and yields, especially soybeans appear to be very good.

On October 6, 1980, the Farm Committee met at the farm. Melvin Schildroth, our tenant had completed soybean harvest and was just beginning corn harvest at the Parish farm.

Janet Schildroth, Melvin's wife, talked with the committee about a conservation course she took at UNI under Ben Clausen this past summer. She developed several field trips for school students at the Parish farm as her project for the course.

Jim Frevert, Hertz Farm Manager, discussed cropping and terracing plans with the committee. The remaining three terraces on the east 80 were staked out and tiling was to commence on 7 October, 1980.

The committee visited with Mr. and Mrs. Robert Weisenstein, tenants of the farm house. We toured the house and found it to be in order as well as the grounds. They requested that the hunting/no hunting situation be clarified by posting signs. Mr. Sam Goodin, Grundy County Conservation Board executive officer, has been contacted to do so.

The wood lot weed-tree kill carried out this past year was very effective and the Grundy County Conservation Board will plant trees as specified in our lease agreement in the spring.

The prairie was found to be in very good shape with the prairie grasses now in control. This is the third year for the latest planting.

Bob Hibbs reported the realtor has had some clients interested in the classroom building but no sale has yet been made.

The Farm Committee recommends that the tenant house be inspected yearly by the Farm Committee and a recommendation for its future status be made to the Board.

Following the April meeting of the Board of Directors, H. T. Horner of the Board and the Farm Committee contracted with two agricultural economists at ISU to make an independent study of the following questions:

- to assess the present management of the farm by Hertz Farm Management Service;
- to assess the present tenant who farms the land;
- to review the farming and non-farming practices on the farm with respect to optimum income associated with the most acceptable conservation practices;
- to review the status of the farm buildings, especially the farmhouse, in terms of their value to the farm operations and suitability for habitation;
- and to determine whether our present agreements with the management service, farm tenant and house tenant are equitable and to the best advantage of the Academy.

Their report was discussed at a meeting of the Farm Committee on June 12, 1981. Briefly their conclusions were as follows:

- The management of the farm by Hertz appears to be excellent.
- The present farm operator is doing a good job in operating the farm.
- No major changes are suggested in the farming practices, after considerable discussion of these with the manager and the operator, although several areas of improvement were listed for Board consideration, both in terms of income and soil conservation objectives.
- All the farm buildings appear to be in good condition. The farm house is sub-standard and of below average quality. No major repairs should be made, and when the present tenant vacates the house, consideration should be given to tearing it down.

- Budget analysis would indicate that the tenant (operator) is receiving a slightly larger profit than the owner, calling for a \$10-\$20 per acre override to the owner paid by the operator. Other alternatives were mentioned for consideration, also.

The Board of Directors will take up the content of that report at their fall 1981 meeting. The "mobile" classroom building, so long a white elephant at the farm because of its lack of use, was sold in the spring of 1981 to the Unitarian Universalist Society of Black Hawk County for the sum of \$1500. The foundation remains for some possible future use.

The **Social Implications Committee** met on December 5, 1980 in Toledo. George Magrane, a new member of the committee, described a grant proposal under preparation for submission to the National Science Foundation, dealing with the teaching of controversial issues in science classes. Discussion then turned to ways that the Academy's "Creation/Evolution Resource Panel" could be made available and functional. The committee decided to call the panel together to prepare a new position statement on creation/evolution to be sent to Iowa legislators and to respond to several requests for aid that had been received from schools by Jack Gerlovich of the Department of Public Instruction.

The "**Creation/Evolution Resource Panel**" met in Marshalltown on January 15 to discuss the nature of a position paper and to decide on a delivery mechanism for their expertise. Three panelists stayed behind to draft a statement. It was conveyed to the rest of the panel for comment by mail. The Board of Directors met on January 31 to take up the position paper specifically. It was revised somewhat by the Board and shortly thereafter sent to the entire voting membership of the Academy for approval or disapproval. Mail ballots were returned by 59% of the 1250 voting members by the announced deadline. Of these, 47 rejected the statement and 675 (91.8%) accepted it. In other words, 54% of the Academy's voting membership approved the statement by mail ballot. It is of course unknown whether those not returning ballots accepted or rejected the statement. For the historical record the statement is reproduced here:

**STATEMENT OF THE POSITION OF THE IOWA ACADEMY OF
SCIENCE ON THE STATUS OF CREATIONISM AS A SCIENTIFIC
EXPLANATION OF NATURAL PHENOMENA
31 January 1981**

Current attempts to introduce "scientific creationism" into the science classroom are strongly opposed by the Iowa Academy of Science on the grounds that creationism when called "scientific" is a religious doctrine posed as science. It is contrary to the nature of science to propose supernatural explanations of natural events or their origins. With its appeal to the supernatural, creationism is outside the realm of science.

Creationist organizations that are advocating the teaching of "scientific creationism" in science classrooms include members purported to be scientists who have examined the evidence and have found creationism to be a superior alternative to evolution. They claim to know of evidence that supports the idea of a young earth and that shows evolution to be impossible. Much of this "evidence" is inaccurate, out of date, and not accepted by recognized paleontologists and biologists. The total membership of these "scientific" creationist groups constitutes only a fraction of one percent of the scientific personnel in this country. Most of them are not trained in biology or geology, the areas in which professional judgments are made in the field of evolutionary theory. They often misrepresent the positions of respected scientists and quote them out of context to support their own views before audiences and government bodies. They are driven by the notion that all explanations of natural events must conform to their preconceived creationist views. These tactics are used to give the uninformed public the false impression that science itself is confused. Then a supernatural explanation is proposed to bring order out of apparent chaos.

The Iowa Academy of Science urges legislators, school administrators, and the general public not to be misled by the tactics of these so-called "scientific creationists." The Academy respects the right of persons to hold diverse religious beliefs, including those which reject evolution, but only as matters of theology or faith, not as secular science. Creationism is not science and the

Academy deprecates and opposes any attempt to disguise it as science. Most recognized scientists find no conflict between religious faith and acceptance of evolution. They do not view evolution as being anti-religious. They have no vested interest in supporting evolution as do the "scientific creationists" in supporting creationism, but merely consider evolution as being most consistent with the best evidence.

The Iowa Academy of Science feels strongly that the distinction between science and religion must be maintained. A state with one of the highest literacy rates and with the highest scientific literacy scores in the nation, and one which prides itself on the individuality of its citizens, should discriminate in its public education system between what is science and what is not science.

In reporting to the Board of Directors in the spring of 1981, the chair of the Social Implications Committee, Phyllis Kingsbury, mentioned the following additional concerns and activities of the SIC: News Media Resource Listing — the list needs to be distributed to the news media of Iowa; Newspaper Article Series — The question of editorship is yet to be solved; some articles have been received for possible publication.

At their April meeting, Executive Director Hanson reminded the Board that no funds had been budgeted for the operation of the "Creation/Evolution Resource Panel." An unspecified amount of support was voted and Stanley Weinberg of Ottumwa was asked to take over as convener of the panel. He called the group together late in May and proceeded to organize the panel into writing groups to develop briefs for consultants, dealing with (1) Procedures for working with school boards. (2) What is a scientific theory? (3) Geochronology and absolute dating. (4) Stratigraphy. (5) The Fossil Record. (6) Origin of the Universe. (7) Thermodynamics. (8) Descriptive biology. (9) Origin of life. (10) Mechanism of evolution. (11) Species and speciation. (12) Patterns of evolution: neo-Darwinism vs. punctuated equilibrium. (13) Probability. The briefs will be for speakers' use and will not be distributed to an audience. They will be simple and at a popular level. Weinberg asked that they be finished by the middle of August, 1981.

The name of this resource group was changed to the "IAS Panel on Controversial Issues" and it is expected to make a significant contribution to the Academy's objectives in promoting science. The position paper reproduced above was the first of several significant actions. It was sent to all members of the Senate Education Committee along with a cover letter that emphasized the Academy's attitude that creationism is acceptable for inclusion in the school curriculum but not as science. The statement also found its way outside the state and has received good reports and endorsement from other academies of science.

The **Recognition & Awards Committee**, chaired again by Verner Jensen of UNI, decided to solicit nominations from college administrators and from business and industry. The committee was fairly deluged with nominations from these sources and had a difficult time in selecting a limited number for recognition. Those who were recognized were mentioned earlier in this report.

The **Membership Committee**, chaired by George Knaphus, did not meet in 1980-81 and transacted little business except accepting two applications for Fellow status — those who were mentioned in the Minutes of the Annual Business Session. Membership recruitment was handled almost entirely by the central office. During the year 116 new members joined the Academy; an almost equal number were dropped by request or for non-payment of dues.

Table 3 shows the changes in membership counts by categories during the five years preceding and including 1980-81. It is notable that Student Associates have shown a continuing decrease since 1979 (probably because of the lack of research grant funds in the past two years) and that the number of Fellows has decreased steadily since 1977. (There are many Members who would qualify for Fellow, but the initiative must come from the Member or one of his colleagues.) The number of Emeritus Fellows has continued to increase during the period.

Table 3. *Membership Counts 1977-1981*

Category	1977	1978	1979	1980	1981
Associate	714	-	-	-	1
Member	-	698	701	706	773
Student Assoc.	173	202	218	186	162
Fellow	465	435	421	395	364
Life Member	37	38	39	38	39
Emeritus	65	67	72	76	84
Distinguished Fellow	7	7	10	12	14
TOTAL	1454	1440	1461	1414	1437

Gary Downs chaired the **Student Programs Committee** again in 1980-81. This active committee worked with Joe Moore, the Director of the Junior Academy, realizing that a new Director would be needed for 1981-82. The committee met on September 19, 1980 at Marshalltown and again on March 5, 1981 at ISU. Their work in the fall included finalizing the Junior Academy calendar for 1980-81, planning the IJAS program held in conjunction with the Iowa Science Teachers Fall Conference on November 11, the nature of a proposal to AAAS for research grant funds, a new science symposium to be held at Iowa Lakes Community College in March, the development of the Physics Olympics Handbook, the revision of the IJAS Handbook, general plans for the Awards Luncheon to be held at the 1981 Annual Meeting of the Academy, and recommendations that IAS centennial medallions be presented to all secondary school students invited to present papers at the spring meeting.

The March meeting of this committee included discussion of final plans for the Awards Luncheon, development of the AAAS research grant funds proposal, and the replacement of Joe Moore as Director of the Junior Academy. Mary Sievert of Davenport High School had been contacted during the year as a possible candidate along with Don Murphy of Hoover High School, Des Moines. The committee's recommendation to the Board of Directors was that Mary Sievert be appointed Director and that Don Murphy be appointed Associate Director. (The Board concurred with this recommendation when they met on April 23.) The committee met briefly on April 24 to prepare the 1981-82 Student Programs budget and to discuss the details of Mary Sievert's succession to the directorship of the Junior Academy in August.

It should be noted that the practice of recognizing student activities in science at the Academy's Annual Meeting, with Governor Ray present if possible, has become a state-wide norm, primarily through the efforts of Joe Moore and the cooperation of Jack Gerlovich of the Department of Public Instruction. The selection of students for the West Virginia National Youth Science Camp has been taken over by a sub-group of the Student Programs Committee and has provided the main entry for the Governor into the recognition scenario.

The proposal to AAAS was written by Executive Director Hanson in time for the June 1 deadline, but word had not been received in response to it at this writing. (These research grant funds, when available, are administered by the Student Programs Committee. Post secondary research grants, when available, are administered by a special Research Grants Committee.)

Work on the Academy's most ambitious publishing venture, "Iowa's Natural Heritage," continued on schedule during 1980-81. Late in the summer and early fall of 1980, the Academy's steering committee for this project worked with the Executive Director of the Iowa Natural Heritage Foundation to develop a formal agreement

concerning the division of responsibilities for the book between the Foundation and the Academy. Stated simply, the Academy is responsible for the creative aspects of the book (not overlooking the creative nature of the editor's and designer's work) while the Foundation is responsible for promotion, marketing, and distribution. By the summer of 1981, the Foundation had devised a plan to fund the \$450,000 budget for 30,000 copies of the book by pre-publication sales of 20,000 copies to a group of businesses at a special price of \$22.50. Sales will not be made to the general public until 6 months after publication; during that moratorium period Academy and Foundation members will be able to purchase the book at \$22.50 (one copy per person).

The date of publication is tentatively set for August 1982. The present steering committee, made up of three Academy members and three Foundation members, met twice this year with the designer, Chuck Townsend, and the editor, Tom Cooper, both of ISU, and have been delighted with the high quality of work being pulled together. The book is expected to be an award-winner among books of its kind, and the Academy as a whole can share in the favorable light in which this work will be accepted by the public.

National Involvement of the Iowa Academy of Science

During calendar year 1980, Executive Director R. W. Hanson served as president of the **National Association of Academies of Science (NAAS)**, having served as secretary-treasurer and president-elect the previous four years. Frank Starr of the Waterloo Community Schools served as Director of the American Junior Academy of Science for 19 years prior to 1980, when he was elected president-elect of NAAS. These contacts have been beneficial to the Iowa Academy in providing a means of gathering fresh ideas for Academy activities. They have also given national exposure to the work of the Iowa Academy of Science for its work in the area of controversial issues and our role in publishing the popular level book "Iowa's Natural Heritage." Frank Starr has

developed the American Junior Academy of Science into one of the most significant national activities for talented youth who are science-oriented, and working with the AAAS Office of Science Education, a feature called the "youth symposium" has been added to the AAAS annual meeting program through the efforts of NAAS. Starr was elected president-elect of NAAS for the year 1981 and will become president after the annual meeting in January, 1982.

During 1980-81, Hanson, as past-president, worked with the NAAS Board of Directors and several other AAAS sections to develop a national symposium for the 1982 annual meeting of AAAS, to be held in Washington, DC, in January. The major symposium is entitled "Science and Belief: I. The Interface, and II. Problems for Science Education."

Financial Matters

The assets of the Academy remained fairly steady during the year. The support from Pioneer HiBred (\$3300) and the sale of the mobile classroom building at the farm (\$1500) helped to avert more serious erosion of assets. Table 4 displays the sources of our income and its disposition by categories. The distribution is somewhat arbitrary but reasonable. For example, the allocation of "administrative expense" to the various categories of activity is based on fairly good estimates of central office expense and time.

Table 5 is the Balance Sheet for June 30, 1981, with a comparison with the same date a year ago. Since the value of grain in storage, the farm and office equipment are somewhat uncertain, strict comparison of the figures gives only a rough estimate of the status of our assets. The most meaningful comparison is to be had by looking at the item labeled "Net income (loss)".

The operating budget for 1980-81, including the state appropriation and UNI subsidy, was approved by mail canvass of the Board during the summer of 1980 and revised at the fall Board meeting to a total of

Table 4. Sources and Disposition of Operating Funds, 1980-81

Resources		Disposition				
Source	Amount	Publications	Programs; Projects	Meetings; etc.	Admin.	Reserves
Farm (net)	19,500.00	-0-	3,504.85	14,643.18	1,351.97	-0-
Interest & Div.	2,874.76	-0-	2,874.76	-0-	-0-	-0-
Dues (regular)	17,311.50	13,871.54	-0-	539.96	2,900.00	-0-
Junior Academy	253.06	-0-	253.06	-0-	-0-	-0-
Page Charges	1,680.00	1,680.00	-0-	-0-	-0-	-0-
Annual Meeting	3,656.75	-0-	-0-	3,656.75	-0-	-0-
Gifts and Grants	3,852.50	-0-	3,852.50	-0-	-0-	-0-
Reprints	1,051.00	1,051.00	-0-	-0-	-0-	-0-
Other sales	4,255.25	4,255.25	-0-	-0-	-0-	-0-
Services	707.79	-0-	331.28	-0-	376.51	-0-
Miscellaneous	3,051.25	-0-	-0-	-0-	3,051.25	-0-
State aid*	4,293.00	4,293.00	-0-	-0-	-0-	-0-
UNI subsidy*	700.00	700.00	-0-	-0-	-0-	-0-
Reserve	1,725.14	-0-	-0-	-0-	1,725.14	(1,725.14)
TOTAL	64,912.00	25,850.79	10,816.45	18,839.89	9,404.87	(1,725.14)
Percent of Total	100.0	(39.8)	(16.7)	(29.0)	(14.5)	-0-
Allocation of Administrative Expense		9,404.87	5,642.92	13,166.81	9,404.87	-0-
Percent	100.0	(25.0)	(15.0)	(35.0)	(25.0)	-0-

*Do not appear in IAS accounts.

\$61,399. This was \$1,040 less than the year before; actual expenditures for 1980-81 came to \$64,912, not including the cost of soil conservation capital improvements on the farm. All of the latter have been completed for the foreseeable future, making more operating funds available for Academy operation from the farm. A canvass of the Board in June 1981 resulted in a 1981-82 budget of \$72,216, of which \$11,248 must come from corporate contributions, not yet in hand, in order to prevent further erosion of the Academy's assets.

Table 5. *Balance Sheet*

Assets	June 30, 1980	June 30, 1981
Checking	\$ 1,113.80	\$ 1,002.04
Passbook savings	7,850.00	850.00
Money Market fund	89.00	5,835.00
Certificates of deposit	10,000.00	10,000.00
Automobile	3,903.00	3,343.00
Bonds, incl. accr. int.	6,140.00	6,140.00
	\$29,095.18*	\$27,170.04*
Net Worth		
Retained Earnings	25,962.63	29,095.18
Net income (loss)	3,132.55	(1,790.00)
	\$29,095.18*	\$27,170.04*

*Not including interest earned through 6/30 and not deposited until after 7/1 nor value of farm or office equipment. For IRS purposes, the farm is valued at \$60,000, its appraised value in 1960 when it was given to the Academy.

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PAPER PRESENTATIONS, ANNUAL MEETING 1981

Invited Junior Academy Papers

Randy Beckett, Central High School, Argyle: Agriculture's effect on the freshwater ecosystem.
 Melissa K. Berry, Central High School, Davenport: Physiological effects of iron deficiency and iron overload in mice.
 Joseph G. Ceurvorst, Central High School, Davenport: Alternate energy sources; gasoline extraction from milkweed.
 Jerry DuBois, III, East High School, Des Moines: High speed timing system.
 Douglas Grier, Marshalltown High School: The enhancement of *glycine max* through controlled levels of electromagnetic radiation.
 Padma Kavuru, Columbus High School, Waterloo: The effect of interferon on murine cytomegalo virus infection.
 Joseph Loebach, St. John's High School, Bancroft: The genetic relationship between progesterone and nesting in mice.
 Scott Meyer, Wahlert High School, Dubuque: The transpiration of lead ions by the *syngonium podophyllum*, *cissis rhombifolia*, and *asparagus sprengeri*.
 Christine S. Radandt, Orange City Christian High School: The effects of lilac on the root growth of germinating radish seeds.
 Merry Lynn Rankin, Twin Cedars High School, Bussey: How do various solutions of sulfuric and nitric acid in the form of acid rain, affect the growth of *glycine g. max* and *zea mays*?
 John A. Stevens, Dubuque Senior High School: Adapting metal hydrides for hydrogen storage.
 Mark A. Stoyer, East High School, Sioux City: Alleopathic properties of *Taraxacum officinale* (dandelions) against *sorghum bicolor* (sorghum).

Contributed Papers

(All abstracts of contributed papers, except those not received in time, appeared in the March 1981 issue of the PROCEEDINGS, with the name and address of author.)