JOURNAL

OF THE

Tennessee Academy of Science

VOLUME XLIX

NUMBER 4

CONTENTS

Page
Table of Contents, Volume XLIX, 1974
Petrology of a Carbonate Core from the Mississippian Pennington Formation: Sand Mountain, Alabama. Alexander MacGregor and Richard E. Bergenback114
Notes on Crayfishes from the Chickasaw Basin. J. F. Payne and L. A. Riley 125
The Land Planarian, Bipalium kewense Mosely, 1878, in Middle Tennessee. Clay M. Chandler
Problems Encountered in Deriving Activity Coefficient Values from Data on Mixed Electrolyte Systems. M. H. Lietzke and R. W. Stoughton
Studies in the Absolute Configuration of Optically Active Amines Related to Amphetamine and Ephedrine. C. D. Mount, H. E. Smith and R. I. Mani 134
A new record for Necturus maculosus in the Great Smoky Mountains. D. A. Merkle and D. A. Kovacic
Abstracts of Papers Presented at the Spring Collegiate Meetings
Index to Volume XLIX, 1974
News Items, Awards and Current Events

JOURNAL

OF THE

Tennessee Academy of Science

EDITORIAL STAFF

Gus Tomlinson, Editor, George Peabody Coll., Nashville 37203

Bernard W. Benson, High School Science-Mathematics Editor, The Univ. of Tennessee at Chattanooga 37401

James Mason, Medical Sciences Editor, The Univ. of Tennessee, Memphis 38103

JAMES D. CAPONETTI, Botany Editor, The Univ. of Tennessee, Knoxville 37916

ROY W. CLARK, Physics-Astronomy Editor, M.T.S.U., Murfreesboro, Tennessee 37130

ROBERT GOODRICH, Interim Engineering Editor, Vanderbilt

University, Nashville, Tennessee 37203
ROBERT G. LITCHFORD, Zoology Editor, The Univ. of Tennessee at Chattanooga 37403

STUART W. MAHER, Geology-Geography Editor, Tennessee Division of Geology, Knoxville 37919

JOHN T. NETTERVILLE, Chemistry Editor, David Lipscomb College, Nashville 37203

JAMES STACE, Mathematics Editor, Austin Peay State Univ., Clarksville 37040

All articles and communications for publications, books, and publications for review, should be addressed to the Editor.

New subscriptions, changes of address and applications for membership should be addressed to the Secretary. Personal items, news of events in the scientific world, and other notes suitable for the "News of Tennessee Science" department should be addressed to the Editor.

Published quarterly, in January, April, July and October, by the Tennessee Academy of Science at Box 153, George Peabody College, Nashville, Tennessee 37203.

The JOURNAL is sent to all members not in arrears for dues. The subscription price is \$8.00 a year, invariably in advance. Single copies \$3.00.

Second Class Postage Paid at Nashville, Tennessee.

THE TENNESSEE ACADEMY OF SCIENCE

(Founded 1912, at Nashville, Tennessee) Affiliated with the American Association for the Advancement of Science

Affiliated Societies

Tennessee Ornithological Society, Nashville, Tennessee Barnard Astronomical Club, Nashville Tennessee Science Teachers' Association Tennessee Psychological Association Tennessee Junior Science and Humanities Symposium

Officers

Albert Myers, President Elect, Carson-Newman Coll., Jefferson City 37760

ROBERT AMY, President, Southwestern, Memphis 38112
Gus Tomlinson, Editor, George Peabody Coll., Nashville
37203

JAMES D. CAPONETTI, Secretary, Univ. of Tennessee, Knoxville 37916

ROBERT WILSON, Treasurer, Univ. of Tennessee at Chattanooga, Chattanooga 37403

WINTFRED SMITH, Director, Reelfoot Lake Biol. Sta., at U.T., Martin 38237

Executive Committee

ROBERT L. AMY, Southwestern, Memphis 38112

JOHN H. BAILEY, East Tennessee State Univ., Johnson City 37602

James D. Caponetti, Univ. of Tennessee, Knoxville 37916
Julian T. Darlington, Southeastern, Memphis 38112

ROBERT E. MARTIN, Tennessee Technological Univ., Cookeville 38501

Albert Myers, Carson-Newman Coll., Jefferson City 37760 DIANE NELSON, E.T.S.U., Johnson City 37601

JOHN G. PARCHMENT, Middle Tennessee State Univ., Murfreesboro 37130

RICHARD J. RARIDON, ORNL, Oak Ridge 37831

JERRY RICE, State Dept. of Education, Nashville 37219

WINTFRED SMITH, Univ. of Tennessee at Martin, Martin 38237

Gus Tomlinson, George Peabody Coll., Nashville 37203 A. Paul Wishart, The Univ. of Tennessee, Knoxville 37916

NOTICE TO AUTHORS

Manuscripts submitted for publication in the JOURNAL should be sent to the Editor. Manuscripts must be approved by the Editor and the appropriate Section Editor before publication. Manuscripts should be submitted in duplicate, typewritten, double spaced with wide margins, and with legends for figures typed on a separate page. Recent issues should be consulted with regard to matters of style. Each table should be placed on a separate sheet. Footnotes should not be used except very rarely. Greek letters and symbols should be avoided as much as possible.

Each paper should be supplied with an abstract not to exceed 250 words.

Photographs (black and white glossy prints) may be accepted as illustrations; however, line drawings and diagrams are preferable. Drawings should be made in India ink on white paper or Bristol Board. An article containing more than 2 illustrations can be published only with financial cooperation of the author.

A per page charge of \$10.00 will be made to industrial contributors.

A blank form for ordering reprints from the printer is enclosed with the galley proof. The cost of reprints is as follows:

Tonowa	2	4	8	12	16
100 copies Ea. add. 100	pages \$12.00 2.00	pages \$20.00 3.00	pages \$38.00 8.50	pages \$47.00 12.25	\$56.00 16.00

The Tennessee Academy of Science is very anxious to include in its 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.

The annual dues are \$8.00 for members except teachers below the college level, whose dues are \$5.00, student dues are \$3.00 and a life membership is \$100. Dues may be sent direct with your application for membership to the Secretary.

This journal is abstracted by Biological Abstracts, Chemical Abstracts, and Nuclear Abstracts, and indexed by Science Citation Index.

JOURNAL OF THE Tennessee Academy of Science

VOLUME XLIX

NUMBER 4

TABLE OF CONTENTS

VOLUME XLIX, 1974

NUMBER 1, JANUARY	NUMBER 3, JULY
	Page
Report of the Director of the Reelfoot Lake Biological Station, Wintfred L. Smith	Fishes of the Hiwassee River System—Ecological and Taxonomic Considerations. Robert K. Hitch and
A View on the Origin of a Modern State. Clifton C. Carpenter	David A. Etnier 81 The Mammals of Northeastern Tennessee. Charles K.
Semiprime Goldie Rings Satisfy the Invariant (Quasi-) Basis Property. James C. Pleasant	Smith, Jack Giles, M. E. Richmond, Jerry Nagel and D. W. Yambert
A Taxonomic and Ecological Study of Some Algae in Two Ponds in South Shelby County, Tennessee. Martha	Observations Concerning the Use of Derivative Maps in Comprehensive Community Planning. Phillip R.
Powell BrownEarth Science Teacher Preparation: A State-Wide	9 Kemmerly 95 A Decade of Agricultural Change in Delicias, Chihuahua.
Perspective. R. Jerry Rice and James X. Corgan Immature Stages of Some Eastern Nearctic Tabanidae	
(Diptera). V. Stenotabanus (Aegialomyia) magnicallus	Dale Thomas and Paul S. Marx104
(Stone). James C. Goodwin	Insects. Morgan E. Sisk105
Tennessee. John W. Reynolds Some Aspects of the Autecology of Bupleurum rotundi-	F. Graves, Jr. and Michael J. Harvey106
folium in Tennessee Cedar Glades. Jerry M. Baskin and Carol C. Baskin	Book Review: A Creationist Text. Arthur W. Jones110 21 News Items, Awards and Current Events103, 109, 112
Undergraduate Research: It Can Be Done in a Liberal Arts College. Carl Tabb Bahner	
Effects of Coumarin Upon Plant Growth and Development. Frederick T. Wolf	
Mobile Environmental Education Laboratory Project: Development, Implementation and Evaluation. Ronald	NUMBER 4, OCTOBER
B. Childress Cockroach Collections from Tennessee (Blattaria: Blat-	Table of Contents, Volume XLIX, 1974113 Petrology of a Carbonate Core from the Mississippian
tellidae). Frank W. Fisk TAS News Events and Announcements	Pennington Formation: Sand Mountain, Alabama.
1AS News Events and Announcements	Alexander MacGregor and Richard E. Bergenback 114 Notes on Crayfishes from the Chickasaw Basin. J. F.
NUMBER 2, APRIL	Payne and L. A. Riley
New President of the Tennessee Academy of Science	Middle Tennessee. Clay M. Chandler128
Proceedings of the Tennessee Academy of Science Abstracts of Papers Presented at the Annual Meeting	Values from Data on Mixed Electrolyte Systems. M.
The Two-Year College: An Historical Sketch of the National and Regional Scenes. James C. Perry, Jr.	H. Lietzke and R. W. Stoughton
A Profile of Tennessee Community Colleges. Frank C. Bell, Jr.	Active Amines Related to Amphetamine and Ephedrine.
Science in the Tennessee Community Colleges. Michael A. Dorset	A new record for Necturus maculosus in the Great Smoky
Pond and Cage Culture of Channel Catfish in Virginia.	Abstracts of Papers Presented at the Spring Collegiate
Donald W. Holmes, Vaughn M. Douglass and Robert	Meetings
T. Lackey News Items, Awards and Current Events	