

PLANT MITES (ACARI) OF THE FRENCH ANTILLES. 4. ERIOPHYIDAE (PROSTIGMATA)

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MITES
ERIOPHYIDAE
FRENCH CARIBBEAN ISLANDS
GEOGRAPHIC DISTRIBUTION

SUMMARY: Twenty-three eriophyid species are reported from the French Antilles, seven of which are described as new to Science. *Aceria hibisci* (Nalepa), *Colomerus bucidæ* (Nalepa) and *Epitrimerus calophylli* (Cook) are redescribed.

ACARIENS
ERIOPHYIDES
ÎLES FRANÇAISES DES CARAÎBES
DISTRIBUTION GÉOGRAPHIQUE

RÉSUMÉ : Vingt-trois espèces d'ériophyides sont signalées des Antilles françaises, sept d'entre elles étant nouvelles pour la Science. *Aceria hibisci* (Nalepa), *Colomerus bucidæ* (Nalepa) et *Epitrimerus calophylli* (Cook) sont redécrites.

INTRODUCTION

A few species of eriophyid mites have been reported from the French Antilles: *Aceria hibisci* (Nalepa), *Aculops lycopersici* Masee and *Phyllocoptruta oleivorus* (Ashmead) (GUTIERREZ & ETIENNE, 1988). Twenty-three species are reported in this paper, seven of which are new to science. *Aceria hibisci* (Nalepa), *Colomerus bucidæ* (Nalepa) and *Epitrimerus calophylli* (Cook) are redescribed based on specimens collected during this study.

The following abbreviations are used in this paper: CIRAD-FLHOR (Centre International de Recherche Agronomique pour le Développement-Département de recherche sur les Fruits, Légumes et l'Horticulture, Martinique); CNPq (Conselho

Nacional de Desenvolvimento Científico e Tecnológico, Brazil); ENSAM (Ecole Nationale Supérieure Agronomique de Montpellier, France); ESALQ (Escola Superior de Agricultura "Luiz de Queiroz", Piracicaba, Brazil); INRA (Institut National de la Recherche Agronomique; Centres de Recherche Antilles-Guyane et Montpellier). CF, GJM, JE and SK refer to the authors.

The following figure abbreviations were used. For females, CD: caudal area, dorsal view; CG: coxigenital region; CS: caudal area, lateral view; DA: anterior dorsal view; E: empodium; L1: leg I; L2: Leg II; SA: anterior lateral view; V: ventral view. For males, GM: genital region.

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Abacarus sacchari ChannaBasavanna

Abacarus sacchari CHANNA BASAVANNA, 1966: 117.

Specimens examined: Guadeloupe, Lamentin, CF, Dec. 1997, from *Saccharum officinarum* (Poaceae); Martinique, Fort-de-France, CF, Dec. 1997, from *Saccharum officinarum* (Poaceae).

Acalitus odoratus Keifer

Acalitus odoratus KEIFER, 1970: 3.

Specimens examined: Guadeloupe, Parc National, CF, Dec. 1997, from *Eupatorium* sp. (Asteraceae).

Acalitus maracai (Boczek and Nuzzaci), n. comb.

Aceria maracai BOCZEK & NUZZACI, 1988: 129.

Specimens examined: Guadeloupe, Baie Mahault, Jarry, JE, March 1998, from *Pluchea symphytifolia* (Asteraceae); Porte d'Enfer, SK, Dec. 1997, from *P. symphytifolia*. Les Saintes, Terre-de-Bas, Pointe-à-Nègre, SK, March 1998, from *P. symphytifolia*. Marie-Galante: Rabi, SK, March 1998, from *P. symphytifolia*.

Acalitus capparidis Flechtmann, sp. nov.

(Fig. 1)

DIAGNOSIS. *A. capparidis* n. sp. belongs to the group of *Acalitus* having 4-rayed empodia and is distinctive in having coxae I medially ornamented with granules and coxae II smooth (coxae II are ornamented in other known species). The dorsal shield line pattern resembles that of *A. ueckermanni* Meyer, 1990, but the median and admedian lines are much shorter and do not extend over the entire shield length. *A. capparidis* is also unique in having the last 10–13 dorsal annuli with smaller and more widely spaced microtubercles.

FEMALE: Measurements in micrometers of holotype and, in parentheses, ranges of 8 female paratypes: worm-like idiosoma, 153 (155–220) long, 45

(42–49) wide. Gnathosoma directed downwards, rostrum 15 (14–16) long; basal and antapical setae tiny or absent; chelicerae (13–15) long, oral stylets (7–8) long. Dorsal shield 19 (17–20) long, ornamented with longitudinal lines as figured and lateral granules; shield tubercles at rear shield margin 15 (14–17) apart, scapular setae *sc* 19 (19–22) long, directed backwards, slightly divergent. Legs without tibial I and femoral I setae. Legs I, from trochanter base, 22 (19–22) long; femora 6 (6–7) long, femoral setae *bv* missing; genua 3 long, genual setae *l'* 10 (10–15) long; tibiae 4 long, tibial setae *l'* missing; tarsi 6 (5–6) long, solenidia 6 (6–7) long, empodia 4 (4–5) long, 4-rayed, dorsal setae *ft''* 6 (6–10) long, lateral setae *ft'* 14 (14–15) long, unguinal setae *u'* 3 (3–4) long. Legs II 17 (16–18) long, femora 5 (5–7) long, *bv* 4 (4–6) long; genua 3 long, *l'* 7 (7–12) long; tibiae 3 long; tarsi 4 (4–5) long, solenidia 7 (6–8) long, empodia 5 (5–6) long, 4-rayed, *ft''* 3 long, *ft'* 15 (13–16) long, *u'* 2 long. Coxae I fused to each other, ornamented medially with bead-like microtubercles; first coxal setae *lb* 7 apart, 3 (3–4) long; second coxal setae *la* 8 (6–8) apart, 18 (14–18) long; third coxal setae *2a* 16 (14–18) apart, 37 (32–38) long; coxae II smooth. Coxigenital region with 5 (4–6) transverse lines of bead-like microtubercles and irregularly placed microtubercles continuous with coxae I ornamentation. Genitalia 14 (12–16) wide, 10 (9–10) long, genital setae *3a* 6 (5–7) long; coverflap basally microtuberculate, distally smooth with 3 radial lines. Opisthosoma: lateral setae *c2* 14 (12–14) long, on annulus 4 (4–5); first ventral setae *d* 34 (31–42) long, 33 (30–33) apart, on annulus 17 (13–16); second ventral setae *e* 28 (25–33) long, 21 (19–23) apart, on annulus 32 (28–33); third ventral setae *f* 11 (10–11) long, 11 (11–12) apart, on annulus 55 (48–57). Total ventral annuli 60 (53–62), with bead-like microtubercles; total dorsal annuli 77 (71–83). The first approximately 15 dorsal annuli with elongate microtubercles, the subsequent ones with bead-like microtubercles and the last 11 (10–13) annuli with smaller and more widely spaced microtubercles. Caudal setae *h2* 53 (48–54) long; accessory setae *h1* minute in some specimens, not seen in others.

MALE (*n* = 3, measurements of 2 specimens). Smaller than female, 152–160 long, 42–44 wide. Gnathosoma: basal and antapical rostral setae not seen; chelicerae 10–11 long, oral stylets 6–7 long. Dorsal

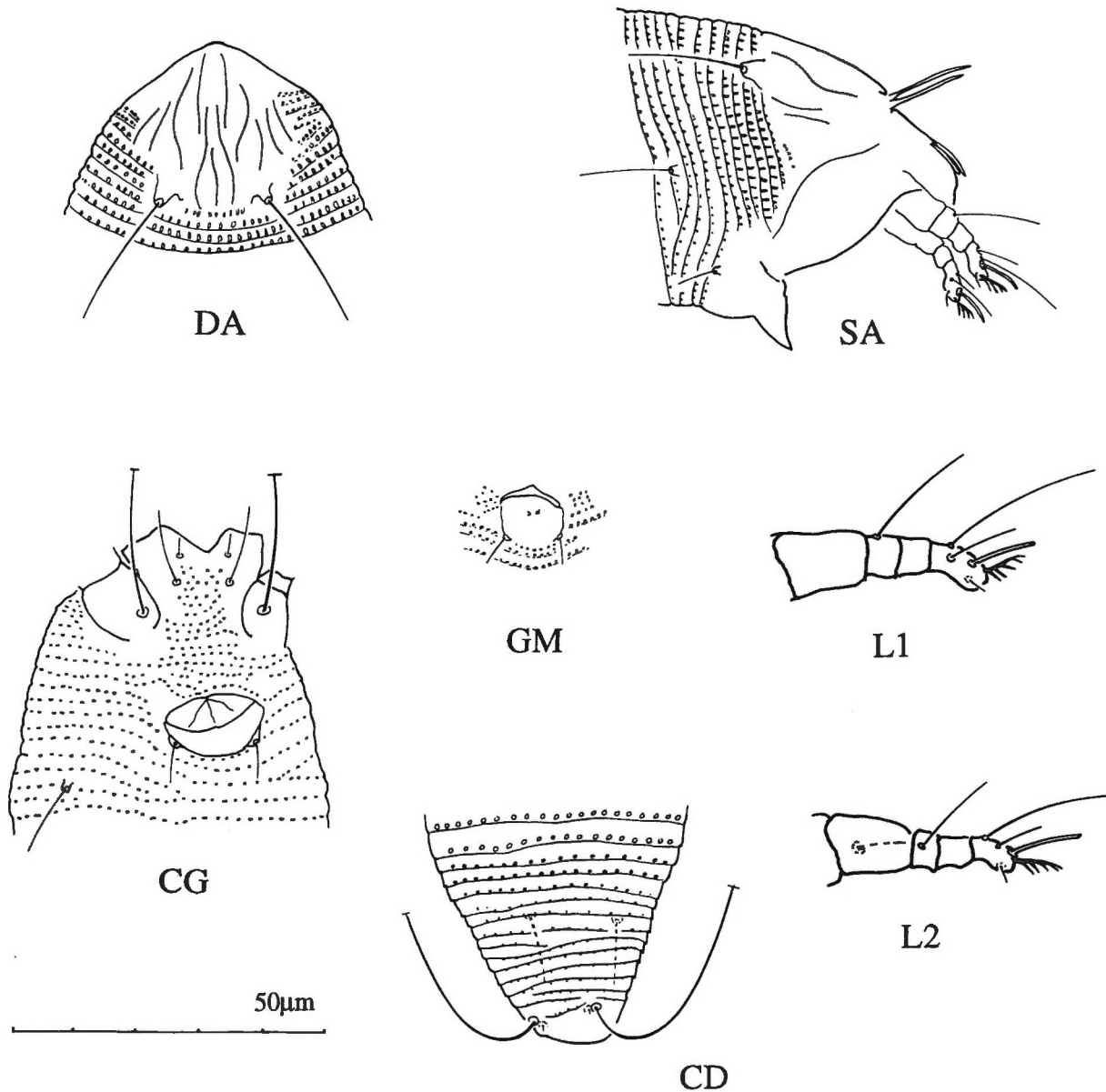


FIG. 1: *Acalitus capparidis* Flechtmann, n. sp.

shield 18–19 long; *sc* 16–17 long, 15–16 apart. Legs without tibial and femoral setae I. Legs I 18–19 long; femora 6–7 long, *bv* missing; genua 3 long, *l''* 13–14 long; tibiae 3 long, *l'* missing; tarsi 4 long, solenidia 5 long, empodia 4 long, 4-rayed, *ft''* 5–8 long, *ft'* 15–16 long, *u'* 2 long. Legs II 16–18 long, femora 5–6 long, *bv* 5–6 long; genua 3 long, *l''* 9–10 long; tibiae 3 long; tarsi 3–4 long, solenidia 6 long, empodia 4–5 long, 4-rayed, *ft''* 4 long, *ft'* 16–17 long, *u'* 2 long. Coxae: *lb* 5 long, 7 apart; *la* 13–14 long, 7 apart; *2a* 24–28 long,

16 apart. Coxigenital region with 3 transverse lines of bead-like microtubercles and irregularly placed microtubercles. Genitalia 11 wide, 9 long, smooth; *3a* 5–6 long. Opisthosoma: *c2* 13 long, on annulus 3; *d* 25–29 long, 30–34 apart, on annulus 11; *e* 21–25 long, 18 apart, on annulus 26–29; *f* 8–10 long, 10–11 apart, on annulus 48–49. Total ventral annuli 53–56, with bead-like microtubercles; total dorsal annuli 68–70, microtubercles as in female. Caudal setae *hl* 36–42 long; *hl* minute.

TYPE MATERIAL: Holotype female, 34 paratype females and 3 paratype males from *Capparis indica* (Capparidaceae), Dec. 1998, Port-Louis, Guadeloupe, CF, on 6 microscopic preparations. One preparation with paratypes deposited in Muséum National d'Histoire Naturelle à Paris; one preparation with paratypes in ENSA-M/INRA, Department of Plant Protection, Laboratory of Acarology, Montpellier; remaining preparations in the collection of the Department of Zoology, University of São Paulo/ESALQ, Piracicaba, São Paulo, Brazil.

RELATION TO HOST: *Acalitus capparidis* induces the plant to produce crinkle galls on the lower leaf surface, opening through a small pit on the upper surface.

ETYMOLOGY: *capparidis*, Latin genitive of *Capparis*, the genus of the host plant, meaning from this host.

Acalitus amicorum Flechtmann, sp. nov.

(Fig. 2)

DIAGNOSIS. An *Acalitus* species with 4-rayed empodia characterized by having most dorsal, lateral and ventral microtubercles each ending in an acute tip, and by having a smooth female genital coverflap and a unique prodorsal shield pattern of longitudinal lines.

FEMALE. Measurements in micrometers of holotype and, in parentheses, ranges of 6 paratypes: elongate, worm-like idiosoma 192 (178–206) long, 37 wide. Gnathosoma directed downwards, rostrum (9–10) long, basal setae 3 (2–3) long, antapical setae not seen; chelicerae 12 (12–13) long, oral stylets 7 (7–8) long. Prodorsal shield 17 (16–19) long, 19 (18–19) wide, with a short median line, a pair of straight admedian lines, a pair of curved admedian lines, 3–4 lateral lines and lateral granules. Shield tubercles at rear shield margin, granulated basally, 13 (13–14) apart; scapular setae *sc* 21 (21–24) long, directed backwards, extending over 7–9 dorsal annuli. Legs without tibial I and femoral I setae. Legs I, from trochanter base, 21 (21–22) long; femora 8 (7–10) long, femoral setae *bv* missing; genua 2 (2–3) long, genual setae *l''* 10 (10–14) long; tibiae 3 long,

tibial setae *l'* missing; tarsi 5 long, solenidia 7 (7–10) long, empodia 6 long, 4-rayed, dorsal setae *ft''* 10 (10–13) long, lateral setae *ft'* 19 (18–20) long, unguinal setae *u'* 4 long. Legs II 18 (17–19) long; femora 6 (6–8) long, *bv* 11 (10–12) long; genua 2 long, *l''* 8 (7–11) long; tibiae 2 long; tarsi 5 long, solenidia 11 (10–11) long, empodia 6 long, 4-rayed, *ft''* 5 (5–9) long, *ft'* 19 (18–23) long, *u'* 4 long. Coxae I fused to each other, ornamented with 3 median lines of microtubercles and a few scattered microtubercles; coxae II also with microtubercles. First coxal setae *1b* 7 (6–7) apart, 4 (4–5) long; second coxal setae *1a* 6 (6–7) apart, 17 (16–18) long, third coxal setae *2a* 16 (15–17) apart, 28 (26–29) long. Coxigenital region with a clear transverse line of pointed microtubercles adpressed to anterior margin of genitalia and a group of dispersed microtubercles just anteriorly, sometimes giving the impression of 1–2 transverse rows. Genitalia 14 (13–15) wide, 11 (8–11) long, genital setae *3a* 9 (7–10) long; coverflap smooth. Opisthosoma: lateral setae *c2* 16 (12–16) long, on annulus 1–2; first ventral setae *d* 31 (27–33) long, 24 (24–26) apart, on annulus 12 (12–14); second ventral setae *e* 25 (21–27) long, 16 (14–16) apart, on annulus 27 (27–31); third ventral setae *f* 15 (13–16) long, 11 (10–11) apart, on annulus 53 (53–57). Total dorsal annuli 65 (63–65); microtubercles elongate in central area of first 5–7 dorsal annuli, almost as long as width of annulus. Microtubercles ending each in an acute tip laterally on first 5–7 annuli and all over the remaining annuli. Total ventral annuli 58 (58–62), with microtubercles ending each in an acute tip. Last 5–6 dorsal and ventral annuli with microtubercles barely discernible. Caudal setae *h2* 26 (26–37) long, accessory setae *h1* 2 long or shorter.

MALE. Not seen.

TYPE MATERIAL. Holotype female and 36 paratype females from *Abutilon indicum* (Malvaceae), June 1998, Lorient, Saint-Barthélémy, JE, on 7 microscopic preparations; 44 paratype females from *Abutilon indicum*, March 1998, Oyster Pond, Saint-Martin, SK, on 6 microscopic preparations; 51 paratype females from *Bastardia viscosa* (Malvaceae), April 1998, Anse Flamands, Saint-Barthélémy, SK, on 8 microscopic preparations. One preparation with paratypes deposited in Muséum National d'Histoire Naturelle à Paris; one preparation with paratypes in

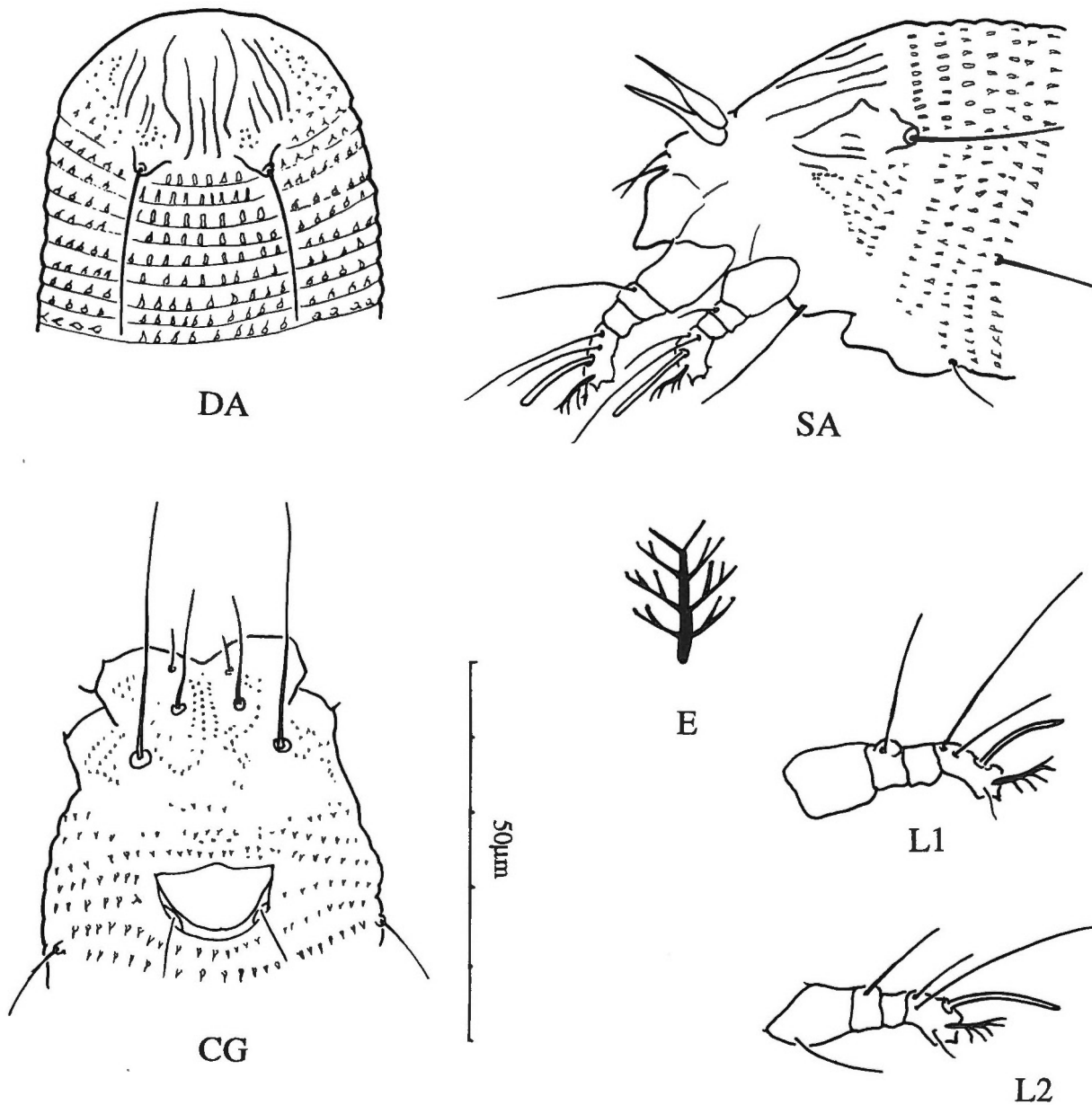


FIG. 2: *Acalitus amicorum* Flechtmann, n. sp.

ENSA-M/INRA, Department of Plant Protection, Laboratory of Acarology, Montpellier; remaining preparations in the collection of Department of Zoology, University of São Paulo/ESALQ, Piracicaba, São Paulo, Brazil.

RELATION TO HOST. Erineum patches on lower surfaces of leaves, which bulge on upper side, in *Abutilon indicum*; erineum patches and some leaf deformation in *Bastardia viscosa*.

ETYMOLOGY: This species commemorates the friendship dedicated to me (CF) by Jean ETIENNE, Serge KREITER and Gilberto J. DE MORAES.

Acalitus comptus Flechtmann, sp. nov.

(Fig. 3)

DIAGNOSIS. *Acalitus comptus* n. sp. belongs to the group of *Acalitus* with 4-rayed empodia and with both coxae ornamented with granules; it is distinctive

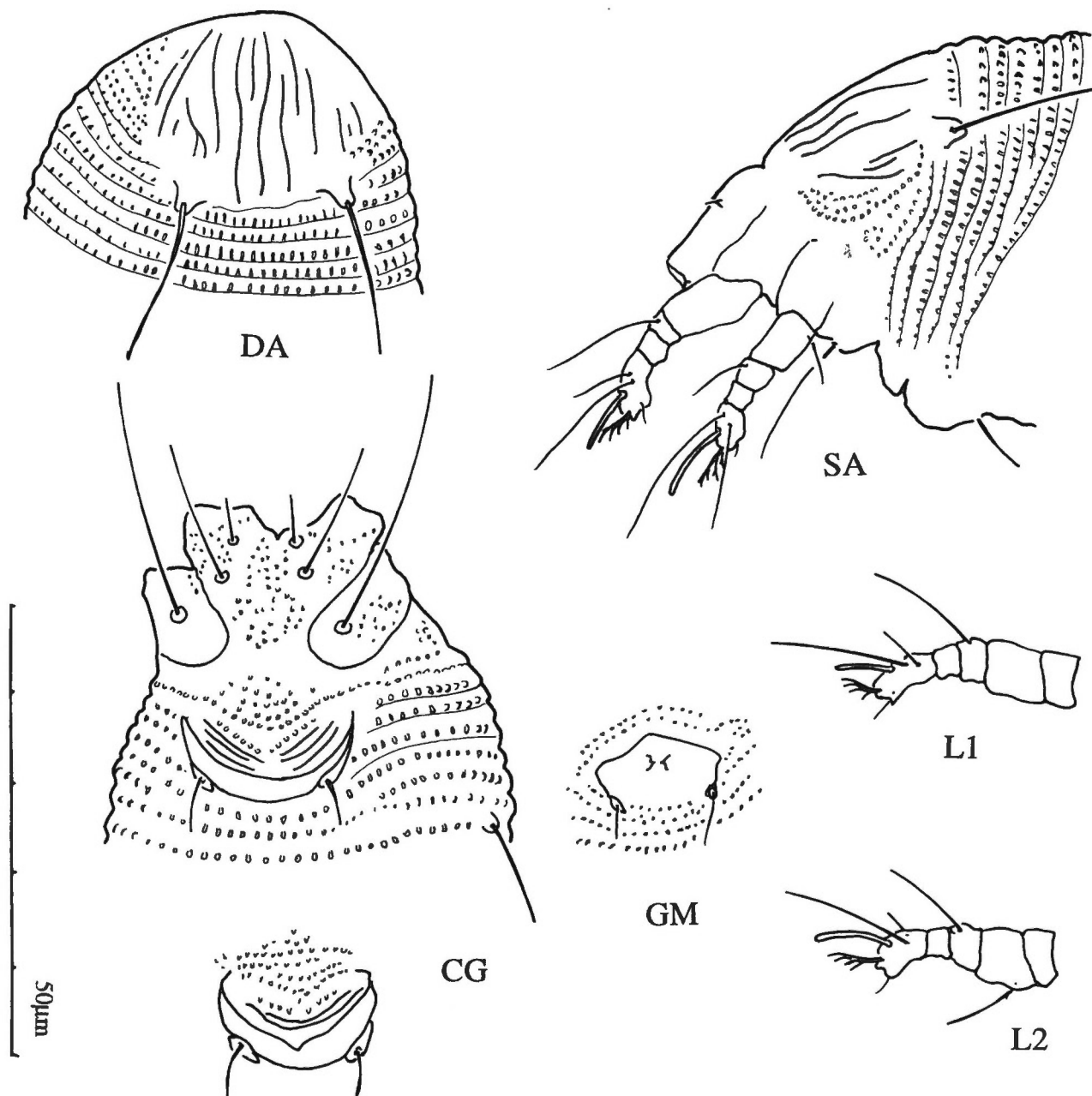


FIG. 3: *Acalitus comptus* Flechtmann, n. sp.

in having the female genital coverflap basally granulated and distally with 2-3 continuous or medially interrupted arched lines or scorings.

FEMALE. Measurements in micrometers of holotype and, in parentheses, ranges of 5 paratypes: Elongate, worm-like idiosoma 180 (163-188) long, 41 (39-41) wide. Gnathosoma: rostrum (13-15) long; basal setae 3 (2-3) long, antapical setae not seen;

chelicerae 12 (11-12) long, oral stylets 6 (6-7) long. Dorsal shield 17 (17-19) long, 20 (20-21) wide, ornamented with a short anterior, median line, 2 pairs of admedian lines, several lateral lines and lateral granules. Setiferous tubercles at rear shield margin, extending over first dorsal annulus, 14 (14-15) apart; scapular setae *sc* 15 (14-16) long, directed backwards. Legs without tibial I and femoral I setae. Legs I, from

trochanter base, 19 (18–20) long; femora 7 (7–8) long, femoral setae *bv* missing; genua 2 long, genual setae *l''* 9 (8–11) long; tibiae 3 (2–3) long, tibial setae *l'* missing; tarsi 5 (4–6) long, solenidia 6 (5–6) long and blunt, empodia 5 (4–5) long, 4-rayed, dorsal setae *ft''* 8 (6–8) long, lateral setae *ft'* 11 (11–14) long, unguinal setae *u'* 3 (2–3) long. Legs II 17 (17–18) long; femora 6 (5–7) long, *bv* 9 (6–9) long; genua 2 long, *l''* 9 (6–9) long; tibiae 2 long; tarsi 4 long, solenidia 6 (5–6) long, empodia 4 long, 4-rayed, *ft''* 5 (4–5) long, *ft'* 13 (13–14) long, *u'* 3 long. Coxae I fused to each other, ornamented with microtubercles; first coxal setae *lb* 6 apart, 6 (6–7) long; second coxal setae *la* 7 apart, 14 (13–14) long. Coxae II with a few abaxial microtubercles; third coxal setae *2a* 16 (14–16) apart, 26 (23–26) long. Coxigenital region with one transverse row of microtubercles and a central agglomeration of microtubercles, as figured. Genitalia 16 (15–17) wide, 8 (8–9) long, genital setae *3a* 5 (5–7) long. Coverflap basally with microtubercles and distally with 2–3 transverse, curved lines, continuous or interrupted medially. Opisthosoma: lateral setae *c2* 10 (9–11) long, on annulus 3 (2–4); first pair of ventral setae *d* 31 (28–31) apart, 23 (20–25) long, on annulus 17 (13–17); second pair of ventral setae *e* 19 (17–19) apart, 13 (10–13) long, on annulus 34 (30–34); third pair of ventral setae *f* 14 (9–14) apart, 11 (10–12) long, on annulus 60 (53–60). Total ventral annuli 65 (58–65), with slightly elongate microtubercles, each with a minute distal spine; total dorsal annuli 68 (64–68) with elongate microtubercles, each ending in an acute tip. Last 12 dorsal annuli with much smaller microtubercles; ventrally, all annuli with similar, acute-tipped microtubercles. Caudal setae *h2* 31 (31–35) long; accessory setae *h1* 2 long.

MALE (ranges of measurements of 3 specimens). Smaller than female, 128–138 long, 38–39 wide. Gnathosoma: rostrum 11 long, basal setae 2–3 long, antapical setae not seen; chelicerae 11–12 long, oral stylets 6–7 long. Dorsal shield 17–18 long, 19–20 wide; *sc* 12–14 long, 12–13 apart. Legs without tibial I and femoral I setae. Legs I 16–17 long; femora 5–6 long, *bv* missing; genua 2 long, *l''* 9–10 long; tibiae 2 long, *l'* missing; tarsi 4–5 long, solenidia 5 long, empodia 4 long, 4-rayed, *ft''* 4–5 long, *ft'* 10–12 long, *u'* 2 long. Legs II 15–16 long; femora 5–6 long, *bv* 5–7 long; genua 2 long, *l''* 5–6 long; tibiae 2 long; tarsi 4 long,

solenidia 5–6 long, empodia 4 long, 4-rayed, *ft''* 3 long, *ft'* 11–12 long, *u'* 2 long. Coxae: *lb* 6 apart, 4–5 long; *la* 6–7 apart, 8–11 long; *2a* 13–14 apart, 15–18 long. Genitalia smooth, 10–11 wide, 8–9 long, *3a* 4–5 long. Opisthosoma: *c2* 9–10 long, on annulus 1–3; *d* 27–28 apart, 18–20 long, on annulus 11–13; *e* 17–19 apart, 10–11 long, on annulus 27–29; *f* 9–11 apart, 9–10 long, on annulus 49–51. Total ventral annuli 54–55; total dorsal annuli 58–61; microtubercles as in female. Caudal setae *h2* 25–31 long; *h1* 2 long.

TYPE MATERIAL. Holotype female, 23 female and 6 male paratypes from *Wedelia trilobata* (Asteraceae), Dec. 1998, Pigeon, Bouillante, Guadeloupe, JE, on 7 microscopic preparations. One preparation with paratypes deposited in Muséum National d'Histoire Naturelle à Paris; one preparation with paratypes in ENSA-M/INRA, Department of Plant Protection, Laboratory of Acarology, Montpellier; remaining preparations in the collection of Department of Zoology, University of São Paulo/ESALQ, Piracicaba, São Paulo, Brazil.

ETYMOLOGY: *comptus*, L., ornamented, referring to the presence of ornamentation on coxae.

REMARKS. LIZER (1917) described *Aceria brethesi* from *Wedelia glauca*, from Buenos Aires, Argentina, which has about 42 opisthosomal annuli, very long lateral setae, reaching well beyond insertion of first pair of ventral setae (much shorter in the new species described here), and first pair of ventral setae reaching well beyond insertions of second pair of setae (shorter in the new species).

Aceria acnisti Keifer

Aceria acnisti KEIFER, 1953: 66.

Specimens examined: Guadeloupe, Gourbeyre, CF, Dec. 1997, from *Acnistus cauliflorus* (Solana-ceae).

Aceria annonae (Keifer)

Eriophyes annonae KEIFER, 1973: 3.

Aceria annonae, AMRINE & STASNY, 1994: 22.

Specimens examined: Guadeloupe, Baie Mahault, Calvaire, JE, March 1998, from *Annona muricata*

(Annonaceae); Capesterre-Belle Eau, JE, April 1998, from *Annona muricata* (Annonaceae); Pointe-Noire, CF, Dec. 1997, from *Annona muricata* (Annonaceae). Les Saintes, Terre-de-Haut, Le Bourg, GJM, March 1998, from *Annona muricata* (Annonaceae).

Aceria avicenniae (Keifer)

Eriophyes avicenniae KEIFER, 1972. C-7: 19.

Aceria avicenniae, AMRINE & STASNY, 1994: 24.

Specimens examined: Saint-Martin, Anse Marcel, SK, March 1998, from *Avicennia germinans* (Verbenaceae).

Aceria guerreronis Keifer

Aceria guerreronis KEIFER, 1965: 7.

Specimens examined: Guadeloupe, Sainte-Rose, JE, Jan. 1993, from *Coccos nucifera* (Arecaceae).

Aceria hibisci (Nalepa)

(Fig. 4)

Eriophyes hibisci NALEPA, 1906: 147; 1909: 523.

Aceria hibisci, AMRINE & STASNY, 1994.

NALEPA (1906) described this species from *Hibiscus rosa-sinensis* from the Fiji Islands and provided a detailed account of its relation to the host plant. NALEPA (1909) reported the same species from the Samoa Islands and added some details to the description of the mite and to the damage it causes to its host plant. Later, *A. hibisci* was reported from Australia (ANONYMOUS, 1994) and Reunion Island (QUILICI *et al.*, 1997). In this study, *A. hibisci* was collected from *H. rosa-sinensis* in Guadeloupe and Martinique; figures and description of the Caribbean specimens are given below.

FEMALE (n = 9). Body 176–215 long, 51–58 wide. Gnathosoma: rostrum 18–19 long, basal setae 3 long, antapical setae 4 long, chelicerae 10–11 long, oral stylets 5–6 long. Dorsal shield 22–25 long, 33–41 wide, shield design as figured. Setiferous tubercles

20–22 apart, at rear shield margin; scapular setae *sc* 24–29 long, directed backwards. All leg setae present. Legs I 23–24 long; femora 5–6 long, femoral setae *bv* 6–9 long; genua 4 long, genual setae *l''* 16–20 long; tibiae 4 long, tibial setae *l'* 4 long; tarsi 6 long, solenidia 6 long, empodia 4–5 long, 4-rayed, dorsal setae *ft''* 8–11 long, lateral setae *ft'* 15–19 long, unguinal setae *u'* 3 long. Legs II 20–23 long; femora 4–5 long, *bv* 6–8 long; genua 3 long, *l''* 7–9 long; tibiae 4 long; tarsi 5–6 long, solenidia 7–8 long, empodia 4–5 long, 4-rayed, *ft''* 4–6 long, *ft'* 15–19 long, *u'* 3 long. Coxae smooth, fused medially to each other, sternal line 4–7 long; first coxal setae *1b* 8–11 apart, 8–11 long; second coxal setae *1a* 9–11 apart, 15–18 long; third coxal setae *2a* 18–20 apart, 24–32 long. Coxae II smooth. Genitalia 17–20 wide, 10–15 long; epigynum with 8 longitudinal scorings or lines. Genital setae *3a* 5–7 long. Coxigenital area with 4–5 annuli, microtuberculate. Opisthosoma: lateral setae *c2* 13–19 long, on annulus 4–5; first ventral setae *d* 25–41 apart, 37–51 long, on annulus 15–19; second ventral setae *e* 18–30 apart, 5–8 long, on annulus 27–32; third ventral setae *f* 12–17 apart, 13–16 long, on annulus 47–55. Total ventral annuli 52–61, with bead-like microtubercles, each ending in an acute tip; those of the last 5 annuli elongate; last 18–22 annuli without microtubercles on dorsal part. Caudal setae *h2* 57 long; accessory setae *h1* 4–5 long.

MALE (n = 3). Smaller than female; idiosoma 143–190 long, 43–50 wide. Gnathosoma: basal setae 4 long, antapical setae 3 long, chelicerae 14–16 long, oral stylets 7–9 long. Dorsal shield 21–22 long, 40–42 wide; *sc* 17–22 long, 19–21 apart. Legs I 20–22 long; femora 5 long, *bv* 5 long; genua 3 long, *l''* 11–13 long; tibiae 3 long, *l'* 4 long; tarsi 4–5 long, solenidia 5–6 long, empodia 4 long, 4-rayed, *ft''* 7–8 long, *ft'* 10–11 long, *u'* 3 long. Legs II 18–19 long, femora 5 long, *bv* 4–7 long; genua 2–3 long, *l''* 5–9 long; tibiae 3 long; tarsi 4 long, solenidia 6–7 long, empodia 4 long, 4-rayed, *ft''* 3–4 long, *ft'* 14–16 long, *u'* 2–3 long. Coxae: *1b* 6–9 long, 6–9 apart; *1a* 13–14 long, 8–9 apart; *2a* 22–25 long, 18 apart. Coxigenital region with 4–5 annuli, microtuberculate. Genitalia 13–15 wide, 8–9 long, posterior half granulated; *3a* 5–6 long. Opisthosoma: *c2* 9–10 long, on annulus 2–3; *d* 30–34 long, 31–35 apart, on annulus 12–13; *e* 4–5 long, 19–22 apart, on annulus 23–25; *f* 11–14 long,

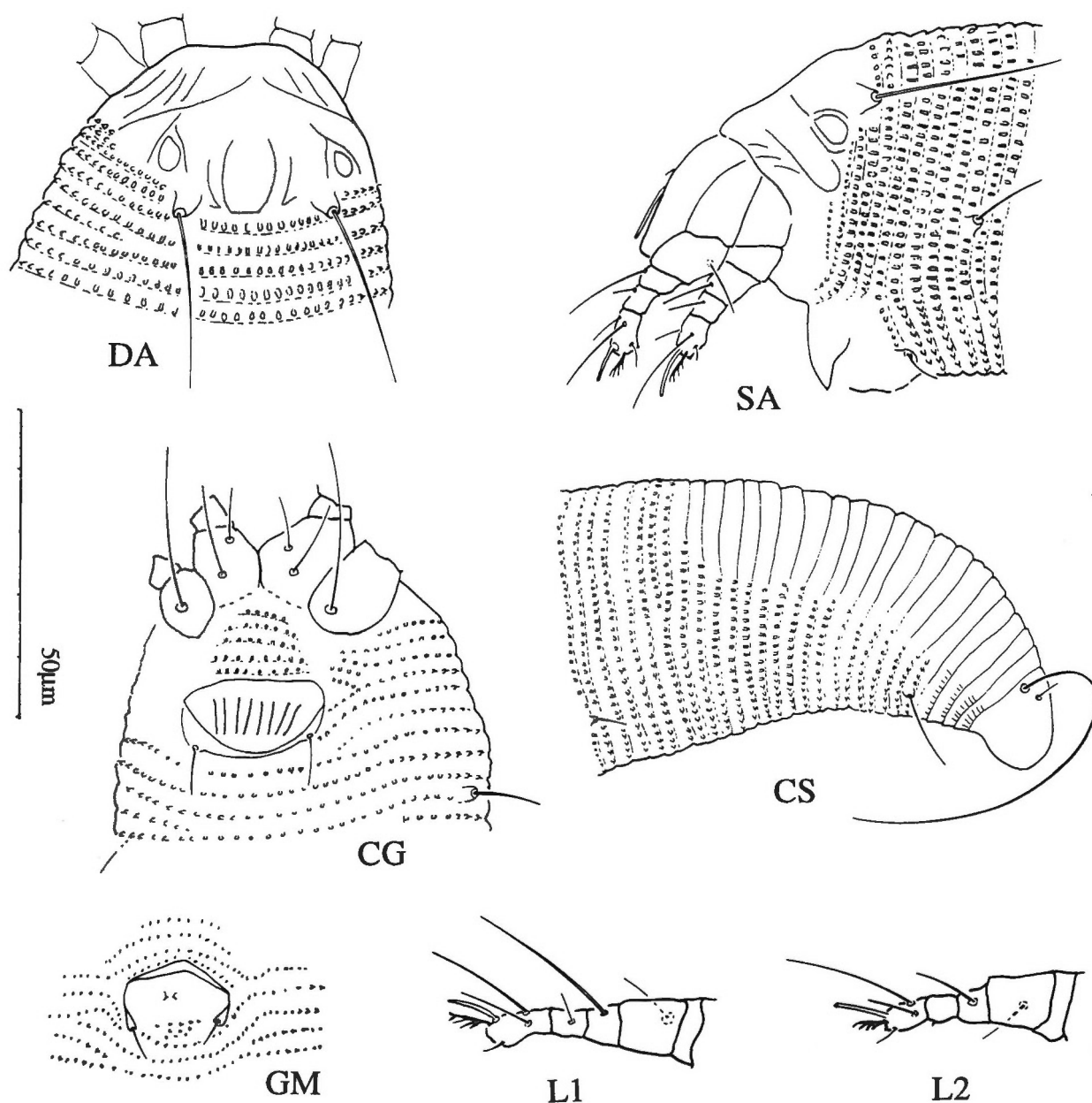


FIG. 4: *Aceria hibisci* (Nalepa)

14–16 apart, on annulus 43–49. Total ventral annuli 48–53, microtuberculate as in female. Caudal setae *h2* 37–38 long, *h1* 3–4 long.

MATERIAL EXAMINED. 11 females and 2 males from *Hibiscus rosa-sinensis* (Malvaceae), Martinique, Anse Céron, CF, Dec. 1997; Sainte-Marie, Dec. 1997, CF, on 4 microscopic preparations; 11 females and 1 male from *Hibiscus* sp., Guadeloupe, Ravine Chaude, Lamentin, Jan. 1998 and March 1998, JE, from

Hibiscus sp. (Malvaceae); 22 females, 5 males from *Hibiscus rosa-sinensis*, Guadeloupe, Petit-Bourg, Domaine Duclos INRA, March 1998, JE, on 4 microscopic preparations. One preparation with paratypes deposited in Muséum National d'Histoire Naturelle à Paris; one preparation with paratypes in ENSA-M/INRA, Department of Plant Protection, Laboratory of Acarology, Montpellier; remaining preparations in the collection of the Department of Zoology,

University of São Paulo/ESALQ, Piracicaba, São Paulo, Brazil.

Aceria lantanae (Cook)

Eriophyes lantanae COOK, 1909: 144.

Aceria lantanae, KEIFER & DENMARK, 1976: 1.

Specimens examined: Guadeloupe, Bouillante, Pigeon, JE, Aug. 1998, from *Lantana camara* (Verbenaceae).

Aculops lycopersici (Massee)

Phyllocoptes lycopersici MASSEE, 1937: 403.

Aculops lycopersici, KEIFER, 1966b: 9.

Specimens examined: Guadeloupe, Petit-Bourg, Domaine Duclos INRA, JE, May 1998, from *Lycopersicon esculentum* (Solanaceae).

Calacarus speciosissimum Flechtmann, n. sp.

(Fig. 5)

DIAGNOSIS. *Calacarus speciosissimum* n. sp. has the somewhat general dorsal shield design of most described species in the genus, with 6 pairs of marginal and a few median cells, but is distinct in the absence of setae on genu II, the 5-rayed empodia (genu II with setae present and 6-rayed empodia in the majority of known species) and in having very long ventral setae.

FEMALE. Measurements in micrometers of holotype and, in parentheses, ranges of 8 paratypes: idiosoma 215 (198–283) long, 74 (72–74) wide. Gnathosoma: rostrum (31–33) long, basal setae (3–4) long, antapical setae (9–11) long, chelicerae (31–35) long, oral stylets (24–28) long. Dorsal shield broadly triangular, 50 (49–56) long, 74 (74–79) wide, with 6 pairs of marginal nearly quadrangular cells and a few median cells, as figured. Short and rounded anterior lobe. Legs II without genual setae. Legs I 38 (35–40) long; femora 10 (9–11) long, setae *bv* 15 (14–16) long; genua 5 long, setae *l''* 32 (30–33) long; tibiae 10 (9–10) long, setae *l'* 7 (5–7) long; tarsi 7 (7–8) long, solenidia

(9–10), ending in a conical knob, empodia 8 (7–9) long, 5-rayed, dorsal setae *ft''* (24–26) long, lateral setae *ft'* (25–28) long, unguinal setae *u'* (7–9) long. Legs II 35 (32–35) long; femora 12 (9–12) long, *bv* 16 (12–16) long; genua 4 long, *l''* missing; tibiae 6 (6–8) long; tarsi 8 (6–8) long, solenidia 8 (6–8) long, with an apical conical knob, empodia 8 (8–10) long, 5-rayed, *ft''* 8 (7–8) long, *ft'* 24 (23–26) long, *u'* 10 (7–10) long. Coxae I with a few anterior dashes, sternal line 4 long; otherwise, coxae smooth. Coxal setae *lb* 12 (10–12) long, 18 (16–18) apart; *la* 14 (14–18) long, 11 (9–11) apart; *2a* 58 (46–58) long, 35 (32–35) apart. Coxigenital area with ca. 8 annuli. Genitalia 25 (23–25) wide, 19 long; genital setae *3a* 14 (14–17) long; coverflap apparently smooth. Opisthosoma: lateral setae *c2* 42 (40–48) long, on annulus 4 (3–5); ventral setae *l, d*, 59 (59–79) long, 40 (37–40) apart, on annulus 22 (21–25); ventral setae II, *e*, 28 (24–31) long, 19 (19–22) apart, on annulus (42–54); ventral setae III, *f* 31 (31–35) long, 22 (22–23) apart, on annulus (64–79) or 7th from rear. Total ventral annuli (72–86), all microtuberculate; total dorsal annuli 78 (73–80), with longitudinal waxy ridges. Caudal setae, *h2* 61 (61–86) long, accessory setae, *hl* missing.

MALE (*n* = 5). Smaller than female, 172–220 long, 61–73 wide. Gnathosoma: rostrum 28–29 long, basal setae 3 long, antapical setae 9 long, chelicerae 24–27 long, oral stylets 20–23 long. Dorsal shield triangular, 35–45 long, 51–61 wide; anterior lobe pointed. Legs II without genual setae. Legs I 35–36 long; femora 10 long, *bv* 11–14 long; genua 5 long, *l''* 26–31 long; tibiae 8–10 long, *l'* 7–10 long; tarsi 6–8 long, solenidia 8–9 long, empodia 6–7 long, 5-rayed, *ft''* 22–24 long, *ft'* 24–27 long, *u'* 7–9 long. Legs II 30–32 long, femora 10–11 long, *bv* 10–13 long; genua 4 long, *l''* missing; tibiae 5–7 long; tarsi 6–7 long, solenidia 8–9 long with conical knob, empodia 6–7 long, 5-rayed, *ft''* 7–8 long, *ft'* 21–24 long, *u'* 7 long. Sternal line 4 long, coxal setae *lb* 8–9 long, 14–18 apart; *la* 12–16 long, 8–11 apart; *2a* 37–46 long, 24–34 apart. Genitalia 18–19 wide, 11–16 long, *3a* 11–14 long; posteriorly with short irregular dashes. Coxigenital area with 7–8 annuli, apparently smooth. Opisthosomal setae: *c2* 32–45 long, on annulus 2–3; *d* 47–61 long, on annulus 14–18, 34–39 apart; *e* 24–31 long, 17–23 apart, on annulus 33; *f* 28–31 long, 20–26 apart, on annulus 51 or 7th from rear. Total ventral annuli 57, all microtu-

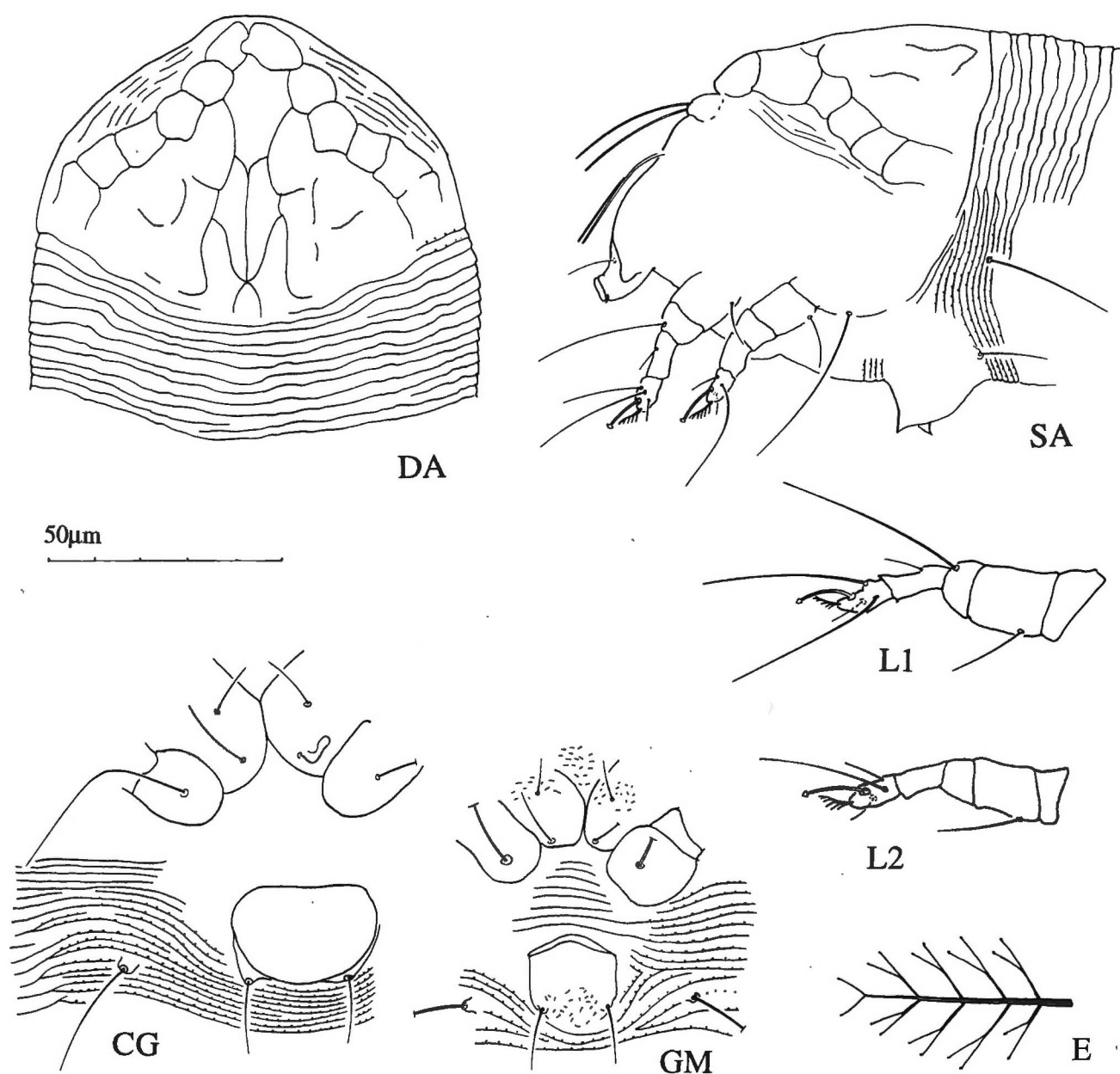


FIG. 5: *Calacarus speciosissimum* Flechtmann, n. sp.

berculate; total dorsal annuli 56–72. Caudal setae *h2* 57–64 long; *h1* missing.

TYPE MATERIAL. Female holotype, 22 female and 8 male paratypes from *Clerodendron speciosissimum* (Verbenaceae), Martinique, La Trinité, Avenue du Brésil, Dec. 1997, CF, on 6 microscopic preparations. One preparation with paratypes deposited in Muséum National d'Histoire Naturelle à Paris; one preparation with paratypes in ENSA-M/INRA,

Department of Plant Protection, Laboratory of Acarology, Montpellier; remaining preparations in the collection of the Department of Zoology, University of São Paulo/ESALQ, Piracicaba, São Paulo, Brazil.

RELATION TO HOST. Leaf vagrants; no apparent damage.

ETYMOLOGY: *speciosissimum*, L., beautiful, showy, from the specific designation of the host plant.

Calepitrimerus muesebecki Keifer

Calepitrimerus muesebecki KEIFER, 1940: 113.

Specimens examined: Guadeloupe, Petit Canal Godet, JE, Jan. 1992, from *Persea americana* (Lauraceae).

Colomerus bucidae (Nalepa), n. comb.

(Fig. 6)

Eriophyes bucidae NALEPA, 1904: 180.

Eriophyes buceras CROMROY, 1958: 130; DENMARK, 1966. N. syn. NALEPA (1904) described *E. bucidae* from *Bucida buceras* L. from Barbados.

Although NALEPA (1904) did not present an illustration, the main morphological characters are clearly described, as well as details of the type of injury it causes. CROMROY (1958) described *E. buceras* from the same host, from Puerto Rico. Although he compared his species with other eriophyids described by NALEPA, he obviously was not aware of NALEPA's 1904 paper, which he did not mention. DENMARK (1966) reported CROMROY's species from the same host in Florida, USA.

Specimens collected from *Buchenavia* (syn. *Bucida*) *capitata* in Guadeloupe fit exactly the descriptions of both species, as well as CROMROY's and DENMARK's illustrations; the type of injury is also the same. Therefore, the above mentioned species are synonymized and a redescription, based on the specimens from Guadeloupe, is given. The species is transferred to the genus *Colomerus* because it has the dorsal shield setae (scapular setae, *sc*) directed diagonally ahead, the female genitalia are somewhat appressed to coxae II and the female genital coverflap has longitudinal ribs in two uneven ranks.

FEMALE (measurements in micrometers, ranges from 5 specimens): worm-like idiosoma 136–142 long. Gnathosoma: basal and antapical setae 2 long; chelicerae 15 long. Dorsal shield 20–22 long, with the median line complete, admedian lines complete or broken, sub-parallel, slightly sinuate and gently converging to rear, several short lateral lines, mostly longitudinal and a not well defined ocellar spot above rear coxae. About 3–4 partial annuli on side of shield.

Shield tubercles ahead of rear margin; in most preparations, tubercles fold centrad and direct scapular setae up and directed diagonally forwards; in some preparations the tubercles fold postero-laterally and direct the setae backwards. Scapular setae *sc* 15–18 long; their bases 9–10 apart when tubercles directed centrad and 13–14 apart when tubercles directed backwards. Legs with all the setae present; legs I, from trochanter base, 17–10 long; femora 5–6 long, femoral setae *bv* 6–8 long; genua 3 long, genual setae *l'* 14–18 long; tibiae 3–4 long, tibial setae *l'* 3 long; tarsi 5 long, solenidia 5–6 long, blunt, empodia 4 long, 5-rayed, dorsal setae *ft''* 4–7 long, lateral setae *ft'* 11–15 long, unguinal setae *u'* 3 long. Legs II 16–18 long; femora 5–6 long, *bv* 5–6 long; genua 2–3 long, *l'* 6–9 long; tibiae 3–4 long; tarsi 4 long, solenidia 6–7 long, blunt, empodia 4 long, 5-rayed, *ft''* 4–5 long, *ft'* 14–17 long, *u'* 2–3 long. Coxae I well separated by centrally parallel lines and a few irregular longitudinal lines; first coxal setae *lb* 7 apart, 8–9 long; second coxal setae *la* 8–9 apart, 14–19 long; coxae II smooth, third coxal setae *2a* 15–16 apart, 27–30 long. Coxigenital region with 4 annuli, microtuberculate. Genitalia 17–18 wide, 9–10 long; coverflap with longitudinal ribs in 2 ranks, 12 ribs in the basal rank and 14–16 ribs in the distal one; genital setae *3a* 7–9 long. Opisthosoma: lateral setae *c2* 12–16 long, on annulus 3–5; first ventral setae *d* 29–33 apart, 29–39 long, on annulus 13–14, extending well beyond bases of second ventral setae *e*; these 16–22 apart, 28–39 long, on annulus 25–19, almost reaching bases of third ventral setae *f*; these 14–16 apart, 10–12 long, on annulus 44–52. Total ventral annuli 49–57, total dorsal annuli 53–61, microtubercles elongate dorsally and ventrally, shorter and more rounded laterally; last 8–10 dorsal annuli without microtubercles and last 5–6 ventral annuli with narrow, elongate microtubercles.

MALE (*n* = 3). Similar to female, 134–150 long, 36–38 wide. Gnathosoma: rostrum 15 long, basal and antapical setae 2 long; chelicerae 12 long. Dorsal shield as in female, 19–20 long; *sc* 12–14 long, 10–14 apart respectively when tubercles are folded centrad or backwards. Legs I, from trochanter base, 16 long; femora 5–6 long, *bv* 5–6 long; genua 2 long, *l'* 10–11 long; tibiae 2–3 long, *l'* 3 long; tarsi 4 long, solenidia 4–5 long, blunt, empodia 4 long, 5-rayed, *ft''* 4–5 long, *ft'* 9–11 long, *u'* 3 long. Legs II 14–16 long,

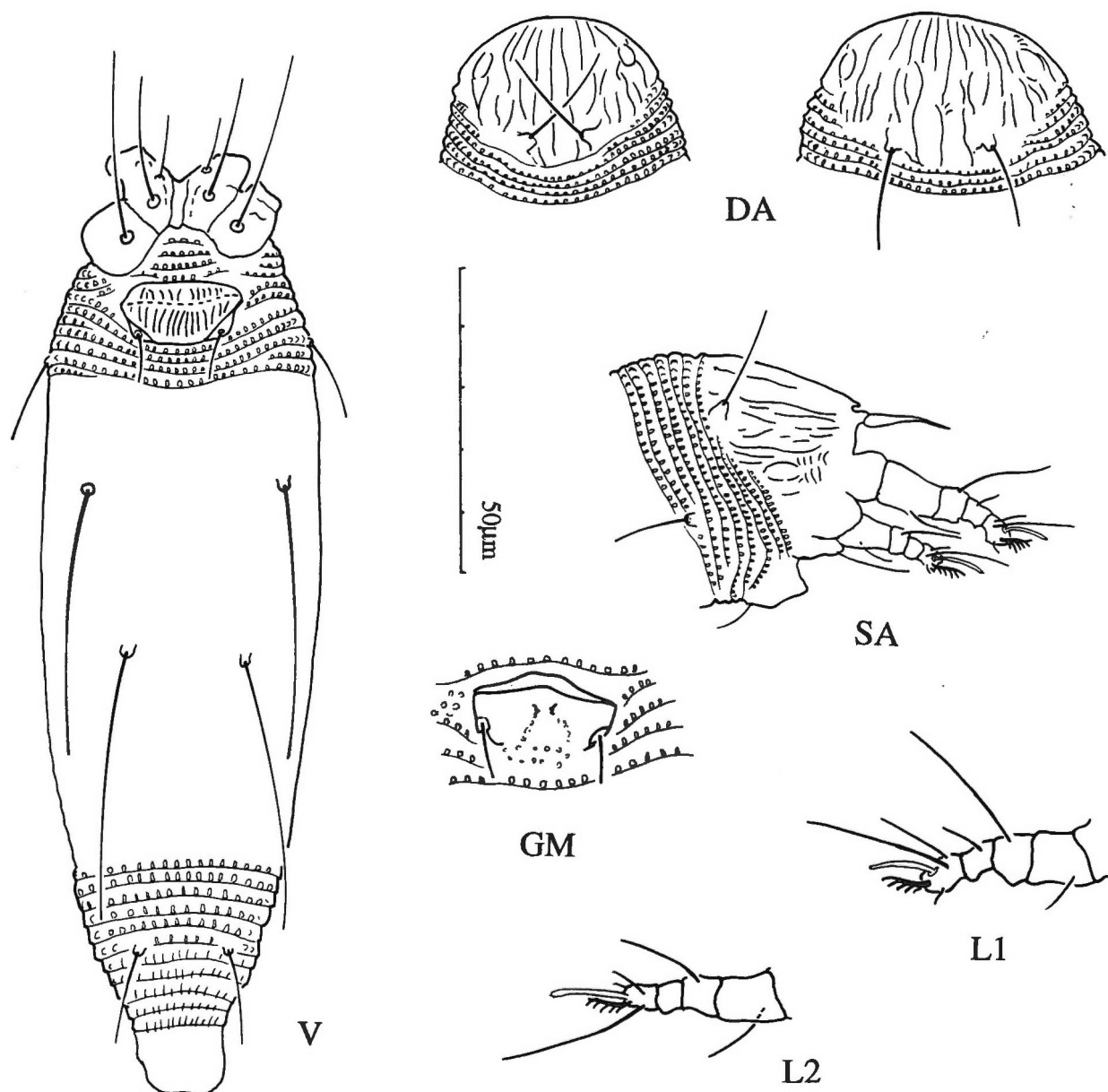


FIG. 6: *Colomerus bucidae* (Nalepa)

femora 4–5 long, *bv* 4–5 long; genua 2–3 long, *l'* 5–6 long; tibiae 2–3 long; tarsi 3 long, solenidia 5–7 long, blunt, empodia 3 long, 5-rayed, *fl''* 3 long, *fl'* 11–12 long, *u'* 2 long. Coxae: *1b* 6–7 apart, 5–7 long; *1a* 7–8 apart, 14–15 long; *2a* 14–15 apart, 18–24 long. Coxigenital region with 5 annuli, microtuberculate. Genitalia 14 wide, 7–8 long, smooth; *3a* 5–6 long. Opisthosoma: *c2* 9–11 long, on annulus 3–4; *d* 24–26 apart, 23–29 long, on annulus 10–13; *e* 17–19 apart, 22–26 long, on annulus 21–26; *f* 9–10 apart, 10 long, on

annulus 41–46. Total dorsal annuli 49–55, total ventral annuli 49–55, microtuberculate as in female. Caudal setae *h2* 21–25 long, *h1* absent.

MATERIAL EXAMINED. 45 females, 7 males, collected from black olive, *Buchenavia* (syn. *Bucida*) *capitata*, Combretaceae, Dec. 1998, Les Abymes, Guadeloupe, JE, on 7 microscopic preparations; 4 females, same host, May 1995, Anse Marcel, Saint Martin, JE, on one microscopic preparation. One preparation deposited in Muséum national d'Histoire naturelle, Paris;

one preparation with paratypes in ENSA-M/INRA, Department of Plant Protection, Laboratory of Acarology, Montpellier; remaining preparations in the collection of Department of Zoology, University of São Paulo/ESALQ, Piracicaba, São Paulo, Brazil.

RELATION TO HOST. Erineum patches on the lower surface of leaves and which bulge out on the upper surface, causing leaf deformations

Cosella pentamera Flechtmann, n. sp.

(Fig. 7)

DIAGNOSIS. Similarly to *C. deleoni* (KEIFER, 1956), *C. pentamera* n. sp. has apparently 5-rayed empodia; all other known species have 4-rayed empodia (*C. cissi* Keifer, 1978, *C. ischnocarpasia* Mondal and Chakrabarti, 1981, *C. simplicis* Manson, 1984 and *C. callipodex* Flechtmann, 1996). The new species is distinctive in having an anterior cell and a mediolongitudinal line of 3 pairs of cells on the dorsal shield; there are no cells in *C. deleoni*, a network plus many short irregular lines between the main lines in *C. cissi*, lateral areas of shield with cells in *C. ischnocarpasia*, a network of many cells in *C. callipodex* and an irregular, not always clear, network in *C. simplicis*.

FEMALE (measurements in micrometers of holotype and, in parentheses, ranges of 8 paratypes): fusiform, evenly tapering idiosoma 154 (154–198) long, 57 (57–74) wide. Gnathosoma directed downwards, (19–22) long; basal setae 3 (2–4) long, antapical setae 4 (4–5) long; chelicerae (16–17) long, oral stylets (10–11) long. Dorsal shield 41 (41–46) long, 61 (61–76) wide, with an anteromedian square cell followed by a mediolongitudinal set of 3 pairs of rectangular cells; laterally with irregular, longitudinal lines; otherwise, smooth. Dorsal shield tubercles ahead of rear shield margin; scapular setae *sc* 6 (5–6) long. Legs without tibiae. Legs I, from trochanter base, 20 (20–25) long; femora 9 (7–9) long, setae *bv* 7 (7–9) long; genua 4 (3–4) long, setae *l'* 28 (25–28) long; tibiae absent; tarsi 6 (6–8) long, solenidia 5 (5–6) long, empodia 6 (5–6) long, apparently 5-rayed, dorsal setae *ft''* 16 (16–22) long, lateral setae *ft'* 22 (22–23) long, ungual setae *u'* 5 (5–6) long. Legs II 17 (17–21) long; femora 8 (6–8) long, *bv* 8 (8–9) long; genua 3 (2–3) long, *l''* 7 (6–9) long; tibiae absent; tarsi

7 (6–7) long, solenidia 6 (6–7) long, empodia 5 (5–6) long, apparently 5-rayed, *ft''* 4 (3–4) long, *ft'* 22 (29–24) long, *u'* 5 long. Coxae I fused with each other, apparently also fused with hypostome, granulate anteriorly; first coxal tubercle and setae, *1b*, absent. Coxal setae *1a* 11 (10–16) long, 9 (9–11) apart; *2a* 18 (16–24) long, 20 (20–26) apart. Coxigenital region without discernible annuli, apparently smooth. Genitalia 18 (16–19) wide, 14 (14–17) long, basally granulated and apically smooth; genital setae *3a* 9 (8–10) long. Opisthosoma: lateral setae *c2* 31 (31–46) long, on annulus 1–2; ventral setae *d* 33 (22–33) long, 26 (26–42) apart, on annulus 12–13; *e* 7 (5–7) long, 15 (15–19) apart, on annulus 23–26; *f* 16 (16–18) long, 19 (18–20) apart, on annulus 39–45 or 5th from rear. Total ventral annuli 48 (44–51), microtuberculate; total dorsal annuli 42 (42–47), smooth. Caudal setae *h2* 48 (45–55) long; accessory setae, *h1* minute.

MALE (*n* = 4). Smaller than female, 130–145 long, 51–56 wide. Gnathosoma: basal setae 3–4 long; antapical setae 4–5 long; chelicerae 13–14 long, oral stylets 10–11 long. Dorsal shield 36–38 long, 53–61 wide; tubercle spacing 22–26, *sc* 5–6 long; shield design as in female. Legs without tibiae. Legs I 17–20 long, from trochanter base. Femora 6–9 long, *bv* 6–7 long; genua 3–4 long, *l''* 22–24 long; tibiae absent; tarsi 5–8 long, solenidia 5–6 long, empodia 5–6 long, apparently 5-rayed, *ft''* 16–18 long, *ft'* 19–20 long, *u'* 5–6 long. Legs II 15–18 long; femora 7 long, *bv* 5–7 long; genua 2–3 long, *l''* 6–8 long; tibiae absent; tarsi 6 long, solenidia 5–7 long, empodia 5–6 long, apparently 5-rayed, *ft''* 4 long, *ft'* 18–20 long, *u'* 4 long. Coxae as in female; *1a* 8–13 long, 7–9 apart; *2a* 11–15 long, 18–20 apart. Coxigenital region as in female; genitalia 12–15 wide, 12–13 long, posterior half with granules; setae *3a* 5–7 long. Opisthosoma: *c2* 31–37 long, on annulus 1–2; *d* 23–32 long, 24–26 apart, on annulus 8–13; *e* 4–5 long, 13–14 apart, on annulus 18–20; *f* 14–16 long, 15–18 apart, on annulus 32–35. Total ventral annuli 38–40, microtuberculate; total dorsal annuli 37–40, smooth. Caudal setae *h2* 38–46 long, accessory setae *h1* minute.

TYPE MATERIAL. Female holotype, 36 female and 7 male paratypes from *Haematoxylon campechianum* (Fabaceae), Guadeloupe, Sainte-Anne, Dec. 1997, CF, on 6 microscopic preparations. One preparation with paratypes deposited in Muséum National d'His-

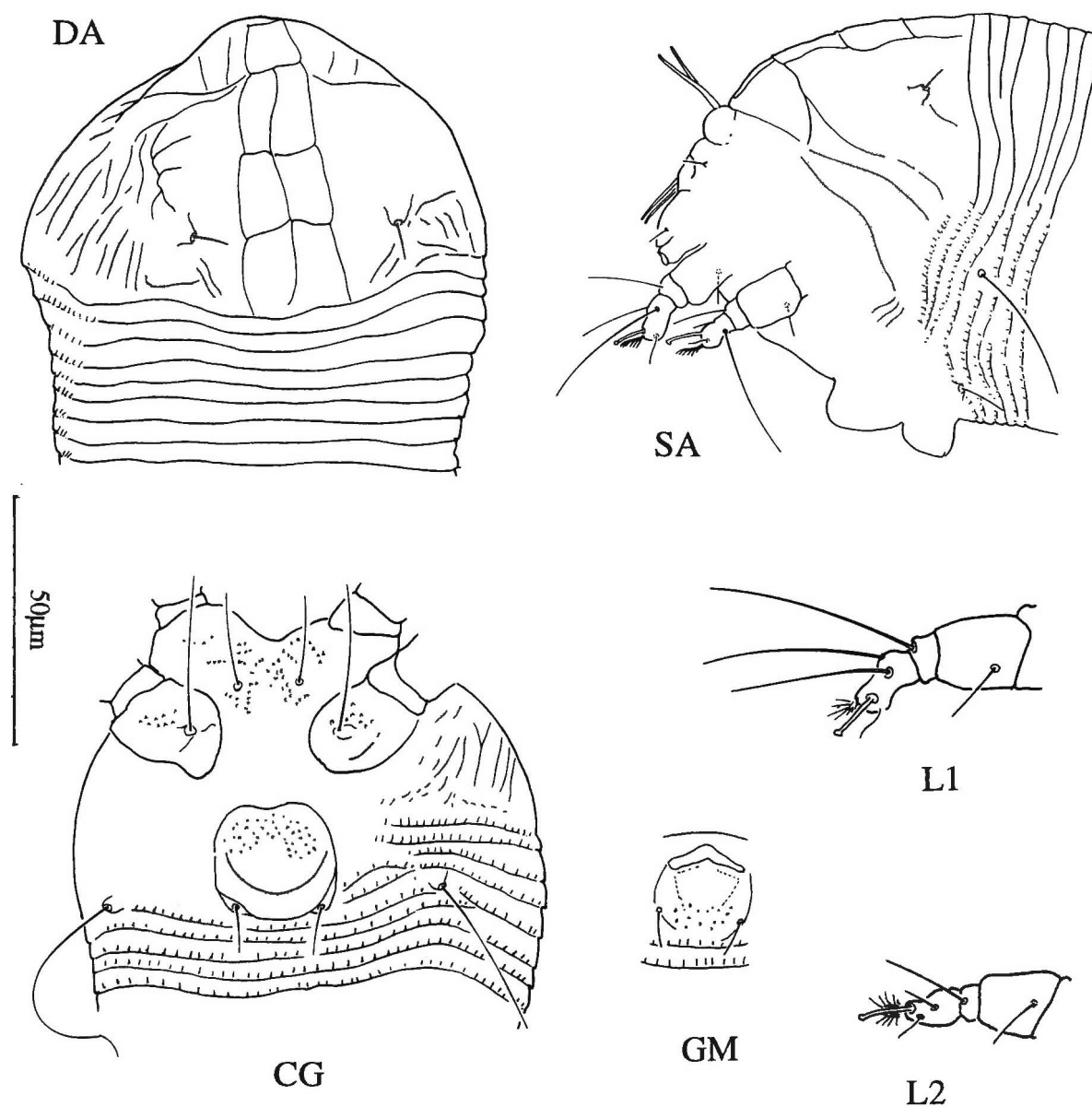


FIG. 7: *Cosella pentamera* Flechtmann, n. sp.

toire Naturelle à Paris; one preparation with paratypes in ENSA-M/INRA, Department of Plant Protection, Laboratory of Acarology, Montpellier; remaining preparations in the collection of Department of Zoology, University of São Paulo/ESALQ, Piracicaba, São Paulo, Brazil.

RELATION TO HOST. Lower leaf surface vagrants; no apparent damage.

ETYMOLOGY: *pentamera*, Greek, five-parted, referring to the 5-rayed empodia.

Epitrimerus calophylli (Cook) **n. comb.**

(Fig. 8)

Eriophyes calophylli Cook, 1909: 143.

COOK (1909) originally described *Eriophyes calophylli* solely on the basis of the host and injury, from a Cuban plant specimen of *Calophyllum calaba* Jacq. This is accepted by the International Code of Zoological Nomenclature and Cook's name for this mite

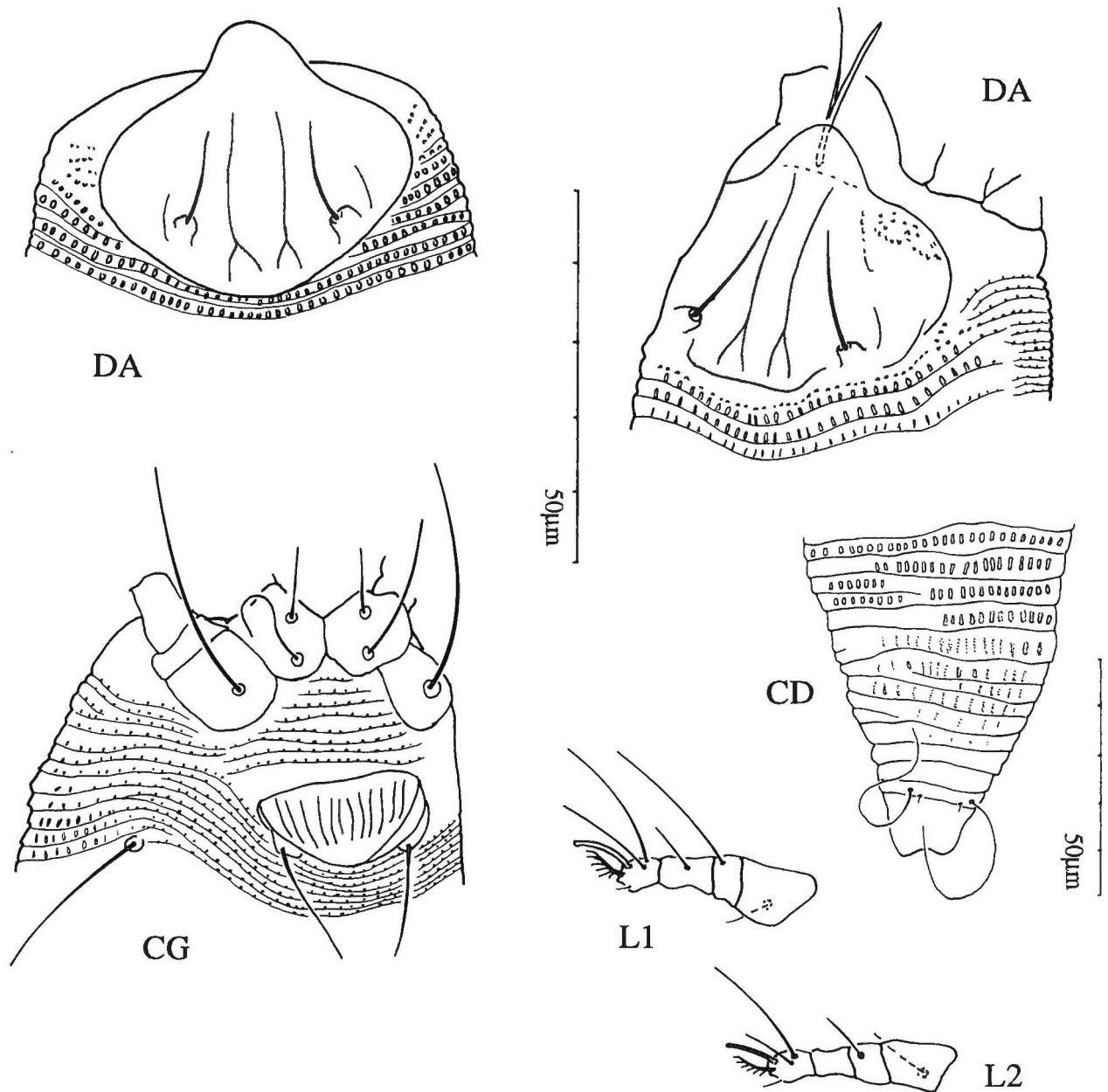


FIG. 8: *Eptrimerus calophylli* (Cook)

is valid. The description of the species is given below.

DIAGNOSIS. *E. calophylli* is characterized by 6-rayed empodia, reduced dorsal shield ornamentation, restricted to 2 mediolongitudinal lines terminating in a bifurcation, and large microtubercles on the dorsal annuli.

FEMALE (measurements in micrometers of type and, in parentheses, ranges from 4 paratypes): fusi-

form idiosoma 180 (162–198) long, 57 wide. Gnathosoma: rostrum (26) long, basal setae 3 long, antapical setae 4 (4–6) long; chelicerae 17 (16–18) long, oral stylets 15 (13–15) long. Dorsal shield 28 (28–33) long, 37 (37–38) wide, ornamentation consists of 2 submedian longitudinal lines, rear end bifurcated, and a few anterolateral granules; anterior lobe broadly rounded. Shield tubercles ahead of rear shield margin, 17 (17–19) apart, directing scapular setae *sc* forwards,

these 13 (13–15) long. Legs: legs I, from trochanter base, 24 (23–24) long; femora 6 (6–7) long, femoral setae *bv* 7 (6–8) long; genua 5 long, genual setae *l''* 19 (18–20) long; tibiae 5 long, tibial setae *l'* 6 long; tarsi 5 long, solenidia 6 (6–7) long, empodia 5 long, 6-rayed, dorsal setae *ft''* 14 long, lateral setae *ft'* 16 (15–17) long, unguinal setae *u'* 5 (4–5) long. Legs II 22 long; femora 7 (6–7) long, *bv* 7 (6–7) long; genua 3 long, *l''* 8 (7–8) long; tibiae 4 long; tarsi 5 long, solenidia 8 (7–8) long, empodia 5 (5–6) long, 6-rayed, *ft''* 5 long, *ft'* 16 (16–18) long, *u'* 4 long. Coxae: sternal line 6 long; coxae smooth; 1st coxal setae *1b* 7 (7–9) apart, 5 (5–6) long; 2nd coxal setae *1a* 8 (8–9) apart, 17 (16–20) long; 3rd coxal setae *2a* 19 (19–22) apart, 27 (27–33) long. Coxigenital region with 7 (7–8) annuli, microtuberculate. Genitalia 19 (17–21) wide, 12 (10–13) long, genital setae *3a* 13 (12–13) long; coverflap with 12 longitudinal lines. Opisthosoma with a dorsal mediolongitudinal and 2 sublateral ridges fading away posteriorly; lateral setae *c2* 19 (18–10) long, on annulus 8 (7–9); first ventral setae *d* 28 (28–36) long, 35 (33–36) apart, on annulus 20 (23–26); second ventral setae *e* 17 (15–18) long, 19 (19–20) apart, on annulus 38 (43–47); third ventral setae *f* 19 (18–19) long, 18 (17–18) apart, on annulus 59 (65–68) or fourth from rear. Total ventral annuli 63 (69–72), with small bead-like microtubercles; total dorsal annuli 52 (53–54) with large, elongate microtubercles which fade away in the last 9 dorsal annuli and are apparently absent in the last 4 annuli. Caudal setae *h2* 39 (37–53) long; accessory setae *h1* 2 long.

MALE. Not seen.

TYPE MATERIAL. Holotype female and 4 paratype females from *Calophyllum calaba* (Clusiaceae), March 1998, Baie Mahault, Calvaire, Guadeloupe, JE, on 3 microscopic preparations in the collection of Department of Zoology, University of São Paulo/ESALQ, Piracicaba, São Paulo, Brazil.

RELATION TO HOST. *Epirimerus calophylli* induces bladdery projections on the upper surface of the leaves with corresponding cavities on the lower surface containing numerous fine and short trichomes. When numerous, the mite causes curling and distortion of leaves.

Mesalox paucinotus Flechtmann

Mesalox paucinotus FLECHTMANN, 1995: 83.

Specimens examined: Guadeloupe, Bouillante, Pigeon, JE, July 1998, from *Miconia mirabilis* (Melastomataceae). Saint-Martin, Pic de Paradis, SK, March 1998, from *Miconia* sp.

Nothopoda etiennei Flechtmann, sp. nov.

(Fig. 9)

DIAGNOSIS. *Nothopoda etiennei*, like all other known species in the genus, has 4-rayed empodia. The genital flap is granulated at its base and has 2 or 3 curved cross lines near the rear edge, it resembles *N. dorestei* Keifer, 1976, *N. footei* (KEIFER, 1969), *N. rapanae* Keifer, 1951 and *N. kallarensis* Mohanasundaram, 1981, and differs from *N. wollastoniae* Mohanasundaram and Muniappan, 1993 (genital flap with distal longitudinal scorings) and *N. mytibariae* Kuang and Feng, 1990 (genital flap smooth). The new species is distinctive in having 3 pairs of longitudinal, divergent, rows of cells on the prodorsal shield (only a few central longitudinal lines in *N. rapanae*; a few median cells in *N. kallarensis*; faint lines in *N. dorestei* and only median and admedian cells in *N. footei*).

FEMALE (measurements of holotype and ranges of 5 paratypes, in parentheses). Elongate worm-like idiosoma 223 (214–231) long, from front end of shield to rear lobes, 70 (66–70) wide. Gnathosoma directed downwards, rostrum (18–19) long; basal setae 2 long; antapical setae 5 (4–6) long; chelicerae 12 (12–17) long, oral stylets 7 (6–8) long. Dorsal shield 38 (38–42) long, 46 (46–48) wide; median and admedian shield lines complete and lateral lines and cross lines forming 3 longitudinal, divergent rows of cells; outer forks disappearing into lateral granulations. Dorsal tubercles on rear shield margin, 35 (33–35) apart, scapular setae *sc* 19 (17–19) long, directed backwards, slightly divergent. Legs I without tibiae and tibial setae I. Legs I, from trochanter base, 26 (26–28) long; femora 11 (10–11) long, femoral setae *bv* 10 (8–10) long; genua 4 long, genual setae *l''* 27 (27–30) long; tibiae absent; tarsi 9 (9–10) long, solenidia 5 long, empodia 6 long, 4-rayed, dorsal

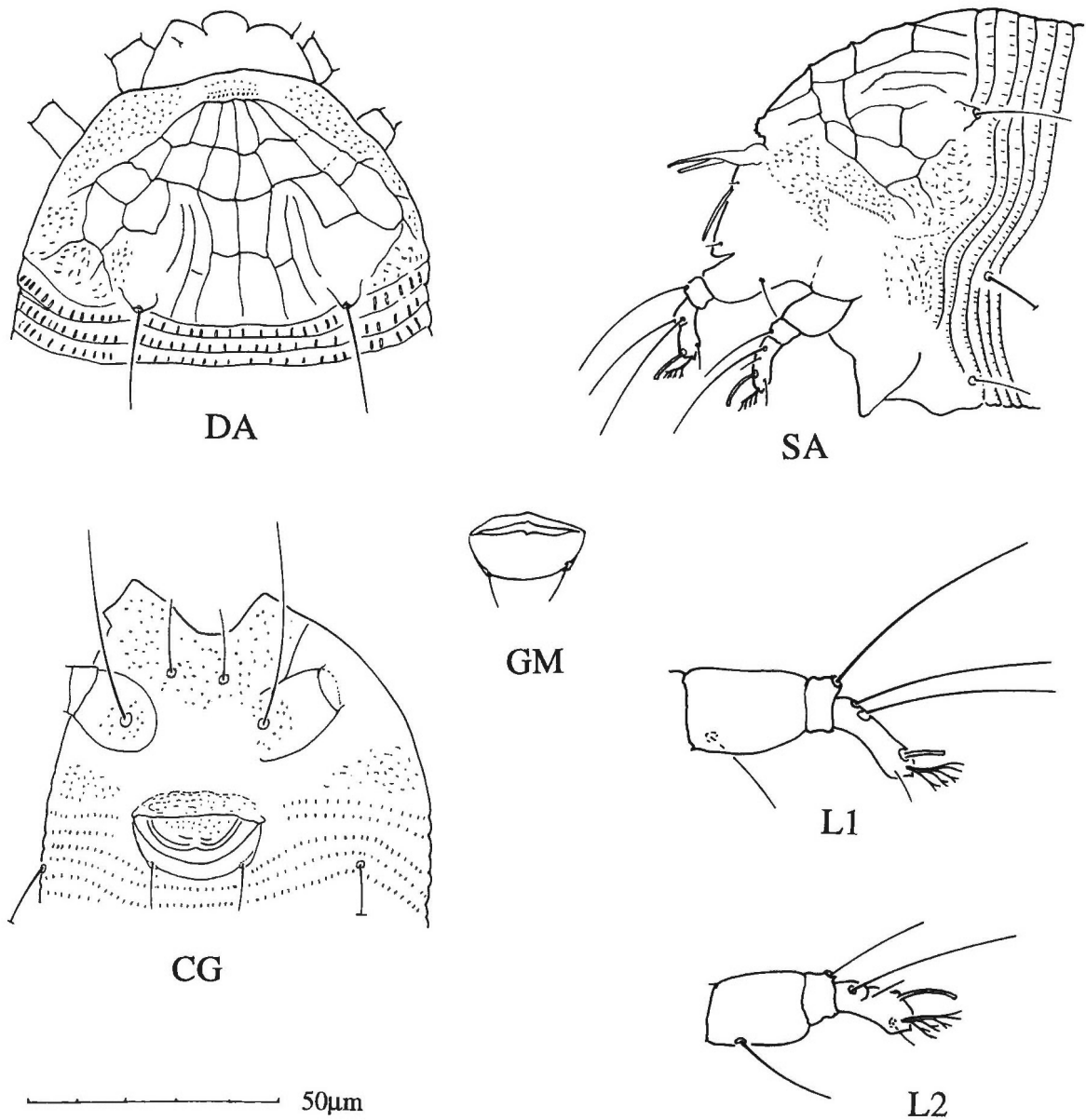


FIG. 9: *Nothopoda etiennei* Flechtmann, n. sp.

setae ft'' 19 (18–20) long, lateral setae ft' 24 (23–26) long, unguinal setae u' 6 (4–6) long. Legs II 24 (23–26) long; femora 10 (9–10) long, bv 9 (8–14) long; genua 3 long, l'' 9 (9–13) long; tibiae absent; tarsi 8 (8–10) long, solenidia 7 (7–8) long, empodia 6 long, 4-rayed, ft'' 5 (3–5) long, ft' 22 (22–25) long, u' 4 long. Coxae I well fused to each other across center, no sternal line, granulate; first setiferous tubercle and

setae lb missing; second coxal setae $1a$ 9 (9–10) apart, 15 (15–18) long; third coxal setae $2a$ 24 (23–30) apart, 30 (30–38) long; coxae II partially granulated. Coxigenital region apparently smooth. Genitalia 20 (20–22) wide, 13 (13–14) long, genital setae $3a$ 9 (9–13) long. Coverflap granular at base and with 2 to 3 curving cross lines near rear edge. Opisthosoma: lateral setae $c2$ 31 (31–40) long, on annulus 2 (1–2);

ventral setae *d* 67 (65–70) long, 43 (40–44) apart, on annulus 14 (12–15); ventral setae *e* 13 (13–15) long, 23 (18–25) apart, on annulus 27 (25–31); ventral setae *f* 23 (23–27) long, 23 (22–23) apart, on annulus 49 (44–53) or 7th from rear. Total ventral annuli 56 (51–60), microtuberculate; total dorsal annuli 58 (56–63), with elongate microtubercles. Caudal setae *h*₂ 75 (75–84) long; accessory setae *h*₁ minute.

MALE (*n* = 3). Smaller than female; idiosoma 176–192 long, 60 wide. Gnathosoma: basal setae 2 long, antapical setae 4 long; chelicerae 13–14 long, oral stylets 5–7 long. Dorsal shield 36–38 long, 42 wide; *sc* 12–15 long, 30 apart. Legs I and II without tibiae and tibial setae I. Legs I 22 long; femora 8–10 long, *bv* 8–10 long; genua 4 long, *l*'' 24 long; tibiae absent; tarsi 7–8 long, solenidia 4 long, empodia 5 long, 4-rayed, *ft*'' 16–17 long, *ft*' 18–20 long, *u*' 4 long. Legs II: femora 8 long, *bv* 10 long; genua 3 long, *l*'' 9–10 long; tibiae absent. Tarsi 7 long, solenidia 5–7 long, empodia 6 long, 4-rayed, *ft*'' 4 long, *ft*' 20–22 long, *u*' 3 long. Coxae: setae *1b* missing; *1a* 10–15 long, 9–10 apart; *2a* 23–24 long, 22–25 apart. Genitalia 17–19 wide, 10–13 long, apparently smooth; setae *3a* 6–7 long. Opisthosoma: *c*₂ 23–28 long, on annulus 1–2; *d* 62–67 long, 32–37 apart, on annulus 12–14; *e* 9–10 long, 19–21 apart, on annulus 25–28; *f* 20–22 long, 15–22 apart, on annulus 45–46. Total ventral annuli 51–53, microtuberculate. Total dorsal rings 47–53, microtuberculate. Caudal setae *h*₂ 66–68 long; accessory setae *h*₁ minute.

TYPE MATERIAL. Holotype female, 28 female and 7 male paratypes from *Merremia aegyptia* (Convolvulaceae), Martinique, Fond Boucher, Dec. 1997, CF, on 5 microscopic preparations. One preparation deposited in Muséum National d'Histoire Naturelle à Paris; one preparation with paratypes in ENSA-M/INRA, Department of Plant Protection, Laboratory of Acarology, Montpellier; remaining preparations in the collection of Department of Zoology, University of São Paulo/ESALQ, Piracicaba, São Paulo, Brazil.

RELATION TO HOST. Leaf vagrants, no apparent damage.

ETYMOLOGY: This species is named for Jean ETIENNE, INRA Entomologist in Guadeloupe.

Phyllocoptruta antillana Flechtmann, sp. nov.

(Fig. 10)

DIAGNOSIS. *Phyllocoptruta antillana* is close to *P. arga* Styer and Keifer, 1977 (in: KEIFER, 1977), *P. musae* Keifer, 1955 and *P. sakimurae* Keifer, 1966a in having the female genital coverflap with a well differentiated area basally; in the new species this area has 3 transverse complete lines, while in *P. musae* and *P. sakimurae* this area is outlined with short longitudinal dashes and in *P. arga* it is divided into 2 portions enclosed by curved lines, convex towards the rear. The dorsal shield design of the new species is most similar to *P. kuangi* [KUANG & ZHUO, 1989—syn. *P. sapii* Kuang & Zhuo, preoccupied by *P. sapii* (KEIFER, 1972), according to AMRINE & STASNY, 1994]. The new species is unique in that setae are absent on tibia I and genu II.

FEMALE (measurements, in micrometers, of holotype and, in parentheses, ranges of 8 paratypes). Idiosoma 170 (150–215) long, 62 (62–76) wide. Gnathosoma: rostrum (26–24) long, basal setae 2 (2–3) long, antapical setae 8 (8–10) long; chelicerae 14 (12–16) long, oral stylets 11 (10–12) long. Dorsal shield 38 (38–46) long, 55 (55–67) wide, generally triangular with a variable front lobe (pointed in some specimens, rounded in others); shield design a network, as figured. Basal axes of tubercles diagonal; tubercles a little ahead of rear shield margin, 34 (33–37) apart; scapular setae *sc* 10 (9–12) long, pointing diagonally outwards. Legs without tibiae I setae (*l*') and genua II setae (*l*''). Legs I 30 (30–32) long; femora 8 (6–8) long, femoral setae *bv* 7 (6–9) long; genua 4 (4–5) long, genual setae *l*'' 19 (18–22) long; tibiae 7 (7–9) long, tibial setae *l*' absent; tarsi 5 (4–6) long, solenidia 5 (4–5) long, ending in a large knob, empodia 4 (4–5) long, 4-rayed, dorsal setae *ft*'' 15 (14–16) long, lateral setae *ft*' 17 (17–20) long, unguital setae *u*' 4 long. Legs II 28 (28–30) long; femora 8 (6–9) long, *bv* 8 (5–8) long; genua 4 (4–5) long, *l*'' missing; tibiae 5 (5–7) long; tarsi 5 (4–5) long, solenidia 4 (4–6) long, empodia 4 (4–5) long, 4-rayed, *ft*'' 4 (4–6) long, *ft*' 15 (14–17) long, *u*' 3 (3–4) long. Sternal line 6 (6–8) long. Coxal setae *1b* 7 (7–8) long, 10 (10–12) apart; *1a* 11 (9–14) long, 9 (9–10) apart, and *2a* 30 (26–30) long, 23 (23–28) apart. Coxae smooth. Coxigenital region with 5 (4–5) annuli, smooth. Epi-

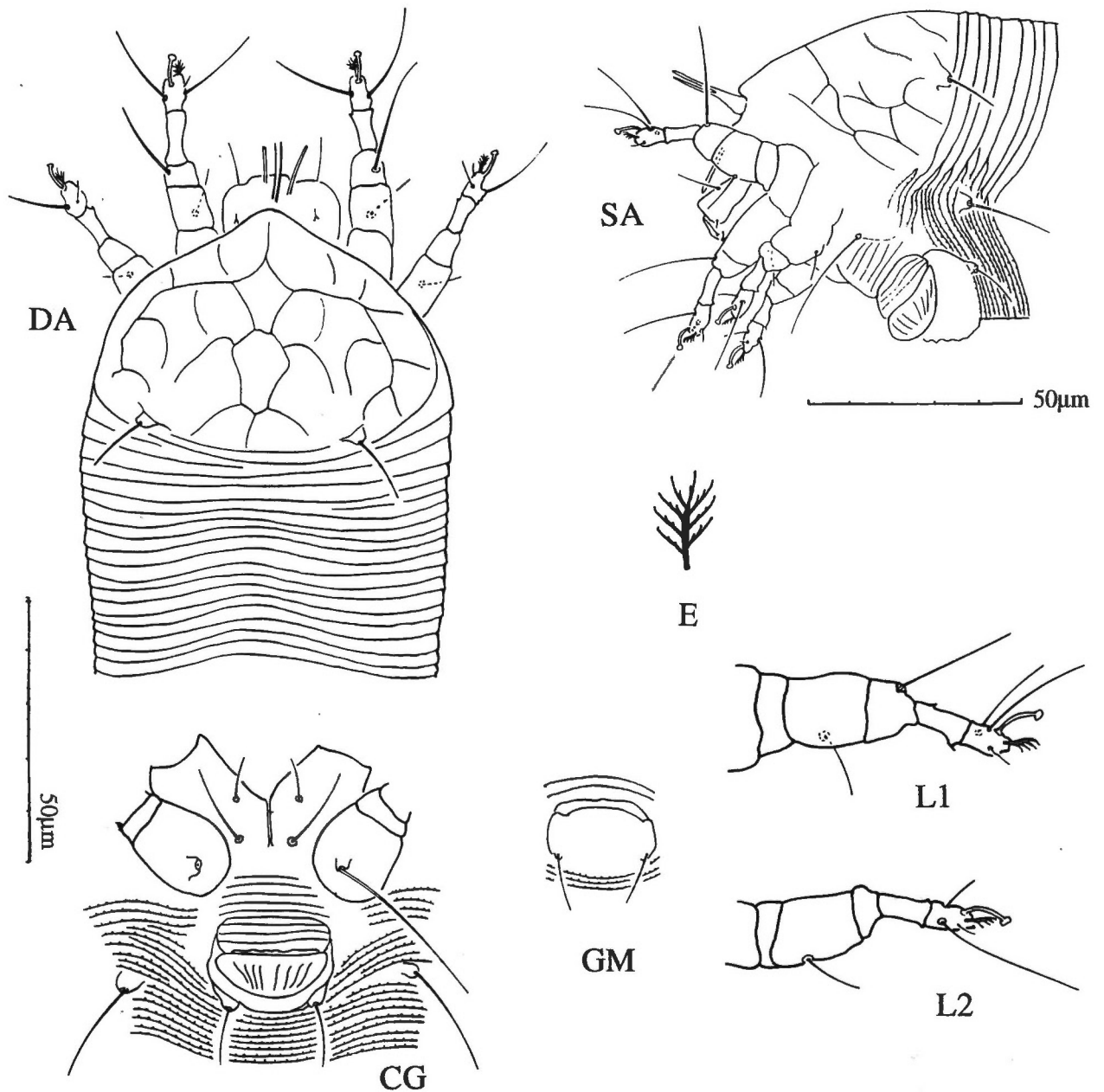


FIG. 10: *Phyllocoptruta antillana* Flechtmann, n. sp.

gynium basally with outlined transverse area with 3 transverse lines; apically with 3 (3–4) pairs of longitudinal lines. Genitalia 20 (19–25) wide, 15 (13–18) long; genital setae *3a* 9 (11–15) long. Opisthosoma: lateral setae *c2* 19 (19–24) long, on annulus 4 (4–5); ventral setae I, *d*, 48 (45–63) long, 25 (25–44) apart, on annulus 23 (20–24); ventral setae II, *e*, 10 (7–14) long, 18 (17–22) apart, on annulus 40 (38–46); ventral setae III, *f* 19 (17–19) long, 26 (25–27) apart, on

annulus 56 (53–56). Total ventral annuli 61 (58–73), microtuberculate; on annuli anterior to setae *d*, microtubercles small, beadlike, posteriorly progressively increasing in length: at level of setae *e* microtubercles half as long as annulus; at level of setae *f* as long as annulus. Total dorsal annuli 45 (38–45), smooth. Caudal setae, *h2* 39 (37–42) long; accessory setae, *h1* minute.

MALE (n = 4). Smaller than female. Idiosoma

144–179 long, 53–58 wide. Gnathosoma: rostrum 15 long, basal setae 3 long, antapical setae 8–9 long, chelicerae 13–15 long, oral stylets 10–11 long. Dorsal shield 39–40 long, 56–61 wide, same shield design as in female. Tubercles 31–35 apart, *sc* 9–13 long. Legs without setae on tibiae I and genua II. Legs I 29–30 long; femora 7–8 long, *bv* 6–9 long; genua 4 long, *l'* 17–20 long; tibiae 6–8 long, *l'* missing; tarsi 5 long, solenidia 5 long, empodia 4 long, 4-rayed, *ft''* 9–16 long, *ft'* 14–18 long, *u'* 3 long. Legs II 24–28 long; femora 6–8 long, *bv* 6–7 long; genua 4 long, *l'* missing; tibiae 5–7 long; tarsi 5 long, solenidia 5 long, empodia 4 long, 4-rayed; *ft''* 4–5 long, *ft'* 14–17 long, *u'* 3 long. Coxal setae *1b* 6–8 long, 10–11 apart; *1a* 9–11 long, 8–9 apart; *2a* 18–30 long, 22–25 apart. Coxae smooth. Coxigenital region with 4–5 annuli, smooth. Genital area smooth. Genitalia 18 wide, 11–14 long, *3a* 10–12 long. Opisthosoma: *c2* 19–26 long, on annulus 2–4; *d* 42–48 long, 27–32 apart, on annulus 17–21; *e* 10–12 long, 13–17 apart, on annulus 32–37; *f* 17–21 long, 20–22 apart, on annulus 47–56. Total ventral annuli 53–62, microtuberculation as in female. Total dorsal annuli 43–46. Caudal setae *h2* 35–40 long; *h1* minute.

TYPE MATERIAL. Female holotype, 10 female and 5 male paratypes from *Sapium caribaeum* (Euphorbiaceae), Guadeloupe, Gourbeyre, Dec. 1997, CF; Petit-Bourg, Domaine Duclos INRA, JE, March 1998, on the same host. On 3 microscopic preparations: one preparation with paratypes deposited in Muséum national d'Histoire naturelle, Paris; other preparations, with holotype and paratypes, in the collection of Department of Zoology, University of São Paulo/ESALQ, Piracicaba, São Paulo, Brazil.

RELATION TO HOST. *P. antillana* causes leaf galls of about 3 mm in diameter which open on lower leaf surfaces. Living mites are orange-pink in colour.

ETYMOLOGY: The specific designation, *antillana*, means originating from the Antilles.

Phyllocoptruta oleivorus Ashmead

Typhlodromus oilivorus ASHMEAD, 1879: 160.
Phyllocoptruta oleivorus KEIFER, 1938: 193.

Specimens examined: Guadeloupe, Les Abymes, JE, April 1998, from *Citrus* sp. (Rutaceae); Matouba,

JE, April 1998, from *Citrus* sp. (Rutaceae). Martinique, Le Lamentin, Petit Morne CIRAD, and Le Marin, CF, Dec. 1997, from *Citrus* sp. (Rutaceae).

Shevtchenkella stefneseri Craemer

Shevtchenkella stefneseri CRAEMER, 1996: 62.

Specimens examined: Guadeloupe, Bouillante, Pigeon, JE, Aug. 1998, from *Lantana camara* (Verbenaceae).

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