

ZOOTAXA

434

A revised catalog of the mite family Phytoseiidae

G.J. DE MORAES, J.A. MCMURTRY, H.A. DENMARK & C.B. CAMPOS



Magnolia Press
Auckland, New Zealand

G.J. DE MORAES, J.A. MCMURTRY, H.A. DENMARK & C.B. CAMPOS

A revised catalog of the mite family Phytoseiidae

(*Zootaxa* 434)

494 pp.; 30 cm.

18 February 2004

ISBN 1-877354-24-4 (Paperback)

ISBN 1-877354-25-2 (Online edition)

FIRST PUBLISHED IN 2004 BY

Magnolia Press

P.O. Box 41383 St. Lukes

Auckland 1030

New Zealand

e-mail: zootaxa@mapress.com

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

© 2004 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)

A revised catalog of the mite family Phytoseiidae

G.J. DE MORAES^{1,2}, J.A. MCMURTRY³, H.A. DENMARK⁴ & C.B. CAMPOS²

¹CNPq Researcher (e-mail gjmoraes@carpa.ciagri.usp.br);

²Depto. Entomologia, Fitopatologia e Zoologia Agrícola, Universidade de São Paulo/ Escola Superior de Agricultura “Luiz de Queiroz”, 13418-900 Piracicaba-SP, Brazil;

³University of California and Oregon State University, P. O. Box 4487, 9 Blue Goose Lane, 97707 Sunriver, Oregon, USA;

⁴Emeritus Entomologist, Entomology Section, Division of Plant Industry, Florida Department of Agriculture and Consumer Services, P. O. Box 147100, 32614-7100 Gainesville, Florida, USA

TABLE OF CONTENTS

ABSTRACT	5
INTRODUCTION	5
ACKNOWLEDGEMENTS	7
PHYTOSEIIDAE Berlese	9
AMBLYSEIINAE Muma	9
<i>Amblyseiella</i> Muma	9
<i>Amblyseiulella</i> Muma	10
<i>Amblyseius</i> Berlese	12
<i>Archeosetus</i> Chant & McMurtry	55
<i>Arrenoseius</i> Wainstein	55
<i>Asperoseius</i> Chant	55
<i>Chelaseius</i> Muma & Denmark	56
<i>Chileseius</i> Gonzalez & Schuster	58
<i>Eharius</i> Tuttle & Muma	58
<i>Euseius</i> Wainstein	59
<i>Evansoseius</i> Sheals	86
<i>Fundiseius</i> Muma & Denmark	87
<i>Honduriella</i> Denmark & Evans	89
<i>Indoseiulus</i> Ehara	89
<i>Iphiseiodes</i> De Leon	90
<i>Iphiseius</i> Berlese	91
<i>Kampimodromus</i> Nesbitt	93
<i>Kampimoseiulella</i> Chant & McMurtry	96
<i>Knopkirie</i> Beard	96
<i>Macmurtryseius</i> Kolodochka & Denmark	97
<i>Macroseius</i> Chant, Denmark & Baker	97

<i>Neoparaphytoseius</i> Chant & McMurtry	97
<i>Neoseiulus</i> Hughes	98
<i>Noeledius</i> Muma & Denmark	153
<i>Okiseius</i> Ehara	154
<i>Olpiseius</i> Beard	156
<i>Paraamblyseiulella</i> Chant & McMurtry	156
<i>Paraamblyseius</i> Muma	157
<i>Paragigagnathus</i> Amitai & Grinberg	158
<i>Parakampimodromus</i> Chant & McMurtry	160
<i>Paraphytoseius</i> Swirski & Shechter	160
<i>Pholaseius</i> Beard	164
<i>Phyllodromus</i> De Leon	164
<i>Phytoscutus</i> Muma	165
<i>Phytoseiulus</i> Evans	167
<i>Proprioseiopsis</i> Muma	170
<i>Proprioseiulus</i> Muma	192
<i>Proprioseius</i> Chant	192
<i>Quadromalus</i> Moraes, Denmark & Guerrero	194
<i>Ricoseius</i> De Leon	194
<i>Swirskiseius</i> Denmark & Evans	195
<i>Typhlodromalus</i> Muma	195
<i>Typhlodromips</i> De Leon	205
<i>Typhloseiella</i> Muma	230
PHYTOSEIINAE Berlese	231
<i>Chantia</i> Pritchard & Baker	231
<i>Phytoseius</i> Ribaga	231
<i>Platyseiella</i> Muma	259
TYPHLODROMINAE Scheutten	260
<i>Africoseiulus</i> Chant & McMurtry	260
<i>Australiseiulus</i> Muma	260
<i>Chanteius</i> Wainstein	261
<i>Cocoseius</i> Denmark & Andrews	263
<i>Cydnoneius</i> Muma	263
<i>Galendromimus</i> Muma	264
<i>Galendromus</i> Muma	265
Subgenus <i>Galendromus</i> Muma	265
Subgenus <i>Mugidromus</i> Tutle & Muma	270
<i>Gigagnathus</i> Chant	271
<i>Kuzinellus</i> Wainstein	271
<i>Leonseius</i> Chant & McMurtry	275
<i>Metaseiulus</i> Muma	275
Subgenus <i>Leonodromus</i> Muma	275
Subgenus <i>Metaseiulus</i> Chant & McMurtry	276
<i>Meyerius</i> van der Merwe	288
<i>Neoseiulella</i> Muma	290
<i>Papuaseius</i> Chant & McMurtry	298
<i>Paraseiulus</i> Muma	298
<i>Silvaseius</i> Chant & McMurtry	304
<i>Typhlodromina</i> Muma	304
<i>Typhlodromus</i> Scheutten	307

Subgenus <i>Anthoseius</i> De Leon	307
Subgenus <i>Typhlodromus</i> Scheuten	360
<i>Typhloseiopsis</i> De Leon	372
<i>Typhloseiulus</i> Chant & McMurtry	373
<i>SPECIES INCERTAE SEDIS</i>	375
<i>NOMINA NUDA</i>	378
PAPERS PROVIDING INFORMATION ON GENERAL MORPHOLOGY	378
REFERENCES	379
INDEX OF SPECIES	442
INDEX OF LOCATIONS	487

ABSTRACT

Mites of the family Phytoseiidae are the most common predators of phytophagous mites on most plant species. Some species are widely studied and used for the biological control of mite pests. Many new species continue to be discovered as collections are intensified in certain regions or habitats, e.g. in Africa, Asia, Central and South America. The last catalog of Moraes et al. (1986) included about 1500 described species. This updated catalog includes almost 2250 species. As in the last catalog, it includes references to descriptions and redescriptions of species, synonymies and recorded world distributions.

Key words: Acari, Mesostigmata, Phytoseiidae, predators, biological control agents, host plants, distribution, catalog, taxonomy, bibliography

INTRODUCTION

The widespread interest in the Phytoseiidae Berlese (Acari: Mesostigmata) as biological control agents of phytophagous mites and thrips is evident from the more than 4000 publications on phytoseiids from 1960–1994 (Kostiainen & Hoy 1996). Mites of this family are the most common predators of phytophagous mites on most plant species. Thus, phytoseiids are the predators most widely studied and used for the biological control of mite pests (Gerson et al. 2003). Many new species continue to be discovered as collections are intensified in certain regions or habitats, e.g. in Africa, Asia, Central and South America. The catalog of Moraes et al. (1986) included about 1500 described species. Currently, the number of described species, mentioned in this catalog, is almost 2250.

This publication is an update of the 1986 phytoseiid catalog published by Moraes et al. (1986). As in that publication, it includes references to descriptions and redescriptions of species, synonymies and recorded world distributions.

Gnoriminae Chaudhri, *Gnorimus* Chaudhri, 1975a, *Gnorimus chaudhrii* Wu & Wang, 1982 and *Gnorimus tabella* Chaudhri, 1975a, included in Moraes et al. (1986), were not included in this catalog because they were considered to belong to the Ascidae (Chant &