

## PROCEEDINGS OF THE TENNESSEE ACADEMY OF SCIENCE 1991

Diane R. Nelson, Secretary TAS  
*East Tennessee State University*

### EXECUTIVE COMMITTEE MEETING

April 19, 1991

The Executive Committee meeting of the Tennessee Academy of Science was called to order by President Benjamin P. Stone at 7:00 p.m. CST in Room 234 of the downtown campus of Tennessee State University on April 19, 1991. Members present were Benjamin P. Stone, president; Prem S. Kahlon, past-president; John Harris, treasurer; Diane R. Nelson, secretary; Libby Workman, *Journal* editor; William Pafford, director of the Junior Academy; Betty Davis, meeting coordinator; Habte Churnet and William A. Sliger, members-at-large; and Clay Chandler, local arrangements chairperson. William A. Sliger was appointed to fill the member-at-large position vacated by Mike Kennedy, who was elected president-elect at the November 1990 meeting.

The minutes of the November 1990 executive committee meeting and the annual business meeting were published in the April 1991 issue of the *Journal* and copies were distributed to the executive committee. The minutes were approved as printed by a motion passed unanimously.

The treasurer's report was published in the April 1991 issue of the *Journal*. The annual request to the State Department of Education for funding will be made in July 1991. The annual meeting of the academy at UTC in November 1990 was successful; revenues and attendance were up and expenses were down. Dr. Harris has been awarded a Fulbright Fellowship to India for December, January, and February. Arrangements have been made to send out dues notices early, to hire a graduate student to oversee weekly work, and for Dr. Stone to sign and mail out checks in the absence of the treasurer. Discussion of the budget is considered under New Business. The treasurer's report was accepted.

The editor, Libby Workman, reported that currently there are 18 manuscripts accepted for publication, 7 articles in review, and 13 articles in author revision. Page charges generally run \$45 for typesetting and \$50 for publishing, a total of \$95 per page based on the 44 page issue. A stipend of \$750 per quarter is paid to the editor. The treasurer will ask the auditor for clarification on reporting the stipend. Postal charges for the *Journal* have increased substantially.

Dr. Wayne Stevenson, director of the Visiting Scientist Program, sent the following summary statistics: "The Tennessee Visiting Scientist program has experienced increased activity this year. To date, 78 visits have been completed compared to 52 visits last year. These visits resulted in 9,750 student contacts and 450 teacher contacts. An additional 69 visits are scheduled to be completed before the end of the school year. Requests for speakers increased from 73 to 200 this year. In 51 cases, school and speaker were not able to work out a mutually agreeable date." The director's report was accepted.

The director of the Collegiate Division, Richard J. Raridon, could not attend the meeting. The regional meetings are in the process of being held.

Dr. Raridon, AAAS representative, sent the following report: "I represented TAS at the annual meeting of AAAS's Section Y and also the annual meeting of the National Association of Academies of Science which were held in Washington, DC, February 14-18, 1991. At the NAAS meeting, the AAAS representative, Joe Dasbach, announced that research grants, ranging from \$500 to \$2000, had been given to twenty academies in 1990. The Junior Academy director reported that 56 students from 20 states had taken part in the AJAS activities. Tennessee was not represented. Next year's meeting will be in Chicago, February 6-11, 1992. I was elected to be one of the two NAAS representatives on the AAAS Council, a three year term. I am enclosing a copy of the handout available in the exhibition area at the AAAS meeting to interest people in their local academies." The handout was distributed, and the report was accepted.

The director of the Junior Academy, William Pafford, presented the following report: "The 1991 spring meeting is scheduled for Friday, April 19, at Pearl Cohn Comprehensive High School in Nashville. A total of twenty-one students have been invited to present their research papers. We received sixty papers this year; they were submitted from thirteen schools. This compares favorably with last year's total of 58 papers from 14 schools. A representative from the Tennes-

see State Department of Education is scheduled to be with us at the April 19 meeting. At that time, a certificate and a small honorarium will be presented to an outstanding science teacher from each of the three grand divisions of the state. The three teachers to be recognized are as follows: East Tennessee: Ms. Marilyn Hawk, Greeneville High School; Greeneville; Middle Tennessee: Ron Bingham, Coffee County Central High School, Manchester; and West Tennessee: Ms. Donna R. Freeman, East High School, Memphis." The top female presenter this year was Chesleigh J. Murray, Tullahoma High School, Grade 11, with "The Influence of Atmospheric Negative Ions on Plant Metabolism." The top male presenter and overall winner was Zemer Gitai, White Station High School, Memphis, Grade 10, with "Antifreeze Glycopeptides in *Ictalurus punctatus* (catfish)." The director's report was accepted. Dr. Pafford announced that he will retire in May 1992 and that Dr. Jack Rhoton, ETSU, has expressed willingness to assume the duties of director. A motion was passed that Dr. Rhoton serve as assistant this year and that he be appointed director of the Junior Academy upon Dr. Pafford's retirement. The Junior Academy will meet on April 25, 1992.

Geraldine Farmer, State Board of Education, was unable to attend the executive committee meeting.

### OLD BUSINESS

Dr. Stone stated that the report on the "Status of Science Programs in State Universities of Tennessee" was incomplete at this time.

The following changes in the Bylaws regarding dues have been approved by the executive committee and will be voted on by the membership at the November 1991 annual business meeting. The dues increase will go into effect in July 1992.

#### ARTICLE X: BYLAWS

\$15.00 except students and emeritus members, whose dues are \$8.00. Honorary members are exempt from the payment of dues. (JTAS 57(2):39)

Proposed Reading: Section 1. The annual dues of members and Fellows are \$20.00 except students and emeritus members, whose dues are \$10.00. Honorary members are exempt from the payment of dues.

Present Reading: Section 2. Any member that contributes twenty dollars (\$20.00) or more to the Academy becomes a Sustaining Member for that year. Institutions may also be elected to Sustaining Membership by the Executive Committee. (JTAS 50(2):46)

Proposed Reading: Section 2. Any member that contributes \$25.00 or more to the Academy becomes a Sustaining Member for that year. Institutions may also be elected to Sustaining Membership by the Executive Committee.

Present Reading: Section 3. A person, institution or business organization may be elected by the Executive Committee to Supporting Membership. The annual dues for such memberships are \$25.00.

Proposed Reading: Section 3. A person, institution or business organization may be elected by the Executive Committee to Supporting Membership. The annual dues for such memberships are \$30.00.

Present Reading: Section 4. Any member who makes a single payment of \$150.00 becomes a Life Member and may enjoy all the privileges of the Academy without further payment of dues. (JTAS 50(2):46)

Proposed Reading: Section 4. Any member who makes a single payment of \$200.00 becomes a Life Member and may enjoy all the privileges of the Academy without further payment of dues.

Dr. Stone recommended that the Constitution be reviewed every three years.

*Journal* references should be stated whenever changes are made.

#### NEW BUSINESS

A motion was passed to approve the standing committees appointed by Dr. Stone.

Dr. Clay Chandler, MTSU, discussed local arrangements for the November 1991 meeting at MTSU.

After discussion prompted by a letter from Dr. James X. Corgan, a motion was passed to retain the current name of the *Journal*.

After discussion on the use of non-sexist language in the Constitution, Dr. Stone appointed a subcommittee composed of Libby Workman and Habte Churnet to bring to the executive committee a revised Constitution using the titles of the officers instead of "he."

After discussion of Article III, Section 6 (Officers), the executive committee agreed to keep the section as amended in 1986. (JTAS 62(2):30)

Dr. Habte Churnet discussed the separation of the Geology-Geography Section into separate sections. Article V, Section 3 of the Constitution provides instructions for formation of new sections.

Action was deferred on a letter from Dr. David Fields suggesting the establishment of an awards program for the Academy.

A letter was received from Dr. David Kesler about stating the *Journal's* policy about citing animal use protocols. Dr. Stone appointed a subcommittee of Dr. Andy Sliger and Dr. George Murphy to prepare and submit a policy statement to the executive committee for consideration.

Four resolutions adopted by the AAAS Council on February 18, 1991, were distributed to the executive committee. Dr. Stone will forward them to the resolutions committee for recommendations to the executive committee in November.

The secretary, Diane R. Nelson, announced that 1991 is her last year of service to the academy in the role of secretary, and she requested that she not be nominated for president at this time. She stated that she has thoroughly enjoyed serving the academy as secretary and she appreciated the opportunity to do so. She acknowledged the support and cooperation of the executive committee and the membership throughout the years. She will continue to be an active participant in the academy in the future. In response, Dr. Stone stated the appreciation and respect of the academy for the secretary's many years of service.

After discussion of budgetary problems in the state and the need to avoid deficit financing by the academy, the treasurer's report was accepted and the following budget was adopted.

The meeting was adjourned at 10:20 p.m.

#### EXECUTIVE COMMITTEE MEETING

November 21, 1991

The executive committee meeting of the Tennessee Academy of Science was called to order by President Benjamin P. Stone at 7:00 p.m. CST in Dining Room A of the James Union Building at Middle Tennessee State University on November 21, 1991. Members present were Benjamin Stone, president; Prem Kahlon, past-president, Michael Kennedy, president-elect; Diane R. Nelson, secretary; John Harris, treasurer; Libby Workman, *Journal* editor; William Pafford, director of the Junior Academy; Richard Raridon, director of the Collegiate Division; Betty C. Moore, meeting coordinator; Ernestine Friedman, assistant to the director of the Visiting Scientist Program; Andy Sliger and George Murphy, members-at-large; Sara Swain, nominee for secretary; Geraldine Farmer, State Department of Education; and Clay Chandler, chairperson of the local arrangements committee.

The secretary, Diane R. Nelson, had mailed printed copies of the minutes of the April 1991 executive committee meeting. A motion to accept the minutes as distributed was approved unanimously.

The treasurer, John Harris, presented his audited report, which appears elsewhere in these proceedings. The report was accepted by a motion passed unanimously. The effort to encourage members to make contributions to the Academy exceeded expectations; over \$2,000 was received. Dr. Harris will be in India on a Fulbright for six months. A graduate student will maintain the records, and Dr. Stone will sign checks during the treasurer's absence.

The editor, Libby Workman, reported that currently there are 19 manuscripts

#### TREASURER'S REPORT

Cash Receipts and Disbursements  
For Year Ended June 30, 1991

##### RECEIPTS:

STATE OF TENNESSEE	19,000.00
JOURNAL—SPECIAL ISSUE	8,000.00 (APSU)
MEMBERSHIP DUES	7,879.00
ANNUAL MEETING FEES	3,382.00
JOURNAL PAGE CHARGES	1,770.00
LIBRARY SUBSCRIPTIONS	1,650.00
INTEREST EARNED	1,469.37
AAAS AWARD	900.00
EXHIBITORS' FEES	150.00
CONTRIBUTIONS	87.00
MISC.	30.00
<b>TOTAL RECEIPTS</b>	<b>\$44,317.37</b>

##### DISBURSEMENTS:

PRINTING AND PUBLICATIONS	\$19,642.80
TENN. JR. ACADEMY OF SCIENCE	4,707.60
VISITING SCIENTIST PROGRAM	4,600.00
ANNUAL MEETING	2,648.19
RESEARCH GRANTS	1,900.00
BOARD MEETING	1,793.92
COLLEGIATE DIVISION	1,671.01
TREASURER'S OFFICE EXPENSE	1,300.58
ACCOUNTING FEE	575.00
SECRETARY'S OFFICE EXPENSE	557.48
AAAS EXPENSES	499.04
PRESIDENT'S OFFICE EXPENSE	183.75
MISC.	115.00
<b>TOTAL DISBURSEMENTS</b>	<b>40,194.37</b>

CASH INCREASE FROM OPERATIONS	4,123.00
CASH BALANCE, JULY 1, 1990	20,425.26
CASH BALANCE, JUNE 30, 1991	\$24,548.26

##### SUMMARY OF CASH ACCOUNTS

JUNE 30, 1991	
TENNESSEE SAVINGS BANK*	
COOKEVILLE, TN 38501	
NOW ACCOUNT	1,666.30
SAVINGS ACCOUNT	22,379.06
<b>TOTAL</b>	<b>\$24,045.36</b>

##### TENNESSEE TECHNOLOGICAL UNIVERSITY

COOKEVILLE, TN 38505	
AGENCY ACCOUNT	502.90
CASH BALANCE, JUNE 30, 1991	\$24,548.26

\*TENNESSEE SAVINGS BANK HAS BEEN ACQUIRED BY PEOPLES BANK AND TRUST OF THE CUMBERLANDS.

##### BUDGET FOR 1991-92 (Projected Disbursements)

President's Office	\$ 200
Secretary's Office	600
Treasurer's Office	1,800
Junior Academy	5,000
Visiting Scientist Program	4,600
Journal	19,000
Research Grants	1,000
Annual Meeting	3,000
Collegiate Division	1,000
Board Meetings	1,200
AAAS	500
Meeting Coordinator's Office	100
Membership Committee	150
Audit Fee	600
<b>TOTAL BUDGET</b>	<b>\$38,750</b>

accepted for publication, 6 in review, and 17 in author revision. The backlog is due partially to the special symposium issue. There will be no January issue due to the budget cuts. The combined January-April issue will be held to \$3400 budgeted. The Tennessee Academy of Science is included in a recent book, *To Foster the Spirit of Professionalism—Southern Scientists and State Academies of Science*, by Nancy Smith Midgette. The editor's report was accepted.

The following report of the director of the Visiting Scientist Program was presented by Ernestine Friedman, University Programs Division, Oak Ridge Associated Universities:

"The Tennessee Visiting Scientist program is supported by the Tennessee Academy of Science to enable outstanding professionals in science and other technical fields to make personal contacts with students and teachers, to acquaint them with science applications, and to provide information on careers. The program expanded significantly during the 1990-1991 academic year. Participating scientists are dedicated individuals who are very willing to work with teachers in an effort to fit a visit into busy schedules. Most unfilled requests reflect the inability to work around both busy schedules. Estimates of the number of contacts is based upon the return of completed evaluation forms. Although the return rate is high, the contact number is not available for all visits.

#### Summary of 1990-91 Activities

Trips requested	210
Trips declined (schedule conflicts)	67
Trips completed	139
Trips canceled (health, weather, etc.)	4
Students contacted	14,130
Others (teachers, aides, parents, etc.)	583
Increase in trips requested over last year	200%
Increase in students contacted over last year	325%

Program assessment and documentation is an integral part of this program's operation. An important element of this assessment is the collection of evaluation information from participating scientists and teachers. This information also serves as the basis for modifications pertaining to procedures and overall program planning.

Over the years, the Tennessee Visiting Scientist Program has become a strong and very visible activity of the Tennessee Academy of Science and is an important part of the education of many Tennessee students. Early indications are that the dramatic increase in demand for the program will continue during the 1991-1992 school year. By November 15, 70 requests for visits had already been received: 15 lectures had been completed.

Unfortunately, funding limitations may leave many requested trips unsupported. Without the usual support of the Tennessee Department of Education, other sources of funds are sought. To avoid a loss of momentum, Oak Ridge Associated Universities' Science/Engineering Education Division has agreed to provide an additional \$2000 to reimburse the travel expenses of participating scientists. Additional support, however, will be needed to continue the program at or above the 1990-1991 level.

In summary, many teachers use the Tennessee Visiting Scientist Program several times during the year. A typical comment is "Thank you again for making my year more successful!" To the Tennessee Academy of Science, as financial sponsor of the program we pass that thanks along to you." The report was accepted.

The Director of the Collegiate Division, Richard J. Raridon, presented the following report.

"The Middle Regional meeting of the Collegiate Division was held April 5 at Austin Peay State University. Thirty-three papers were presented by students representing seven schools. The Eastern Regional meeting was held April 12 at Tusculum College. Twenty-nine papers were presented by students representing eleven schools. The Western Regional meeting was held April 13 at Rhodes College. Eighteen papers were presented by students representing five schools. Thanks are due the regional sponsors, Dr. Charles J. Biggers, Dr. James X. Corgan and Dr. Irving T. Glover for their years of dedicated service. Drs. Corgan and Glover have resigned and have been replaced by Dr. Dan Barnett, Tusculum College, and Dr. Vincent Anigbogu, Austin Peay State University."

Dr. Raridon moved that Dr. James X. Corgan and Dr. Irving T. Glover be nominated for the Distinguished Service Award for their service to the collegiate division and the academy. The motion passed. President Stone said that he would send their names forward to the distinguished service award committee, and he appointed Andy Sliger, George Murphy, and Sara Swain to the committee. The report was accepted.

The director of the Junior Academy, William Pafford, presented the follow-

ing report: "The 1991 spring meeting of the Tennessee Junior Academy of Science was held on Friday, April 19, at Pearl-Cohn Comprehensive High School in Nashville. A total of 68 papers were submitted from 13 schools, and 21 were selected by a panel of readers to be presented at the annual meeting. The two top presenters were Ms. Chesleigh J. Murray, Tullahoma High School, Tullahoma, Tennessee; and Mr. Zemer Gitai, White Station High School, Memphis.

Three outstanding science teachers were recognized at the Junior Academy meeting. They were: Ms. Marilyn Hawk, Greeneville High School, Greeneville (East Tennessee representative); Mr. Ron Bingham, Coffee County Central High School, Manchester (Middle Tennessee representative); and Ms. Donna Freeman, East High School, Memphis (West Tennessee representative). Each received a framed certificate and a check in the amount of \$200. We are indebted to Dr. Geraldine Farmer, of the Tennessee State Department of Education, for assistance in selecting these outstanding teachers."

Dr. Pafford will be retiring in May. Dr. Jack Rhoton, ETSU, has agreed to assume the duties of director and will attend the April meeting with Dr. Pafford. The director's report was accepted.

Dr. Clay Chandler, chairperson of the local arrangements committee, discussed the arrangements for the 1990 annual meeting. He and his committee were commended for their excellent work.

The following reports from standing committees were presented.

**AUDITING.** Auditor James F. McKinnie sent the following report: "I have examined the receipts and disbursements records of the Tennessee Academy of Science for the fiscal year ended June 30, 1991, and in my opinion the attached Cash Receipts and Disbursements Statement correctly reflects the cash position of the organization at June 30, 1991. The entire accounting system is well maintained.

I have prepared a Return Organization Exempt Form Income Tax, including a Schedule A. This Form 990 must be filed with the Internal Revenue Service.

I noted a problem with the method of payment for the printing, editing, etc., of the *Journal* of the Tennessee Academy of Science. In the future, I recommend that the editor be paid in three separate checks:

- 1] A small amount to cover immaterial items for which it is not easy to make a proper accounting; examples—postage, paper, pencils, etc.
- 2] Reimbursement for all direct expenses for which an accounting will be required; examples—labor, major supplies, etc.
- 3] A fee to the editor for services rendered."

The recommendations for payments to the editor were discussed. It was agreed that postage is a major cost item and must be itemized separately. President Stone stated that a firm policy should be presented to the April meeting for the approval of the executive committee. He appointed the following individuals to the ad hoc committee: George Murphy (chairperson), Prem Kahlon, Dick Raridon, and Geraldine Farmer. The charge to the committee is:

- (1) to recommend a policy for all payments to the editor;
- (2) to consider raising page charges to more than \$15/page;
- (3) to consider raising the charge to foreign subscribers to cover the cost of postage and to libraries (without losing subscriptions);
- (4) to recommend a standard format for the *Journal* to maximize space utilization and reduce costs.

**FELLOWS.** Dr. Clay Chandler, chairperson of the Fellows committee, submitted the following report: "The following have been nominated for Fellows of the Tennessee Academy of Science and approved by the Fellows committee (Drs. Clay M. Chandler, Chairman, S. K. Ballal, H. R. DeSelm, James X. Corgan, and David Fields).

Dr. George G. Killough, president and technical director of Hendecagon Corporation, Oak Ridge (nominated by Dr. David Fields); Dr. Charles R. McGhee, Professor of Biology, Middle Tennessee State University (nominated by Dr. Clay M. Chandler); Dr. Robert E. Newkirk, Professor of Biology, Tennessee State University (nominated by Dr. Prem. S. Kahlon).

Nomination letters were attached. A motion was passed to present the names to the membership at the annual business meeting for approval.

**MEMBERSHIP.** No report was received. A list of new members will be presented to the membership at the annual business meeting for approval. Certificates of membership for each new member have been mailed in previous years, but this procedure is not being followed and should be revived.

**NECROLOGY.** No report was received. The deaths of the following individuals were reported by members of the executive committee:

- Dr. Gus H. Lundberg, past-president, treasurer and editor of the *Journal*
- Dr. James Wilson, TSU, past-president of TAS
- Dr. John Patten, chairman Biology Department, MTSU

Dr. Harry J. Klepser, Geology Department, UTK

Dr. James Wade Gilbert, Physics Department, MTSU

NOMINATING. Dr. Prem Kahlon, chairperson, presented the following slate of officers for 1992:

President: Dr. Michael Kennedy

President-Elect: Dr. George Murphy

Secretary: Ms. Sara Swain

Treasurer: Dr. John Harris

The proposed slate of officers was approved unanimously and will be presented to the membership at the annual business meeting. If nominations are received from the floor, only the name and school of the individual will be presented.

RESEARCH. The report received from Dr. Fred Wolf, chairperson, will be presented at the annual business meeting.

RESOLUTIONS. The report from Ms. Betty C. Davis, chairperson, will be presented at the annual business meeting. The Resolution of Appreciation and the Resolution of Support of the AAAS Resolutions were approved unanimously by the executive committee.

#### OLD BUSINESS

President Stone discussed the ramifications of the current budget and his efforts to obtain additional funding from other sources. Dr. Stone revised the budget after the state funds were eliminated. Geraldine Farmer discussed the possibility of obtaining funds from Title II for the Junior Academy.

A motion was passed to support the Distinguished Teachers Award in the amount of \$100 for each of the three teachers, contingent upon receipt of Title II funds from the State Department of Education. Dr. Farmer stated that if high school teachers were involved in research it would be helpful in getting funds.

Libby Workman presented a report on the use of non-sexist language in the TAS Constitution. President Stone appointed a committee, consisting of Andy Sliger, Libby Workman, and Sara Swain, to compare the report with the revised copy of the Constitution he distributed to the executive committee on November 21, 1991. A motion was passed to approve, subject to editorial changes, the constitution with the new dues increases, as stated in the Call for Papers and previous executive committee meetings. Dr. Stone has provided President-Elect Kennedy with the computer disk containing the revised Constitution, including references to changes reported in the *Journal*. Dr. Kennedy will make the changes and present them to the executive committee in April, after consultation with the committee appointed by Dr. Stone.

Dr. Andy Sliger presented the report of the ad hoc committee on the treatment of animals in research. He recommended that the executive committee endorse the policies in the following publications: (1) U.S. Department of Health and Human Services, (2) American Society of Ichthyologists and Herpetologists, and (3) American Ornithological Union. A motion was passed to accept the recommendation. Dr. Sliger will distribute copies of the articles and policy statement.

#### NEW BUSINESS

A motion was passed to accept the "Barnard Astronomical Society of The Clarence T. Jones Memorial Observatory of Chattanooga, Tennessee" as an affiliate of the academy.

Dr. Kennedy discussed the need for the establishment of a Life Membership Fund, which would encumber monies to be set aside to draw interest, in order to avoid "spending tomorrow's money today."

Appreciation was expressed to President Stone for his service to the academy this year and his efforts to obtain additional funding.

Appreciation was expressed to the anonymous donor who contributed funds for the executive committee dinner.

The next executive committee meeting will be held in Nashville on April 24, 1992.

Dr. Diane Nelson, secretary, expressed her appreciation to the executive committee for their support during her 14 year tenure as secretary since 1978. She will continue to be an active member of the academy. She received a round of applause.

The meeting was adjourned at 9:30 pm. CST.

## THE ONE-HUNDRED AND FIRST MEETING OF THE TENNESSEE ACADEMY OF SCIENCE

November 21-22, 1991

Middle Tennessee State University

The annual meeting of the Tennessee Academy of Science, Inc., was held on November 21-22, 1991, at Middle Tennessee State University, at Murfreesboro. Dr. Clay Chandler was chairperson of local arrangements. Dr. Michael Kennedy, MSU, was program chairperson.

The executive committee meeting was held in Dining Room A of the James Union Building on Thursday, November 21, 1991. The general session, luncheon, and section meetings were held in the Keathley University Center on Friday, November 22. The general session was held in the University Theatre, beginning at 9:15 am, with Dr. Michael L. Kennedy, presiding. The Academy was welcomed by Dr. James E. Walker, president, Middle Tennessee State University. The TAS Plenary Session began at 9:30 a.m. with the keynote address given by Dr. Michael J. Harvey, department of biology, Tennessee Technological University. Dr. Harvey's presentation was "Bats of Tennessee and the World." The annual business meeting followed at 10:15 a.m., with President Benjamin P. Stone presiding. The luncheon was held at Cannonsburg Pioneer Village. Section meetings were held Friday afternoon as listed in the program. Collegiate Division papers were presented in the appropriate sectional meetings.

### ANNUAL BUSINESS MEETING

November 22, 1991

The annual business meeting of the Tennessee Academy of Science, Inc., was called to order by President Benjamin P. Stone. The president determined that a quorum was present.

The secretary, Diane R. Nelson, gave the reports of the secretary, treasurer, editor, and directors of the three educational programs, which were similar to those presented the previous evening at the executive committee meeting. The reports were approved and will be recorded in the minutes.

The secretary, Dr. Nelson, presented the reports of the standing committees. The report of the Auditor was read. The secretary read the report of the fellows committee, chaired by Dr. Clay Chandler, which had been approved by the executive committee. A motion was passed that the following individuals be elected a Fellow of the Academy: Dr. George G. Killough, Oak Ridge; Dr. Charles R. McGhee, MTSU; and Dr. Robert E. Newkirk, TSU. A list of new members was presented, and a motion was passed to accept them by the membership. The secretary reported the following deaths among the members during the year:

Dr. Gus Lundberg, TAS Past-President, Treasurer, Editor

Dr. James Wilson, TSU, Past-President of TAS

Dr. John Patten, Chairman of Biology, MTSU

Dr. Harry J. Klepser, Geology Department, UTK

Dr. James Wade Gilbert, Physics Department, MTSU

A moment of silence was observed in memory of these individuals.

The secretary read the following report from Dr. Fred Wolf, chairperson of the research committee: "The research committee consisted of Dr. Ronald Barrett, Belmont College, Dr. Geraldine Farmer, Tennessee Department of Education, Dr. Prem Kahlon, Tennessee State University, Dr. Oliver Yates, David Lipscomb University, and myself as chairman. Funding of our committee was reduced from the usual \$1,900 per year to \$1,050.

The perennial problem of lack of publicity recurred: Two days before the deadline for receipt of applications, only two research requests had been received. This problem was solved by Dr. Geraldine Farmer, who distributed 300-500 notices at a high school students' meeting one week before the deadline, as a result of which the number of applications reached a satisfactory level of 32."

The secretary presented the slate recommended by the nominating committee and approved by the executive committee. The president asked for nominations from the floor; there were none. A motion was passed to accept the nominees, and the secretary was instructed to cast one vote which would represent the unanimous election of Michael Kennedy as president, George Murphy as president-elect, Sara Swain as secretary, and John Harris as treasurer.

The secretary presented the following resolutions which were accepted:

#### RESOLUTION OF APPRECIATION

"WHEREAS, the Tennessee Academy of Science is enjoying a most pleasant, profitable, and well organized series of meetings at Middle Tennessee State University, and

WHEREAS, the success of these meetings has resulted mainly from the efforts of the officers of the respective sections; the local arrangements committee representing Middle Tennessee State University, composed of Dr. Clay M. Chandler, chairman, George Beers, Burt Bordine, Mark Hodge, George Murphy, Martin Stewart, Sara Swain, and Marion Wells; and program chairman, Dr. Michael Kennedy; from the recognition given the meetings by the press, television, and radio stations; and from the generous hospitality of the host institution, Middle Tennessee State University and its president, Dr. James E. Walker,

BE IT RESOLVED, therefore, that the Tennessee Academy of Science expresses its sincere appreciation to these and all others who contributed to the success of these meetings."

#### RESOLUTION OF SUPPORT

"WHEREAS, the American Association for the Advancement of Science, as a principal organization of scientists in the United States, is composed of members concerned with broad issues of human welfare, scientific research, and public policy, and

WHEREAS, the Tennessee Academy of Science is also concerned with the same types of broad issues, and

WHEREAS, the Tennessee Academy of Science is in general agreement with the policies of the American Association for the Advancement of Science,

THEREFORE, be it resolved that the membership of the Tennessee Academy of Science adds its support to the American Association for the Advancement of Science in its 1991 resolutions in support of (A) A national center for biodiversity, (B) institutional mechanisms to enhance coordination and support for environmental research, (C) freedom of medical research and medical application relative to RU486, and (D) increased funding for efforts toward controlling world population growth."

#### American Association for the Advancement of Science RESOLUTION IN SUPPORT OF A NATIONAL CENTER FOR BIODIVERSITY

WHEREAS, biological information is critically important for the understanding and protection of our nation's biological diversity;

WHEREAS, governmental agencies and citizens have need for biological, and especially systematic and ecological information to meet their obligations to protect biological diversity;

WHEREAS, biological survey activities in the United States are piecemeal and there is little incentive for scientists and their institutions to perform such activities despite their importance to environmental policy;

WHEREAS, a National Center for Biological Diversity would provide critical biological data to enhance larger databases about the environment, and should be developed in coordination with them;

WHEREAS, federal legislation has been introduced that would create a National Center for Biological Diversity that will draw together sources of information on biological diversity, support research to fill gaps in that information, commission and publish guides, keys, and faunal/floral and microbial surveys for public uses, and communicate information to policy-makers and conservation organizations;

THEREFORE BE IT RESOLVED, that the American Association for the Advancement of Science supports the concept of a national center for biological diversity as a data coordination and information center, urges that it be developed in coordination with other environmental databases, and encourages other scientists to support such initiatives that more fully incorporate biological information into the public policy process.

Adopted by the AAAS Council, February 18, 1991

#### American Association for the Advancement of Science RESOLUTION IN SUPPORT OF INSTITUTIONAL MECHANISMS TO ENHANCE COORDINATION AND SUPPORT FOR ENVIRONMENTAL RESEARCH AND TRAINING AND THEIR INCORPORATION INTO PUBLIC POLICY

WHEREAS, support for environmental research and training and their

incorporation into public policy must be regarded as seriously as corresponding activities in the field of human health;

WHEREAS, a solid scientific basis is essential for effective programs to protect the environment;

WHEREAS, there is a need in the United States for a coordinated national program to support fundamental and applied environmental research encompassing a wide variety of disciplines aimed at understanding, preventing and solving environmental problems;

WHEREAS, such research is presently uncoordinated and largely underfunded;

THEREFORE BE IT RESOLVED, that the American Association for the Advancement of Science (AAAS) calls for the development and funding of institutional mechanisms to support the full range of research, training, and education needed to understand and address our environmental problems; to increase coordination among the various sciences and appropriate government and other institutions in addressing environmental problems; and to ensure more effective incorporation of scientific information into the public policy process.

Adopted by the AAAS Council, February 18, 1991

#### American Association for the Advancement of Science RESOLUTION FOR RU 486 AND FREEDOM OF MEDICAL RESEARCH

WHEREAS, RU486, a major new drug, is both an anti-glucocorticoid and anti-progesterone steroid that has many potential benefits for society; and

WHEREAS, RU 486 is an effective treatment for Cushing's Syndrome; it has shown effective activity in the treatment of some types of breast cancer; it has been used in France as a safe, effective method for the termination of early pregnancy; and there is suggestive activity for its value in the treatment of endometriosis and difficult deliveries; and

WHEREAS, a hostile political climate has discouraged Roussel Uclaf, the French manufacturer of RU 486, from seeking a license to market the compound in the United States; and

WHEREAS, the U.S. Food and Drug Administration has imposed an import alert on RU 486; and

WHEREAS, AAAS is committed to freedom of scientific inquiry and the advancement of modern technology;

THEREFORE BE IT RESOLVED that AAAS encourages pharmaceutical companies and the U.S. Food and Drug Administration to make RU 486 and related agents available for further research and use as medically indicated.

Adopted by the AAAS Council, February 18, 1991

#### American Association for the Advancement of Science RESOLUTION CONCERNING WORLD POPULATION GROWTH

WHEREAS, the American Association for the Advancement of Science (AAAS), being the principal organization of scientists in the United States, is composed of members concerned with broad issues of human welfare, scientific research, and public policy, and

WHEREAS, in 1960 the AAAS Board supported a statement on overpopulation, signed by Nobel laureates and distinguished scientists, for submission to the United Nations, and

WHEREAS, in 1972 the Council of AAAS adopted a resolution calling for substantial increases in support of scientific research on the problems associated with human reproduction, and

WHEREAS, in 1974 AAAS published its comments on the World Population Plan of Action recognizing that nations, and their constituent socio-cultural groups, should implement their own population policies, and

WHEREAS, AAAS is concerned that continued rapid growth of the human population contributes directly to human suffering throughout the planet, impedes sustainable economic development, increases international tensions, and exacerbates environmental degradation that endangers the survival of the human and many other species, and

WHEREAS, the 1990 Institute of Medicine report on Developing New Contraceptives: Obstacles and Opportunities indicates that research in the field continues to require significant support, and

WHEREAS, the AAAS recognizes that some U.S. government policies concerning population problems and fertility control are contrary to the positions previously taken by AAAS, in lacking support for voluntary fertility control programs, in general, and for the United Nations Population Fund (UNPF), in particular,

WHEREAS, since voluntary contraceptive options cannot be achieved for all couples who wish them without committing the resources of American

science and technology to the common goals of improving reproductive technology, encouraging and protecting contraceptive development, and avoiding unwanted pregnancy by safe and legal means;

THEREFORE BE IT RESOLVED that continuing in its historic role, AAAS calls upon the Executive and Legislative branches of the U.S. government to provide additional population/family planning funding for domestic and international contraceptive research efforts, specifically those of the National Institutes of Health, of the U.S. Agency for International Development and the World Health Organization.

Adopted by the AAAS Council, February 18, 1991

#### OLD BUSINESS

A motion was passed to amend Article X: Bylaws as follows, effective July 1, 1992:

##### ARTICLE X: BYLAWS

Section 1: The annual dues of members and Fellows are \$20.00 except students and emeritus members, whose dues are \$10.00. Honorary members are exempt from the payment of dues.

Section 2: Any member that contributes \$25.00 or more to the Academy becomes a Sustaining Member for that year. Institutions may also be elected to Sustaining Membership by the Executive Committee.

Section 3: A person, institution or business organization may be elected by the Executive Committee to Supporting Membership. The annual dues for such memberships are \$30.00.

Section 4: Any member who makes a single payment of \$200.00 becomes a Life Member and may enjoy all the privileges of the Academy without further payment of dues.

#### NEW BUSINESS

Future meetings will be at APSU in 1992, MSU in 1993, and David Lipscomb in 1994.

A special award was given to Dr. Prem Kahlon by Dr. Ben Stone in appreciation of Dr. Kahlon's service to the academy. Dr. Diane Nelson and Dr. James Corgan received a round of applause from the audience for their respective roles in the academy.

The gavel was passed from Dr. Stone to Dr. Michael Kennedy, who adjourned the meeting at 11:00 a.m.

### TREASURER'S REPORT

November 15, 1991

John W. Harris, Treasurer

Cash Balance—July 1, 1991 24,548.26

#### RECEIPTS:

STATE OF TENNESSEE	0.00
MEMBERSHIP DUES	5,668.00
LIBRARY SUBSCRIPTIONS	30.00
INTEREST EARNED	281.61
JOURNAL PAGE CHARGES	525.00
JOURNAL SALES	50.00
CONTRIBUTIONS	2,283.00
REGISTRATION AND LUNCHEON FEES	28.00
AAAS AWARD	700.00
EXHIBITORS' FEES	200.00
TOTAL RECEIPTS	9,765.61
TOTAL CASH AVAILABLE	34,313.87

#### DISBURSEMENTS:

JOURNAL PRINTING COSTS	16,266.61
VISITING SCIENTIST PROGRAM	0.00
TENN. JR. ACADEMY OF SCIENCE	2,331.17
ANNUAL MEETING (1990)	2,630.00
BOARD MEETING EXPENSES	0.00
TREASURER'S EXPENSES	429.99
PRESIDENT'S EXPENSES	0.00
STUDENT RESEARCH GRANTS	0.00
COLLEGIATE DIVISION EXPENSES	0.00
SECRETARY'S EXPENSES	324.19
TOTAL DISBURSEMENTS	21,981.96

CASH BALANCE—NOVEMBER 1, 1990 12,331.91

RECEIPTS	9,765.61
DISBURSEMENTS	21,981.96
CASH DECREASE	12,216.35
CASH BALANCE—JULY 1, 1991	24,548.26
CASH BALANCE—NOVEMBER 1, 1991	12,331.91

#### BREAKDOWN OF HOLDINGS

TTU ACCOUNT	295.66
CKG. ACCOUNT, PEOPLES BANK & TRUST	1,793.50
SVGS. ACCOUNT, PEOPLES BANK & TRUST	10,242.75

TOTAL HOLDINGS AS OF NOV. 1, 1991 \$12,331.91