

A new species of *Armscirus* and description of the male of *Scutopalus tomentosus* from Brazil (Acari: Cunaxidae)

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Abstract

In this work, we describe the male of *Scutopalus tomentosus* Rocha, Skvarla & Ferla, 2013 and a new species *Armscirus amazoniensis* Wurlitzer & Silva **sp. nov.** from specimens collected on coconut crop, *Cocos nucifera* L. (Arecaceae), cultivated in state of Pará, into the Amazonic biome, Brazil.

Key words: Amazonic; *Cocos nucifera*; coconut tree; Pará; predator

Introduction

The Amazonic biome has the world's greatest biodiversity, containing approximately 100 million species that have not yet been described or discovered (Boubli & Hrbek, 2012). The state of Pará, which encompasses part of this biome, is the third largest producer of coconuts, *Cocos nucifera* L. (Arecaceae), in Brazil, with production of approximately two hundred thousand tons of fruit per year due to its favorable edaphoclimatic characteristics for tropical crops (IBGE, 2018).

Included in this biodiversity is Cunaxidae, which is a cosmopolitan family that inhabits diverse environments, such as forest, grasslands, agricultural fields and soil (Skvarla *et al.* 2014). All known species are predators that feed on collembolans, nematodes, thrips, phytophagous mites, and other small arthropods (Heryford 1965, Walter & Kaplan 1991, Lahiri *et al.* 2004, Castro & Moraes 2010). The genus *Scutopalus* Den Heyer, 1980 (Cunaxoidinae) comprises 15 species (Skvarla & Dawuling 2019), of which the following species have been described from Brazil: *S. acaraje* Rocha & Argolo, 2017 and *S. tomentosus* Rocha, Skvarla & Ferla, 2013. Among world *Scutopalus*, only *S. latisetosus* Den Heyer, 1980, *S. clavatus* (Shiba, 1976), *S. philippinensis* (Corpuz-Raros, 1996) and *S. rugosus* (Corpuz-Raros, 1996) have the males described.

The genus *Armscirus* Den Heyer, 1978 (Cunaxinae) comprises 47 species (Skvarla & Dawuling 2019). *Armscirus bahianensis* Den Heyer & Castro, 2012, *A. brasiliensis* Den Heyer & Castro, 2012, *A. bison* (Berlese, 1988), *A. huyssteeni* Den Heyer, 1978 and *A. raulzito* Rocha & Argolo, 2017 have been described or reported to Brazil.

To date, the only cunaxid species reported from the Amazonic biome is *A. huyssteeni* (Ferreira, Krug, Garcia & Moraes, 2018). This paper presents the first survey of cunaxids from the Amazonic biome and describes the male of *Scutopalus tomentosus* and a new species of *Armscirus* collected from *Cocos nucifera* from the state of Pará, Brazil.

Material and Methods

Mites were collected from the leaves of *C. nucifera* in commercial cultivation area belonging to the Company SOCOCO S. A. Amazon agribusiness in the municipality of Santa Izabel (01°13'40.16"S 48°02'5.35"W) and Moju (2°06'03.3"S 48°39'48.4"W), in the state of Pará, Brazil. Leaflets collected from the apical, median and basal parts of "Leaf 14", were deposited in plastic bags and kept in a Styrofoam box with Gelox® (ice pack) to maintain a low temperature. The samples were taken on the leaf 14, since the maximum population level of the mite *Aceria guerreronis* (Eriophyidae) occurs in fruits of this leaf (GALVÃO et al. 2011). Leaf 14 is the one that best expresses the nutritional status of the plant, and is recognized for having in its armpit a bunch of fruits the size of a "closed hand" (Silva & Faria, 2001).

The mites were observed using a stereomicroscope (Zeiss Stemi 305) and mounted on microscope slides in Hoyer's medium (Jeppson *et al.* 1975), maintained in an oven at an average temperature of 50–60 °C for approximately eight days, for drying, fixation and clarification of the specimens. The prepared specimens were examined with a phase contrast microscope (Axio Scope. A1-Zeiss) and the drawings were proceed using camera lucida and finalized in Corel-DRAW X8®. The specimens were prepared in the Laboratory of Entomology of the Empresa Brasileira de Pesquisa Agropecuária (EMBRAPA Amazônia Oriental), Belém, state of Pará, Brazil. The identification was carried out in the Laboratory of Acarology of University of Vale do Taquari – Univates, Lajeado, state of Rio Grande do Sul, Brazil.

Measurements are given in micrometers (µm), with averages in bold and minimum-maximum in parentheses. Nomenclature and abbreviations of prodorsal setae follow Fisher *et al.* (2011). Hypognathal, hysterosomal and anal setae follow Skvarla *et al.* (2014). The chaetotaxy of the legs and palpus follow Den Heyer (1981), Mejía-Recamier & Palacios-Vargas (2007) and Skvarla *et al.* (2014). Setae between {} indicate duplex or triplex.

The following abbreviations are used: Gnatosomal setae: hypognathal setae (*hg*). Prodorsal setae: posterior trichobothria (*pt*); anterior trichobothria (*at*); median proterosomal setae (*m_{ps}*); lateral proterosomal setae (*l_{ps}*). Hysterosomal setae: internal humerals (*c₁*); external humerals (*c₂*); internal dorsals (*d₁*); internal lumbals (*e₁*); internal sacrals (*f₁*); internal clunals (*h₁*); external clunals (*h₂*); postanal setae (*ps*). Chaetotaxy of the legs and palpus: attenuate solenidion (*ats*); depression tarsi I (*dep*); blunt-pointed rod-like solenidion (*bsl*); simple tactile setae (*sts*); dorsoterminal solenidion (*dtsl*); long blunt-pointed rod-like solenidion (*lbsl*); microsetae (*mst*); peg-like seta (*pe*); small blunt-pointed rod-like solenidion (*sbsl*); trichobothrium (*T*); terminal solenidion (*tsl*); spine-like setae (*spls*); famulus (*fam*); spine-like setae (*spls*).

Systematics

Cunaxidae Thor, 1902

Cunaxoidinae Den Heyer, 1978a

Scutopalus Den Heyer, 1980

Scutopalus tomentosus Rocha, Skvarla & Ferla, 2013

(Figs. 1–3)

Description

Male (n=4). Idiosoma length **238** (225–250); idiosoma width **151** (140–160). Dorsum (Fig. 1A) with proterosomal and hysterosomal dorsal shields fused measuring 140 µm of length, reticles with

dotted lines and possessing some central granulation. Propodosomal setae: *lps*, *mps*, sensilla (*at* and *pt*) and simple tactile setae *c*₁, *d*₁, *e*₁ and *c*₂ present in shield. Setae *f*₁ present on small-reticulated transverse shield with dotted lines in the portion hysterosomal posterior to the main shield. Setae *h*₁ inserted on the integument. Setae *h*₂ located in the lateral anal region. Setae *lps*, *mps*, *c*₁, *d*₁, *e*₁, *f*₁, *h*₁ broad and serrate while *c*₂ and *h*₂ simple. Cupule *im* present in integument. The length of the setae is as follows: *at* **80** (80–80), *pt* **78** (65–90), *lps* **34** (32–40), *mps* **28** (25–30), *c*₁ **27** (25–30), *c*₂ **10** (9–10), *d*₁ **25** (23–26), *e*₁ **24** (23–25), *f*₁ **20** (19–22), *h*₁ **9** (7–11). Distance between setae: *at*–*at* **21**(20–23), *at*–*lps* **15** (10–20), *lps*–*lps* **40** (38–43), *pt*–*pt* **63** (60–65), *pt*–*mps* **10** (10–10), *mps*–*mps* **43** (40–45), *mps*–*c*₁ **22** (16–26), *c*₁–*c*₁ **40** (38–41), *d*₁–*d*₁ **34** (33–35), *e*₁–*e*₁ **30** (27–34), *f*₁–*f*₁ **19** (10–36), *h*₁–*h*₁ **23** (20–25).

Venter (Fig. 1B) Coxae I–IV fused with venter, forming a single ventral shield with dense, fine striae. With one pair of propodogastral setae, three pairs of hystergastral setae and one pair of setae aggenital setae. Genital plates small and visible, with two pairs of papillae and four pairs of setae genital (*g*₁–*g*₄). Cupule *ih* present in the integument. Anal region with *ps*₁ and *ps*₂. Length of genital setae: *g*₁ **5** (5–5), *g*₂ **5** (5–5), *g*₃ **6** (5–6) e *g*₄ **7** (7–8).

Gnathosoma (Fig. 2A–B). Chelicera (Fig. 3A) length **78** (75–80) and length of cheliceral seta **1** (1–1). Subcapitulum (Fig. 3B) ventral region with longitudinal striae, four pairs of setae *hg1*–*hg4* and two pairs of setae adoral present. Length of setae hypognathal *hg1* **11** (10–12), *hg2* **16** (13–20), *hg3* **12** (10–15) e *hg4* **16** (14–18). Palp (Fig. 3B) length **57** (53–63) with three segments. Chaetotaxy: trochanter 0; femurogenua with 5 *sts*; tibiotsarsus with 1 *ats*, 5 *sts* ends in a claw.

Legs (Fig. 3A–D). Leg I **167** (155–175); leg II **165** (150–175); leg III **171** (160–175); leg IV **191** (175–200). Chaetotaxy: coxae (Fig. 1B) I–IV, 3-2-3-3 *sts*; trochanters I–IV, 1-1-2-1 *sts*; basifemora I–IV, 4-5-3-1 *sts*; telofemora I–IV, 4-4-3-3 *sts*; genua I with 4 *ats*, 5 *sts*; genua II with 4 *ats*, 3 *sts*; genua III with 2 *ats*, 5 *sts*; genua IV with 2 *ats*, 5 *sts*; tibiae I with 1 *mst*, 1 *ats*, 5 *sts*; tibiae II with 1 *bsl*, 5 *sts*; tibiae III with 1 *bsl*, 5 *sts*; tibiae IV with 1 T, 4 *sts*; tarsi I with 2 *lbsl*, 1 *bsl*, 1 *dep*, 1 *dtsl*, 1 *tsl*, 11 *sts*; tarsi II with 1 *lbsl*, 1 *dtsl*, 1 *tsl*, 10 *sts*; tarsi III with 1 *dtsl*, 7 *sts*; tarso IV with 1 *dtsl*; 7 *sts*.

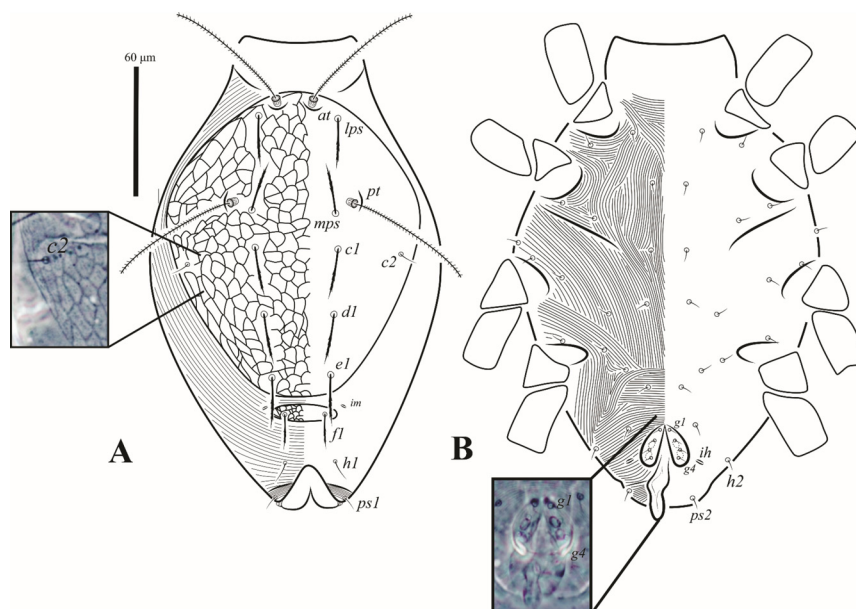


FIGURE 1. *Scutopalus tomentosus* Rocha, Skvarla & Ferla, 2013, male. (A) Dorsal and (B) ventral view of the idiosoma.

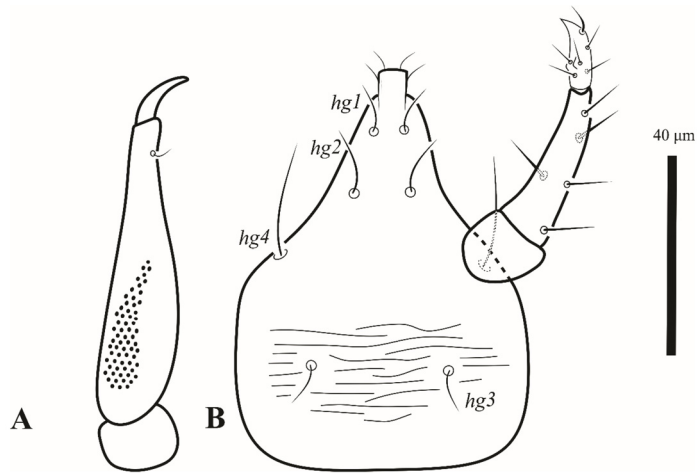


FIGURE 2. *Scutopalus tomentosus* Rocha, Skvarla & Ferla, 2013, male. Gnathosoma – A. Dorsal view of the chelicera; B. Subcapitulum and palp ventral view.

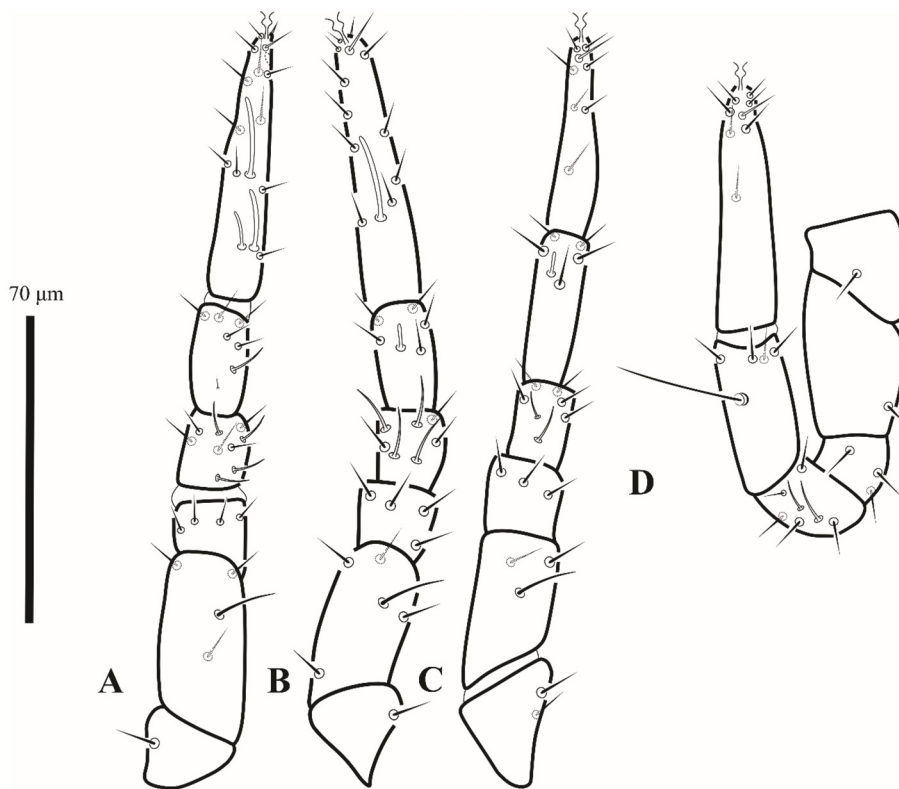


FIGURE 3. *Scutopalus tomentosus* Rocha, Skvarla & Ferla, 2013, male. A. Leg I; B. Leg II; C. Leg III; D. Leg IV.

Developmental stages. Unknown.

Remarks. The male resembles the female, but is smaller. Setae f_1 are on a small-reticulated transverse shield with dotted lines in the portion hysterosomal posterior to the main shield, while the female presents setae in small sclerites. The coxal shields are fused and the genital region are smaller than female. Genua III with 2 *ats* and 5 *sts* in male, while the female has 1 *ats* and 5 *sts*.

Specimen examined. The specimen was collected by Aloyséia C. da Silva Noronha on 12/II/2019 from *C. nucifera*, in a commercial coconut cultivation area in the municipality of Santa Izabel do Pará, Pará state, Brazil (01°13'40.16"S 48°02'54.5"W), 41 m above sea level. One male will be deposited in the Departamento de Acarologia e Entomologia da Escola Superior de Agricultura "Luiz de Queiroz", Universidade de São Paulo (ESALQ / USP), Piracicaba, São Paulo state, Brazil. The other three males will be deposited in the Museu de Ciências Naturais (ZAUMCN) of Universidade do Vale do Taquari-Univates, Lajeado, Rio Grande do Sul state, Brasil, next to the paratype of the female which was examined. A female paratype in ZAUMCN was also examined.

Cunaxinae Oudemans, 1902
***Armscirus* Den Heyer, 1978b**

Armscirus amazoniensis Wurlitzer & Silva sp. nov.
(Figs. 4–10)

Description

Female (n=4). Idiosoma length **625** (610–650); idiosoma width **448** (425–450). Dorsum (Fig. 4A). Propodosomal shield (concave) present and reticulated. Propodosomal setae: *lps*, *mps* and sensilla (*at* and *pt*) present. Hysterosoma with hysterosomal median shield (subquadrangular) and a pair of lateral reticulate platelets. Simple tactile setae *c*₁, *c*₂, *d*₁, *e*₁, *f*₁, *h*₁ and *h*₂ inserted in the integument. Cupule *im* present in integument. The length of the setae is as follows: *at* **390** (380–400), *pt* **398** (390–410), *lps* **14** (12–15), *mps* **15** (15–25), *c*₁ **10** (10–10), *c*₂ **12** (10–16), *d*₁ **14** (10–16), *e*₁ **16** (15–17), *f*₁ **38** (35–43), *h*₁ **41** (40–45). Distance between setae: *at-at* **35** (35–35), *at-lps* **145** (120–170), *lps-lps* **221** (215–230), *pt-pt* **241** (230–250), *pt-mps* **68** (55–75), *mps-mps* **103** (91–110), *mps-c*₁ **55** (45–64), *c*_{1-c}₁ **85** (80–88), *d*_{1-d}₁ **75** (75–76), *e*_{1-e}₁ **101** (95–105), *f*_{1-f}₁ **78** (70–85), *h*_{1-h}₁ **42** (36–45).

Venter (Fig. 4B). Integument of venter with papillated striations. Coxae I–II and III–IV contiguous and reticulated. Ventral region between coxae II to genital shield with one pair of propodogastral setae (located on small sclerotized plates non-reticulated) and four pairs of hysterogastral setae and one pair of aggenital setae present. Genital valves with thin broken striae and papillae, bearing four pairs of subequal setae (*g*₁–*g*₄). Cupule *ih* present in tegument. Anal region with *ps*₁ and *ps*₂. Length of genital setae: *g*₁ **24** (20–26), *g*₂ **29** (25–30), *g*₃ **37** (30–46) e *g*₄ **36** (35–36). Gnathosoma (Fig. 5A–B). Chelicera (Fig. 5A) length **258** (250–270) and length of cheliceral setae **20** (15–25). Subcapitulum (Fig. 5B) with ventral surface punctated, four pairs of setae *hg*₁–*hg*₄ and two pairs of setae adoral present. Length of hypognathal setae *hg*₁ **21** (20–22), *hg*₂ **31** (30–32), *hg*₃ **19** (18–20) and *hg*₄ **70** (60–78). Palp (Fig. 5B) five-jointed. Chaetotaxy: trochanter without setae; basifemur with 1 *sts*; telofemur with 1 *spls* and 1 apophysis; genua with 1 *sts*; 3 *spls* and 1 apophysis; tibiotarsus with 4 *sts*; 1 *spls* and one claw.

Legs (Fig. 6A–D). Leg I **566** (540–600); leg II **536** (520–550); leg III **596** (565–620); leg IV **656** (640–675). Chaetotaxy: coxae (Fig. 4B) I–IV, 1 peg, 3-2-3-3 *sts*; trochanters I–IV, 1-1-2-1 *sts*; basifemora I–IV, 5-5-4-2 *sts*; telofemora I–IV, 4-4-4-4 *sts*; genua I with 3 *ats*, {1 *ats*, 1 *mst*}, 4 *sts*; genua II with 2 *ats*, 5 *sts*; genua III with 1 *ats*, 5*sts*; genua IV with 2 *ats*, 5 *sts*; tibiae I with 1 *ats*, {1 *ats*, 1 *mst*}, 4 *sts*; tibiae II with 1 *ats*, 5 *sts*; tibiae III with 1 *bsl*, 5 *sts*; tibiae IV with 1 T, 4 *sts*; tarsi I with 3 *ats*, {1 *ats*, 1 *fam*, 1 *sts*}, 1 *dtsl*, 2 *tsl*, 18 *sts*; tarsi II with 1 *bsl*, 1 *dtsl*, 1 *tsl*, 19 *sts*; tarsi III with 1 *tsl*, 19 *sts*; tarsi IV with 19 *sts*.

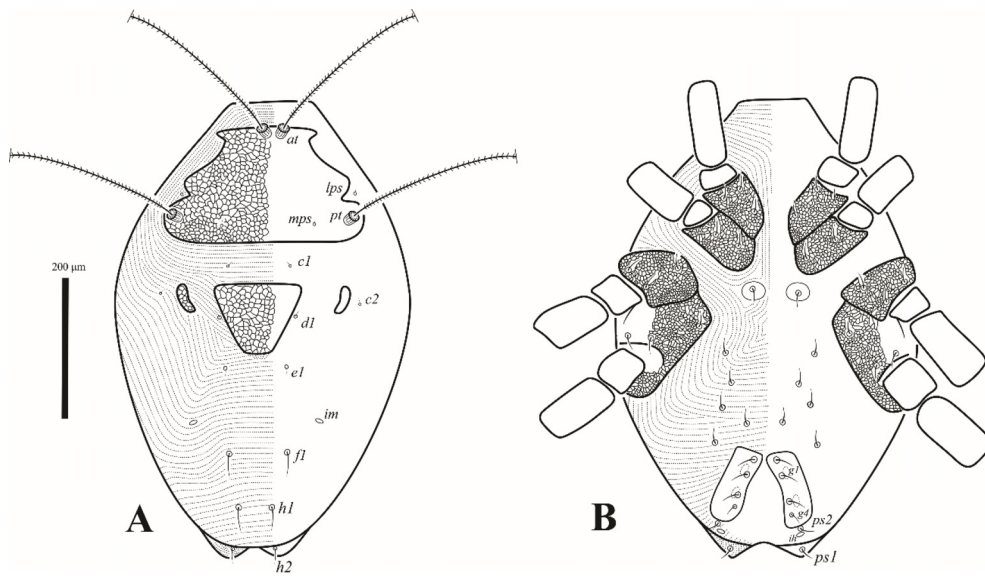


FIGURE 4. *Armascirus amazoniensis* Wurlitzer & Silva sp. nov. female. (A) Dorsal and (B) ventral view of the idiosoma.

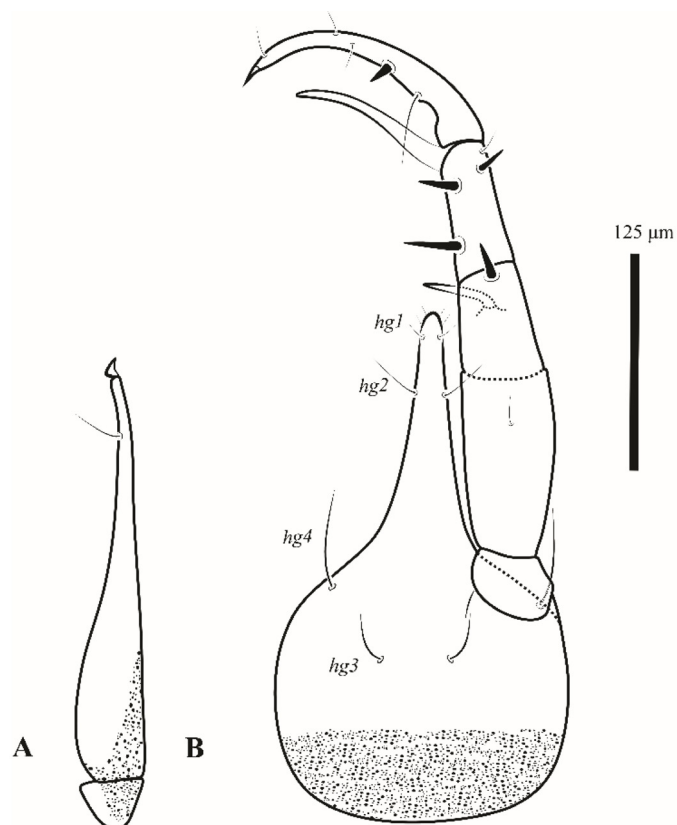


FIGURE 5. *Armascirus amazoniensis* Wurlitzer & Silva sp. nov. female. Gnathosoma – A. Subcapitulum and palp ventral view; B. Chelicera dorsal view.

Male (n=4). Idiosoma length **286** (250–313); idiosoma width **179** (163–195). Dorsum (Fig. 7A). Propodosomal shield reticulated, distally cone-shaped. Propodosomal setae: *lps*, *mps* and sensilla (*at* and *pt*) present. Hysterosoma with large reticulate hysterosomal median shield bearing, with simple tactile setae *c*₁, *c*₂, *d*₁, *e*₁, *f*₁ and cupule *im* present. Setae *h*₁ and *h*₂ present inserted in the tegument. Anal region with *ps*₁ and *ps*₂ and cupule *ih* present. The length of the setae is as follows: *at* **338** (145–190), *pt* **415** (195–195), *lps* **9** (6–10), *mps* **8** (6–10), *c*₁ **8** (6–10), *c*₂ **8** (9–9), *d*₁ **17** (6–10), *e*₁ **10** (9–11), *f*₁ **18** (15–25), *h*₁ **16** (15–17). Distance between setae: *at*–*at* **23** (20–25), *at*–*lps* **75** (70–80), *lps*–*lps* **109** (93–120), *pt*–*pt* **111** (95–120), *pt*–*mps* **30** (28–33), *mps*–*mps* **52** (50–56), *mps*–*c*₁ **24** (20–29), *c*₁–*c*₁ **35** (30–40), *d*₁–*d*₁ **36** (32–40), *e*₁–*e*₁ **41** (42–39), *f*₁–*f*₁ **30** (17–27), *h*₁–*h*₁ **31** (21–25).

Venter (Fig. 7B) coxae plates fused and reticulated forming a single ventral shield with one pair of propodogastral setae, four pairs of hysteroastral setae and aggenital setae absent. Genital plates small and visible, with two pairs of papillae and four pairs of setae genital (*g*₁–*g*₄). Length of genital setae: *g*₁ **13** (10–15), *g*₂ **19** (15–20), *g*₃ **16** (15–18) and *g*₄ **13** (10–16).

Gnathosoma (Fig. 8A–B). Chelicera (Fig. 8A) length **104** (100–109) and length of cheliceral setae **11** (8–15). Subcapitulum (Fig. 8B) with ventral surface punctated, four pairs of setae *hg*₁–*hg*₄ and two pairs of setae adoral present. Length of setae hypognathal *hg*₁ **13** (10–15), *hg*₂ **25** (20–30), *hg*₃ **10** (7–11) and *hg*₄ **23** (20–25). Palp (Fig. 8B) five-jointed. Chaetotaxy: trochanter without setae; basifemur with 1 *sts*; telofemur with 1 *spls* and 1 small apophysis; genua with 1 *sts*; 3 *spls* and 1 apophysis; tibiotarso with 4 *sts*; 1 *spls* and one claw.

Legs (Fig. 9A–D). Leg I **297** (277–313); leg II **243** (220–275); leg III **285** (275–313); leg IV **319** (300–350). Chaetotaxy: coxae (Fig. 7B) I–IV, 3-1-3-2 *sts*; trochanters I–IV, 1-1-2-1; basifemora I–IV, 5-5-3-0 *sts*; telofemora I–IV, 4-4-4-4 *sts*; genua I with 3 *ats*, {1 *ats*, 1 *mst*}, 4 *sts*; genua II with 1 *ats*, 1 *bsl*, 5 *sts*; genua III with 1 *ats*, 5 *sts*; genua IV with 2 *ats*, 5 *sts*; tibiae I with 1 *bsl*, {1 *ats*, 1 *mst*}, 4 *sts*; tibiae II with 1 *ats*, 5 *sts*; tibiae III with 1 *bsl*, 5 *sts*; tibiae IV with 1 T, 4 *sts*; tarsi I with 3 *ats*, {1 *bsl*, 1 *fam*, 1 *sts*}, 1 *dtsl*, 2 *tsl*, 10 *sts*; tarsi II with 1 *bsl*, 1 *dtsl*, 1 *tsl*, 12 *sts*; tarsi III with 1 *tsl*, 10 *sts*; tarsi IV with 11 *sts*.

Tritonymph (female) (n=1) Idiosoma length **500**; idiosoma width **350**. Dorsum (Fig. 10A). Propodosomal shield (concave) present and reticulated with the presence of the ecdysial line dorsally on the propodosoma. Propodosomal setae: *lps*, *mps* and sensilla (*at* and *pt*) present. Hysterosoma with hysterosomal median shield (subquadrangular) and a pair of lateral reticulate platelets. Simple tactile setae *c*₁, *c*₂, *d*₁, *e*₁, *f*₁, *h*₁ and *h*₂ inserted in the integument. Cupule *im* present in integument. The length of the setae is as follows: *at* **380**, *pt* **130**, *lps* **9**, *mps* **11**, *c*₁ **9**, *c*₂ **9**, *d*₁ **10**, *e*₁ **10**, *f*₁ **32**, *h*₁ **31**. Distância entre as setas: *at*–*at* **30**, *at*–*lps* **25**, *lps*–*lps* **175**, *pt*–*pt* **185**, *pt*–*mps* **55**, *mps*–*mps* **80**, *mps*–*c*₁ **59**, *c*₁–*c*₁ **68**, *d*₁–*d*₁ **64**, *e*₁–*e*₁ **75**, *f*₁–*f*₁ **57**, *h*₁–*h*₁ **40**.

Venter. Integument of venter with papillated striations. Coxae I–II and III–IV contiguous and reticulated. Ventral region between coxae II to genital shield with one pair of propodogastral setae and four pairs of hysteroastral setae and one pair of aggenital setae present. Genital valves with thin broken striae and papillae, bearing four pairs of subequal setae (*g*₁–*g*₄). Cupule *ih* present in integument. Anal region with *ps*₁ and *ps*₂. Length of genital setae: *g*₁ **10**, *g*₂ **11**, *g*₃ **19** and *g*₄ **20**.

Gnatosoma. Chelicera (Fig. 6A) length **185** and length of setae cheliceral **15**. Subcapitulum (Fig. 6B) with ventral surface punctated, four pairs of setae *hg*₁–*hg*₄ and two pairs of setae adoral present. Length of setae hypognathal *hg*₁ **19**, *hg*₂ **25**, *hg*₃ **15** and *hg*₄ **35**. Palp (Fig. 6B) five-jointed. Chaetotaxy: trochanter without setae; basifemur with 1 *sts*; telofemur with 1 *spls* and 1 apophysis; genua with 1 *sts*; 3 *spls* and 1 apophysis; tibiotarso with 4 *sts*; 1 *spls* and one claw.

Legs. Leg I **350**; leg II **350**; leg III **375**; leg IV **450**. Chaetotaxy: coxae I–IV, 1peg, 3-2-3-3 *sts*; trochanters I–IV, 1-1-2-1; basifemora I–IV, 5-5-3-0 *sts*; telofemora I–IV, 4-4-4-4 *sts*; genua I with 3 *ats*, {1 *ats*, 1 *mst*}, 4 *sts*; genua II with 2 *ats*, 5 *sts*; genua III with 1 *ats*, 5 *sts*; genua IV with 2 *ats*, 5 *sts*; tibiae I with 1 *ats*, {1 *ats*, 1 *mst*}, 4 *sts*; tibiae II with 1 *ats*, 5 *sts*; tibiae III with 1 *bsl*, 5 *sts*; tibiae

IV with 1 T, 4 *sts*; tarsi I with 3 *ats*, {1 *ats*, 1 *fam*, 1 *sts*}, 1 *dtsl*, 2 *tsl*, 14 *sts*; tarsi II with 1 *bsl*, 1 *dtsl*, 1 *tsl*, 17 *sts*; tarsi III with 1 *tsl*, 15 *sts*; tarsi IV with 16 *sts*.

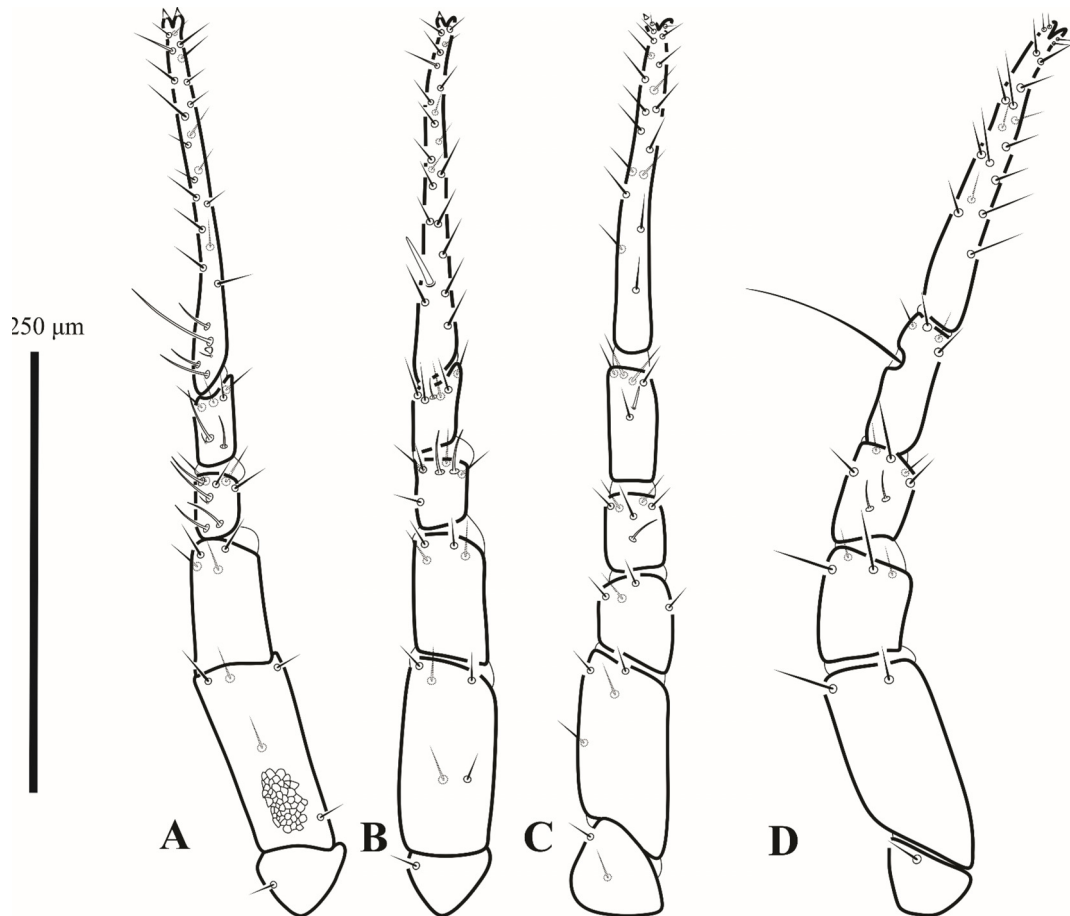


FIGURE 6. *Armascirus amazoniensis* Wurlitzer & Silva sp. nov. female. A. Leg I; B. Leg II; C. Leg III; D. Leg IV.

Remarks. The adult females of this new species resemble those of *Armascirus hastus* Shiba, 1986, *Armascirus gimplei* Smiley, 1992 and *Armascirus orzarkensis* Skvarla & Dowling, 2012 by lacking of setae on the hysterosomal median shield and having a pair of lateral platelets, having one pair of propodogastral setae, four pairs of hystergastral setae and one pair of aggenital setae, and having palpal chaetotaxy (trochanter without setae; basifemur with 1 *sts*; telofemur with 1 *spls* and 1 apophysis; genua with 1 *sts*; 3 *spls* and 1 apophysis; tibiotarso with 4 *sts*; 1 *spls* and one claw). They can be distinguished from those of *A. gimplei* and *A. hastus* by having the median hysterosomal shield bigger and subquadrangular (small and oval in *A. gimplei*, small and diamond-shaped in *A. hastus*). In *A. amazoniensis* **sp. nov.** the median hysterosomal shield is as wide as long, while in *A. orzarkensis* the hysterosomal median shield is two times wider than long with its anterior margin separated caudally from the line of setae c_1-c_1 .

The males differ from the female mainly by presenting a large shield on hysterosoma, bearing five pairs of setae (c_1 , c_2 , d_1 , e_1 and fl) and a pair of cupules *im*; with coxae plates fused, and having different chaetotaxy of basifemora III–IV; genua II; tibiae I and tarsi I–IV.

The tritonymph resembles adult female, however, it differs mainly for presenting an ecdysial line dorsally on the propodosoma and through the chaetotaxy of basifemora III–IV and tarsi I–IV.

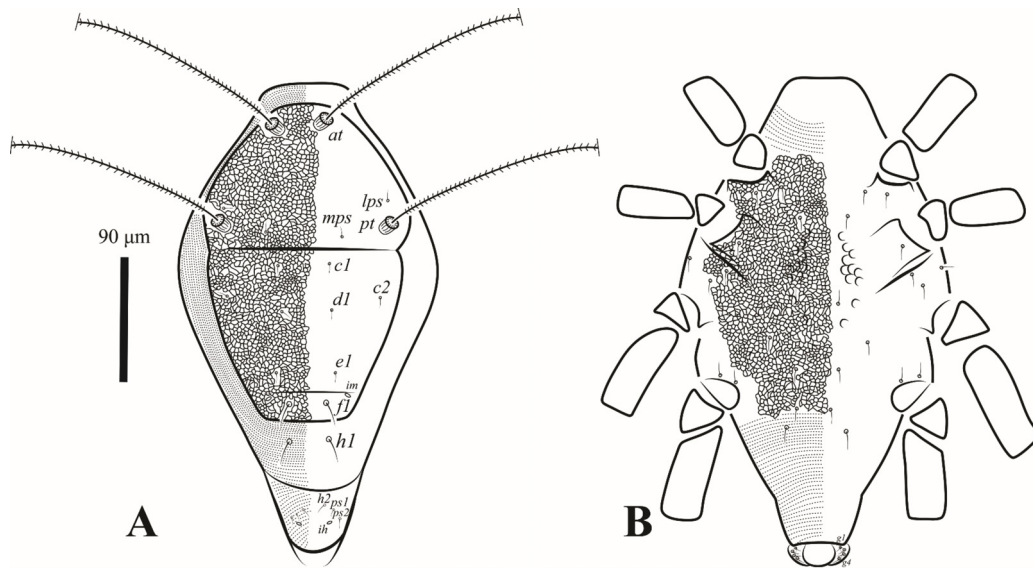


FIGURE 7. *Armascirus amazoniensis* Wurlitzer & Silva sp. nov. male. (A) Dorsal and (B) ventral view of the idiosoma.

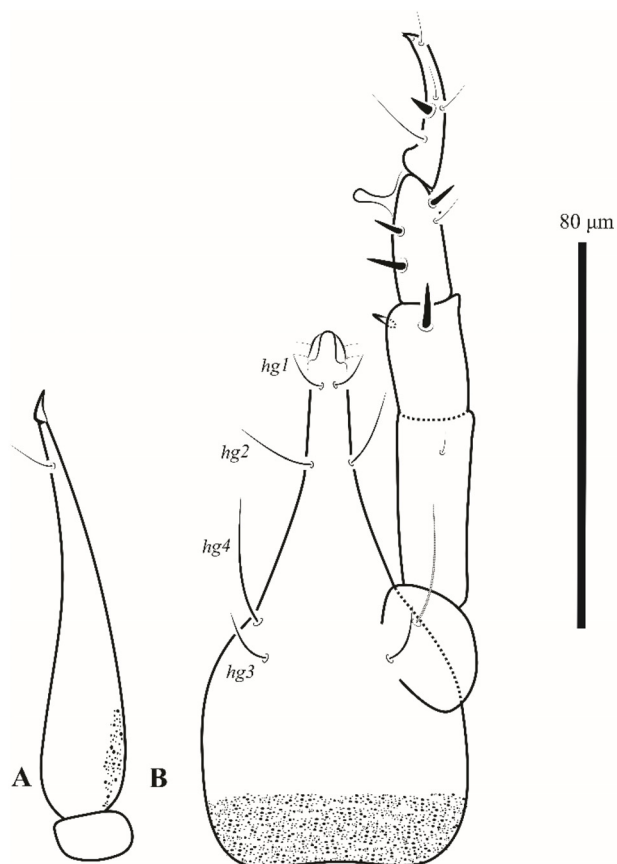


FIGURE 8. *Armascirus amazoniensis* Wurlitzer & Silva sp. nov. male. Gnathosoma – A. Subcapitulum and palp ventral view; B. Chelicera dorsal view.

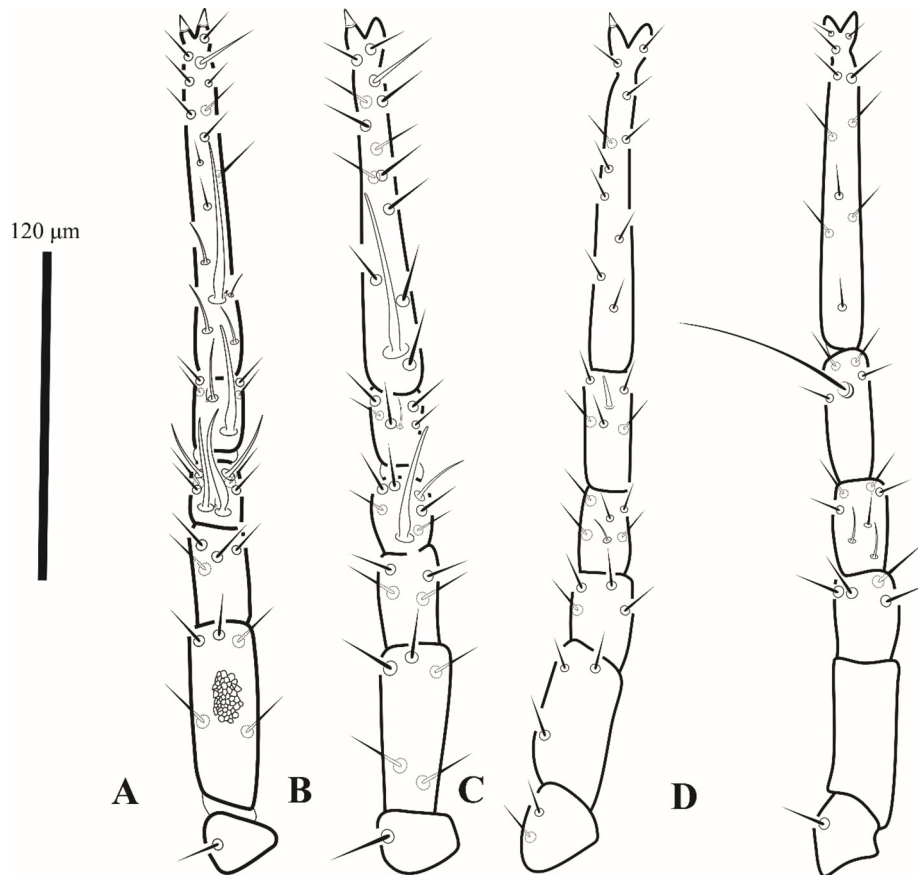


FIGURE 9. *Armascirus amazoniensis* Wurlitzer & Silva sp. nov. male. A. Leg I; B. Leg II; C. Leg III; D. Leg IV.

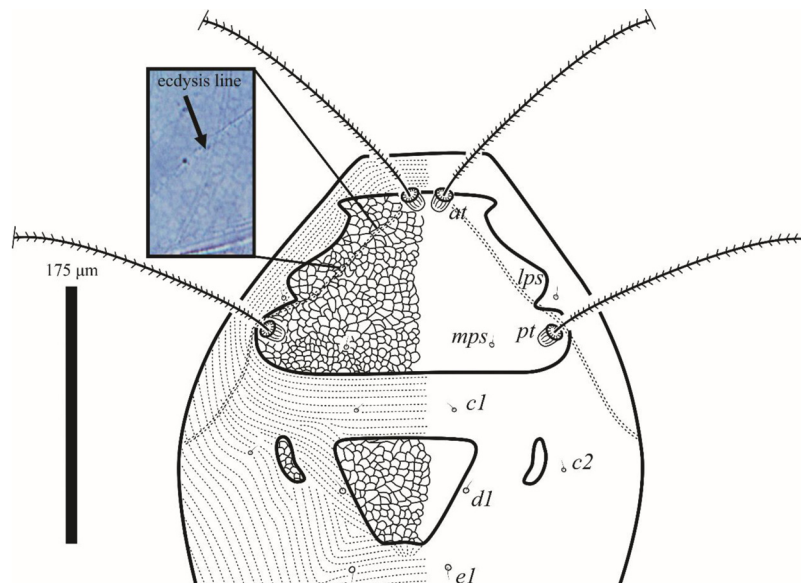


FIGURE 10. *Armascirus Armascirusamazoniensis* Wurlitzer & Silva sp. nov. female phase tritonymph. Dorsal view of the ecdysial line.

Etymology. The new species' name refers to Amazonic biome where the holotype was collected.

Type material. Holotype female and eight paratypes (three female, four males and one tritonymph) was collected by Aloyséia C. da Silva Noronha on *C. nucifera*, in a commercial coconut cultivation area in Santa Izabel do Pará (01°13'40.16"S 48°02'54.35"W) on 12/II/2019 and by Camila Tavares Ferreira in Moju (2°06'03.3"S 48°39'48.4"W) on 22/IV/19, Pará state, Brazil, 41 m above sea level. The holotype will be deposited in the Departamento de Acarologia e Entomologia da Escola Superior de Agricultura "Luiz de Queiroz", Universidade de São Paulo (ESALQ / USP), Piracicaba, São Paulo state, Brazil. All types will be deposited in the Museu de Ciências Naturais (ZAUMCN) of Universidade do Vale do Taquari-Univates, Lajeado, Rio Grande do Sul state, Brasil.

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