



<http://dx.doi.org/10.11646/zootaxa.3889.3.5>

<http://zoobank.org/urn:lsid:zoobank.org:pub:467A779C-303B-4259-B9B3-1F077858FC09>

Two new species of tarsonemid mites (Acari: Tarsonemidae) from northeastern Brazil

JOSILENE M. SOUSA¹, ANTÔNIO C. LOFEGO² & MANOEL G. C. GONDIM JR.¹

¹*Departamento de Agronomia, Área Fitossanidade, Universidade Federal Rural de Pernambuco. Av. Dom Manoel de Medeiros s/n, Dois irmãos, 52171-900 Recife, Pernambuco, Brasil. E-mail podos@ig.com.br, E-mail: mguedes@depa.ufrpe.br*

²*UNESP—Universidade Estadual Paulista, Departamento de Zoologia e Botânica, Rua Cristovão Colombo, 2265, 15054-000, São José do Rio Preto, SP, Brasil. E-mail: aclofego@ig.com.br*

Abstract

Two new species of tarsonemid mites, *Daidalotarsonemus annonae* sp. nov. and *Fungitarsonemus setillus* sp. nov. found on Annonaceae leaves collected in northeastern Brazil are described and illustrated. Females of *D. annonae* are similar to those of *D. serissae*, but differ by having setae *c2* setiform, and seta *1a* distant from apodeme 1. *F. setillus* is similar to *F. pereregrinus*, but females can be distinguished by having the prodorsal shield fused to tergite C, dorsal setae *h* and *d* short, and setae *c1* longer than *c2*.

Key words: Annonaceae, *Daidalotarsonemus*, *Fungitarsonemus*, Tarsonemidae, taxonomy

Introduction

Tarsonemidae is a relatively large family comprising parasitic, predaceous, fungivorous and phytophagous mites, and includes species which are major worldwide pests (Lindquist 1986). In 2002, Lin & Zhang reported that the family consisted of 529 species in 40 genera. However, several new species have been described since that time. In Brazil alone, two new genera and ten new species were described from 2002 to 2007 (Morales *et al.* 2002; Lofego *et al.* 2005, 2007; Lofego & Feres 2006; Lofego & Gondim 2006), and it is expected that many more species remain to be discovered and described, mainly in tropical regions. In an on-going effort to determine the mite fauna of Annonaceae in northeast Brazil, two new tarsonemid species were recently collected which are described and illustrated herein.

Material and methods

Leaf samples of three *Annona* species and one hybrid (*Annona coriacea* L., *Annona muricata* L., *Annona squamosa* L. and *Annona cherimolia* x *Annona squamosa*) were collected in 2008 and taken to the laboratory for examination under a stereomicroscope. Tarsonemid species were collected and mounted in Hoyer's medium for examination under phase contrast microscope.

The new species were described, following the terminology used by Lindquist (1986). Measurements of the holotype female and measurements range for the male and female paratypes (in parentheses) are given in micrometres. The following abbreviations are used for institutions where types were deposited: UNESP/SJRP—Universidade Estadual Paulista, Department of Zoology and Botany, São José do Rio Preto-SP, Brazil; UFRPE—Universidade Federal Rural de Pernambuco, Department of Agronomy, Recife-PE, Brazil; USNM—United States National Museum of Natural History, Smithsonian Institution, USA.

from those of *F. peregrinus* by having the prodorsal shield fused to tergite C; dorsal setae *h* and *d* about 0.3 and 0.4 times as long as those of *F. peregrinus*, respectively; and setae *c1* longer than *c2* (vs. *c1* shorter than *c2* in *F. peregrinus*). Males of the two species can be distinguished in *Fungitarsonemus setillus* by having dorsal setae *c1* and *c2* subequal in length, and setae *v2* twice longer than *sc2* (vs. setae *c2* about five times longer than setae *c1* and setae *v2* shorter than setae *sc2* in *F. peregrinus*). The fusion of the prodorsal shield and tergite C also occurs in females of *Fungitarsonemus pulvirosus*, however, in this species dorsal setae *c1*, *d* and *f* are very long (more than 100µm) and whip-like.

Acknowledgments

The authors are grateful to Pernambuco Research and Technology Foundation (Fundação de Amparo à Ciência e Tecnologia do Estado de Pernambuco, FACEPE, APQ-007-5.01/12), and Coordination of Improvement of Higher Education Personnel (Coordenação de Aperfeiçoamento de Pessoal de Nível Superior, CAPES, PNPd—2419/2011) for financial support. To National Council for Scientific and Technological Development (Conselho Nacional de Desenvolvimento Científico e Tecnológico, CNPq) for research fellowships for the co-authors. We thank to Drs. Gilberto José de Moraes (USP/Brazil), Ronald Ochoa and Gregory Evans (USDA/USA) for the suggestions and revision of the manuscript.

References

- Beer, R.E. (1954) A revision of the Tarsonemidae of the Western Hemisphere (Order Acarina). *The University of Kansas Science Bulletin*, 36, 1091–1387.
- Lin, J.-Z. & Zhang, Z.-Q. (2002) *Tarsonemidae of the world: key genera, geographical distribution, Systematic catalogue and annotated bibliography*. Systematic & Applied Acarology Society, London, 440 pp.
- Lindquist, E.E. (1986) The world genera of Tarsonemidae (Acari: Heterostigmata): a morphological, phylogenetic, and systematic revision, with reclassification of family-group taxa in the Heterostigmata. *Memoirs of the Entomological Society of Canada*, 136, 1–157.
<http://dx.doi.org/10.4039/entm118136fv>
- Lofego, A.C. & Feres, R.J.F. (2006) A new genus and species of tarsonemid mite (Acari: Tarsonemidae) from Brazil. *Zootaxa*, 1299, 45–55.
- Lofego, A.C. & Gondim, M.G.C. Jr. (2006) A new species of *Steneotarsonemus* (Acari: Tarsonemidae) from Brazil. *Systematic & Applied Acarology*, 11, 195–203.
- Lofego, A.C., Moraes, G.J. de & Ochoa, R. (2007) Four new species of *Xenotarsonemus* (Acari: Tarsonemidae) from Brazil, *Zootaxa*, 1646, 1–15.
- Lofego, A.C., Ochoa, R. & Moraes, G.J. de (2005) Some tarsonemid mites (Acari: Tarsonemidae) from Brazilian "Cerrado" vegetation with description of three new species. *Zootaxa*, 823, 1–27.
- Moraes, G.J. de, Lindquist, E.E. & Lofego, A.C. (2002) A new genus and species of tarsonemid mite (Acari: Tarsonemidae) associated with a neotropical curculionid beetle (Coleoptera). *Invertebrate Systematics*, 16, 687–695.
<http://dx.doi.org/10.1071/IT01030>
- Yang, Q.S., Ding, T.Z. & Zhou, H. (1987) Three new species of the genus *Daidalotarsonemus* from Shanghai, China (Acarina: Tarsonemidae). *Entomotaxonomia*, 9, 151–152.