

THE EIGHTIETH MEETING OF THE TENNESSEE ACADEMY OF SCIENCE

NOVEMBER 20-21, 1970
SOUTHWESTERN AT MEMPHIS

The eightieth meeting of the Tennessee Academy of Science was held November 20-21, 1970, at Southwestern at Memphis, Memphis, Tennessee. Dr. Clinton L. Baker, Professor of Biology at Southwestern, was Chairman of the Local Arrangements Committee, and Dr. Richard J. Raridon, Oak Ridge National Laboratory, was Program Chairman.

A total of 308 persons registered for the meeting. Of these, 172 were university-college professors, 97 were university-college students, 3 were high school teachers, 1 was from the T.V.A., 5 were from ORNL, 12 were from private industry, 14 were from state divisions, 3 were from the U.S. Geologic Service, and 1 was a zoo director.

The General Session was held in Room B of the Frazier Jelke Science Center on Friday morning beginning at 10:00 a.m. C.S.T. President James L. Wilson presided and the welcome was delivered by Dr. William L. Bowden, newly inaugurated, 17th President of Southwestern at Memphis. The theme of the session was pollution. Section meetings were held Friday afternoon; 73 papers were presented. The Annual Business Meeting was held in Room B of the Frazier Jelke Science Center at 5:00 p.m. C.S.T.

The Annual Dinner was held in the Southwestern Burrow Refectory at 7:30 p.m. C.S.T., Friday evening. Dinner tickets were purchased by 125 persons. President James L. Wilson presided, and the address was delivered by Dr. Jack W. Powers, Research Corporation, Atlanta, Georgia, who spoke on "Innovations in Science Teaching."

The Collegiate Division held its meeting on Saturday morning at 9:00 a.m. C.S.T. in Room C of the Frazier Jelke Science Center. Dr. Richard J. Raridon, Director of the Collegiate Division, chaired the meeting, and 13 papers were presented by college students.

ANNUAL BUSINESS MEETING

The annual business meeting of the Tennessee Academy of Science was called to order by President James L. Wilson at 5:10 p.m. C.S.T. in Room B of the Frazier Jelke Science Center at Southwestern at Memphis in Memphis, Tennessee, on November 20, 1970. Forty-three persons were present.

The *Secretary* reported that during 1970, there were 49 new members, four drops, and eight deaths reported to the Secretary. During the annual meeting, there were 52 new memberships. Total Academy membership now stands at 924. A motion was seconded and passed to approve all 1970 applications for memberships.

The reports of the *Treasurer*, the *Editor*, the *Director of the Collegiate Division*, the *Director of the Junior Academy*, the *Director of the Visiting Scientists Program*, the *President*, and the *Director of the Reelfoot Lake Biological Station* were similar to those presented earlier at the Executive Committee meeting. Again, all reports were approved by a passed motion.

The *President* asked the Academy's representative to the A.A.A.S., James D. Caponetti, to read his reports of the Academy Conference Meeting and the A.A.A.S. Council Meeting held in Boston, Massachusetts, on December 30, 1969. These reports are not reproduced here because they are contained in the Minutes of the January, 1970, Executive Committee Meeting.

The *Chairman of the Fellows Committee*, Dr. Arthur W. Jones, presented the following members of the Academy as nominees to be named Fellows of the Academy:

1. Brother Edward Doody, Christian Brothers College, Memphis.
2. George W. Edwards, Lambuth College, Jackson.
3. Nelson Fuson, Fisk University, Nashville.
4. Robert W. McGowan, Memphis State University, Memphis.

5. Cartter Patten, 831 Georgia Avenue, Chattanooga.

6. Charles D. Proctor, Meharry Medical College, Nashville.

A motion was seconded and passed that those named be made Fellows of the Academy.

The *Chairman of the Membership Committee*, Johnny O. Younghanse, submitted the following report:

"The membership committee has continued the 'double the membership' campaign during this year. The membership has not doubled; however, some 800-1,000 membership applications have been distributed through the members. The effects of this campaign cannot be evaluated at this time, but according to the secretary, the results are encouraging. The chairman wishes to express his appreciation to the members of this committee: Robert E. Martin, Robert G. Litchford, Christopher P. Keim, Kenneth D. Burnham, Raymond L. Tanner, Robert L. Amy, and John A. Patten."

A motion was seconded and passed to accept the report.

The *Chairman of the Necrology Committee*, Floyd M. Ford, requested that the audience stand and observe silent prayer while he read the names of eight members whose deaths came to his and the Secretary's attention during the past year.

1. Mr. Jesse W. Fox, Memphis State University, Memphis.
2. Mrs. Burt R. Francis, Kingston Springs.
3. Dr. Hugh D. Miser, Washington, D.C.
4. Mr. C. A. Mooers, Knoxville.
5. Dr. Thomas C. Carson, East Tennessee State University, Johnson City.
6. Dr. Loyal Durand, Jr., The University of Tennessee, Knoxville.
7. Mr. Huston E. Hood, Mosta Mesa, California.
8. Dr. Paul J. Haigh, Carson-Newman College, Jefferson City.

After a motion was introduced and seconded to accept the chairman's report, Dr. John H. Bailey of East Tennessee State University announced that Richard Stevenson who was formerly associated with East Tennessee State University, had passed away during the year. The motion was passed to accept the Chairman's report. At the Annual Dinner, Dr. Glenn Gentry reported to the Secretary that Dr. Joseph C. Ireland, Bethel College, McKenzie, had passed away. The Secretary made inquiry to the Chairman of the Division of Sciences and Mathematics at Bethel College concerning Dr. Ireland. Dr. Larry Black answered that Dr. Ireland passed away September 30, 1970, at Watertown, Tennessee. He was 77 years of age and had served as Professor of Biology at Bethel College from 1958 to 1968.

The *Chairman of the Nominating Committee*, Gustave H. Lundberg, presented the following nominations for the year 1971:

1. Dr. Richard J. Raridon, President.
2. Dr. Arthur W. Jones, President-Elect.
3. Dr. James D. Caponetti, Secretary.
4. Dr. Robert L. Wilson, Treasurer.

President Wilson asked for further nominations from the floor; there were none. A motion by Dr. Malcolm Owen was seconded and passed to bring further nominations to a close, and instructing the Secretary to cast one vote which would represent the unanimous election of each candidate to his respective office.

The *Chairman of the Program Committee*, Richard J. Raridon, presented a short oral report thanking all section chairmen for their help in making the section meetings a success. A motion was seconded and passed to accept the chairman's report.

There were no reports from the *Science Talent Search* and *Research Committees*.

The *Chairman of the Resolutions Committee*, Norman Campbell, read the following resolutions:

"WHEREAS, the Tennessee Academy of Science, including the Collegiate Division, is enjoying a most pleasant, profitable,

and well-organized series of meetings at Southwestern at Memphis, 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, Clinton L. Baker, Chairman, Robert L. Amy, Julian T. Darlington, Robert R. Jones, Arlo I. Smith, James W. Witherspoon, and Carl Johnson, from recognition given the meetings by the various news media, and from the generous hospitality of our host institution,

"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 Administration and Finance,

"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 Administration and Finance 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 a part of the Proceedings of this meeting and that copies be sent to President William L. Bowden of Southwestern at Memphis; Dr. Clinton L. Baker, Chairman of the Committee for Local Arrangements; the Tennessee Commissioner of Education, the Honorable Howard Warf; and the Tennessee Commissioner of Administration and Finance, the Honorable Harlan Mathews."

A motion was seconded and passed to approve the resolutions.

OTHER BUSINESS

1. President Wilson announced to the audience that the Executive Committee had accepted the invitation of Dr. John A. Patten, Head of the Biology Department, Middle Tennessee State University, Murfreesboro, to hold the 1971 annual meeting of the Academy on November 19-20.

2. President Wilson discussed the financial plight of the Academy and summarized the decisions reached by the Executive Committee concerning the industrial brochure, notice for voluntary donations, and a registration fee at annual meetings. The full statements of these decisions are in the Minutes of the Executive Committee Meeting. A motion by Dr. Malcolm Owen was seconded and passed to approve the decisions and entrust them to the Executive Committee.

The annual business meeting was adjourned at 6:15 p.m. C.S.T.

REPORT OF THE TREASURER OF THE TENNESSEE ACADEMY OF SCIENCE

JANUARY 1, 1970 TO DECEMBER 31, 1970

ROBERT LAKE WILSON, TREASURER
University of Tennessee at Chattanooga

Cash in Bank, January 1, 1970	\$ 9,427.78
Receipts:	
Membership	\$ 3,077.00
Journal Subscriptions	1,013.75
Advertising and Cuts	130.00
Sale of Publications	215.00
AAAS Grant	200.00
State Grant	11,500.00
Junior Academy loan repayment	500.00
Total Receipts	16,635.75
Total Cash available	\$26,063.53

Disbursements:

President's Office Expenses	\$ 200.18
Secretary's Office Expenses	375.84
Editor's Office Expenses	450.00
Treasurer's Office Expenses	739.26
Journal Expenses	5,685.10
Executive Committee Meeting	515.78
AAAS Meetings	201.09
Dues AAAS	36.44
Seminar Exchange Program	32.89
Fidelity Bond	62.50
Miscellaneous	13.83
AAAS Scholarships	334.00
Academy Programs TJAS-CD-VSP	9,000.00
Loan to Junior Academy	500.00
Total Disbursements	\$18,146.91
Book Balance, December 31, 1970	\$ 7,916.62
Add: Outstanding Checks	48.11
Bank Balance, December 31, 1970	\$ 7,964.73

REPORT OF THE AUDITOR

"I have examined the Treasurer's Report of cash receipts and disbursements, operations account, for the period, January 1, 1970 to December 31, 1970.

In my opinion, on the basis of information made available to me, the statements fairly present the transactions of these accounts. Signed by RAYFORD J. MCLAURIN."

NEW MEMBERS TENNESSEE ACADEMY OF SCIENCE FOR 1970

- Anderson, Samuel W., Box 24, Lee College, Cleveland, Tenn. 37311
- Andrews, Dr. Hollings T., Biol. Dept., Tenn. Tech. Univ., Cookeville 38501
- Atkins, Howard K., Dept. of Biology, Hiwassee College, Madisonville 37354
- Ayers, Dr. Jerry B., College of Education, Tenn. Tech. Univ., Box 5-A, Cookeville 38501
- Bamford, Ross, Law Engineering Testing Co., Box 1231, Birmingham, Ala. 35201
- Beasley, Padge, Jr., 87 W. Lafayette Circle, Memphis 38111
- Benson, Dr. Bernard W., Dept. of Education, The Univ. of Tenn., Chattanooga 37403
- Black, H. Delano, Dept. of Biology, Memphis State Univ., Memphis 38111
- Black, Dr. John L., Dept. of Biology, Box 89, Bethel College, McKenzie 38201
- Blackwell, Dr. Leo H., UT Radiation Biology, 800 Madison Ave., Memphis 38103
- Boercker, Dr. Fred, Physics Dept., Austin Peay State Univ., Clarksville 37040
- Bowles, Rebecca R., 4997 Warwick, Memphis 38117
- Breeden, Dr. John, David Lipscomb College, Nashville 37203
- Browne, Dr. Edward T., Jr., Dept. of Biology, Memphis State Univ., Memphis 38111
- Bryan, Norman L., 512 E. College Ave., Carthage 37030
- Burns, James B., Dept. of Biology, Univ. of Tenn., Chattanooga 37403
- Burton, Dr. John W., Box 1917, Physics Dept., Carson-Newman College, Jefferson City 37760
- Busby, Stephen Paul, 6153 Harwick Drive, Memphis 38117
- Byrd, John G., 117 Pratt Lane, Oak Ridge 37830
- Cantrell, Dr. William F., Dept. of Pharmacology, Univ. of Tenn. Medical Units, Memphis 38103
- Caudill, Hubert H., 107 Dixie Lane, Oak Ridge 37830
- Chatman, Tony, 316-C January St., Murfreesboro
- Chester, William W., Physical Sciences Dept., The Univ. of Tenn., Martin 38237
- Claxton, Larry Davis, 3541 Midland, Memphis 38111
- Coffey, Michael T., The Univ. of the South, Box 171, Sewanee 37375

- Coppert, Cydnee Hale (Miss), 1512 Kirby Ave., Chattanooga 37404
- Craig, John C., Jr., David Lipscomb College, Nashville 37203
- Davis, Dr. Kenneth B., Jr., Dept. Biology, Memphis State Univ., Memphis 38111
- Davis, Stephen F., Dept. of Psychology, King College, Bristol 37620
- DeGroot, James H., The New Jersey Zinc Co., 209 Industrial Drive, Carthage 37030
- D'Encarnacao, Dr. Paul S., Dept. of Psychology, Memphis State Univ., Memphis 38111
- Dennison, Dr. Clifford C., Lee College, Cleveland 37311
- Dockery, Dianne E., Box 7061, Middle Tenn. State Univ., Murfreesboro 37130
- Dunigan, Dr. C. James, Dept. of Geog. & Geol., Austin Peay State Univ., Clarksville 37040
- Edmondson, Larry E., 210 E. 15th St., Cookeville 38501
- Edwards, Donald B., 1000 E. Watauga, Johnson City 37601
- Evans, Dr. James D., Dept. of Anatomy, UT Medical Units, Memphis 38103
- Fischer, Frederick T., 1518 Sulphur Springs Road, Murfreesboro 37130
- Fitzgerald, Francis, #1 Seville Apt., Lebanon 37087
- Garavelli, Dr. Caesar B., 3319 Lucibill, Memphis 38116
- Gibson, Dennis, 1301 Clifton Lane, Nashville 37215
- Godfrey, Dr. Andrew E., Vanderbilt Univ., Box 14, Station B, Nashville 37203
- Griffith, Robert V., Lee College, Cleveland 37311
- Hammond, Amy L., 1151 Laurel Ave., Apt. L., Knoxville 37916
- Hatmaker, Charlene, 1718 Green Hills Drive, Hixson 37343
- Heffner, Sister Jean Clare, O.P., Siena College, 4405 Poplar Ave., Memphis 38117
- Heilman, Nita R., 2141 Post Road, Clarksville 37040
- Henderson, Jerry S., Box 2323, E. Tenn. State Univ., Johnson City 37602
- Holland, Dr. Charles W., Box 106, Middle Tenn. State Univ., Murfreesboro 37130
- Hostetter, John A., Lambuth College, Jackson 38301
- Houff, Dr. Harry P., Physical Sciences Dept., The Univ. of Tenn., Martin 38237
- Hughes, Ray H., Jr., Lee College, Cleveland 37311
- Hunt, Dr. W. Everett, Dept. of Physics, David Lipscomb College, Nashville 37203
- Jackson, Joseph W., Pine Hill Estates, Blountville 37617
- Johnson, Carl E., 2415 Drake Cove, Memphis 38106
- Keller, Dr. Wayne H., Apt. C-8, 189 Old Hickory Blvd., Jackson 38301
- Krumpe, Paul F., The Univ. of Tenn., 408 10th St., Knoxville 37916
- Kuhlman, Dr. H. H., Southern Missionary College, Collegedale 37315
- Lester, Lane P., Dept. of Biology, The Univ. of Tenn., Chattanooga 37403
- Lounsbury, Dr. Richard W., Dept. of Geology, Memphis State Univ., Memphis 38111
- Lovell, Denis C., Box 1744, Middle Tenn. State Univ., Murfreesboro 37130
- Lumsden, Dr. David N., Dept. of Geology, Memphis State Univ., Memphis 38111
- Marlin, Ruth Owen, Dept. of Pathology, Univ. of Tenn., 858 Madison, Memphis
- Mason, Dr. James M., 858 Madison, Memphis
- Mason, James Michael, 2639 Central Ave., Apt. F-3, Memphis 38104
- Massey, Felix M., Nilewood Apts., #13, Murfreesboro 37130
- Maynard, Ernest G., Box 427, Lee College, Cleveland 37311
- McPherson, Dr. James L., Lee College, Cleveland 37311
- Meistrell, F. J., 1150 Vultee Blvd., Nashville 37217
- Miller, Harold J., Hiwassee College, Madisonville 37354
- Murphy, Mrs. Brenda S., Box 538, Middle Tenn. State Univ., Murfreesboro 37130
- Murphy, Dr. George, Box 538, Middle Tenn. State Univ., Murfreesboro 37130
- Nelson, Dr. DeVaughn R., Box X, Oak Ridge National Lab., Oak Ridge, 37830
- Nelson, Mrs. Diane R., Box 2739, East Tenn. State Univ., Johnson City 37602
- Nickell, Rev. Marcus, Martin College, Pulaski 38478
- Norton, Mrs. Virginia M., 637 Showell, Memphis 38111
- Odom, Franklin, Route 8, Villa Road, Cleveland 37311
- Owen, Miss Patty Jill, Box 3148, Middle Tenn. State Univ., Murfreesboro 37130
- Owens, Michael H., Box 153, Carthage 37030
- Parker, Nick C., 628 Normal, Memphis 38111
- Patterson, James E., Box 10282, Tenn. Tech. Univ., Cookeville 38501
- Peterson, Dr. Glen E., Dept. of Biology, Memphis State Univ., Memphis 38111
- Phillips, Charles W., LeMoyné-Owen College, Memphis 38112
- Pierce, Carol Virginia, 1565 S. Perkins, Memphis 38117
- Ramage, Dr. Donald R., Belmont College, Dept. of Biology, Nashville 37203
- Reed, Mrs. Gretchen M., Dept. of Anatomy, The Univ. of Tenn. Medical Units, Memphis 38103
- Reese, Marshall E., Jr., Dept. of Zoology & Entomology, Univ. of Tenn., Knoxville 37916
- Reynolds, John W., 1611 Laurel Avenue, S.W., Knoxville 37916
- Rice, Wm. J., 1005 Murfreesboro Road, Room 205, Nashville 37214
- Riggs, Dr. Morris P., Lee College, Cleveland 37311
- Rushton, Dr. Priscilla J., Dept. of Biology, Memphis State Univ., Memphis 38111
- Russell, Timothy G., Phillips Petroleum Co., Box 6, Abu Dhabi, Trucial States, Arabian Gulf
- Savage, Dr. Richard P., Box 5054, Tenn. Tech. Univ., Cookeville 38501
- Schmitt, Charles R., 104 Paris Lane, Oak Ridge 37830
- Schuijer, John Paul, 3020 Baron Ave., #14, Memphis 38114
- Shaw, Conrad E., Tenn. Div. of Geology, G-5 State Office Bldg., Nashville 37203
- Sierk, Dr. Herbert A., Dept. of Biology, Union Univ., Jackson 38301
- Stanley, George, Jr., 302 Patterson St., Memphis 38103
- Stickney, Webster T., Occidental Minerals Corp., Carthage 37030
- Stiles, Dr. Robert N., Div. Clinical Physiology, Univ. of Tenn., 62 S. Dunlap, Memphis 38103
- Sweeney, James O., Jr., 1211 N. Academy, Murfreesboro 37130
- Thompson, Lillian, 3206 Montview Drive, Chattanooga 37411
- Tipton, Mr. R., Southwestern at Memphis, Memphis 38112
- Triplett, Larry L., Biology Div., Oak Ridge National Lab., Box Y, Oak Ridge 37830
- Vogel, Dr. Howard H., Jr., Univ. of Tenn., College of Medicine, Dept. of Radiology—Chandler Bldg., Memphis 38103
- Walton, Dr. Barbara A., 950 Springcreek Road, Apt. 207, Chattanooga 37412
- Walton, Walter R., Box 663, Lee College, Cleveland 37311
- White, Mr. Doss H., U. S. Bureau of Mines, 301 W. Cumberland Ave., Knoxville 37902
- White, James B., DeVille Apts., J-4, Murfreesboro 37130
- White, Dr. June B., Box 1071, Union Univ., Jackson 38301
- Williams, Dr. James C., Chem. Dept., Memphis State Univ., Memphis 38111
- Wilson, Dr. David, Dept. of Chem., Vanderbilt Univ., Nashville 37204
- Wilson, Dr. Robert John, Univ. of Tenn. Section Radiation Physics, 800 Madison Ave., Memphis 38103
- Woodruff, Byron Lee, Box 8173, Austin Peay State Univ., Clarksville 37040
- Wright, Nick S., Route 4, Livingston 38570
- Wyatt, Dr. Jimmy T., Dept. of Biology, East Tenn. State Univ., Johnson City 37601
- Zachry, Joel Glen, Box 300, Kingston 37763