


JOURNAL
OF THE
Tennessee Academy of Science

VOLUME LXVIII

NUMBER 1

CONTENTS

- Vascular Flora of Land Between The Lakes, Kentucky and Tennessee: An Updated Checklist. *Edward W. Chester*..... 1
- Antagonism and Infection Inhibition of *Phomopsis phaseoli* by *Bacillus pumilus*. *James W. Hilty* 15
- Water and Nutrient Budgets for Center Hill Lake. *Susannah J. Pucker* and *John A. Gordon*..... 19
- Historical Overview of Tennessee's Mineral Industry: Past and Present
Gregory A. Upham..... 23
-  First Records of Albinism in *Nerodia rhombifer* (Diamondback Water Snake). *Ray D. Burkett* and *James A. Huggins*..... 32

JANUARY 1993

Tennessee Academy of Science

EXECUTIVE COMMITTEE

President
George Murphy
Dept. of Biology
Middle Tennessee State Univ.
Murfreesboro, TN 37130

Past-president
Michael L. Kennedy
Dept. of Biology
Memphis State Univ.
Memphis, TN 38152

President-elect
Wilburn A. Sliger
Dept. of Biological Sciences
Univ. of Tennessee, Martin
Martin, TN 38238-5014

Secretary
Sarah H. Swain
Dept. of Biology
Middle Tennessee State Univ.
Murfreesboro, TN 37130

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

Tennessee Dept. of Education
Geraldine Farmer
Tennessee Dept. of Education
Cordell Hull Building
Nashville, TN 37243-0379

1991-1993 Member-at-large
D. M. S. Bhatia
Dept. of Geology
Austin Peay State Univ.
Clarksville, TN 37044

1992-1994 Member-at-large
John R. Freeman
Dept. of Biology
Univ. of Tennessee, Chattanooga
Chattanooga, TN 37403

Meeting Coordinator
Betty Davis
Univ. School, Box 21460A
East Tennessee State Univ.
Johnson City, TN 37614

Director, Junior Academy
Jack Rhoton
East Tennessee State Univ.
Box 23020A
Johnson City, TN 37614

Director, Collegiate Division
Richard Raridon
111 Columbia Drive
Oak Ridge, TN 37830

Director, Visiting Sci. Program
Wayne Stevenson
Univ. Programs Division
Oak Ridge Associated Labs.
Oak Ridge, TN 37830

Editor
Phyllis K. Kennedy
Dept. of Biology
Memphis State Univ.
Memphis, TN 38152

EDITORIAL BOARD

Editor
Phyllis K. Kennedy
Dept. of Biology
Memphis State Univ.
Memphis, TN 38152

Botany
James D. Caponetti
Dept. of Botany
Univ. of Tennessee
Knoxville, TN 37916

Chemistry
Martin V. Stewart
Dept. of Chemistry and Physics
Middle Tennessee State Univ.
Murfreesboro, TN 37132

Engineering
David Yarbrough
Dept. of Chemical Engineering
Tennessee Tech. Univ.
Cookeville, TN 38505

Geology and Geography
Stuart W. Maher
505 E. Broadway
Kenwill, Inc.
Maryville, TN 37801

History of Science
Phillip J. Lorenz
Dept. of Physics
Univ. of the South
Sewanee, TN 37375

Math and Computer Science
Kirk Menser
Dept. of Math. and Computer Sci.
Austin Peay State Univ.
Clarksville, TN 37044

Medical Sciences
Robert O'Bannon
Dept. of Biology
Lee College
Cleveland, TN 37311

Physics and Astronomy
Martha Weller
Dept. of Chemistry and Physics
Middle Tennessee State Univ.
Murfreesboro, TN 37132

Science and Math Teachers
Sarah F. Barlow
Dept. of Biology
Middle Tennessee State Univ.
Murfreesboro, TN 37132

Zoology I
David H. Kesler
Dept. of Biology
Rhodes College
2000 North Parkway
Memphis, TN 38112

Zoology II
Phyllis K. Kennedy
Dept. of Biology
Memphis State Univ.
Memphis, TN 38152

The TENNESSEE ACADEMY OF SCIENCE was founded in 1912 at Nashville, Tennessee. Membership 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 \$20 for members and fellows, except students and emeritus members whose dues are \$10. Life membership is \$200. 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 Junior Science and Humanities Symposium; Tennessee Ornithological Society, Nashville; Tennessee Psychological Association; and Tennessee Science Teachers' Association.

The JOURNAL OF THE TENNESSEE ACADEMY OF SCIENCE (ISSN 0040313X) is published quarterly at the Department of Biology, Memphis State University, Memphis, TN 38152, by the Tennessee Academy of Science for all members not in arrears for dues. The subscription rate is \$20 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. Send address changes to Tennessee Academy of Science, c/o Dr. Phyllis K. Kennedy, Department of Biology, Memphis State University, Memphis, TN 38152.

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