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ARTÍCULO DE REVISIÓN

Revision of the spider genus *Caloctenus* Keyserling, 1877 (Araneae, Ctenidae)

Revisión del género de arañas *Caloctenus* Keyserling, 1877 (Araneae, Ctenidae)

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Abstract

Caloctenus Keyserling is examined and redefined to include small ground-dwelling spiders with an enhanced ventral spination beneath anterior tibiae/metatarsi -a combination of five-eight/six-seven paired-spines, pars cephalica well marked by a deep furrow, strongly convex pars thoracica, and body thickly coated with iridescent scales.

As relimited, *Caloctenus* comprises four species from northern South America; a key to identify them is provided. Males of *C. aculeatus* Keyserling and *C. gracilitarsis* Simon are described for the first time, as are two new species, *C. carbonera* from Venezuela, and *C. oxapampa* from Peru.

All other species described under this genus belong somewhere else. *Caloctenus boetonensis* Strand, *C. celer* Simon, and *C. oreus* Simon are transferred to *Acantheis* Thorell, 1891. *Caloctenus fernandensis* Simon is transferred to *Africactenus* Hyatt, 1954. *Caloctenus penicilliger* Simon and *C. variegatus* Bertkau are transferred to *Enoploctenus* Simon,1897. *Caloctenus abyssinicus* Strand is placed *incertae sedis* within Ctenidae.

Keywords: Taxonomy, spiders, Calocteninae, northern South America, neotropics, new species.

Resumen

Se examina y redefine el género *Caloctenus* Keyserling. Este grupo incluye arañas pequeñas que se caracterizan por tener el cefalotórax con las regiones cefálica y torácica bien delimitadas por surcos profundos; el cuerpo enteramente cubierto por escamas iridicentes y una combinación de 5-8/6-7 pares de espinas ventrales en las tibias/metatarsos del primer y segundo par de patas.

Caloctenus incluye cuatro especies del norte de Sudamérica, se proporciona una clave para identificarlas. Los ejemplares machos de *C. aculeatus* Keys. y *C. gracilitarsis* Simon se describen por primera vez. Se presenta dos nuevas especies: *C. carbonera*, de Venezuela y *C. oxapampa*, del Perú.

Otras especies previamente descritas bajo este género pertenecen a otros grupos. *Caloctenus boetonensis* Strand, *C. celer* Simon, y *C. oreus* Simon se transfieren al género *Acantheis* Thorell, 1891. *Caloctenus fernandensis* Simon se transfiere a *Africactenus* Hyatt, 1954. *Caloctenus penicilliger* Simon y *C. variegatus* Bertkau se transfieren a *Enoploctenus* Simon, 1897. *Caloctenus abyssinicus* Strand se considera *incertae sedis* en Ctenidae.

Palabras claves: Taxonomía, arañas, Calocteninae, norte de Sudamérica, neotrópico, nuevas especies.

Introduction

The family Ctenidae was created by Keyserling (1877) to include *Ctenus* Walckenaer, 1805 and three genera he was proposing for the first time: *Oligoctenus*, *Acanthoctenus*, and *Caloctenus*.

At one time (Pickard-Cambridge, 1897a-b; Simon, 1897a; Roewer, 1954; Bonnet, 1955), *Caloctenus* comprised as many as 16 species. Benoit (1974) justifiably removed five African species and placed them in *Africactenus* Hyatt, 1954. As currently listed, *Caloctenus* comprises eleven species (Table 1), of which six, including the type species, have been described from the Neotropics.

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Table 1. List of *Caloctenus* species modified from Platnick, 2004. J= juvenile, M= male, F= female. * Type species.

Species	Types	Locality	Museum
AFRICA			
abyssinicus Strand, 1917	J	Ethiopia	? lost
fernandensis Simon, 1910	F	Bioko	? lost
AMERICA			
aculeatus Keyserling, 1877*	F	Colombia	BMNH
distinctus Caporiacco, 1947	J	Guyana	LS
gracilitarsis Simon, 1897	M F	Venezuela	MNHN
luteovittatus Simon, 1897	J	S. Vincent	MNHN
penicilliger Simon, 1897	M	S. Vincent	MNHN
variegatus Bertkau, 1880	F	Brazil	? lost
ASIA			
boetonensis Strand, 1913	F	Sulawesi	SM
celer Simon, 1897	M F	Java	MNHN
oreus Simon, 1901	F	Malaysia	? lost

Since early in the history of ctenids (Keyserling, 1877; Simon, 1897a; Simon, 1909; Mello-Leitão, 1936), *Caloctenus* was placed in its own group and easily separated from other genera by its labium wider than long and about one third the length of the endites, a vaulted cephalothorax, seven pairs of spines beneath tibiae I-II, and anterior spinnerets not longer than the posterior ones.

Although none of these characters were unique to *Caloctenus*, at least the labium shape appeared to hold together a natural group; initially as the section Calocteneae (Simon, 1897a) and later recognized as the subfamily Calocteninae by various authors.

The monophyly of caloctenines was first tested (Silva Dávila, 1994) to examine the relationships among species of *Caloctenus*. Based on genitalic similarities, this hypothesis supported a sister-group relationship between *C. aculeatus* and *C. gracilitarsis*, and in turn, this clade sister to *C. oxapampa* plus *C. carbonera*. More recently (Silva Dávila, 2003), caloctenines were compared to a more comprehensive sample of the various ctenid groups. Both analyses (Silva Dávila, 1994, 2003) showed that caloctenines, as delimited in the literature, were polyphyletic; however, both sets of data strongly supported one distinctive clade, which was recognized as Calocteninae *sensu stricto*.

Caloctenines comprise five genera from South America, Sri Lanka, the Seychelles Islands, and Madagascar. Although this group is strongly supported by seven synapomorphies, all but one (long and thick anal setae) are subject to some degree of homoplasy. The phylogenetic relationships within this group are being re-examined with the description of several new species from Sri Lanka and Madagascar.

Both hypotheses (Silva Dávila, 1994, 2003) show a sister group relationship between *Caloctenus* and *Gephyroctenus* Mello-Leitão, 1936. The latter is a more speciose taxon restricted to the Amazonian lowland forests; a taxonomical revision of *Gephyroctenus* is also in progress (Brescovit, pers. comm.).

Interestingly, a new genus from Madagascar appears to be the sister group to the South American caloctenines. Luckly, exhaustive field work in recent years is providing a more complete set of data to re-examine the phylogenetic relationships among caloctenines and help to clarify their distribution patterns; which are so far, characterized by narrow endemisms at generic and species level.

Material and methods

Specimens were examined following standard procedures for spiders. All measurements are in millimeters. Species descriptions are based upon a single individual, locality noted in parentheses. Spines on legs III-IV appear to be highly variable, so only spination patterns for pedipalps and legs I-II are here described. When right male pedipalps are indicated, the images have been rotated as to appear left.

Tracheae were examined in one adult female of *Caloctenus gracilitarsis*. The dorsal cuticle of the abdomen was partly removed and the abdomen transferred to saturated KOH, boiled for 5-10 minutes to digest the soft tissue, rinsed in distilled water, stained in ethanol-chlorazol black solution, and finally transferred to 75 percent ethanol for examination with a stereomicroscope (Griswold, 1991).

A compound microscope with drawing tube/photographic camera was used to examine and draw further details of the male and female genitalia. Digital images were made with a Leica stereoscope adapted to a digital camera and put together with automontage software by Syncroscopy Ltd.

Abbreviations

AC,aciniform gland spigots; AER, anterior ocular row at their greatest width; AME, anterior median eyes; ALE, anterior lateral eyes; ALS, anterior lateral spinnerets; AN, annuli of subtegulum; BH, basal hematodocha; C, conductor; CD, copulatory duct; CO, copulatory opening; CY, cylindrical gland spigots; CyL, cymbial lobe; Eb, embolic base; Ep, ventral process of embolus base; FD, fertilization duct; LL, lateral lobes of epigynum; MA, tegular median apophysis; MAP, major ampullate gland spigots; mAP, minor ampullate gland spigots; mp, epigynal mating plug; MS, median sector of epigynum; N, nubbin; OQA, ocular quadrangle, width of anterior median eye row; OQL, ocular quadrangle length at their greatest distance from AME to PME in frontal view; OQP, ocular quadrangle, width of posterior median eye row; P, petiole; PI, piriform gland spigots; PME, posterior median eye; PLE, posterior lateral eye; PER, posterior ocular row at their greatest width; PLS, posterior lateral spinnerets; PMS, posterior median spinnerets; RTA, retrolateral tibial apophysis; S, spermatheca; ST, subtegulum; T, tegulum; Ta, tartipore; TP, tegular process; TS, tracheal spiracle; VL, tibial ventral lobe.

Museum Collections

AMNH - American Museum of Natural History, New York (N. Platnick); BMNH - Natural History Museum, London (J. Beccaloni, P. Hillyard); CAS - California Academy of Sciences, San Francisco (C. Griswold); MCZ - Museum of Comparative Zoology, Harvard University, Cambridge (G. Giribet, H. W. Levi, L. Liebensperger); MNHN - Museum National d'Histoire Naturelle, Paris (C. Rollard, J. Hertault); MUSM - Museo de Historia Natural, Lima (G. Lamas, D. Silva); MZS - Museo Zoologico de «La Specola», Florence (L. Bartolozzi); SM - Senckenberg Museum, Frankfurt am Main (M. Grasshoff); UCV – Universidad Central de Venezuela (courtesy of A. Brescovit).

Taxonomy

Caloctenus Keyserling

Caloctenus Keyserling 1877: 682, 696 (type species, by original designation, *Caloctenus aculeatus* Keys., 1877:697, holotype female in BMNH, examined).- Roewer, 1954: 667.- Bonnet, 1955: 936.- Platnick, 2004.

Diagnosis.- Males and females differ from other ctenids in the ventral spination on tibiae/metatarsi I-II, five to eight /six to seven pairs of long spines; broad carapace with deep transversal median and longitudinal lateral furrows (figs. 1A-C; 4A); dark-colored body coated with iridescent scales (figs. 2A-B, 3B-C, 4A); male palpal tibiae strongly sclerotized at apex and often with large ventral lobe (figs. 14 b-C, 16A, 19B-C, 22B-C), median apophysis with an apical beak (figs. 14A, 17B,

20B, 22D); and epigynal folds fused to various degrees (figs. 15A, 18A, 21A, 24A).

Description.- Small to medium-sized spiders, total length 3,10-7,17. Sexual dimorphism slight (figs. 1B-C). Live specimens show shades of green and brown (figs. 13A-B), in preserved specimens the carapace is brown, with a pale orange median band and dark brown radial streaks (figs. 1B-C, 2A-B); black pigment around eyes except ALE's; chelicerae light orange-brown, anterior surface with dark longitudinal reticulations, boss pale orange; labium light orange-brown at base, pale amber at tip; sternum pale yellow; legs and pedipalps pale orange with irregular dark brown reticulations (figs. 2A-B).

Carapace (figs. 1A-C, 2A-B, 3A) with pars cephalica well marked by deep furrows, pars thoracica strongly convex, thoracic fovea longitudinal and deep. Carapace length 0,81 to 1,32 times width. Ocular area dark and broad, eight eyes in three rows, 2-4-2 (figs. 1A-C; 3A), second row recurved; ALE oval, lenses greatly reduced (fig. 1A; 3A); OQP/OQA 1,28-1,70. Clypeus low, height 0,60 to 1,44 times AME diameter. Chelicerae stout, with conspicuous boss (fig. 1A); chilum absent; fang furrow with three promarginal and three to four retromarginal teeth (fig.4B). Labium 0,67-0,91 times wider than long (fig. 4C); endites converging slightly anteriorly (fig. 4C), length 1,60 to 2,73 times width; serrula subapical (fig. 4D). Sternum heart-shaped, length 1,15-2,51, width 1,18-2,69.

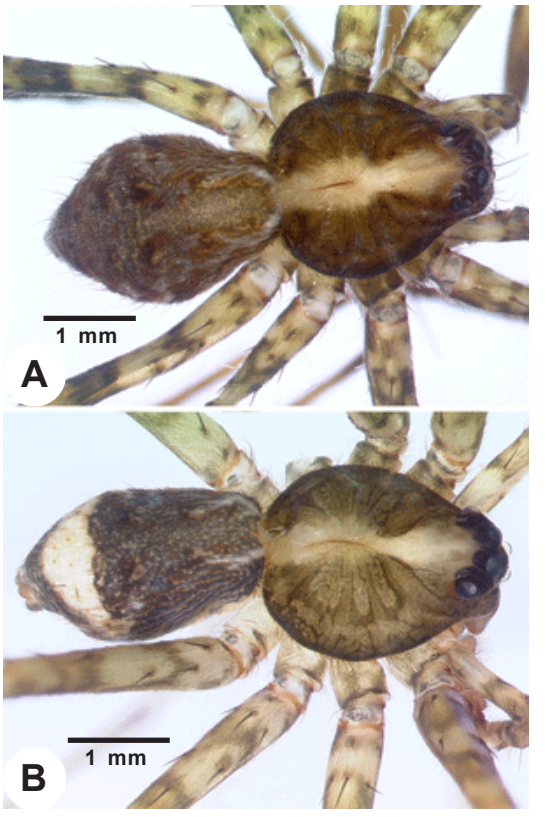

Figure 2. *Caloctenus oxapampa* n.sp., habitus, dorsal view. **A.** Female (holotype). **B.** Male (paratype).

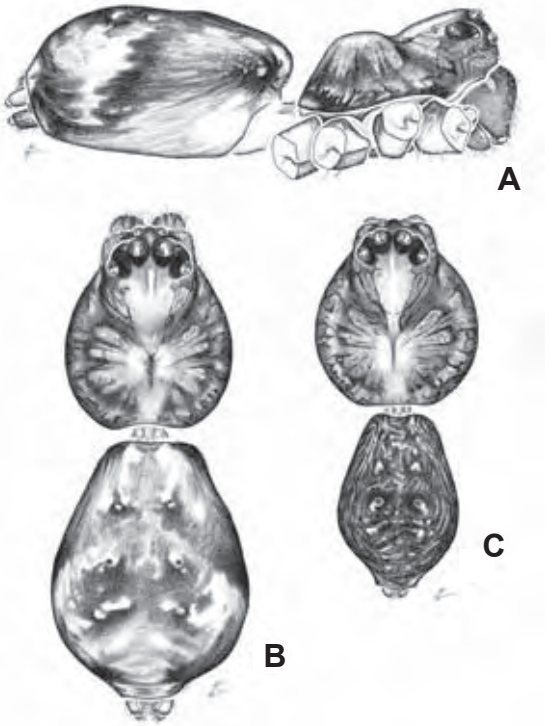

Figure 1. *Caloctenus oxapampa* n. sp, habitus. **A-B.** Female holotype; lateral and dorsal, respectively. **C.** Male paratype, dorsal. Illustrations by Jenny Speckels.

Legs slender, male femur I length/carapace width 1,02-1,78; leg formula 4123, occasionally 1423; trochanters deeply notched. Anterior femora with a row of prolateral spines on greatly enlarged sockets (fig. 3D); tibiae and metatarsi I-II have long, overlapping spines on enlarged sockets (fig. 5A). Femora of legs and

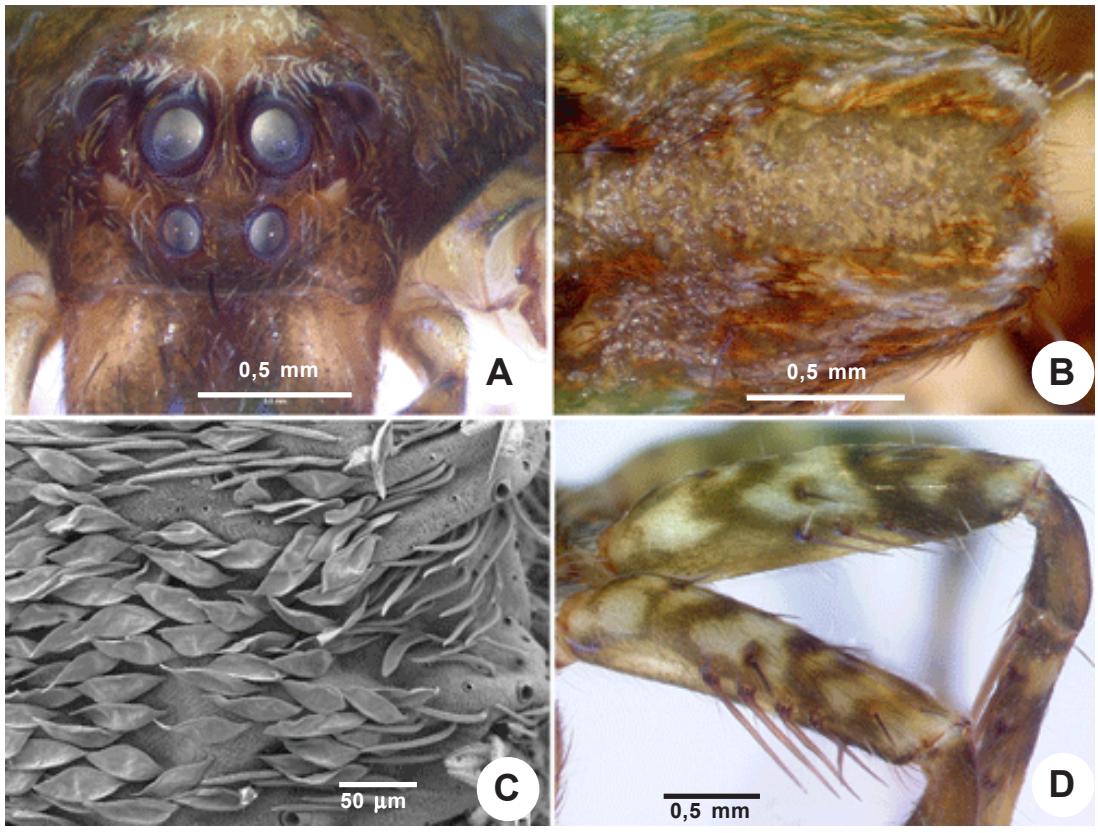

Figure 3. *Caloctenus oxapampa*, female (Oxapampa). **A.** Eyes, frontal view. **B-C**. Abdomen, dorsal view showing iridescent scales. **D.** Femora I-II showing prolateral spines.

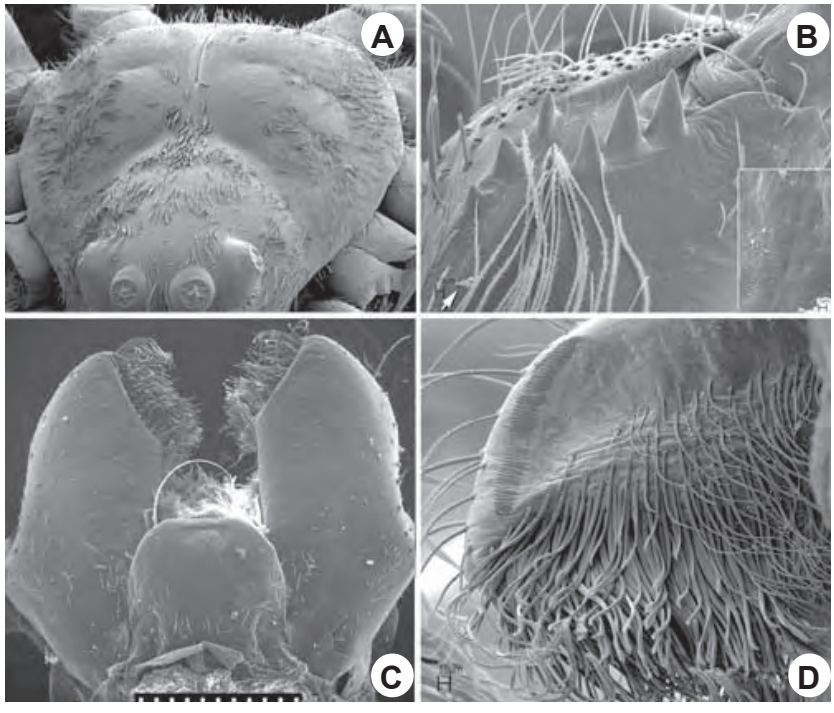

Figure 4. *Caloctenus oxapampa*, female (Oxapampa). **A**. Carapace, dorsal view. **B.** Cheliceral furrow, inset and white arrow to cheliceral glands. **C.** Labium and endites, ventral view. **D.** Close up of endite showing serrula, dorsal view.

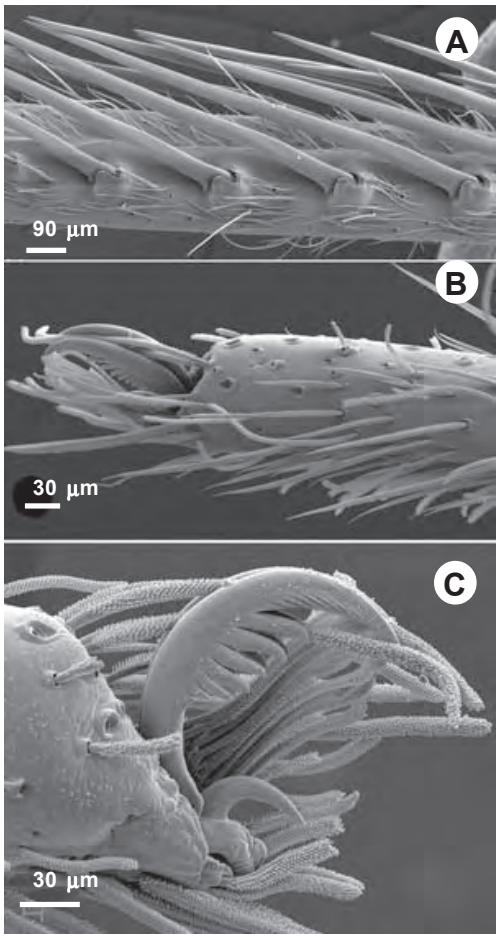

Figure 5. *Caloctenus oxapampa* n. sp., female. **A.** Close up of spines on metatarsus I. **B.** Claw tufts and scopula, I left tarsus. **C.** Close up of tarsus showing inferior claw.

pedipalps with dorsal and lateral spines, ventral spinules may be present; palpal patella with dorsal and lateral spines, patellae I-IV frequently with one dorsal spine; tibiae I-II with 5-8 ventral-paired spines, rarely with one to two pairs of lateral spines; metatarsi I-II with 6-7 paired-ventral spines, rarely with one to two pairs of lateral spines; tibiae III-IV with variable number of dorsal, lateral, and ventral spines. Tarsal scopula sparse (fig. 5B). Two or three tarsal claws (fig. 5C), with ridged surface; superior tarsal claws pectinate with 6 to 9 teeth, inferior tarsal claw smooth (fig. 5C). Claw tuft hairs sparse (figs. 5B-C). Tarsal organ capsulate and seemingly sexually dimorphic (fig. 6A-D). Tarsi with two to three irregular rows of trichobothria; trichobothrial hood with two to four transverse ridges (fig.6B).

Abdomen widest posteriorly (figs. 1B-C), coated with iridescent scales, sparse white plumose hairs, club-shaped red hairs, and macrosetae (figs. 2A-B, 3B-C). Epiandrium lacking spigots (fig. 7A) Tracheal system (fig. 7B); consisting of a pair of slender tubes nearly as long as abdomen, and a lateral shorter branch arising from each tube, tracheal spiracle closer to colulus (fig. 7B, 8B); colulus a short,

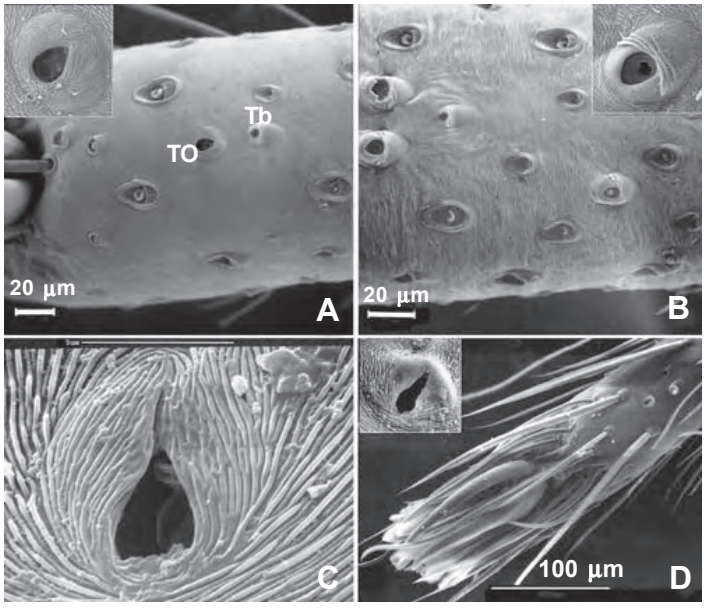

Figure 6. Left tarsi I. A-B. *Caloctenus gracilitarsis* female (Colonia Tovar). **A.** Inset of TO. **B.** Inset of Tb. **C.** Tarsal organ, *C. aculeatus* female (Páramo de Montserrate). **D.** *C. carbonera* male (El Valle); inset of TO, juvenile male (Ecuador). TO= tarsal organ, Tb= trichobotrium.

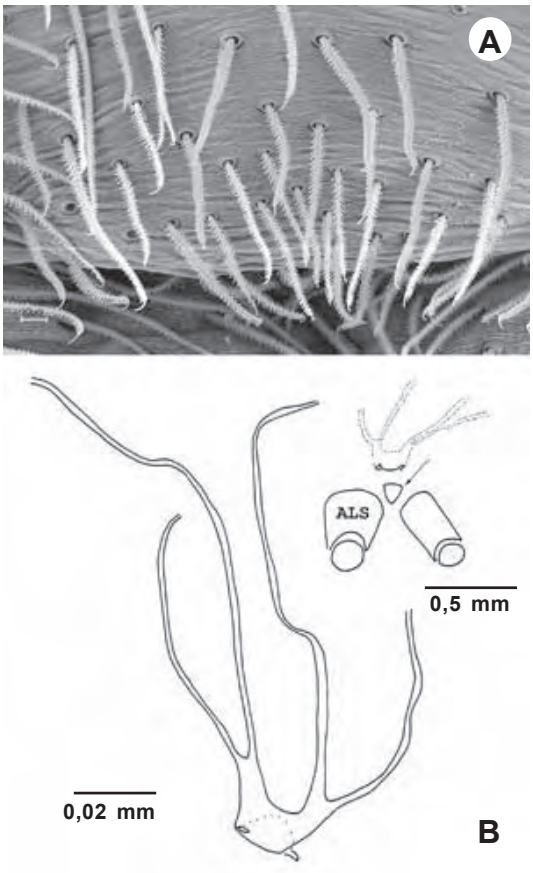

Figure 7. Abdomen. **A.** *Caloctenus oxapampa* (Oxapampa), epiandrium. **B.** *C. gracilitarsis* (Colonia Tovar), female tracheal system. ALS= anterior lateral spinneret. Arrow to colulus.

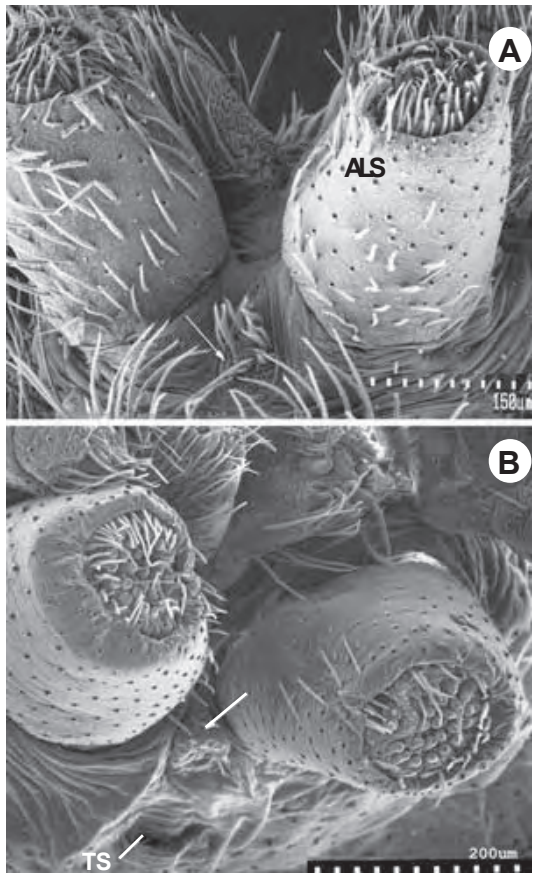

Figure 8. Spinnerets. *Caloctenus gracilitarsis* (Colonia Tovar). **A.** Male. **B.** Female. ALS= anterior lateral spinneret, TS= tracheal spiracle. Arrow to colulus.

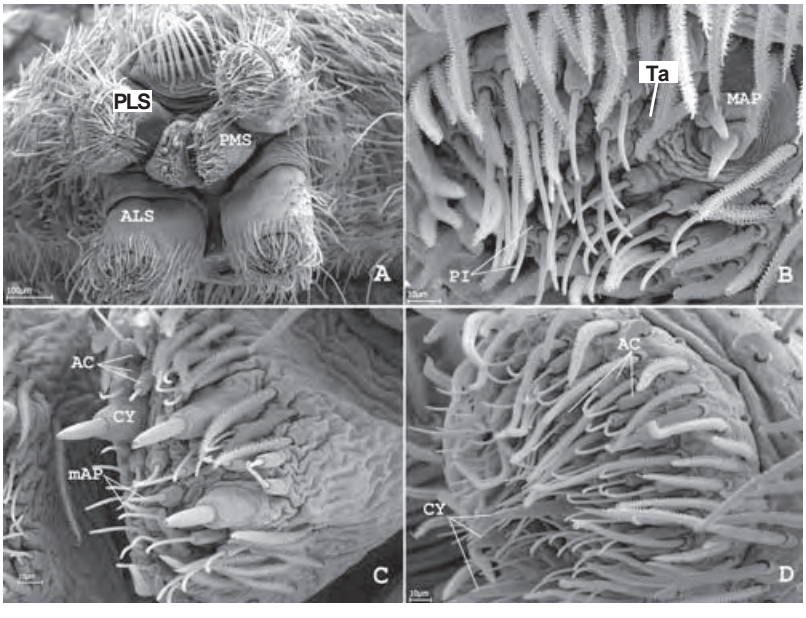

Figure 9.
Female spinnerets, *Caloctenus oxapampa* (Oxapampa).
A. Overview. **B.** Close up of ALS. **C.** PMS. **D.** PLS. AC= aciniform gland spigots, ALS= anterior lateral spinneret, CY= cylindrical gland spigots, mAP= minor ampullate gland spigots, MAP= major ampullate gland spigots, PI= piriform gland spigots, PLS= posterior lateral spinneret, PMS= posterior median spinneret, Ta= tartipore.

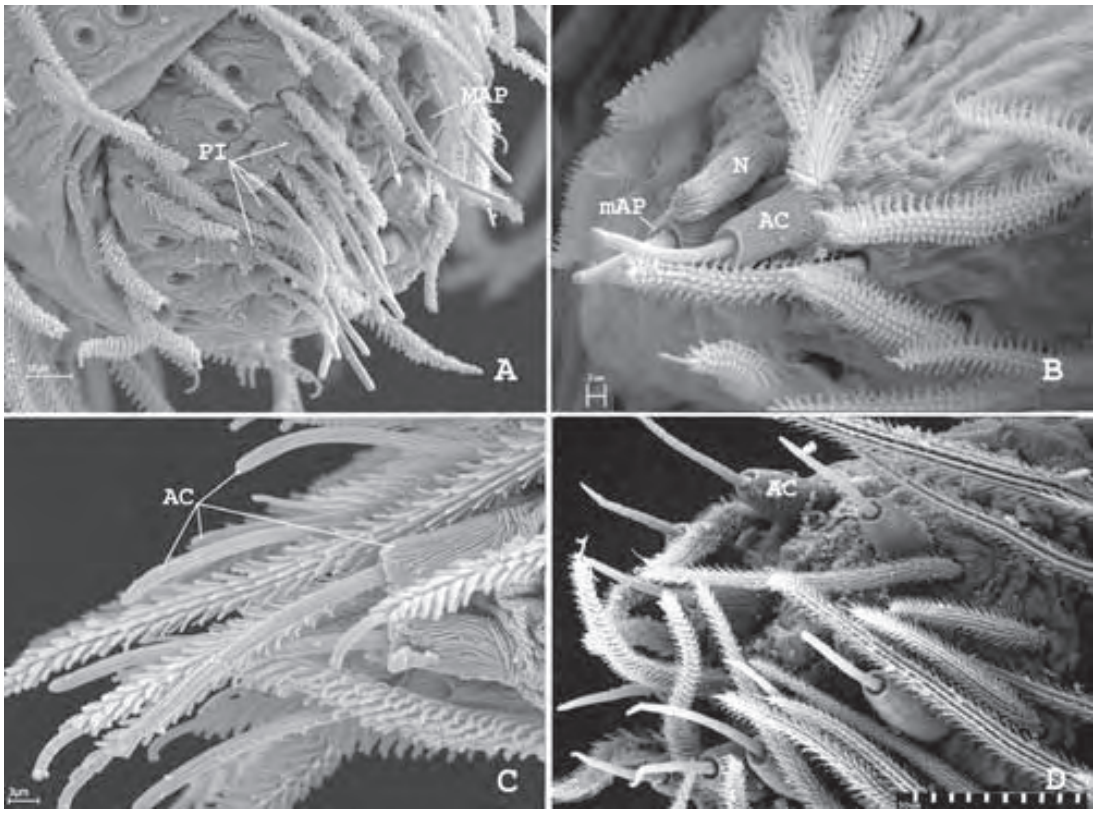

Figure 10. Male spinnerets, **A-C**. *Caloctenus oxapampa* (Oxapampa). **D.** *C. gracilitarsis* (Colonia Tovar). **A**. Anterior lateral spinneret. **B.** Posterior median spinneret. **C.** Posterior lateral spinneret. **D.** Posterior lateral spinneret. AC= aciniform gland spigots, MAP= major ampullate gland spigots, mAP= minor ampullate gland spigots, N= nubbin of mAP=, PI= piriform gland spigots. Arrow to tartipore.

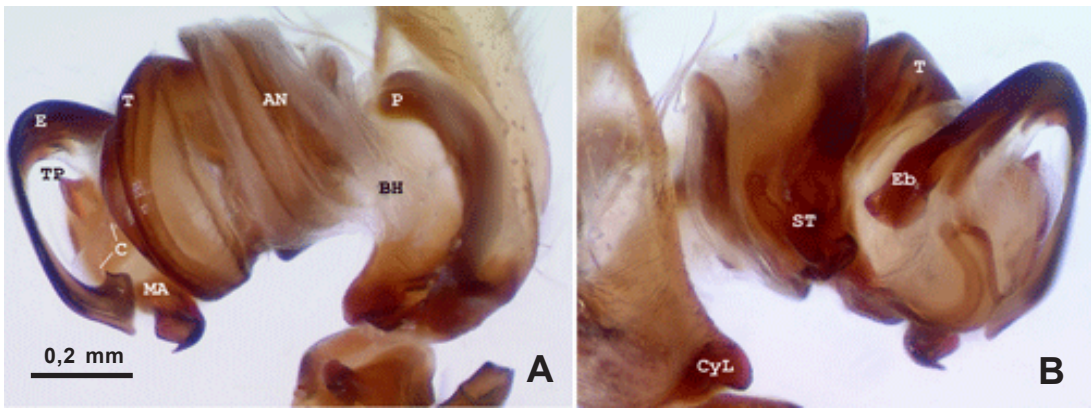

Figure 11. Expanded left male palp, *Caloctenus carbonera* (El Valle). **A.** Retrolateral view. **B.** Prolateral view. An= anelli, BH= basal hematodocha, C= conductor, CyL= cymbial prolateral lobe, E= embolus, Eb= embolic base, MA= median apophysis, P= petiole, ST= subtegulum, T= tegulum, TP= tegular process.

hairy lobe (figs. 7B, 8A-B); anal tubercle with long, thick ventral setae (fig. 9A).

Six spinnerets (fig. 9A). Female ALS (fig. 9B) with 2 major ampullate gland spigots, a tartipore, and more than 20 piriform gland spigots; PMS (fig. 9C) with two minor ampullate gland spigots, three-four cylindrical gland spigots, and more than 20 aciniform gland spigots; PLS (fig. 9D) with three-four cylindrical gland spigots and more than 20 aciniform gland spigots. Male ALS (fig. 10A) with single major ampullate gland spigot, nubbin, tartipore, and more than 20 piriform gland spigots; PMS (fig. 10B) with single minor ampullate gland spigot, nubbin, and reduced field of aciniform gland spigots; PLS (figs. 10C-D) with reduced field of aciniform gland spigots.

Male palpal tibia with large retroapical apophysis and ventral lobe (figs. 14 B-C, 16A, 19B-C, 22B-C). Cymbium projecting prolaterally into a small basal lobe (fig. 11B), variously produced retrolaterally (figs. 14A-B, 17A, 19B, 20A, 22A), petiole nearly as large as alveolus (fig. 11A); subtegulum cup-shaped, with 4-5 annuli (figs. 11A-B), prolaterally with a basal process (fig. 11B); tegulum often variously produced at embolus and median apophysis base (figs. 14B, 17A-B, 19B); ST-T locking mechanism conspicuous when partly or totally expanded (figs. 11B, 22D); embolus arising on prolateral side of tegulum, coniform (fig. 17A) or spiral-like (fig. 20A), embolic base projecting prolaterally into a basal process (figs. 11B, 22D); median apophysis with an apical beak, often thin and translucent (figs. 17B, 22D); small, hyaline conductor, arising from mesoapex of tegulum (fig. 17A, 20B, 23A); sperm duct simple, encircles tegulum (figs. 11A, 14B, 19A, 22A-B).

Epigynum either divided into median sector and lateral lobes (fig. 15A) or median sector partly (fig. 18A) or entirely fused to lateral lobes (figs. 21A, 24A); lateral lobes lacking teeth; vulva with copulatory ducts somewhat elongated (figs. 15B, 18B), slightly convoluted (fig. 21B), or very short (figs. 24B, 25B). Copulatory duct openings either antero-mesal (figs. 15A, 18A), antero-lateral (fig. 21A), or posterior (fig. 24A, 25A); spermathecal head defined by few large pores (figs. 18B, 25B); fertilization ducts posterior (figs. 15B, 18B, 25B), or antero-mesal (fig. 21B).

Composition.- Four species, two of them are new.

Misplaced species.- An examination of the type specimens of *Caloctenus celer* Simon and *Caloctenus penicilliger* Simon shows they belong somewhere else. *Caloctenus penicilliger* belongs in *Enoploctenus* Simon, while *C. celer* is a member of *Acantheis* Thorell. The type specimens of *Caloctenus distinctus* Caporiacco and *C. luteovittatus* Simon, are both immatures of *Enoploctenus*. The type specimen of *Caloctenus variegatus* Bertkau is lost and, according to Brescovit (in litt.), is a penultimate stage of a female *Enoploctenus cyclothorax* Bertkau. I have not been able to locate the type specimen of *Caloctenus fernandensis* Simon, an adult female; however, Simon's remarks (1910: 362) indicate that this species belongs in *Africactenus* Hyatt; no other African ctenid genus has an epigynum projecting anteriorly in two lobes and six pairs of ventral spines beneath tibiae I-II.

The type specimen of *Caloctenus abyssinicus* Strand is lost. The original description (Strand 1917: 41) is based on an immature female and does not allow a positive identification. Also, a cheliceral furrow with a combination of two prolateral and four retromarginal teeth is unusual for the family. *Caloctenus abyssinicus* is placed *incertae sedis*, within Ctenidae.

Natural history. Based on collection records of *C. gracilitarsis* and *C. aculeatus*, Simon (1897a:120) remarks that *Caloctenus* inhabited the highest mountains and cloud forests of South America. Labels of recent collections indicate these spiders are found at elevations over 1800 m, running about on the ground surface of cloud forests or adjacent habitats (roadsides).

Figure 12. Habitat of *Caloctenus oxapampa* (Oxapampa, Peru). **A.** Type locality in 2003. **B.** Steep slope with small patches of native vegetation. **C-D.** Close up of microhabitat. Photos J. Bötgger.

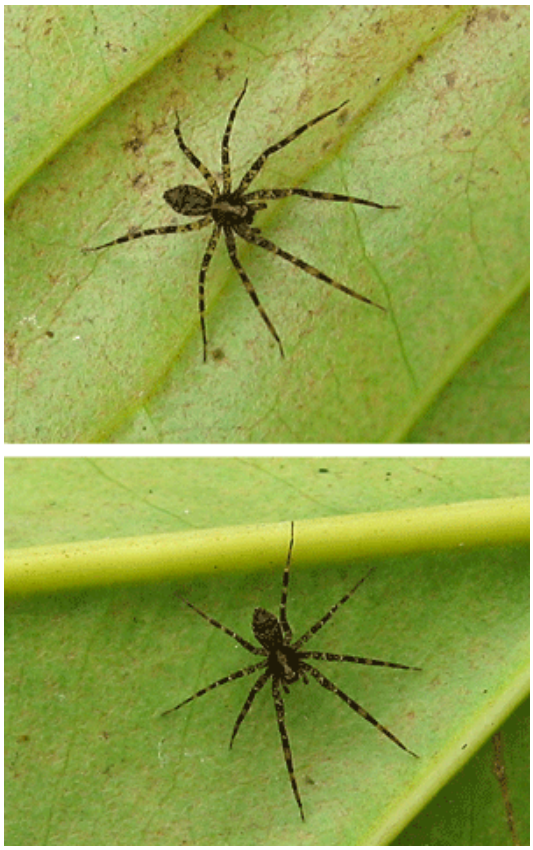

Figure 13. Habitus of living female. *Caloctenus oxapampa* (Oxapampa, Peru). Photos J. Bötgger.

Peck and Peck (collection labels), by using flight interception traps along altitudinal transects in Venezuela, found males of *C. carbonera* in rain forests at 1200m as well as in cloud forests from 2250 to 2400m. Brignoli (1972:81) records one female of *C. gracilitarsis* from a cave in Miranda, near Caracas (Venezuela); this record suggests a preference for dimly lit and humid environments.

Peruvian specimens were first collected at Oxapampa on the ground of a steep slope with secondary vegetation at about 1900m; at present, the type locality has been replaced by eucalyptus trees and a water reservoir (fig. 12A). The type specimens were running at daytime in a lycosid-like fashion. Most recently, after a more exhaustive search only a few were found in the litter of a steep slope (fig. 12B-D). They were found together with other ctenids (*Ctenus* s.l., *Enoploctenus* sp.) and various other spiders.

These cryptic spiders (fig. 13) are very fast runners. Also,it was observed that once annoyed, one female raised its first pair of legs from time to time.

Distribution. Known from Colombia, Ecuador, Peru, and Venezuela (Map 1). The record from Ecuador (Tungurahua: Rio Pastaza Canon [*ca*. 01° 15' S, 78° 30' W], 1700 m, 4.xi.1987. W. Clarke-Macintyre, AMNH), corresponds to a juvenile male.

Key to the species of *Caloctenus*

1a. Males.....2

1b. Females.....5

2a. Cymbium with large retrolateral projection (fig. 19B); palpal tibia shorter than cymbium (fig. 19A-C); retromargin of cheliceral furrow with 3 stout teeth
carbonera

2b. Cymbium otherwise; palpal tibia as long or longer (figs. 14A, 22A) than cymbium (fig. 14A); retromargin of cheliceral furrow with 4 teeth (fig. 3B).....3

3a. Embolus base projecting into a large ventral process (figs. 22B-D, 23A-D), palpal tibia with retrobasal thorn (fig. 22A-B); all tarsi with 3 claws
oxapampa

3b. Embolus base otherwise; palpal tibia lacking modified spines, all tarsi with 2 claws.....4

4a. RTA large, strongly curved, apex pointed outwards (fig. 14B); tegulum with narrow digitiform projection at median apophysis base (fig. 14B-C)
aculeatus

4b. RTA short, apex truncated, bifid (fig. 16A-B); tegulum not so projected (fig. 17A-B)
gracilitarsis

5a. Median sector and lateral lobes fused medially (fig.18A), tibia I with 5 pairs of ventral spines
gracilitarsis

5b. Median sector and lateral lobes otherwise, tibia I with more than 5 pairs of ventral spines.....6

Map 1. Distribution range for *Caloctenus* species.

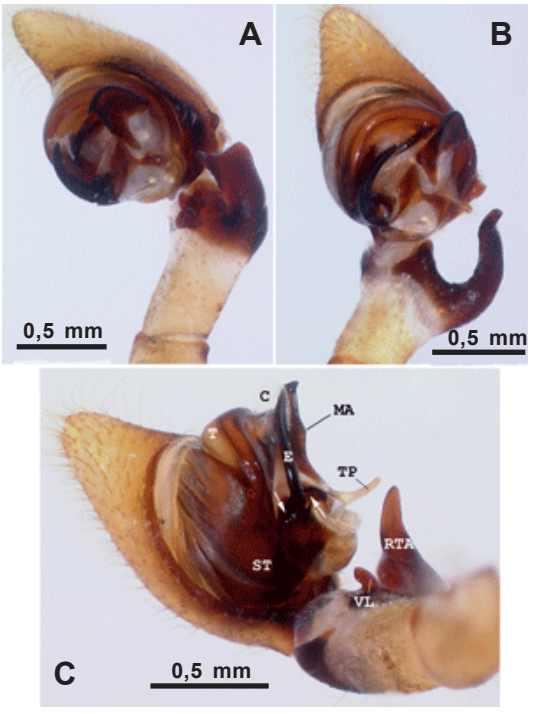

Figure 14. *Caloctenus aculeatus* Keys (Paramo Montserrate). Right male palp. **A.** Retrolateral view. **B.** Ventral view. **C.** Prolateral view. C= conductor, E= embolus, MA= median apophysis, RTA= retrolateral tibial apophysis, T= tegulum, TP= tegular process, VL= ventral tibial lobe. Arrows to ventral and probasal embolic processes.

6a. Epigynal median sector arrowhead-shaped, inner margin of lateral lobes heavily sclerotized (fig. 15A) *aculeatus*

6b. Epigynal median sector and lateral lobes otherwise; epigynum lightly sclerotized.....7

7a. Median sector and lateral lobes fused anteriorly (fig. 21A); fertilization ducts anterior (fig. 21B); all tarsi with two claws.....*carbonera*

7b. Median sector and lateral lobes fused posteriorly (fig. 24A); fertilization ducts posterior (figs. 24B, 25B); all tarsi with three claws.....*oxapampa*

Caloctenus aculeatus Keyserling

Figures 14-15; Map 1

Caloctenus aculeatus Keys., 1877: 697 (female holotype from Bogota, Colombia, in BMNH, no. 2921, examined).- Roewer, 1954: 667.- Bonnet, 1955: 936.- Platnick, 2004.

Diagnosis. Males differ from other species in the narrow, digitiform tegular process at base of median apophysis (fig. 14A-C). Females can be recognized by the arrowhead-shaped epigynal median sector (MS) and lateral lobes (LL) with heavily sclerotized inner margins (fig. 14A).

Male (Paramo Montserrate). Total length 5.47. Carapace dark brown, markings typical. Abdomen dorsum and sides light gray-brown, 2 posterodorsal chevrons, venter yellow-gray. Carapace 2.59 long, 2.15 wide; ocular area 0.57 long, 0.99 wide; diameter of eyes AM:AL:PM:PL,

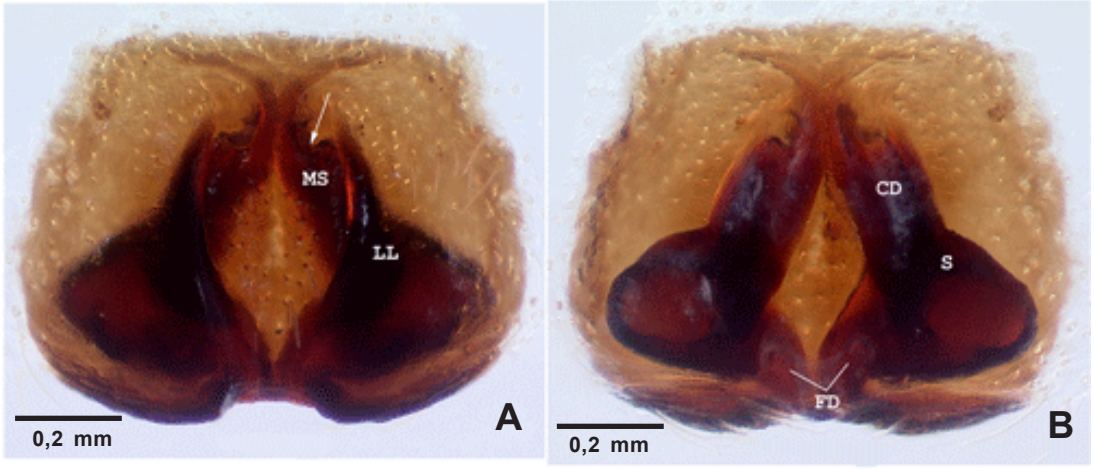

Figure 15. *Caloctenus aculeatus* Keys. (Paramo Montserrate) Female genitalia. **A.** Epigynum, ventral. **B.** Vulva, dorsal. CD= copulatory duct, FD= fertilization ducts, LL= epigynal lateral lobe, MS= epigynal median sector, S= spermatheca. Arrow to copulatory opening.

0.16:0.07:0.26:0.24; AME-AME 0.4 times AME diameter; PME separation 0.44 times PME diameter; clypeal height 0.20. Sternum 2.48 long, 2.52 wide; labium 0.33 long, 0.42 wide; endites 0.82 long, 0.40 wide. Femur I length 1.39 times carapace width. Spination: palpus -femur d0-1-1, p0-0-1, r0-0-1, patella d0-0-1, p1-0-0, tibia p1-1-0, r0-1-0; leg I -femur d0-1-1-0, p0-2-1-1, r0-1-0-1, v0-0-1-0, patella d0-0-1, tibia v2-2-2-2-2-2-1, metatarsus v2-2-2-2-2-1; leg II -femur d0-1-1-1, p1-1-1-0, r1-1-1-0, patella d0-0-1, tibia v2-2-2-2-2-2-2, metatarsus v2-2-2-2-2; leg III -femur d0-1-1-1, p1-1-1-0,r1-1-1-0, patella d0-0-1, tibia d0-0-1-0, p0-1-1-0, r0-1-1-0, v2-2-0-2, metatarsus d0-0-1-0, p1-1-0-1, r1-1-0-1, v0-1-1-1; leg IV -femur d1-1-0-1, p1-1-0-1, r1-0-1-1, patella d0-0-1, tibia d0-0-1-0, p0-1-1-0, r0-1-1-0, v2-2-0-0, metatarsus d0-1-0-0, p1-1-0-1, r1-1-0-1, v1-1-1-2. Leg measurements:

	I	II	III	IV	Palp
Femur	2,99	2,81	2,59	3,32	1,20
Patella	1,06	1,02	0,91	0,95	0,62
Tibia	3,25	2,73	2,30	3,07	0,51
Metatarsus	3,23	2,74	2,63	3,87	—
Tarsus	1,06	0,91	0,91	1,17	1,28
Total	11,59	10,21	9,34	12,38	3,61

Palpal tibia (figs. 14A-C) stout, with large ventral lobe, length 0,17 times femur I; RTA (figs. 14A-C) large, broad, and curved, directed outwards. Cymbium retrolaterally projecting into a small subbasal lobe (figs. 14A-B); tegulum with a slender hyaline process at median apophysis base (figs. 14B-C); MA origin retro-mesal (fig. 14B); embolus coniform, arising from a large sclerotized process on prolateral side of tegulum (fig. 14C); conductor (figs. 14A-C) hyaline, origin mesal.

Female (holotype).- Total length 4,71. Markings as in male except paler. Carapace 2,15 long, 1,79 wide, 0,68 high; ocular area 0,55 long, 0,91 wide, diameter of eyes AM:AL:PM:PL, 0,11:0,06:0,22:0,22; AME-AME nearly AME diameter; PME separation 0,68 times PME diameter; clypeal height 0,13;

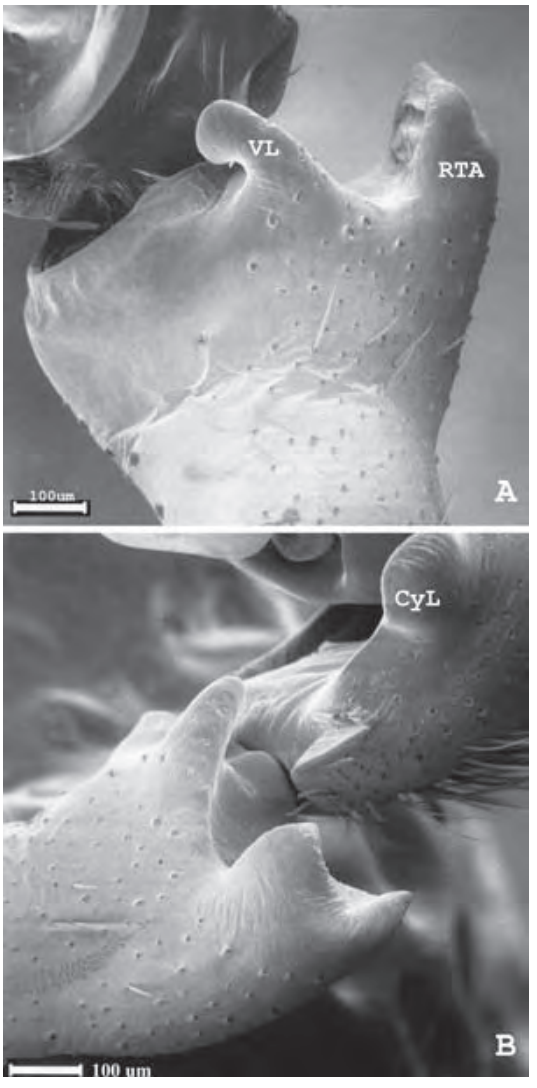

Figure 16. *Caloctenus gracilitarsis* (Colonia Tovar), left male pedipalp. **A-B.** Close up of tibia showing apophyses. CyL= retrolateral cymbial lobe, RTA= retrolateral tibial apophysis, VL= ventral tibial lobe.

sternum 1,02 long, 1,02 wide; endites 0,68 long, 0,34 wide. Femur I 1,08 times carapace width. Leg III missing. Spination: palpus -femur d0-0-2-1, p0-0-2-0, r0-0-1-0, patella d1-0-0-1, p1-0-0, tibia d1-0-0-1, p2-0-0-0, tarsus p2-1-0-0, r1-1-0-0; leg I -femur d0-1-1-1, p0-2-1-1, r1-1-1-1, patella d-0-0-1, tibia p0-0-1-1-0, r0-0-1-1-0, v2-2-2-2-2-2, metatarsus p0-0-1-1-0, r0-0-1-1-0, v2-2-2-2-2-2; leg II -femur d0-1-0-1-0-1, p2-1-1-1-1-1, r1-0-0-0-1-0, tibia v2-2-2-2-2-2-2, metatarsus v2-2-2-2-2-2-2. Leg measurements:

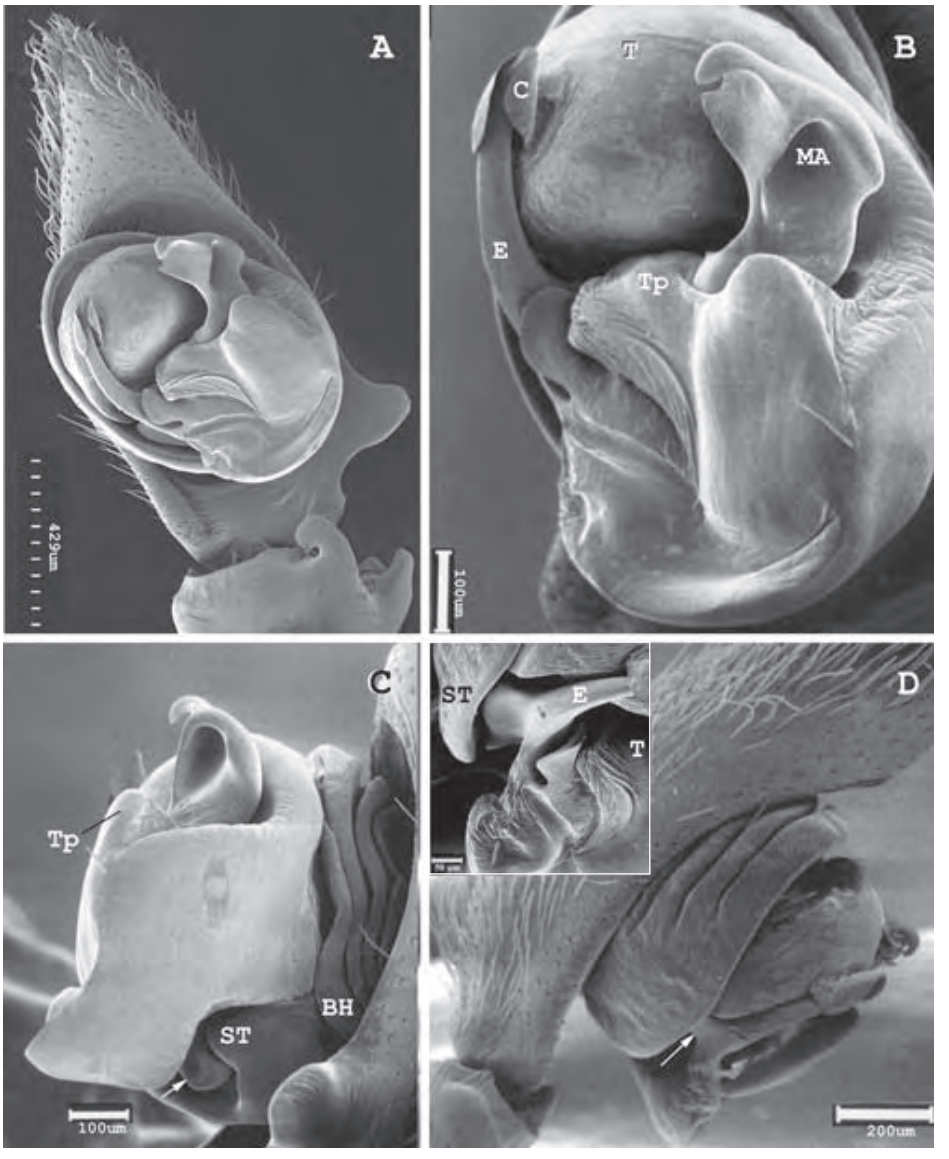

Figure 17. *Caloctenus gracilitarsis* (Colonia Tovar), left male pedipalp. **A.** Ventral. **B.** Close up of bulb. **C.** Close up showing tegulum in retrolateral view. **D.** Prolateral. Inset shows embolus base. BH= basal hematodocha, C= conductor, E= embolus, MA= median apophysis, ST= subtegulum, T= tegulum, TP= tegular process. Arrow to lobate process of embolus base.

	I	II	III	IV	Palp
Femur	1,93	1,86	—	2,23	0,77
Patella	0,73	0,77	—	0,66	0,40
Tibia	1,86	1,61	—	1,86	0,49
Metatarsus	1,72	1,57	—	2,48	—
Tarsus	0,53	0,51	—	0,75	1,31
Total	6,77	6,32	—	7,98	2,97

Epigynum (fig. 15A) with median sector shaped like an arrowhead; inner margins of lateral lobes heavily sclerotized, lateral lobes convex, slightly protruding anteriorly. Vulva (fig. 15B) with elongate copulatory ducts; spermathecae nearly rounded, head not defined; fertilization ducts posterior, directed upwards.

Material examined. Colombia: Santa Fe de Bogota [*ca*. 04° 35' N, 74° 04' W; 2619 m], 7.i.1890 (BMNH, no. 2921), female holotype; Paramo Montserrate (*Weinmannia* forest) [*ca*. 04° 37' N, 74° 02' W], xii.1978

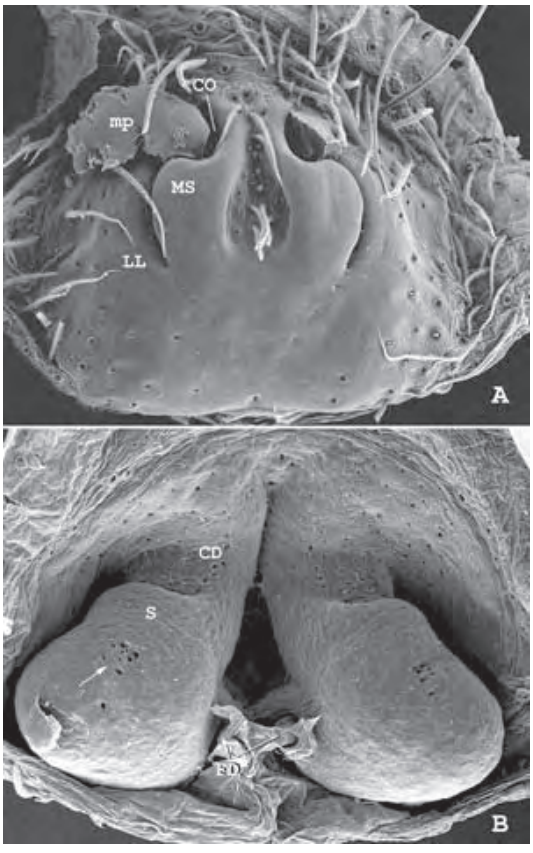

Figure 18. *Caloctenus gracilitarsis* (Colonia Tovar), female genitalia. **A.** Epigynum, ventral. **B.** Vulva, dorsal. Arrow to head of spermatheca. CD= copulatory duct, CO= copulatory opening, FD= fertilization ducts, LL= epigynal lateral lobe, mp= mating plug, MS= epigynal median sector, S= spermatheca.

(A. Bernal, MCZ 33292), 1 female; Paramo Montserrate, iv.1979 (A. Bernal, MCZ 30753), 1 male.

Distribution.- Known from Bogota, Colombia (Map 1).

Caloctenus gracilitarsis Simon

Figures 16-18; Map 1

Caloctenus gracilitarsis Simon, 1897a: 496 (2 syntype females from Colonia Tovar (MNHN 11025) plus 2 syntype females and a juvenile male (11118) from Caracas, Venezuela.- Roewer, 1954: 667.- Bonnet, 1955: 936.- Caporiacco, 1955: 397 (male palp and epigynum illustrated, fig. 55).- Brignoli, 1972: 381 (female genitalia illustrated, figs. 39-40).- Platnick, 2004.

Diagnosis. Males are distinguished by the short, slightly bifid RTA (fig. 16A-B); tegulum projecting upwards at median apophysis base (fig. 17A-C). Females have a median sector with shallow hairy fossa and epigynal lobes fused at half epigynum length (fig. 18A).

Male (Colonia Tovar). Total length 5,79. Carapace light brown, markings typical. Abdomen pale brown, posteriorly with a yellowish transversal band. Carapace 2,80 long, 2,26 wide; ocular area 0,62 long, 0,97 wide; diameter of eyes AM:AL:PM:PL, 0,17:0,14:0,22:0,27; AME-AME 0,4 times AME diameter; PME separation 0,4 times PME diameter; clypeal height 0,24. Sternum 1,28 long, 1,32 wide; labium 0,34 long, 0,42 wide; endites 0,86 long, 0,39 wide. Femur I length 1,7 times carapace width. Spination: palpus - femur d0-1-1, p0-0-1, r0-0-1, patella p0-0-1, tibia p1-1-0, r0-1-0; leg I -femur d1-1-1-0, p1-0-2-0, r1-1-1-1, tibia d0-1-0-0-0, p0-0-1-1-0, r0-0-0-1-0, v0-2-2-2-2-2, metatarsus p0-0-0-0-1-1, r0-0-0-0-1-1, v2-2-2-2-2-2; leg II -femur d1-1-1-0, p1-1-0-1, r1-1-1-1, tibia d1-1-0-0-0, p0-0-1-1-0, r0-0-0-0-1, v0-2-2-2-2-2, metatarsus p0-0-0-0-1-1, r0-0-0-0-1-1, v2-2-2-2-2-2; leg III -femur d1-1-1-0, p1-1-1-0,r1-1-1-0, patella p0-1, tibia d1-1-0-0, p0-1-0-1, r0-1-0-1, v2-0-2-2, metatarsus d2-0-0-0, p0-0-1-1, r0-0-1-1, v1-2-2-2; leg IV -femur d1-1-0-1, p1-1-1-0, r1-1-1-1, patella d0-1, tibia d0-0-1-1, p0-1-0-0, r0-1-0-1, v2-0-2-2, metatarsus d2-0-0-0, p1-1-0-1, r1-0-1-1, v2-2-0-2. Leg measurements:

	I	II	III	IV	Palp
Femur	3,92	3,69	3,37	4,26	1,45
Patella	1,23	1,22	1,01	1,03	0,58
Tibia	4,17	3,66	3,33	4,02	0,71
Metatarsus	4,55	4,23	3,91	5,28	—
Tarsus	1,49	1,35	1,30	1,69	1,26
Total	15,36	14,15	12,92	16,28	4,00

Palpal tibia (fig. 16A-B) stout with apex heavily sclerotized and large ventral lobe,

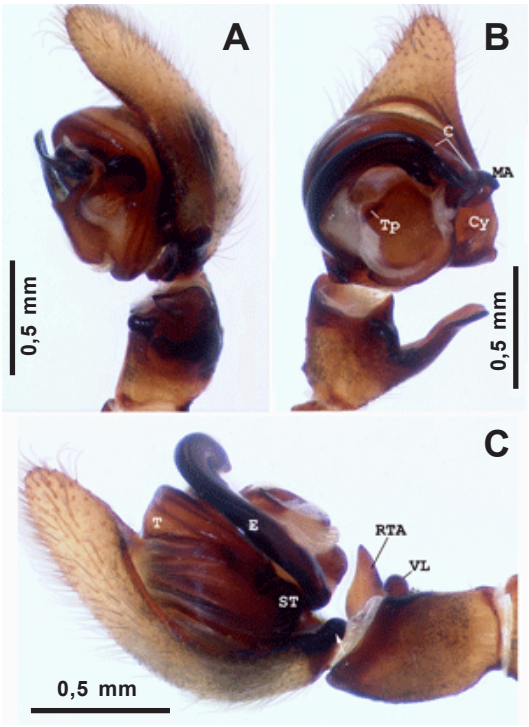

Figure 19. *Caloctenus carbonera* (Tabay-Mucuy), left male pedipalp. **A.** Retrolateral. **B.** Ventral. **C.** Prolateral. C= conductor, Cy= cymbium, E= embolus, MA= median apophysis, RTA= retrolateral tibial apophysis, ST= subtegulum, T= tegulum, TP= tegular process, VL= ventral tibial lobe. Arrow to cymbial prolateral lobe.

length 0,11 times femur I; RTA short, slightly bifid and convex (fig. 16A-B). Cymbium projecting retrolaterally into short, subbasal lobe (fig. 17A); tegulum (fig. 17A-B) with small process at embolic base, median apophysis deeply excavated (fig. 17B-C); embolus (fig. 17A-B) coniform-like, arising prolateral, embolic base (fig. 17B, D) projecting into ventral and dorsal processes; conductor (fig. 17A-B, D) hyaline, short, originating from narrow base at mesoapex of tegulum, embraces embolic tip.

Female (syntype from Colonia Tovar). Total length 6,16. Markings typical, abdomen yellowish gray with 2 anterior bands, posterior transversal band split into gray spots. Carapace 2,52 long, 2,12 wide. Ocular area 0,60 long, 0,99 wide; diameter of eyes AM:AL:PM:PL, 0,13:0,11:0,22:0,24; AME-AME nearly AME diameter; PME separation 2 times PME diameter; clypeal height 0,18. Endites 0,86 long, 0,51 wide; labium 0,36 long, 0,42 wide; sternum 1,21 long, 1,26 wide. Femur I 1,3 times carapace width. Spination: palpus - femur d0-0-1-1, p0-0-0-1, r0-0-0-1, patella d0-0-1, p1-0-0-0, tibia d1-0-0-1, p2-0-0-0, tarsus p2-1-0-0, r1-1-0-0; leg I -femur d0-1-1-1, p0-0-2-1, r1-1-1-1, patella d0-0-1, tibia r0-1-1-0-0, v2-2-2-2-2, metatarsus r0-0-1-0-0-0, v2-2-2-2-2-2; leg II -femur d0-1-1-1, p1-1-0-1, r1-1-1-1, patella d0-0-1, tibia p1-0-1-0, r1-0-1-0, v2-2-2-2-2, metatarsus p1-0-0-1-0-0, r1-0-0-1-0, v2-2-2-2-2-2. Leg measurements:

	I	II	II	IV	Palp
Femur	2,76	2,35	2,52	3,03	1,08
Patella	1,06	0,80	0,84	0,84	0,51
Tibia	2,74	2,52	2,30	2,88	0,66
Metatarsus	2,74	2,63	2,63	3,47	—
Tarsus	0,80	0,88	0,95	1,28	1,06
Total	10,10	9,18	9,24	11,50	3,31

Epigynum (fig. 18A) with median sector and lateral lobes fused near the middle; median sector, in most specimens, with shallow and hairy central fossa; lateral lobes convex and slightly sclerotized; broad copulatory openings. Vulva (fig. 18B) with spermathecae diverging posteriorly, head recognized by few large pores; fertilization ducts open postero-mesal.

Variation (5 females, 5 males). Total length 4,03- 6,46; carapace length 1,18-1,23 times width; PER 1,23-1,32 times AER; clypeal height 1,00-1,44 times AM diameter; femur I 1,22-1,34 carapace width; dorsum of abdomen slightly marked or with a continuous transverse posterior band; ventral spines on tibiae I-II vary from 5 to 6, spination pattern on legs III and IV quite variable. Epigynum may lack a well defined central fossa.

Material examined. Venezuela: The types cited above; Colonia Tovar [*ca*. 10° 25' N, 67 °16' W; 1886 m] (MNHN 11028), 2 males, 4 females; Corozal, nr. Caracas [*ca*.

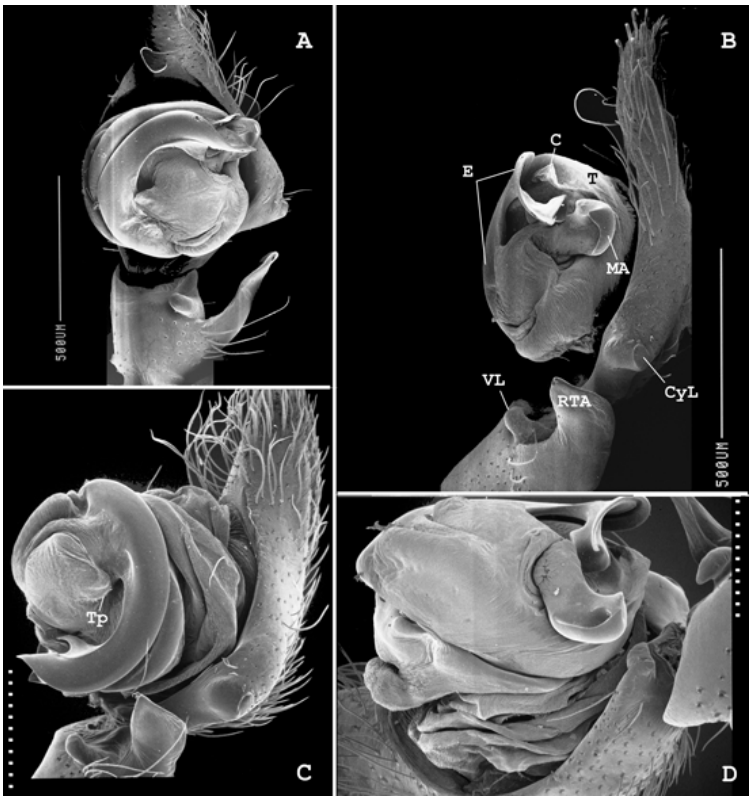

Figure 20.
Caloctenus carbonera (El Valle), left male pedipalp. **A.** Ventral. **B** Retrolateral. **C.** Expanded left palp, retrolateral. **D.** Ibid, prolateral. C= conductor, CyL= cymbial lobe, E= embolus, MA= median apophysis, RTA= retrolateral tibial apophysis, T= tegulum, TP= tegular process, VL= ventral tibial lobe.

10°18'N, 67°20'W; 971m] (MNHN 10976), 2 males; El Junquito [*ca*. 10° 28' N, 67° 04' W; 1825 m], viii.1948 (Marcuzzi, UCV no. xii-886), 1 male, 2 juveniles; El Junquito, 16.x.1949 (Marcuzzi, LS), 1 female, 2 juveniles;.

Distribution. Northeastern Venezuela (Map 1).

Caloctenus carbonera new species

Figures 19-21; Map 1

Type. Holotype female from La Carbonera [*ca*. 08° 38' N, 71° 21' W], NW of Merida on the road to La Azulita, Merida, Venezuela, 2200 m, in cloud forest (11.i.1985; J. Palmer), deposited in MCZ.

Etymology. The specific name is a noun in apposition from the type locality.

Diagnosis. Individuals of both sexes have 3 stout teeth on the retromargin of the fang furrow. Males are distinguished by the massive embolus and a nearly square sclerotized tegular section between the embolus and median apophysis base (figs. 19B, 20A). Females have a lightly sclerotized epigynum (fig. 21A), with median sector and lateral lobes fused anteriorly into a broad pocket.

Male description (Tabay-Mucuy). Total length 4,64. Carapace gray brown, markings typical. Abdomen light gray brown, darker anteriorly, an anterior yellowish gray band widens into a triangle at the middle. Carapace 2,45 long, 1,86 wide, 0,68 high; ocular area 0,42 long, 0,92 wide; diameter of eyes AM:AL:PM:PL, 0,16:0,07:0,22:0,24; AME-AME nearly AME diameter; PME separation 0,41 times PME diameter. Clypeal height 0,16; sternum 1,10 long, 1,10 wide; labium 0,27 long, 0,37 wide; endites 0,70 long, 0,37 wide. Femur I length 1,38 times carapace width. Spination: palpus -femur d0-1-1, p0-0-1, patella d0-0-1, p1-0-0, tibia p2-0-0; leg I -femur d1-0-1-1, p0-2-1-1, patella d0-0-1, tibia v2-2-2-2-2-2, metatarsus v2-2-2-2-2-2-2; leg II -femur d1-0-1-1, p1-0-1-0, r1-0-0-1, patella d0-0-1, tibia v2-2-2-2-2-2, metatarsus v2-2-2-2-2-2-2. Leg measurements:

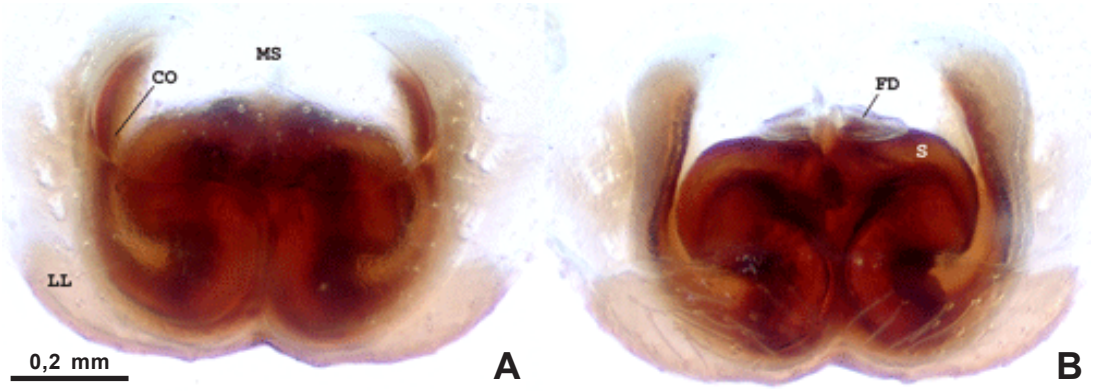

Figure 21. *Caloctenus carbonera* (holotype), female genitalia. **A.** Epigynum, ventral. **B.** Vulva, dorsal. Arrow to head of spermatheca. CO= copulatory opening, FD= fertilization duct, LL= epigynal lateral lobe, MS= epigynal median sector, S= spermatheca.

	I	II	II	IV	Palp
Femur	3,03	2,66	2,56	3,18	0,84
Patella	0,88	0,84	0,69	0,73	0,44
Tibia	3,54	3,07	2,37	2,96	0,62
Metatarsus	3,54	3,03	2,74	3,76	—
Tarsus	1,31	1,13	1,02	1,28	0,84
Total	12,30	10,73	9,38	11,91	2,74

Palpal tibia shorter than cymbium (figs. 19A-C), length 0,21 times femur I; RTA, almost as long as tibia length (figs. 19B-C, 20A), blunt-tipped (fig. 20B-C). Cymbium with large retrolateral projection (figs. 19B, 20A), small probasal projection (fig. 19C); tegulum with small process at embolus base (figs. 19A, 20A); median apophysis (figs. 19A-B, 20B, D) small, infolding margins meeting apically becoming an acute tip; embolus stout,apex bifid (fig. 20C), conductor does not embrace embolic tip (figs. 20A-B, D).

Female (holotype).- Total length 4,10. Carapace gray brown, markings typical; abdomen with stripes joining into a trapezoid pattern. Carapace 2,01 long, 1,62 wide, 0,66 high; ocular area 0,51 long, 0,85 wide, diameter of eyes AM:AL:PM:PL, 0,13:0,04:0,22:0,22; AM-AM nearly AM diameter; PME separation 0,41 times PME diameter; clypeal height 0,13. Sternum 0,93 long, 0,95 wide; endites 0,48 long, 0,29 wide. Femur I 1,10 times carapace width. Spination: palpus -femur d0-1-1, p0-0-0-1, patella d0-0-1, p1-0-0, tibia p2-0-0-0, r1-0-0-1, tarsus p2-1-0-0, r1-1-0-0; leg I -femur d0-1-1-0, p0-2-1-0, r1-0-0-0. v0-1-2-2, patella d-0-0-1, tibia v2-2-2-2-2-2, metatarsus v2-2-2-2-2-2-2-1; leg II -femur d0-1-1-1, p1-1-1-0, r1-0-1-0, patella d0-0-1, tibia v2-2-2-2-2-2, metatarsus v2-2-2-2-2-2-2. Leg measurements:

	I	II	III	IV	Palp
Femur	1,79	1,70	1,64	2,04	0,69
Patella	0,69	0,66	0,58	0,62	0,37
Tibia	1,86	1,64	1,35	1,83	0,42
Metatarsus	1,75	1,61	1,61	2,19	—-
Tarsus	0,47	0,47	0,58	0,73	0,58
Total	6,56	6,08	5,76	7,41	2,06

Epigynum (fig. 21A) lightly sclerotized, with epigynal median sector and lateral lobes fused anteriorly; median sector broad, lateral lobes pocket-like; copulatory ducts open anteriorly on sides of the pocket, posterior margins of LL strongly convex. Vulva (fig. 21B) with heavily sclerotized spermathecae, copulatory ducts long, convoluted; fertilization ducts moved to an anterior position.

Variation (5 males). Total length 4,10-4,67, carapace length 1,24-1,32 times width; PER 1,26-1,31 times AER; clypeal height 0,87-1,07 times AME diameter; cheliceral length 0,66-0,75; femur I 1,23-1,40 times carapace width; spination pattern on legs III-IV variable.

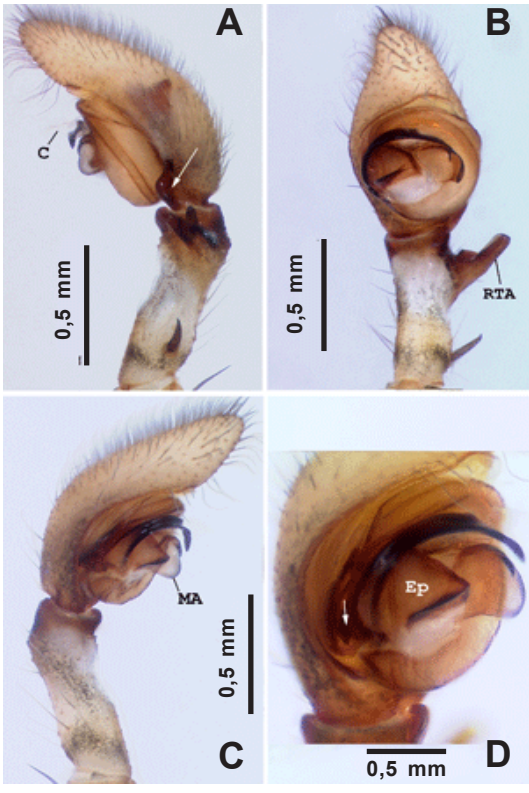

Figure 22. *Caloctenus oxapampa* (Oxapampa), left male pedipalp. **A.** Retrolateral. Arrow to cymbial lobe. **B.** Ventral. **C.** Prolateral. **D.** Close up showing embolic processes. Arrow to E-ST locking mechanism. C= conductor, Ep= ventral embolic process, MA= median apophysis, RTA= retrolateral tibial apophysis.

Additional Material Examined. Venezuela: Merida: Tabay-Mucuy, Send. Lag. Suero [*ca*. 08° 38' N, 71° 04' W], cloud forest, 2250 m, 17.vi-2.viii.1989, flight interception trap (S. & J. Peck 89-219, AMNH), 2 males; El Valle, 15 km NE Merida [*ca*. 08° 35' N, 71° 08' W], cloud forest, 2400 m, 24-vi.-2.viii.1989, flight interception trap (S. & J. Peck 89-230, AMNH), 3 males; Tachira: Pregonero [*ca*. 08° 01' N, 71° 45' W], Camp Siberia, La Idea, rainforest, 1200 m, 10-31.vii.1989, flight interception trap (S. & J. Peck 89-258, AMNH), 1 male.

Distribution.- Northwestern Venezuela (Map 1).

Caloctenus oxapampa new species

Figures 1, 2, 22-25; Map 1

Type. Holotype female and paratype male from Oxapampa, Cerro El Mirador [10° 34' 56" S, 75° 23' 72" W], Pasco, Peru, 1859 m (19.vi.1986, D. Silva D.), deposited in MUSM.

Etymology.- The specific name is a noun in apposition from the type locality.

Diagnosis. Males of *C. oxapampa* differ from all other species in the large sclerotized process at the embolus base (figs. 22B-D, 23A-D); thin and broad median apophysis (fig. 22D, 23A-B); and palpal tibia with retrobasal thorn (fig. 22A-B). Females have epigynal median sector and lateral lobes fused posteriorly (fig. 24A-B, 25A); epigynal median sector broad, translucent; and lateral lobes narrow, projecting upwards (fig. 25A).

Male description (paratype). Total length 3,95. Carapace dark orange brown, markings typical. Abdomen gray darker at both sides, dorsum speckled with whitish spots (fig. 1C) or with large guanine marking posterior (fig. 2B). Carapace 2,01 long, 1,70 wide; ocular area 0,40 long, 0,81 wide; diameter of eyes AM:AL:PM:PL, 0,15: 0,07: 0,20: 0,22; AME-AME 0,85 times AME diameter; PME separation 0,32 times PME diameter; clypeal height 0,09. Sternum 0,99 long, 1,06 wide; labium 0,26 long, 0,33 wide; endites 0,64 long, 0,31 wide. Femur I length 1,78 times carapace width. Spination: palpus -femur d0-1-1, p0-0-1, r0-0-1, patella d0-0-1, p1-0-0, tibia p2-0-0, r1-0-1, tarsus p2-1-0, r1-1-0; leg I -femur d0-1-1-0, p0-2-1-0, r1-0-0-0, v0-1-2-2, patella d0-0-1, tibia v2-2-2-2-2-2-2, metatarsus v2-2-2-2-2-2-2; leg II -femur d0-1-1-1, p1-1-1-0, r1-0-1-0, patella d0-0-1, tibia v2-2-2-2-2-2-2, metatarsus v2-2-2-2-2-2-2. Leg measurements:

	I	II	III	IV	Palp
Femur	3,03	2,66	2,56	3,18	0,84
Patella	0,88	0,84	0,69	0,73	0,44
Tibia	3,54	3,07	2,37	2,96	0,62
Metatarsus	3,54	3,03	2,74	3,76	—
Tarsus	1,31	1,13	1,02	1,28	0,84
Total	12,30	10,73	9,38	11,91	2,74

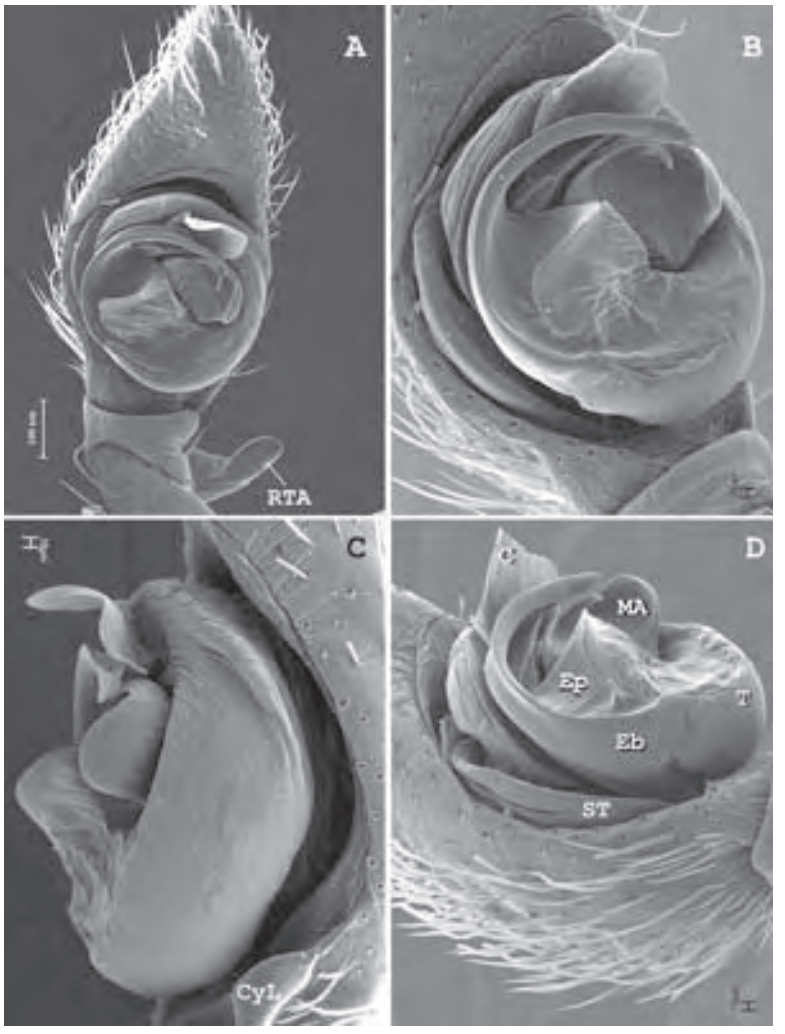

Figure 23.
Caloctenus oxapampa (Oxapampa), left male pedipalp.
A. Ventral. **B.**Close up showing Ep. **C.** Retrolateral. **D.** Prolateral. C= conductor, CyL= cymbial lobe, Eb= embolus base, Ep= ventral embolic process, MA= median apophysis, RTA= retrolateral tibial apophysis, ST= subtegulum, T= tegulum.

Palpal tibia (fig. 22A-C) relatively long, length nearly three times width, 0,23 times femur I, concave at base of RTA; RTA (figs. 22A-B, 23A) slightly subapical, base swollen and concave with rounded apex. Cymbium tapering gradually to base, weak probasal and retrobasal projections (figs. 22A, C; 23C); embolus tapering to apex, broad base projecting ventrally into a large sclerotized process (figs. 22B-D, 23A-D), and prolaterally into a small lobe that fits in a subtegular notch (figs. 22D; 23B, D); median apophysis with broad wings and large beak (fig.22D, 23A-C); conductor with short flange, originating from wide base at apex of tegulum and partly embracing embolic tip (fig. 23A-D).

Female (holotype). Total length 5,17. Carapace brown, markings typical (figs. 1A-B). Carapace 1,75 long, 2,15 wide; ocular area 0,37 long, 0,88 wide, diameter of eyes AM:AL:PM:PL, 0,13: 0,07: 0,22: 0,22; AME-AME 0,85 times AME diameter; PME separation 0,32 times PME diameter; clypeal height 0,09. Sternum 1,02 long, 1,06 wide; endites 0,71 long, 0,26 wide. Femur I 1,02 times carapace width. Spination: palpus - femur d0-1-1, p0-0-1, patella d0-0-1, p1-0-0, tibia p2-0-0, r1-0-0, tarsus p2-1-0, r1-1-0; leg I - femur d0-1-1-0, p0-2-1-0, r1-0-0-0, v0-1-2-2, patella d0-0-1, tibia v2-2-2-2-2-2, metatarsus v2-2-2-2-2-2-2-1; leg II -femur d0-1-1-1, p1-1-1-0, r1-0-1-0, patella d0-0-1, tibia v2-2-2-2-2-2, metatarsus v2-2-2-2-2-2-2. Leg measurements:

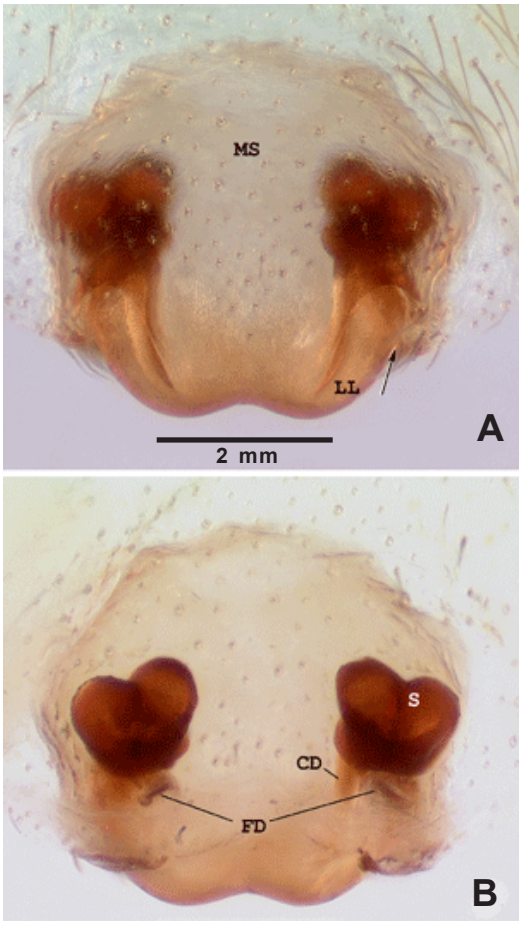

Figure 24. *Caloctenus oxapampa* (holotype), female genitalia. **A.** Epigynum, ventral. **B.** Vulva, dorsal. CD= copulatory duct, FD= fertilization ducts, LL= epigynal lateral lobe, MS= epigynal median sector, S= spermatheca. Arrow to copulatory opening.

	I	II	III	IV	Palp
Femur	2,19	2,15	2,04	2,48	0,73
Patella	0,80	0,77	0,62	0,69	0,40
Tibia	2,37	2,04	1,72	2,04	0,51
Metatarsus	2,19	2,04	2,04	2,74	—-
Tarsus	0,66	0,66	0,77	0,95	0,66
Total	8,21	7,66	7,19	8,90	2,30

Epigynum slightly sclerotized (fig. 24A), median sector and lateral lobes fused posteriorly (figs. 24A-B, 25A); copulatory openings postero-lateral. Vulva with small, bilobate spermathecae (fig. 24A, 25A), copulatory ducts entering spermathecae postero-mesally (fig. 25B); fertilization ducts posterior (fig. 24B, 25B).

Additional material examined. Peru: Pasco, Oxapampa, tanque de agua, rio San Alberto, 10° 34' 51" S, 75° 23' 47" W, 1909 m, 13-15.i.2004 (J. Böttger, J. Grados, D. Silva, MUSM), 2 females, 2 males, 6 juveniles; *Ibid* (J. Böttger, J. Grados, D. Silva, CAS), 2 females, 1 male, 2 juveniles; Oxapampa surroundings, aprox. 1800 m, 21.vi.1986 (D. Silva, AMNH), 1 juvenile male.

Distribution. Known only from type locality in central Peru (Map 1).

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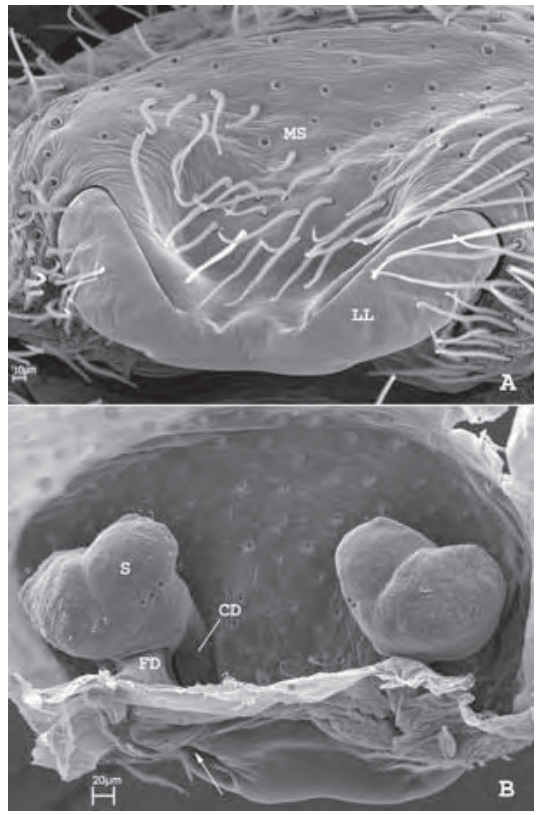

Figure 25. *Caloctenus oxapampa* (Oxapampa), female genitalia. **A.** Epigynum, posteroventral. **B.** Vulva, dorsal. CD= copulatory duct, FD= fertilization ducts, LL= epigynal lateral lobe, MS= epigynal median sector, S= spermatheca. Arrow to copulatory opening.

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