



Zootaxa 3614 (1): 001–460
www.mapress.com/zootaxa/

Copyright © 2013 Magnolia Press

Monograph

ISSN 1175-5326 (print edition)

ZOOTAXA

ISSN 1175-5334 (online edition)

<http://dx.doi.org/10.11646/zootaxa.3614.1.1>

<http://zoobank.org/urn:lsid:zoobank.org:pub:E75E5224-20F1-431C-A7CB-9EE0D3F25118>

ZOOTAXA

3614

Dryinidae of the Oriental region (Hymenoptera: Chrysidoidea)

ZAIFU XU^{1*}, MASSIMO OLMI² & JUNHUA HE³

¹College of Nature Resources and Environment, South China Agricultural University, Guangzhou, Guangdong 510642, China.

E-mail: xuzaiju@scau.edu.cn

²Tropical Entomology Research Center, Via De Gasperi 10, I-01100 Viterbo, Italy. E-mail: olmimassimo@gmail.com; olmi@unitus.it

³Institute of Insect Sciences, Zhejiang University, Hangzhou 310029, China. E-mail: jhhe@zju.edu.cn

* Corresponding author.



Magnolia Press
Auckland, New Zealand

Accepted by A. Lelej: 5 Dec. 2012; published: 15 Feb. 2013

ZAIFU XU, MASSIMO OLMI & JUNHUA HE
Dryinidae of the Oriental region (Hymenoptera: Chrysidoidea)
(*Zootaxa* 3614)

460 pp.; 30 cm.

15 Feb. 2013

ISBN 978-1-77557-104-9 (paperback)

ISBN 978-1-77557-105-6 (Online edition)

FIRST PUBLISHED IN 2013 BY

Magnolia Press

P.O. Box 41-383

Auckland 1346

New Zealand

e-mail: zootaxa@mapress.com

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

© 2013 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)

Table of contents

Abstract	4
Introduction	4
Material and methods	5
Taxonomy	8
Dryinidae Haliday, 1833	8
Key to the subfamilies of the Oriental region	9
I. Subfamily Aphelopinae R. Perkins, 1912	12
Key to the genera	12
1. Genus <i>Aphelopus</i> Dalman, 1823	12
Key to the species	14
2. Genus <i>Crovettia</i> Olmi, 1984	43
Key to the species	43
II. Subfamily Conganteoninae Olmi, 1984	47
Key to the genera	47
3. Genus <i>Conganteon</i> Benoit, 1951	47
Key to the species	49
4. Genus <i>Fiorianteon</i> Olmi, 1984	54
Key to the species	54
III. Subfamily Anteoninae R. Perkins, 1912	58
Key to the genera	59
5. Genus <i>Anteon</i> Jurine, 1807	59
Key to the species	60
6. Genus <i>Burmanteon</i> Engel, 2003	199
7. Genus <i>Deinodryinus</i> R. Perkins, 1907	201
Key to the species	203
8. Genus <i>Lonchodryinus</i> Kieffer, 1905	211
Key to the species	212
IV. Subfamily Bocchinae Richards, 1939	223
9. Genus <i>Bocchus</i> Ashmead, 1893	226
Key to the species	226
V. Subfamily Dryininae Haliday, 1833	240
Key to the genera	241
10. Genus <i>Thaumatodryinus</i> R. Perkins, 1905	242
Key to the species	242
11. Genus <i>Dryinus</i> Latreille, 1804	254
Key to the groups of <i>Dryinus</i>	255
Key to the males	255
Group 1	256
Group 2	300
Group 3	301
Species <i>incertae sedis</i>	308
12. Genus <i>Pseudodryinus</i> Olmi, 1991	311
Key to the species	311
13. Genus <i>Hybristodryinus</i> Engel, 2005	314
VI. Subfamily Gonatopodinae Kieffer in Kieffer & Marshall, 1906	315
Key to the genera	316
14. Genus <i>Neodryinus</i> R. Perkins, 1905	316
Key to the species	317
15. Genus <i>Adryinus</i> Olmi, 1984	337
16. Genus <i>Echthrodelphax</i> R. Perkins, 1903	341
Key to the species	341
17. Genus <i>Haplogonatopus</i> R. Perkins, 1905	346
Key to the species	346
18. Genus <i>Gonatopus</i> Ljungh, 1810	354
Key to the groups of <i>Gonatopus</i>	359
Key to the males	359
Group 1	360
Group 2	365
Group 3	382
Group 4	386
Group 5	389
Group 6	392

Group 7	398
Group 10	425
Uncertain group of <i>Gonatopus</i> (species <i>incertae sedis</i>)	428
19. Genus <i>Esagonatopus</i> Olmi, 1984	428
VII. Subfamily Ponomarenkoinae Olmi, 2010	432
20. Genus <i>Ponomarenkoa</i> Olmi, 2010	432
<i>Dryinidae incertae sedis</i>	438
Acknowledgements	439
References	439
Index of Dryinid Names	454
Index of Dryinid Hosts	459
Index of Dryinid Natural Enemies	460

Abstract

An updated revision of Oriental Dryinidae is presented. Seven subfamilies, 20 genera and 368 species are treated. Eight new species are described: *Aphelopus zonalis* Xu, Olmi & He, **sp. nov.** (China, Hainan); *Anteon zoilum* Xu, Olmi & He, **sp. nov.** (China, Yunnan), *Anteon zonarium* Xu, Olmi & He, **sp. nov.** (China, Yunnan), *Anteon zopyrum* Xu, Olmi & He, **sp. nov.** (China, Xizang), *Anteon zoroastrum* Xu, Olmi & He, **sp. nov.** (Malaysia, Malaya), *Esagonatopus sinensis* Xu, Olmi & He, **sp. nov.** (China, Yunnan), *Gonatopus yunnanensis* Xu, Olmi & He, **sp. nov.** (China, Yunnan); *Ponomarenkoa ellenbergeri* Olmi, Xu & He, **sp. nov.** (Myanmar amber). Descriptions, geographic distribution, known hosts, natural enemies and type material of each species are presented, together with illustrations of the main morphological characters and keys to the subfamilies, genera and species. Complete lists of references concerning the Oriental Dryinidae and their hosts are given. New synonymies are proposed for *Aphelopus albiclypeus* Xu, He & Olmi, 1999 (= *A. exnotaulices* He & Xu, 2002, **syn. nov.**), *A. orientalis* Olmi, 1984 (= *A. albopictoides* Xu & He, 1999, **syn. nov.**), *A. taiwanensis* Olmi, 1991 (= *A. compressus* Xu & Yao, 1997, **syn. nov.**), *A. niger* Xu & He, 1999 (= *A. nigricornis* Xu, He & Olmi, 1999, **syn. nov.**), *A. penanganus* Olmi, 1984 (= *A. olmii* He & Xu, 2002, **syn. nov.**), *Anteon cacumen* Xu & He, 1997 (= *A. longwangshanense* Xu & He, 1997, **syn. nov.**), *A. hilare* Olmi, 1984 (= *A. corax* Olmi, 1984, **syn. nov.**, = *A. javanum* Olmi, 1984, **syn. nov.**, = *A. serratum* Xu & He, 1999, **syn. nov.**), *A. lankanum* Olmi, 1984 (= *A. planum* Xu & He, 1999, **syn. nov.**), *A. munitum* Olmi, 1984 (= *A. bauense* Olmi, 1984, **syn. nov.**), *A. parapriscum* Olmi, 1991 (= *A. alpinum* He & Xu, 2002, **syn. nov.**), *A. peterseni* Olmi, 1984 (= *A. scrupulosum* He & Xu, 2002, **syn. nov.**), *A. yuani* Xu, He & Olmi, 1998 (= *A. yuae* He & Xu, 2002, **syn. nov.**), *Lonchodryinus bimaculatus* Xu & He, 1994 (= *L. niger* He & Xu, 2002, **syn. nov.**), *L. ruficornis* (Dalman, 1818) (= *L. melaphelus* Xu & He, 1994, **syn. nov.**), *Dryinus indicus* (Kieffer, 1914) (= *Chlorodryinus koreanus* Móczár, 1983, **syn. nov.**, = *Dryinus masneri* Olmi, 2009, **syn. nov.**), *D. stantoni* Ashmead, 1904 (= *D. undatomarginis* Xu & He, 1998, **syn. nov.**, = *D. wuyishanensis* He & Xu, 2002, **syn. nov.**), *Adryinus jini* Xu & Yang, 1995 (= *A. platycornis* Xu & He, 1995, **syn. nov.**), *Gonatopus nigricans* (R. Perkins, 1905) (= *G. fulgori* Nakagawa, 1906, **syn. nov.**, = *G. insulanus* He & Xu, 1998, **syn. nov.**, *Pseudogonatopus sogatea* Rohwer, 1920, **syn. nov.**; *P. pusanus* Olmi, 1984, **syn. nov.**), *G. nudus* (R. Perkins, 1912) (= *G. yangi* He & Xu, 1998, **syn. nov.**), *G. pedestris* Dalman, 1818 (= *Epigonatopus sakaii* Esaki & Hashimoto, 1933, **syn. nov.**), *G. rufoniger* Olmi, 1993 (= *Neodryinus hishimonovorus* Xu & He, 1997, **syn. nov.**), *G. schenklingi* Strand, 1913 (= *G. euscelidivorus* Xu & He, 1999, **syn. nov.**). New combinations are proposed for *Deinodryinus constrictus* (Olmi, 1998), **comb. nov.** (from *Anteon*), *Dryinus asiaticus* (Olmi, 1984), **comb. nov.** (from *Alphadryinus*), *D. barbarus* (Olmi, 1984), **comb. nov.** (from *Mesodryinus*), *Gonatopus bengalensis* (Olmi, 1984), **comb. nov.** (from *Agonatopoides*), *G. bicuspis* (Olmi, 1993), **comb. nov.** (from *Pseudogonatopus*), *G. borneanus* (Olmi, 1984), **comb. nov.** (from *Agonatopoides*); *G. indicus* (Olmi, 1987), **comb. nov.** (from *Donisthorpina*), *G. insularis* (Olmi, 1984), **comb. nov.** (from *Agonatopoides*), *G. lankae* (Ponomarenko, 1981), **comb. nov.** (from *Pseudogonatopus*), *G. malesiae* (Olmi, 1984), **comb. nov.** (from *Pseudogonatopus*), *G. nepalensis* (Olmi, 1986), **comb. nov.** (from *Pseudogonatopus*), *G. pajanensis* (Olmi, 1989), **comb. nov.** (from *Agonatopoides*), *G. pyrillae* (Mani, 1942), **comb. nov.** (from *Agonatopoides*), *G. sarawakensis* (Olmi, 1984), **comb. nov.** (from *Pseudogonatopus*), *G. validus* (Olmi, 1984), **comb. nov.** (from *Pseudogonatopus*).

Key words: taxonomy, revision, Oriental region, descriptions, hosts, distribution, type material, keys

Introduction

Dryinidae (Hymenoptera: Chrysidoidea), which have thirteen subfamilies, 48 genera and 1722 species in the world, are parasitoids of Hemiptera Auchenorrhyncha (Guglielmino & Olmi, 1997, 2006, 2007). They play important roles in the natural control of these insect pests, and have potential significance as biological control agents (Olmi, 1994, 1999a, 1999b, 2000a).