

JOURNAL
OF THE
Tennessee Academy of Science

VOLUME 80

NUMBER 3-4

CONTENTS

| | |
|---|----|
| Detection of <i>Borrelia burgdorferi</i> Sequences in a Biopsy from a Tennessee Patient. <i>Joy M. Haynes, Prescott P. Lee, Rebecca L. Seipelt, and Stephen M. Wright</i> | 57 |
| Insect Species Associated with Eastern Hemlock in the Great Smoky Mountains National Park and Envirions. <i>L. Buck, P. Lambdin, D. Paulsen, J. Grant, and A. Saxton</i> | 60 |
| Abstracts of Papers Presented at the 2005 Collegiate Meetings | 70 |
| Student Presentation Awards at the 2005 Collegiate Meetings | 82 |
| The Tennessee Junior Academy of Science | 83 |
| Books and New Media | 85 |
| Announcements | 86 |

JULY-OCTOBER 2005

Tennessee Academy of Science

EXECUTIVE COMMITTEE

President

Stephen M. Wright
Department of Biology, Box 60
Middle Tennessee State Univ.
Murfreesboro, TN 37132

Past-president

J. Michael Redding
Dept. of Biology
Tennessee Tech. Univ.
Cookeville, TN 38505

President-elect

John W. Harris
Dept. of Biology
Tennessee Tech. Univ.
Cookeville, TN 38505

Secretary

Sarah H. Swain
Dept. of Biology, Box 60
Middle Tennessee State Univ.
Murfreesboro, TN 37132

Treasurer

C. Steven Murphree
Dept. of Biology
Belmont University
Nashville, TN 37212

Managing Editor

M. Gore Ervin
Dept. of Biology, Box 60
Middle Tennessee State Univ.
Murfreesboro, TN 37132

Meeting Coordinator

J. Michael Redding
Dept. of Biology
Tennessee Tech. Univ.
Cookeville, TN 38505

Dept. of Education Liaison

Linda Jordan
8th Floor, Gateway Plaza
710 James Robertson Pkwy.
Nashville, TN 37243-0379

Director, Junior Academy

Jack Rhoton
East Tennessee State Univ.
Box 70684
Johnson City, TN 37614-0684

Director, Collegiate Division

Fred Matthews
Dept. of Chemistry
Austin Peay State Univ.
Clarksville, TN 37044

Director, Electronic Communication

James Howard
Dept. of Chemistry
Middle Tennessee State Univ.
Murfreesboro, TN 37132

Director, Visiting Scientist Prog.

Michael L. Daley
Dept. of Electrical Engineering
The Univ. of Memphis
Memphis, TN 38152

Chair, Education

Cindi Smith-Walters
Dept. of Biology, Box 60
Middle Tennessee State Univ.
Murfreesboro, TN 37132

Chair, Financial Oversight

Andrew Stiger
Dept. of Biological Sciences
Univ. of Tennessee, Martin
Martin, TN 38238

Chair, Long Range Planning

George Murphy
Dept. of Biology, Box 60
Middle Tennessee State Univ.
Murfreesboro, TN 37132

Chair, Publicity

Mandy Carter Lowe
Math and Science Dept.
Columbia State Comm. College
Columbia, TN 38402-1315

2003-2005 Member-at-large

Michael Gibson
Dept. of Geol., Geog., Physics
Univ. of Tennessee, Martin
Martin, TN 38238

2004-2006 Member-at-large

Al Hazari
Dept. of Chemistry
Univ. of Tennessee, Knoxville
Knoxville, TN 37916

2005-2007 Member-at-large

Steven W. Hamilton
Center for Field Biology
Austin Peay State University
Clarksville, TN 37044

The TENNESSEE ACADEMY OF SCIENCE was founded in 1912 at Nashville, Tennessee. Membership is open to all teachers and professors of science, research workers in science both in educational institutions and industrial establishments, and all others who are interested in some phase of science. Annual dues are \$30 for members and fellows, except students and emeritus members whose dues are \$10. Life membership is \$300. Applications for membership should be addressed to the Treasurer.

Affiliated societies of the Academy are: American Association for the Advancement of Science (AAAS); Barnard Astronomical Society, Clarence T. Jones Memorial Observatory, Chattanooga; Barnard-Seyfert Astronomical Society, Nashville; National Association of Academies of Science; Tennessee Association of Science Department Chairs; Tennessee Junior Science and Humanities Symposium; Tennessee Entomological Society; Tennessee Ornithological Society, Nashville; Tennessee Psychological Association; and Tennessee Science Teachers' Association.

The JOURNAL OF THE TENNESSEE ACADEMY OF SCIENCE (ISSN 0040313X) is published by the Tennessee Academy of Science, Department of Biology, Belmont University, 1900 Belmont Boulevard, Nashville, TN 37212-3757, for all members not in arrears for dues. The subscription rate is \$30 per year. Single copies of recent issues are \$10. Whole sets of back issues on microfilm are available from AMS Press, Inc., 56 E. 13th Street, New York, NY 10003. Postage paid at: Nashville, TN, and at additional mailing offices. Send address changes to: JOURNAL OF THE TENNESSEE ACADEMY OF SCIENCE, C/O DR. STEVEN MURPHREE, DEPARTMENT OF BIOLOGY, BELMONT UNIVERSITY, 1900 BELMONT BOULEVARD, NASHVILLE, TN 37212-3757.

This Journal is abstracted by Biological Abstracts, Chemical Abstracts, and Nuclear Abstracts, and is indexed by Science Citation Index and Agricola Citations.