The OHIO JOURNAL of SCIENCE

AN OPEN ACCESS, ONLINE, INTERNATIONAL, MULTIDISCIPLINARY JOURNAL

Volume 123

November 2024 https://doi.org/10.18061/ojs.v123i2 Number 2

The Obio Journal of Science

Copyediting and design by MR. PHILIP WINCHELL,

Manuscript submission guidelines: *https://ohiojournalofscience.org*

For technical questions about electronic formats or other submission details: Phone: 614-389-2182 • Fax: 614-389-2470 Email: onfo@ohiosci.org

The Ohio Academy of Science

Executive Director – MICHAEL WOYTEK

OFFICERS

President – MARTIN ENGLISH, DVM President-Elect – JOHN HOAG, PhD Past President – CHARLIE FLOWER, PhD Secretary – Stephen McConoughey, PhD

Treasurer – VACANT Jr. Academy Council Director – John Means, PhD

The Ohio Journal of Science has published peer-reviewed, original contributions to science, education, engineering, and technology since 1900. The Ohio Academy of Science produces two issues annually: (1) peer-reviewed April Program Abstracts distributed digitally and in print at the annual meeting; (2) peer-reviewed articles published as accepted throughout the year. The Ohio State University Libraries publish both issues Open Access online on behalf of The Ohio Academy of Science, 5930 Wilcox Pl., Suite F, Dublin, OH 43016. https://www.ohiosci.org

Professional membership: \$75 per year.

Printed in The United States of America.

CONTENTS

ARTICLES

2 Soil Biota in a Nonnative Range has a Net Positive Effect on the Perennial Herb *Lupinus polyphyllus* by Danielle Sirivat, Satu Ramula, and Jean H. Burns

14 An Assessment of In-stream Sampling Activity of Macroinvertebrates and Stream Channelization in Dug Run, Allen County, Ohio, USA by David A. Zuwerink, Zakiah Le'Flore, and Seth Lochtefeld

28 First Documented Nesting of American White Pelicans (*Pelecanus erythrorhynchos*) in Ohio, USA by Bruce N. Buckingham and Laura J. Kearns

32 First Record of a Hermaphroditic Muskrat by Donald P. Althoff and Rachel E. McCaulla

38 In Silico Comparative Analysis of Different *vacA* Genes of *Helicobacter pylori* by Halimat Chisom Atanda, Elijah Kolawole Oladipo, and Seun Elijah Olufemi

44 The Woodland Muskox *Bootherium bombifrons* (Artiodactyla, Bovidae) from Hebron, Licking County, Ohio, USA and its Paleoecology in the Great Lakes Region by H. Gregory McDonald, David L. Dyer, Linda C. K. Shane, Brian J. Haskell, and Thomas W. Stafford, Jr.

ADDITIONAL MATTER

25 Letter to a Young Scientist by Stephen W. Kress, PhD

FRONT COVER PHOTO: Skull of the Hebron muskox, *Bootherium bombifrons*, OHC N 9079. Scale is 10 cm. See the artical "The Woodland Muskox *Bootherium bombifrons* (Artiodactyla, Bovidae) from Hebron, Licking County, Ohio, USA and its Paleoecology in the Great Lakes Region" by H. Gregory McDonald et al., starting on page 44.

