

Description of a new genus and four new species of Acaricalini (Acari, Eriophyidae, Phyllocoptinae) from South China

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ABSTRACT

A new genus and four new species of eriophyoid mites of the tribe Acaricalini (Acari, Eriophyoidea) from the Longlin and Heng counties, Guangxi Zhuang Autonomous Region, China are described and illustrated: *Chiacaphyllisa syzygii* n. gen., n. sp. infesting *Syzygium* sp. (Myrtaceae), *Protumescoptes laurifolii* n. sp. infesting *Geniconthus laurifolius* (Roxb.) Hook.f. (Asclepiadaceae), *Litaculus tremae* n. sp. infesting *Trema angustifolia* (Planch.) Blume (Ulmaceae) and *Paracaphyllisa montani* n. sp. infesting *Gnetum montanum* Markgr. (Gnetaceae). All species described here are vagrants on the undersurface of host leaves. A key to the genera of Acaricalini in China is provided.

RÉSUMÉ

Description d'un nouveau genre et de quatre nouvelles espèces d'Acaricalini (Acari, Eriophyidae, Phyllocoptinae) du sud de la Chine.

Un nouveau genre et quatre nouvelles espèces d'Acaricalini (Acari, Eriophyidae) du sud des régions de Longlin et Heng, Région autonome de Guangxi Zhuang, Chine sont décrites et illustrées: *Chiacaphyllisa syzygii* n. gen., n. sp. infestant *Syzygium* sp. (Myrtaceae), *Protumescoptes laurifolii* n. sp. infestant *Geniconthus laurifolius* (Roxb.) Hook.f. (Asclepiadaceae), *Litaculus tremae* n. sp. infestant *Trema angustifolia* (Planch.) Blume (Ulmaceae) et *Paracaphyllisa montani* n. sp. infestant *Gnetum montanum* Markgr. (Gnetaceae). Toutes les espèces décrites ici sont errantes sur la face inférieure des feuilles des plantes hôtes. Une clé des genres d'Acaricalini de Chine est fournie.

KEY WORDS

Acari,
Eriophyidae,
Phyllocoptinae,
Acaricalini,
China
new genus,
new species.

MOTS CLÉS

Acari,
Eriophyidae,
Phyllocoptinae,
Acaricalini,
Chine,
genre nouveau,
espèces nouvelles.

INTRODUCTION

A new genus and four new species belonging to Acaricalini, were part of specimens that we collected during the yearly surveys of plant-inhabiting mites conducted in Guangxi Zhuang Autonomous Region, China.

The tribe Acaricalini was established by Amrine & Stasny (1994) based on the type genus *Acaricalus* Keifer, 1940. As of 2007, the tribe holds 23 genera from Asia, Africa, Europe and the Americas (Amrine *et al.* 2003; Flechtmann 2004; Kuang *et al.* 2004; Li *et al.* 2007). Until now, 13 genera are known to occur in China (Kuang 1995; Huang & Wang 2003; Kuang *et al.* 2004; Li *et al.* 2007). A key to the genera of Acaricalini in China is provided.

MATERIALS AND METHODS

Specimens recovered from plant materials were prepared and slide mounted according to Kuang (1986), the generic classification is made according to Amrine *et al.* (2003) and the morphological terminology used here follows Lindquist (1996). All type specimens are deposited in the College of Agriculture, Guangxi University, Guangxi Zhuang Autonomous Region, China (CAGU); Muséum national d'Histoire naturelle, Paris (MNHN), France. All measurements are given in micrometers (μm). All specimens were examined with Olympus CX41RF microscope, photographed using a Sony DSC-P8 digital camera (3.2 mega pixels) and drawn using Adobe Photoshop 7.0.

SYSTEMATICS

Tribe ACARICALINI Amrine & Stasny, 1994

Genus *Chiacaphyllisa* n. gen.

TYPE SPECIES. — *Chiacaphyllisa syzygii* n. sp.

ETYMOLOGY. — Chi, meaning "China". The genus designation is derived from the combination *Chi-* and the name of the genus *Acaphyllisa* Keifer, 1978, to which the new genus is similar in morphology.

DIAGNOSIS. — Body spindle; prodorsal shield with frontal lobe; dorsal pedipalp genual setae (*d*) bifurcate; scapular tubercles ahead of rear shield margin; scapular setae (*sc*) directed mediad; coxae with sternal line; anterolateral setae on coxisternum I (*1b*) absent, leg with usual segments and setae; empodium divided, dorsal opisthosoma with three ridges, middorsal ridge ending in a broad furrow before the termination of subdorsal ridges; opisthosoma with all usual setae.

REMARKS

The new taxon is assigned to Eriophyoidea, Eriophyidae, Phyllocoptinae, Acaricalini. The new genus is similar to *Acaphyllisa* Keifer, 1978, but can be differentiated by anterolateral setae on coxisternum I (*1b*) absent (anterolateral setae on coxisternum I [*1b*] present in *Acaphyllisa*; see Keifer 1978). The new genus is also similar to *Acaphylla* Keifer, 1943 and *Paracaphyllisa* Kuang & Luo, 2004, but can be differentiated by anterolateral setae on coxisternum I (*1b*) absent and antaxial genual setae (*l'*) of leg II present (anterolateral setae on coxisternum I [*1b*] present in *Acaphylla* and antaxial genual setae [*l'*] of leg II absent in *Acaphylla* and *Paracaphyllisa*; see Keifer 1943; Kuang & Luo 2004).

Chiacaphyllisa syzygii n. sp.

(Fig. 1)

TYPE MATERIAL. — Holotype: Jinzhong MT., 37 km SW of Longlin County (24°8'N, 105°34'E), Guangxi Zhuang Autonomous Region, China, 1.XII.2004, from *Syzygium* sp. (Myrtaceae), coll. Sui-Gai Wei, De-Wei Li and Guo-Quan Wang, ♀ (CAGU).

Paratypes: same data as holotype, 9 ♀♀, 1 ♂ (CAGU); 1 ♀, 1 ♂ (MNHN).

ETYMOLOGY. — The specific epithet is derived from the generic name of the host plant, *Syzygium* Gaertn.

RELATION TO HOST. — The mites are vagrants on the lower surface of the leaves; no visible damage.

DESCRIPTION

Female (*n* = 8)

Body (Fig. 1A, B) spindleform, yellowish, 150 (141–155) long, 62 (58–65) wide, 61 (58–63) thick.

Gnathosoma 26 (25–27), projecting obliquely down, pedipalp coxal setae (*ep*) 3 (3–4); dorsal

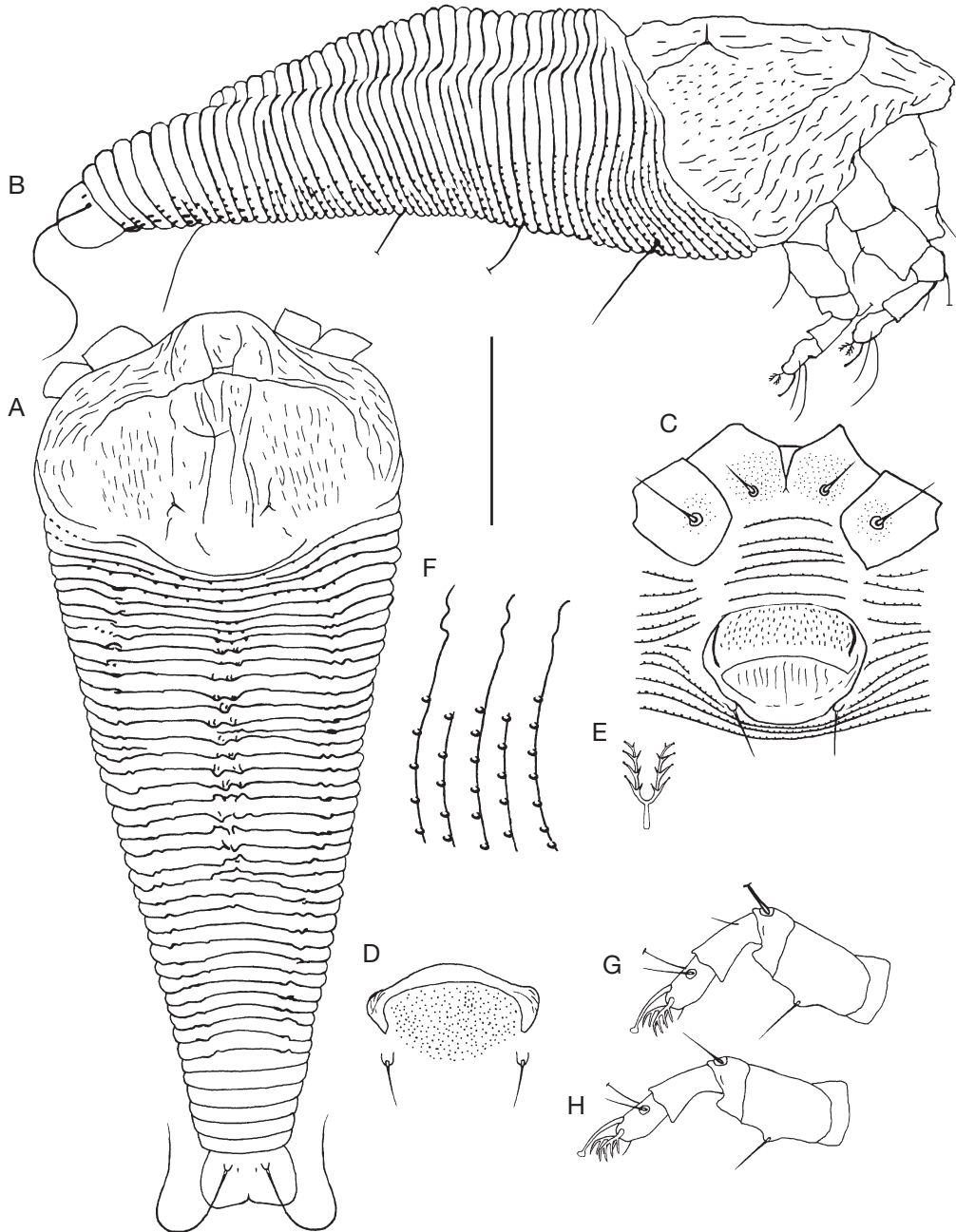


FIG. 1. — *Chiacaphyllisa syzygii* n. sp.: **A**, dorsal view of female; **B**, lateral view of female; **C**, coxal-genital region, female; **D**, genital region, male; **E**, empodium; **F**, lateral opisthosoma; **G**, leg I; **H**, leg II. Scale bar: A, B, 30 μ m; C, 27 μ m; D, 18 μ m; G, H, 13 μ m.

pedipalp genual setae (*d*) bifurcate, 13 (11-16); oryal stylets 24 (22-26).

Prodorsal shield with frontal lobe, 50 (49-52) long, 62 (58-64) wide; median line discontinuous; admedian lines and submedian lines incomplete; shield with short lines. Scapular tubercles ahead of rear margin, 16 (15-17) apart; scapular setae (*sc*) short, 2 (2-3), directed mediad.

Coxae (Fig. 1C) with sternal line, forked anteriorly, coxal area with granules, anterolateral setae on coxisternum I (*lb*) absent; proximal setae on coxisternum I (*la*) 9 (8-10), apart 13 (12-14); proximal setae on coxisternum II (*2a*) 14 (12-18), apart 25 (23-27).

Leg (Fig. 1G, H) segments normal. Leg I 31 (29-33), femur 10 (9-10), basiventral femoral setae (*bv*) 7 (7-8); genu 4 (4-5), antaxial genual setae (*l*ⁿ) 20 (19-22); tibia 8 (8-9), paraxial tibial setae (*l*) 3 (3-4), at basal 1/3 tibia; tarsus 6 (6-7), paraxial fastigial tarsal setae (*ft*) 30 (28-32), antaxial fastigial tarsal setae (*ft*ⁿ) 6 (5-7), paraxial unguinal tarsal setae (*u*) 4 (4-5); tarsal empodium, 5 (5-6), divided, each branch 4-rayed, tarsal solenidion 6 (6-7), knobbed. Leg II 29 (28-32), femur 9 (8-10), basiventral femoral setae (*bv*) 6 (5-7); genu 4 (4-5), antaxial genual setae (*l*ⁿ) 6 (6-7); tibia 7 (7-8), tarsus 6 (6-7), paraxial fastigial tarsal setae (*ft*) 28 (26-30), antaxial fastigial tarsal setae (*ft*ⁿ) 6 (5-7), paraxial unguinal tarsal setae (*u*) 4 (4-5); tarsal empodium, 5 (5-6), divided, each branch 4-rayed, tarsal solenidion 6 (5-6), knobbed.

Opisthosoma (Fig. 1A, B): middorsal ridge ending in a broad furrow before the termination of subdorsal ridges; dorsal opisthosoma with 38 (37-39) annuli, smooth, except the anterior three annuli with granules; ventrally with 52 (50-53) annuli, with round microtubercles; setae *c*2 17 (16-19), on ventral annulus 8 (7-9), apart 53 (50-57); setae *d* 47 (45-50), on ventral annulus 19 (18-20), apart 25 (24-25); setae *e* 30 (28-34), on ventral annulus 33 (31-34), apart 11 (10-12); setae *f* 17 (16-18), on 6th ventral annulus from rear, apart 25 (24-27); setae *h*1 present; setae *h*2 34 (30-38).

Female genitalia (Fig. 1C) 15 (14-16) long, 22 (21-24) wide, coverflap with basal granules, distally with 12 longitudinal lines, proximal setae on coxisternum III (*3a*) 7 (7-8), apart 15 (14-16).

Male (*n* = 2)

Body spindleform, yellowish, 145 (140) long, 60 (59) wide.

Gnathosoma 25 (24), projecting obliquely down, pedipalp coxal setae (*ep*) 3 (3); dorsal pedipalp genual setae (*d*) bifurcate, 13 (12); oryal stylets 22 (22).

Prodorsal shield with frontal lobe, 49 (47) long, 60 (58) wide; median line discontinuous; admedian lines and submedian lines incomplete; shield with short lines. Scapular tubercles ahead of rear margin, 16 (15) apart; scapular setae (*sc*) short, 2 (2), directed mediad.

Coxae with sternal line, forked anteriorly, coxal area with granules, anterolateral setae on coxisternum I (*lb*) absent; proximal setae on coxisternum I (*la*) 8 (8), apart 14 (13); proximal setae on coxisternum II (*2a*) 15 (13), apart 25 (24).

Leg segments normal. Leg I 30 (29), femur 9 (9), basiventral femoral setae (*bv*) 7 (7); genu 4 (4), antaxial genual setae (*l*ⁿ) 21 (19); tibia 8 (7), paraxial tibial setae (*l*) 3 (3), at basal 1/3 tibia; tarsus 6 (6), paraxial fastigial tarsal setae (*ft*) 31 (29), antaxial fastigial tarsal setae (*ft*ⁿ) 6 (5), paraxial unguinal tarsal setae (*u*) 4 (4); tarsal empodium, 5 (5), divided, each branch 4-rayed, tarsal solenidion 6 (5), knobbed. Leg II 28 (27), femur 9 (8), basiventral femoral setae (*bv*) 6 (5); genu 4 (4), antaxial genual setae (*l*ⁿ) 6 (6); tibia 7 (7), tarsus 6 (6), paraxial fastigial tarsal setae (*ft*) 29 (27), antaxial fastigial tarsal setae (*ft*ⁿ) 5 (5), paraxial unguinal tarsal setae (*u*) 4 (4); tarsal empodium, 5 (5), divided, each branch 4-rayed, tarsal solenidion 6 (5), knobbed.

Opisthosoma: middorsal ridge ending in a broad furrow before the termination of subdorsal ridges; dorsal opisthosoma with 38 (38) annuli, smooth, except the anterior three annuli with granules; ventrally with 51 (50) annuli, with round microtubercles; setae *c*2 18 (16), on ventral annulus 8 (7), apart 51 (50); setae *d* 48 (45), on ventral annulus 19 (18), apart 25 (24); setae *e* 31 (28), on ventral annulus 32 (31), apart 11 (10); setae *f* 17 (16), on 6th ventral annulus from rear, apart 26 (25); setae *h*1 present; setae *h*2 35 (33).

Male genitalia 17 (16) wide, proximal setae on coxisternum III (*3a*) 7 (7), apart 13 (12) (Fig. 1D).

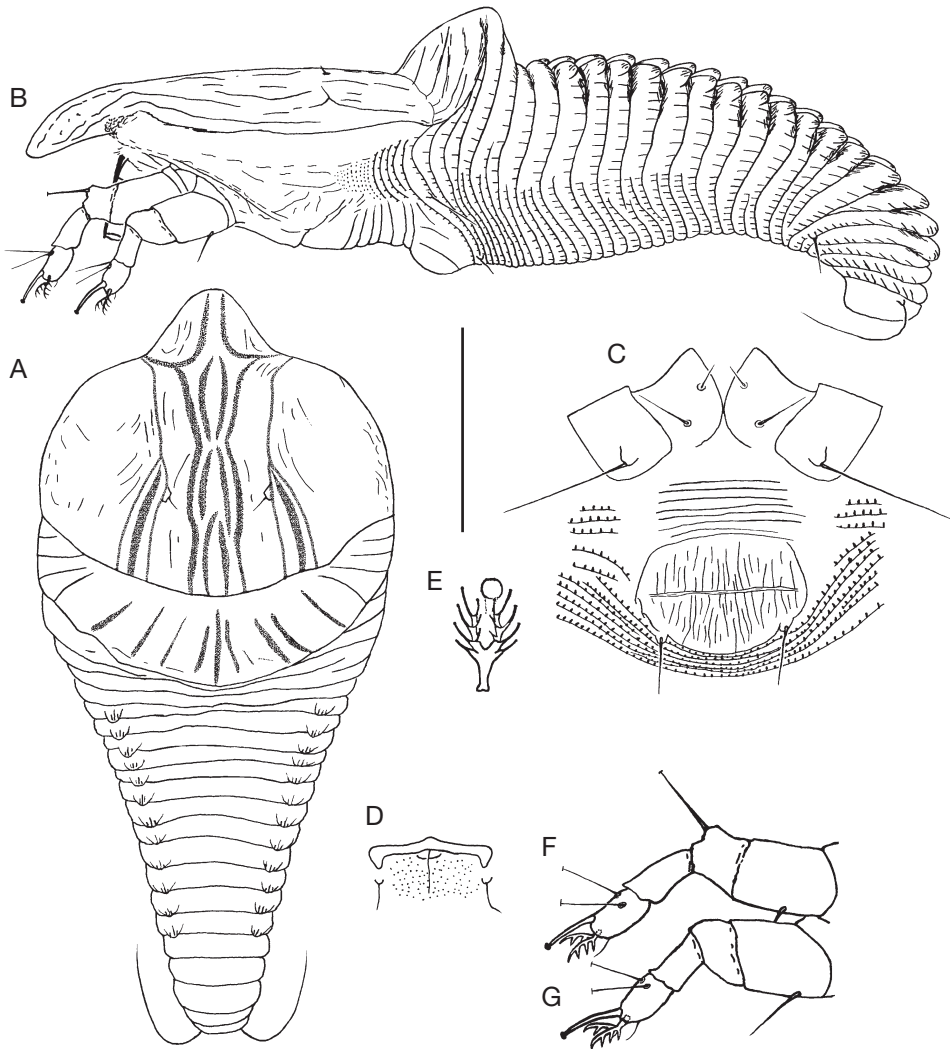


FIG. 2. — *Protumescoptes laurifolii* n. sp.: **A**, dorsal view of female; **B**, lateral view of female; **C**, coxal-genital region, female; **D**, genital region, male; **E**, empodium; **F**, leg I; **G**, leg II. Scale bar: A, B, 40 μ m; C, D, 28 μ m; F, G, 19 μ m.

Genus *Protumescoptes*
Pandit & Chakrabarti, 2000

Protumescoptes laurifolii n. sp.
(Fig. 2)

TYPE MATERIAL. — Holotype: Jinzhong MT., 37 km SW of Longlin County (24°8'N, 105°34'E), Guangxi Zhuang Autonomous Region, China, 1.XII.2004, from *Geniconthus laurifolius* (Roxb.) Hook.f. (Asclepiadaceae),

coll. Sui-Gai Wei, Guo-Quan Wang and De-Wei Li, ♀ (CAGU).

Paratypes: same data as holotype, 10 ♀♀, 1 ♂ (CAGU); 2 ♀♀ (MNHN).

ETYMOLOGY. — The specific epithet is derived from the species name of the host plant, *laurifolius*.

RELATION TO HOST. — The mites are vagrants on the lower surface of the leaves, no visible damage.

DESCRIPTION

Female ($n = 13$)

Body (Fig. 2A, B) spindleform, ivory-white, 181 (171-190) long, 81 (76-85) wide, 59 (55-62) thick.

Gnathosoma 25 (24-26), projecting obliquely down, pedipalp coxal setae (*ep*) 2 (2-3); dorsal pedipalp genual setae (*d*) 7 (6-8); oryale stylets 25 (23-26).

Prodorsal shield flat, lower than dorsal opisthosoma, with a long, thick frontal lobe; 60 (57-63) long, 70 (66-73) wide; shield lines bold, median line absent, admedian lines discontinuous, submedian undulated lines complete, anterior submedian lines rhomboid-like. Scapular tubercles set ahead of rear shield margin, 20 (20-21) apart, scapular setae (*sc*) 3 (3-4), directed up and mediad.

Coxae (Fig. 2C) with a sternal line, forked anteriorly and posteriorly, coxal area smooth, anterolateral setae on coxisternum I (*lb*) 5 (5-6), apart 15 (14-16); proximal setae on coxisternum I (*la*) 10 (9-12), apart 9 (8-9); proximal setae on coxisternum II (*2a*) 20 (18-23), apart 27 (24-28).

Leg (Fig. 2F, G) segments normal. Leg I 29 (28-30), femur 9 (9-10), basiventral femoral setae (*bv*) 6 (6-7); genu 5 (5-6), antiaxial genual setae (*l*ⁿ) 12 (11-13); tibia 7 (7-8), paraxial tibial setae (*l*) absent; tarsus 6 (6-7), paraxial fastigial tarsal setae (*ft*) 21 (19-23), antiaxial fastigial tarsal setae (*ft*ⁿ) 19 (17-22), paraxial unguinal tarsal setae (*u*) 5 (5-6); tarsal empodium, 5 (5-6), divided, each branch 4-rayed, tarsal solenidion 6 (6-7), knobbed. Leg II 27 (26-28), femur 8 (7-9), basiventral femoral setae (*bv*) 7 (7-8); genu 4 (4-5), antiaxial genual setae (*l*ⁿ) absent; tibia 6 (6-7); tarsus 6 (6-7), paraxial fastigial tarsal setae (*ft*) 20 (18-24), antiaxial fastigial tarsal setae (*ft*ⁿ) 6 (6-8), paraxial unguinal tarsal setae (*u*) 5 (4-6); tarsal empodium, 5 (5-6), divided, each branch 4-rayed, tarsal solenidion 6 (6-7), knobbed.

Opisthosoma (Fig. 2A, B): dorsally with a broad furrow and 4 anterior projecting annuli form an arching transverse ridge, dorsum with 18 (17-19) annuli, with filamentous microtubercles except the part of the furrow; ventrally with 36 (35-38) annuli, with filamentous microtubercles; setae *c*2 18 (17-

20), on ventral annulus 6 (5-6), apart 63 (58-66); setae *d* and setae *e* absent; setae *f* 15 (14-16), on 5th ventral annulus from rear, apart 21 (19-22); setae *h*1 absent; setae *h*2 25 (22-28).

Female genitalia (Fig. 2C) 21 (20-22) long, 24 (22-25) wide, coverflap with a middle transverse suture and many longitudinal ridges, proximal setae on coxisternum III (*3a*) 9 (9-10), apart 18 (17-19).

Male ($n = 1$)

Body spindleform, ivory-white, 147 long, 66 wide.

Gnathosoma 22, projecting obliquely down, pedipalp coxal setae (*ep*) 2; dorsal pedipalp genual setae (*d*) 6; oryale stylets 22.

Prodorsal shield flat, lower than dorsal opisthosoma, with a long, thick frontal lobe; 55 long, 64 wide; shield lines bold, median line absent, admedian lines discontinuous, submedian undulated lines complete, anterior submedian lines rhomboid-like. Scapular tubercles set ahead of rear shield margin, 19 apart, scapular setae (*sc*) 3, directed up and mediad.

Coxae with a sternal line, forked anteriorly and posteriorly, coxal area smooth, anterolateral setae on coxisternum I (*lb*) 5, apart 13; proximal setae on coxisternum I (*la*) 9, apart 8; proximal setae on coxisternum II (*2a*) 18, apart 24.

Leg segments normal. Leg I 27, femur 8, basiventral femoral setae (*bv*) 6; genu 5, antiaxial genual setae (*l*ⁿ) 11; tibia 6, paraxial tibial setae (*l*) absent; tarsus 6, paraxial fastigial tarsal setae (*ft*) 20, antiaxial fastigial tarsal setae (*ft*ⁿ) 17, paraxial unguinal tarsal setae (*u*) 5; tarsal empodium, 5, divided, each branch 4-rayed, tarsal solenidion 6, knobbed. Leg II 25, femur 7, basiventral femoral setae (*bv*) 6; genu 4, antiaxial genual setae (*l*ⁿ) absent; tibia 6; tarsus 6, paraxial fastigial tarsal setae (*ft*) 18, antiaxial fastigial tarsal setae (*ft*ⁿ) 6, paraxial unguinal tarsal setae (*u*) 4; tarsal empodium, 5, divided, each branch 4-rayed, tarsal solenidion 5, knobbed.

Opisthosoma: dorsally with a broad furrow and 4 anterior projecting annuli forming an arching transverse ridge, dorsum with 17 annuli, with filamentous microtubercles except the part of the furrow; ventrally with 35 annuli, with filamentous

microtubercles; setae *c*2 16, on ventral annulus 6, apart 58; setae *d* and setae *e* absent; setae *f* 14, on 5th ventral annulus from rear, apart 18; setae *h*1 absent; setae *h*2 21.

Male genitalia 16 wide, proximal setae on coxisternum III (*3a*) 8; apart 15 (Fig. 2D).

REMARKS

This species is similar to *Protumescoptes antidesmae* Pandit & Chakrabarti, 2000, but can be differentiated by female genitalia away from coxal base and tarsal empodium 4-rayed (female genitalia near coxal base and tarsal empodium 5-rayed in *P. antidesmae*; see Pandit & Chakrabarti, 2000).

Genus *Litaculus* Manson, 1984

Litaculus tremae n. sp. (Fig. 3)

TYPE MATERIAL. — Holotype: Jinzhong MT., 37 km SW of Longlin County (24°8'N, 105°34'E), Guangxi Zhuang Autonomous Region, China, 1.XII.2004, from *Trema angustifolia* (Planch.) Blume (Ulmaceae), coll. Sui-Gai Wei, De-Wei Li and Guo-Quan Wang, ♀ (CAGU). Paratypes: same data as holotype, 14 ♀♀, 1 ♂ (CAGU); 1 ♀, 1 ♂ (MNHN).

ETYMOLOGY. — The specific epithet is derived from the generic name of the host plant, *Trema* Lour.

RELATION TO HOST. — The mites are vagrants on the lower surface of the leaves, no visible damage.

DESCRIPTION

Female (*n* = 6)

Body (Fig. 3A, B) spindleform, light yellow, 127 (120-136) long, 69 (65-72) wide, 37 (35-40) thick.

Gnathosoma 20 (19-21), projecting obliquely down, pedipalp coxal setae (*ep*) 2 (2-3); dorsal pedipalp genual setae (*d*) bifurcate, 12 (11-14); oryale stylets 19 (18-21).

Prodorsal shield semi-round, with frontal lobe and lower than dorsal opisthosoma, 47 (45-50) long, 66 (62-70) wide; middle shield flat with some irregular sulci, median, admedian and submedian lines absent; lateral sides of shield with

granules, bent down, lateral margins reaching coxal area. Scapular tubercles small, ahead of rear margin, 13 (13-14) apart, scapular setae (*sc*) 2 (2), directed up.

Coxae (Fig. 3C) with a sternal line, coxal area smooth, anterolateral setae on coxisternum I (*1b*) 5 (5-6), apart 14 (14-15); proximal setae on coxisternum I (*1a*) 10 (10-11), apart 13 (13-14); proximal setae on coxisternum II (*2a*) 15 (14-16), apart 29 (29-31).

Leg (Fig. 3G, H) segments normal. Leg I 29 (28-30), femur 11 (10-11), basiventral femoral setae (*bv*) 6 (6-7); genu 3 (3-4), antaxial genual setae (*l*ⁿ) 20 (18-23); tibia 6 (6-7), paraxial tibial setae (*l*^t) 2 (2), at dorsal middle tibia; tarsus 6 (6-7), paraxial fastigial tarsal setae (*ft*^t) 18 (16-24), antaxial fastigial tarsal setae (*ft*^a) 16 (15-19), paraxial unguinal tarsal setae (*u*^t) 4 (3-4); tarsal empodium, 4 (4-6), divided, each branch 5-rayed, tarsal solenidion 5 (5-6), knobbed. Leg II 27 (26-29), femur 10 (10-11), basiventral femoral setae (*bv*) 7 (7-8); genu 3 (3-4), antaxial genual setae (*l*ⁿ) absent; tibia 5 (5-6); tarsus 5 (5-6), paraxial fastigial tarsal setae (*ft*^t) 19 (16-24), antaxial fastigial tarsal setae (*ft*^a) 5 (5-7), paraxial unguinal tarsal setae (*u*^t) 4 (3-4); tarsal empodium, 4 (4-5), divided, each branch 5-rayed, tarsal solenidion 4 (4-5), knobbed.

Opisthosoma (Fig. 3A, B): dorsal opisthosoma annuli arc-like, smooth, 16 (16-17) annuli; ventrally with 44 (43-45) annuli, with filamentous microtubercles; setae *c*2 15 (15-16) on ventral annulus 13 (13-14), apart 48 (47-53); setae *d* 18 (17-19), on ventral annulus 21 (20-22), apart 34 (33-37); setae *e* 35 (34-37), on ventral annulus 32 (31-33), apart 13 (13-14); setae *f* 15 (14-16), on 6th ventral annulus from rear, apart 22 (22-24); setae *h*1 absent; setae *h*2 17 (15-19).

Female genitalia (Fig. 3C) 19 (18-20) long, 22 (22-24) wide, coverflap with three distinct and many faint longitudinal lines, proximal setae on coxisternum III (*3a*) 9 (9-10), apart 15 (15-17).

Male (*n* = 2)

Body spindleform, light yellow, 135 (130) long, 72 (72) wide.

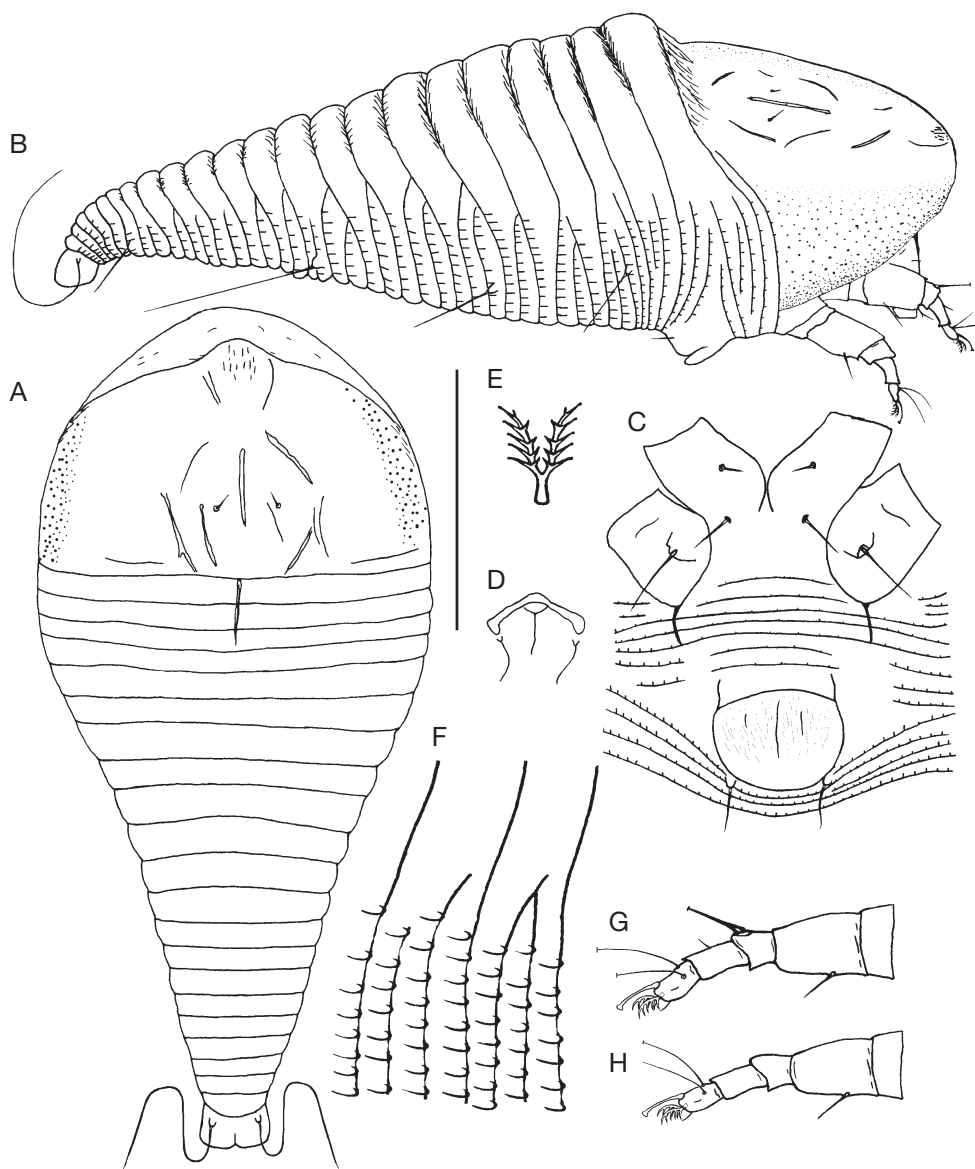


FIG. 3. — *Litaculus tremae* n. sp.: **A**, dorsal view of female; **B**, lateral view of female; **C**, coxal-genital region, female; **D**, genital region, male; **E**, empodium; **F**, lateral opisthosoma; **G**, leg I; **H**, leg II. Scale bar: A, B, 40 μ m; C, D, 45 μ m; G, H, 34 μ m.

Gnathosoma 20 (19), projecting obliquely down, pedipalp coxal setae (*ep*) 2 (2); dorsal pedipalp genual setae (*d*) bifurcate 13 (12); oryal stylets 20 (19).

Prodorsal shield semi-round, with frontal lobe

and lower than dorsal opisthosoma, 48 (46) long, 67 (65) wide; middle shield flat with some irregular sulci, median, admedian and submedian lines absent; lateral sides of shield with granules, bent down, lateral margins reaching coxal area.

Scapular tubercles small, ahead of rear margin, 14 (13) apart, scapular setae (*sc*) 2 (2), directed up.

Coxae with a sternal line, coxal area smooth, anterolateral setae on coxisternum I (*Ib*) 5 (5), apart 15 (14); proximal setae on coxisternum I (*Ia*) 10 (10), apart 13 (12); proximal setae on coxisternum II (*2a*) 16 (15), apart 30 (28).

Leg segments normal. Leg I 29 (28), femur 11 (10), basiventral femoral setae (*bv*) 6 (6); genu 3 (3), antaxial genual setae (*l*ⁿ) 21 (19); tibia 6 (6), paraxial tibial setae (*l*) 2 (2), at dorsal middle tibia; tarsus 6 (6), paraxial fastigial tarsal setae (*ft*) 22 (19), antaxial fastigial tarsal setae (*ft*ⁿ) 17 (15), paraxial unguinal tarsal setae (*u*) 4 (3); tarsal empodium, 5 (4), divided, each branch 5-rayed, tarsal solenidion 5 (5), knobbed. Leg II 27 (26), femur 10 (9), basiventral femoral setae (*bv*) 7 (7); genu 3 (3), antaxial genual setae (*l*ⁿ) absent; tibia 5 (5); tarsus 5 (5), paraxial fastigial tarsal setae (*ft*) 20 (18), antaxial fastigial tarsal setae (*ft*ⁿ) 5 (5), paraxial unguinal tarsal setae (*u*) 4 (3); tarsal empodium, 4 (4), divided, each branch 5-rayed, tarsal solenidion 4 (4), knobbed.

Opisthosoma: dorsal opisthosoma annuli arc-like, smooth, 17 (16) annuli; ventrally with 44 (43) annuli, with filamentous microtubercles; setae *c*2 15 (14) on ventral annulus 13 (13), apart 49 (47); setae *d* 19 (18), on ventral annulus 21 (20), apart 36 (34); setae *e* 35 (34), on ventral annulus 33 (31), apart 13 (12); setae *f*15 (14), on 6th ventral annulus from rear, apart 22 (21); setae *h*1 absent; setae *h*2 17 (15).

Male genitalia 17 (17) wide, proximal setae on coxisternum III (*3a*) 5 (5); apart 15 (15) (Fig. 3D).

REMARKS

This species is similar to *Litaculus pennigerus* Manson, 1986, but can be differentiated by prodorsal shield semi-round, median, admedian and submedian lines absent, lateral sides of shield with granules; ventrally annuli with filamentous microtubercles; tarsal empodium each branch 5-rayed (prodorsal shield with incomplete admedian line; ventrally annuli with rounded microtubercles and tarsal empodium with each branch 4-rayed in *Litaculus pennigerus*; see Manson 1986).

Genus *Paracaphyllisa* Kuang & Luo, 2004

Paracaphyllisa montani n. sp.

(Fig. 4)

TYPE MATERIAL. — Holotype: Jiulong MT., 33 km North of Heng County (22°69'N, 109°2'E), Guangxi Zhuang Autonomous Region, China, 15.X.2004, from *Gnetum montanum* Markgr. (Gnetaceae), coll. De-Wei Li and Guo-Quan Wang, ♀ (CAGU).

Paratypes: same data as holotype, 3 ♀♀, 5 ♂♂ (CAGU); 1 ♀, 1 ♂ (MNHN).

ETYMOLOGY. — The specific epithet is derived from the species name of the host plant, *montanum*.

RELATION TO HOST. — The mites are vagrants on the lower surface of the leaves, no visible damage.

DESCRIPTION

Female (*n* = 5)

Body (Fig. 4A, B) spindleform, yellowish, 200 (188-213) long, 69 (64-72) wide, 60 (55-63) thick.

Gnathosoma 21 (19-22), projecting obliquely down, pedipalp coxal setae (*ep*) 2 (2-3); dorsal pedipalp genual setae (*d*) 8 (7-9); orygal stylets 21 (18-22).

Prodorsal shield with frontal lobe, 47 (45-49) long, 62 (60-63) wide; median line incomplete, from rear to 1/6 and from anterior to 1/6 of shield only, admedian lines complete, at basal 1/6 of shield fused with median line, a transverse short line connecting admedian lines at middle shield, submedian lines incomplete; shield sides with granules. Scapular tubercles ahead of rear margin, 15 (15-16) apart, scapular setae (*sc*) 4 (4-5), directed up and mediad.

Coxae (Fig. 4C) with sternal line, coxal area smooth, anterolateral setae on coxisternum I (*Ib*) 5 (5-6), apart 15 (14-15); proximal setae on coxisternum I (*Ia*) 14 (13-15), apart 9 (8-9); proximal setae on coxisternum II (*2a*) 18 (17-19), apart 25 (24-26).

Leg (Fig. 4F, G) segments normal. Leg I 22 (21-23), femur 7 (7-8), basiventral femoral setae (*bv*) 5 (5-6); genu 2 (2-3), antaxial genual setae (*l*ⁿ) 25 (23-27); tibia 5 (5-6), paraxial tibial setae (*l*) 3 (3-4), at dorsal middle tibia; tarsus 4 (4-5), paraxial fastigial tarsal setae (*ft*) 16 (14-

18), antaxial fastigial tarsal setae (*ft'*) 12 (11-14), paraxial unguinal tarsal setae (*u'*) 3 (3-4); tarsal empodium, 4 (4-5), divided, each branch 4-rayed, tarsal solenidion 5 (5-6), knobbed. Leg II 21 (20-23), femur 7 (7-8), basiventral femoral setae (*bv*) 6 (6-7); genu 2 (2-3), antaxial genual setae (*l''*) absent; tibia 4.5 (4.5-5); tarsus 4 (4-5), paraxial fastigial tarsal setae (*ft'*) 18 (16-20), antaxial fastigial tarsal setae (*ft''*) 6 (5-8), paraxial unguinal tarsal setae (*u'*) 3 (3-4); tarsal empodium, 4 (4-5), divided, each branch 4-rayed, tarsal solenidion 5 (5-6), knobbed.

Opisthosoma (Fig. 4A, B): middorsal ridge ending in a broad furrow before the termination of subdorsal ridges; dorsal opisthosoma ridges with filamentous microtubercles on ridges; dorsal opisthosoma with 48 (47-50) annuli; ventrally with 72 (70-74) annuli, with rounded microtubercles; setae *c*2 13 (12-14) on ventral annulus 10 (10-11), apart 61 (58-64); setae *d* 50 (47-53), on ventral annulus 26 (25-27), apart 34 (33-36); setae *e* 11 (11-12), on ventral annulus 47 (46-48), apart 14 (13-15); setae *f*14 (13-15), on 6th ventral annulus from rear, apart 18 (18-19); setae *h*1 present; setae *h*2 54 (50-58).

Female genitalia (Fig. 4C) 17.5 (17-19) long, 23 (22-24) wide, coverflap with basal granules and distal 12 longitudinal lines, proximal setae on coxisternum III (*3a*) 10 (10-11), apart 16 (16-17).

Male (*n* = 6)

Body spindleform, yellowish, 182 (178-185) long, 56 (53-60) wide; 52 (50-56) thick.

Gnathosoma 19 (17-20), projecting obliquely down, pedipalp coxal setae (*ep*) 2 (2-3); dorsal pedipalp genual setae (*d*) 7 (7-9); oryax stylets 19 (17-20).

Prodorsal shield with frontal lobe, 45 (43-46) long, 59 (57-60) wide; median line incomplete, from rear to 1/6 and from anterior to 1/6 of shield only, admedian lines complete, at basal 1/6 of shield fused with median line, a transverse short line connect admedian lines at middle shield, submedian lines incomplete; shield sides with granules. Scapular tubercles ahead of rear margin, 14 (13-14) apart, scapular setae (*sc*) 4 (3-4), directed up and mediad.

Coxae with sternal line, coxal area smooth, anterolateral setae on coxisternum I (*1b*) 5 (4-5), apart 14 (13-14); proximal setae on coxisternum I (*1a*) 13 (12-13), apart 8 (7-8); proximal setae on coxisternum II (*2a*) 16 (15-17), apart 23 (22-25).

Leg segments normal. Leg I 20 (19-21), femur 6 (6-7), basiventral femoral setae (*bv*) 5 (4-5); genu 2 (2-3), antaxial genual setae (*l''*) 22 (20-24); tibia 4 (4-5), paraxial tibial setae (*l'*) 3 (2-3), at dorsal middle tibia; tarsus 4 (4-5), paraxial fastigial tarsal setae (*ft'*) 14 (13-16), antaxial fastigial tarsal setae (*ft''*) 11 (10-12), paraxial unguinal tarsal setae (*u'*) 3 (3-4); tarsal empodium, 4 (4-5), divided, each branch 4-rayed, tarsal solenidion 5 (5-6), knobbed. Leg II 19 (18-20), femur 6 (6-7), basiventral femoral setae (*bv*) 6 (5-6); genu 2 (2-3), antaxial genual setae (*l''*) absent; tibia 4 (4-5); tarsus 4 (4-5), paraxial fastigial tarsal setae (*ft'*) 16 (14-18), antaxial fastigial tarsal setae (*ft''*) 6 (5-7), paraxial unguinal tarsal setae (*u'*) 3 (3-4); tarsal empodium, 4 (4-5), divided, each branch 4-rayed, tarsal solenidion 5 (5-6), knobbed.

Opisthosoma: middorsal ridge ending in a broad furrow before the termination of subdorsal ridges; dorsal opisthosoma ridges with filamentous microtubercles on ridges; dorsal opisthosoma with 47 (45-49) annuli; ventrally with 70 (69-73) annuli, with rounded microtubercles; setae *c*2 12 (12-14) on ventral annulus 10 (10-11), apart 57 (55-62); setae *d* 46 (44-59), on ventral annulus 25 (25-27), apart 32 (30-35); setae *e* 10 (10-12), on ventral annulus 47 (46-48), apart 12 (11-14); setae *f* 13 (13-15), on 6th ventral annulus from rear, apart 16 (14-17); setae *h*1 present; setae *h*2 50 (48-55).

Male genitalia 17 (15-18) wide, proximal setae on coxisternum III (*3a*) 10 (9-11); apart 16 (16-17) (Fig. 4D).

REMARKS

This species is similar to *Paracaphyllisa adinandrae* Kuang & Luo, 2004, but can be differentiated by the prodorsal shield with median line incomplete, sides with granules; dorsal opisthosoma ridges with filamentous microtubercles; coxal area smooth, tarsal solenidion knobbed, coverflap with basal granules and distal longitudinal lines; setae *h*1

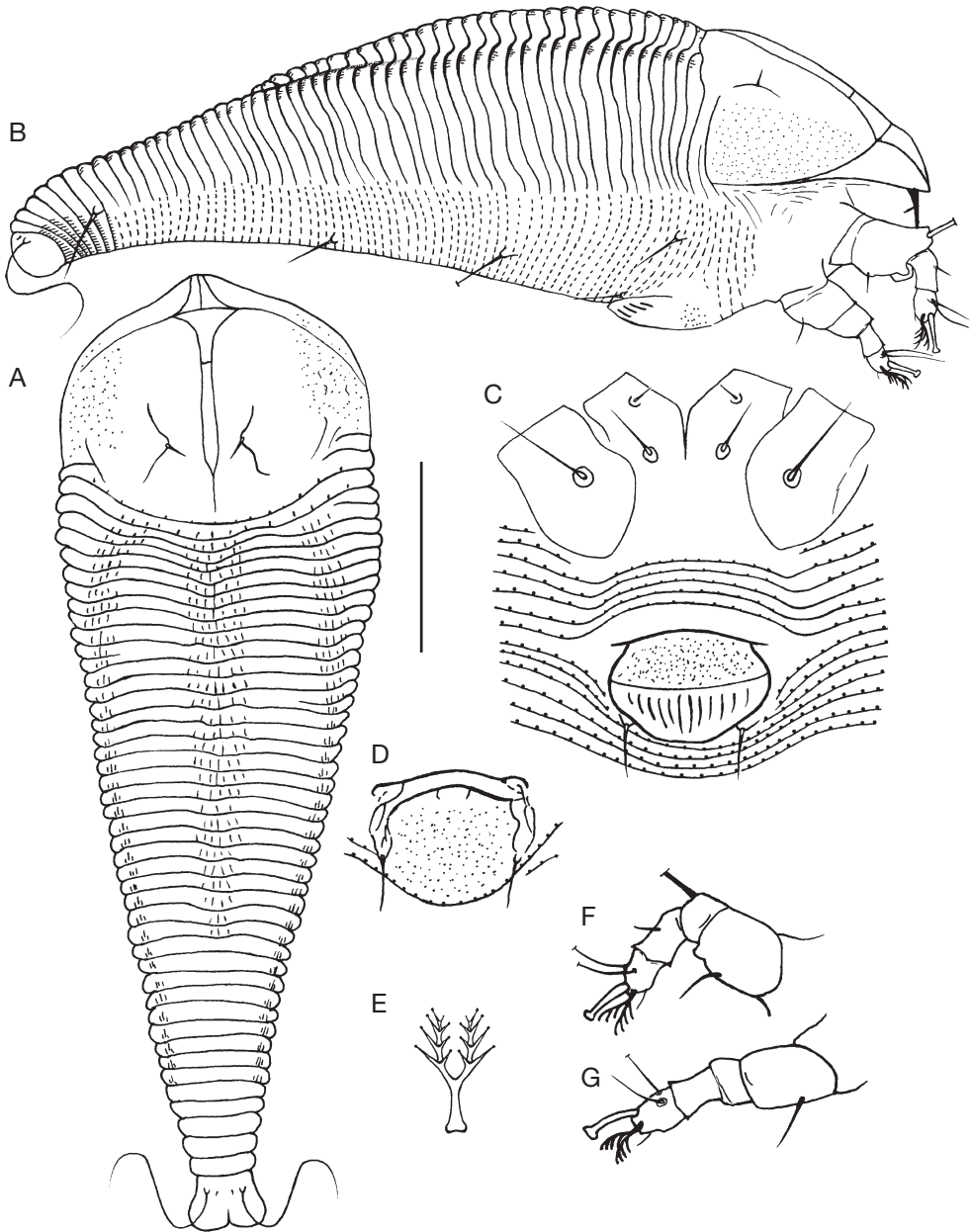


FIG. 4. — *Paracaphyllisa montani* n. sp.: **A**, dorsal view of female; **B**, lateral view of female; **C**, coxal-genital region, female; **D**, genital region, male; **E**, empodium; **F**, leg I; **G**, leg II. Scale bar: A, B, 40 μ m; C, 27 μ m; D, 21 μ m; F, G, 14 μ m.

present (*P. adinandrae* prodorsal shield median line complete and sides smooth; dorsal opisthosoma ridges smooth, without filament microtubercles;

coxal area with short lines; tarsal solenidion slightly knobbed coverflap smooth; setae *h1* absent in *P. adinandrae*; see Kuang *et al.* 2004).

KEY TO THE GENERA OF THE TRIBE ACARICALINI AMRINE & STASNY, 1994 IN CHINA

1. Scapular setae absent; tibial setae absent 2
— Scapular setae present; tibial setae variable 3
2. Opisthosoma with central longitudinal ridge *Knorella*
— Opisthosoma with central ridge for about 4 annuli followed by a broad central furrow ...
..... *Schizacea*
3. Scapular tubercles on rear shield margin 4
— Scapular tubercles ahead of rear shield margin 5
4. Scapular setae very small, located on lateral edges of rear shield margin; tibial setae absent
..... *Neodichopelmus*
— Scapular setae normally placed on rear shield margin directing setae divergently to the
rear; tibial setae present *Dichopelmus*
5. Coxal setae *1b* absent 6
— Coxal setae *1b* present 7
6. Dorsal opisthosoma with a single middorsal ridge; genu II setae absent *Acaphylla*
— Dorsal opisthosoma with three ridges; genu II setae present *Chiacaphyllisa* n. gen.
7. Opisthosoma with several dorsal annuli near prodorsal shield fused forming a plate either
directly behind or a few annuli away from shield 8
— Opisthosoma dorsal annuli not fused 12
8. Dorsal annuli fused immediately behind prodorsal shield 9
— Dorsal annuli fused following three opisthosomal annuli *Tumescoptes*
9. Tibial setae placed distally; first 3 or 4 annuli fused medially to form a lyre-shaped lobe
..... *Neoacaphyllisa*
— Tibial setae placed basally or absent 10
10. Tibial, genu II and opisthosomal setae *d* and setae *e* absent *Protumescoptes*
— Tibial setae present; opisthosomal and other leg setae variable 11
11. Genu II setae absent *Calpentaconvexus*
— Genu II setae present *Pentaconvexus*
12. Opisthosoma rounded, smooth 13
— Opisthosoma with ridge(s) 14
13. Prodorsal shield trapezoid-shaped *Neolitaculus*
— Prodorsal shield semicircular *Litaculus*
14. Genu II setae present *Acaphyllisa*
— Genu II setae absent *Paracaphyllisa*

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