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First record of Proprioseiopsis citri (Muma) (Acari: Phytoseiidae) from Brazil with a complementary description

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**ABSTRACT**

Proprioseiopsis citri (Muma) (Acari: Phytoseiidae) is reported for the first time from Brazil. The specimens were collected from litter in Jaboticabal, State of São Paulo, Brazil. Measurements of holotype also are provided and the male is described for first time. A key to the species of Proprioseiopsis from Brazil is provided.

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**KEYWORDS**

Amblyseiinae; diversity; litter; Proprioseiopsis; taxonomy

The Phytoseiidae Berlese (Acari: Mesostigmata) is a highly diverse predatory mite family with more than 2700 species described (Demite et al. 2014, 2016). Phytoseiid mites are recognized as effective natural enemies against certain agricultural arthropod pests (Gerson et al. 2003; McMurtry et al. 2013, 2015), increasing its importance as one of the best-studied mite families.

Proprioseiopsis Muma is the sixth largest genus in the family Phytoseiidae containing 164 described species (Demite et al. 2016). In Brazil, 10 described species have been recorded (see Phytoseiidae Database: Demite et al. 2016).

The objective of this article is to provide a complementary description of Proprioseiopsis citri, based on an examination of the holotype and of additional specimens collected in Brazil, where it is reported for the first time. A key to Proprioseiopsis in Brazil is provided.

**Materials and methods**

Mites were mounted on slides with Hoyer’s medium and examined under a phase-contrast microscope. Illustrations were made using a drawing tube. Dorsal and ventral setal nomenclature is that of Rowell et al. (1978) and Chant and Yoshida-Shaul (1991), respectively. All measurements are given in micrometres indicating measurements of the holotype in brackets followed by mean for the Brazilian specimens measured, and (in parentheses) by the respective range. The Brazilian specimens are deposited in the mite reference collection of Departamento de Entomologia e Acarologia, Escola Superior de Agricultura “Luiz de Queiroz”, Universidade de São Paulo, Piracicaba, São Paulo State, Brazil.

**Results and discussion**

Proprioseiopsis citri (Muma, 1962)

(Figures 1–7)


Specimens examined

Holotype: female collected from litter at Sebring, Florida, USA, collected by M.H. Muma, 18-VII-1960; Brazilian specimens: 7 females and 1 male collected from litter at base of Bougainvillea spectabilis Willd (Nyctaginaceae), Jaboticabal (21°14′44″S; 48°17′15″W), São Paulo State, Brazil, collected by J.C. Santos, 10-VII-2012.

FEMALE

(Holotype + 7 Brazilian specimens)

Dorsum (Figure 1).


Peritreme. Extending forward to level of j1.

Venter (Figure 2).

Sternal and genital shields smooth, distances between st1-st3 [61] 60 (59–61), st2-st2 [68] 72 (70–75) and st5-st5 [68] 70 (63–73); ventral shield pentagonal, striated anteriorly and smooth posteriorly, with three pairs of pre anal setae (JV1, JV2 and ZV2); [109] 110 (101–117) long, [106] 105 (102–109) wide at level of ZV2 and [94] 94 (91–97) wide at level of anus; four pairs of opisthogastric setae on unsclerotized cuticle (JV4, JV5, ZV1 and ZV3); JV5 [78] 73 (71–77). All ventral setae smooth. Two pairs of metapodal plates present.

Chelicera (Figure 3).


Spermatheca (Figure 4).


Legs (Figure 5).

MALE

(1 Brazilian specimen)

Dorsum. Dorsal shield mostly smooth, with a few anterolateral striae; 263 long and 190 wide; j1 18, j3 30, j4 6, j5 6, j6 5, j7 8, z2 14, z4 10, z5 6, Z1 12, Z4 71, Z5 50, s4 47, S2 10, S4 10, S5 10, r3 18, R1 8. All dorsal setae smooth.

Peritreme. Extending to level of j1.

Venter (Figure 6). Sternogenital and ventrianal shields reticulate ventrianal shield subtriangular; 115 long and 143 wide at anterior corners, with four pairs of pre-anal setae, one pair of pores mediad bases of JV2, and four pairs of lyrifissures; JV5 35.

Spermatodactyl (Figure 7). Shaft 20 long.

Legs. Macrosetae sharp-tipped, lengths: SgIV 43, StIV 27, StIV 45. Chaetotactic formulae of genua II and II as in females.

Previous records


Remarks

Until now, P. citri was reported only from USA (Alabama and Florida) and from Paraguay. In both countries, it was found in litter, the same substrate onto which it was found in the present study; it was also reported once from citrus bark (Denmark and Muma 1970). Fadamiro et al. (2009) did not mention in which substrate (citrus leaves/fruits or ground cover plants (weeds)) this species was recorded. The original description of P. citri was brief, with measurements only of the dorsal shield of female and male adults. Measurements of setae of a single specimen, probably from Florida, were provided by Schicha (1980). Measurements of the present study are similar to those provided in that paper, except for macrosetae of genu and tibia IV, about 30% longer in the holotype and in the Brazilian specimens.
Key for species of *Proprioseiopsis* from Brazil

1. Genu I with a macroseta...... *peruvianus* species group Chant & McMurtry ................................................................. 2
2. Genu I without macroseta ...... *belizensis* species group Chant & McMurtry ............................................................... 4
3 (1). Calyx of spermatheca saccular, elongate, constricted near the middle and flared near the base. ........................................... 3
4 (3). Seta *j* ≤ at least 25 µm; setae *z4* and *z5* at most 130 and 132 µm, respectively......................................................... 3
5 (2). Seta *j* ≤ at least 25 µm; setae *z4* and *z5* at most 130 and 132 µm, respectively......................................................... 3
6 (4). Seta *j* ≤ at least 25 µm; setae *z4* and *z5* at most 130 and 132 µm, respectively......................................................... 3
7 (5). Seta *j* ≤ at least 25 µm; setae *z4* and *z5* at most 130 and 132 µm, respectively......................................................... 3
8 (6). Seta *j* ≤ at least 25 µm; setae *z4* and *z5* at most 130 and 132 µm, respectively......................................................... 3

**Proprioseiopsis jasmini** (El-Banhawy)

3'. Calyx of spermatheca saccular, bell-shaped, without any constrictions ................................................................. 3

**Proprioseiopsis biologicus** Chant & McMurtry ................................................................. 6

3' (2). Seta *j* ≤ at least 140 and 152 µm, respectively......................................................... 3

**Proprioseiopsis paniquassuessenis** Moraes, Barbosa & Castro

4 (1) Calyx of spermatheca short, cup-shaped ...... *asetus* species subgroup Chant & McMurtry......

**Proprioseiopsis mexicana** (Garman) (= *P. asetus*; according Denmark & Evans 2011)

4'. Calyx of spermatheca longer, not cup-shaped ...... 5

**Proprioseiopsis mexicana** (Garman) (= *P. asetus*; according Denmark & Evans 2011)

4' (5). Seta *j* ≤ at most 20% longer (< 45µm) than the distance between its base and that of seta *z2*....

**Proprioseiopsis mexicanus** Chant

5 (4). Seta *j* ≤ at most 20% longer (< 45µm) than the distance between its base and that of seta *z2*....

**Proprioseiopsis mexicanus** Chant

5' (3). Calyx of spermatheca shorter than the distance between its base and that of seta *z2*......

**Proprioseiopsis mexicanus** Chant

5' (6). Calyx of spermatheca longer, not cup-shaped ...... 5

**Proprioseiopsis mexicanus** Chant

5' (4). Calyx of spermatheca shorter than the distance between its base and that of seta *z2*......

**Proprioseiopsis mexicanus** Chant

5) (1). Seta *j* ≤ at least 25 µm; setae *z4* and *z5* at most 130 and 132 µm, respectively......................................................... 3

**Proprioseiopsis pentagonalis** Lofego, Demite & Moraes

8 (5). Seta *j* ≤ at least 25 µm; setae *z4* and *z5* at most 130 and 152 µm, respectively......................................................... 3

**Proprioseiopsis pentagonalis** Lofego, Demite & Moraes

8' (3). Seta *j* ≤ at least 25 µm; setae *z4* and *z5* at most 130 and 152 µm, respectively......................................................... 3

**Proprioseiopsis citri** (Muma)

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**References**


