



Zootaxa 3979 (1): 001–098  
www.mapress.com/zootaxa/

Copyright © 2015 Magnolia Press

# Monograph

ISSN 1175-5326 (print edition)

**ZOOTAXA**

ISSN 1175-5334 (online edition)

<http://dx.doi.org/10.11646/zootaxa.3979.1.1>

<http://zoobank.org/urn:lsid:zoobank.org:pub:E67D8C90-92AB-44F9-9138-35268A229AF4>

# ZOOTAXA

3979

## **Taxonomic review of the genus *Hypomicrogaster* Ashmead (Hymenoptera: Braconidae: Microgastrinae), with descriptions of 40 new species**

A. A. VALERIO<sup>1\*</sup> & J.B. WHITFIELD<sup>2#</sup>

<sup>1</sup>Central American Institute of Biological Research and Conservation (CIBRC). P.O. Box 2398-2050 San Pedro de Montes de Oca,  
San José, Costa Rica. E-mail: [avalerio\\_13@hotmail.com](mailto:avalerio_13@hotmail.com)

<sup>2</sup>Department of Entomology, University of Illinois at Urbana-Champaign, IL 61801, USA. E-mail: [jwhitfie@life.illinois.edu](mailto:jwhitfie@life.illinois.edu)

\* [urn:lsid:zoobank.org:author:E4B936BE-5F7D-4A22-B9E7-D237BBDE45EB](http://urn:lsid:zoobank.org:author:E4B936BE-5F7D-4A22-B9E7-D237BBDE45EB)

# [urn:lsid:zoobank.org:author:7A98AB5F-552D-4437-8F5D-C593CA713506](http://urn:lsid:zoobank.org:author:7A98AB5F-552D-4437-8F5D-C593CA713506)



Magnolia Press  
Auckland, New Zealand

A. A. VALERIO & J.B. WHITFIELD

**Taxonomic review of the genus *Hypomicrogaster* Ashmead (Hymenoptera: Braconidae: Microgastri-  
nae), with descriptions of 40 new species**

(*Zootaxa* 3979)

98 pp.; 30 cm.

25 Jun. 2015

ISBN 978-1-77557-737-9 (paperback)

ISBN 978-1-77557-738-6 (Online edition)

FIRST PUBLISHED IN 2015 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/>

© 2015 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
Current systematics of the genus <i>Hypomicrogaster</i> Ashmead	5
Taxonomic study of the genus <i>Hypomicrogaster</i> Ashmead	6
Material and methods	6
Results	10
Taxonomy	10
Characterization of the genus <i>Hypomicrogaster</i> Ashmead	10
Key for the species of the genus <i>Hypomicrogaster</i> Ashmead (mainly females)	11
Description of type species previously named and their taxonomic status	20
<i>Hypomicrogaster areolaris</i> (Blanchard) Valerio n. comb.	20
<i>Hypomicrogaster ecus</i> Nixon	24
<i>Hypomicrogaster imitator</i> (Ashmead) Nixon	25
<i>Hypomicrogaster tydeus</i> Nixon	26
<i>Hypomicrogaster zonaria</i> (Say) Nixon	31
New species descriptions	42
<i>Hypomicrogaster aodous</i> Valerio n. sp.	42
<i>Hypomicrogaster aplebis</i> Valerio n. sp.	43
<i>Hypomicrogaster cernus</i> Valerio n. sp.	45
<i>Hypomicrogaster crocinus</i> Valerio n. sp.	47
<i>Hypomicrogaster daktulios</i> Valerio n. sp.	48
<i>Hypomicrogaster deltis</i> Valerio n. sp.	49
<i>Hypomicrogaster duo</i> Valerio n. sp.	50
<i>Hypomicrogaster epipagis</i> Valerio n. sp.	52
<i>Hypomicrogaster espera</i> Valerio n. sp.	53
<i>Hypomicrogaster evrys</i> Valerio n. sp.	54
<i>Hypomicrogaster sicpollex</i> Valerio n. sp.	55
<i>Hypomicrogaster guille</i> Valerio n. sp.	56
<i>Hypomicrogaster hektos</i> Valerio n. sp.	57
<i>Hypomicrogaster hupsos</i> Valerio n. sp.	58
<i>Hypomicrogaster ingensis</i> Valerio n. sp.	60
<i>Hypomicrogaster insolitus</i> Valerio n. sp.	61
<i>Hypomicrogaster inversalis</i> Valerio n. sp.	62
<i>Hypomicrogaster koinos</i> Valerio n. sp.	63
<i>Hypomicrogaster largus</i> Valerio n. sp.	66
<i>Hypomicrogaster laxis</i> Valerio and Mason n. sp.	68
<i>Hypomicrogaster linearis</i> Valerio n. sp.	69
<i>Hypomicrogaster lineatus</i> Valerio n. sp.	70
<i>Hypomicrogaster luisi</i> Valerio n. sp.	72
<i>Hypomicrogaster masoni</i> Valerio n. sp.	73
<i>Hypomicrogaster mesos</i> Valerio n. sp.	75
<i>Hypomicrogaster mikrosus</i> Valerio n. sp.	76
<i>Hypomicrogaster multus</i> Valerio n. sp.	77
<i>Hypomicrogaster pectinatus</i> Valerio n. sp.	78
<i>Hypomicrogaster plagios</i> Valerio n. sp.	79
<i>Hypomicrogaster pollex</i> Valerio n. sp.	81
<i>Hypomicrogaster rugosus</i> Valerio n. sp.	82
<i>Hypomicrogaster scindus</i> Valerio n. sp.	85
<i>Hypomicrogaster sicingens</i> Valerio n. sp.	86
<i>Hypomicrogaster sicscindus</i> Valerio n. sp.	87
<i>Hypomicrogaster siderion</i> Valerio n. sp.	88
<i>Hypomicrogaster spatulae</i> Valerio n. sp.	89
<i>Hypomicrogaster specialis</i> Valerio n. sp.	90
<i>Hypomicrogaster tantillus</i> Valerio n. sp.	92
<i>Hypomicrogaster tetra</i> Valerio n. sp.	93
<i>Hypomicrogaster zan</i> Valerio n. sp.	94
Discussion	96
Acknowledgements	96
References	97

## Abstract

A taxonomic review of the genus *Hypomicrogaster* Ashmead is presented with the redescription and redelimitation of the already named species *Hypomicrogaster ecus* Nixon, *H. imitator* (Ashmead), *H. tydeus* Nixon and *H. zonaria* (Say). The review also implies eleven new synonymies, and a new combination for the species *H. areolaris* (Blanchard). Also, the present revision identified 40 new *Hypomicrogaster* species: *Hypomicrogaster aodous* n. sp., *H. aplebis* n. sp., *H. cernus* n. sp., *H. crocinus* n. sp., *H. daktulios* n. sp., *H. deltis* n. sp., *H. duo* n. sp., *H. epipagis* n. sp., *H. espora* n. sp., *H. evrys* n. sp., *H. guille* n. sp., *H. hektos* n. sp., *H. hupsos* n. sp., *H. ingensis* n. sp., *H. insolitus* n. sp., *H. inversalis* n. sp., *H. koinos* n. sp., *H. largus* n. sp., *H. laxis* n. sp., *H. linearis* n. sp., *H. lineatus* n. sp., *H. luisi* n. sp., *H. masoni* n. sp., *H. mesos* n. sp., *H. mikrosus* n. sp., *H. multus* n. sp., *H. pectinatus* n. sp., *H. plagios* n. sp., *H. pollex* n. sp., *H. rugosus* n. sp., *H. scindus* n. sp., *H. sicingens* n. sp., *H. sicpollex* n. sp., *H. sicscindus* n. sp., *H. siderion* n. sp., *H. spatulae* n. sp., *H. specialis* n. sp., *H. tantillus* n. sp., *H. tetra* n. sp., *H. zan* n. sp. The *Hypomicrogaster* species are using as hosts 11 families of Lepidoptera, and 52 confirmed lepidopteran species feeding on 34 families of plants. Additionally, a fully illustrated key to all known described species of *Hypomicrogaster* is presented.

**Key words:** Africa, host records, new species, neotropics, phylogeny, parasitoids, wasp ecology

## Introduction

The genus *Hypomicrogaster* (Ichneumonoidea: Braconidae: Microgastrinae) was described by Ashmead in 1898, but it was Thomas Say (1836), curiously, who earlier described the type species for the genus *Hypomicrogaster*, from Indiana, under the name *Microgaster zonaria*. Later, Muesebeck (1922) wrote that Say's type specimen was lost, but Ashmead later identified some material as *M. zonaria* in a study of the type specimen for the synonymized species *Protapanteles recurvariae* (Ashmead 1920). According to Mason (1981), the genus *Hypomicrogaster* is characterized as containing solitary specialists on microlepidoptera in leaf-mines and other cryptic or endophytic micro-habitats based on the few (largely Nearctic) host records, especially from the original description of *Hypomicrogaster zonaria* (under the name *Protapanteles recurvariae*) from the gelechiid larva *Coleotechnites* (= *Recurvaria*) *piceaella* (Kearfott) (Table 1).

The generic limits for *Hypomicrogaster* remained essentially uncharacterized in the generic revision of Nixon (1965), who recognized eight species groups, of which currently only the *virbius* and *zonaria* species groups are now recognized under the genus. Nixon mentioned that "...in order to find a means of dividing up the large number of species from all parts of the world falling within the loose definition of *Microgaster* auctt., I have found convenient the use of *Hypomicrogaster*. I have accepted the genus in a wide sense..." The imprecision in the definition of several Microgastrine genera led to the description of some *Hypomicrogaster* species under other generic names [e.g. *Hypomicrogaster* (= *Microgaster*) *diaphanae* and *Hypomicrogaster* (= *Urogaster*) *imitator*]. This situation prevailed until Mason's (1981) revision, in which he not only re-delimited the genera *Microgaster* and *Hypomicrogaster*, but also analyzed the polyphyletic nature of the huge genus *Apanteles*. Mason pointed out that (in his more limited delimitation) the genus *Hypomicrogaster* is "one of the most strongly characterized Microgastrinae genera... a large genus in the Neotropical region where nearly all species are undescribed."

In 1992, Austin and Dangerfield revised the Australasian fauna of Microgastrinae and realized that some of the *Hypomicrogaster* species *sensu* Nixon actually belonged to other recognized genera (Table 2). The authors concluded that the genus *Hypomicrogaster* "is excluded from the Australasian fauna... apparently restricted to the New World, primarily to the Neotropical region"; this finding agrees with Mason's opinion about the genus distribution and provoked other taxonomists to think about the validity of other non-Neotropical species within the genus. In contrast to this trend, Shate and Bhoje (2000) described a new species *H. minari* from India, thus expanding the distribution of the genus to the Oriental region, and the existence of *H. imitator* (Ashmead) Nixon from Africa expands the distribution of the genus to the Afrotropical region. To date, no comprehensive revision has been conducted, so that the generic limits and detailed information regarding the geographical distribution of the *Hypomicrogaster* species are poorly defined (Table 3).