

PHYTOSEIID MITES (ACARI: PHYTOSEIIDAE) FROM
GUADELOUPE AND MARTINIQUE

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ABSTRACT

Nine species of mites of the family Phytoseiidae are reported for the first time from Guadeloupe and Martinique. Measurements of the specimens of each species collected are given.

Key Words: French Caribbean Islands, predatory mites, *Thrips palmi*, *Solanum melongena*

RESUMEN

Nueve especies de acaros de la familia Phytoseiidae están señaladas por primera vez en Guadeloupe y Martinique. Medidas de los individuos de las especies recolectadas son presentadas.

This paper reports on phytoseiid mites from plants in Guadeloupe and Martinique, in collections made sporadically between 1985 and 1989. This is the first report of phytoseiid mites from those Caribbean islands. Setal nomenclature is that of Row-

ell et al. (1978) and Chant & Hansell (1971) for dorsal and ventral surfaces, respectively. All measurements are in micrometers. Except where indicated, the collector of the specimens was J. Etienne, and information on world distribution of each species was based on Moraes et al. (1986, 1991). The following abbreviations are used in this paper: I.N.R.A. (Institut National de la Recherche Agronomique; Antilles-Guyane); E.N.S.A.-M. (Ecole Nationale Supérieure Agronomique de Montpellier).

Amblyseius aerialis (Muma)

Amblyseiopsis aerialis Muma 1955: 264; Garman 1958: 75.

Typhlodromus (Amblyseius) aerialis Chant 1959: 88; Muma 1961: 287.

Amblyseius aerialis DeLeon 1966: 91; Moraes & Mesa 1988: 71; Denmark & Muma 1989: 15.

Specimens Examined: GUADELOUPE - Petit-Bourg, Domaine Duclos I.N.R.A., IX-1988 to I-1989, on *Solanum melongena* L. infested with *Thrips palmi* Karny (Thysanoptera).

Previous Records: Algeria, Bermuda, Brazil, Colombia, Cuba, Galapagos, Guyana, Honduras, India, Jamaica, Mexico and USA.

Remarks: The measurements of the specimens collected agree well with those of specimens from British Guyana (DeLeon 1966). The average measurements of 4 adult females followed by the respective ranges (in brackets) are: dorsal shield length 374 (367-382), width 262 (245-284), j1 26 (24-29), j3 49 (46-53), j4 4 (2-5), j5 3 (2-5), j6 5, J2 5 (5-6), J5 6 (5-6), z2 7 (5-9), z4 9 (6-10), z5 5, Z1 7 (6-7), Z4 145 (133-163), Z5 281 (257-318), s4 106 (94-118), S2 5, S4 10 (9-12), S5 10 (10-11), r3 10 (9-12), R1 10 (7-13), SgeI 44 (43-46), SgeII 38 (36-38), SgeIII 62 (58-70), StiIII 43 (38-48), SgeIV 136 (118-152), StiIV 94 (89-97), StIV 82 (72-89), ST1-ST3 71 (64-79), ST2-ST2 80 (77-82), ST5-ST5 84 (81-86), length of ventrianal shield 120 (118-121), width at ZV2 level 85 (77-89), width at anus level 83 (74-89), length of sclerotized proximal portion of cervix of spermatheca 14 (12-17), length of unsclerotized distal portion of cervix of spermatheca 20 (17-22), length of fixed digit 37 (36-38) with 12-14 teeth, length of movable digit 41 (41-42) with 4 teeth.

Iphiseiodes zuluagai Denmark & Muma

Iphiseiodes zuluagai Denmark & Muma 1972: 23.

Amblyseius zuluagai Moraes et al. 1991: 125.

Specimens Examined: GUADELOUPE - Petit-Bourg, Domaine Duclos I.N.R.A., II-1989, on *Hibiscus* sp., and *S. melongena* infested with *T. palmi*.

Previous Records: Brazil, Colombia, Cuba, Panama and Puerto Rico.

Remarks: The measurements of the female specimens collected are very similar to those of the holotype. The average measurements of 5 adult females followed by the respective ranges (in brackets) are: dorsal shield length 357 (334-394), width 330 (312-356), j1 15 (13-19), j3 24 (23-28), j4 2 (1-3), j5 1 (1-3), j6 3 (1-3), J2 3, J5 4 (3-4), z2 2 (1-3), z4 1 (1-3), z5 1, Z1 3 (3-4), Z4 4, Z5 90 (84-95), s4 97, S2 3 (3-4), S4 3, S5 3 (3-4), r3 4, R1 4, SgeI 51 (47-55), SgeII 31 (29-33), SgeIII 46 (41-51), StiIII 25 (24-27), SgeIV 80 (77-85), StiIV 49 (44-51), StIV 33 (29-36), ST1-ST3 47 (44-51), ST2-ST2 72 (66-76), ST5-ST5 111 (104-118), length of ventrianal shield 108 (102-117), width at ZV2 level 130 (126-140), width at anus level 117 (114-122), length of cervix of spermatheca 14 (13-15), length of fixed digit 31 (29-34) with 11 teeth, length of movable digit 35 (34-36) with 3 teeth.

The measurements of one of the 2 adult males collected are: dorsal shield length 287, width 217, j1 13, j3 27, j4, j5, j6 and J2 1, J5 4, z2, z4, z5 5, Z1 and Z4 1, Z5 62,

s4 (broken), S2, S4 and S5 1, r3 and R1 3, SgeI 38, SgeII 27, SgeIII 37, StiIII 23, SgeIV 61, StiIV 44, StIV 30, length of ventrianal shield 118, width at anterior corners 173, length of shaft of spermatodactyl 28.

Neoseiulus anonymus (Chant & Baker)

Amblyseius anonymus Chant & Baker 1965: 21; McMurtry 1983: 254; Schicha & Elshafie 1980: 32; Moraes & Mesa 1988: 76.

Neoseiulus anonymus Denmark & Muma 1973: 265.

Specimens Examined: GUADELOUPE - Matouba, VI-1988, on *Fragaria* sp., S. Simon leg.

Previous Records: Brazil, Colombia, Cuba, Guatemala, Honduras, Mexico and Peru.

Remarks: The measurements of a single adult female collected are: dorsal shield length 312, width 144, j1 19, j3 38, j4 36, j5 41, j6 51, J2 53, J5 10, z2 46, z4 46, z5 42, Z1 55, Z4 71, Z5 72, s4 58, S2 61, S4 51, S5 39, r3 36, R1 36, StIV 62, ST1-ST3 60, ST2-ST2 and ST5-ST5 58, length of ventrianal shield 101, width at ZV2 level 77, width at anus level 72, length of cervix of spermatheca 12, length of fixed digit 22, length of movable digit 24.

Fundiseius urquharti (Yoshida-Shaul & Chant), Comb. nov.

Amblyseius urquharti Yoshida-Shaul & Chant 1988: 2055.

Specimens Examined: GUADELOUPE - Petit-Bourg, Domaine Duclos I.N.R.A., II-1989, on *Hibiscus* sp. and *S. melongena* infested with *T. palmi*.

Previous Records: Antigua (Type material - Yoshida-Shaul & Chant 1988).

Remarks: The measurements of the female specimens collected are similar to those of the holotype (only known female specimen of this species to date), except for the shorter j3 and longer Z4 and s4. The average measurements of 5 adult females followed by the respective ranges (in brackets) are: dorsal shield length 376 (344-423), width 301 (286-324), j1 16 (13-18), j3 22 (19-25), j4 3 (1-6), j5 2 (1-5), j6 7 (6-9), J2 6 (5-6), J5 10 (8-11), z2 10 (8-13), z4 15 (14-17), z5 2 (1-3), Z1 7 (6-10), Z4 89, Z5 88 (86-89), s4 82 (80-86), S2 14 (11-17), S4 11 (10-11), S5 9 (6-10), r3 17 (13-18), R1 13 (11-14), StIV 39 (37-42), ST1-ST3 44 (42-46), ST2-ST2 71 (69-76), ST5-ST5 126 (121-130), length of ventrianal shield 145 (140-152), width at ZV2 level 206 (184-225), width at anus level 161 (130-178), length of cervix of spermatheca 11 (8-19), length of fixed digit 34 (33-34) with 10-12 teeth, length of movable digit 38 (37-38) with 2 teeth. The wide amplitude for the measured length of the cervix of the spermatheca relates to the difficulty in determining its distal end, because the sclerotization of this structure diminishes very slowly toward this portion.

Phytoseiulus macropilis (Banks)

Laelaps macropilis Banks 1905: 139.

Phytoseiulus speyeri Evans 1952: 398 (after Denmark & Muma 1973).

Phytoseiulus chanti Ehara 1966: 135 (after Denmark & Muma 1973).

Phytoseiulus macropilis Muma et al. 1970: 30; McMurtry 1983: 259; Denmark & Schicha 1983: 31.

Specimens Examined: GUADELOUPE - Pointe-à-Pitre, Domaine Duclos I.N.R.A., VIII-1985, on *Phaseolus vulgaris* L.

Previous Records: Angola, Barbados, Brazil, Canary Islands, Cook Islands, Colombia, Cuba, Fiji, Guatemala, Hawaii, Jamaica, Mexico, New Caledonia, Panama, Peru, Puerto Rico and USA.

Remarks: The measurements of the adult females collected are similar to those provided by Denmark & Schicha (1983), except for the longer j5, j6, z4, s4 and r3. The average measurements of 3 adult females followed by the respective ranges (in brackets) are: dorsal shield length 328 (310-344), width 213 (199-230), j1 24 (23-25), j3 41 (38-46), j4 52 (48-56), j5 75 (72-77), j6 154 (145-165), J5 5, z2 9 (8-9), z4 57 (55-60), z5 9 (6-13), Z1 107 (98-114), Z4 126 (118-135), Z5 109 (98-114), s4 174 (163-185), S5 28 (27-28), r3 and R1 24 (23-25), SgeI 47 (44-52), SgeII 31 (28-32), SgeIII 31 (30-32), StiIII 28 (25-29), SgeIV 77 (72-79), StiIV 37 (34-41), StIV 109 (104-114), ST1-ST3 65 (64-67), ST2-ST2 74 (70-76), ST5-ST5 72 (70-75), length of ventrianal shield 91 (89-93), width at JV2 level 67 (61-75), width at anus level 66 (64-70), length of proximal, inflated portion of the cervix of spermatheca, 13 (11-14), length of remaining sclerotized, distal portion of cervix 19 (18-22), length of fixed digit 22 (20-23) with 9 teeth, length of movable digit 24 (23-24) with 3 teeth.

The measurements of 2 adult males collected are: dorsal shield length 241-267, width 127 (201-226), j1 19-20, j3 29-42, j4 38-50, j5 56-60, j6 116-121, J5 4-5, z2 8-10, z4 52-61, z5 10-11, Z1 75-83, Z4 89-95, Z5 80, s4 121-133, S5 28-29, r3 15-17, R1 18-20, SgeIII 25, StiIII 24, SgeIV 52, StiIV 27, StIV 74-79, length of ventrianal shield 105-116, width at anterior corners 152-163, length of shaft of spermatodactyl 15-17.

Proprioseiopsis cannaensis (Muma)

Amblyseiulus cannaensis Muma 1962: 4.

Amblyseius cannaensis Moraes & McMurtry 1983: 132; Moraes & Mesa 1988: 77; Moraes et al. 1991: 126.

Proprioseiopsis cannaensis Muma et al. 1970: 38.

Specimens Examined: GUADELOUPE - Saint François, XI-1987, on *S. melongena* infested with *T. palmi*; Petit-Bourg, Domaine Duclos I.N.R.A., on *S. melongena* infested with *T. palmi*.

Previous Records: Brazil, Colombia, Cuba, Ecuador, El Salvador, Guyana, New Caledonia, Paraguay and USA.

Remarks: The measurements of the adult females collected agree well with those of the holotype; however, similarly to specimens from Brazil (Moraes & McMurtry 1983), Colombia (Moraes & Mesa 1988) and Cuba (Moraes et al. 1991), S4 is shorter than in the holotype. The average measurements of 5 adult females collected followed by the respective ranges (in brackets) are: dorsal shield length 334 (316-343), width 264 (250-279), j1 25 (23-27), j3 67 (64-72), j4 5 (4-5), j5 5 (4-6), j6 10 (9-12), J5 9 (8-12), z2 38 (36-42), z4 24 (19-26), z5 5 (4-6), Z1 23 (19-25), Z4 110 (95-114), Z5 88 (77-101), s4 100 (95-112), S2 20 (13-23), S4 14 (14-15), S5 14 (13-17), r3 20 (18-24), R1 15 (13-17), SgeIII 27 (22-32), StiIII 25 (19-24), SgeIV 53 (46-60), StiIV 35 (28-41), StIV 76 (70-83), ST1-ST3 52 (51-55), ST2-ST2 74 (70-76), ST5-ST5 95 (90-97), length of ventrianal shield 107 (91-117), width at ZV2 level 116 (113-121), width at anus level 101 (104-110), length of cervix of spermatheca 17 (12-19), length of fixed digit 31 (28-33), length of movable digit 32 (30-34).

Proprioseiopsis mexicanus (Garman)

Amblyseiopsis mexicanus Garman 1958: 75.

Amblyseius mexicanus Moraes & McMurtry 1983: 134.

Proprioseiopsis mexicanus Muma et al. 1970: 48.

Specimens Examined: Saint François, XI-1987, on *S. melongena* infested with *T. palmi*; Matouba, VI-1988, on *Fragaria* sp., S. Simon leg.

Previous Records: Australia, Brazil, Colombia, Cuba, Hawaii, Mexico, New Zealand, Panama and USA.

Remarks: The measurements of the adult females collected are very similar to those of the holotype, provided by Moraes & McMurtry (1983). The average measurements of 5 adult females collected followed by the respective ranges (in brackets) are: dorsal shield length 335 (331-339), width 224 (212-241), j1 19 (15-22), j3 30 (24-34), j4 and j5 5 (4-7), j6 5 (5-6), J5 9 (9-10), z2 12 (11-14), z4 10, z5 4 (4-5), Z1 6 (5-7), Z4 74 (72-76), Z5 103 (97-110), s4 59 (56-65), S2 and S4 9 (8-10), S5 9 (9-12), r3 11 (9-14), R1 9 (8-10), SgeII 23 (20-24), SgeIII 24 (23-25), StiIII 22 (20-24), SgeIV 49 (48-51), StiIV 32 (27-36), StIV 56 (51-60), ST1-ST3 60 (58-62), ST2-ST2 68 (65-74), ST5-ST5 66 (64-72), length of ventrianal shield 108 (103-114), width at ZV2 level 92 (86-97), width at anus level 85 (80-89), length of cervix of spermatheca 9 (6-10), length of fixed digit 33 (29-38), length of movable digit 31 (29-32). Fixed digit with 8 teeth; movable digit with 1 tooth.

The measurements of a single adult male collected are: dorsal shield length 279, width 194, j1 17, j3 24, j4 5, j5 4, j6 5, J5 9, z2 and z4 11, z5 10, Z1 8, Z4 56, Z5 74, s4 43, S2, S4 and S5 9, r3 10, R1 8, SgeIII 19, SgeIV 32, StiIV 23, StIV 48, length of ventrianal shield 103, width at anterior corners 121, length of shaft of spermatodactyl 18.

Phytoseius (Phytoseius) rex DeLeon

Phytoseius rex DeLeon 1967: 12.

Phytoseius (Phytoseius) rex Denmark & Muma 1975: 295.

Specimens Examined: GUADELOUPE - Saint François, XI-1987, on *S. melongena* infested with *T. palmi*.

Previous Records: Guyana, Puerto Rico and Trinidad.

Remarks: The measurements of the specimens collected are very similar to those of the holotype, except for the slightly longer StIV. The average measurements of 5 adult females collected followed by the respective ranges (in brackets) are: dorsal shield length 285 (276-290), width 153 (149-156), j1 27 (26-29), j3 44 (41-48), j4 5 (5-7), j5, j6 and J5 6 (5-7), z2 11 (7-12), z3 24 (22-29), z4 8 (7-10), z5 6 (5-7), Z4 73 (70-77), Z5 68 (62-72), s4 108 (101-110), s6 76 (72-79), r3 42 (41-46), SgeIV 21 (19-22), StiIV 48 (43-50), StIV 30 (29-31), ST1-ST3 60 (58-60), ST2-ST2 72, ST5-ST5 68 (62-70), length of ventrianal shield 89 (84-96), width at ZV2 level 54 (50-58), width at anus level 53 (50-58), length of cervix of spermatheca 29 (24-36), length of inflated region of major duct adjacent to atrium 13 (7-17), length of fixed digit 25 (24-26), length of movable digit 26. Fixed digit with 3 teeth; movable digit with 1 tooth.

The measurements of 2 adult males collected are: dorsal shield length 214, width 127(120-134), j1 19, j3 24-29, j4, j5 and j6 5, J5 5-7, z2 7-10, z3 17, z4 and z5 5, Z4 38-41, Z5 34, s4 62-67, s6 43-48, r3 29-31, SgeIV 12, StiIV and StIV 19-22, length of ventrianal shield 79-91, width at anterior corners 127, length of shaft of spermatodactyl 12-14.

Phytoseius (Phytoseius) woodburyi DeLeon

Phytoseius (Phytoseius) woodburyi DeLeon 1965: 130.

Phytoseius (Dubininellus) woodburyi Denmark 1966: 64.

Phytoseius (Phytoseius) woodburyi Muma and Denmark 1968: 236.

Specimens Examined: MARTINIQUE - Fort-de-France, I-1987, on *Hibiscus* sp., *B. Hostachy* leg.

Previous Records: Colombia, Hawaii, India, Jamaica, Puerto Rico and Trinidad.

Remarks: The measurements of the specimens collected are similar to those of the holotype. The average measurements of 6 adult females collected followed by the respective ranges (in brackets) are: dorsal shield length 286 (283-293), width 160 (156-163), j1 29 (26-31), j3 31 (29-31), j4 and j5 5 (5-7), j6 6 (5-7), J5 7, z2 12 (7-14), z3 31 (29-34), z4 11 (10-14), z5 5 (5-7), Z4 89 (82-94), Z5 69 (65-72), s4 121 (115-130), s6 81 (77-86), r3 44 (43-48), SgeIV 10 (10-12), StiIV 49 (48-50), StIV 25 (22-29), ST1-ST3 53 (48-55), ST2-ST2 61 (60-62), ST5-ST5 61 (58-65), length of ventrianal shield 87 (84-91), width at ZV2 level 35 (34-36), width at anus level 48 (46-50), length of cervix of spermatheca 4 (2-5), length of fixed digit 23 (22-24), length of movable digit 21 (19-22). Fixed digit with 3 teeth; movable digit with 1 tooth.

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