

A NEW SPECIES OF *TEGOPRIONUS* KEIFER (PROSTIGMATA: ERIOPHYIDAE) FROM BRAZIL, DESCRIBED FROM ALL MOTILE STAGES, WITH AN OVERVIEW OF THE GENUS *TEGOPRIONUS*

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ABSTRACT — *Tegoprionus mesogibbosus* n. sp., from leaves of *Inga sessilis* (Vell.) Mart. (Fabaceae, Mimoseoideae) in Brazil is described from all motile stages. An overview of the genus *Tegoprionus* is presented.

KEYWORDS — Eriophyoidea; taxonomy; new species; South America; *Tegoprionus mesogibbosus*

INTRODUCTION

Tegoprionus was erected by Keifer (1961) to accommodate the apparently unique species *Tegonotus dentatus* Nalepa, 1891, an eriophyid mite with irregularly projecting opisthosomal annuli along the middorsal longitudinal ridge. Although Nalepa's description is somewhat inadequate and has no figure, his publication meets the requirements of the International Code of Zoological Nomenclature (ICZN, 1999): mite name, host plant and symptoms. Nalepa regarded his 1894 publication as the true description, more complete and including a figure; he also noted the dorsal semiannuli in a few specimens were all similar, without the mediodorsal projection. Nalepa (1911) presented an additional description and figures; in a few specimens seven opisthosomal mediodorsal projections are present on annuli 3-6-8-12-14-17-20 or on annuli 4-7-10-12-15-18-

20. The type host is *Galium verum* L. (Rubiaceae), commonly known as yellow bedstraw. The mite causes leaf deformation and "weissfilzige [white felt] Blütenquirlgallen [flower whisk galls]". The type locality was not mentioned but was probably France.

Further references to the occurrence of this mite, always from the same host plant, were made by Nalepa (1892), from Lorraine, France; Liro and Roivainen (1951) from Finland; Schleicher (1938) from Germany; Farkas (1965) from Europe and America; Farkas (1966) from Hungary; Roivainen (1951) reported it as a leaf vagrant on *Pimpinella saxifraga* L. (Rubiaceae) from Finland and included a redescription and figure. Boczek and Chyczewski (1977) reported it from Poland and Boczek and Csapo (1992) reported it from *Galium tricornutum* Stock. and *G. mollugo* L. in Poland, as well as Sko-

racka *et al.* (2005). Petanovic (2001) reported it from Serbia.

Meyer (1989) described *Tegoprionus bicristatus*, an eriophyid with "two rows of projections along two subdorsal ridges". Amrine *et al.* (2003) erected *Meyerella* and designated *T. bicristatus* its type species. Thus, *Tegoprionus* remains monotypic.

In this paper a second species of *Tegoprionus* is described from all motile stages; larvae and nymphs are readily distinguishable.

MATERIALS AND METHODS

Terminology follows that of Lindquist (1996) and classification is based on Amrine *et al.* (2003). Measurements are given in micrometers (μm) and, unless stated otherwise, refer to the length of the structure. In the description of the female, each measurement of the holotype precedes the corresponding range for the paratypes. The count of ventral opisthosomal annuli starts from the first full annulus behind the genitalia. Dorsal opisthosomal annuli were counted from the first full annulus behind the middle of the prodorsal shield rear margin. Measurements were conducted according to de Lillo *et al.* (2010) except for the following: 1) idiosoma length, was measured from the tip of the frontal lobe to the rear end of the anal lobe, not considering pedipalps; 2) the distance between *sc* setal tubercles was measured between the tubercles and not the setae. Micrographs were obtained using a differential interference contrast microscope.

Tegoprionus Keifer, 1961

Tegoprionus Keifer, 1961 - B-2: 4. Genotype: *Tegonotus dentatus* Nalepa, 1891 - by original designation. Idiosoma fusiform; rostrum projecting obliquely downward. Prodorsal shield triangular, anterior lobe a narrow projection over rostrum; dorsal shield tubercles on rear shield margin; dorsal setae (scapular setae, *sc*) projecting divergently to rear. Opisthosoma dorsal semiannuli with one mid longitudinal ridge; semiannuli irregularly bearing a wide central lobe projecting dorsally. Each dorsal semiannulus covers 3-4 ventral annuli.

Tegoprionus mesogibbosus n.sp. (Figures 1 – 5)

Diagnosis — Opisthosoma with four dorsomedian enlargements, each on contiguous semiannuli 8 – 11 or 9 – 12.

FEMALE (measured specimens: 6)

Idiosoma — 143 (135 – 179), 44 (44 – 50) wide. Yellowish when alive. Gnathosoma downcurved; pedipalp genual seta (*d*) undivided, 4 (4 – 5); pedipalp coxal seta (*ep*) 3 (2 – 3); chelicerae 12 (12 – 15). Prodorsal shield triangular, 29 (29 – 32) including frontal lobe, 37 (37 – 42) wide, smooth. Scapular setal tubercles on rear shield margin, 21 (21 – 23) apart; *sc* 19 (19 – 20), directed to the rear. Frontal lobe rounded, 4 (4 – 5) and 10 (10 – 11) wide at base. Legs with usual setae present. Leg I 23 (23 – 25); femur 7 (7 – 9), ventral basifemoral seta (*bv*) 7 (7-10); genu 4 (3 – 4), antaxial genual seta (*l'*) 12 (12 – 16); tibia 5 (4 – 5), paraxial tibial seta (*l''*) 4 (5 – 4); tarsus 4 (5 – 4), antaxial fastigial tarsal seta (*ft''*) 16 (16 – 22), paraxial fastigial tarsal seta (*ft'*) 12 (8 – 12), paraxial unguinal tarsal seta (*u'*) 5 (4 – 5), solenidion almost straight, blunt, 6 (6 – 8); empodium entire, 4 (4 – 6), 6-rayed. Leg II 21 (21 – 23); femur 6 (6 – 8), ventral basifemoral seta (*bv*) 6 (6 – 11); genu 4 (3-4), antaxial genual seta (*l''*) 4 (4 – 9); tibia 4 (3 – 4); tarsus 5 (4 – 5), antaxial fastigial tarsal seta (*ft''*) 14 (14 – 18), paraxial fastigial seta (*ft'*) 4 (4 – 5), paraxial unguinal tarsal seta (*u'*) 3 (3), solenidion as in leg I, 6 (6 – 8); empodium entire, 5 (5), 6-rayed. Coxisternal plates: coxisternal plates I and II granulated. Internal coxisternal apodeme like a line 5 (5 – 6) long. Anterior seta on coxisternum I (*1b*) 5 (5 – 6), 9 (8 – 9) apart; proximal seta on coxisternum I (*1a*) 13 (13 – 16), 6 (6 – 7) apart; proximal seta on coxisternum II (*2a*) 33 (33 – 40), 17 (17 – 19) apart. Coxigenital annuli 5 (4 – 5), faintly microtuberculate, almost smooth. Opisthosoma: with 18 (17 – 18) dorsal wide semiannuli, smooth; first 7 (7 – 8) annuli evenly arched in cross section, next 4 semiannuli each with a large dorsomedian enlargement and caudal 6 (6) annuli evenly arched. Ventral opisthosoma with 56 (49 – 56) semiannuli, with slightly elliptical microtubercles; last 12 (12 – 13) ventral annuli with filamentous, elongate microtubercles. Opisthosomal lateral seta (*c2*) 11 (10 – 12), on annulus 5 (5 – 6) counting

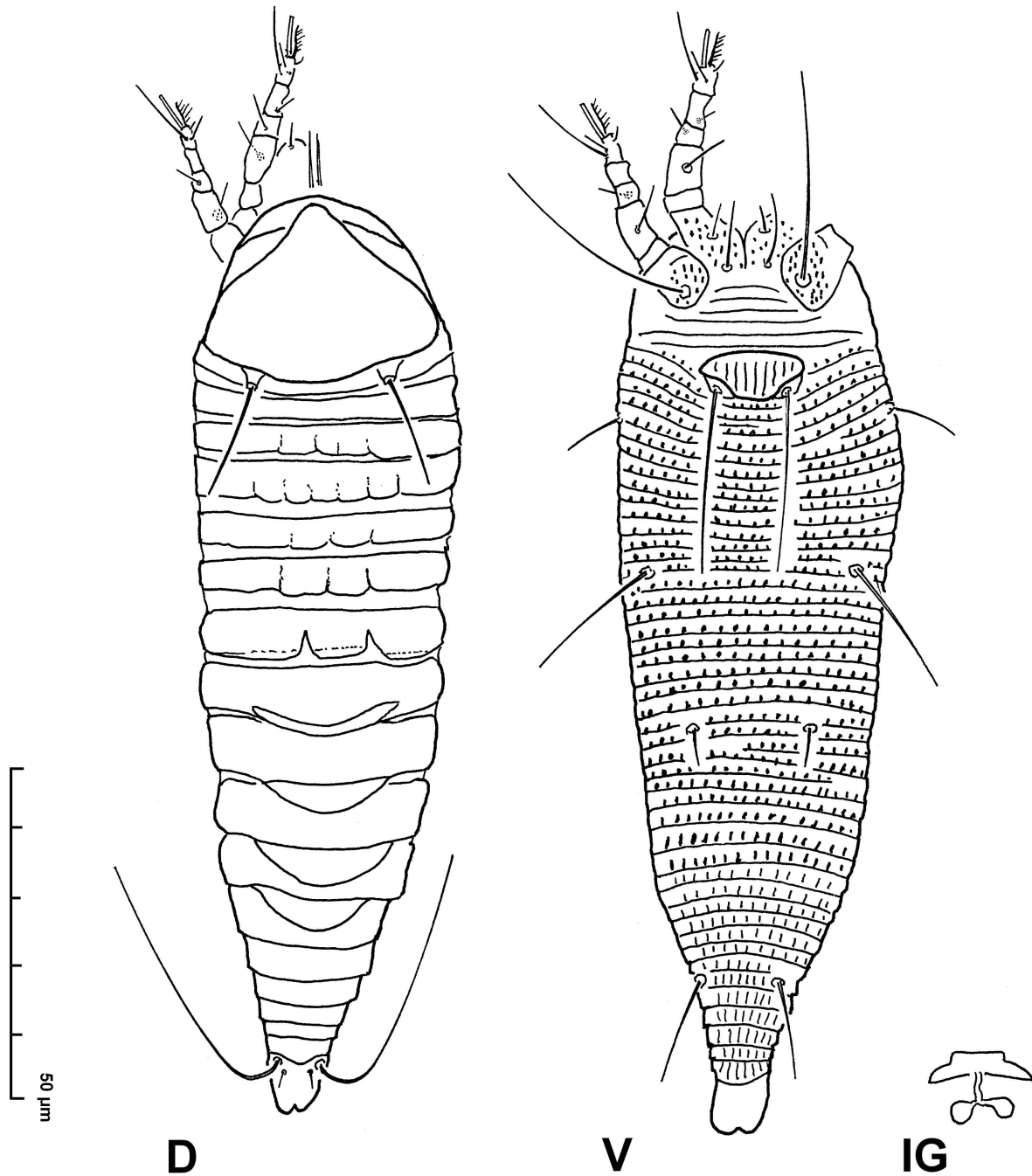


FIGURE 1: *Tegoprionus mesogibbosus* n.sp. female: D dorsal habitus; V ventral habitus; IG internal genital structures.

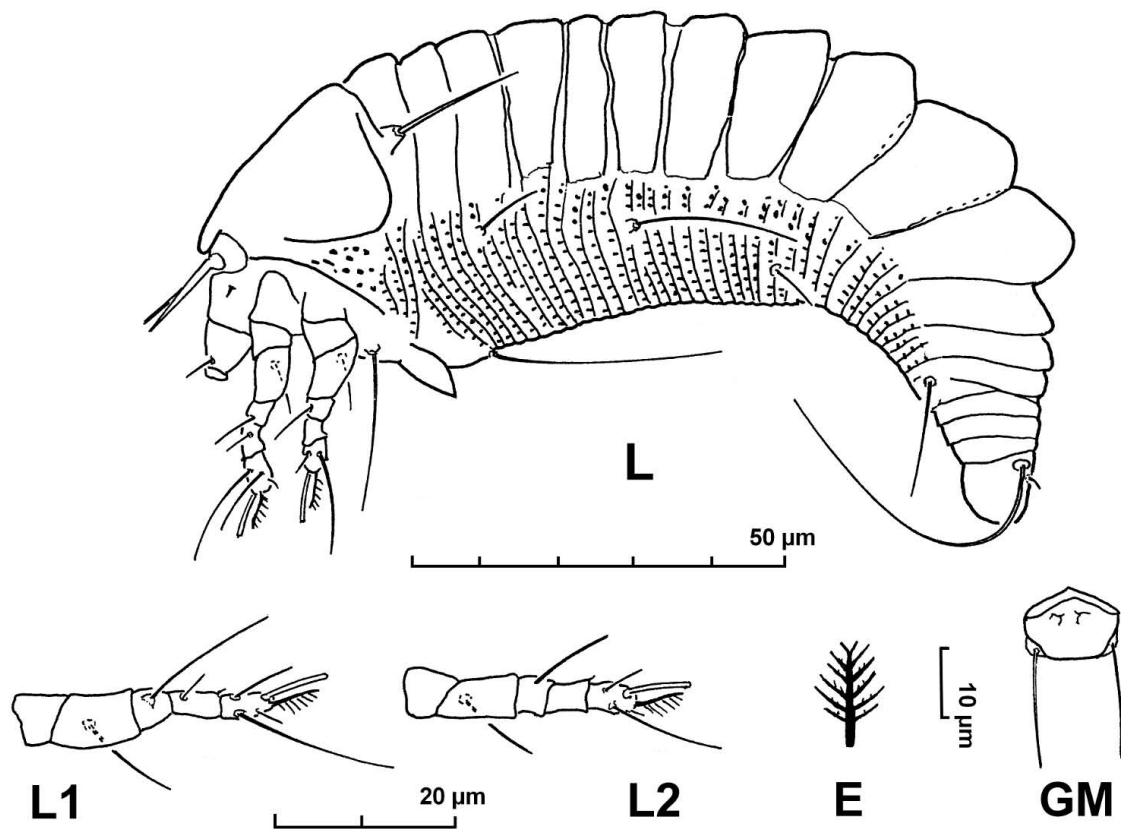


FIGURE 2: *Tegoprionus mesogibbosus* n.sp.: L lateral habitus, female; L1, L2 legs I and II, female; E empodium, enlarged; GM external genitalia, male.

from genitalia rear margin. Opisthosomal ventral seta I (*d*) 22 (22 – 27), 32 (32 – 35) apart, on annulus 16 (16 – 18); ventral seta II (*e*) 9 (9 – 11), 17 (17 – 22) apart, on annulus 35 (29 – 35); ventral seta III (*f*) 18 (18 – 20), 13 (12 – 13) apart, on annulus 51 (44 – 51) or 5 (5 – 6)th from rear. Opisthosomal caudal seta (*h*₂) 45 (43 – 48); opisthosomal caudal seta (*h*₁) 2 (2 – 3). Genitalia 7 (7 – 12), 17 (17 – 19) wide; epigynum with 8 (8 – 10) longitudinal parallel ridges. Proximal seta on coxisternum III, (*3a*) 32 (32 – 36), reaching past bases of opisthosomal ventral seta *d*.

MALE (measured specimens: 3)

Smaller than female, idiosoma 114 – 136, 38 – 41 wide. Gnathosoma: dorsal pedipalp genual seta undivided, 2; pedipalp coxal seta 2. Chelicerae 14. Prodorsal shield: 26 – 28 including frontal lobe, 33 – 38 wide, frontal lobe 4, wide at base 7 – 8. Scapular

seta (*sc*) 16 – 17, setal tubercles 20 – 22 apart; frontal lobe 4, 7 – 8 wide. Legs: leg I 22 – 23; femur 7 – 8, *bv* 10 – 11; genu 3, *l*'' 13 – 14; tibia 4-5, *l*' 3 – 5; tarsus 4, *ft*'' 11 – 13, *ft*' 8 – 9, *u*' 3, solenidion 6 – 7; empodium 5 – 6, 6-rayed. Leg II 21; femur 6 – 8, *bv* 6 – 7; genu 3, *l*'' 7 – 8; tibia 4; tarsus 4 – 5, *ft*'' 13 – 18, *ft*' 5, *u*' 3, solenidion 7; empodium 5 – 6, 6-rayed. Coxisternal plates: coxisternal plates I and II granulated; internal coxisternal apodeme 4 – 6. Setae: *1b* 6 – 7, 7 – 8 apart; *1a* 12 – 13, 6 – 8 apart; *2a* 25 – 31, 15 – 18 apart. Coxigenital semiannuli 5, smooth. Opisthosoma: dorsal semiannuli as in female; 41 – 44 ventral annuli, microtubercles as in female. Opisthosomal setae: *c*₂ 10 – 13, on annulus 3; *d* 22 – 24, 26 – 28 apart, on annulus 12; *e* 8 – 10, 16 – 17 apart, on annulus 22-23; *f* 16 – 19, 11 – 13 apart, on annulus 36 – 38 or 6th from rear. Opisthosomal caudal seta

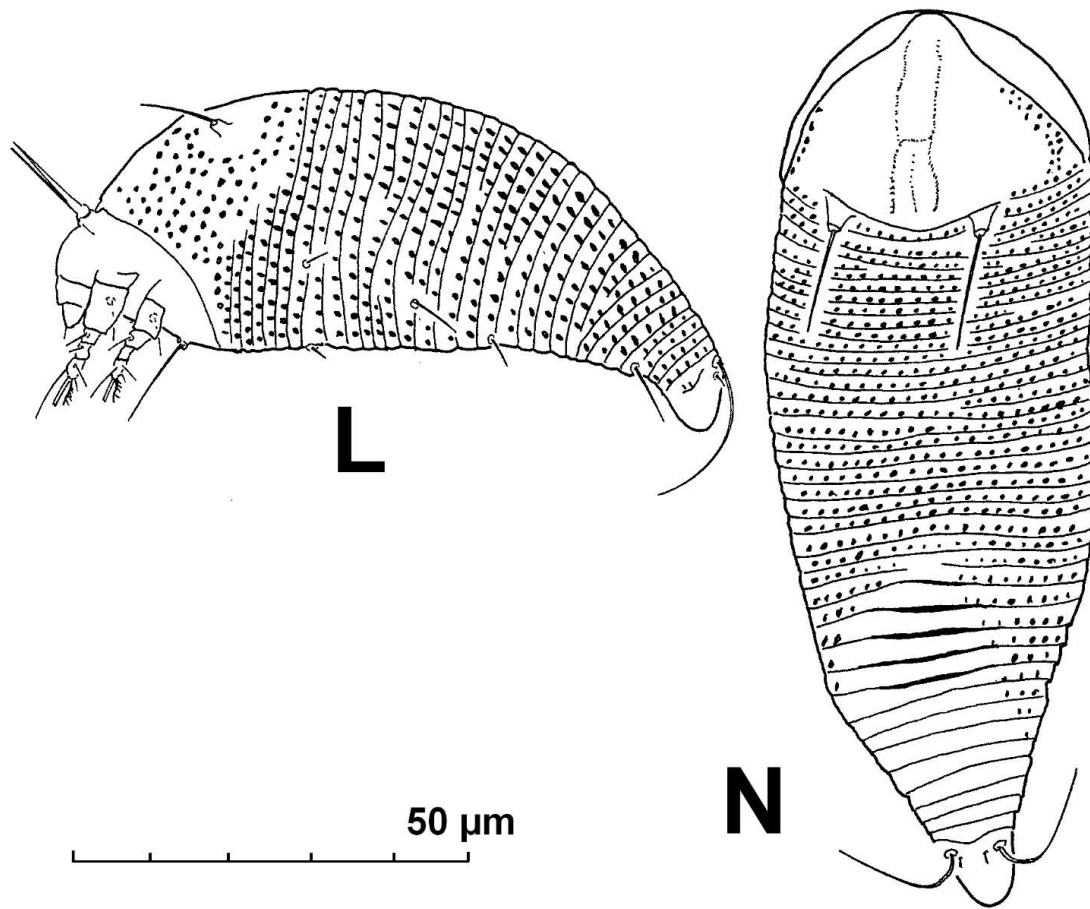


FIGURE 3: *Tegoprionus mesogibbosus* n.sp. Imatures: L larva; N nymph.

h_2 37 – 41, h_1 2. Genitalia 11 – 12, 13 – 15 wide; seta 3a 19 – 23. Three males, out of 31, with similar dorsal opisthosomal annuli (without dorsomedian enlargements), 144 – 149 long.

NYMPH (measured specimens: 7)

Idiosoma — 99 – 145; prodorsal shield 29 – 32, including frontal lobe; frontal lobe 4, scapular seta 13 – 16, 20 apart. Shield rather smooth, but with two weak submedian ridges extending over the entire shield length, mesally connected by a transverse ridge, and a faint median ridge on posterior half of shield. Lateral borders of shield with 2 – 3 lines of round, hemisphaerical granules. Opisthosomal annuli equal dorso-ventrally in number: 38 – 42. First 27 – 28 annuli entirely microtuberculate;

dorsal semiannuli 28/29 to 32/33 medially losing progressively, from center, the microtubercles and slightly enlarged; posterior dorsal semiannuli without microtubercles.

LARVA (measured specimens: 2)

Idiosoma — 89 – 92; no clearly delimited prodorsal shield; scapular setae (sc) 10. Area anterior to scapular setal tubercles entirely microtuberculate, microtubercles round, hemisphaerical. Opisthosoma with 29 – 31 dorsoventrally equal anuli, microtuberculate, microtubercles elliptical.

Type material — female holotype, position ringed on slide, 118 female paratypes, 31 male paratypes with opisthosomal dorsal enlargements, 3 male paratypes without enlargements, 7 nymph

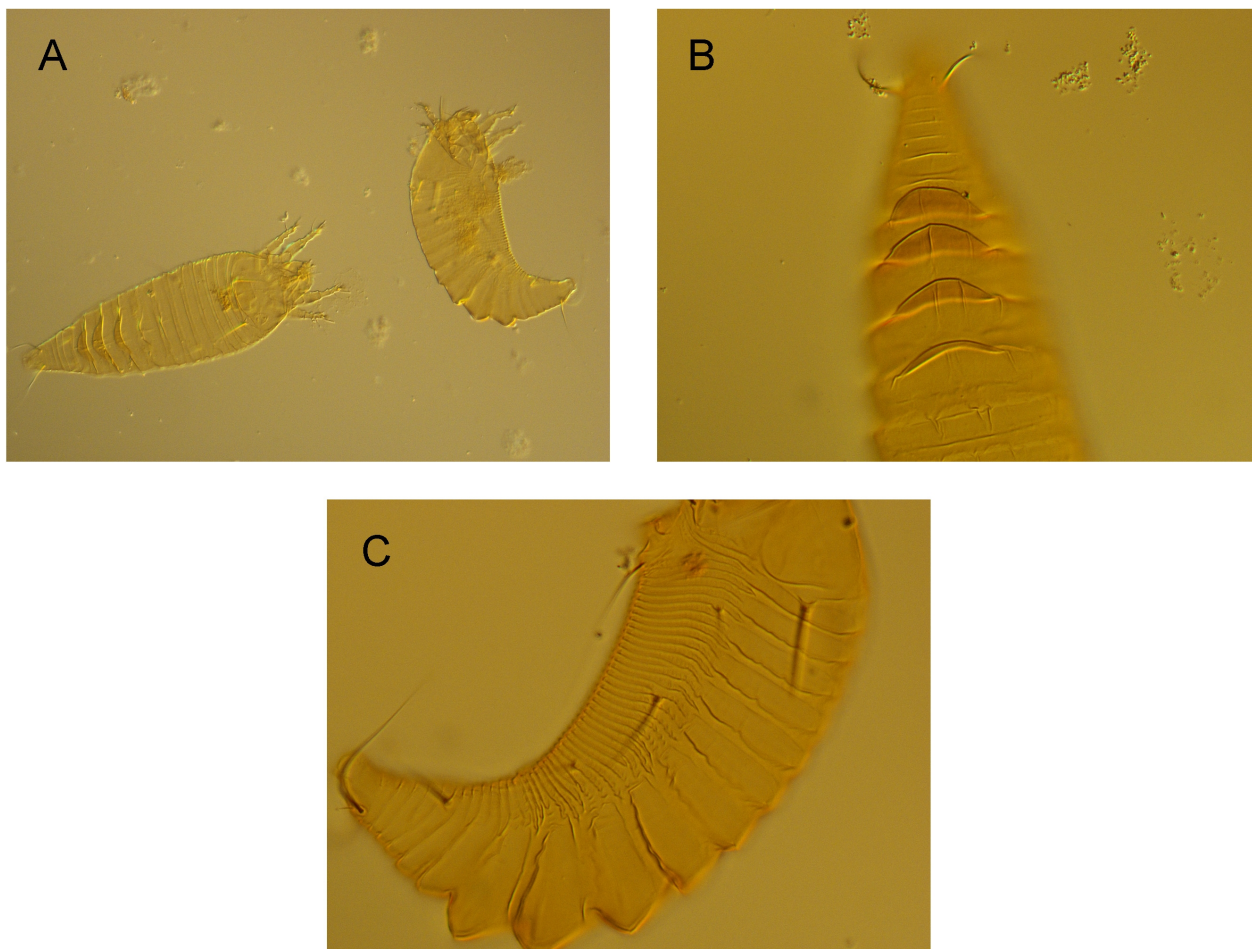


FIGURE 4: *Tegoprionus mesogibbosus* n.sp. females: A – dorsal and lateral habitus; B – female, detail of posterior part of dorso-opisthosoma; C – female, in lateral aspect.

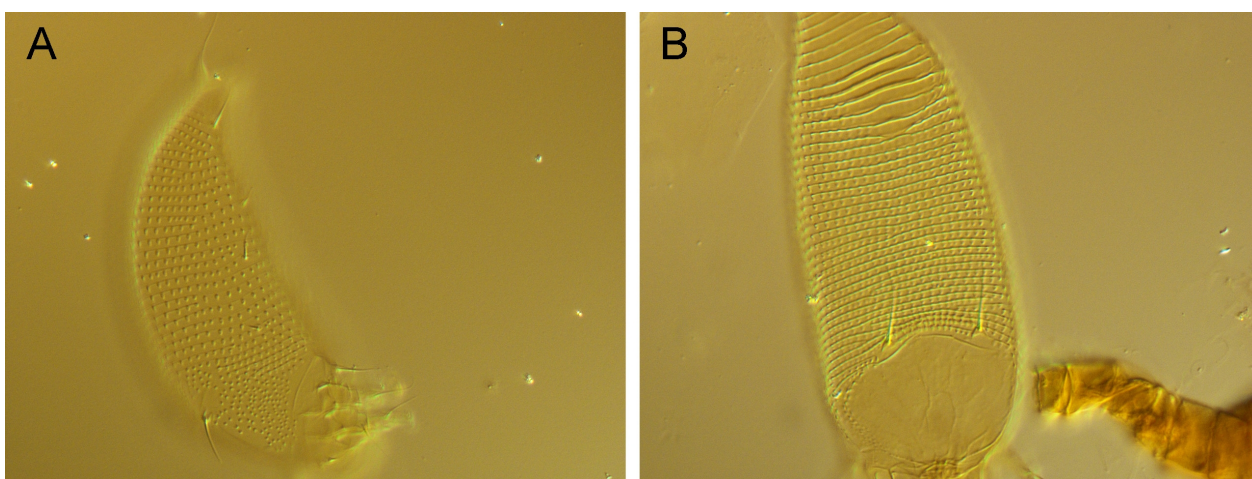


FIGURE 5: *Tegoprionus mesogibbosus* n.sp.: A – larva; B – nymph.

and 2 larva paratypes, collected from *Inga sessilis* (Vell.) Mart. (Fabaceae, Mimosoideae), Jardim Botânico, Curitiba, Paraná, Brazil, 25°26'34"S, 49°14'22"W, coll. Dr. P.R. Demite and Mr. L.V.F. Silva, 04 April 2013, on 12 microscopic preparations: one preparation in the collection of Dr. J.W. Amrine Jr., holotype and remaining preparations in the Acarological Collection, Departamento de Entomologia e Acarologia, Escola Superior de Agricultura "Luiz de Queiroz", Piracicaba, São Paulo, Brazil.

Relation to host — undersurface leaf vagrants; no visible damage.

Etymology — the specific designation *mesogibbosus* is derived from *meso*, Latin, middle position, and *gibbosus*, Latin, *gibbus*, humped, referring to the opisthosomal medio dorsal enlargements.

Remarks — *Tegoprionus mesogibbosus* n. sp. is the second species described in the genus. It differs from the type species basically in the number and position of the dorsomedial opisthosomal enlargements – enlargements on 7 annuli, irregularly spaced in the type species, enlargements on 4 contiguous annuli in the n. sp. As in the type species, the new species has morphologically different males, with and without the dorsomedial opisthosomal enlargements, the latter in much smaller number. The immature forms, larvae and nymphs of the n.sp. are readily distinguished, as is the case in *Rhombacus eucalypti* Ghosh and Chakrabarti and in *Epitrimerus angustisternalis* Flechtmann (Flechtmann, 2010).

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