

# ZOOTAXA

2150

**Systematics of *Sparganothoides* Lambert and Powell, 1986  
(Lepidoptera: Tortricidae: Sparganothini)**

JAMES J. KRUSE & JERRY A. POWELL



Magnolia Press  
Auckland, New Zealand

James J. Kruse & Jerry A. Powell

**Systematics of *Sparganothoides* Lambert and Powell, 1986 (Lepidoptera: Tortricidae: Sparganothini)**  
(*Zootaxa* 2150)

78 pp.; 30 cm.

6 July 2009

ISBN 978-1-86977-375-5 (paperback)

ISBN 978-1-86977-376-2 (Online edition)

FIRST PUBLISHED IN 2009 BY

Magnolia Press

P.O. Box 41-383

Auckland 1346

New Zealand

e-mail: [zootaxa@mapress.com](mailto:zootaxa@mapress.com)

<http://www.mapress.com/zootaxa/>

© 2009 Magnolia Press

All rights reserved.

No part of this publication may be reproduced, stored, transmitted or disseminated, in any form, or by any means, without prior written permission from the publisher, to whom all requests to reproduce copyright material should be directed in writing.

This authorization does not extend to any other kind of copying, by any means, in any form, and for any purpose other than private research use.

ISSN 1175-5326 (Print edition)

ISSN 1175-5334 (Online edition)



## Systematics of *Sparganothoides* Lambert and Powell, 1986 (Lepidoptera: Tortricidae: Sparganothini)

JAMES J. KRUSE<sup>1</sup> & JERRY A. POWELL<sup>2</sup>

<sup>1</sup>U.S. Department of Agriculture, Forest Service, State and Private Forestry, Forest Health Protection, Fairbanks Unit, Fairbanks, AK 99709 USA. E-mail: jkruse@fs.fed.us

<sup>2</sup>Essig Museum of Entomology, 1170 VLSB, MC3140, University of California, Berkeley, CA 94720, USA .  
E-mail: powellj@nature.berkeley.edu

### Table of contents

Abstract .....	4
Introduction .....	5
Materials and methods .....	6
Phylogenetics .....	7
Results and discussion.....	9
Systematic treatment .....	10
<i>Sparganothoides</i> Lambert and Powell .....	10
Key to males of <i>Sparganothoides</i> .....	16
<i>Hydeana</i> Group .....	19
1. <i>Sparganothoides hydeana</i> (Klots) .....	19
2. <i>Sparganothoides machimiana</i> (Barnes and Busck) .....	21
3. <i>Sparganothoides laderana</i> Kruse and Powell, <b>new species</b> .....	23
4. <i>Sparganothoides amitana</i> Kruse and Powell, <b>new species</b> .....	24
5. <i>Sparganothoides calthograptana</i> Kruse and Powell, <b>new species</b> .....	25
6. <i>Sparganothoides coloratana</i> Kruse and Powell, <b>new species</b> .....	26
7. <i>Sparganothoides audentiana</i> Kruse and Powell, <b>new species</b> .....	26
8. <i>Sparganothoides canities</i> Kruse and Powell, <b>new species</b> .....	28
Teratana group .....	29
9. <i>Sparganothoides teratana</i> (Zeller), new combination .....	29
10. <i>Sparganothoides carycrosana</i> Kruse and Powell, <b>new species</b> .....	30
11. <i>Sparganothoides plemmelana</i> Kruse and Powell, <b>new species</b> .....	31
12. <i>Sparganothoides lugens</i> (Walsingham) .....	32
13. <i>Sparganothoides castanea</i> (Walsingham) .....	33
14. <i>Sparganothoides vinolenta</i> (Walsingham) .....	35
<i>Ocrisana</i> group .....	36
15. <i>Sparganothoides ocrisana</i> Kruse and Powell, <b>new species</b> .....	36
16. <i>Sparganothoides xenopsana</i> Kruse and Powell, <b>new species</b> .....	38
17. <i>Sparganothoides umbosana</i> Kruse & Powell, <b>new species</b> .....	38
18. <i>Sparganothoides probolosana</i> Kruse & Powell, <b>new species</b> .....	39
19. <i>Sparganothoides canorisana</i> Kruse & Powell, <b>new species</b> .....	40
20. <i>Sparganothoides capitornata</i> Kruse and Powell, <b>new species</b> .....	42
21. <i>Sparganothoides arcuatana</i> Kruse and Powell, <b>new species</b> .....	43
22. <i>Sparganothoides licrosana</i> Kruse and Powell, <b>new species</b> .....	45
<i>Lentiginosana</i> group .....	46
23. <i>Sparganothoides lentiginosana</i> (Walsingham) .....	46

<i>Morata</i> group .....	47
24. <i>Sparganothoides morata</i> (Walsingham) .....	48
25. <i>Sparganothoides albescens</i> (Walsingham) .....	50
26. <i>Sparganothoides torusana</i> Kruse and Powell, <b>new species</b> .....	50
27. <i>Sparganothoides prolesana</i> Kruse and Powell, <b>new species</b> .....	52
28. <i>Sparganothoides polymytariana</i> Kruse and Powell, <b>new species</b> .....	53
<i>Aciculana</i> group .....	53
29. <i>Sparganothoides aciculana</i> Kruse and Powell, <b>new species</b> .....	54
30. <i>Sparganothoides silaceana</i> Kruse and Powell, <b>new species</b> .....	55
31. <i>Sparganothoides broccusana</i> Kruse and Powell, <b>new species</b> .....	55
32. <i>Sparganothoides cornutana</i> Kruse and Powell, <b>new species</b> .....	59
Taxa excluded from <i>Sparganothoides</i> .....	65
Biology of <i>Sparganothoides</i> .....	65
Acknowledgments .....	70
References .....	71
Appendix 1. Characters for phylogenetic analysis .....	72
Appendix 2. Data matrix for phylogenetic analysis .....	76
Appendix 3. Summary of rearing attempts .....	77
Appendix 4. Geographic distribution by political unit .....	78

## Abstract

The New World genus *Sparganothoides* Lambert and Powell, 1986 is reviewed and revised. The genus ranges from the mid-Atlantic and southern United States through Central America to Venezuela. Greatest species richness is documented from the middle elevations of central and southern Mexico south through Costa Rica. Thirty-two species are treated, of which 23 are described as new: *S. aciculana* (Juchitepec, Mexico), *S. amitana* (Río Verde, Mexico), *S. arcuatana* (Mendoza, Mexico), *S. audentiana* (Gómez Farias, Mexico), *S. broccusana* (Potrerillos, Mexico), *S. calthograpta* (Jocala, Mexico), *S. canities* (Tepalcates, Mexico), *S. canorisana* (Coatepec, Mexico), *S. capitornata* (Volcán Santa María, Guatemala), *S. caryrosana* (Potrerillos, Mexico), *S. coloratana* (Sierra Alta Tarahumara, Mexico), *S. cornutana* (San Cristóbal de Las Casas, Mexico), *S. laderana* (Iguala, Mexico), *S. licrosana* (Potrerillos, Mexico), *S. ocrisana* (Monteverde, Costa Rica), *S. plummelana* (Baleu, Guatemala), *S. polymytariana* (Río Jaba, Costa Rica), *S. probolosana* (El Salto, Mexico), *S. prolesana* (Monteverde, Costa Rica), *S. silaceana* (Villa Mills, Costa Rica), *S. torusana* (Río Metlec, Mexico), *S. umbosana* (El Palmito, Mexico), and *S. xenopsana* (Esperanza, Mexico). One new combination, *Sparganothoides teratana* (Zeller), is proposed; and two species, *Epagoge schausiana* Walsingham and *Epagoge spadicea* Walsingham, formerly included in *Sparganothoides*, are excluded. A hypothesis of phylogenetic relationships among the species is provided, a classification based on species groups is proposed, and a key to the species based primarily on features of the male genitalia is presented. We recognize six monophyletic species groups: Hydeana Group (8 species); Teratana Group (6 species); Ocrisana Group (8 species); Lentiginosana Group (1 species); Morata Group (5 species); and Aciculana Group (4 species). Male and female genitalia are illustrated for each species where known; ten species are represented by males only. Biological and life history data are summarized based mainly on laboratory rearings from eggs produced by confined females of eight species, representing five of the six species groups.

**Key words:** Costa Rica, early stages, dead leaf-feeders, Lepidoptera, Mexico, morphology, Neotropics, new species, phylogeny