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Annual Report of the Iowa Academy of Science 1977-78

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Annual Report of the Iowa Academy of Science 1977-78

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PREFACE

The completion of the 100-year history of the Academy in the fall of 1974 led to the current practice of writing a running history on a year-to-year basis, in the form of the Annual Report. The Board of Directors decided in the fall of 1975 to publish the Annual Report in the PROCEEDINGS. Recent committee reports and Board minutes, from which most of this report derives, are on file in the Academy office. Records older than 1975 are in the Special Collections section of the Iowa State University Library, constituting the official archives of the Academy.

THE 90TH SESSION

The Academy met as a society for the 90th time in April, 1978 on the campus of the University of Northern Iowa. The previous annual meeting held at UNI was in 1969; visitors to the campus observed numerous physical changes but no reduction in the hospitality extended by the faculty and administration. Planning for the 1978 meeting started in September, 1977, when the **Annual Meeting Committee** met to evaluate the 1977 meeting and to block out the format for 1978. For the second year in a row, the section meetings had to be scheduled mainly on Saturday due to the lack of available classrooms on Friday. This circumstance has changed the habits of many Academy members; it now seems preferable to devote Friday to general interest activities and Saturday to the specialized section meetings. Furthermore, it can no longer be taken for granted that the host institution will cancel classes to make classrooms available.

A relatively new addition to the annual meeting in 1976 was included again in 1977 and seems to be a feature with some permanence — the short course. Twenty-two persons from colleges, universities, hospitals and industry were registered in the short course on high performance liquid chromatography that started Thursday afternoon for a solid ten hours of instruction.

Fifteen sections of the Academy presented a total of 180 papers, 53 of which were by non-members. Forty-five per cent of all the papers were presented by students. Of 73 student papers, almost half were by non-members. In 1977 there were 208 contributed papers, 48% of which were by students; 59% of them were non-members. The institutional sources of the contributed papers in 1978 included Iowa State University with 45, the University of Iowa with 43, the University of Northern Iowa with 24, and Drake University with 9. Other colleges contributed a total of 32 papers. Non-academic sources provided 22 papers. Five papers were by high school teachers. Three-fourths of the ISU and UI papers were by students, mostly graduate students, whereas 17 of 61 papers from UNI, Drake, and other colleges were by students.

Table I summarizes attendance, number of papers, and number of Academy members who have selected each section as an interest.

Registered attendance at the 80th session is reported in Table II. Actual attendance is estimated at some 20% above the total count.

Table I. *Attendance Summary, Both Sessions, 1978*

Section	No. of Papers	Attendance	Members
Anthropology	11	25	31
Botany	25	35	229
Cell Biology	14	24	52
Chemical Education	0	28	71
Chemistry C	7	20	149
Chemistry D	4	15	115
Conservation	24	80	177
Engineering	20	30	60
Geology	19	50	136
Mathematics	8	48	64
Physics	5	50	96
Physiology*	3	37	93
Psychology	13	35	44
Science Teaching	19	40	419
Zoology*	7	29	245
	180	546	---

*Combined meeting

Other (Friday)	
Junior Academy Papers Session	25
General Session I (Vondra)	250
Citizens' Workshop on Energy	40
DNA Research Symposium	150
Astronomy Education Workshop	40
Fitness Feature	90
Tour — John Deere Engine Works	42
Social Hour	200
Banquet	200
General Session II (Carlson)	250
General Session III (Cicerone)	200

Friday, April 21 included a wide variety of features ranging from a symposium on DNA research to an astronomy education workshop and a session on fitness for busy people. The day began with a general session at 10:00 a.m. at which Carl Vondra of I.S.U. discussed his experiences unearthing evidences of early man at Lake Turkana in Kenya. The Academy's formal business session followed before lunch; the minutes of that meeting appear at the end of this report. Following the banquet several awards were presented, including those of the Wildlife Society. Frank Starr introduced the students that had presented research papers early in the day and then presented Joe Moore, the new Junior Academy Director, to announce the names of the students that were selected to represent Iowa at the AAAS convention in January, 1979. They were:

¹Executive Director of IAS

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Linda Berens, Wahlert High School, Dubuque
Patrick Halbur, Kuemper High School, Carroll
Alternates:

Alan Rakoff, Fairfield High School, Fairfield
Diane Walther, Central High School, Waterloo

David McCalley of UNI then presented the teachers that were chosen to receive the Academy's Excellence in Teaching Awards. They were:

James H. Meyer Biology Teacher
 Cedar Falls High School
Gale Courtney Chemistry Teacher
 Tri-County Community High School
 Thornburg
William J. Cox Physics Teacher
 Dowling High School
 Des Moines
Richard A. Golz Earth Science Teacher
 East High School
 Waterloo
Dennis Frisch Junior High Science Teacher
 Wilton Elementary School
 Wilton
Darleen Ayres Elementary Science Teacher
 Horace Mann Elementary
 Ottumwa

Friday culminated with a general session in Russell Hall Auditorium with Dr. Elof Axel Carlson of SUNY at Stonybrook discussing "Frankenstein or Cornucopia: The Social Side of Recombinant DNA Research."

Future meetings of the Academy have been scheduled through 1982, as follows:

1979: April 20-21 Cornell College, Mount Vernon
 1980: April 18-19 Simpson College, Indianola
 1981: April 10-11 Joint meeting with the Illinois State Academy of Science, in the Quad-cities area
 1982: April 16-17 Coe College, Cedar Rapids

The joint meeting with the Illinois State Academy of Science in 1981 was under consideration for about two years before it was placed on the calendar.

REVIEW OF ACADEMY ACTIVITY 1977-78

During the annual business session on April 21, Executive Director Hanson read the following "Report of the Board of Directors" summarizing the main activities of that body:

The first meeting of the Board of Directors involving those elected a year ago took place on June 3, 1977. The first order of business was the budget for the fiscal year that began July 1, 1977.

A budget of \$50,627 was adopted for 1977-78, anticipating adequate farm income to allocate \$16,000 to general Academy operation. Beans sold for \$10.20 a bushel in the spring of 1977; what has happened to the market prices of both corn and beans this year is well known. Our state appropriation this year was only \$4,500 and will be at that level again in 1978-79. We came through the year without a decrease in total assets, nevertheless, primarily due to better management of PROCEEDINGS costs through page charges and continued growth in membership. (We are now up to 1489 in numbers, showing a continuous growth since 1973.) Another reason for a balanced budget this year was the fact that two major projects didn't materialize — the indexing of the PROCEEDINGS and the development of a stronger Junior Academy program. (I will mention more on the Junior Academy later.)

Table II. *Registered Attendance, 1978*

Category	Pre-registered		Walk-in		Total
	Papers*	Others	Fri.	Sat.	
Members					
Professional	71	137	91	22	321
Student	38	9	6	1	54
Subtotal	109	146	97	23	375
Non-members					
Professional	15	7	25	9	56
Student	35	5	19	6	65
Subtotal	50	12	44	15	121
Guests, etc.	18	19	-	-	37
Total	177	177	142	38	534

*180 papers were presented by 177 individuals

As a result of reports and recommendations received by the Board in June 1977, several actions were taken:

Nels Lersten was appointed Editor-in-Chief of the PROCEEDINGS, succeeding T.E. Rogers of Cornell College.

The Executive Director of the Academy and the Director of the Junior Academy were re-appointed for another year; however, Ed Pizzini resigned as IJAS director later in June.

The Publications Committee was asked to set up guidelines for monographs.

An *ad hoc* "conservation committee" was appointed by the president, following up on a motion passed at the April 1977 business meeting.

The Board submitted nominations to Governor Ray for appointments to the Iowa Preserves Advisory Board (this is based on the Iowa Code, which stipulates that the Iowa Academy of Science make such nominations).

The entire Constitution and Bylaws were edited to remove gender references and inconsistencies in grammar. Several bylaw revisions were also considered.

The Board met again on November 19, 1977, and spent much time working on the Constitution and Bylaws revisions that were eventually mailed to the voting membership in February.

At that meeting the Farm Committee reported that a lease was being negotiated with the Grundy County Conservation Board involving the all-purpose building, the wood lot, the prairie area, and a 6-acre triangular tract not easily accessible for cultivation. (The lease has now been signed and copies of it are available to members that would like to know more about this matter.)

Ed Cawley, Sylvan Runkel, and Daryl Smith were appointed to serve as the *ad hoc* "conservation committee." (That committee will be making a recommendation later in this meeting.)

In November the Finance Committee reported to the Board that they had looked into the possibility of negotiating a more favorable lease arrangement for the operation of the farm. Along with the Farm Committee they decided that the present lease arrangement was satisfactory.

The Board accepted the recommendation of the Membership Committee that ten persons be promoted to Fellow.

New flat rate page charges were recommended by the Publications Committee and approved by the Board. (They appeared in the December issue of the PROCEEDINGS and are currently in effect.)

It was at the November Board meeting that it was decided that an increase in Academy dues should be recommended to the membership for 1979. Several other bylaw revisions were approved and they were included with the election material sent out in February. Many of these deal with dues, the dues year, reinstatement of membership, and definition of "being in arrears."

The Board also approved a 25% price increase for the PROCEEDINGS to subscribers in 1979, adding an additional \$1.00 for overseas subscriptions, at the same time approving periodic increases in reprint prices to reflect increases in costs as they occur.

Responding to an inquiry from the Illinois State Academy of Science, the Board approved in principle the idea of a joint meeting with the Iowa Academy in the future, meeting on the Davenport-Rock Island area. (Plans are now underway to meet jointly with the Illinois Academy in the spring of 1981.)

Late in the year the Board approved the organization of a special science- and education-oriented tour of Eastern Europe under the Academy's name. All Academy members were informed of this tour opportunity but it didn't materialize for lack of interest. (One interesting side-light on this matter was that it came back to me that someone connected with the Academy had implied to a state legislator that this tour was being supported with Academy dollars. That of course was not going to be the case; the travel agency stood all the expense of advertising the trip. At any rate the trip is off.)

The third meeting of the Board was held at UNI on April 1. The long agenda kept the group busy from 9:30 a.m. till 6:00 p.m.

Frank Starr presented the recommendation that Joe Moore be appointed as Director of the Junior Academy and the Board responded unanimously in favor. Joe was present and the Board discussed the future of the Junior Academy with him at great length. He will be introduced later.

The results of a very close election were reported by Willard Poppy, chairman of the Election Committee. He will report directly to this body at the conclusion of this report and announce the results of the election.

The Farm Committee reported that some additional terracing and tiling were completed on the Parish Farm this year, bringing the farm closer to the committee's goal in that respect. About ½ of the cost of these improvements is covered by federal and state funds.

The Social Implications Committee has been developing some general plans for a public conference in early December 1978 dealing with the "economic and social implications of land, air, and water quality legislation." The conference will be addressed to legislators, business and industry, educators, and representatives of municipal, county, and regional government and planning agencies. Some outside funding will be sought for that conference.

The Research Grants Committee presented recommendations for a substantial increase in the research grant budget along with some new guidelines. Hereafter there will be two deadlines — May 1 and October 1 — after which the Committee will evaluate proposals in batches for grants up to \$400. New forms and instructions will be available soon. Additional grant funds from the AAAS will hereafter be used exclusively

to support research by high school students and will be used to develop one of several thrusts of the Junior Academy under its new director.

History seemed to be repeating itself when the Board responded to a letter from the Department of Public Instruction asking for general Academy involvement in the revision of certification standards and guidelines for science teacher education programs. An *ad hoc* committee has been set up to select a study committee to work with DPI on this matter. (Interested parties should contact either President-elect Goellner or me.)

A resolution was received from the executive board of the Iowa Science Teachers Section concerning Academy support of a state-wide land use policy. That resolution will be brought before this body later today.

The Board met again last night with the chairpersons of the various standing committees to brainstorm some new ideas about getting additional financial support from the state legislature. Several fresh approaches are under consideration and members of the Academy should watch for these in the IAS BULLETIN that will be coming out in May.

I'd like to add a comment about the work of the Governor's Science Advisory Council and a project that we have undertaken for the Governor's office. A grant of \$25,000 was received from NSF under the State Science, Engineering, and Technology program to study and improve the mechanism by which science and technology affects policy formulation in the executive branch. Many of the work program tasks are well underway, but there is one major one remaining — that of inventorying the personnel resources in Iowa that would be available on call to participate in task forces brought together to study specific point problems as the need arises. This may be a formidable task and I would like to hear from any Academy member that would be capable of helping with the inventory or with suggestions on how to develop it. Grant funds are available to help with expenses.

(The GSAC, incidentally, has had a close working relationship with the Governor's office, and I can report that this has enhanced the image of scientists so far as the Governor is concerned. This effect will be good for the scientific community at large, and we owe much to the 12 dedicated men who have agreed to serve unselfishly in this capacity.)

Committee Activity

The preceding report provides an introduction to the many hours of committee work contributed by dedicated Academy members. Those committees are appointed by the new president just before or just after he or she takes office. Dr. Lois Tiffany became the Academy's first woman president when the gavel was handed over to her on Friday evening, April 22, 1977, at Drake University. The committees she appointed are listed at the end of this report, for the record.

The work of the committees flows along from year-to-year, sometimes with little change in personnel or philosophy. The **Annual Meeting Committee**, whose work was mentioned earlier, starts early to make plans for the next annual meeting, but once that is accomplished their work subsides until the following year. In September and October many other committees met to discuss matters referred to them by the Board or to develop recommendations for Board action.

Nels Lersten, a botanist from I.S.U., took over as Editor-in-Chief in June and met with his Associate Editors in September to go over the reviewing process for submitted manuscripts for the PROCEEDINGS. The future of the indexing project was considered with the conclusion that annual indexing would commence with the 1978 issue.

The **Publications Committee** wrestled with the question of page charges for the PROCEEDINGS, having concluded after one year that the policy in effect was almost impossible to administer by the managing editor. A new flat-rate policy was adopted by the Board on the Committee's recommendation and has appeared in the PROCEEDINGS since December of 1977. Page charges became a necessity in 1976 due to the drastic reduction in state support for the publication of

the PROCEEDINGS and rising costs.

The IOWA SCIENCE TEACHERS JOURNAL continued to be a joint project of the Academy and the University of Northern Iowa in 1977-78. An effort was made in the fall of 1977 to encourage more secondary school science teachers to avail themselves of a free subscription to this fine publication, but a sample mailing to 2200 teachers failed to generate more than a handful of new "subscribers". Circulation stands at about 1300 including the Science Teaching Section (398), other Academy members that request it (330), secondary science teachers who are non-members (350), paid subscribers (25), and gifts and exchanges (167).

The **Student Programs Committee** met twice in the fall to deal with the need for finding a new Director for the Junior Academy, E.L. Pizzini having resigned from that post in June. During the year several important changes were made on recommendation from this committee to restore the Iowa Junior Academy of Science to its historical objectives — that of encouraging talented secondary school students in science through awards and research grants. Later in the year, Joe Moore, science consultant for Area Education Agency One, was appointed as the new IJAS Director.

The **Social Implications Committee**, in spite of difficulties in getting the members together, made an effort during the year to generate some ideas for Academy activities in the area of public understanding of science. One idea, still on the drawing board, was a meeting in December of 1978 for educators, legislators, and representatives of business, industry and municipalities, dealing with the economic and social implications of land, air, and water quality legislation. Another idea was the publication of a volume on "Iowa's Heritage", a thorough compendium on the land, natural regions, and people of Iowa, for general distribution.

The **Membership Committee** met in the fall to consider several applications for promotion to Fellow and to discuss ways of increasing the membership of the Academy. Those promoted to Fellow are listed in the minutes of the annual business session. Table III shows membership trends since 1974.

Table III. *Membership Counts 1974-1978*

Category	1974	1975	1976	1977	1978
Associate Member	680	638	663	714	-
Student	-	-	-	-	698
Associate Fellow	155	160	156	173	202
Life Member	433	481	488	465	435
Emeritus	23	26	34	37	38
	66	65	66	65	67
TOTAL	1357	1370	1407	1454	1440

The **Elections Committee** started early in the 1977-78 year to round up an excellent slate of candidates. Past-president Willard Poppy chaired the committee and presented the results of the mail ballot at the annual business meeting in April. (The minutes of that meeting include the election results.)

The **Research Grants Committee**, as in previous years, reviewed grant applications during the early part of 1977-78 as they arrived and funded them until money ran out. Later in the year the committee met to

revise application and evaluation procedures and guidelines. Two deadlines for applications were set up, following which the committee would meet to batch-process the proposals. The first of these deadlines was May 1, 1978, and most of the proposals that were in hand at that time arrived in response to a mailing to all the secondary school science teachers in Iowa. Some of these were funded with money from AAAS, but several were turned down because of poor quality or poor research design. Renewed interest in student research seemed to be apparent from the response, and the committee may well mark 1977-78 as a turning point in that regard. One of the important factors in the approach now being taken by the Research Grants Committee was the restriction imposed by AAAS on the use that academies could make of research grant funds provided by AAAS. Such funds must be used exclusively for secondary school research support and cannot be used to support post-high school research. The Committee therefore proposed successfully to the Board that additional Academy funds be earmarked for research grants to support post-secondary school projects. The use of Academy funds for this purpose was a first in 1977. Research grants awarded in 1977-78 to secondary school students came to a total of \$820. Grants to post-secondary applicants totaled \$1,744, part of which was carried over from the previous year.

The **Recognition and Awards Committee** honored three individuals and one institution at the annual meeting with the IAS Award of Merit. Special framed citations were presented. Frank Starr and Hjalmer Peterson were recognized for contributions in science education and work with youth. Gladys Black was recognized for her work as an amateur ornithologist. The Iowa Lakeside Laboratory received recognition for "excellent research contributions in various aspects of floral and faunal life as they occur in the lakes, marshes, and prairies of Iowa."

The **Farm Committee**, after a year of making virtually no improvements on the Parish Farm, developed plans for additional terracing and tiling which were consummated in the early spring of 1978, along with an agreement with the Grundy County Conservation Board involving parts of the farm not entirely suitable for crop production. About ten acres have been leased to the GCCB for development as a wild life preserve and wood lot. Unfortunately, income from the farm in 1977-78 did not come up to expectations. Executive Director Hanson raised questions throughout the year concerning the fairness of the lease arrangement to the Academy. The Farm Committee and the Finance Committee took the view that they were content with the arrangement. Hanson, on the other hand, continued to question the appropriateness of the Academy being in the position of operating a farm and expressed some concern about preoccupation with the farm detracting from other goals of the Academy. (The situation is, of course, that the bequest requires the Academy to keep the farm until the year 2035.)

The first mention of the concept of a **Governor's Science Advisory Council** appeared in the Annual Report for 1975-76. The appointment of that body by Governor Ray was described in the Annual Report for 1976-77. Although the GSAC is not an Academy agency, it should be reported this year that the Academy office is involved in the work of the Council through the management of the State Science, Engineering, and Technology (SSET) project funded by a grant from the National Science Foundation.

The SSET project is being managed by R.W. Hanson, Executive Director of the Academy, and the grant is sub-contracted to the Academy by the Office for Programming and Planning. Two other academies have been involved in SSET projects in their own states — Nebraska and Ohio. The Iowa project will be completed by February, 1979. During 1977-78, the Governor's Science Advisory Council, acting as the performing organization under the grant, conducted studies dealing with problems indigenous to Iowa and made a broad study of state agency activity in areas involving science and technology. For example, the question of banning nitrite in the processing

of meat was recognized by the Governor's office as having important economic ramifications in Iowa (and elsewhere). The GSAC was asked to research the matter and in responding, a position paper was prepared giving the scientific background for a specific recommendation, viz:

"The Governor's Science Advisory Council believes that zero health risk with food additives is a humanly unattainable goal and therefore recommends (a) that nitrite not be banned but the level be lowered to the minimum that still affords protection against botulism; (b) that efforts be continued to find a substitute for nitrite; (c) that the ultimate decision for the acceptability of risk be left with the consumer public."

The paper was sent to the Governor who promptly sent it on to the Department of Agriculture. The ban was postponed but the matter remains unsettled. The position paper accomplished an important goal, nevertheless — it raised the credibility of the scientific community to very respectable level in the Governor's eyes.

The Academy functions effectively as an interface between the scientific community and the Governor's Science Advisory Council. In the same sense, the Board of Directors discussed late in the 1977-78 year the possibility of assisting in the creation of a science and technology advisory body for the state legislature.

The Iowa Academy continued in 1977-78 to be effectively represented on the Board of Directors of the **Association of Academies of Science (AAS)**. Frank Starr of the Waterloo Schools continued as director of the American Junior Academy of Science. Robert W. Hanson continued as Secretary-Treasurer of AAS and editor of the

"Directory and Proceedings of the AAS." Hanson organized a symposium for the 1978 annual meeting of the AAAS on "Problems and Progress in Science Advising to State Government" and as one of the participants reviewed for other states the way in which the Governor's Science Advisory Council in Iowa was set up and how it functions.

The **Iowa Science Teachers Section (ISTS)**, formerly organized as the Iowa Science Teachers Association, again held a fall conference for science teachers at Marshalltown Community College in November, 1977, which attracted over 300 science teachers from all levels in schools and colleges. Another section sponsored a fall meeting in keeping with its practice since it started in 1972. The **Chemical Education Section** met at Drake University in September to discuss the problem of the under-prepared student in chemistry.

Financial Matters

The budget adopted by the Board of Directors for the 1977-78 fiscal year involved anticipated expenditures of \$50,627 and estimated receipts of \$40,308, including a state appropriation of \$4,500 and an allocation of farm income of \$16,000. The difference was expected to come from assets on hand at the start of the year. At year's end the record (exclusive of the SSET project) showed expenditures of \$47,556.34 and receipts of \$49,652.33, with an increase in assets of \$2,096.19. The expenditures fell short of the budget because some planned activity didn't materialize.

President Lois Tiffany called a special meeting of the Board of Directors and committee chairs on April 20 to brainstorm ideas on approaches to the legislature, in view of the failure to have the 1978-79

Table IV. *Sources and Disposition of Operating Funds, 1977-78*

<i>Resources</i>		<i>Disposition</i>			
<i>Source</i>	<i>Amount</i>	<i>Publications</i>	<i>Programs; Projects</i>	<i>Meetings; Etc.</i>	<i>Administration</i>
Dues	\$14,352.00	\$ 2,880.03	\$ 336.91	\$ 356.75	\$10,778.31
Page charges	800.00	800.00	-	-	-
Reg. fees, etc.	5,945.07	-	-	5,945.07	-
PROCEEDINGS	3,349.40	3,349.40	-	-	-
1st JOURNAL	128.00	128.00	-	-	-
Monograph	276.25	276.25	-	-	-
Reprints	1,246.67	1,246.67	-	-	-
AAAS Grant	200.00	-	200.00	-	-
Contributions	980.00	-	150.00	-	830.00
From Reserves*	16,403.81	-	-	836.00	15,567.81
Miscellaneous	1,504.44	-	494.84	-	1,009.60
Interest	2,370.70	-	2,364.61	-	6.09
Federal funds	8,230.01	-	7,799.19	-	430.82
State Approp.	4,500.00	4,500.00	-	-	-
UNI Subsidy	500.00	500.00	-	-	-
TOTAL	\$60,786.35	\$13,680.35	\$11,345.55	\$ 7,137.82	\$28,622.63
Per Cent	100%	22.5%	18.7%	11.7%	47.1%
Estimate of administrative expense		7,155.66	4,293.39	10,017.92	7,155.66
Per Cent of Total Adm.		25.0%	15.0%	35.0%	25.0%

*Savings and farm income transfers

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appropriation increased from \$4,500. Executive Director Hanson urged the Board and others present to take a fresh look at the performance of the Academy and not to be satisfied with its relative success, hoping to generate some new approaches in presenting the work of the Academy to the legislature. A committee of three was appointed by President Tiffany to help Hanson write a narrative of the programs of the Academy. The committee (Donald Biggs, Richard Wach, and Stanley Grant) met in Des Moines in April to discuss ways of approaching the legislature. It was decided then to request an appropriation for general support rather than for the printing of the PROCEEDINGS alone and to expand activity planning in the areas of public understanding of science, special publications, and advising to state government. The plan was to request a much higher level of support than in the past and to approach individual legislators on grounds more closely related to their concerns.

Table IV shows the sources of Academy operating funds and their disposition in 1977-78.

This table includes the state appropriation of \$4,500 and "UNI subsidy" of \$500, neither of which appear in the Academy's ledger, since the money doesn't pass through Academy accounts. "Federal funds" refers to NSF grant funds used for the SSET project under contract with the Office for Programming and Planning. The remainder of this project will be handled out of a separate checking account not included in the figures of Table V which summarizes the assets of the Academy. A footnote to Table V indicates that all cash assets of the Academy consist of a required reserve (Life Member payments) and a "contingency fund" that is there in case farm or fee income should drop precipitously.

Referring again to Table IV, the allocation of certain kinds of income to certain columns is determined by the nature of the income (e.g.,

registration fees and sales of publications). Other income, such as dues, is allocated to "pick up the slack." The "estimate of administrative expense" is based on experience and is only meant to be suggestive. Although it appears that 47.1% of Academy income goes for administration, three-fourths of the \$28,622 is distributed among Academy activities. The remainder goes for record-keeping, primarily.

The "Programs and Projects" column of Table IV includes several efforts: student programs, teacher programs, research grants, advising to state government, and recognition and awards. The several programs described in the state appropriation budget narrative included all of these along with publications, meetings, and administration.

Neither of these tables show the value of time and services provided by the University of Northern Iowa. In addition to released time for the Executive Director (half-time, one semester), the Mail Center and the Data Processing Center at UNI provide valuable services by agreement with the Academy. In addition, as part of its share of the responsibility for the IOWA SCIENCE TEACHERS JOURNAL, UNI provides photocomposition service and postage for this periodical.

Going beyond UNI's support of the Academy, there is no way to indicate a proper dollar value of the institutional support provided without charge for committee members, directors, and officers. Perhaps more importantly there is no way to estimate the value of the time devoted to Academy concerns by the many persons in leadership positions and by the Academy membership at large. If all these values could be integrated, the sum in dollars would begin to reflect the magnitude of activity and degree of success the Academy enjoys.

It is that kind of support that made 1977-78 another year of solid progress for the Iowa Academy of Science.

Table V. Financial Summary 1977-78

	Checking	Savings	Total Assets
Beginning balance	\$ -754.68	\$30,000.00	\$29,245.32
Receipts	57,882.54	6,000.00	
Disbursements	(55,786.35)	(6,000.00)	
Ending balance	1,341.51	30,000.00	31,341.51*

*Reserve: \$7,000.00; contingency fund: \$24,341.51
(This total does not include value of unsold grain inventories.)

MINUTES OF THE ANNUAL BUSINESS SESSION

April 21, 1978

The meeting was called to order at 11:35 a.m. by President Tiffany in Lantz Auditorium of the Science Building at the University of Northern Iowa. There were 75 persons present.

1. Hanson read his Report of the Board of Directors* and then introduced Joe Moore, the new Director of the Iowa Junior Academy of Science. Moore made several comments about his aspirations and plans for the coming year. It was moved and seconded that the Report of the Board of Directors be accepted. Motion carried.

2. Treasurer Donald Pilgrim presented the Treasurer's report to the effect that the Academy's assets showed the following changes during calendar year 1977:

	Checking	Savings	Total
Assets 1/1/77	6,035.77	26,000.00	32,035.77
Receipts	46,063.89	- -	46,063.89
Transfers	7,000.00	(7,000.00)	
Disbursements	42,398.74*	- -	42,398.74
Transfers	(11,000.00)	11,000.00	
Assets 12/31/77	5,700.92	30,000.00	35,700.92**

*(Including 2,097.96 expended for the SSET project which was reimbursed after 1/1/78.)

** (Plus 2,097.96 SSET funds reimbursed in Jan. 1978.)

*Contained within the text of the Annual Report

He also reported that the audit of the Executive Director's books had been completed and they were found to be in order for the year 1977.

It was moved and seconded that the Treasurer's Report be accepted. Motion carried.

3. Willard Poppy presented the results of the election conducted by mail ballot and announced that the following candidates had been elected:

President-elect:	Clifford McCollum, UNI
Director:	Sr. Marguerite Neumann, Clarke College
Director:	H.T. Horner, Jr., I.S.U.

Poppy introduced the elected candidates (Horner was not present) and then announced that the Constitution revisions mailed with the ballot were passed by a vote of 435 to 14.

4. George Knaphus presented the Membership Committee report to the effect that the following persons had been promoted to Fellow status:

James G. Macmillan
Sister Marguerite Neumann
Paul Rosenberry
Donald DePrénger
Charlie Martinson
David Staniforth
Herbert H. Snyder
Patricia Hemmendinger
John Berg
Edward Thorland

Knaphus then read the names of the following deceased members who had died since the last annual meeting and asked the audience to rise for a moment of silent tribute to their memory:

E.W. Chittenden
George E. Knudson
David N. Crosthwaite, Jr.
Richard E. Frey
Elmo H. Arndt
Florian Stork
Bruce Heezen
Mrs. B.O. Wolden

5. President Tiffany then called on Willard Poppy to present two motions:

(1) Moved, that the rules be suspended and the Bylaws revisions included with the 1978 mail ballot be declared passed on the basis of the results of the mail ballot.

Seconded, the motion carried without dissent.

(2) Moved, that Article XIV of the Bylaws be amended by adding the words "or by mail ballot" to the end of the sentence.

This motion was seconded, but discussion resulted in an amended version that was passed on voice vote, as follows:

Moved that Article XIV of the Bylaws be amended as follows:

These Bylaws may be amended upon recommendation of the Board of Directors and (a) by the affirmative vote of a majority of the voting members present at an Annual Business Meeting of the Academy, or (b) by mail ballot.

6. President Tiffany called on Ed Cawley to present a report of the *Ad hoc* "Conservation Committee," as follows:

The committee met on March 30, 1978, and discussed the proposal. The following is the unanimous recommendation of the committee:

The Iowa Academy of Science should have a permanent standing committee. The functions of the committee, as indicated by the Academy, should be reviewed every five years to permit modification of the tasks of the committee and ensure flexibility. The committee will be named the Natural Resources Committee to indicate the enlarged scope of its responsibilities.

Its functions should include:

1. To support and encourage the identification, assessment, and protection of natural resource areas including: Native terrestrial and aquatic habitats, geologic structures, archeological sites.
2. To support and encourage wise planning in land use of both natural and agricultural lands.
3. To produce information for use by state and local communities for natural resources location and evaluation.
4. To serve as a contact agency for citizen input and concern relating to resource utilization.
5. To create and maintain a list of resource consultants and government agencies concerned with resource utilization.
6. To recommend members to serve on the State Preserves Board as indicated in the Iowa Code.

The purpose of the committee would be to augment the role of other committees, especially the Social Implications Committee and the Farm Committee. It would also attempt to bridge the present gap between the Iowa Academy and other areas of the Academic community especially relating to agriculture.

Further the committee recommends that five members should be appointed for staggered two year terms. No member should serve more than two consecutive terms.

In appointments an attempt should be made to include representatives from as broad a range as possible, i.e., agriculture and geology should be included. As far as possible members not presently serving on standing committees should be chosen to expand involvement of members in activities of the Academy.

Respectfully submitted
Edward T. Cawley, Chairman
Daryl Smith
Sylvan Runkel

President Tiffany then called on Daryl Smith to make the following motion:

Moved, that the following additions and changes be made in the Bylaws:

Add new Section 10 and change present sections 10, 11, and 12, to Sections 11, 12, 13.

New Section 10. *Natural Resources Committee.*

10a. The Natural Resources Committee shall consist of six Members or Fellows each serving three year terms, two being appointed each year. No member may serve more than two consecutive three year terms.

10b. The chair shall be designated by the President.

10c. *Duties.* The Natural Resources Committee shall (1) support and encourage the identification, assessment and protection of natural resource areas including: native terrestrial and aquatic habitats, geologic structures and archeological sites, (2) support and encourage wise planning in land use including natural, agricultural and urban lands, (3) produce information for use by state and local communities for natural resources location and evaluation, (4) serve as a contact agency for citizen input and concern relating to resource utilization, (5) create and maintain a list of resource consultants and government agencies concerned with resource utilization, (6) recommend members to serve on the Iowa Preserves Advisory Board as indicated by the Iowa Code.

10d. The functions of the committee shall be reviewed every five years to permit modification of tasks and maintain flexibility.

The motion was seconded.

After considerable discussion, President Tiffany pointed out that, since this motion had not come before the Board of Directors, a vote at this meeting would only be a recommendation that the Board consider it favorably. The official vote would then have to be by mail ballot.

On voice vote the motion carried.

7. President Tiffany called on Ross Iverson to present a resolution from the executive committee of the Iowa Science Teachers Section, as follows:

Be it resolved that the Iowa Academy of Science favors a statewide land use policy consistent with the best possible economic and environmental standards and which will:

1. Maintain and conserve natural areas for scientific research and recreation.
2. Maintain and improve Iowa's agricultural capacity.
3. Maintain and improve Iowa's water quality.
4. Maintain and improve Iowa's air quality.

Iverson admitted in the discussion that the action to create a Natural Resources Committee might in some degree obviate the necessity of the resolution. Nevertheless, after some discussion, the resolution was passed on voice vote.

Submitted by:
Robert W. Hanson, Executive Director

CONSTITUTION AND BYLAWS AMENDMENTS

The voting membership of the Academy approved a thoroughly edited version of the Constitution and Bylaws by mail ballot during the 1978 election in March. The full text of the approved document appears below:

CONSTITUTION OF THE IOWA ACADEMY OF SCIENCE, INC.

(Adopted 1970 and Revised 1972, 1974, 1975, 1976, 1977, and 1978.)

ARTICLE I — NAME

This organization shall be known as *The Iowa Academy of Science* and shall be incorporated under the laws of the State of Iowa.

ARTICLE II — OBJECTIVES

The objectives of the Iowa Academy of Science shall be the promotion of interest in the sciences, in scientific research, improvement of instruction in the sciences, the dissemination of scientific knowledge, and the recognition of high achievement in attaining these objectives in the State of Iowa.

ARTICLE III — MEMBERSHIP

Section 1. *Categories of membership.* The membership shall consist of Emeritus Fellows, Fellows, Members, Associates, Student Associates, Corporate Associates, and Institutional Associates. No candidate for membership shall be excluded on the basis of sex, religion, race, color, or national origin.

1a. *Emeritus Fellows.* Fellows who are 60 or more years of age and who have been members in good standing for a total of 15 years and are retired (from their regular occupation) may request transfer to the status of Emeritus Fellow.

1b. *Fellows.* Fellows may be elected by the Board of Directors on recommendation of the Membership Committee from those who meet the requirements for Member status and who have also shown evidence of scholarship as indicated by publications of papers in the PROCEEDINGS or presentation of papers at the Annual Meeting. Publication of other scholarly work, evidence of outstanding service in teaching, or service in promoting the objectives of the Iowa Academy of Science, may also be submitted as evidence for promotion to Fellow status. Any Member may apply for Fellow status or may be nominated for Fellow status by a Member or Fellow of the Academy in good standing. A Fellow may become a Life Fellow by payment of the dues prescribed in the Bylaws.

1c. *Members.* Persons actively engaged in research in science, or teaching science, or administration in science, may become Members of the Academy. Such Members may ask the Membership Committee to consider their requests for promotion to Fellow status or the Membership Committee may initiate the action necessary for promotion. A Member may become a Life Member by payment of the dues prescribed in the Bylaws.

1d. *Associates.* Persons interested in the progress of science may apply for Associate membership, even though they may not be actively engaged in scientific work.

1e. *Student Associates.* Bona fide students in institutions of higher learning may apply for membership as Student Associates. Their student status must be vouched for by a professor in the department of the institution in which they are enrolled.

1f. *Corporate and Institutional Associates.* Corporations or institutions interested in supporting the Academy may become Corporate or Institutional Associates.

Section 2. *Privileges.* Only Members and Fellows shall be eligible to hold office in the Academy and have full voting privileges.

ARTICLE IV — OFFICERS

Section 1. *President.* The President-elect shall succeed to the office of President at the adjournment of the next Annual Meeting following election, serving as President for a period of one year. The President shall discharge the usual duties and have such powers as generally pertain to the office or as may be required by this Constitution or by the Bylaws, or by the Articles of Incorporation, or by the Board of Directors. In event of resignation, absence, disability, or death, the duties of President shall be assumed for the remainder of the unexpired term by the President-elect. Should the President be unavailable, the duties of the office shall be assumed for the remainder of the unexpired term by a Member or Fellow, properly qualified, appointed by the Board of Directors.

Section 2. *President-Elect.* A President-elect shall be elected annually in accordance with the Bylaws; the term of office shall commence at the adjournment of the Annual Meeting. The President-elect shall become President at the adjournment of the Annual Meeting in the following year, performing such duties and having such powers as required by this Constitution, or by the Bylaws, or by the Articles of Incorporation, or by the Board of Directors. In event of resignation, absence, disability, or death, the duties of the office shall be assumed for the remainder of the unexpired term by a Member or Fellow properly qualified, appointed by the Board of Directors.

Section 3. *Immediate Past-President.* The immediate Past-president shall continue as an officer of the Academy for one year beyond the term of office as President and shall perform such duties as required by this Constitution or by the Bylaws, or by the Articles of Incorporation, or by the Board of Directors. In the event of resignation, absence, disability or death, the duties of the office shall be assumed for the remainder of the unexpired term by a Member or Fellow, properly qualified, appointed by the Board of Directors.

Section 4. *Treasurer.* The Treasurer shall be elected for a three-year term in accordance with the Bylaws. The term of office shall commence at the adjournment of the Annual Meeting. The Treasurer shall serve as the Chairman of the Finance Committee. The Treasurer shall arrange for the audit of the general operating account and the non-operating funds and endowments of the Academy that are in the custody of the Executive Director and shall prepare an annual financial statement of the Academy's assets. The Treasurer shall perform such other duties and have such powers as required by this Constitution, or by the Bylaws, or by the Articles of Incorporation, or by the Board of Directors. In event of resignation, absence, disability, or death, the duties of the office shall be assumed for the remainder of the unexpired term by a Member or Fellow designated by the Board of Directors.

Section 5. *Executive Director.* The Executive Director shall be appointed by the Board of Directors at its Annual Meeting. The term of office shall commence on the first of July following appointment. The Executive Director shall be custodian of the funds of the Academy and shall collect all monies due the Academy, and shall perform such other duties and have such powers as required by this Constitution, or by the Bylaws, or by the Articles of Incorporation, or by the Board of Directors. In event of resignation, absence, disability, or death, the duties of the office shall be assumed for the balance of the unexpired term by a Member or Fellow appointed by the Board of Directors.

Section 6. *Editor of the Proceedings.* The Editor of the PROCEEDINGS shall be appointed by the Board of Directors at its Annual Meeting. The term of office shall commence at the adjournment of the Annual Meeting of the Board of Directors. The duties, powers, and term of office shall be as required by this Constitution, or by the Bylaws, or by the Articles of Incorporation, or by the Board of Directors. In event of resignation, absence, disability or death, the duties of the Editor shall be assumed for the remainder of the unexpired term by a Member or Fellow, properly qualified, appointed by the Board of Directors.

ARTICLE V — BOARD OF DIRECTORS

Section 1. *Authority.* The authority to manage the affairs of the Academy shall be vested in the Board of Directors. The Board of Directors is empowered to engage the services of qualified individuals to assist in the proper execution of the activities of the Academy.

Section 2. *Membership.* The Board of Directors shall consist of twelve members, including the President, President-elect, the immediate Past-president, the Treasurer, the Editor of the Proceedings, the Executive Director ex-officio non-voting, plus six additional 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.

Section 3. In the event of the resignation, absence, disability, or death of a Director, the balance of the unexpired term shall be filled by a Member or Fellow appointed by the remaining members of the Board of Directors.

ARTICLE VI — PROSCRIPTIONS

Section 1. The Academy shall be organized and operated for the advancement of scientific work and science-related educational activities for the benefit of the State of Iowa.

Section 2. The Academy shall not be organized nor operated for profit, either to itself or to any officer of, member of, or substantial contributor to, the Academy. This shall not, however, prevent the Academy from engaging in all activities permitted to it by Article IV of the Articles of Incorporation.

Section 3. The Academy shall not pay compensation to any member, nor to any other individual, beyond that which is a reasonable salary or compensation for personal services actually rendered to the Academy.

Section 4. No substantial part of the activities of the Academy shall consist of dissemination of propaganda or the influencing of legislation. However, the Academy may make public factual information which provides background on issues directly concerned with conservation or scientific endeavors in the State of Iowa.

Section 5. The Academy shall not participate in, nor intervene in, any political campaign on behalf of any candidate for public office.

ARTICLE VII — AMENDMENTS

This Constitution may be amended at any time by assent of two-thirds of the votes cast by mail ballot, provided that notice of the proposed amendment, approved by a majority of the Board of Directors, has been sent to all voting members at least 45 days prior to the deadline for receipt of ballots.

BYLAWS OF THE IOWA ACADEMY OF SCIENCE, INC.

(Adopted 1970 and Revised 1972, 1973, 1974, 1975, 1976 and 1977)

ARTICLE I — MEETINGS

Annual meetings of the Academy shall be held on or about the third Friday and Saturday of April, unless otherwise decided by the Board of Directors.

ARTICLE II — QUORUM

A quorum of the business session of the Annual Meeting shall consist of twenty-five voting members.

ARTICLE III — BOARD OF DIRECTORS

Section 1. The Board of Directors shall meet at least twice each year, once in a regular annual session in the spring of each year immediately preceding the

Annual Meeting of the Academy, and once on a date set by the Executive Committee, normally in the fall of the year at a time and place designated by the President. Special meetings of the Board may be called by the President upon recommendation of the Executive Committee.

Section 2. The President of the Academy shall serve as the presiding officer of the Board of Directors and may invite the chairs of Standing Committees, or other Academy members, individually to sit with the Board and to participate on a non-voting basis in the deliberations of the Board.

Section 3. The President, President-elect, immediate Past-president, Treasurer and Executive Director shall constitute an Executive Committee which shall be empowered to act for the Board on an interim basis when action is necessary between the meetings of the Board. Such actions shall be reported to the Board at its next meeting for its approval.

ARTICLE IV — EXECUTIVE DIRECTOR

Section 1. *Duties.* The duties of the Executive Director shall be:

- 1a. to implement the policy decisions of the Board of Directors.
- 1b. to maintain the central office of the Academy as its place of business, to prepare federal and state income tax returns for the Academy, and to keep on file the letters of incorporation and postal permits.
- 1c. to receive and disburse money in the normal operation of Academy business, under the supervision of the Treasurer.
- 1d. to maintain an accurate and up-to-date list of the membership of the Academy and their dues records, with dates of their election to the different categories of membership, their sectional affiliations, and the date of their separation from the Academy.
- 1e. to prepare the agenda of and keep records of the proceedings of the Executive Committee, the Board of Directors, and the Academy.
- 1f. to coordinate the activities of the various officers, committee chairs, the Iowa Junior Academy of Science, and other Academy projects.
- 1g. to have charge of the preparation, printing and mailing of circulars, blanks, notifications, programs of meeting, etc.
- 1h. to act as editor of the *IAS Bulletin* and to handle subscription matters for the *Iowa Science Teachers Journal*.
- 1i. to prepare an Annual Report and Membership List of the Academy.
- 1j. to assist the Finance Committee in the interaction between the Academy and any corporations or institutions desirous of encouraging scientific endeavors in Iowa.
- 1k. to serve as the representative of the Academy at the meeting of the Association of Academies of Science held in conjunction with the AAAS annual convention.
- 1l. to do all things within reason, as directed by the Board of Directors, to enhance and extend the effectiveness of the Academy.

Section 2. *Committee Membership.* The Executive Director shall be a member of the Executive Committee and an ex-officio non-voting member of the Board of Directors and of all Standing Committees.

ARTICLE V — EDITOR

Section 1. *Term of Office.* The Editor of the *Proceedings of the Iowa Academy*

of Science shall be appointed by the Board of Directors for a four year term.

Section 2. *Duties.* The Editor shall supervise and edit the content of the *Proceedings of the Iowa Academy of Science* with the help of an Editorial Review Board of Associate Editors recommended by the Publications Committee and approved by the Board of Directors. The Editor shall be an ex-officio member of the Publications Committee.

ARTICLE VI — COMMITTEES

Section 1. *Standing Committees.* The incoming President shall appoint Standing Committees, as named in the following sections, immediately at the close of the Annual Meeting. The responsibilities of each Standing Committee shall begin upon appointment.

Section 2. *Annual Meeting Committee.*

2a. This Committee will be made up of the Local Arrangements Chair for the Annual Meeting just concluded, the Local Arrangements Chair for the forthcoming Annual Meeting, and four other Members or Fellows who have preferably served as Section Chair, two of whom will be appointed each year to serve two year terms. One of the appointed Members or Fellows should be from the institution to host the meeting two years hence.

2b. The chair of the Committee will be appointed by the President.

2c. The duties of the Annual Meeting Committee will be to develop general plans for future Annual Meetings and to consider invitations from potential host institutions. They will evaluate each Annual Meeting in terms of various measures of success no later than October 1 following the meeting and make recommendations for the general planning and format for the next two Annual Meetings. The Executive Director, the chair of the Local Arrangements Committee and the Section Chairs will work closely together to implement the recommendations of the Annual Meeting Committee in planning each Annual Meeting.

Section 3. *Elections Committee.*

3a. The Elections Committee shall be made up of six Members or Fellows each serving two year terms with three members being appointed each year.

3b. The chair shall be designated by the President.

3c. The duties of the Election Committee shall be to nominate candidates for the office of President-elect, Treasurer, and Directors such that there is more than one candidate provided for each vacancy. The Committee shall gather biographical data on each candidate and prepare election materials to be distributed by mail from the central office at least 45 days prior to the Annual Meeting. Ballots shall be returned to the central office by mail and turned over to the Elections Committee for counting. The chair of the Elections Committee shall report the results of the election at the Annual Meeting.

Section 4. *Finance Committee.*

4a. The Finance Committee shall be composed of the Treasurer and at least six Members or Fellows appointed for three year terms with two appointed each year.

4b. The Treasurer shall serve as chair.

4c. The duties of the Finance Committee shall be to solicit financial support in the form of Corporate and Institutional memberships, contributions, grants, bequests, and endowments. It shall seek optimum return on Academy investments and income property. It shall also be advisory to the Board of Directors regarding budget, salaries, and other financial matters.

Section 5. *Membership Committee.*

5a. The Membership Committee shall be made up of six Members or Fellows appointed for three year terms with two members appointed each year.

5b. The chair shall be designated by the President.

5c. The Membership Committee shall annually conduct a membership drive to increase membership in all categories except Corporate and Institutional Associate. It shall make nominations of new Fellows to the Board, consider applications for promotion from Member to Fellow, and made appropriate recommendations to the Board.

The Committee shall assist the Executive Director with maintaining accurate membership lists. It shall be responsible for appropriate memorial tributes upon the death of members.

Section 6. *Publications Committee.*

6a. The Publications Committee shall consist of the Editor, ex-officio, and six other Members or Fellows serving three year terms, two of the six being appointed each year.

6b. The chair shall be designated by the President.

6c. *Duties.* Matters relating to all Academy publications, excepting programs, shall be referred to the Publications Committee by the Board of Directors. It shall report recommendations to the Board of Directors for action.

Section 7. *Recognition and Awards Committee.*

7a. The Recognition and Awards Committee shall consist of six Members or Fellows each serving three year terms, two being appointed each year, and the director of the Excellence in Science Teaching Awards program as an ex-officio non-voting member.

7b. The chair shall be designated by the President.

7c. *Duties.* The Recognition and Awards Committee shall implement recognition by the Academy of individuals or groups outstanding in attaining the objectives of the Academy as stated in the Constitution, including the solicitation and evaluation of nominations for awards approved by the Board of Directors. Recognition and awards for secondary school students shall not be within the jurisdiction of this Committee.

Section 8. *Social Implications Committee.*

8a. The Social Implications Committee shall consist of six Members or Fellows appointed for three year terms, two being appointed each year.

8b. The chair shall be designated by the President.

8c. *Duties.* Matters relating to the social and environmental implications of science and Academy activities shall be referred to this Committee by the Board of Directors. The Committee shall report recommendations to the Board of Directors for action.

Section 9. *Student Programs Committee.*

9a. The Student Programs Committee shall consist of six Members or Fellows, two of whom are selected by the Science Teaching Section as its representatives. Each member of the Committee shall serve a three year term. Two members shall be appointed each year. The Director of the Iowa Junior

Academy shall be an ex-officio non-voting member.

9b. The chair shall be designated by the President.

9c. *Duties.* This Committee shall supervise the activities of the Iowa Junior Academy of Science and the Iowa Science Talent Search. All matters relating to Academy programs for pre-college students shall be referred to this Committee by the Board of Directors.

Section 10. *Parish Farm Committee.*

10a. The Parish Farm Committee shall consist of six Members or Fellows each serving three year terms, two being appointed each year.

10b. The chair shall be designated by the President.

10c. *Duties.* The Parish Farm Committee shall recommend policies for the management of the Parish Farm and implement those approved by the Board of Directors, including plans for capital improvements, soil conservation measures, crop plans, and any non-farming uses of the farm property.

Section 11. *Temporary Committees.* The President may appoint temporary committees of suitable size, at intervals as needs arise. The committees shall serve one year. Temporary committees may be reappointed annually. The President shall designate the chair of each committee and shall specify duties for each committee, in writing, to the chair.

Section 12. The President shall appoint a member of the Board of Directors as a liaison to each committee.

ARTICLE VII — ELECTIONS AND VOTING

Section 1. The election of officers and directors shall be by mail ballot under the supervision of the Elections Committee. The results of the balloting shall be reported to the Board of Directors prior to the Annual Meeting and to the members present at the business session of the Annual Meeting. A simple majority of votes cast shall be necessary for election.

Section 2. Voting on Constitutional amendments shall be by mail ballot under the supervision of the Board of Directors or their designate(s), and the results shall be announced by the President to the members present at the business session of the Annual Meeting.

Section 3. Motions that pertain to Academy commitments, financial or otherwise, must be presented in writing to the Board of Directors prior to the Annual Business Meeting.

ARTICLE VIII — SECTIONS

Section 1. *Formation of Sections.* Twenty-five or more persons may petition the Executive Director for the establishment of a new section. At the time of petitioning they shall suggest an appropriate name for the section. If the petition is favorably voted on by the Board of Directors, a temporary section chair shall be designated by the President. New sections will be considered temporary for at least one year, at the discretion of the Board of Directors.

Section 2. *Privileges and Responsibilities.*

2a. Each section is empowered to perfect its own organization as limited by the Constitution, Bylaws and Articles of Incorporation of the Academy. Each section, however, must have a chair and vice-chair who are Members or Fellows in the Academy and who are responsible for the preparation and conduct of the section's program at the Annual Meeting.

2b. Unless otherwise provided for by a section's separate governance provisions, the vice-chair of the section shall be elected annually at the section's

meeting during the Annual Meeting by the members of the section in attendance and shall become the chair of the section one year later. The chair shall have responsibility for the planning and conduct of the section's program at the Annual Meeting, with the assistance of the vice-chair.

2c. In the event that a section chair or vice-chair is vacant or vacated in the year of election, the President may appoint a replacement in consultation with either the members of the section or the Board of Directors.

Section 3. *Dissolution*. If a section does not prepare and conduct a sectional program at the Annual Meeting for two consecutive years it may be dissolved by the Board of Directors; or three-quarters of the membership of a section may petition the Executive Committee, at any time, for dissolution of the section.

ARTICLE IX — PUBLICATIONS

Section 1. *Official Organ*. The official organ of the Academy shall be the *Proceedings of the Iowa Academy of Science*.

1a. 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.

1b. Papers from nonmembers shall be accepted for publication at the discretion of the Editor.

1c. The *Proceedings* shall be sent to the membership of the Academy in good standing.

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.

ARTICLE X — LIBRARY

The Iowa State University library shall be the depository for *The Proceedings of the Iowa Academy of Science*, and the Director of that library shall be requested to serve as Librarian of the Academy. The Librarian shall arrange for the sale and distribution of back issues in cooperation with the Executive Director. The Librarian may be invited to meet with the Board of Directors when matters pertaining to the library policies of the Academy are under consideration.

ARTICLE XI — AAAS AFFILIATION

The Academy shall be affiliated with the American Association for the Advancement of Science, and shall be a member of the Association of Academies of Science and Section X, General Science, of the AAAS. The Executive Director shall serve as a delegate of the Academy to the Association of Academies of Science and AAAS Section X. The President shall designate a Member or Fellow to represent the Academy in the absence of the Executive Director.

ARTICLE XII — IOWA JUNIOR ACADEMY OF SCIENCE

Section 1. The Academy shall maintain a Junior Academy as a means of discovering and fostering ability and interest in science among secondary school students, under the supervision of the Student Programs Committee.

Section 2. The Director of the Junior Academy shall be a Member or Fellow in the Academy, appointed by the Board of Directors for a term of one year. He should succeed himself in office for a minimum of three years to provide continuity in Junior Academy affairs.

Section 3. The Student Programs Committee is empowered to organize the Junior Academy as limited by the Constitution and Bylaws of the Academy, subject to the approval of the Board of Directors.

ARTICLE XIII — FINANCE

Section 1. The fiscal year of the Academy and its agencies shall be from July 1 through June 30 of the following year.

Section 2. *Budget*. The Executive Director, in consultation with Academy officers and agency heads concerned, shall prepare an annual asking-budget of income and expenditures for the new fiscal year and present it to the Board of Directors at their Annual Meeting for approval or amendment. The Executive Director is authorized to make only those expenditures provided for in the approved annual budget. Emergency-deficiency appropriations shall be approved by the Executive Committee.

Section 3. *Dues*.

3a. Emeritus Fellows shall be exempt from all fees.

3b. The Board of Directors shall be empowered to recommend dues. The establishment of such dues as are recommended by the Board of Directors shall be by majority vote of the membership at an Annual Business Meeting of the Academy.

3c. The dues rate for spouses shall be 50% of the full rate; husband and wife shall receive one set of each mailing and one subscription to Academy publications.

3d. The membership year of the Academy shall coincide with either the calendar year or the fiscal year, depending on date of application.

3e. The names of members who have not paid their dues within six months of the start of the membership year shall be removed from the mailing lists of all Academy publications and shall be considered to be in arrears. Non-payment of dues within 30 days of final notice shall constitute a request for withdrawal from the Academy.

3f. Members, Fellows, or Associates who have been withdrawn from the membership for non-payment of dues may be reinstated without loss of continuous membership by payment of unpaid dues at the current rate along with dues in advance for the forthcoming year. A former Member, Fellow, or Associate may apply as a new Member or Associate only after a period of two or more years of nonmembership.

Section 4. Basic financial policies of the Academy shall be formulated and investments for the Academy shall be made by the Board of Directors with the advice of the Finance Committee or other appropriate consultants.

Section 5. Funds from Life Member or Life Fellow payments shall be invested and only the interest therefrom shall be used for current expenses of the Academy.

Section 6. The financial records of the Academy in the custody of the Executive Director shall be audited annually by the Treasurer and one other member of the Finance Committee named by the Board of Directors or by a Certified Public Accountant at the pleasure of the Board of Directors. The report of the audit of the calendar year just past shall be presented to the Board of Directors at its next Annual Meeting.

Section 7. The surety bond of the Treasurer and of the Executive Director shall be fixed and approved by the Board of Directors. The bond in each case shall be sufficient to cover the maximum amount of monies and negotiable securities in the custody of the Treasurer and Executive Director, respectively.

ARTICLE XIV — AMENDMENTS

The Bylaws may be amended upon recommendation of the Board of Directors and (a) by the affirmative vote of a majority of the voting members present at an Annual Business Meeting of the Academy, or (b) by mail ballot.

ACADEMY LEADERSHIP 1977-78*Officers*

President — Lois H. Tiffany, Iowa State University
 President-Elect — Karl Goellner, Coe College
 Past-President — Willard Poppy, University of Northern Iowa
 Treasurer — Donald Pilgrim, Luther College
 Editor — Nels Lersten, Iowa State University
 Executive Director — Robert W. Hanson, University of Northern Iowa

Directors

Paul Christiansen, Cornell College, 1978
 Donald Huffman, Central College, 1978
 David Fagle, Marshalltown Community Schools, 1979
 Margaret Watson, Simpson College, 1979
 Stanley C. Grant, Iowa Geological Survey, 1980
 Leland L. Wilson, University of Northern Iowa, 1980

Section Chairs

Anthropology/Archaeology — Joseph Tiffany, University of Iowa
 Botany — Robert Kennedy, University of Iowa
 Cell Biology — Asa C. Black, Jr., University of Iowa
 Chemical Education — Hjalmer Peterson, North Iowa Area Community College and Robert E. Buckles, University of Iowa
 Chemistry, Inorg. — Paul Rider, University of Northern Iowa
 Chemistry, Org. and Biol. — Sr. M. Marguerite Neumann, Clarke College
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