

PROCEEDINGS OF THE TENNESSEE ACADEMY OF SCIENCE 1977

JAMES D. CAPONETTI, *Secretary*

EXECUTIVE COMMITTEE MEETING

APRIL, 1977

The Executive Committee Meeting of the Tennessee Academy of Science was called to order by the President at 7:00 p.m. C.S.T. in the Chancellor's Conference Room of the main building of the University of Tennessee, Nashville, on April 15, 1977. Members present were Raymond L. Tanner, President; Robert E. Martin, President-Elect; James D. Caponetti, Secretary; Robert L. Wilson, Treasurer; Gus Tomlinson, Journal Editor; Richard J. Raridon, Director of the Collegiate Division; William N. Pafford, Director of the Junior Academy; Paul Wishart, Director of the Visiting Scientists Program; Wintfred L. Smith, Tennessee Biological Stations Liaison Officer; Jerry Rice, Science Specialist of the Tennessee State Department of Education; S. K. Ballal, Clay M. Chandler, and B. R. Jennings, Members-at-Large.

The Secretary, James D. Caponetti, had mailed printed copies of the Minutes of the November, 1976, Executive Committee Meeting and the Annual Business Meeting to each member of the Executive committee. They were accepted by a passed motion.

The Editor, Gus Tomlinson, presented the following report:

"A complete report on 1975-76 activities, including a list of manuscripts received, published and rejected for the year, was given at the November meeting and published in JTAS in April, 1977. These data will not be repeated for this meeting. Instead, this report represents an updating of the November data plus plans for operation during the 1977 year.

The January 1977 issue, which included the report of the Reelfoot Biological Station, thirteen regular manuscripts, and TAS news events and announcements, has been published and mailed to all subscribers. The Junior Academy of Science Recognition Program for 1977, the question of life on Mars and the 143rd meeting of AAAS for 1976 in Denver were highlighted in the news and events section of the January issue. Continuing the economy measure of the last few years, a separate printing for the Director of the Reelfoot Biological Station has not been done. Instead, the Editor will share the regular back issues typically retained in the Editor's office with the Director of the Reelfoot Biological Station.

Since funding for a new Reelfoot Biological Station has been difficult to obtain, and since the Tech Aqua Biological Station and others continue to be functional, the Editor requests the assistance of members of the TAS Executive Committee in identifying appropriate individuals at all functional biological stations, including any to be constructed on Reelfoot Lake, who could and would provide a brief annual report for inclusion in JTAS. The Executive Committee approved this policy at the November, 1976 meeting. The Editor will strive to include information of this nature in the future if help is forthcoming in acquiring the data in a dependable and regular manner.

The April 1976 issue is already in preparation. It will include a biographical sketch of the new President of TAS, the proceedings for TAS during 1976, abstracts of manuscripts which were presented at the November meeting, plus as many regular scientific manuscripts as space will allow. Among the new events which are scheduled for the April issue are the announcements of the Outstanding Teacher Awards for Tennessee for 1976, the summer 1977 Program at Tech Aqua, and the International Solar Energy Conference and Exhibit to be held at Palm Springs, California, May 2-4, 1977.

December, January and February were fairly good months with respect to receipt of new manuscripts for publication in JTAS. Eight new manuscripts were received during this period. These manuscripts will provide a modest backlog which will allow appropriate editorial review to precede publication.

Editorial and clerical assistance for the Editor continues to be done by students who work part-time at the expense of the Academy. Under the secretarial pool arrangement at Peabody, it is difficult to find individuals who have the expertise to work with a technical journal such as JTAS and who remain in their positions long enough to be of much continued assistance. The total operating cost of the Editor's office to the Academy has averaged \$266 per month since the November 1976 annual meeting as compared to \$256 per month for the previous year. Although the high student turnover rate makes this procedure difficult, it is still the most economical operating procedure with respect to cost to the Academy. By continuing to utilize student assistants, it is estimated that monthly costs for the coming year will be about \$270. Naturally, this does not include cost of JTAS publication by Curley Printing Company.

In working through miscellaneous back copies of the journal which Vanderbilt insists they can no longer store, a set of complimentary copies have been selected to be carried to the annual meeting in November to be distributed to TAS membership. A collection of more recent vintage (since 1970) will be added for distribution at Cookeville since storage for new back copies is a continuous problem for the Editor's office. You may recall that complimentary copies were made available at UT-Nashville in November, 1975. These copies were apparently very popular since all of them were removed from the registration area at UT-Nashville.

The Editor solicits the aid of all TAS members in acquiring high quality manuscripts for publication in JTAS. News events which might be of interest to JTAS readers are also welcomed.

The Editor's report was accepted by a passed motion. The Tennessee Biological Station's Liaison Officer, Wintfred L. Smith, presented the following report:

"The lease between the Tennessee Wildlife Resources Agency and the Tennessee Academy of Science for the Reelfoot Lake Biological Station and ten acres of surrounding land was officially terminated on January 12, 1977, upon signature of an Agreement for Terminating Lease by Dr. Raymond L. Tanner, President, Tennessee Academy of Science, and Mr. Harvey Bray, Executive Director, Tennessee Wildlife Resources Agency. During the first week of January, 1977, the building burned to the ground. Circumstances surrounding the burning are not clear, but it appears that this is the last act of vandalism to be inflicted upon a facility known to biologists throughout the country. Although not present at the time of the fire, state personnel were constructing a boardwalk across the Bayou du Chien to Goat Island immediately in front of the Station. A tractor parked near the northwest corner of the Station sustained considerable damage. Photographs will be available at our April 15th meeting. To my knowledge no injuries have been reported as a result of the fire. Due to relatively wet weather, the fire was restricted to the immediate vicinity of the building. Had the fire occurred during a dry period, damage to surrounding forested land could have been extensive.

A general plan for the development of a modest biological station at Reelfoot Lake has been presented to the administration of the University of Tennessee at Martin. The proposal has received the support of the administration and will be made a project for a capital campaign, primarily on the part of our Office of Development.

Background information and requests for support have been received from three biological stations now operating within the state. The proposals for support are diverse. Proposals were received from the following:

1. Edward J. Meeman Biological Field Station, Memphis State

University, Dr. Neil A. Miller, Director, Department of Biology, Funds requested: \$150.00.

2. Oxley Biological Field Station, Lambuth College, Dr. Robert A. Carlton, Director, Department of Biology, Funds requested: \$125.00.

3. Tech Aqua Biological Station, Tech Aqua Consortium, Tennessee Technological University, Dr. Robert E. Martin, Director, Funds requested: \$500.00.

Additional background information on each of these biological stations will be available at our April 15th meeting.

To date, no proposal has been received from the Mid-Appalachian College Council, Incorporated (MACCI) Field Biology Teaching and Research Center. Dr. A. Randolph Shields, Director, Maryville College, although Dr. Shields has expressed definite interest in this type of program."

Dr. Smith's report was accepted by a passed motion.

The Director of the Visiting Scientists Program, A. Paul Wishart, presented the following report:

"Preparation for the 1976-77 Visiting Scientist Program began in the Spring Quarter of 1975. Following is a summary of activities involved:

1. Letters were sent to all scientists participating in the current program expressing appreciation for their efforts and soliciting nominations of additional scientists in specified science areas.

2. An analysis was made of specific science field representation in each of the geographic areas of the state.

3. Invitations were sent a participating scientists and newly selected scientists to work in the 1975-76 program. Efforts were made to fill vacancies and strengthen the program by securing the personnel who were located within 100 miles of any secondary school requesting their services.

4. Rosters including the names of 128 scientists were mailed to more than 350 Tennessee Secondary Schools, to all Visiting Scientists, and to approximately 50 supervisors in the state.

5. All scientists were invited to become members of the Tennessee Academy of Science if not presently affiliated.

The Director wishes to express his appreciation to all participants for their willingness to contribute their time and professional services to the continuation of the program. It is suggested that the scientist keep mileage records to submit to the IRS for travel costs permitted beyond the \$0.10 per mile allowance used in the VSP budget.

Consideration needs to be given to adjustment of travel allowances due to the rapidly changing energy costs. The TAS membership also is encouraged to talk with colleagues and fellow scientists relative to their participation in the 1976-77 program.

Visiting Scientist Program 1974-1976 Statistical Summary.

Contacts Made	1974-1975	1975-1976
Number of visits	67	67
Number of visits cancelled	—	10
Number of students contacted	3502	8515
Number of teachers contacted	148	181
Number of classes contacted	81	151
Miles driven by scientists	—	3537
Number of Scientists on Roster: 1974-75 = 90; 1975-76 = 105		
Fields Represented:	Astronomy	Geology & Geography
	Biology	Mathematics
	Chemistry	Medicine & Pharmacy
	Ecology	Physics
	Engineering	Psychology
	General Science	

The Director's report was accepted by a passed motion.

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

"The Collegiate Division met at the University of Tennessee at Chattanooga on November 20, 1976. A total of twelve papers were presented by students representing five schools.

Regional meetings are scheduled for Spring 1977. Dr. George W. Edwards, Lambuth College, has agreed to serve as Western Regional Sponsor."

The Director's report was accepted by a passed motion.

The Director of the Junior Academy, William N. Pafford, presented the following report on the up-coming annual meeting of the Junior Academy:

"The Tennessee Junior Academy of Science will meet on Friday, April 15, in Room 202 of the Industrial Arts Building at George Peabody College. At that time high school students from around the state will present a total of 14 papers.

Registration is scheduled from 9:00 until 9:30 a.m. Papers will be presented during the period of 9:30-11:30 a.m., with lunch scheduled at 11:40 a.m. A second session of presentations will be held from 1:00 until 3:00 p.m.

Judges for the presentations will be Mr. Arthur Cook, Peabody Dean of Students and former Professor of Biology; Mr. Buford Hatcher, Biology teacher, Hillsboro High School, Nashville; and Dr. Clifford Hofwolt, Assistant Professor of Science Education, Peabody. Dr. Gus Tomlinson is in charge of local arrangements and will assist as needed, including audio-visual set-up.

You are invited to attend the meeting and hear Tennessee's future scientists. I look forward to seeing each of you in Nashville."

The Director's report was accepted by a passed motion.

Dr. Pafford also presented a report on Junior Academy expenditures as follows:

"The attached material is forwarded at this time so that you may have an opportunity to study it prior to the April 15 meeting.

During 1975-76 total expenditures of the Junior Academy were \$2,567.68. The *Handbook and Transactions* was not published that year, and the Director did not attend the spring meeting of the Executive Committee.

Since the 1974-75 *Handbook and Transactions* was published, printing costs have increased greatly. They seem to be going up about 6-10 percent annually, based on past records. If a *Handbook* is published this year the cost will undoubtedly be in the neighborhood of \$1.00 each for 600 copies. Since 534 Newsletters were sent out, we anticipate a need for about 600 *Handbooks*. It should be pointed out also that it has been necessary this year to obtain some items, such as letterhead stationery and envelopes, which are purchased infrequently.

As you will note from the attached budget, the substantial cut this year—from \$3,950.00 in 1975-76 to \$3,000.00—does not provide funds sufficient to print a 1976-77 *Handbook and Transactions*. While I was not aware of the budget cut until a few weeks ago, there is no way expenses could have been reduced; I do, however, wish to go over the budget carefully, item by item, so that you may have an opportunity to evaluate the TJAS program in its entirety.

A total of \$550.70 was spent for participant support to attend the spring meeting last year (excluding cost of the luncheon). While I have actually reduced the amount allowed for overnight lodging, we will have participants from Dresden, Maryville, Knoxville, Kingsport, Johnson City, etc., and I believe the budgeted sum of \$625.00 will be quite close to the total expenditure for this item.

The Director's salary and the Secretary's salary are the same as last year. The sum of \$270.00 is budgeted for the Director's trips to Chattanooga (fall) and Nashville (spring). Cost of the Chattanooga trip was about \$100.00; cost of the Nashville trip is estimated at \$170.00.

\$10.00 each is budgeted for three readers; \$35.00 is budgeted for each of three judges; \$50.00 is budgeted for one person to handle local arrangements for the spring meeting. A total of \$120.00 is budgeted to cover luncheon costs.

We have paid Specialty Printing \$16.00 for letterhead stationery; \$62.50 for instruction sheets; \$36.00 for membership cards; \$74.00 for newsletters; \$11.00 for cover sheets; and \$39.50 for certificates of participation. We will need to have programs printed (\$65.00 budgeted) and in past years Specialty Printing has usually printed the *Handbook and Transactions*.

We have spent \$76.35 for postage at this time. If the *Handbook* is not printed we will need to purchase about \$25.00 worth of stamps for normal correspondence, as we have virtually none at this time. At book rates, it will cost .25¢ each to send the *Handbook*, or a total of \$150.00 for 600 handbooks.

We need some 6½ x 9½ inch envelopes. \$30.00 is budgeted for this item.

My purpose is to clarify all budget expenditures and insure that the Executive Committee is aware that the 1976-77 *Handbook and Transactions* cannot be published under present budgetary restrictions. I should point out, however, that last year's

budget was more than adequate to allow for publication of the *Handbook*; other factors apparently contributed to Dr. Bailey's decision not to publish one.

It is my feeling that interest in the Junior Academy will decline unless a *Handbook* is published annually. While one cannot be published this year unless there is a supplement to the 1976-77 budget, I have included the cost in the proposed 1977-78 budget.

It is clear that either (1) Junior Academy activities must be scaled down or (2) the budget must be substantially increased. It may be that many, if not all, activities will have to be eliminated. While my experience in this area is limited, I do not believe costs can be reduced for our spring meeting or for the *Handbook*; these, and preparation, duplication, and distribution of materials are major expenses which are relatively fixed.

It is my feeling that Junior Academy activities are worthwhile and should be continued. The Executive Committee is requested to give consideration to this matter and assist the Director in determining the present and future role of the Junior Academy."

The Director's report was accepted by a passed motion.

The Science Specialist of the Tennessee State Department of Education, Jerry Rice, announced with regret that other duties prevented him from serving further on the Executive Committee. By previous arrangement with the President, he introduced his replacements, John Keith Bennett and Roger Dale Bynum. These gentlemen were welcomed to the Executive Committee with best wishes for an association of mutual benefit.

Several months ago, Mr. Rice had submitted a list of teachers nominated to receive Distinguished Teacher Awards for 1977 as follows:

1. First District—Miss June Pinkston, Science Teacher, North Greene High School, Greeneville.
2. Second District—Mrs. Maurine Schweitzer, Biology Teacher, Everett High School, Maryville.
3. Third District—Mr. James Kerr, Chemistry Teacher, Cleveland High School, Cleveland.
4. Fourth District—Mr. Ronald Bingham, Biology Teacher, Central High School, Manchester.
5. Fifth District—Mr. Jack Norris, Biology and Physical Science Teacher, Cheatham County Central High School, Ashland City.
6. Sixth District—Mr. William H. Nelson, Chemistry Teacher, Franklin High School, Franklin.
7. Seventh District—Mr. Spurgeon P. Smith, Science Teacher, Ripley High School, Ripley.
8. Eighth District—Mrs. Caroline Cantrell, Chemistry and Physics Teacher, Treadwell High School, Memphis.

President Tanner then presented committee reports from the respective chairpersons as follows:

1. Auditing Committee—The Chairman, Myron S. McCay sent a memorandum to the President stating that he had no report at this time and that he and Gene Van Horn would be assisted by Frank L. Boyer, Professor of Chemistry and John R. Freeman, Professor of Biology, during this fiscal year.

2. Fellows Committee—The Chairman, S. K. Airee, had sent the following report:

"I would like to report on behalf of the Fellows Committee. The members have discussed on the phone the criteria for selecting the nominees. The consensus seems to be that the nominees should:

1. Be active members of the Academy.
2. Have participated enthusiastically in the activities of the Academy in more than one of the following ways: (a) section chairman, (b) editor, (c) field trip leader, (d) committee service, (e) publish in the JTAS, and (f) present papers at the annual meeting.

3. Be a researcher, educator, administrator or a professional involved in science endeavors in Tennessee.

The Committee feels that the nominations may be invited from the whole membership of the Academy and plans to draft a letter in that regard. After the nominations are in, the Committee will screen these and make recommendations to the Academy. It is felt that the number should be limited, and perhaps, none nominated during some years. I wonder if Dr. Caponetti can supply the members with current lists of membership."

The committee report was accepted by a passed motion. Moreover, the Secretary introduced a motion to adopt the committee's criteria for selecting the nominees. Discussion of the motion brought an amendment to item (2) "in more than two of the following ways." The motion passed. Another motion was passed to publish the criteria for selecting the nominees, and a list of Fellows back to 1956 in the Journal of the Academy in a future issue designated by the Editor.

3. Membership Committee—The Chairman, Hubert H. Caudill, sent the following report:

"I have no membership committee report for the Spring meeting of the Executive Committee of the TAS.

About three weeks ago I received from Dr. Caponetti a large supply of membership application forms and he informed me that I would need to contact Dr. Wilson about a current membership list. I have written Dr. Wilson requesting such a list but have not yet heard from him. If I receive a membership list I plan to make a couple of copies of it and send one along with a supply of membership applications to the other members of the membership committee.

I plan to write letters to at least one TAS member in each institution of higher learning in East Tennessee and to representatives of private and industrial laboratories in East Tennessee seeking to recruit their help in expanding our membership. I plan to ask Dr. Chandler and Dr. Nash if they will do likewise for Middle and West Tennessee, respectively."

The Committee report was accepted by a passed motion.

4. Necrology Committee—The Chairman, Prem S. Kahlon, sent the following report:

"Thank you for your letter of February 23, 1977, regarding the report from the Necrology Committee for Executive Committee Meeting of April 15, 1977. I am in the process of writing letters to other members of the committee (Drs. Burke and Mason) and key persons of the academy at various campuses for compilation of report for the annual meeting. I do not have anything of interest to report to you at this time for your April 15 meeting, however, as and when I learn of an event that will be of interest to our membership, I will let you know."

The Committee report was accepted by a passed motion.

5. Nominating Committee—No report.

6. Program Committee—No report.

7. Research Committee—The Chairman, Charles A. Brown, sent the following report:

"The Research Committee does not have a report at this time. We are presently getting organized."

The Committee report was accepted by a passed motion.

8. Resolutions Committee—No report.

President Tanner had invited the President of the Science Association of Tennessee, Mr. Sam Williams, to attend the Executive Committee meeting to explain the purposes of the Association and explore the possibilities of a joint annual meeting. The Association is composed of 200 to 350 elementary and junior and senior high school teachers who donate their time to teach special subjects. The organization is three years old, meets once a year, and has a newsletter. Since the Editor had spoken to Mr. Williams previously, he introduced a motion to explore the possibility of a joint meeting of the Academy and the Association during the Academy's 1978 annual meeting at Lambuth College in Jackson. The seconded motion passed.

The Treasurer, Robert L. Wilson, presented a report which appears elsewhere. It was accepted by a passed motion.

In an effort to get industry more involved in Academy affairs, Member-at-Large Clay Chandler introduced a motion to add to the Executive Committee a member of the Academy who is in industry. For many reasons, the idea was thought to be unfeasible and thus the motion was defeated.

President Tanner and several other members of the Executive Committee have, for several years, questioned the justification of salaries for directors of programs since other members of the Executive Committee do not receive salaries. The President had sent the following memorandum to the Director of the Junior Academy:

"I wanted to keep you fully informed of my intention. As I compare the budgets of the several academy programs, I notice no director's salary in any other and believe that this is the item which should be discontinued in the Junior Academy

budget. There is absolutely no personal side to this approach—I simply believe that TAS's overall funding is so low that salaries for professionals are unallowable. I am very appreciative of the excellent job Dr. Bailey did and which you have so willingly picked up and gotten well underway, but I do feel that with rising costs all around we must be thrifty and utilize as much volunteer effort as possible, such as my own position."

The Director answered as follows:

"I have your memorandum of April 4. As regards the director's salary for the Junior Academy, I have no wish to receive a salary if the other program directors receive none. In developing a budget I used the same format as Dr. Bailey had used previously; he informed me some time ago, when we first discussed the matter of my working with the program, that a salary should be included and that each program director did the same.

I hope you are aware that I have not had access to budgets of the other programs. It was only recently, in fact, that I became aware of the total budget allocated to the Junior Academy for this year. My only yardstick in preparing a budget has been the budgets of TJAS from past years."

The Secretary introduced a motion to abolish salaries for all Academy members who direct any programs or who serve as officers or members of the Executive Committee beginning fiscal year 1977-78. The seconded motion passed.

The Tennessee Biological Stations Liaison Officer (Dr. Smith) reported three requests from biological stations for student research support.

1. A request from Dr. Neil A. Miller, Department of Biology, Memphis State University as follows:

"During the pre-summer session, 1977, the Department of Biology will offer a 4 hour credit course, Field Techniques in Ecology (Biology 4050) to be held at the Edward J. Meeman Biological Field Station. The course will meet from May 9th through May 27th, and we will require financing to help defray the cost of transporting students to and from the Station as well as transportation to various study sites in west Tennessee. This letter is a request to the Tennessee Academy of Science for financial assistance.

1. Name and location of field station: Edward J. Meeman Biological Field Station—north Shelby County adjacent to Meeman/Shelby Forest State Park.

2. Name of institution operating the station: Memphis State University—Department of Biology.

3. Name, address and telephone number of the chief administrative officer of station: Dr. Neil A. Miller, 321 Life Sciences Building, Memphis State University, Memphis, Tennessee 38152 (901) 454-2970.

4. Amount of funds requested: \$150.00 (1,000 miles) 15¢/mile.

5. Distribution of funds if awarded: The total amount of the fund will be used to help defray transportation costs in order to reduce the total cost of the course for each student."

2. A request from Drs. Robert A. Carlton and Lois P. Lord, Department of Biology, Lambuth College as follows:

"Kathy Turner, a recent graduate of Lambuth, talked with you recently concerning a research proposal to the Tennessee Academy of Science. A copy of this proposal is attached to this letter.

Kathy would perform this research in Nathan Bedford Forrest State Park using the facilities of the Lambuth College biological station which is located nearby.

We have found Kathy to be an excellent student and we feel that the project she proposes is certainly worthy. She will carry this work out under our direction and she has our personal endorsement in doing so. We strongly recommend that her application for funding be given favorable consideration.

Research Study Area: Nathan Bedford Forrest State Park.

Study Time: June 15, 1977 to August 15, 1977.

Lab and Residence Facilities: Lambuth Biological Station.

Research Project: To study the carrying capacity of the deer population in a designated area by considering the nutritional value of the browse in relation to the soil nutrients.

Funds: \$125.00 to help cover living expenses incurred while in residence.

Study Performed: As a fulfillment of the requirements of an independent study project under the direction of Dr. Robert

Carlton and Dr. Lois Lord, Lambuth College, Jackson, Tennessee."

2. A request from Dr. Robert E. Martin, Department of Biology, Tennessee Technological University as follows:

"Please consider Tech Aqua students for support while pursuing work at a Tennessee biological station.

The TAS supported three students each of two years and one student last year in this manner. It costs a student approximately \$500 plus books and supplies to attend a full summer at Tech Aqua. We have a scholarship committee to evaluate applications for assistance strictly on the basis of past academic performance. Our scholarships have in the past been awarded for merit NOT on the basis of need. If the TAS should support students attending Tech Aqua in the future the applications would be reviewed and the award(s) again based on performance.

The Tech Aqua Biological Station is located on highway 56 about eight miles north of Smithville, Tennessee. The summer programs are operated by the Tech Aqua Consortium which is currently made up of Tennessee Tech, Belmont College, Middle Tennessee State University, Tennessee State University, the University of the South, the University of Tennessee at Knoxville, the University of Tennessee at Martin, Vanderbilt University and Western Kentucky University.

We wish to request an award of \$500 to be distributed at the discretion of the Tech Aqua Scholarship committee to one or more applicants."

A motion was passed to approve the requests of Memphis State University and Lambuth College (total of \$275.00). The request from Tennessee Tech had already been budgeted.

The next item of business was approval of the budget for fiscal year 1977-78. After reviewing the items, a motion was passed to (1) increase visiting scientists travel allowance to 15¢ per mile and (2) increase the junior Academy budget by \$200.00 to help in the publication of the *Handbook*. A passed motion set the budget.

The Past-President, John M. Mallette, visited with the Tennessee Commissioner of Education, The Honorable Sam Ingram, as requested by the Executive Committee of the Academy. Dr. Mallette's follow-up letter is presented:

"Please know that I appreciate having had the opportunity of visiting with you on February 9, 1977, at which time I expressed sincere gratitude on the part of the Executive Committee, as well as for the entire membership of the Tennessee Academy of Science, for the support your office has given to us throughout the years. We are especially thankful and encouraged to know that the Department of Education stands ready to assist us within the next fiscal year. There are a number of ways in which promising scientists as well as future scientists can benefit from this support. If there are any specific ways that the Academy can assist you and the Department in any endeavors, please do not hesitate to ask.

I hope that our paths will cross again one day soon in the future service of education to our fellow man in the great State of Tennessee as well as in the nation. With best wishes and kind regards, I remain."

The Academy's two delegates to AAS, Richard J. Raridon and George W. Griffith, attended the AAS meeting and Dr. Raridon submitted the following report:

"Dr. George W. Griffith, ORNL, and I represented TAS at the annual meeting of the Association of Academies of Science in Denver, Colorado, on February 22, 1977. Thirteen talks were given in two sessions covering the following topics related to state academy affairs—membership drives, maintaining a continuity of effort (executive director or secretary), visiting scientist programs, fund raising activities, a governor's science and technology advisory panel, and publishing difficulties and alternatives. Considerable discussion ensued. Most of the texts will be published in the 1977 AAS Directory and Proceedings which TAS officers will receive.

At the AAS business meeting, Dr. James Batt, Executive Director of the Wisconsin Academy was elected to the position of president-elect. The main item for discussion was the new AAAS directive on distribution of research funds which was to take effect this spring. No one seemed to have a clear idea of what was expected in the way of proposals to AAAS. A motion was

passed to recommend that AAAS postpone the implementation for one year. This was presented to Dr. Carey by Charles Vaughn and myself at the AAAS Council meeting on February 23 and Dr. Carey agreed to the delay. I do not feel that TAS will have any difficulty continuing to get AAAS research funds, and we may even be able to receive more if they can be put to good use.

In addition to presiding at one of the AAS sessions, I also gave a talk at the annual banquet the previous evening as incoming President of AAS. The banquet has become a joint AAS and AJAS affair in recent years.

The next AAS meeting will be on February 14, 1978, in Washington. The Junior Academy session will be held on February 13. We are entitled to send two delegates to the AJAS to present papers.

The delegates' report was accepted by a passed motion.

The Secretary reported that the following constitutional amendments are now needed:

1. Removal of all reference to the Science Advisory Committee.
2. Removal of all reference to the Reelfoot Lake Biological Station.

3 Change the title of Dr. Wintfred L. Smith from Director of the Reelfoot Lake Biological Station to Tennessee Biological Stations Liaison Officer.

The President appointed an ad hoc committee of himself and the Secretary to prepare a list of necessary proposed amendments and present them to the Executive Committee at the November, 1977 Executive Committee Meeting, and to the membership during the annual Business Meeting. The proposed amendments will be sent to the membership prior to the November, 1977 annual meeting of the Academy.

The Secretary was authorized to be in charge of contacting and arranging for exhibitors at the next annual meeting at Tennessee Technological University, Cookeville in cooperation with the chairman of the Local Arrangements Committee, Dr. S. K. Ballal.

OLD BUSINESS—None

NEW BUSINESS—None

The meeting was adjourned at 10:30 p.m. C.S.T.

EXECUTIVE COMMITTEE MEETING NOVEMBER, 1977

The Executive Committee Meeting of the Tennessee Academy of Science, Inc., was called to order by the President at 7:00 P.M. C.S.T. in the Alumni Lounge of the University Center, Tennessee Technological University, Cookeville, Tennessee, on November 17, 1977. Members present were Raymond L. Tanner, President; Robert E. Martin, President-Elect; John M. Mallette, Past President; James D. Caponetti, Secretary; Robert L. Wilson, Treasurer; Gus Tomlinson, Journal Editor; Richard J. Raridon, Director of the Collegiate Division; William N. Pafford, Director of the Junior Academy; Paul Wishart, Director of the Visiting Scientists Program; Wintfred L. Smith, Chairman of the Scientific Field Stations Liaison Committee; Clay M. Chandler, and B. R. Jennings, Members-at-Large.

The Secretary, James D. Caponetti, had mailed printed copies of the Minutes of the April, 1977, Executive Committee Meeting. They were approved without change by a motion passed unanimously.

The President asked the Secretary to present proposed amendments to the Constitution. The President and the Secretary were an ad hoc committee to prepare amendments related to the removal of all reference to the Science Advisory Committee and to the Reelfoot Lake Biological Station. The latter change necessitated a change in title for Dr. Wintfred L. Smith, and changes in nomination regulations for fellows required alteration of Article II, Section 3. The proposed amendments were sent to the membership prior to the November, 1977 annual meeting. The approved changes with present reading are as follows:

ARTICLE II, SECTION 3

Present Reading:

Section 3.—Fellows. Members who are professionally engaged in scientific work and who have advanced science by research, by teaching, or who have actively participated in the affairs of the Academy may be elected fellows at any regular meeting by a three-fourths vote of the members present, after having been recommended by the Executive Committee.

Proposed Reading:

Fellows. Members who have participated in more than two of the following Academy activities: (1) section chairperson, (2) section editor, (3) field trip leader, (4) committee service, (5) published in the Journal of the Academy, (6) present papers at the annual meeting, (7) director of educational programs and who are researchers, educators, administrators, or professionals involved in science endeavors in Tennessee may be elected fellows at any regular meeting by a three-fourths vote of the members present, after having been recommended by the Executive Committee.

ARTICLE III, SECTION 1

Present Reading:

Section 1.—The officers of the Academy shall consist of a President, President-elect, Secretary, Treasurer, Editor, and Director of the Reelfoot Lake Biological Station. All officers except the Editor and the Director of the Reelfoot Lake Biological Station shall be elected by ballot at the annual meeting and shall hold office for one year. The new officers shall take office on January 1 following the annual meeting at which they are elected. The Editor and Director of the Reelfoot Lake Biological Station shall be elected by the Executive Committee and shall hold office for three years. Officers shall be eligible for re-election.

Proposed Reading:

The officers of the Academy shall consist of a President, President-elect, Secretary, Treasurer, and Editor. All officers except the Editor shall be elected by ballot at the annual meeting and shall hold office for one year. The new officers shall take office on January 1 following the annual meeting at which they are elected. The Editor shall be elected by the Executive Committee and shall hold office for three years. Officers shall be eligible for re-election.

ARTICLE III, SECTION 7

Present Reading:

Section 7.—The Director of the Reelfoot Lake Biological Station shall have charge of any Station Buildings for the Academy. He shall select an Advisory Committee, members of which shall be subject to confirmation by the Executive Committee. He shall prepare a report of the activities of the biological station for the current year to be presented at the annual meeting, and this report shall be published in the Journal.

Proposed Reading:

Delete whole section.

ARTICLE IV, SECTION 5

Present Reading:

Section 5.—The Executive Committee of the Academy shall constitute the Board of Trustees of the Reelfoot Lake Biological Station.

Proposed Reading:

Delete whole section.

ARTICLE IV, SECTION 7

Present Reading:

Section 7.—The following Committees shall be standing committees of the Tennessee Academy of Science, Inc.

Auditing	Necrology	Research
Fellows	Nominating	Resolutions
Membership	Program	Science Advisory

All standing Committees shall be appointed by the President. Other Committees may be appointed by the President subject to the approval of the Executive Committee.

Proposed Reading:

Same, except delete "Science Advisory" and add "Scientific Field Stations Liaison."

ARTICLE X, SECTION 9

Present Reading:

Section 9.—Election of officers, except the Editor and the Director of the Reelfoot Lake Biological Station, shall be by ballot, but, with unanimous consent of the members, the Secretary may cast one ballot, representing the unanimous vote of the members present. A nominating committee shall be appointed by the president before the annual business meeting to nominate officers to serve the Academy during the ensuing year.

Proposed Reading:

Election of officers, except the Editor, shall be by ballot, but, with unanimous consent of the members, the Secretary may cast one ballot, representing the unanimous vote of the members present. A nominating committee shall be appointed by the President before the annual Business Meeting to nominate officers to serve the Academy during the ensuing year.

The Treasurer, Robert L. Wilson, submitted an audited report which was approved and appears elsewhere in these proceedings along with the Report of the Auditor. Both reports were accepted by a passed motion. In line with rising costs, the Executive Committee agreed that a letter from the Treasurer supported by the President be sent to the Commissioner of the State Department of Finance and Administration requesting at least a 10% increase in the state appropriation to the Academy as an anti-inflation measure.

The Editor, Gus Tomlinson, submitted the following report:

"Four numbers of volume fifty-two have been published since the annual meeting last November. Each issue was published and mailed on schedule during the year. In addition to the regular annual inclusions in the Journal, i.e., proceedings, news items, awards, current events, abstracts, reports, index, etc., the 1977 volume contains thirty-seven regular manuscripts and the Reelfoot Lake Report. The breakdown by subject area for 1977 inclusions in the Journal is as follows:

Physics and Astronomy	3	Proceedings	1
Reelfoot Lake Report	1	News Events (sets)	4
Abstracts (sets)	2	Mathematics	1
Botany	6	Science Education	3
Chemistry	2	Index	1
Geology-Geography	4	Environmental	1
Zoology	9	Medical Science	6
General Science	2		

The January and April, 1978 issues of JTAS are in preparation. September 1, 1977, twenty manuscripts, fully marked and tentatively scheduled for publication in January or April, 1978 issues, were placed in the possession of the printer. Galley proofs have already been sent to the authors. Six additional manuscripts are in author revision, and six manuscripts are being reviewed by sectional editors. Four manuscripts were rejected during 1977, after several attempts over a period of two years, to get the manuscripts revised to meet objections. The breakdown by subject area for the manuscripts to be included in the January or April, 1977 issues and the fourteen manuscripts which are in some phase of preparation is as follows:

<i>Twenty Manuscripts in Galley Proof for January and April</i>		<i>Fourteen Manuscripts in Preparation</i>	20
Zoology	7	Zoology	6
Geology	4	Environmental Science	1
Botany	2	Mathematics	1
Chemistry	2	Science Education	1
General Science	1	Botany	4
Physics	1	Geology-Geography	1
Environmental	1		14
Science Education	2		

The current backlog of fourteen manuscripts compares with fifteen in 1976, seventeen in 1975, and eighteen in 1974. With this modest backlog of manuscripts, new manuscripts are still being published relatively soon after they are received. For example, forty-one new manuscripts (as compared to forty-one in

1976 and thirty-seven during 1975) were received during 1977. Twelve of these have already been published and sixteen additional ones are scheduled for publication in the January or April issues for 1978. Among the thirteen unpublished manuscripts which were received during the year, eleven are still in review or under author revision. Thus, a well written manuscript of reasonable length has an excellent chance of being published within a few months after it has been submitted and accepted for publication in JTAS. This should encourage authors to avail themselves of JTAS for their publications. Hopefully, the increase of four manuscripts submitted for publication in JTAS in 1976 and copies in 1977, as compared to 1975, means continued interest and respect for JTAS. The Editor continues to welcome the assistance of the Executive Committee and all members of the Academy in soliciting new, short, well written manuscripts for the Journal.

Editorial and clerical assistance continues to be done by students who work part-time at the expense of the Academy. Total operating costs of the Editor's Office to the Academy averaged \$267.58 per month in 1977 as compared to \$256.38 per month in 1976. Although the high student turnover rate makes this procedure difficult, it is still the least expensive operating procedure with respect to cost to the Academy. By continuing to utilize student help, yet recognizing reduced secretarial and other support at Peabody College, it should be possible to hold monthly costs for 1977 to approximately \$275 per month (approximately \$3300 for a 12 month year).

JTAS SUMMARY REPORT FOR 1977

1. A total of forty-one manuscripts were received during 1977, twenty-eight of which have already been published or scheduled to be published in the January or April issues. Several others were only recently received. Thus, short, well written manuscripts are being published within a few months after they are submitted for publication in JTAS.

2. All back issues of JTAS from 1926 are available from AMS Press, Inc., 56 East Thirteenth Street, New York, NY 10003 on microfilm.

3. Zoology, Botany and Math manuscripts continued to be received at approximately the same rate as usual during 1977. Manuscripts in Geology, Environmental Science, and Science Education have increased slightly in number during the past year while those in Physics and Medical Science have decreased.

4. In 1978, the traditional Reelfoot Biological station report the major biological stations where scientific research and/or instruction is being carried out in the state of Tennessee. This report will be carried in the April issue each year.

NOTE: Members of the Academy and their colleagues are urged to support the Academy and its official publication by submitting their research in short, well written manuscripts which can enhance the quality of the Journal of the Tennessee Academy of Science."

The Editor's report was approved by a passed motion. The Editor requested that he reverse the order of presentation of biological station report from January issue to April issue, and biographical sketch of new President and President-Elect from April issue to January issue. A motion to this effect was passed.

The Director of the Visiting Scientists Program, Paul Wishart, submitted the following report of the fourteenth Annual Visiting Scientists Program:

"Preparation for the 1977-78 VSP Roster began in May, 1977. Letters were written to the scientists listed in the previous year's Roster to inquire if they desired to continue to serve in the program. Participants were requested to make appropriate additions or changes in the topics for their presentations. Application forms for new nominees were sent to each of the scientists in an effort to secure additional specialists from different academic fields from the various parts of the state. Approximately twenty new scientists were added to the official team as a result of the inquiry. After the required data for the new Roster had been received, forms were sent out to all of the new prospects to obtain: (1) information as to the topics to be presented in the secondary schools and (2) relevant professional and personal data required to conduct the program. Follow-up letters were mailed during the summer and also during the fall to those who

failed to respond to the first mail-out in order to complete the Roster.

The 1977-78 Roster, including almost 100 individuals, was typed in two sections in order to make it possible for late responses to be included for the current academic year. More than 500 copies were prepared for distribution to teachers, supervisors, and scientists throughout the state. Geographic areas extending from Upper East Tennessee to the Memphis area are involved in the program with both rural and metropolitan secondary schools utilizing the services of our scientists.

We have found that a significant number of the schools were desirous of repeated visits from scientists representing one special academic area, as for example: Biology or Geology. Arrangements are made for selected schools to schedule as many as four follow-up visits if these are compatible with the curricular program of the school. Scientists are also encouraged to work with teachers in science inservice programs.

The energy crisis still exerts an important role in the operation of the VSP educational effort. The increasing travel costs and the closing of schools during cold weather are examples of factors directly related to the successful operation of the Program. Scientists of the state continue to show their willingness to accept the very modest honoraria provided by the VSP in order to serve Tennessee's high school students and teachers. In 1977, the TAS Executive Committee recommended increasing the mileage allowance from \$0.10 to \$0.15 per mile for the use of private cars.

Evaluative comments from both the schools and the scientists indicate that the program provides a much needed service and is deserving of continuation in future years. Evaluation reports are used after each visit and the feed-back from the scientists, science teachers, principals, and students are most beneficial in improving the operation of all portions of the program.

Following are the special fields in science and science related areas that were included in the program for the current year:

- | | |
|----------------------|------------------------|
| 1. Astronomy | 6. Geology & Geography |
| 2. Biology & Ecology | 7. Mathematics |
| 3. Chemistry | 8. Medicine & Pharmacy |
| 4. Engineering | 9. Physics |
| 5. General Science | 10. Psychology |

Summary—Visiting Scientist Program—Statistical Summary

Contacts Made	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77
Number of visits	60	66	60	42	61	61
Number of students contacted	9343	10234	8911	3502	8515	5776
Number of teachers contacted	268	249	214	148	181	321
Number of classes contacted	178	217	209	81	151	161
Mileage					3535	3625
Number of Scientists on Roster	99	83	96	90	128	104
Fields Represented:	Astronomy		Geology & Geography			
	Biology		Mathematics			
	Chemistry		Medicine & Pharmacy			
	Ecology		Physics			
	Engineering		Psychology			
	General Science					

The Director's report was approved by a passed motion.

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

"Three regional meetings of the Collegiate Division were held during the spring, 1977. The Eastern Regional Meeting, under the direction of Dr. Robert G. Ziegler, was held at King College on April 30. Nine papers were presented and 30 were in attendance. The Middle Regional Meeting, under the direction of Dr. John T. Netterville, met at Vanderbilt University on April 23. Sixty students and faculty attended and 24 papers were presented.

The Western Regional Meeting, under the direction of Dr. George W. Edwards, was held at Lambuth College on March 26. One hundred were in attendance and 18 papers were presented, including several by students at Murray State University, Murray, Kentucky."

The Director's report was approved by a passed motion.

The Director of the Junior Academy, William N. Pafford, submitted the following report:

"High school students submitted a total of 42 research papers to the Junior Academy of Science during 1976-77. A panel of readers selected the top 15 papers for presentation at the spring meeting, which was held on April 15 at George Peabody College. In addition to the students who read papers, several parents and teachers also attended the meeting.

The 1977 Junior Academy *Handbook and Transactions* has been published. The top five papers are included in their entirety (after editing), along with abstracts of the other 10 papers presented at the spring meeting. Over 600 copies of the *Handbook* have been mailed, along with a copy of the 1977-78 *Newsletter*. They were mailed to all high schools in Tennessee; to members of the Executive Committee of TAS; and to the 15 students who presented papers at the spring 1977 meeting.

In order to publicize the Junior Academy program, a summary of activities will be published in the *Tennessee Teacher*, probably sometime prior to January. Information concerning funds available to support research projects will be included.

Peabody College has been kind enough to invite the Junior Academy back for the 1978 spring meeting, which is scheduled for Friday, April 14. Their hospitality is sincerely appreciated."

The Director's report was approved by a passed motion.

President Tanner then presented committee reports from the respective chairpersons as follows:

1. Auditing Committee—The chairman, Myron S. McCay, had sent the following report:

"The Treasurer's records have been examined for the period July 1, 1976 to June 30, 1977, and have been found to be in excellent order. All transactions have been noted clearly, in accordance with Academy authorizations.

Again, the Auditing Committee has been impressed with the Treasurer's records for their simplicity and clarity. In the opinion of the Auditing Committee, the Treasurer is to be commended for his careful management of the Academy funds.

This year, also, the report of a highly-qualified certified public accountant has been completed, confirming the accuracy of the Treasurer's records and operations."

The committee report was approved by a passed motion.

2. Fellows Committee—The chairman, S. K. Airee, had sent the following nominations for Fellows:

"Nominee	Field	Affiliation
1. Stuart H. Maher	Geology	State Division of Geology
2. H. Gordon Morris	Biology	Univ. of Tennessee,
3. William N. Pafford	Biology	Martin East Tennessee State Univ."

A motion was passed to approve the three nominees Fellows of the Academy and present them to the membership at the annual Business Meeting.

3. Membership Committee—The chairman, Hubert H. Caudill, sent the following report:

"I'm sorry that I will be unable to attend the annual meeting of the Tennessee Academy of Science this year.

During the past year an effort was made to involve more people in actively recruiting new members for the Academy. Letters were written to approximately forty-five people who gave papers at last year's meeting expressing appreciation for their contributions to the Academy, enclosing membership application forms and asking their help in seeking an expanded membership. A letter and a supply of application forms was also sent to each member of the membership committee and to each section chairman. This effort seems to have been moderately successful in that we obtained eighty-one new members during the past year.

The chairman wishes to thank each member of the membership committee and each section chairman for his contributions to a successful year."

The Committee report was approved by as passed motion.

4. Necrology Committee—The chairman, Prem S. Kahlon, sent the following report:

"We mailed about 15 letters to members in various centers in order to collect this information. We appreciate very much your support and response to our letters. We received four names to be remembered from various centers. Two of these names were those of Dr. Gordon Hunt and Mr. George Rouse who were remembered last year.

Dr. Wilson L. Miser's name was sent to us by Dr. Robert Wilson, through Dr. James Caponetti. It was indicated on the TAS returned envelope that Dr. Miser died in February, 1974. The only information that we could collect on him was from a membership index card indicating that he became a member in 1946 and become a life member of TAS. He was in the Department of Mathematics. From the addresses listed on the index card, it appears that he had been associated with Vanderbilt; Ohio-Northern University, Ada, Ohio; Lincoln Road, Lincoln, Mass.; Sweetbriar College, Sweetbriar, Va.; Concordia College, Moorhead, Minn.

The other name also received from Dr. Robert Wilson's returned envelope was that of Mr. Hayes Blackwell, address 109 Nixon Street, Centerville, TN 37033. We could not obtain any information on him from any source.

Thank you again for helping us to gather this information."

After the Committee report was approved by a passed motion, several members of the Executive Committee reported that William Uselton who was formerly associated with Preiser Scientific, Inc., had also passed on. A moment of silent prayer was observed.

5. Nominating Committee—The chairman, John M. Mallette, submitted the following nominees for officers of the Academy:

"President-Elect: Dr. James D. Caponetti, University of Tennessee, Knoxville; Secretary: Dr. Diane Nelson, East Tennessee State University; Treasurer: Dr. Robert Wilson, University of Tennessee, Chattanooga."

A motion was passed to approve the three nominees for officers and present them to the membership at the annual Business Meeting.

6. Program Committee—The chairman, Robert E. Martin, reported that the meeting program was ready to go as scheduled and looked forward to an enjoyable and successful meeting.

7. Research Committee—The chairman, Charles A. Brown, sent the following report:

"The Research Committee received a total of ten research proposals and recommends that the following individuals be awarded grants as indicated.

Rodney L. Crabtree	\$ 60.00
Jeffrey D. Elliott	\$ 45.00
Craig S. Gawlas	\$ 50.00
Robert S. Harvey	\$100.00
Hang Nguyen	\$ 15.00
Hans L. Roeder	\$ 85.00
Christopher P. Williams	\$ 70.00
	<u>\$425.00 TOTAL</u>

Additional information is included on the enclosed Grant-in-Aid recommended for funding forms. The unsuccessful applications were received too late, were incomplete or were simply a repeat of a well-known experiment.

As Chairman, I wish to express my appreciation to the other members of the Research Committee for their help in evaluating the proposals submitted to the committee and to those members of the Tennessee Academy of Science who helped to publicize the existence of the research grants. With an earlier start on the publicity next year, the number of applicants should increase substantially."

The Committee report was approved by a passed motion.

8. Resolutions Committee—Report to be submitted at Business Meeting.

The Executive Committee approved the holding of a joint meeting with the Science Association of Tennessee. A motion

was passed for the Presidents (or designees) of the Academy and the Science Association of Tennessee to get together and plan a joint meeting and choose a suitable site.

The Chairman of the Scientific Field Stations Liaison Committee, Wintfred L. Smith, submitted the following report:

"Reports of expenditure of funds granted to biological stations for the summer session, 1977, have been received from Ms. Katharine G. Turner, who worked at the Oxley Biological Field Station, Lambuth College, and Dr. Neil A. Miller, Edward J. Meeman Biological Field Station, Memphis State University. Ms. Turner, Dr. Miller, Dr. Robert A. Carlton (Lambuth College), and Dr. Clifford C. Amundsen (UTK) have expressed their appreciation to the Academy.

A report concerning the activities of biological stations within Tennessee is being prepared and will be submitted for publication in the April issue of JTAS.

Two proposals for support for the summer of 1978 have been received. Copies follow:

1. Application for Scholarship Support: Please consider Tech Aqua students for support while pursuing work at a Tennessee biological station. The TAS supported three students each of two years and one student year before last in this manner. It costs a student approximately \$500 plus books and supplies to attend a full summer at Tech Aqua. We have a scholarship committee to evaluate applications for assistance strictly on the basis of past academic performance. Our scholarships have in the past been awarded for merit NOT on the basis of need. If the TAS should support students attending Tech Aqua in the future, the applications would be reviewed and the awards again based on performance.

The Tech Aqua Biological Station is located on Highway 56 about eight miles north of Smithville, Tennessee. The summer programs are operated by the Tech Aqua Consortium which is currently made up of Tennessee Tech, Middle Tennessee State University, Tennessee State University, the University of the South, The University of Tennessee at Chattanooga, the University of Tennessee at Knoxville, Vanderbilt University and Western Kentucky University. We wish to request an award of \$500 to be distributed at the discretion of the Tech Aqua Scholarship Committee to one or more applicants from Tennessee schools.—Dr. Robert E. Martin, Tech Aqua Director, Box 5041, Tenn. Tech., Cookeville, TN 38501.

2. An Introduction to Biology in the Field. A. D. Oxley Biological Field Station, Eva, Tennessee. Operated by Lambuth College, Jackson, Tennessee; chief administrative officer: Dr. James S. Wilder, President. Director of Field Station: Dr. Robert A. Carlton, Department of Biology, Lambuth College, Jackson, TN 38301. Total support requested from the Tennessee Academy of Science: \$500.00.

Abstract: The funds requested from the Academy are to support a new, innovative program of study at the Field Station during the summer of 1978. The program, directed to eligible high school seniors, upcoming college freshmen, and other beginning biology students, will carry up to 8 hours of college credit under the title of Biology 1014-24, Introductory Biology. residence at the station under the direction of Drs. R. A. Carlton and W. J. Davis."

A motion was passed to approve the chairman's report and also approve the two proposals for support by Tech Aqua and the Oxley Station. Dr. Martin abstained from voting.

OLD BUSINESS—None

NEW BUSINESS

1. A motion was passed to accept invitations for annual meetings from Meharry Medical College for 1979 and from Oak Ridge National Laboratory for 1980. The invitation from Lambuth College for 1978 was reconfirmed by Dr. James Beasley.

2. A motion was passed to reappoint Dr. Raridon the Academy's representative to Section X of AAAS and he was authorized to attend the AAS and AAS meetings in behalf of the Academy.

The meeting was adjourned at 10:15 P.M. C.S.T.

THE EIGHTY-SEVENTH MEETING OF THE TENNESSEE ACADEMY OF SCIENCE

NOVEMBER 18-19, 1977

TENNESSEE TECHNOLOGICAL UNIVERSITY, COOKEVILLE

The eighty-seventh meeting of the Tennessee Academy of Science, Inc., was held November 18-19, 1977, at Tennessee Technological University, Cookeville, Tennessee. Dr. S. K. Ballal, Professor of Biology at "Tech," was Chairman of the Local Arrangements Committee, and Dr. Robert E. Martin, Professor of Biology at "Tech" and Director of the Tech Aqua Biological Station, was Program Chairman.

Meeting registrations totaled 366. Of these, 155 were university-college professors, 6 high school teachers, 3 from State Divisions, 3 from the Oak Ridge National Laboratory, 1 from the Oak Ridge Associated Universities, 1 from the Tennessee Valley Authority, 5 from private industry, 1 member of the press, and 186 students.

A total of eight laboratory supply and optical companies and affiliates exhibited their products in the second floor lobby of the University Center. In alphabetical order, they were: ACTS Instruments, Inc.; Carolina Biological Supply Co.; The Frank Carryl Co.; R. L. Dotts Instrument Co.; Fisher Scientific Co.; Preiser Scientific, Inc.; Sargent-Welch Scientific Co.; and Southern Biological Supply Co.

The General Session was held in the Multipurpose Room of the University Center on Friday morning November 18, beginning at 9:30 A.M. C.S.T. The Chairman of Local Arrangements, Dr. S. K. Ballal, chaired the session, and the welcome was given by Dr. Arliss L. Roaden, President of Tennessee Technological University, Cookeville. The theme of the session was "Energy and Environment" which covered issues in domestic energy needs, education, and future outlook. Section meetings were held Friday afternoon; 127 papers were presented as listed in the program. The Annual Business Meeting was held in the OVC Room of the University Center at 5:00 P.M. C.S.T.

The Annual Banquet was held in the Multipurpose Room of the University Center. It was served buffet style beginning at 7:00 P.M. C.S.T. Friday evening. Banquet ticket sales were 125. President Raymond L. Tanner presided, and the address was delivered by Robert McFarren who was a last minute fill-in for Robert I. Hanfling, Deputy Assistant Administrator of the Federal Energy Administration, Washington, D. C. The address was "National Energy Plan."

The Joint Session of the Tennessee Section of the American Association of Physics Teachers (TAAPT) and the Physics-Astronomy Section of the Academy was held at 9:00 A.M. C.S.T. Saturday morning in Room 219 of Bruner Hall. Dr. F. X. Hart of The University of the South presided and 5 papers were presented. The Business Meeting of TAAPT was held at mid-morning in the same room.

An Organizational Meeting of the Tennessee Chapter of the Wildlife Society was held at 10:00 A.M. C.S.T. Saturday morning in Room 118 of Pennebaker Hall. Dr. Boyd L. Dearden of The University of Tennessee, Knoxville presided.

The Collegiate Division also held its meeting on Saturday morning at 9:00 A.M. C.S.T. in Room 128 of Pennebaker Hall. Dr. Richard J. Raridon, Director of the Collegiate Division, presided and 10 papers were presented by college students.

ANNUAL BUSINESS MEETING NOVEMBER, 1977

The Annual Business Meeting of the Tennessee Academy of Science, Inc., was called to order by President Raymond L. Tanner at 5:00 P.M. C.S.T. in the OVC Room of the University Center, Tennessee Technological University, Cookeville, Tennessee, on November 18, 1977. Forty-seven persons were present.

The reports of the Treasurer, Editor, Directors of the three educational programs, and the several committees were similar to those presented the previous evening at the Executive Committee Meeting. All reports were approved by passed motions. Executive Committee Meeting. All reports were approved by passed motions.

One of the members of the Fellows Committee, Dr. James Corgan, presented the three nominees approved by the Executive Committee. A motion was passed that the nominees be elected Fellows of the Academy.

The President presented the report of the Nominating Committee and asked for further nominations from the floor. There were no further nominations. The Secretary was instructed to cast one vote which would represent the unanimous election of James D. Caponetti as President-Elect, Diane Nelson as Secretary, and Robert Wilson as Treasurer.

The Chairman of the Resolutions Committee, Dr. Benjamin P. Stone, presented the following resolutions:

WHEREAS, the Tennessee Academy of Science, Inc., including the Collegiate Division, is enjoying a most pleasant, profitable, and well-organized series of meetings at the Tennessee Technological University, and

WHEREAS, the success of these meetings has resulted from the efforts of the officers and sponsors of these organizations, the chairmen of the respective sections, the members of the Committee on Local Arrangements (S. K. Ballal and Robert E. Martin), from recognition given the meetings by the various news media, and from the generous hospitality of our host institution, which provided six hundred dollars to supplement Academy funds designated for guest speakers in the General Session and the Annual Banquet of the Tennessee Academy of Science.

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

WHEREAS, the Tennessee Department of Education, continuing to recognize the worth of the educational programs of the Tennessee Academy of Science, has provided funds for these programs from monies made available by the General Assembly of Tennessee and authorized by the Tennessee Department of Finance and Administration.

BE IT RESOLVED, therefore, that the Tennessee Academy of Science express its sincere appreciation to the State Department of Education and to the State Department of Finance and Administration for providing these funds.

BE IT FURTHER RESOLVED that these resolutions be included in the minutes of the Tennessee Academy of Science and published as part of the proceedings of this meeting and that copies be sent to Dr. Arliss L. Roaden, President, Tennessee Technological University; Dr. Robert E. Martin, Program Chairman for the Academy; Dr. S. K. Ballal, Chairman of the Committee for Local Arrangements for the Academy; the Tennessee Commissioner of Education, the Honorable Sam H. Ingram; and the Tennessee Commissioner of Finance and Administration, the Honorable William S. Jones.

All resolutions were approved by a passed motion.

The President presented the proposed amendments to the Constitution as approved by the Executive Committee. All proposed amendments were approved by a passed motion.

The meeting was adjourned at 5:40 P.M. C.S.T.

TENNESSEE ACADEMY OF SCIENCE OPERATIONS ACCOUNT TREASURER'S REPORT

JULY 1, 1976 THROUGH JUNE 30, 1977

Cash in Pioneer Bank, July 1, 1976 \$ 8,294.14
Less: Outstanding checks, July 1, 1976 165.00
Cash Balance, per books, July 1, 1976 \$ 8,129.14

Cash Receipts—

Membership Dues \$ 3,987.00
Journal Subscriptions 1,295.50
Registration Fees 756.00
Exhibitors 200.00
Tennessee Department of Education 15,000.00
Contributions 29.50 21,268.00
Total Cash Available \$29,397.14

Cash Disbursements—

Editor's Office \$ 3,156.00
Treasurer's Office 1,776.87
Secretary's Office 406.95
Journal (Printing & Mailing) 7,081.75
AAS Conference 959.74
AAAS Assessment for 1976 32.00
AAAS Meeting 97.96
Treasurer's Bond 122.00
Scholarships, AAAS 475.00
Programs of the Academy
Visiting Scientist \$3,000.00
Junior Academy 3,000.00
Collegiate Division 1,500.00 7,500.00
To Savings in Chattanooga Federal 2,000.00

Annual Meeting Expense 368.20 23,976.47
Cash Balance, Per Books, June 30, 1977 \$ 5,420.67
Add: Outstanding Checks, June 30, 1977 135.30
Cash in Pioneer Bank, June 30, 1977 \$ 5,555.97
Savings—Chattanooga Federal Savings & Loan,
6/30/76 \$ 6,673.65
Transferred from Operations Account (above),
12/18/76 2,000.00
Total \$ 8,673.65
Interest Earned on Savings Account 614.14
Savings Account—Chattanooga Federal
at June 30, 1977 \$ 9,287.79

Rayford J. McLaurin
Auditor
Chattanooga, Tennessee
November 15, 1977

November 15, 1977

REPORT OF THE AUDITOR

To the Tennessee Academy of Science:

I have examined the Treasurer's Report of Cash Receipts and Disbursements, Operations Account, for the period, July 1, 1976 to June 30, 1977.

In my opinion, on the basis of information made available to me, the statement attached fairly presents the transactions of these accounts.

Sincerely,
Rayford J. McLaurin
Auditor
Chattanooga, Tennessee

TENNESSEE ACADEMY OF SCIENCE

New Member List—1977

Donald W. Allsbrooks
714 Goodman Street
Memphis, TN 38111

Dr. Muhammad Salim Banna
Department of Chemistry
Vanderbilt University
Nashville, TN 37240

James Grant Barr
Dept. of Phar. - UTCHS
800 Madison, Box CR 301
Memphis, Tennessee 38163

Dr. Ronnie C. Barnes
Dept. Physical Science
Lambuth College
Jackson, TN 38301

Owen L. Barwick
5620 Stoneway Trail
Nashville, TN 37209

Dr. Dil Mohan S. Bhatia
Box 8484

Dr. C. B. Coburn, Jr.
Biology Department
Tennessee Tech University
Cookeville, TN 38501

Charles Clifton Coney
Department of Biology
East Tenn. State University
Lynn S. Cook

Dept. of Phar. UTCHS
800 Madison Ave. CR301
Memphis, TN 38163

Margaret Wallace Coomer
706 St. Mary's Drive #4
Waycross, GA 31501

John Copeland
Dept. Wildlife Management
Lincoln Memorial University
Harrogate, TN 37752

Ronald Wesley Crothers
Route 1
Ocoee, TN 37361

Cheryl A. Goudie
Ecological Research Center
Department of Biology MSU
Memphis, TN 38152

Annie Ruth Goodwin Harvey
461 Second Street, NW
Cleveland, Tennessee 37311

Dr. David R. Hawkes
Dyersburg State Comm. College
Dyersburg, TN 38024

J. Fred Heitman
Biology Department
Box 5063 TTU
Cookeville, TN 38501

Dr. Margaret W. Hougland
Department of Anatomy ETSU
Box 19960A
Johnson City, TN 37601

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