

GENERIC SYNONYMY IN THE PHYTOSEIIDAE (ACARINA: MESOSTIGMATA)¹

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Three exhaustive systematic studies of the predatory mite family, Phytoseiidae, have been published within the last four years. In each study a different subfamily, generic, and subgeneric organization of the family has been proposed. Chant (1959) recognized two subfamilies, eight genera, and four subgenera; Muma (1961) proposed four subfamilies, 43 genera, and five subgenera; Wainstein (1962) outlined two subfamilies, three tribes, seven genera, 22 subgenera, and 18 sections.

Because of the wide geographic separation of the workers, the nearly concurrent publication of the studies, and the remarkably similar morphology of related species, numerous synonyms and one homonym have been established.

The purpose of this paper is to present in systematic arrangement the presently described supraspecific categories within the family, to cite authorities recognizing such categories, and to indicate their validity according to the most recent interpretation of the International Code of Zoological Nomenclature. Personal opinions or evaluations of the present or other authors are not cited, and if the systematic status of the category is not in question, no notation is included. Because of extensive repetitions of references, only the authors and dates are cited in the body of the text with full references restricted to the literature cited.

FAMILY PHYTOSEIIDAE

Subfamily Macroseiinae Chant, Denmark and Baker 1959, Chant 1959, Muma 1961, Wainstein 1962.

Genus *Macroseius* Chant, Denmark and Baker, 1959, Chant 1959, Muma 1961, Wainstein 1962.

Subfamily Aceodrominae Muma 1961.

Genus *Aceodromus* Muma 1961.

Subfamily Amblyseiinae Muma 1961—Phytoseiinae Berlese 1916 in part, Chant 1959 in part, Wainstein 1962 in part.

Tribe *Amblyseiini* Wainstein 1962.

Genus *Phytoscutus* Muma 1961.

Phytoscutella Muma 1961.

Phytoseiulus Evans 1952, Athias-Henriot 1957, Chant 1959, Muma 1961, Wainstein 1962.

Subgenus *Phytoseiulus*, Wainstein 1962.

Asperoseius, Wainstein 1962.

Proprioseius, Wainstein 1962.

Kampimoseius Wainstein 1962.

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- Genus *Proprioseius* Chant 1957, Chant 1959, Muma 1961.
Phytoseiulella Muma 1961.
Amblyseiulella Muma 1961.
Proprioseiopsis Muma 1961—*Pavlovskius* Wainstein 1962 is an objective synonym.
Asperoseius Chant 1957, Chant 1959, Muma 1961.
Amblyseiulus Muma 1961.
Platyseiella Muma 1961.
Paraphytoseius Swirski and Shechter 1961.
Amblyscutus Muma 1961—*Megadromus* Wainstein 1962 is an objective synonym.
- Genus *Cydnodromella* Muma 1961—*Allodromus* Wainstein 1962 is an objective synonym.
Kampimodromus Nesbitt 1951, Womersley 1954—*Paradromus* Muma 1961 is an objective synonym.
Paradromus Muma 1961 is an objective synonym of *Kampimodromus* Nesbitt 1951.
Amblyseiella Muma 1955, Athias-Henriot 1957.
Amblyseius Berlese 1941, Garman 1948, Nesbitt 1951, Womersley 1954, Evans 1957, Athias-Henriot 1957, Muma 1961, Wainstein 1962.
- Subgenus *Amblyseius*, Muma 1961, Wainstein 1962.
 Section *Amblyseius*, Wainstein 1962.
Typhlodromopsis, Wainstein 1962.
Amblydromus Wainstein 1962 is a homonym of *Amblydromus* Muma 1961.
Euseius Wainstein 1961.
Italoseius Wainstein 1962.
Afrodromus Wainstein 1962.
- Subgenus *Amblyseiulus* Muma 1961.
Typhlodromopsis DeLeon 1959, Muma 1961.
Arrenoseius Wainstein 1962.
Pavlovskius Wainstein 1962 is an objective synonym of *Proprioseiopsis* Muma 1961.
Skironodromus Wainstein 1962.
Megadromus Wainstein 1962 is an objective synonym of *Amblyscutus* Muma 1961.
Kampimodromus, Wainstein 1962.
- Section *Kampimodromus*, Wainstein 1962.
Gynaeseius Wainstein 1962.
- Subgenus *Amblyseiellus* Muma 1955, Wainstein 1962.
Iphiseius Berlese 1921, Muma 1961.
- Genus *Iphiseius* Berlese 1921, Evans 1954, Athias-Henriot 1957, Chant 1959.
Paraamblyseius Muma 1962.
Cydnodromus Muma 1961.
Phyllodromus DeLeon 1959B, Muma 1961.
Phytodromus Muma 1961.
Athiaseius Wainstein 1962 is an objective synonym of *Typhloseiella* Muma 1961.

Typhloseiella Muma 1961—*Athiaseius* Wainstein 1962 is an objective synonym.

Typhloseius Muma 1961.

Subfamily Phytoseiinae Berlese 1916, Chant 1959 in part, Muma 1961, Wainstein 1962 in part.

Tribe *Phytoseiini* Wainstein 1962.

Genus *Dubininellus* Muma 1961. If Chant and Athias-Henriot (1960) are correct in assuming that Ribaga (1902) misidentified his type of *Phytoseius* Ribaga (1902) as *Gamasus plumifer* Canestrini and Fanzago 1876, this genus is a subjective synonym of *Phytoseius*. Further, *G. plumifer* and related species will then represent an undescribed genus.

Phytoseius Ribaga 1902, Nesbitt 1951, Womersley 1954, Athias-Henriot 1957, Evans 1957, Chant 1959, Wainstein 1959, Muma 1961 in part. See discussion under *Dubininellus* above.

Subgenus *Phytoseius* Ribaga 1902, Wainstein 1959, Chant 1959, Chant and Athias-Henriot 1960. The discussion above concerning *Phytoseius* and *Dubininellus* as genera also applies to this and the following subgenus.

Dubininellus Wainstein 1959, Chant 1959, Chant and Athias-Henriot 1960. See discussions above.

Tribe *Typhlodromini* Wainstein 1962.

Genus *Typhloseiopsis* DeLeon 1959A, Chant 1959, Muma 1961.

Chanteius Wainstein 1962.

Subgenus *Chanteius* Wainstein 1962.

DeLeoneius Wainstein 1962 is an objective synonym of *Galendromimus* Muma 1961.

Allodromus Wainstein 1962 is an objective synonym of *Cydnodromella* Muma 1961.

Colchodromus Wainstein 1962.

Eratodromus Wainstein 1962 is an objective synonym of *Metaseiulus* Muma 1961.

Typhloseiopsis, Wainstein 1962.

Evanseius Wainstein 1962.

Section *Evanseius* Wainstein 1962.

Dendrodromus Wainstein 1962.

Botanoseius Wainstein 1962 is an objective synonym of *Amblydromus* Muma 1961.

Genus *Paraseiulella* Muma 1961.

Metaseiulus Muma 1961—*Eratodromus* Wainstein 1962 is an objective synonym

Neoseiulus Hughes 1948, Muma 1961.

Amblydromella Muma 1961.

Genus *Neoseiulella* Muma 1961—*Nesbitteius* Wainstein 1962 is an objective synonym.

Australiseiulus Muma 1961—*Australidromus* Wainstein 1962 is an objective synonym.

Clavidromus Muma 1961.

- Anthoseius* DeLeon 1959B, Muma 1961.
Clavidromina Muma 1961.
Amblydromus Muma 1961—*Amblydromus* Wainstein 1962 is a homonym and *Botanoseius* Wainstein 1962 is an objective synonym.
Typhlodromina Muma 1961.
Galendromimus Muma 1961—*DeLeoneius* Wainstein 1962 is an objective synonym.
Galendromus Muma 1961—*Trichoseius* Wainstein 1962 is a subjective synonym.
Typhlodromus Scheuten 1857, Nesbitt 1951, Womersley 1954, Evans 1957, Athias-Henriot 1957, Chant 1959, Muma 1961, Wainstein 1962.
- Subgenus *Typhlodromus*, Chant 1959, Wainstein 1962.
 Section *Typhlodromus*, Wainstein 1962.
Menaseius Wainstein 1962.
Trichoseius Wainstein 1962 is a subjective synonym of *Galendromus* Muma 1961.
Lamiaseius Wainstein 1962.
- Subgenus *Amblyseius*, Chant 1959.
Neoseiulus, Nesbitt 1951, Womersley 1954, Wainstein 1962.
 Section *Neoseiulus*, Wainstein 1962.
Seiodromus Wainstein 1962 is an objective synonym of *Typhlodromella* Muma 1961.
Taxodromus Wainstein 1962.
- Subgenus *Nesbitteius* Wainstein 1962 is an objective synonym of *Neoseiulella* Muma 1961.
 Section *Nesbitteius* Wainstein 1962 is an objective synonym of *Neoseiulella* Muma 1961.
Kallitoseius Wainstein 1962 is an objective synonym of *Typhloctonus* Muma 1961.
- Subgenus *Australidromus* Wainstein 1962 is an objective synonym of *Australiseiulus* Muma 1961.
- Genus *Typhlodromella* Muma 1961—*Seiodromus* Wainstein 1962 is an objective synonym.
Typhloctonus Muma 1961—*Kallitoseius* Wainstein 1962 is an objective synonym.
Seiulus Berlese 1887, Athias-Henriot 1957, Chant 1959, Muma 1961, Wainstein 1962.
Paraseiulus Muma 1961, Wainstein 1962A — *Melodromus* Wainstein 1962 is an objective synonym.
Melodromus Wainstein 1962 is an objective synonym of *Paraseiulus* Muma 1961.

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ADDENDUM

The following two 1962 generic revisions were not reviewed until after the present paper was in press, and the additional synonyms are not included here.

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A LIST OF THE APHIDS OF NEW YORK, by Mortimer D. Leonard, Washington, D. C. *Proceedings of the Rochester Academy of Science*, Vol. 10, No. 6, pp. 289 - 428, 4 plates, Feb. 1963. Paper covers, \$1.50.

The life histories, economic importance, method of feeding, production of winged forms, productivity, role as vectors of plant viruses, and other pertinent information are discussed as introductory material. Detailed records of the distribution of about 350 species of aphids known to occur in New York are given and a list of over 700 food plants on which they occur.