

JOURNAL
OF THE
Tennessee Academy of Science

VOL. XLVII

NO. 1

CONTENTS

THE MEMOIRS OF SAMUEL COLVILLE LIND		Page
CHAPTER 1.	MY FAMILY AND MY YOUTH IN McMinnville, Tennessee . . .	3
CHAPTER 2.	WASHINGTON AND LEE UNIVERSITY	6
CHAPTER 3.	MASSACHUSETTS INSTITUTE OF TECHNOLOGY, BOSTON	7
CHAPTER 4.	THE UNIVERSITY OF LEIPZIG, GERMANY	9
CHAPTER 5.	THE UNIVERSITY OF MICHIGAN	14
CHAPTER 6.	MADAME CURIE'S LABORATORY, PARIS	17
CHAPTER 7.	THE RADIUM INSTITUTE IN VIENNA	19
CHAPTER 8.	CARNOTITE IN COLORADO	20
CHAPTER 9.	THE BUREAU OF MINES IN RENO	26
CHAPTER 10.	WASHINGTON, D. C.	29
CHAPTER 11.	THE UNIVERSITY OF MINNESOTA	32
CHAPTER 12.	OAK RIDGE, TENNESSEE	37

JANUARY, 1972

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
- BRYANT BENSON, *Medical Sciences Editor*, The Univ. of Tennessee, Memphis 38103
- JAMES D. CAPONETTI, *Botany Editor*, The Univ. of Tennessee, Knoxville 37916
- FREDERICK L. CULP, *Physics-Astronomy Editor*, Tennessee Technological Univ., Cookeville 38501
- JAMES B. DELANO, *Engineering Editor*, 301 Park Circle, Tullahoma 37388
- ROBERT G. LITCHFORD, *Zoology Editor*, The Univ. of Tennessee at Chattanooga 37403
- STUART W. MAHER, *Geology-Geography Editor*, Tennessee Division of Geology, Knoxville 37919
- JAMES STACK, *Mathematics Editor*, Austin Peay State Univ., Clarksville 37040
- WILLIAM H. ZUBER, JR., *Chemistry Editor*, Memphis State Univ., Memphis 38111

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 News 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 \$5.00 a year, invariably in advance. Single copies \$1.25.

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

Officers

- ARTHUR W. JONES, *President*, Univ. of Tennessee, Knoxville 37916
- JOHN G. PARCHMENT, *President-elect*, Middle Tenn. State Univ., Murfreesboro 37130
- 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
- WILLIAM F. NELSON, *Director*, Reelfoot Lake Biol. Sta., Univ. of Tennessee at Martin, Martin 38237

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

Executive Committee

- JOHN H. BAILEY, East Tennessee State Univ., Johnson City 37602
- JAMES D. CAPONETTI, Univ. of Tennessee, Knoxville 37916
- ARTHUR W. JONES, Univ. of Tennessee, Knoxville 37916
- JOE MINOR, State Dept. of Education, Nashville
- WILLIAM F. NELSON, Univ. of Tennessee at Martin, Martin 38237
- JOHN G. PARCHMENT, Middle Tennessee State Univ., Murfreesboro 37130
- RICHARD J. RARIDON, ORNL, Oak Ridge 37831
- ROBERT F. SEARS, Austin Peay State Univ., Clarksville 37040
- RAYMOND L. TANNER, Univ. of Tennessee Medical Units, Memphis 38103
- GUS TOMLINSON, George Peabody Coll., Nashville 37203
- ROBERT WILSON, The Univ. of Tennessee at Chattanooga 37403
- A. PAUL WISHART, The Univ. of Tennessee, Knoxville 37916

NOTICE TO AUTHORS

Papers submitted for publication in the JOURNAL may be sent to any member of the editorial staff. Manuscripts must be approved by the Editor and the appropriate Section Editor before publication. Manuscripts should be typewritten, double or triple 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:

	2 pages	4 pages	8 pages	12 pages	16 pages
100 copies	\$12.00	\$20.00	\$38.00	\$47.00	\$56.00
Ea. add. 100	2.00	3.00	8.50	12.25	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 \$5.00 for members except teachers below the college level, whose dues are \$3.00, and \$10.00 for sustaining members. Dues may be sent direct with your application for membership to the Secretary.