DESCRIPTION OF A NEW SPECIES OF PHYTOSEIID MITE FROM NORTHEASTERN BRAZIL AND REDESCRIPTION OF *NEOSEIULUS GRACILIS* (ACARI: PHYTOSEIIDAE)

G. J. DE MORAES,[1] E. L. MELO[2] AND M. G. C. GONDIM JR.[3]
[1]Depto. Zoologia, ESALQ/USP, 13418-900 Piracicaba, SP, Brazil

[2]CIAT, AA 6713, Cali, Colombia

[3]UFRPE, Recife-PE, Brazil

ABSTRACT

A new species of phytoseiid mite, *Phyllodromus trisetatus* n.sp., collected in northeastern Brazil is described. *Phyllodromus* DeLeon, 1959 has been a monotypic genus known only from Florida, U.S.A. *Neoseiulus gracilis* (Muma, 1962) is redescribed based on the holotype and specimens from northeastern Brazil.

Key Words: predaceous mites, biological control, taxonomy, Gamasida

RESUMEN

Es descrita una nueva especie de ácaro fitoseido, *Phyllodromus trisetatus* n.sp., colectado en el noreste de Brasil. *Phyllodromus* DeLeon, 1959 fue un género monotípico conocido solamente de la Florida, U.S.A. *Neoseiulus gracilis* (Muma, 1962) es redescrtito basado en el holotipo y en especímenes del noreste de Brasil.

Phytoseiid mites (Acari: Phytoseiidae) have received considerable attention worldwide because of their potential as natural enemies of phytophagous mites (McMurtry 1984). Few papers have reported on species of phytoseiid mites from Brazil (Moraes et al. 1986), and only 4 papers on phytoseiid mites from northeastern Brazil (Farias et al. 1981; Moraes & Oliveira 1982; Moraes & McMurtry 1983; Moraes et al. 1989).

The present paper provides a description of a new species of phytoseiid mite from northeastern Brazil, and a redescription of *Neoseiulus gracilis* (Muma) based on the holotype as well as specimens collected in northeastern Brazil.

All measurements are given in micrometers. Setal nomenclature is that of Rowell et al. (1978) and Chant & Hansell (1971) for dorsal and ventral surfaces, respectively. Dorsal and ventral idiosomal setal patterns are determined according to Chant & Yoshida-Shaul (1989, 1991).

GENUS PHYLLODROMUS

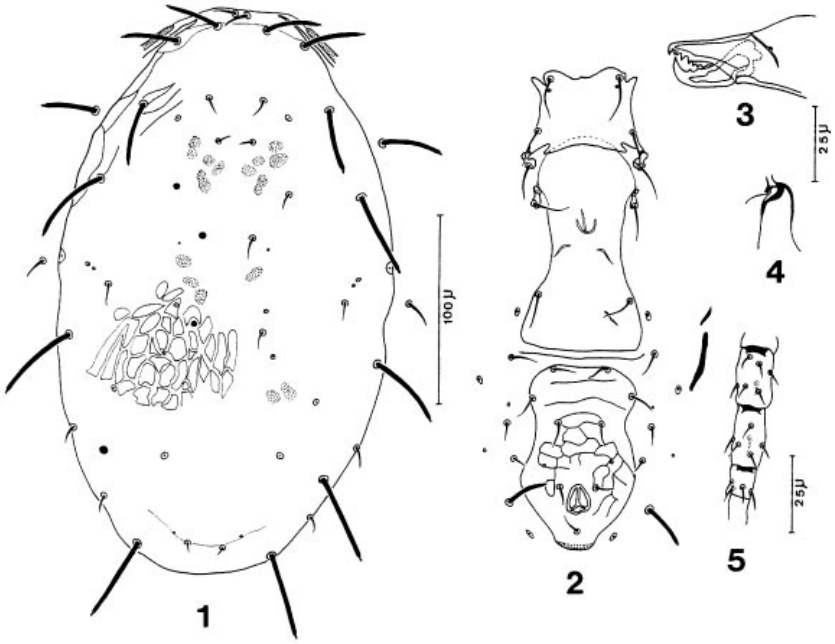
Phyllodromus DeLeon, 1959: 260; Muma, 1961: 290; Muma et al., 1970: 114

Phyllodromus trisetatus Moraes & Melo, n. sp.
(Figs. 1-5)

Diagnosis. This species is similar to the only other species in the genus, *Phyllodromus leiodis* DeLeon, 1959, but differs from it mainly by having JV1 on the ventrianal plate and S2 and S4 setiform.

Female. (3 specimens measured). Dorsum - Dorsal plate faintly striate anterolaterally, smooth or with faint circular pattern in the center, especially near J2; setal pattern 10A:9B; 388 (386-390) long, 223 (219-226) wide at s4 level, j1 18 (17-19), j3 37, j4 12 (11-14), j5 10 (10-11), j6 18 (17-19), J2 12 (11-14), J5 7 (6-8), z2 38 (37-40), z4 44 (43-45), z5 11 (9-13), Z1 14, Z4 63 (62-65), Z5 61 (59-65), s4 56 (56-57), S2 52 (50-54), S4 13 (13-14), S5 11 (10-13), r3 38 (37-39), R1 16 (15-17). Setae j3, z2, z4, s4, S2, Z4, Z5 and r3 flattened and oblanceolate, with a small knob at the tips; other setae setiform. Peritreme - Extending anteriorly to level slightly anterior to z2. Venter - Sternal and genital plates smooth; ventrianal plate with a few transversal striae anterior to JV2 and reticulate posteriorly; metasternal plates smooth; metapodal plates punctuated. All ventral setae setiform, except for JV5 which are flattened and oblanceolate. Distances between setae ST1-ST3 44 (43-45), ST2-ST2 64 (63-66), ST5-ST5 62 (60-65). Posterior margin of sternal plate expanded into a differentiated flap; sternal plate with ST3 on hook-shaped posterior extensions. Ventrianal plate vase-shaped, 124 (122-128) long, 74 (73-76) wide at ZV2 level and 78 (76-80) wide at anus level; JV1 on anterior margin of the plate; 2 small pores postero-laterad of JV2, in line with JV4. Chelicera - Fixed digit 25 (22-28) long, with 7 teeth; movable digit 25 (24-26) long, with 2 teeth. Spermatheca - Cervix deep bell-shaped, 18 (15-22) long; atrium encrusted at the proximal portion of the cervix. Legs - Macrosetae absent on legs; chaetotaxy of GeII 2-2/1,2/1-1 and GeIII 1-2/1,2/0-1.

Male. Unknown.



Figs. 1-5. *Phyllodromus trisetatus* n. sp.: 1. female dorsal plate; 2. female ventral surface; 3. female chelicera; 4. spermatheca; 5. female genu, tibia and tarsus of leg IV.

Locality and Type Material. Holotype female collected from *Solanum erianthum*, Piritiba, State of Bahia, Brazil, on 25-VII-94, by A. R. de Luna; 2 paratype females collected from *Waltheria indica*, at Goiana, State of Pernambuco, Brazil, on 7-III-91, by M. G. C. Gondim Jr. All types deposited at Depto. de Zoologia, ESALQ/USP.

Remarks. Phyllodromus trisetatus fits the description of the genus *Phyllodromus*, except for having JV1 on the ventrianal shield; however, it seems that this should not preclude the placement of the species in this genus, considering that it is not uncommon to observe variations even at the species level in relation to the location of preanal setae on or off the ventrianal plate. *Phyllodromus leiodes* is known only from Florida, where it was collected from *W. indica*, one of the plant substrates on which *P. trisetatus* was found in this study.

The trivial name of the new species refer to the presence of 3 preanal setae (JV1, JV2 and ZV2) on the ventrianal plate.

GENUS *NEOSEIULUS*

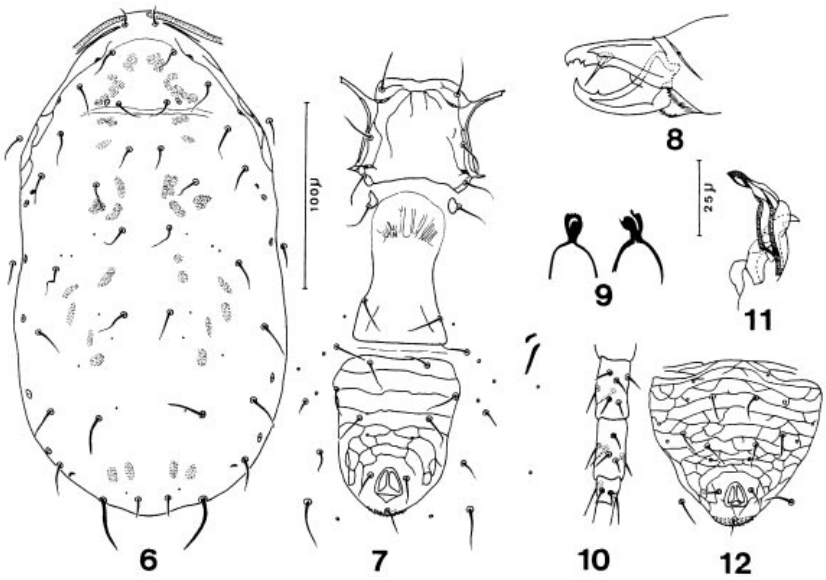
Neoseiulus Hughes, 1948: 141; Muma, 1961: 295 (in part), DeLeon, 1965: 23; Muma & Denmark, 1968: 235; Ragusa & Athias-Henriot, 1983: 660
Amblyseius (*Neoseiulus*), Karg, 1983: 313

Neoseiulus gracilis (Muma)
(Figs. 6-12)

Cydnodromus gracilis Muma, 1962: 9
Neoseiulus gracilis, Muma et al., 1970: 104
Amblyseius (*Neoseiulus*) *atrii* Karg, 1989: (new synonymy)

Material Examined: - Sebring, Florida State, USA, from citrus litter, 11-IV-60, J. A. Murrell (holotype female); Saint Lucia, Lesser Antilles, host?, 1980, S. Mahunka & L. Mahunka-Papp (holotype female of *Amblyseius* (*Neoseiulus*) *atrii* Karg, 1989); Goiana, Pernambuco State, Brazil, from soil, 22-XI-90, M. G. C. Gondim Jr. (8 females, 9 males); Goiana, Pernambuco State, Brazil, from soil, 17-IV-91, M. G. C. Gondim Jr. (12 females, 6 males).

Female. (Figs. 6-10). Dorsum - Dorsal plate with a few striae anterolaterally; setal pattern 10A:9B. The average measurements of 8 specimens collected in Brazil followed by the respective ranges and the measurements of the holotype are given subsequently: dorsal plate 329 (312-350) 342 long, 170 (155-179) 157 wide at s4 level, j1 12 (11-13) 15, j3 18 (17-19) 20, j4 15 (13-16) 18, j5 16 (16-17) 18, j6 16 (14-19) broken, J2 19 (19-21) 20, J5 10 (9-11) 13, z2 16 (16-19) 18, z4 16 (16-17) 20, z5 17 (16-19) 18, Z1 18 (17-19) broken, Z4 23 (22-25) 30, Z5 27 (24-30) 33, s4 17 (17-19) 23, S2 21 (19-22) 23, S4 20 (19-21) 23, S5 20 (17-22) 25, r3 12 (9-14) 17, R1 15 (14-16) 15. All setae smooth. Peritreme extending anteriorly to level of j1. Venter - Sternal plate with a few striae anteriorly and laterally; genital plate smooth; ventrianal plate with a few transversal striae anterior to JV2 and reticulate posteriorly; metasternal plates smooth; metapodal plates punctate. All ventral setae setiform. Distances between setae ST1-ST3 59 (54-62) 58, ST2-ST2 60 (54-65) 63, ST5-ST5 55 (51-59) 63. Ventrianal plate shield-shaped, 114 (110-128) 121 long, 91 (88101) 101 wide at ZV2 level and 76 (73-81) 76 wide at anus level; 2 small pores posteromesad of JV2. Chelicera - Fixed digit 31 (29-33) 28 long, with 4-5 teeth and a pilus dentilis; movable digit 31 (30-32) 30 long, with 1 tooth. Spermatheca - Cervix cup-shaped, 20 (19-22) 18 long; atrium nodular. Legs - Macrosetae absent on legs of Brazilian specimens; macroseta found



Figs. 6- 12. *Neoseiulus gracilis* (Muma) (drawings of specimens collected in Brazil) 6 female dorsal plate; 7. female ventral surface; 8. female chelicera; 9. spermatheca; 10. female genu, tibia and tarsus of leg IV; 11. spermatodactyl; 12. male ventrianal plate.

only on basi-tarsus of leg IV of holotype, 30 long. Chaetotaxy of GeII 22/0,2/0-1; GeIII 1-2/1,2/0-1.

Male. (Figs. 11-12) (5 Brazilian specimens measured). Dorsum - Dorsal plate striate along the margins, 264 (254-276) long, 156 (151-166) wide at s4 level, j1 12 (10-12), j3, j4, j6, J2, z2 and z4 16 (14-17), j5 and z5 15 (14-17), J5 10, Z1 18 (17-19), Z4 20 (19-22), Z5 19 (17-22), s4 and r3 14 (12-17), S2, S4 and S5 18 (17-19), R1 11 (10-12). All setae smooth. Peritreme - Extending anteriorly almost to level of j1. Venter - Sternogenital plate faintly striate. Ventrianal plate reticulate, sub-triangular, 109 (101-113) long, 121 (120-125) wide at anterior corners, with 5 pairs of pores. Chelicera - Shaft of spermatodactyl 13 (1214) long. Legs - Macrosetae absent on legs; chaetotaxy as in female.

Remarks. The measurements of the holotype female of *A.* (*N.*) *atrii* agrees well with the measurements mentioned previously. Similarly to the holotype of *N. gracilis*, it also has a single macroseta, on basi-tarsus IV. It is here considered a junior synonym of *N. gracilis.* Hirschmann (1962) considered *N. gracilis* a junior synonym of *Neoseiulus marinellus* (Muma, 1962); Tuttle & Muma (1973) suspected that *N. gracilis* could be a senior synonym *of Neoseiulus mckenziei* (Schuster & Pritchard, 1963). We have not seen the types of *N. marinellus* or *N. mckenziei.* However, based on the original descriptions of the latter two, we consider them distinct from *N. gracilis* and from each other because of the different spermathecae. Apparently correctly, Ragusa & Athias-Henriot (1983) synonymized *N. mckenziei* under *Neoseiulus barkeri* Hughes, 1948, a species distinct from *N. gracilis.*

ENDNOTE

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