Changes in Vascular Aquatic Flowering Plants During 70 Years in Put-in-Bay Harbor, Lake Erie, Ohio............. Ronald L. Stuckey 321

Near-Infrared Sensitized Photocathodes and Film Sensitives for Typical Xenon-Lamp Radiation and Related Subjects Radames K. H. Gebel, Hermann R. Mestwerdt, and Roy R. Hayslett 343

Bryophytes in the 1969 Crater of Deception Island, Antarctica: An Apparent Case of Rapid Long-Distance Dispersal Steven B. Young and Jean-Roland Kläy 358

Some Ecological Notes on the Blue Color Phase of the Crayfish, Orconectes virilis, in Two Lakes Walter T. Momot and James E. Gall 363

Use of Soil Surveys in the Identification of Floodplains..... Donald E. McCormack 370

Studies of the Gyponinae: New Species of Ponanella and Acuponana Dwight M. DeLong and Mignon Marie Bush 376

Book Reviews.......................... 342, 375, 379

Index to Volume 71.......................... 380
MANUSCRIPTS: The Ohio Journal of Science considers manuscripts on any scientific subject from contributors anywhere. The manuscripts may be papers or notes on recent research or symposia on subjects of scientific interest. Every paper is critically reviewed by at least one and usually two reviewers, and is subject to the approval of the editorial staff. Two copies each, of manuscript and figures, should be submitted to the Editor. A carbon copy should be retained by the author for reading the galley proof. Galley proof and engraver's proof but not original manuscript will be sent to authors. See past numbers of the Journal and the Style Manual for Biological Journals for detailed instructions concerning the preparation of manuscripts.

REPRINTS: A price list for reprints and an order form are sent with proof. Authors should allow about sixty days after publication for receipt of reprints.

SUBSCRIPTIONS: Annual subscription $10.00 (foreign countries, $10.50). Single numbers: $2.25; single volumes (six numbers): $12.00; runs of ten or more volumes: $10.00 per volume. Issued bimonthly, January to November, six issues per volume. The Ohio Journal of Science is sent without additional expense to all paid-up members of The Ohio Academy of Science.

MAILING ADDRESSES: The editorial offices of The Ohio Journal of Science are at the Geology Department, Bowling Green State University, Bowling Green, Ohio 43403. All manuscripts, illustrations, proofs, and correspondence dealing with editorial matters should be addressed to the editor, Dr. Jane L. Forsyth, at this place. All correspondence dealing with subscriptions, changes of address, requests for old issues, and all remittances should be addressed to the Central Office of The Ohio Journal of Science at 445 King Avenue, Columbus, Ohio 43201. Failure to receive any number of the Journal must be reported to this office within three months of date of issue if claim is to be recognized. All correspondence dealing, with the matters of business policy should be addressed to the Secretary-Treasurer, Dr. George H. Crowl, Department of Geology, Ohio Wesleyan University, Delaware, Ohio 43015. Book Review Editor is Dr. Emanuel D. Rudolph, whose office is at the Botany Department, The Ohio State University, 1735 Neil Avenue, Columbus, Ohio 43210.

Printed by the Spahr & Glenn Company, Columbus, Ohio, U. S. A.

Entered as second-class matter November 1, 1915, at the post office at Columbus, Ohio under the Act of March 3, 1879.

Date of Issue—February 3, 1972
THE OHIO JOURNAL OF SCIENCE

JOINT ADMINISTRATIVE BOARD

For The Ohio State University

FRANK W. CHORPENNING

DOUGLAS H. MCKENZIE

WAVE H. SHAFFER

RICHARD J. ANDERSON

For the Ohio Academy of Science

JOURNAL STAFF

JANE L. FORSYTH ...........................................Editor-in-Chief

GEORGE H. CROWL ..........................Secretary-Treasurer

EMANUEL D. RUDOLPH ..........................Book Review Editor

THE OHIO JOURNAL OF SCIENCE

Is published jointly by The Ohio State University and
The Ohio Academy of Science
CONTENTS OF VOLUME 71

NUMBER 1—JANUARY

Distribution of Naturalized Carduus nutans (Compositae) Mapped in Relation to Geology in Northwestern Ohio .................................................. Ronald L. Stuckey and Jane L. Forsyth 1
Leeches Found in Two Species of Helisoma from Fleming’s Creek, Michigan ................................................................. Hugh H. Sarah 15
The Effect of Simazine, Kinetin, and Rhizobium phaseoli on Legume Nodulation and Morphogenesis in Phaseolus vulgaris L., CV. "Red Kidney" .......................................................... Martha A. Thomas and H. David Hammond 21
A Description of the Complete Metamorphosis of The Sea Urchin Lytechinus variegatus Cultured in Synthetic Sea Water ............................................ Jane E. Mazur and John W. Miller 30
Amino Acids in the Haemolymph of Smaller European Elm Bark Beetle Larvae, Scolytus multistriatus (Marsham) (Coleoptera: Scolytidae) ................................................................. Gail F. Kleiner and John W. Peacock 36
The Relationship Between Soil pH and Base-Saturation Percentage for Surface and Subsoil Horizons of Selected Mollisols, Alfisols, and Ultisols in Ohio .................................................. Maynard Beery and L. P. Wilding 43
A New Species of Eleodes from Texas, With Notes on the Subgenus Promus (Coleoptera Tenebrionidae) .............................................................. Charles A. Triplehorn 56

Book Reviews .................................................. 55, 60–63
List of Reviewers of Papers Appearing in The Ohio Journal of Science During 1970 .... 63

Date of Issue February 12, 1971

NUMBER 2—MARCH

The Biology and Psychology of Crowding in Man and Animals .................. Charles H. Southwick 65
The Water Beetles of Miller Blue Hole, Sandusky County, Ohio (Insecta: Coleoptera) ................................................................. Brian E. Melin and Robert C. Graves 73
Relative Sizes of Reptilian Adrenals .............................................. Frank A. Hartman 78
A Bibliography of Research Conducted at the Franz Theodore Stone Laboratory, And Its Predecessor, of the Ohio State University From 1895 to 1968 .................................................. James P. Abrams and Clarence E. Taft 81
A New Occurrence of the Devonian Arthrodire Holonema .................. Steven W. Mitchell 120
Field Methods for Determining the Sex of Barn Swallows (Hirundo rustica) .................................................. David E. Samuel 125

Book Reviews .................................................. 72, 80, 105, 119, 124, 128

Date of Issue April 29, 1971

NUMBER 3—MAY

Kope and Fairview Ripple Marks: Brown and Adams Counties, Ohio ................................................................. Syed A. Ali and Malcolm P. Weiss 129
The Humidity Responses of Tribolium confusum Jacquelin Duval in Wheat Flour, Sand, and Air .................................................. Lee C. Drickamer 149
The Distribution and Paleoenvironmental Interpretation of Cornulites in the Waynesville Formation (Upper Ordovician) of Southwestern Ohio .................................................. Robert W. Morris and Harold B. Rollins 159
Coset Geometries of Some Generalized Semi-Direct Products of Groups .................................................. Stanley E. Payne 170
The Vegetative Composition of a Beech-Maple Climax Forest in the Glaciated Plateau of Northeastern Ohio .................................................. William H. Schlessinger 174
Composition of Ancient Peruvian Copper ...................................... Earle E. Caley and Lowell W. Shank 181
An Integrated Treatment of Simple Dissociation Equilibria in Solution .................................................. Gert G. Schlessinger 192

Book Reviews .................................................. 192

Date of Issue June 18, 1971
NUMBER 4—JULY

Prehistoric Architecture: A Study of House Types in the Ohio Valley . . . Raymond S. Baby
Parallelocrinus (Crinoidea, Inadunata) in the Ames Limestone, Pennsylvanian, of Ohio . . . J. J. Burke
Distribution of Biotia in a Stream Polluted by Acid Mine-Drainage . . . Richard W. Warner
Three Additions to the Annotated List of the Birds of Ohio . . . Milton B. Trautman and Mary A. Trautman
Productivity of White-Tailed Deer in Ohio . . . Charles M. Nixon
Electrophoretic Analyses of Serum Proteins of the Albino Rat . . . David F. McCormick and James D. Graham
Parallel'ocrinus (Crinoidea, Inadunata) in the Ames Limestone, Pennsylvanian, of Ohio . . . J. J. Burke
Distribution of Biota in a Stream Polluted by Acid Mine-Drainage . . . Richard W. Warner
Productivity of White-Tailed Deer in Ohio . . . Charles M. Nixon
Electrophoretic Analyses of Serum Proteins of the Albino Rat . . . David F. McCormick and James D. Graham

Date of Issue September 17, 1971

NUMBER 5—SEPTEMBER

Water Pollution by Oil-Field Brines and Related Industrial Wastes in Ohio . . . Wayne A. Pettyjohn
Hibernating Ichneumonidae of Ohio (Hymenoptera) . . . Clement E. Dasch
The Position and Age of the Sciotoville Bar Locality, Southern Ohio . . . Walter L. Manger
The Changing Distribution of the Genus Najas (Najadaceae) in Ohio . . . W. Alan Went and Ronald L. Stuckey
Helminth Parasites of the Red-Winged Blackbird, Agelaius phoeniceus, and Common Grackle, Quiscalus quiscula, in Northwestern Ohio . . . Janet G. Stanley and Francis C. Rabalais
Spore Germination Time in Fuligo septica . . . Karl Leo Braun
Edaphophyllum irregularum, A New Middle Devonian Digonophyllid Coral From the Lower Arkona Formation, Ontario, Canada . . . Steven W. Mitchell and Egbert G. Driscoll
High Lead Concentrations in Columbus Snow . . . Wayne L. Hamilton and James E. Miller

Date of Issue November 11, 1971

NUMBER 6—NOVEMBER

Changes in Vascular Aquatic Flowering Plants During 70 Years in Put-in-Bay Harbor, Lake Erie, Ohio . . . Ronald L. Stuckey
Near-Infrared Sensitized Photocathodes and Film Sensitive for Typical Xenon-Lamp Radiation and Related Subjects . . . Radames K. H. Gebel, Hermann R. Mestwerdt, and Roy R. Hayslett
Bryophytes in the 1969 Crater of Deception Island, Antarctica: An Apparent Case of Rapid Long-Distance Dispersal . . . Steven B. Young and Jean-Roland Klet
Some Ecological Notes on the Blue Color Phase of the Crayfish, Orconectes virilis, in Two Lakes . . . Walter T. Momot and James E. Gall
Use of Soil Surveys in the Identification of Floodplains . . . Donald E. McCormack

Date of Issue February 3, 1972