

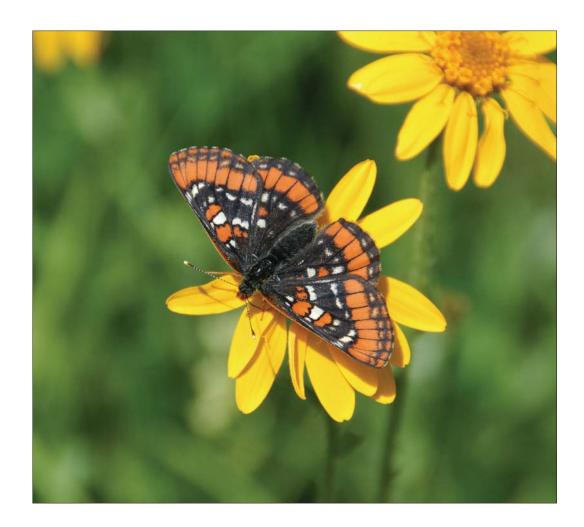
# Cover

Source: The Journal of the Lepidopterists' Society, 66(3)

Published By: The Lepidopterists' Society

URL: https://doi.org/10.18473/lepi.v66i3.a14

# Journal of the Lepidopterists' Society



Published quarterly by The Lepidopterists' Society

#### THE LEPIDOPTERISTS' SOCIETY

Executive Council

Andrew Warren, President John Shuey, Immediate Past President Giovanny Facua, Vice President Paul Opler, Vice President Mamoru Watanabe, Vice President Michael E. Toliver, Secretary Kelly M. Richers, Treasurer

Members at large:

STEPHANIE SHANK CHARLES HARP TODD STOUT RICHARD BROWN
CHARLES V. COVELL, JR.
DAN RUBINOFF

MICHELLE DECOSTA DAVID JAMES HARRY PAVULAAN

Editorial Board
John W. Brown (Chair)
Michael E. Toliver (Member, at large)
Keith Summerville (Journal)
Lawrence F. Gall (Memoirs)
James Adams (News)
John A. Snyder (Website)

### Honorary Life Members of the Society

Lincoln P. Brower (1990), Frederick H. Rindge (1997), Ronald W. Hodges (2004) Charles V. Covell, Jr. (2009), Don R. Davis (2009), Jackie Miller (2010), Jerry Powell (2010) Carl Cook (2011), Paul R. Ehrlich (2011), Rudi Mattoni (2011), Mogens C. ("Mo") Nielsen (2011), Edward G. Voss (2011)

The object of The Lepidopterists' Society, which was formed in May 1947 and formally constituted in December 1950, is "to promote the science of lepidopterology in all its branches, . . . to issue a periodical and other publications on Lepidoptera, to facilitate the exchange of specimens and ideas by both the professional worker and the amateur in the field; to secure cooperation in all measures" directed towards these aims.

Membership in the Society is open to all persons interested in the study of Lepidoptera. All members receive the *Journal* and the *News of The Lepidopterists' Society*. Prospective members should send to the Assistant Treasurer full dues for the current year, together with their full name, address, and special lepidopterological interests. In alternate years a list of members of the Society is issued, with addresses and special interests.

Active members—annual dues \$45.00 within the U.S., \$50.00 outside the U.S. Affiliated members—annual dues \$10.00 within the U.S., \$15.00 outside the U.S. Student members—annual dues \$20.00 within the U.S., \$25.00 outside the U.S. Sustaining members—annual dues \$60.00 within the U.S., \$65.00 outside the U.S. Life members—single sum \$1,800.00 Institutional subscriptions—annual \$60.00, \$65.00 outside the U.S. Airmail postage for the *News* \$15.00, \$30.00 outside North America (U.S., Canada, Mexico)

Send remittances, payable to *The Lepidopterists' Society*, to: Kelly M. Richers, Treasurer, 9417 Carvalho Court, Bakersfield, CA 93311; and address changes to: Julian P. Donahue, Natural History Museum, 900 Exposition Blvd., Los Angeles, CA 90007-4057. For information about the Society, contact: Ernest H. Williams, Department of Biology, Hamilton College, Clinton, NY 13323. To order back issues of the *Memoirs*, write for availability and prices to Kenneth R. Bliss, 28 DuPont Avenue, Piscataway, NJ 08854.

The additional cost for members outside the U.S. is to cover mailing costs.

Journal of The Lepidopterists' Society (ISSN 0024-0966) is published quarterly by The Lepidopterists' Society, % Los Angeles County Museum of Natural History, 900 Exposition Blvd., Los Angeles, CA 90007-4057. Periodicals postage paid at Los Angeles, CA and at additional mailing offices. POSTMASTER: Send address changes to The Lepidopterists' Society, % Natural History Museum, 900 Exposition Blvd., Los Angeles, CA 90007-4057.

# Cover Illustration:

Hadena ectypa (Morrison, 1875), larva and adult. Larva collected 3 August 2009, photographed in the lab 15 August 2009. Adult collected (as larva) 28 July 2009, emerged from pupa 4 September 2009, photographed in the lab 6 September 2009. Both individuals collected at the Knightville State Wildlife Management Area in the town of Huntington, Hampshire County, Massachusetts, USA. Photos by Michael W. Nelson, Massachusetts Natural Heritage & Endangered Species Program. See article on page 1.

# EDITORIAL STAFF OF THE JOURNAL

KEITH S. SUMMERVILLE, Editor
Department of Environmental Science and Policy
Drake University
2507 University Ave., 131 Olin Hall
Des Moines, Iowa 50311-4505
ksummerville@drake.edu

Pec Toliver, Layout Editor Natural Imprints 706 Lake Road Eureka, Illinois 61530 naturimp@mtco.com PHIL DEVRIES, Book Review Editor Department of Biological Sciences University of New Orleans, 2000 Lakeshore Dr. New Orleans, Lousiana 70148-0001 USA pdevries@uno.edu

# Associate Editors:

Gerardo Lamas (*Peru*), Kenelm W. Philip (*USA*), Robert K. Robbins (*USA*), Felix Sperling (*Canada*), David L. Wagner (*USA*), Christer Wiklund (*Sweden*), Carla Penz (*USA*), Andrew Warren (*USA*)

# NOTICE TO CONTRIBUTORS

Contributions to the *Journal* may deal with any aspect of Lepidoptera study. Categories are Articles, Profiles, General Notes, Technical Comments, Book Reviews, Obituaries, Feature Photographs, and Cover Illustrations. Obituaries must be authorized by the president of the society. Requirements for Feature Photographs and Cover Illustrations are stated in Volume 44(2):111 and on the Society's web site at http://www.lepsoc.org/.

Send Journal submissions electronically to: ksummerville@drake.edu or to the editor at the above address. Contributors should feel free to recommend one or two reviewers upon submission of their manuscript. Send requests to review books for the Journal and book review manuscripts to Phil DeVries at the above address (or electronically to: pdevries@uno.edu). Short manuscripts concerning new state records, current events, and notices should be sent to the News, James Adams, School of Sciences and Math, 650 College Dr., Dalton College, Dalton, GA 30720. Before submitting manuscripts or electronic files, consult instructions on the Society's web site at http://www.lepsoc.org/.

Authors should provide an electronic copy of the manuscript in a standard PC or Macintosh-based word processing format.

Abstract: Include an informative abstract for Articles, Profiles, and Technical Comments.

Additional key words: Up to five key words or terms not in the title should accompany Articles, Profiles, General Notes, and Technical Comments.

**Text:** Write with precision, clarity and economy, and use the active voice and the first person whenever appropriate. Make title explicit, descriptive, and as short as possible. The first mention of a plant or animal in the text should include the *full scientific name* with *author*; and *family.* Use metric units for measurements, and a 24-h clock (0930 h, not 9:30 AM) to express time. Underline only where *italics* are intended.

**Literature cited:** References to Articles, Profiles, General Notes, and Technical Comments should be given as Sheppard (1959) or (Sheppard 1959, 1961a,b) and listed alphabetically under the heading Literature Cited, in plain text (do not capitalize author names) and without underlining as follows:

Sheppard, P. M. 1959. Natural selection and heredity. 2nd ed. Hutchinson, London. 209 pp.

—— 1961a. Some contributions to population genetics resulting from the study of the Lepidoptera. Adv. Genet. 10:165–216.

Illustrations: Electronic submissions are expected. Initial submissions may be low-resolution °.jpg format, but final illustrations should be °.tif format with image layers flattened, saved at a resolution of at least 350 ppi (137 pixels per cm), sent on a CD. Illustrate only half of symmetrical objects such as adults with wings spread, unless whole illustration is crucial. Bear in mind that your illustrations will be sized to fit a Journal page (plan to make lettering sufficiently large) and that the figure legend will appear at the bottom of the page (Journal page: 16.5 cm width, 22.5 cm height). One-column illustrations should be 1000 pixels wide; two-column illustrations should be 2200 pixels wide. Figures, both line drawings and photographs, should be numbered consecutively in Arabic numerals; do not use "plate." Type figure legends double-spaced at the end of the manuscript following Literature Cited. Use a separate paragraph for each legend. Color illustrations are encouraged; contact editor or consult our web site for submission requirements and cost.

**Tables:** Number tables consecutively in Arabic numerals. Label them in plain text (e.g., Table 1.) and use a concise and informative heading. Type each table on a separate sheet and place after the Literature Cited section, with the approximate desired position indicated in the text. Avoid vertical lines and vertical writing.

**Voucher specimens:** When appropriate, manuscripts must name a public repository where specimens documenting the identity of organisms can be found. Kinds of reports that require vouchering include descriptions of new taxa, life histories, host associations, immature morphology, and some experimental studies.

**Proofs:** The edited manuscript and galley proofs will be mailed to the author for correction of printer's errors. Excessive author's changes will be charged to authors at the rate of \$3.00 per line. A purchase order for reprints will accompany proofs.

**Page charges:** For authors affiliated with institutions, page charges are \$50 per *Journal* page. For authors without institutional support, page charges are \$25 per *Journal* page. For authors who are not members of the Society, page charges are \$75 per *Journal* page. Authors unable to pay page charges for any reason should apply to the editor at the time of submission for a reduced rate. Authors of Book Reviews and Obituaries are exempt from page charges.

Correspondence: Address all matters relating to the Journal to the editor. Address book reviews directly to the book review editor.

PRINTED BY THE ALLEN PRESS, INC., LAWRENCE, KANSAS 66044 U.S.A.