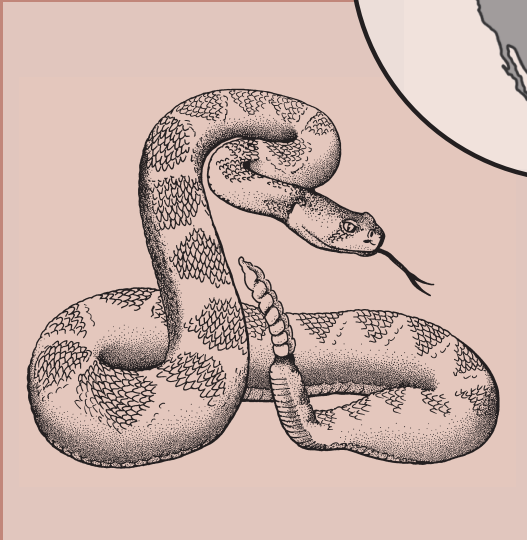
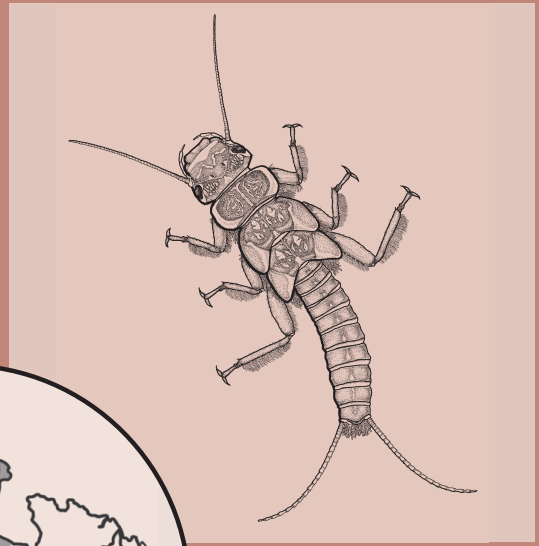


# Western North American Naturalist

Volume 69 No. 1

March 2009

Brigham Young University



# WESTERN NORTH AMERICAN NATURALIST

PUBLISHED AT PROVO, UTAH, BY  
MONTE L. BEAN LIFE SCIENCE MUSEUM  
www.wnan.byu.edu  
E-MAIL wnan@byu.edu  
PHONE 801-422-6688 FAX 801-422-0093

MARK C. BELK, EDITOR  
JANENE AUGER, ASSISTANT EDITOR  
190 MLBM  
Brigham Young University  
Provo, UT 84602

## Associate Editors

Steven D. Aird	Dept. of Biological Sciences, Old Dominion University, Norfolk, VA
Martha Apple	Dept. of Biological Sciences, Montana Tech of the University of Montana, Butte
Elizabeth Arellano Arenas	Universidad Autónoma del Estado de Morelos, Mexico
Yuguang Bai	Dept. of Plant Sciences, University of Saskatchewan, Saskatoon, Canada
Karen H. Beard	Dept. of Wildland Resources, Utah State University, Logan
Brooks Britt	Dept. of Geology, Brigham Young University, Provo, UT
Arthur G. Cleveland	Dept. of Natural and Mathematical Sciences, California Baptist University, Riverside
Leslie Clifford	Dept. of Biology, Mansfield University, Mansfield, PA
J. Curtis Creighton	Dept. of Biological Sciences, Purdue University Calumet, Hammond, IN
Keith Geluso	Dept. of Biology, University of Nebraska at Kearney
Richard A. Gill	Dept. of Biology, Brigham Young University, Provo, UT
James G. Harris	Dept. of Biology, Utah Valley University, Orem, UT
Terry Hildebrand	Dept. of Biology, Southern Utah University, Cedar City
Jocelyn Hudon	Royal Alberta Museum, Edmonton, Canada
Tim Karels	Dept. of Biology, California State University, Northridge
David C. Lightfoot	Museum of Southwestern Biology, University of New Mexico, Albuquerque
Brock McMillan	Dept. of Plant and Wildlife Sciences, Brigham Young University, Provo, UT
Michael L. Morrison	Dept. of Wildlife and Fisheries Sciences, Texas A&M University, College Station
C. Riley Nelson	Dept. of Biology, Brigham Young University, Provo, UT
Becky Pierce	California Department of Fish and Game, Bishop
Calvin A. Porter	Dept. of Biology, Xavier University of Louisiana, New Orleans
Ronald Ryel	Dept. of Forest, Range, and Wildlife Sciences, Utah State University, Logan
Michael K. Young	Rocky Mountain Research Station, USDA Forest Service, Missoula, MT
J. Jaime Zúñiga-Vega	Facultad de Ciencias, Universidad Nacional Autónoma de México

**Editorial Board.** Russell B. Rader, Chair, Biology; John D. Bell, College of Life Sciences; Steven L. Peck, Biology; Dennis K. Shiozawa, Biology. All are at Brigham Young University. Ex Officio Editorial Board members include Larry L. St. Clair, Monte L. Bean Life Science Museum; and Mark C. Belk, Editor, *Western North American Naturalist*.

**Publication and Scope.** The *Western North American Naturalist*, originally founded in 1939 as the *Great Basin Naturalist*, is published quarterly by Brigham Young University. Unpublished manuscripts that further our biological understanding of western North America, including western Canada and all of Mexico, are accepted for publication.

**Subscriptions.** Annual subscriptions to the *Western North American Naturalist* for 2008 are \$35 for individual subscribers (\$40 outside the United States) and \$65 for institutions. Most back issues are in print and available for sale. All matters pertaining to subscriptions, back issues, or other business should be directed to *Western North American Naturalist*, 190 MLBM, Brigham Young University, Provo, UT 84602 or wnan@byu.edu.

**Scholarly Exchanges.** Libraries or other organizations interested in obtaining the *Western North American Naturalist* through a continuing exchange of scholarly publications should contact the Serials Exchange Coordinator, 2204 HBLB, Brigham Young University, Provo, UT 84602.

**Editorial Production.** Rebecca H. Rendón

**Manuscript Supervision.** Elizabeth Hassell