

dent, 1973). He is Secretary-Treasurer of the Westview Cemetery (non-profit). He is a Citizen and has been Secretary-Treasurer, Vice-President, and President of the Jefferson City Civitan Club. He is a deacon in the First Baptist Church of Jefferson City and is a member of the Executive Committee of the Jefferson County Baptist Association.

JOURNAL OF THE TENNESSEE ACADEMY OF SCIENCE

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PROCEEDINGS OF THE TENNESSEE ACADEMY OF SCIENCE 1974

JAMES D. CAPONETTI, *Secretary*

UNIVERSITY OF TENNESSEE, KNOXVILLE

EXECUTIVE COMMITTEE MEETING

JANUARY, 1974

The Executive Committee Meeting of the Tennessee Academy of Science was called to order by the President at 7:15 p.m. C.D.S.T. in the Walnut Room of the Henry H. Hill Student Center, George Peabody College, Nashville, on February 1, 1974. Members present were Robert L. Amy, President; Albert L. Myers, President-Elect; J. Gerald Parchment, Past-President; James D. Caponetti, Secretary; Robert L. Wilson, Treasurer; Gus Tomlinson, Journal Editor; John H. Bailey, Director of the Junior Academy; Richard J. Raridon, Director of the Collegiate Division; Winfred L. Smith, Director of the Reeffoot Lake Program; Jerry Rice, Consultant on Science Education Activities; Diane Nelson and Robert Martin, Members-at-Large.

The Secretary passed out printed copies of the Minutes of the November, 1973, Executive Committee Meeting and the Annual Business Meeting. They were read and approved by a passed motion.

The Treasurer submitted an audited report which appears elsewhere. A professional auditor of Chattanooga, Rayford J. McLaurin, sent the following report as of January 30, 1974:

"I have examined the Treasurer's Report of cash receipts and disbursements, operations account, for the period, July 1, 1972 to June 30, 1973. In my opinion, on the basis of information made available to me, the statement fairly presents the transactions of these accounts."

A motion was passed to accept the reports of the Treasurer and the Auditor.

The Editor submitted the following report:

"A complete annual report through October of 1973 was given at the November meeting. This report will not duplicate those data but will serve instead to update activities of the Editor's Office since November 1.

"The January, 1974 issue containing the Reeffoot Lake Biological Station Report and 11 manuscripts was published and mailed to all subscribers in early January. Final mailing was delayed 3 weeks due to delay in receiving paper for Journal covers. The Editor has asked the printer to order covers in the future much earlier in order that such delays do not occur. The printer states however that the paper shortage is becoming critical and they cannot guarantee that there will not be additional delays in the future.

"Three manuscripts on the two-year college will accompany the Proceedings of TAS in the April issue. The printer is already setting print for these manuscripts. The Proceedings from the November meetings were received from the Secretary January 30 and will be edited and sent to the printer the week of February 4. November and January were good months with respect to receipt of new manuscripts for publication of JTAS. Ten new, short manuscripts have now been received since the

He was married on June 6, 1941 to Katherine Bass. They have three children, John, Bill, and Jim. John is a member of the Chemistry Department faculty of North Carolina Central University (Durham) and Bill is a member of the Chemistry Department faculty of the University of Richmond.

November report was given. These new manuscripts will provide a modest backlog which will allow appropriate editorial review to precede publication.

"There has been no contact from AMS Press, Inc. in New York regarding the finishing date for completing the microfiche and microfilm process for JTAS back issues. The contract between TAS and AMS Press, Inc. allows until April 2, 1974, for completion of this work and the return of file copies. The Editor has conveyed to AMS Press, Inc. by long distance telephone message that the Academy expects the microfilming to be completed and the file copies returned by the April 2, 1974 deadline. The Editor does not plan to take any further action on journal back issues at Peabody, Vanderbilt, and Austin Peay until AMS Press, Inc. has completed the microfilm and microfiche, duplication process.

"Curley Printing Company which publishes JTAS has announced that a substantial increase in publication costs will require the Company to increase the costs for publishing JTAS by almost 15%. The present publication agreement was negotiated with Curley in early 1971 and has not increased since that time. The printer first contacted the Editor to notify him that a 20% across the board increase would be required. After some negotiation, the printer agreed to reduce the increase to 15% for page costs and to continue with etchings and cuts at the current rate. Thus, the current 32 page cost of \$879.04 will be increased by 15% to \$1,010.90 beginning with the April issue. The 4-page ad cost will increase from \$102.58 to \$123.10. The printer cites inflation, increased salaries of employees and spiraling increases in the cost of paper as the reasons for requiring for a renegotiation of our agreement.

"Members of the Executive Committee will recall that the Editor was asked in the general business meeting in November to consider the possibility of publishing a cumulative author index for all publications in JTAS since its inception. The Editor's Office has been working to estimate the length of such a document, its costs in terms of publication expenses, editorial work, and the length of time which would be required for completion. The Editor will outline progress to date and asks for reactions from the Executive Committee on a proposed format for a cumulative author index.

"Preliminary work indicates that a cumulative author index which would list all senior and junior authors of manuscripts alphabetically by sections similar to the major divisions of the Academy would require approximately 3,000 entries to index the entire JTAS history (transactions of TAS Volumes 1-2 and JTAS Volumes 1-48 from 1926-1973).

"After the Executive Committee Meeting of February 1, when a format is expected to be adopted, the Editor's Office expects

to begin work on the cumulative author index. No recommendation will be made by the Editor at this time as to whether the cumulative author index should constitute one of the regular JTAS issues or should be a special issue. Instead, the Editor would like to reserve the prerogative to make that decision after more information regarding the length of the cumulative author index and its prospective time of printing can be more correctly anticipated. Preliminary work indicates that the 3,000 entries which would be required would result in a document whose total length would be 30-35 printed pages. Dr. Robert Wilson has kindly offered the services of Ms. Workman during the summer months if she can be of assistance. The offer was greatly appreciated by the Editor's Office. If the distance between Nashville and Chattanooga does not become a major handicap, the Editor's Office may ask for assistance from Ms. Workman."

The Editor made the following additional comments on certain parts of his report:

1. The 4-page ad cost means 4 additional pages in 4 page units. The new contract is guaranteed for one year, and they will try to keep it for a period of several years if they can. The Editor also reported that other printing companies he had checked with would charge more for printing the journal.

2. The Editor reiterated that he assumed the cumulative author index would require about 3,000 entries and cover 30-33 pages drawn from transaction Volumes 1 and 2 covering the years 1912 to 1917 plus journal Volumes 1-48 covering the years 1926 to 1973.

3. The Editor also stated that we should consider the question of a subject index, and the possibility of publishing the indices in an issue that is a part of Volume 50.

In accepting the Editor's report by a passed motion, the Executive Committee agreed that the Editor should continue to investigate the amount of work involved in producing the indices, and that the Executive Committee make a final decision at its November, 1974, meeting as to whether to publish such an author index as a regular issue in October, 1975 (50th volume) or January, 1976.

The Director of the Visiting Scientists Program was absent from the meeting but arranged with the Secretary to present the following report:

"Scientists Visit Tennessee High Schools—For the 11th consecutive year, scientists from colleges, universities, and governmental agencies, such as those at Oak Ridge National Laboratories, have participated in the Visiting Scientist Program sponsored by the Tennessee Academy of Science. Ninety-five scientists make up the official 1973-74 roster. Information related to the Visiting Scientist Program services are sent to more than 350 secondary schools in Tennessee and additional copies of the roster were made available to science supervisors in the large metropolitan school system.

"This educational program is officially recognized by the Tennessee State Department of Education. It is directed from the University of Tennessee at Knoxville. Letters encouraging school participation in the Visiting Scientist Program were sent to all school superintendents from the State Supervisor of Science. The current program for 1973-74 is budgeted for 60 visits and requests for approximately 70 visits have been received as of January 1974."

"Last year (1972-73) 200 high school classes representing 10,230 students and 249 teachers were visited by the scientists. Speakers represented areas such as Biology, Chemistry, Ecology, Astronomy, Physics, Geology, Mathematics, and Psychology."

A motion was passed to accept the Director's report.

The Director of the Junior Academy presented the following mid-winter progress report:

"The Tennessee Junior Academy of Science informational material for its 1973-74 program has been prepared and mailed to the 1972-73 participating schools and to other Tennessee high schools that have been accredited by the Southern Association of Colleges and Secondary Schools.

"Announcements and/or invitations have been mailed to approximately 800 secondary science teachers and/or school administrators. Requests have been made for 200 Cover Sheets and these have been mailed. Based on previous experience there should be about 100-150 papers submitted.

"The tentative date for our paper reading sessions has been set for Friday, April 19, 1974, at the Stevenson Physical Science

Center on the Vanderbilt University campus. The exact program for the day will depend upon the availability of facilities. There is the possibility of the energy crisis altering certain travel plans as the winter season continues. Nevertheless, our plans will call for "normal operation" and we will *cope* for emergencies as they arise. The attached sheet shows last years' (1972-73) budget and expenditures, and the anticipated budget figures for this year."

A motion was passed to accept the Director's report.

The Director of the Collegiate Division submitted the following report:

"The Collegiate Division met at Vanderbilt University on November 17, 1973. Four excellent papers were presented, followed by good discussions. Some 60 students and faculty were in attendance. One additional student paper was presented in the Chemistry Section on November 16. Travel and per diem expenses for the meeting totaled \$740.24."

Noting that his budget balance was \$456.48 for this academic year; the Director asked for an additional \$150.00 in order to complete the planned spring meetings since it takes about \$600.00 to conduct the Program. A motion was passed to accept the Director's report and allot him the requested funds.

The Director of the Reeffoot Lake Program reported that he met with his Advisory Committee and they are progressing with plans and recommendations for a field station in cooperation with the Fish and Game Commission.

Old Business

1. The President reported that the Chancellor of the University of Tennessee Medical Units, Dr. Edmond D. Pellegrino, had re-issued the invitation for the Academy to hold its 1974 annual meeting at the Medical Units, and that he had accepted the invitation for November 22-23, 1974. The Executive Committee concurred.

2. A motion was passed to tentatively accept the invitation from the University of Tennessee at Nashville to hold the 1975 annual meeting on that campus.

3. Dr. Raridon reported that he met with the American Association of Physics Teachers at the Academy's annual meeting. One of the members, Dr. Edward Burke, reported that they are concerned about the time and place of the Annual Academy meeting. They recommended that the annual meeting should be held in the spring and in the middle part of the state each year. The Secretary reported that several years ago, an ad hoc committee chaired by Dr. Robert Sears of Austin Peay State University investigated the time of year factor and concluded that the weekend before the Thanksgiving holiday presented the least conflict. The Secretary also reported that the Executive Committee discussed the problem of meeting site several years ago and concluded that the only fair and equitable way to solve the problem is to accept invitations from eastern, middle, and western institutions on an alternating basis. Dr. Raridon stated that he would investigate the situation further and make a report at the next Executive Committee meeting.

4. The Secretary reported he received a letter from Dean Donald Caplenor of Tennessee Technological University inviting the Academy to hold its annual meeting at Tech in 1975. The Secretary wrote to Dr. Caplenor explaining that the Executive Committee had tentatively accepted the invitation of the University of Tennessee at Nashville for 1975. After some discussion, a motion was passed to accept Dr. Caplenor's invitation for 1977 which is a time when the Academy would hold its meeting in the middle part of the state. The Secretary was instructed to write a letter of tentative acceptance to Dr. Caplenor.

5. Dr. Bailey expressed the opinion that the annual Distinguished Teacher Awards were a good thing and recommended that we make similar awards for 1974. A motion was passed for Dr. Bailey and Mr. Jerry Rice to recommend one high school teacher from each of the eight legislative districts, and for the Secretary to make the presentations to the teachers so honored.

6. Dr. Parchment reported that Drs. Ganier and Gentry had passed away since the last annual meeting. After some discussion, a motion was passed to place a death notice in the April, 1974, issue of the journal, and for the President to write sympathy letters to the widows and/or families of these two members

who had contributed so much to the Academy during their longtime careers in science.

New Business

1. A budget for the academic year 1974-75 was formulated according to available money in the Academy treasury. The Treasurer's report contains the exact figures allotted to each Academy activity and function. A passed motion set the budget. Since the three monetary scholarships to the Tech Aqua Biological Station are not part of the annual budget, a special motion was passed to make three \$400.00 awards for the summer of 1975 to be used for scholarships only at the discretion of the Executive Committee of the Station.

2. The Executive Committee passed a motion endorsing the following resolution: be it resolved that we are interested in the participation of the preparation of a Tennessee Non-Game Program and sending a representative to the Task Force organizational meeting, and that the Chairman of the Policy Group of the Science Advisory Committee (Dr. J. Gerald Parchment) write a letter to the Task Force stating our interest, and that Dr. George Murphy of Middle Tennessee State University is interested in the program, is an active member of the Academy, and that we nominate him to the Policy Group of the Science Advisory Committee to make him a resource member, and that Dr. Murphy be our representative to the Task Force of the Tennessee Non-Game Program.

3. Dr. Robert Martin suggested that the Executive Committee meetings last longer than necessary. Since the majority present agreed with him, a motion was passed to set a time limit of 7 to 10 p.m. for the meetings. This can be accomplished by sending (mailing) lengthy written reports to Committee members well ahead of the meeting time so that they can be acted on more quickly.

4. Since there has been some confusion in the past on who appoints new members-at-large and when they are appointed, a motion was passed that one new member-at-large be appointed by the President-Elect each year and that person starts the term in January of the year that the President-Elect becomes President.

5. At this point in time, the by-laws of the Academy require numerous adjustments including the appointment of the Consultant on Science Education Activity (Mr. Jerry Rice) as an official member of the Executive Committee of the Academy by changing his title to Science Specialist of the Tennessee State Department of Education. The Secretary and the present Program Chairman (Dr. Albert Myers) were instructed to study the by-laws and recommend changes and adjustments to the Executive Committee at the next meeting (November, 1974) and simultaneously list the changes in the Program Chairman's annual letter to the membership while announcing details of the next annual Academy meeting. Such changes could then be acted upon by the Executive Committee at their meeting, and by the membership at the Annual Business Meeting.

The meeting was adjourned at midnight C.D.S.T.

EXECUTIVE COMMITTEE MEETING

NOVEMBER, 1974

The Executive Committee Meeting of the Tennessee Academy of Science, Inc., was called to order by the President at 7:15 p.m. C.S.T. in the Forest Room of the Sheraton Motor Inn in Memphis, Tennessee, on November 21, 1974. Members present were Robert L. Amy, President; Albert L. Myers, President-Elect; J. Gerald Parchment, Past-President; James D. Caponetti, Secretary; Robert L. Wilson, Treasurer; Gus Tomlinson, Journal Editor; John H. Bailey, Director of the Junior Academy; Richard J. Raridon, Director of the Collegiate Division; Winifred L. Smith, Director of the Reelfoot Lake Program; Jerry Rice, Consultant on Science Education Activities; Diane Nelson and Julian T. Darlington, Members-at-Large.

The Secretary's Minutes of the January, 1974, Executive Committee Meeting were accepted.

The Treasurer submitted an audited report which appears elsewhere along with the Report of the Auditor. Both reports were accepted.

The Editor submitted the following report:

Four Numbers of Volume 49 have been published since the annual meeting last November. Each issue was published and mailed on schedule during this year. In addition to the regular annual inclusions in the Journal, i.e., proceedings, news items, awards, current events, abstracts, reports, index, etc., the 1974 Volume contains twenty-eight regular manuscripts and the Reelfoot Lake Report. The April issue was devoted primarily to two-year colleges and has proved to be a popular issue. The breakdown by subject area for 1974 inclusions in the Journal is as follows:

Reelfoot Lake Report	1	High School Science	2
Abstracts (sets)	2	General Science	1
Botany	4	Proceedings	1
Chemistry	2	News Events (sets)	4
Geology-Geography	3	Two-Year Colleges	3
Zoology	11	Mathematics	1
General Medical Sciences	1	Book Review	1

The January, 1975 issue of JTAS is in preparation. October 18, 1974, twelve manuscripts, fully marked and edited for publication, were placed in the possession of the printer for the January, 1975 issue. Page proofs have been promised by the end of November. In addition to the manuscripts already scheduled for the January issue, twelve have been accepted for publication, five additional manuscripts are in author revision, and one manuscript is being reviewed by a sectional editor. One manuscript was rejected during 1974, after several attempts to get the manuscript revised to meet objections of the Editor and Sectional Editor. The breakdown by subject area for the manuscripts to be included in the January, 1975 issue and the eighteen manuscripts which are in some phase of preparation is as follows:

January 1975 Issue	Eighteen Manuscripts in Preparation		
Zoology	6	Zoology	4
Geology	2	Geology-Geography	2
Geography	1	Botany	4
Botany	2	Chemistry	2
Chemistry	1	Mathematics	2
		General Science	2
		High School Science	2

The current backlog of eighteen manuscripts compares with ten in 1973, ten in 1972, twenty-five in 1971, and thirty-four in 1970. 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 thirty-five during 1973) were received during 1974. Twenty-four of these have already been published or are scheduled for publication in the January issue 1975. Among the eighteen unpublished manuscripts which were received during the year, six were received only recently and are still in the review process. 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 six manuscripts submitted for publication in JTAS in 1974 as compared to 1973 means that authors and researchers are beginning to feel this means that authors and researchers are beginning to feel this way. 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 \$212 per month in 1974 as compared to \$182 per month in 1973. Although the high student turn over 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 administrative changes at Peabody College, it should be possible to hold monthly costs for 1975 to approximately \$250 per month.

At the November, 1972 meeting, the Executive Committee authorized the Editor to negotiate with AMS Press, Inc. in the New York for the purpose of microfilming back copies of the Journal to alleviate the space problem that exists in housing

back copies at Peabody, Vanderbilt University, and Austin Peay State University. Following this authorization, the Editor proceeded to put together a complete set of back issues of the Journal by "pooling" the resources of APSU, Peabody and Vanderbilt. Finally, a complete set back to 1926 was compiled. A contract with AMS Press, Inc. to place all back issues on microfilm and microfiche was negotiated and signed by the Editor February 1, 1973. The contract did not require additional funds from the Academy. The complete back copy set was then forwarded immediately to AMS Press, Inc., with the contractual agreement that microcopy would be completed and the back issues returned to the Editor within one year. Confirmation of this contract and agreement to proceed with microfilming was received from Mr. John Hopper, Editor-in-Chief April 2, 1973. As reported in the Executive Committee meeting of November, 1973, a long period of seeming inactivity followed. Finally, after several letters and telephone calls, Mr. Hopper's assistant, Joseph Scarpula, assured the Editor that all back copies of JTAS had been placed on microfilm. In this conversation of March 22, 1974, Mr. Scarpula stated that AMS had had very bad experiences with microfiche and had decided to discontinue that form of microcopy for the time being.

In July the back copies for the Journal were returned from AMS, Inc. At that time Mr. Hopper and Mr. Scarpula were reminded that the Academy was to receive one copy of the microfilm for its own use at no cost to the Academy. The microfilm copy was not received during the next several weeks after which time Mr. Scarpula and Mr. Hopper were again reminded by letter that the Editor needed the microfilm copy. Finally, the Editor called Mr. Scarpula by long distance on November 7, 1974 and was assured that the microfilm along with pricing catalogs, etc., were already in the mail back to the Academy. The materials have not been received as of the date of this writing. When these materials are received back copies of the Journal at Vanderbilt and other institutions will be ready for removal. All back copies will be retained in the Editor's Office for a period of two years after which time any backlog in excess of forty copies will, by necessity, have to be removed. After four or five years, that backlog will have to be reduced further to about five copies for permanent historical records. Requests for copies which cannot be filled from the Editor's Office will be referred to AMS. Under unusual circumstances, the Editor's Office can provide xerox copies of manuscripts or of whole issues. However, the cost and the personnel to do this prohibits it from being used in a routine manner.

JTAS SUMMARY REPORT FOR 1974

1. One issue of JTAS, the April issue, was primarily devoted to the two-year college movement. In addition, twenty-six regular manuscripts were published during the year.
2. All back issues of JTAS (1926-1974) are now available from AMS Press, Inc., 56 East 13th St., N.Y., N.Y. 10003 on microfilm. Thus, any back copies which have not been available in hardback can now be obtained on microfilm.
3. Forty-one new manuscripts were received during 1974. Of these, twenty-four are already published or are scheduled for publication in the January, 1975 issue. Several of the others were only recently received. Thus, most short, well written manuscripts are getting in print only two or three issues of the Journal after they are accepted for publication.
4. More zoology manuscripts continue to be received than any others. However, the remainder of manuscripts published in 1974 show a wider distribution with respect to subject areas than in previous years.

The Editor's report was accepted.

The Director of the Visiting Scientists Program was absent from the meeting but had arranged with the Secretary to present the following report:

Preparation for the 1974-75 Visiting Scientist Program began in the Spring Quarter of 1974. 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 to participating scientists and newly selected scientists to work in the 1974-75 program. Efforts were made to fill vacancies and strengthen the program by securing personnel who were located within 100 miles of any secondary school requesting their services.

4. Rosters including the names of 96 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.

6. 60 visits to 40 schools were completed in 1973-74.

7. 8,911 students were contacted during the school visitations.

8. 214 teachers were contacted.

9. 209 classes were visited.

10. 11 science and science related areas were requested by the schools.

11. Scientists representing 20 colleges and the Oak Ridge National Laboratory participated in the program.

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.

STATISTICAL SUMMARY

Contacts Made	60
Number of visits	8911
Number of students contacted	214
Number of teachers contacted	209
Number of classes contacted	96

Number of Scientists on Roster

Fields Represented	Geology & Geography
Astronomy	Mathematics
Biology	Medicine & Pharmacy
Chemistry	Physics
Ecology	Psychology
Engineering	
General Science	

The Director's report was accepted.

The Director of the Junior Academy presented his report as follows:

1. The completion and mailing of the Tennessee Junior Academy of Science Handbook and Transactions for the 1973-1974 academic year has been completed and mailed to JTAS participants and participating schools.

2. Completion and mailing of JTAS Newsletters for 1974-1975 to public and private high school officials and science teachers in Tennessee.

3. Approximately 100 papers were received from high school students by the deadline date as announced (February 28).

4. A panel of readers from the science staffs at East Tennessee State University processed and rated the papers in each of six categories.

5. Fifteen papers were selected to be read at the JTAS spring meeting, held on the Vanderbilt campus.

6. Approximately 149 requests for Cover Sheets have been received for participation in the 1974-1975 program. Other requests are anticipated prior to March.

7. The attached financial statement reflects some of the activities of the past year and project activities for the 1974-1975 school year. Energy problems and other conditions could conceivably effect further changes as the school year progresses. These will be handled as events unfold.

8. I am grateful to East Tennessee State University for many contributions of a cooperative staff and administration for facilities and professional staff for help.

9. The completion of the 1974-1975 program will represent ten years that I have served as Director of the Junior Academy.

10. To ETSU, the TAS Senior Academy, the State Department of Education, Vanderbilt University, and the high school science teachers we owe thanks for much untold help.

11. Following my retirement at ETSU, in 1972, I have received encouragement to continue with the Junior Academy

program by Dr. William Pafford, Chairman, General Science and Science Education Department. Dr. Pafford has filled in effectively when I have been unable to participate.

12. Mrs. Jean Knox, Science Education departmental secretary has done much to see that everything moved on schedule. Her help has been invaluable.

The Director's report was accepted.

The Director of the Collegiate Division submitted the following report:

The Collegiate Division of the Tennessee Academy of Science held three regional meetings during the spring of 1974. The Eastern Region met at Roane State Community College on April 6. Eighty-six were in attendance and 20 papers were presented. The Middle Region met at the University of the South on April 20. Thirty-four students and faculty attended and 10 papers were given. The Western Region met at Christian Brothers College on April 6. Twenty-five attended and 8 papers were presented. The total expenses for the period 7-1-73 through 6-30-74 was \$1272.52. Special thanks are due the three regional sponsors, Dr. Robert G. Ziegler of Lincoln Memorial University, Dr. John T. Netterville of David Lipscomb College, and Dr. George E. Rouse of Bethel College.

The Director's report was accepted.

The Academy's representative to the AAS, Richard J. Raridon, submitted the following report:

"I attended the meeting of the Association of Academies of Science in San Francisco on February 26, 1974. During the morning session Dr. Lowell J. Paige of NSF spoke on Science Education: New Demands. During the afternoon delegates from the California, New Mexico, South Dakota, and Wisconsin Academies presented some of their programs. All five of these talks are included in the 1974 Directory and Proceedings of the A.A.S. which each academy officer receives. Also included is a report of one of the A.A.S. delegates to the A.A.S. Council. The individual academies, such as ours, no longer have a direct council representative.

Dr. John Mayor, Director of Education for A.A.A.S., has retired and Dr. Arthur H. Livermore, Deputy Director, has taken his place as A.A.A.S. representative to A.A.S. The new President-Elect of A.A.S. is Dr. Lauren C. Gilman of the University of Miami. I was re-elected to a third term as Secretary-Treasurer of A.A.S. Therefore A.A.S. will pay \$100 toward my expenses to attend the 1975 meeting in New York City on January 27, and I would be available to represent the Tennessee Academy of Science."

The Representative's report was accepted.

The Director of the Reelfoot Lake Program reported that the Reelfoot Lake Program Advisory Committee is in the process of drawing up floor plans for research and living facilities at a specific site in cooperation with the State Department of Conservation. A motion by President-Elect Myers was passed allowing the Director and his advisory committee to work with the architects and planners of the State Department of Conservation on a cooperative Reelfoot Lake instructional program.

The Chairman of the Science Advisory Committee, Dr. J. Gerald Parchment, reported that the committee should re-evaluate its aims and duties. A motion by President-Elect Myers was passed requesting the committee to meet and discuss these duties during the next day (November 22) and report back to the Executive Committee during its January, 1975, meeting. At that time the Chairman of the Science Advisory Committee will be Past-President Robert L. Amy.

The Program Chairman (and President-Elect), Dr. Albert L. Myers, presented the following report:

"Through the cooperation and assistance of many of our members, especially Raymond A. Tanner, Local Arrangement Chairman, a very good program has been made possible. The General Session has four papers: one dealing with the new Museum of Atomic Energy in Oak Ridge, another with possible research and recreation in industrial forestland, and the other two on the use of computer simulation in environmental studies.

The papers in the various sections are as follows:

Botany, 7; Chemistry, 19 (in two concurrent sections); Geology and Geography, 7; Mathematics, 7; Medical Sciences, 14, with

one more paper possible; Physics and Astronomy (joint meeting with Tennessee Section of American Association of Physics Teachers), 17 (in two sections at different times); Science and Mathematics Teachers, 5; Zoology, 25 (in two concurrent sections); Collegiate Division, 9.

The address at the Dinner is on the timely, but perhaps controversial, topic: "Update on Energy," given by H. A. Ricards, Jr., now in marketing with Exxon Company, but with training and experience as a chemical engineer.

I will take the blame for any typographical errors, etc., in the Program. I have already found two, and I am sure there are more."

The Program Chairman's report was accepted.

Old Business

1. The sites for the next three annual meetings are set as follows:

- 1975 at the University of Tennessee at Nashville
- 1976 at the University of Tennessee at Chattanooga
- 1977 at Tennessee Technological University at Cookeville

2. The Secretary and the President-Elect presented a list of proposed amendments to the Constitution and By-Laws of the Academy as follows:

Article II - Section 1. Present Reading:

The membership of the Academy shall consist of seven classes: Members, Fellows, Honorary Members, Sustaining Members, Supporting Member, Life Members, and Patrons.

Proposed reading:

The membership of the Academy shall consist of eight classes: Members, Fellows, Honorary Members, Sustaining Members, Supporting Members, Life Members, Patrons, and Industrial Members.

Action: passed.

Article II - Section 2. Present Reading:

Members. Any person of good moral character, interested or engaged in scientific work may be nominated for membership. Nominations must be endorsed by two members. Members are elected at the annual meeting by a majority of the members present. In the interim between meetings the Executive Committee shall elect members, subject to ratification at the next annual meeting.

Proposed Reading:

Members. Any person of good moral character, interested or engaged in scientific work may be nominated for membership. Nominations should be endorsed by two members. Members are elected at the annual meeting by a majority of the members present. In the interim between meetings the Executive Committee shall elect members, subject to ratification at the next annual meeting.

Action: passed.

Article II - Section 3. Present Reading:

Fellows. Members who are professionally engaged in scientific work and who have advanced science by research or other activities 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 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.

Action: passed.

Article II - Section 4. Present Reading:

Honorary Members. Persons who have attained prominence in, or made outstanding contribution to, science or any other branch of learning, on the recommendation of the Executive Committee, may be elected honorary members at any regular meeting by a three-fourths vote of members present. No more than three honorary members shall be elected in any year.

Proposed Reading:

Honorary Members. Persons who have attained prominence in, or made outstanding contributions to, science or any other branch of learning, including contributions to the Academy, on the recommendation of the Executive Committee, may be elected honorary members at any regular meeting by a three-fourths vote of members present. No more than three honorary members shall be elected in any year.

Action: passed.

Article III - Section 3. Present Reading:

The President-Elect shall, in the absence of the President, preside over all meetings and shall assume the powers and prerogatives of the President. The President-Elect shall become the President at the end of one year.

Proposed Reading:

The President-Elect shall, in the absence of the President, preside over all meetings and shall assume the powers and prerogatives of the President. The President-Elect shall succeed as President at the end of the term of office of the previous President. No person shall serve as President for more than two years.

Action: returned to the proposers for re-wording.

Article III - Section 4. Present Reading:

The Secretary shall keep a record of all meetings of the Academy and of the Executive Committee and shall prepare them for publication in the Journal. He shall conduct all correspondence relating to the Academy. He shall also keep a record of the membership of the Academy and shall inform the Treasurer of any changes affecting the status of members. The address of the Secretary shall be the permanent address of the Academy.

Proposed Reading:

The Secretary shall keep a record of all meetings of the Academy and of the Executive Committee and shall prepare them for publication in the Journal. He shall conduct all correspondence relating to the Academy. He or the Treasurer shall keep a record of the membership of the Academy and they shall keep each other informed of any changes affecting the status of members. The address of the Secretary shall be the permanent address of the Academy.

Action: passed.

Article III - Section 5. Present Reading:

The Treasurer shall receive and disburse all of the funds of the Academy excepting those pertaining to the Reelfoot Lake Biological Station. He shall keep a record of the dues paid by the members. He shall present at the annual meeting a tentative report of the receipts and disbursements to date. In January he shall present for publication in the Journal a detailed written report to the Executive Committee which has been approved by the auditing committee appointed at the preceding annual meeting. The fiscal year shall be the same as the calendar year.

Proposed Reading:

The Treasurer shall receive and disburse all of the funds of the Academy. He shall keep a record of the dues paid by members. He or the Secretary shall keep a record of the membership of the Academy as noted in Section 4 above. He shall present at the annual meeting a tentative report of the receipts and disbursements to date. In January he shall present for publication in the Journal a detailed written report to the Executive Committee which has been approved by the auditing committee appointed at the preceding annual meeting. The fiscal year shall be July 1 to June 30.

Action: passed.

Article III - Section 7. Present Reading:

The Director of the Reelfoot Lake Biological Station shall have charge of the laboratory. He shall select an Advisory Committee, members of which shall be subject to confirmation by the trustees. 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:

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.

Action: passed.

Article IV - Section 1. Present Reading:

The officers of the Academy, the immediate past president, the directors and sponsors of each of the educational programs of the Academy, and three members at large shall constitute the Executive Committee of the Tennessee Academy of Science, Incorporated. Each newly elected President shall appoint one member of the Committee. Each appointed member shall serve for three years. The business of the Academy not otherwise provided for shall be in the hands of the Executive Committee. It shall also pass on any business matters that arise in the interim between meetings, including the election of new members. These latter shall be subject to ratification at the next meeting of the Academy.

Proposed Reading:

The officers of the Academy, the immediate past president, the directors of each of the educational programs of the Academy, a Science Specialist of the Tennessee Department of Education, and three members-at-large shall constitute the Executive Committee of the Tennessee Academy of Science, Incorporated. One member-at-large of the committee shall be appointed by the President at the beginning of each calendar year to serve for a three-year term. The business of the Academy not otherwise provided for shall be in the hands of the Executive Committee. It shall also pass on any business matters that arise in the interim between meetings, including the election of new members. These latter shall be subject to ratification at the next meeting of the Academy.

Action: passed.

Article IV - Section 6. Present Reading:

The Executive Committee of the Academy shall appoint a representative to the Council of the A.A.A.S. and Academy Conference who meets the requirements established by the A.A.A.S.

Proposed Reading:

The Executive Committee shall appoint a delegate to the Section X Committee of the A.A.A.S. and a delegate to the Association of Academies of Science.

Action: in second line of proposed reading, change "a delegate" to "a delegate(s)"—passed.

Article IV - Section 7. Present Reading:

The following Committees shall be standing Committees of the Tennessee Academy of Science.

Auditing Fellows Membership	Necrology Nominating Program	Tenn. Science Talent Search Research Resolutions
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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:

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

Auditing Fellows Membership	Necrology Nominating Program	Research Resolutions Science Advisory
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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.

Action: passed.