

DESCRIPTION OF TWO NEW TETRANYCHOID MITE SPECIES (ACARI, PROSTIGMATA) FROM GUADELOUPE, FRENCH ANTILLES

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ABSTRACT — Two new species of plant feeding mites from Guadeloupe, French Antilles, are described, namely *Brevipalpus etiennei* n. sp. (Tenuipalpidae) and *Tetranychus palmidectes* n. sp. (Tetranychidae).

KEYWORDS — plant mites; Tenuipalpidae; Tetranychidae; taxonomy; Guadeloupe

INTRODUCTION

Records of tetranychoid mites from the French Antilles are rather recent and were summarized by Flechtmann *et al.* (1999). Further publications on plant feeding mites dealing with spider mites and false spider mites from this area are Flechtmann and Etienne (2001, 2002, 2003, 2004, 2005 and 2006).

In this paper two new species, one tenuipalpid and one tetranychid species, from Guadeloupe are described and figured. Measurements are given in micrometers (μm) and, unless stated otherwise, refer to the length of the structure. Holotype measurements precedes the corresponding range for the paratypes.

FAMILY TENUIPALPIDAE BERLESE

Brevipalpus etiennei n. sp

(Figures 1 and 2)

Diagnosis — Body shape Brevipalpine (Mesa *et al.*, 2009); hysterosoma with six pairs of lateral setae, three pairs of dorsocentral setae; palpus 3-segmented, with two setae on distal segment. Tarsus II of female with one solenidion. Fourth pair of ventral setae missing.

Female — (n = 10). Body length, including gnathosoma 300 (285–319), widest at level half way between dorsocentral setae 1 and 2, 188 (176–188) wide. Rostrum not extending beyond middle of femur I; palpus three segmented, with two slender setae on distal segment and one serrate seta on middle segment. Dorso propodosomal anterior extension or rostral shield deeply cleft medially, with finger-like pair of median and two ancillary lobes and a pair of lateral broad dentate lobes. Propodosoma with entire dorsum reticulate; vertical external setae ensiform, serrate, strong; scapular setae 1 and 2 setiform, slightly serrate, small; pores absent. Hysterosoma with dorsal integument entirely reticulate, the elements transverse medially and caudally to

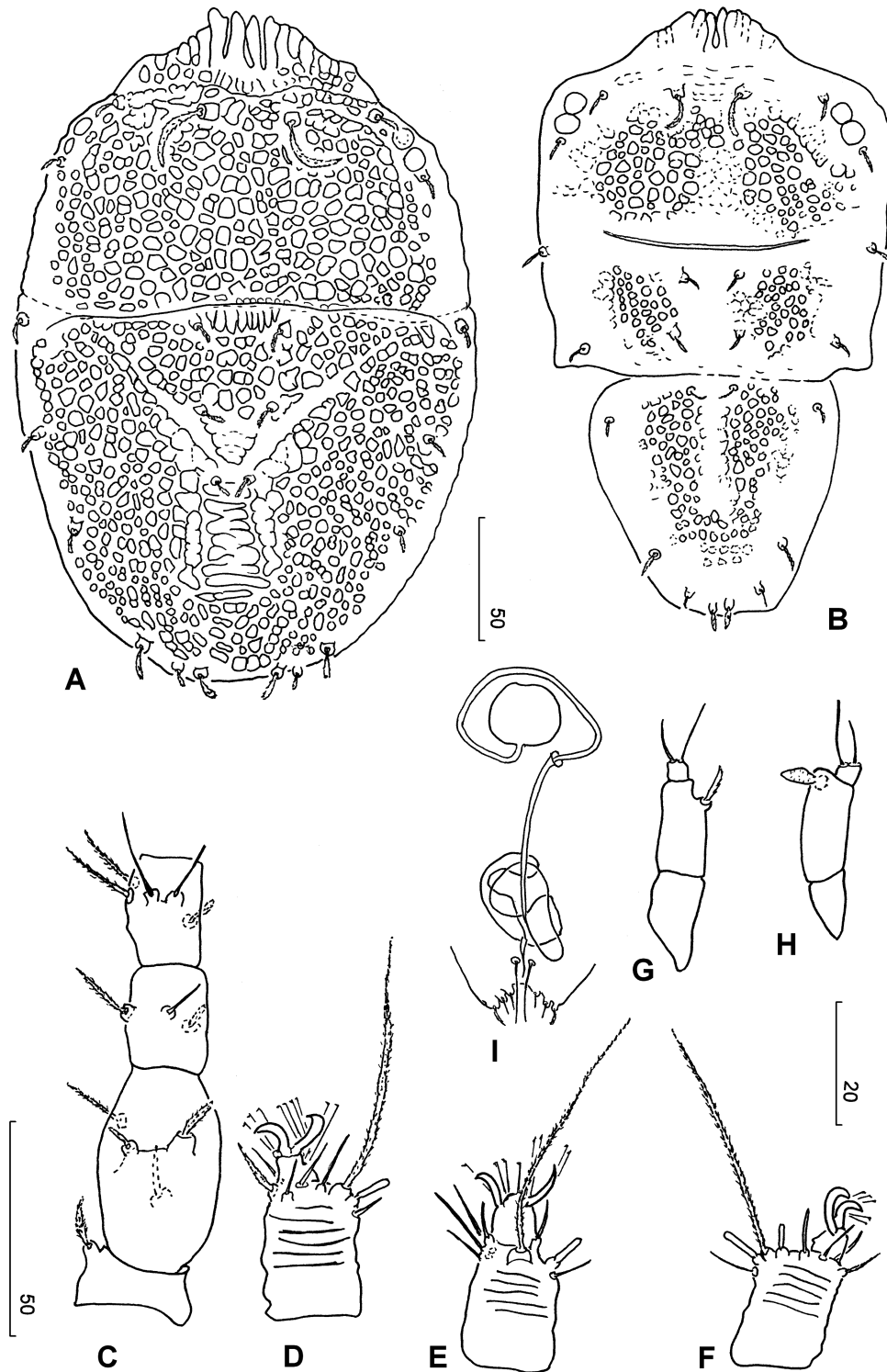


FIGURE 1: *Brevipalpus etiennei* n. sp. A - Female dorsum; B - male dorsum; C - trochanter, femur, genu and tibia of leg I of female; D - tarsus of leg I of female; E - tarsus of leg II of female; F - tarsus of leg II of male; G - palp of female; H - palp of male; I - male reproductive structures.

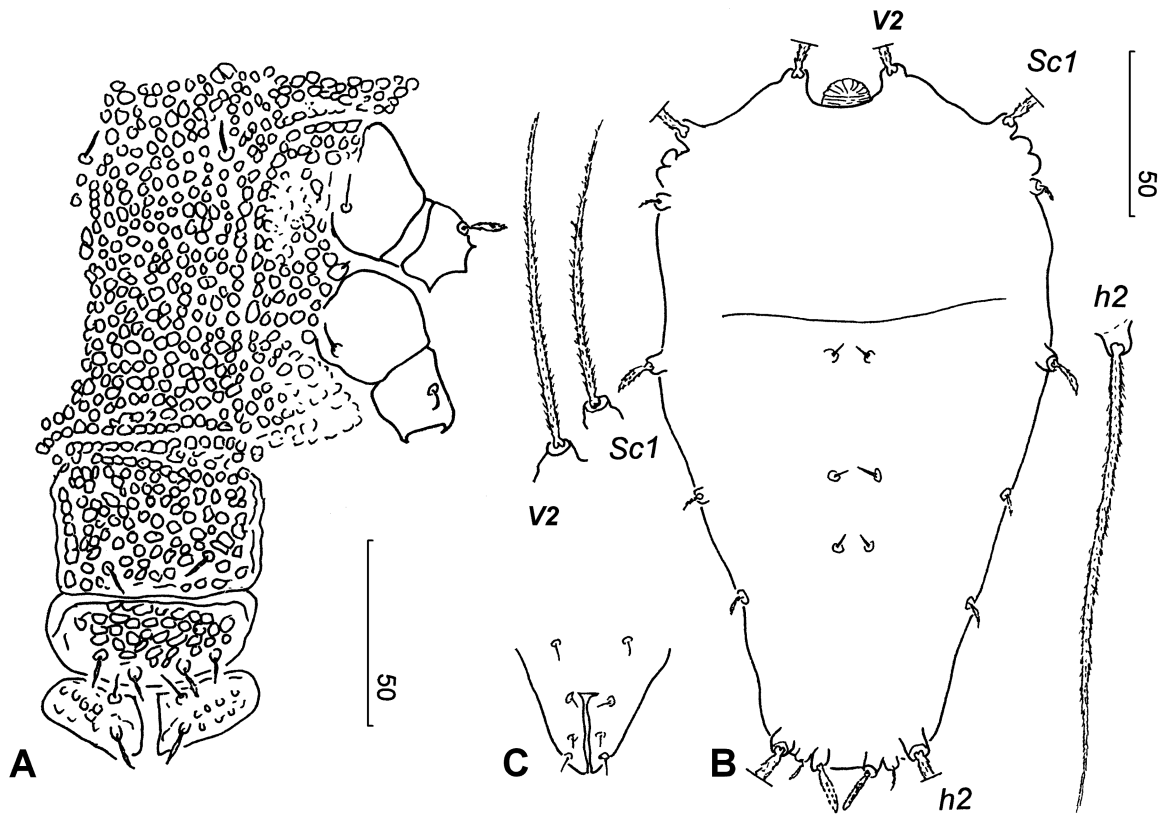


FIGURE 2: *Brevipalpus etiennei* n. sp. A - Female, posterior ventral aspect; B - nymph, dorsum, with vertical external (V2), scapular 1 (Sc1) and antepenultimate dorsolateral (h2) setae separate; C - nymph, anal area.

third pair of dorsocentral setae and with two anterior smooth, narrow branches in direction to but not reaching setae first pair of dorsolateral setae. Dorsal hysterosomal and lateral setae short, slightly serrate; penultimate pair of lateral setae shortest. Pores absent. Entire venter reticulate; first pair of ventral setae whiplike, long, 224 (198-245); second pair of ventral setae setiform, slightly serrate, short, 19 (14-23); fourth pair of ventral setae missing. Ventral opisthosomal setae (aggenital, genital and pseudoanal setae) short, serrate. Leg chaetotaxy, from coxae to tarsi: I — 2-1-4-3-5-6 + 1 solenidion; II — 2-1-4-3-5-6 (or 7) + 1 solenidion; III — 1-1-2-2-3-5; IV — 1-1-1-2-3-4.

Male — (n = 5). Smaller than female, 234-304 long including gnathosoma; 131-150 greatest width. Palp three segmented; middle segment with

a strong lanceolate seta. Tarsis II with two sensory rods or solenidia. Dorsal body with two transverse sutures, partially reticulate, as figured. First pair of ventral seta filamentous, 58-81, third pair of ventral setae 5-7; fourth pair of ventral setae missing. Genital apparatus as figured, with a short aedeagus. Leg chaetotaxy, from coxae to tarsi: I — 2-1-4-3-5-6 + 1 solenidion; II — 2-1-4-3-5 + 2 solenidia; III — 1-1-2-2-3-5; IV — 1-1-1-2-3-5.

Nymph — ("empty", n = 2). Idiosoma 252-280, widest 123-158. Propodosomal setae: vertical external seta 103-128; internal scapular seta 62-109; external scapular seta very short; hysterosomal dorsal setae short, except for the antepenultimate hysterosomal lateral seta, which is 149-175 long.

Nymph — (moulting into female, n = 2). Idiosoma 294, 158 wide. Vertical external seta 135-158;

internal scapular seta 40-158, antepenultimate hysterosomal lateral 140-158.

Nymph — (moulting into male, $n = 1$). Idiosoma 256, 137 wide. Vertical external seta 112; internal scapular seta 30; antepenultimate hysterosomal lateral seta 158.

Type material — Holotype female, 15 female, 11 male, three "empty" nymphs, two nymphs moulting into a female, one nymph moulting into a male, from the underside of leaves of *Charianthus corymbosus* (Rich.) Cogn. (Melastomataceae), Pointe Noire, Morne à Louis, Guadeloupe, col. J. Étienne, 04 March 2007, on 22 microscopic preparations in the collection of Departamento de Entomologia e Acarologia, Escola Superior de Agricultura "Luiz de Queiroz", Piracicaba, SP, Brazil.

Etymology — I take pleasure naming the species after Jean Étienne, INRA Entomologist in Guadeloupe, who collected and submitted the specimens.

Remarks — The new species belongs to the small group of *Brevipalpus* exhibiting a three segmented palp, as *B. frankeniae* Baker, Tuttle and Abbatiello, 1975, but differs in presenting a much shorter rostrum (reaching distal end of genu I in *frankeniae*, only extending to mid of femur I in the n. sp., in the aspect of the dorsal setae (broadly ovate in *frankeniae*, setiform in the n. sp.) and in a much different dorsal opisthosomal reticulation pattern. The female somewhat resembles *B. colpodus* Pritchard and Baker, 1958 (two terminal palp setae, palp four segmented), *B. docimas* Pritchard and Baker, 1958 (three terminal palp setae, palp four segmented) and *B. hybus* Pritchard and Baker, 1958 (three terminal palp setae, palp four segmented) in having the dorsal hysterosomal reticulation elements transverse in the caudal part of middorsum, but differs by the presence of two anterolateral, narrow, smooth integumental areas, not present in the aforementioned species.

FAMILY TETRANYCHIDAE DONNADIEU

Tetranychus palmidectes n. sp.

(Figures 3 and 4)

Diagnosis — Female with dorso hysterosomal striae longitudinal between members of the third and the fourth pairs of dorsocentral setae, forming a diamond shaped pattern; tarsus I with one tactile seta proximal to and three tactile setae in line with proximal duplex setae; empodium with a large dorsomedian spur, more than half as long as proximoventral hairs; area immediately anterior to genital cover devoid of striae.

Male — aedeagus with ventral margin evenly curved dorsad, the terminal knob slightly wider than its stem and with anterior and posterior angulations acute.

Female — ($n = 10$). Gnathosoma: peritremes strongly hooked (Figure 4D); palp tarsus with terminal sensillum (spinneret) thick, about as long as broad (Figure 3E); stylophore rounded anteriorly; buccal cone with anterior adoral setae spine-like; second pair conspicuous, blade shaped; third pair minute, barely noticeable, probably due to its more dorsal insertion (Figure 3F). Dorsal body setae finely serrate, long; lengths: V2 68-75, 68-75 apart; Sc1 131-143, 86-94 apart; Sc2 90-98; c1 113-124, 60-71 apart; c2 105-124; c3 109-120; d1 113-124, 94-101 apart; d2 120-128; e1 113-120, 30-49 apart; e2 113-124; f1 90-101, 26-49 apart; f2 75-79; h1 38-45, h2 38-45. Dorsal integumental striae longitudinal between members of setae e1 and members of setae f1 (third and fourth pairs of dorsocentral setae), forming a diamond shaped pattern. Area immediately anterior to genital area smooth, devoid of striae (Figure 3G). Leg chaetotaxy, solenidia in parentheses, alternative count in brackets, from coxae to tarsi: I — 2-1-9[10]-5-9(1)-13(1) + 2 duplexes; II — 2-1-6-5-7-13(1) + 1 duplex; III — 1-1-4-6-9[10](1); IV — 1-1-4-4-7-10(1). Tarsus I with one tactile seta proximal to proximal duplex setae and three tactile setae almost in line with proximal duplex setae (Figure 3A); empodium split into three pairs of proximoventral hairs and with a dorsomedian spur, longer than half the length of proximoventral hairs (Figure 3C); tarsus II with three tactile setae and one solenidion proximal to duplex seta and one tactile seta near duplex setae (Figure 3B); empodium similar to empodium I, as well as III and IV.

Idiosoma 326-412, body including rostrum 420-

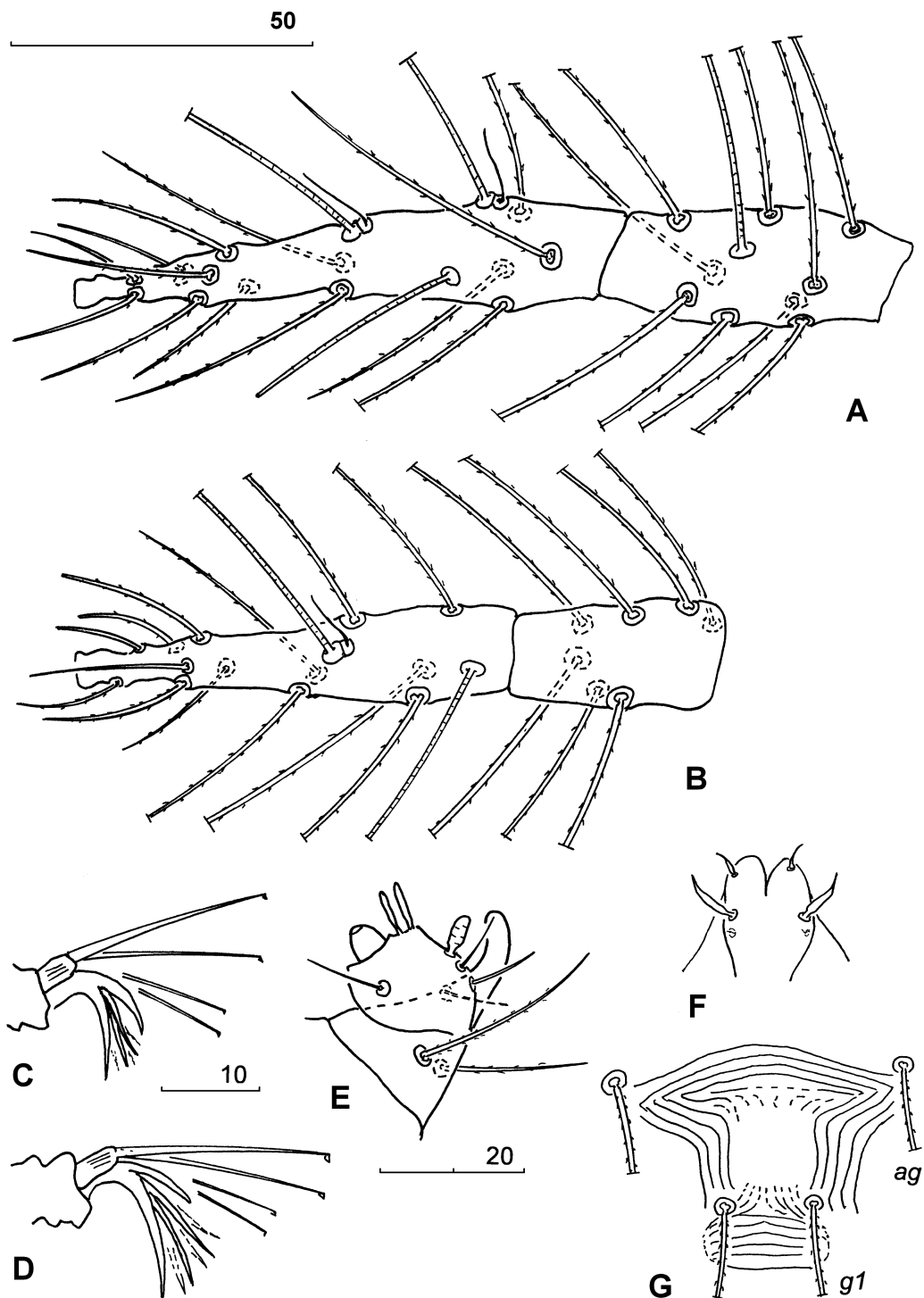


FIGURE 3: *Tetranychus palmidectes* n. sp. Female. A - tibia and tarsus I; B - tibia and tarsus II; C - ambulacrum tarsus I; D - ambulacrum tarsus IV; E - palp; F - buccal cone, ventral; G - area anterior to genital coverflap, *ag* - ag genital seta; *g1* - genital setae 1.

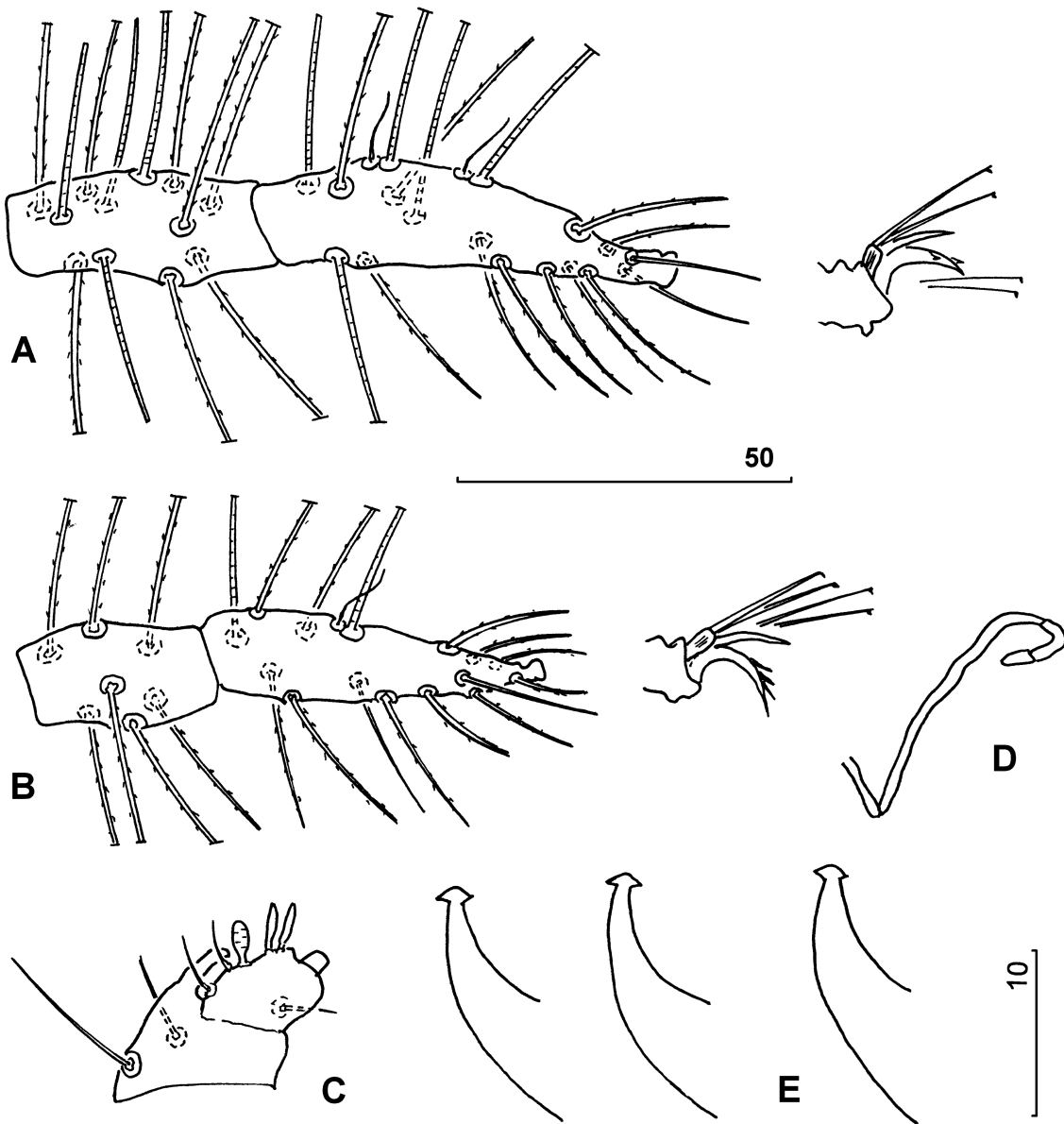


FIGURE 4: *Tetranychus palmidectes* n. sp. Male. A - tibia and tarsus I, ambulacrum enlarged; B - tibia and tarsus II, ambulacrum enlarged; C - palp; D - peritreme; E - aedeagi, left of holotype.

506; widest shortly behind level of setae *c*3, 244-319 wide.

Male — (holotype and 6 paratypes). Gnathosoma: palpus with terminal sensillum (spinneret) short, slightly conical, smaller than that of female

(Figure 4C).

Leg chaetotaxy, solenidia in parentheses, from coxae to tarsi: I — 2-1-9-5-8(4)-12(4) + 2 duplexes; II — 2-1-6-5-7-14(1) + 1 duplex; III — 1-1-4-4-6-9(1); IV — 1-1-4-4-7-10(1). Tarsus I with two solenidia

and two tactile setae situated proximal to proximal duplex setae, one solenidion and one tactile seta almost in line with proximal duplex setae (Figure 4A); empodium I a robust trifold plate with a well developed mediodorsal spur (Figure 4A). Tarsus II with one solenidion and four tactile setae proximal to duplex setae (Figure 4B); empodia II-IV split into three pairs of proximoventral hairs and with a well developed dorsomedian spur (Figure 4B). Aedeagus with broad shaft, curved evenly dorsad, the terminal knob slightly wider than stem and with anterior and posterior angulations acute (Figure 4E).

Etymology — the specific designation *palmidectes* is derived from palm tree plus the Greek *dektēs, dektikos*, meaning able to bite, that is, palm leaf puncturing, feeding.

Type material — holotype male, 6 male and 19 female paratypes, from leaves of the ruffled fan palm, *Licuala grandis* H. Wendl. (Arecaceae), Lamentin, Ravine Chaude, Guadeloupe, coll. J. Étienne, 19 October 2007, on 19 microscopic preparations in the collection of Departamento de Entomologia e Acarologia, Escola Superior de Agricultura "Luiz de Queiroz", Piracicaba, SP, Brazil.

Remarks — *T. palmidectes* n. sp. is to be placed in group 6 of *Tetranychus* species as defined by Flechtmann and Knihinicki (2002). The host plant is an ornamental palm originating from Vanuatu (New Hebrides) and New Guinea and is cultivated mainly in umbrofilous environments.

Together with this spider mite, specimens of a predacious mite, *Neoseiulus longispinus* (Evans, 1952) (Mesostigmata: Phytoseiidae) were collected. Species identified by Gilberto J. de Moraes who reported it previously from Guadeloupe (Moraes *et al.*, 2000).

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