



ISSN 0073-6767

Proceedings of the

Indiana Academy of Science

Volume 106

Number 1-2

The *PROCEEDINGS OF THE INDIANA ACADEMY OF SCIENCE* is a quarterly journal dedicated to promoting scientific research and the diffusion of scientific information; to encouraging communication and cooperation among scientists; and to improving education in the sciences.

EDITOR

Gary E. Dolph
Indiana University Kokomo
2300 S. Washington St.
Kokomo, Indiana 46904-9003
GDOLPH@IUK.EDU
765-455-9303

EDITORIAL BOARD

Hans O. Andersen
Indiana University

Rita Barr
Purdue University

Ernest E. Campaigne
Indiana University

William R. Clark
Ball State University

Donald R. Cochran
Ball State University

Robert F. Dale
Purdue University

Kara W. Eberly
St. Mary's College

Uwe J. Hansen
Indiana State University

Darby R. Karns
Hanover College

N. Gary Lane
Indiana University

Paul C. MacMillan
Hanover College

Wilton N. Melhorn
Purdue University

Paul Rothrock
Taylor University

Alfred R. Schmidt
Rose Hulman Institute of Technology

Thomas P. Simon
United States Environmental Protection Agency

Paul M. Stewart
Indiana University-Purdue University Fort Wayne

Michael Tansey
Indiana University

Robert D. Waltz
Indiana Department of Natural Resources

J. Dan Webster
Hanover College

Harmon Weeks
Purdue University

John O. Whitaker, Jr.
Indiana State University

EXECUTIVE COMMITTEE

James D. Haddock	President	Indiana University-Purdue Univ. Fort Wayne
Rebecca Dolan	President-Elect	Butler University
Susan M. Johnson	Secretary	Ball State University
Edward L. Frazier	Treasurer	5007 W. 14th Street, Speedway
James W. Berry	Director of Public Relations	Butler University
Gary E. Dolph	Editor of the <i>Proceedings</i>	Indiana University Kokomo
James Gammon	Immediate Past President	DePauw University
Nelson R. Shaffer	Executive Officer	Indiana Geological Survey

EXCHANGE ITEMS: Items sent in exchange for the *Proceedings* and correspondence concerning exchange arrangements should be sent to the Indiana Academy of Science, John S. Wright Memorial Library, 140 North Senate Avenue, Indianapolis, Indiana 46204.

REPRINTS AND PERMISSIONS: Write to the Executive Officer, School of Civil Engineering, Purdue University, West Lafayette, IN 47907.

EDITORIAL CORRESPONDENCE: All matter for publication should be addressed to the Editor.

**PROCEEDINGS
OF THE
INDIANA ACADEMY
OF SCIENCE**

Founded 29 December 1885



Volume 106 Number 1-2
1997



Published at Bloomington, Indiana
April 15, 1999

PROCEEDINGS OF THE INDIANA ACADEMY OF SCIENCE

Volume 106, No. 1-2 (1997)

CONTENTS

BOTANY

- R.M. Crandall and R.W. Dolan. FLORISTIC INVESTIGATION
OF CROOKED CREEK COMMUNITY JUAN
SOLOMON PARK, INDIANAPOLIS, INDIANA 1
- R.D. Hyerczyk. THE LICHEN FLORA OF HOOSIER PRAIRIE
STATE NATURE PRESERVE..... 25

CELL BIOLOGY

- D. Polley. GENETIC EVIDENCE FOR TWO POTASSIUM
TRANSPORT SYSTEMS IN THE GREEN ALGA,
CHLAMYDOMONAS REINHARDTII..... 33

ECOLOGY

- S.E. Brown and G.R. Parker. IMPACT OF WHITE-TAILED
DEER ON FOREST COMMUNITIES WITHIN
BROWN COUNTY STATE PARK, INDIANA 39
- T.P. Simon, R.N. Jankowski, and C. Morris. PHYSICAL AND
CHEMICAL LIMNOLOGY OF FOUR NATURAL LAKES
LOCATED WITHIN THE INDIANA DUNES NATIONAL
LAKESHORE, NORTHWESTERN INDIANA..... 53
- R.A. Weiss. TRENDS IN INDIANA HOUSE FINCH COUNTS:
A COMPARISON OF INDIANA AUDUBON SOCIETY
MAY, SUMMER, AND CHRISTMAS BIRDCOUNTS,
1980-1995..... 67
- J.O. Whitaker, Jr., R. McKenzie, M. Rakow, B. Leibacher, and
P. Leibacher. SEASONAL FLIGHT COUNTS IN THREE
BIG BROWN BAT (*EPTESICUS FUSCUS*) COLONIES 79

ENTOMOLOGY

- R.A. Cloyd, C.R. Edwards, and L.W. Bledsoe. TRICHOME DENSITY DIFFERENCES AND BEAN LEAF BEETLE, *CEROTOMA TRIFURCATA* (FORSTER), FEEDING BEHAVIOR ON SOYBEAN PODS..... 85

ENVIRONMENTAL QUALITY

- J. Pichtel, A. Covey, and K. Lukscay. REMOVAL OF LEAD AND CHROMIUM FROM CONTAMINATED SOIL: COLUMN STUDIES 95

GEOLOGY AND GEOGRAPHY

- J.B. Droste and A.S. Horowitz. DISTRIBUTION OF LIMESTONE IN THE BRAZIL FORMATION (PENNSYLVANIAN) IN THE SUBSURFACE OF SOUTHWESTERN INDIANA AND WESTERN KENTUCKY105

HISTORY OF SCIENCE

- H.G. Day. HERMAN T. BRISCOE (1893-1960): A SUPERIOR ROLE MODEL IN CHEMICAL EDUCATION AND ACADEMIC ADMINISTRATION..... 113

SOIL AND ATMOSPHERIC SCIENCES

- E.M. Ossom, C.U. Ethothi, and C.L. Rhykerd. INFLUENCE OF K FERTILIZER LEVELS AND PLANT DENSITY ON THE YIELD AND MINERAL CONTENT OF THE LEAVES AND VINES OF THE FLUTED PUMPKIN, *TELFAIRIA OCCIDENTALIS* HOOK.135

ZOOLOGY

- J.H. Bandoli. FACTORS INFLUENCING REPRODUCTIVE SUCCESS IN MALE SPOTTAIL DARTERS (*ETHEOSTOMA SQUAMICEPS*, PISCES, PERCIDAE)145