

## South American Disteniini (Disteniidae, Coleoptera): new species and new distribution records

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### ABSTRACT

Two new species of Disteniini are described: *Novantinoe apiculatra* from Colombia and *Paracometes viridis* from Peru (new country record for the genus). An updated key and a geographical distribution map for species of *Paracometes* Villiers, 1957, are provided. The two new species are illustrated with dorsal, ventral, lateral, and frontal views. Additionally, geographical distribution of six species of Disteniini are expanded with new department and country records.

### INTRODUCTION

Disteniidae is a family distributed worldwide, comprising more than 400 species (Tavakilian and Chevillotte, 2019, listed as subfamily Disteniinae). The family is subdivided into four tribes: Cyrtonopini, Disteniini, Dynamostini, and Heteropalpini (Švácha and Lawrence, 2014). The tribe Disteniini is the most diverse, comprising 384 species and 30 genera (Tavakilian and Chevillotte, 2019). Here we present new species of two genera of this tribe: *Novantinoe* Santos-Silva and Hovore, 2007, and *Paracometes* Villiers, 1958. The genus *Novantinoe* was reviewed by Santos-Silva and Hovore (2007), when it was composed by 34 species. The genus is currently composed of 40 species, distributed from central Mexico to southern South America. Recently, Botero and Almeida (2019) proposed a key for all the species. The genus *Paracometes* Villiers, 1958, comprises eight species distributed in Central America and northern South America. The South American species were reviewed by Santos-Silva and

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Martins (2010) and the most recently described species is *P. solangeae*, by Botero and Almeida (2019). In addition to the new species of *Novantinoe* and *Paracometes*, we present new geographical records for six species of Disteniini.

## MATERIAL AND METHODS

The specimens are deposited in the following institutions, which are subsequently referred to by their acronyms (with the curator/collection manager in parentheses): AMNH, American Museum of Natural History, New York City (Lee Herman, Corey Smith); IAVH, Instituto de Investigaciones de Recursos Biológicos Alexander von Humboldt, Villa de Leyva, Colombia (Jhon Cesar Neita); MPUJ, Museo Javeriano de Historia Natural Lorenzo Uribe, S.J, Pontificia Universidad Javeriana, Bogotá, Colombia (Igor Dimitri Forero).

Photographs of *Novantinoe* species were taken in the Museu de Zoologia da University of São Paulo (MZSP) with a Canon EOS Rebel T3i DSLR camera, Canon MP-E 65 mm f/2.8 1- 5× macro lens, controlled by Zerene Stacker AutoMontage software. Photographs of *Paracometes viridis* were taken and edited in the AMNH by Stephen Thurston with a Microptics-USA/Visionary Digital photomicrographic system developed by Roy Larimer, using a Canon 70D DSLR camera. Multiple layers stacked using Helicon Focus. References and geographical distribution were consulted in catalogs by Monné (2019) and Tavakilian and Chevillotte (2019).

## RESULTS

### *Novantinoe apiculatra*, sp. nov.

#### Figure 1

**DESCRIPTION:** Female (fig. 1A–D). **Color.** Head, scape, pedicel, prothorax, meso- and metaventrite and abdomen dark with metallic reflections; distal half of clypeus and labrum yellowish; flagellomeres brown, lighter toward apex of antennae; elytra reddish brown; legs yellowish with apex of femora and base of tibiae black. **Head.** Vertex with some sparse and shallow punctures, with sparse, erect long setae, mainly on margin of eyes; frons and antennal tubercles smooth and glabrous, except for some short, dense setae on sides of frons; basal half of clypeus rugose, with long yellowish setae; genae short, apex rounded; distance between upper eye lobes subequal to width of one upper lobe. Gula smooth with long and sparse yellowish setae. Antennae reaching elytral apex at base of antennomere XI; antennomeres finely punctate, with short, dense yellowish setae, interspersed with long setae, mainly at apex; scape slightly curved basally, progressively dilated to apex, coarsely punctate, not granulate at inner face, and with short decumbent yellowish setae interspersed with sparse long and erect setae; antennal formula (ratio) based on length of antennomere III: scape = 1.07; pedicel = 0.09; IV = 0.84; V = 0.84; VI = 0.80; VII = 0.78; VIII = 0.78; IX = 0.67; X = 0.60; XI = 0.78. **Thorax.** Prothorax transverse, 1.2× as wide as long (including lateral tubercles); with anterior and posterior constriction; lateral tubercles wide at base, acute at apex, pointing upward. Pronotum with five gibbosities, two longitudinally sub-

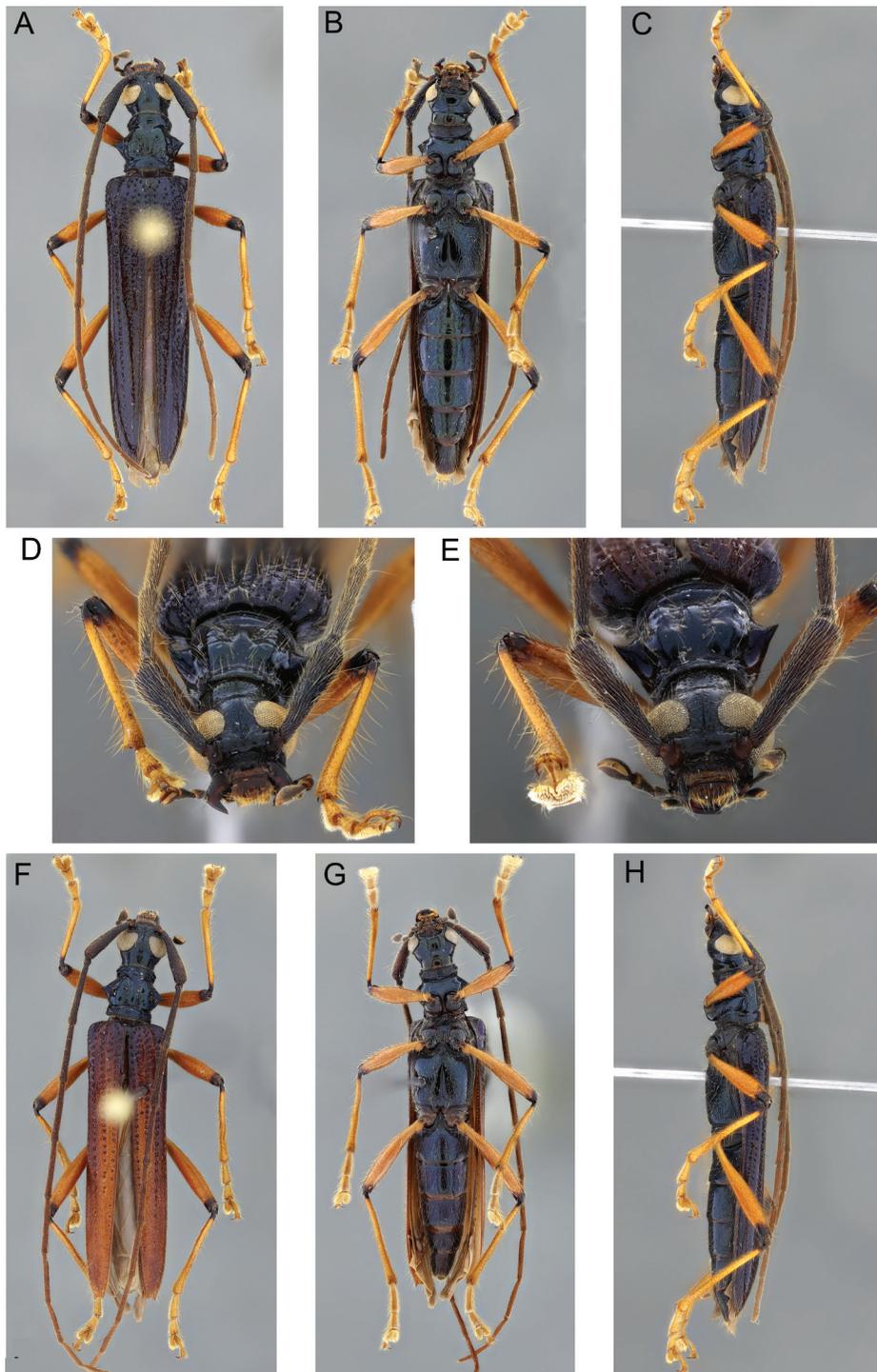


FIGURE 1: *Novantinoe apiculatra*, sp. nov. A–D, Holotype, female: A, dorsal view; B, ventral view; C, lateral view; D, frontal view. E–H, Paratype male: E, frontal view; F, dorsal view; G, ventral view; H, lateral view.

fused and feebly elevated on each side, another elongate, rounded, placed medially. Disc of pronotum with very fine and sparse punctures and with long, sparse whitish setae. Prosternum with transverse sulcus, smooth, with long, sparse whitish setae on anterior margin and short, dense decumbent pubescence posteriorly; prosternal process with apex truncate, sides parallel, width about 1/7 of procoxal cavity width. Mesoventral process deeply emarginate posteriorly. Metaventricle finely punctate, each puncture with long, erect whitish setae, with dense and decumbent whitish pubescence on anterior margin and laterally. Scutellum smooth, with dense short whitish setae on margins, apex subrounded. Elytra gradually narrowed to apex, almost 5× prothorax length; with coarse, deep punctation, arranged in five rows, from humerus to midlength, and another between sutural row and antecedent, from humerus to anterior third, and posterior third smooth; with short, erect, sparse yellowish setae; humeri rounded, without projection; apex of elytra emarginate, with short spine at outer angle, subequal as pedicel length, and small, dentiform projection at inner angle. Legs with long, sparse yellowish setae. Femora subfusiform; more linear toward metafemora; meso- and metafemora with triangular projection at inner and outer apices, subequal in size and shape. **Abdomen.** Ventrites finely and sparsely punctate; with both, short and long, sparse setae, denser laterally and on distal ventrites; apex of ventrite V subrounded. *Male* (fig. 1E–H): Antennae reaching elytral apex at base of antennomere VIII; antennal formula (ratio) based on length of antennomere III: scape = 0.77; pedicel = 0.06; IV = 0.77; V = 0.80; VI = 0.77; VII = 0.75; VIII = 0.69; IX = 0.60; X = 0.54; XI = 0.62. Variation: the elytra of the paratype are light brown (fig. 1F), which might be because the specimen was probably a teneral adult when it was collected.

**DIMENSIONS (mm):** Holotype female. Total length, 17.2; prothoracic length, 2.5; anterior prothoracic width, 1.9; posterior prothoracic width, 2.1; widest prothoracic width (between apices of lateral tubercles), 3.0; humeral width, 3.7; elytral length, 12.3. Paratype male. Total length, 16.9; prothoracic length, 2.2; anterior prothoracic width, 1.8; posterior prothoracic width, 2.0; widest prothoracic width (between apices of lateral tubercles), 2.8; humeral width, 3.6; elytral length, 12.0.

**TYPE MATERIAL:** Holotype female. COLOMBIA, Norte de Santander (ANU Los Estoraques, Bosque Piritama, 8°14N 73°15W, 1850 m.), 27.IV–25.V.2004, Vargas, J. col. Malaisse, IAVH-E-203835 (IAVH). Paratype male, same data as holotype except: IAVH-E-203833 (IAVH).

**ETYMOLOGY:** From the Latin *apiculus* (“little apex”) and “atra” (black) referring to the small black apex of femora.

**REMARKS:** *Novantinoe apiculatra*, sp. nov. can be differentiated from *N. cribristernis* (Bates, 1885) by the scape with coarse and dense punctation (very fine and sparse in *N. cribristernis*), and apex of femora and base of tibiae black (femora and tibiae unicolorous in *N. cribristernis*). It also can be differentiated from *N. birai* Santos-Silva and Hovore, 2007 (fig. 2A), by apex of femora and base of tibiae black (femora and tibiae unicolorous in *N. birai*) and from *N. guyanensis* (Villiers, 1959) (fig. 2B) by ventral face of scape smooth (with tubercles in *N. guyanensis*). *Novantinoe apiculatra* is also similar to *N. lezamai* Santos-Silva and Hovore, 2007 (fig. 2C), but differs by elytra not pubescent; apex of femora only with short triangular projections, without long spines; and by the apex of elytra with outer spine shorter than pedicel. In *N. lezamai* the elytra are cov-



FIGURE 2: *Novantinoe* species: A, *Novantinoe birai*, holotype male; B, *Novantinoe guyanensis*, male; C, *Novantinoe lezamai*, holotype, female; D, *Novantinoe rileyi*, holotype female.

ered by dense pubescence, meso- and metafemora are armed with long spines and the outer angle of elytra is armed with a long spine, longer than pedicel. The new species is also similar to *N. rileyi* Santos-Silva and Hovore, 2007 (fig. 2D), but differs from it by shorter antennae, in females reaching elytral apex at base of antennomere XI; apex of femora and base of tibiae black; apex of femora unarmed; and apex of elytra with outer spine short. In *N. rileyi* the antennae are longer, in females reaching elytral apex at antennomere VII; femora and tibiae are unicolorous; apex of femora has a long outer spine; and the outer spine of apex of elytra is longer.

MODIFIED KEY TO SPECIES OF *NOVANTINOE*

According to the most recent key to species of the genus (Botero and Almeida, 2019), *Novantinoe apiculatra* can be inserted into the alternative of couplet 20, as follows:

- 20. Femora dark only at apical extremity ..... 21
- Femora dark at least on apical half. .... 21
- 21 Elytra pubescent; meso- and metafemora with long spines; outer angle of elytra with long spine, longer than pedicel. Ecuador ..... *N. lezamai* Santos-Silva and Hovore, 2007
- Elytra not pubescent; apex of femora with short triangular projections; apex of elytra with outer spine short, shorter than pedicel. Colombia (Norte de Santander .....  
 ..... *N. apiculatra*, sp. nov.

***Paracometes viridis*, sp. nov.**

Figure 3

DESCRIPTION: Female. *Color*: Integument metallic green; labrum, mandibles, palpi, base of scape, procoxae and protibiae dark brown; from pedicel to antennomere XI, internal and external margins of elytra metallic purple; meso- and meta legs metallic blue; elytral apex yellowish. *Head*:

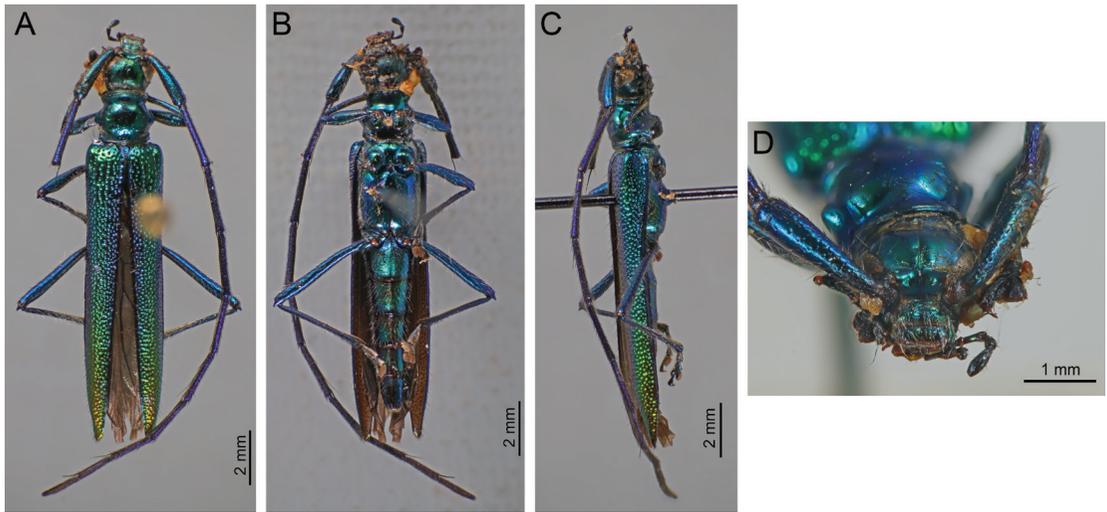


FIGURE 3: *Paracometes viridis*, sp. nov. A–D, Holotype, female: A, dorsal view; B, ventral view; C, lateral view; D, frontal view.

Vertex smooth, with long, erect, and sparse whitish setae; frons short, convex, smooth and glabrous; clypeus finely punctate, with long and dense whitish setae; labrum subsmooth, with long, erect sparse whitish setae. Genae short, apex truncate. Upper eye lobes well separated, distance between them  $2.5\times$  width of one upper lobe. Gulamentum smooth. Antennae reaching elytral apex at base of antennomere VIII; scape curved at base, progressively dilated to apex, finely punctate, with long, erect brownish setae; flagellomeres coarsely punctate, with short, dense brownish setae; antennal formula (ratio) based on length of antennomere III: scape = 0.91; pedicel = 0.08; IV = 1.0; V = 0.95; VI = 0.88; VII = 0.88; VIII = 0.82; IX = 0.73; X = 0.60; XI = 0.69. *Thorax*: Prothorax rectangular,  $1.2\times$  wider (including lateral tubercles) than long; lateral tubercles slightly elevated, large at base, rounded at apex. Surface of pronotum with fine, sparse punctures on posterior half, with transverse, fine wrinkles on lateral gibbosities; gibbosities, slightly elevated, and scarcely differentiated between them. Prosternum with transverse sulcus, glabrous and smooth. Prosternal process rounded at apex; width at narrowest point equal to  $1/7$  of procoxal cavity width. Mesoventral process strongly emarginated and excavated at apex, which is subequal in width to mesocoxal cavity. Scutellum with short, decumbent whitish setae, denser at posterior margin, which is rounded. Elytra gradually narrowed to apex, about  $6\times$  as long as prothorax; with sparse and deep punctation on base, denser and coarser toward apex; apex unarmed, obliquely truncate. Profemora subfusiform; meso and metafemora linear; inner apex of meso- and metafemora with triangular projection. *Abdomen*: Ventrites finely, sparsely punctate; with long, sparse whitish setae denser laterally; ventrites gradually decreasing in width toward last ventrite; apex of ventrite V truncate.

**DIMENSIONS** (mm): Holotype female. Total length, 14.0; prothoracic length, 1.7; anterior prothoracic width, 1.5; posterior prothoracic width, 1.6; widest prothoracic width (between apices of lateral tubercles), 2.2; humeral width, 2.7; elytral length, 10.2.

**TYPE MATERIAL**: Holotype female. PERU, Huánuco: Chinchao (25 km below Carpish, 2500 m), 11.IX.1946, F. Woytkowski col. (AMNH).

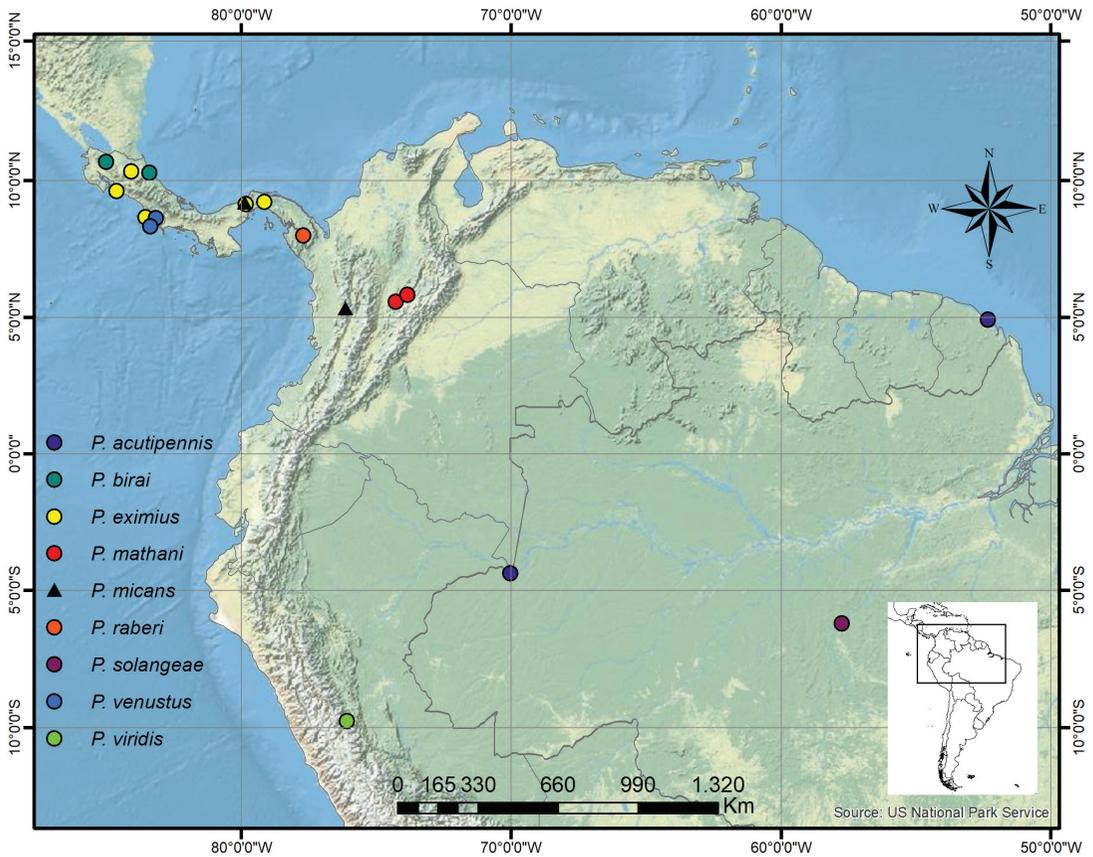


FIGURE 4: Geographical distribution of *Paracometes* species.

ETYMOLOGY: The specific name is from the Latin *viridis* (“green”) referring to the color of the body.

REMARKS: The new species differs from other species of *Paracometes* by having most of the body with metallic green coloration, pronotum lacking central gibbosity and lateral gibbosities with transverse striae. With elytra mostly a lighter color and with apex and base concolorous, *Paracometes viridis* is similar to *P. venustus* (Bates, 1885). The new species differs from it by the head, prothorax, and elytra concolorous, pronotum with fine and sparse punctures, and elytra unicolorous. In *P. venustus*, the head and prothorax are bluish or greenish and the elytra are orangish with large dark band laterally, and surface of pronotum is coarsely punctate (except on gibbosities). This is the first record of the genus from Peru (fig. 4).

KEY TO SPECIES OF *PARACOMETES*

Modified from Heffern and Santos-Silva (2016) and Botero and Almeida (2019)

- 1. Elytra mostly with light color ..... 2
- Elytra mostly with dark color ..... 6

2. Apex and base of elytra concolorous. . . . . 3  
 – Apex and base of elytra with different colors. . . . . 4
3. Head and prothorax contrasting in color to elytra, surface of pronotum coarsely punctate, each elytron with a longitudinal blue band on anterior half. Costa Rica and Panama . . . . .  
 . . . . . *P. venustus* (Bates, 1885)  
 – Head, prothorax, and elytra concolorous, surface of pronotum subsmooth, elytra unicolorous, apex of elytra obliquely truncated. Peru (Huánuco) . . . . . *P. viridis*, sp. nov.
4. Elytra darkened only on a small distal area; scape distinctly shorter than antennomere III. Colombia (Cundinamarca, Santander). . . . . *P. mathani* Villiers, 1958  
 – Elytra with almost entire distal half darkened; scape about as long as antennomere III . . . 5
5. Antennae in female about 1.5 times as long as body; elytral apex narrowly rounded; ventrite V with coarse, confluent punctures. Panama, Colombia (Risaralda) . . . . .  
 . . . . . *P. micans* Santos-Silva and Tavakilian, 2009  
 – Antennae in female about 1.3 times as long as body; elytral apex obliquely truncate, with outer angle distinctly projected; ventrite V finely, sparsely punctate. Panama . . . . .  
 . . . . . *P. raberi* Heffern and Santos-Silva, 2016
6. Sutural angle of elytra projected; each elytron with a pale transverse band on distal half. Costa Rica, Panama. . . . . *P. eximius* (Bates, 1885)  
 – Elytral apex obliquely truncate or rounded, with sutural angle not or slightly projected; elytra without transverse band on distal half or with longitudinal band laterally. . . . . 7
7. Elytral apex distinctly obliquely truncate; distal half of elytra with longitudinal light band laterally. Costa Rica . . . . . *P. birai* (Hovore and Santos-Silva, 2007)  
 – Elytral apex subrounded or slightly, narrowly, obliquely truncate; distal half of elytra without light band. . . . . 8
8. Pronotum without wrinkles, gibbosities of pronotum glabrous; dark area of elytra not reaching scutellum; elytra with erect brown setae; femora unicolorous. French Guiana, Brazil (Amazonas) . . . . . *P. acutipennis* (Buquet, 1851)  
 – Pronotum with transverse fine wrinkles, gibbosities with erect setae; dark area of elytra reaching scutellum; elytra with erect whitish setae; femora bicolorous. Brazil (Pará) . . . . .  
 . . . . . *P. solangeae* Botero and Almeida, 2019

#### NEW GEOGRAPHICAL RECORDS

*Novantinoe iani* Santos-Silva and Hovore, 2007

GEOGRAPHICAL DISTRIBUTION: Colombia (Nariño), Ecuador and Peru. A new department record from Amazonas (Colombia) is added.

SPECIMENS EXAMINED: COLOMBIA, Amazonas: PNN Amacayacu (Cabaña Lorena, 03°30'S 79°59'W, 210 m), 2 males, 1 female, 27.VIII-1.IX.2001, Campos, D. col, "Malaise", IAVH-E-203777, IAVH-E-203836, IAVH-E-203771 (IAVH); (Matamata, 03°41'S 70°15'W, 150 m), 1 female, 25.VIII-3.IX.2001, Chota, D. col, "Malaise", IAVH-E-203796 (IAVH).

*Novantinoe lezamai* Santos-Silva and Hovore, 2007

GEOGRAPHICAL DISTRIBUTION: Ecuador. A new country record from Colombia (Caquetá) is added.

SPECIMENS EXAMINED: COLOMBIA, Caquetá: San José de Fragua (Yuruyaco, 01°20'55"N 76°06'11"W, 1000 m), 1 male, 3-8.IX.2000, E. Gonzáles col., "Malaise", IAVH-E-203787 (IAVH); (Alto del Rio Yuruyaco, Vereda La Esmeralda, 01°20'N 76°06'W, 900 m, "Campamento, Bosque Primario"), 2 females, E. Gonzáles col., "Atraídos por luz" [attracted to light], IAVH-E-209958, IAVH-E-209959 (IAVH).

*Novantinoe mariahelenae* Santos-Silva and Hovore, 2007

GEOGRAPHICAL DISTRIBUTION: Ecuador. A new country record from Colombia (Nariño) is added.

SPECIMENS EXAMINED: COLOMBIA, Nariño: Territorio Kofan (00°30'N 77°13'W, 1430 m), 1 male, 24.IX.1998, P. Díaz and V. Rodríguez col., "Golpeteo" [beating], IAVH-E-80903 (IAVH); (00°30'N 77°13'W, 1000 m), 1 male, 25.IX.1998, E.L. Gonzáles col., Winkler, IAVH-E-80903 (IAVH); R.N. La Plana (Parcela Olga, 01°15'N 78°15'W, 1850 m), 1 female, 02-16.XII.2000, G. Oliva col., IAVH-E-203840 (IAVH); (Via Hondon, 01°15'N 78°15'W, 1930 m), 1 female, 2-16.IV.2001, G. Oliva col., Malaise, IAVH-E-203772 (IAVH); (Parcela Permanente, 01°15'N 78°15'W, 1885 m), 2 females, 14-29.II.2004, G. Oliva col., Malaise, IAVH-E-203759, IAVH-E-203780 (IAVH).

*Novantinoe rileyi* Santos-Silva and Hovore, 2007

GEOGRAPHICAL DISTRIBUTION: Ecuador. A new country record from Colombia (Amazonas) is added.

SPECIMEN EXAMINED: COLOMBIA, Amazonas: PNN Amacayacu (Matamata, 03°41'S 70°15'W, 150 m), 1 female, 20-26.V.2000, Felix, A. col., Malaise, IAVH-E-209944 (IAVH).

*Novantinoe spinosa* (Bates, 1885)

GEOGRAPHICAL DISTRIBUTION: Nicaragua, Costa Rica, Panama, Colombia (Chocó, Valle del Cauca). A new department record from Santander (Colombia) is added.

SPECIMEN EXAMINED: COLOMBIA, Santander: Carmen de Chucurí (Vereda La Belleza, Finca Santiago, Campamento, Bh-T, 06°34'49.5"N 73°34'15.1"W, 801 m), 1 female, 18-25.II.2018, J.C. Neita, E. Torres, M.I. Castro col., IAVH-E-203843 (IAVH).

*Paracometes micans* Santos-Silva and Tavakilian, 2009

GEOGRAPHICAL DISTRIBUTION: Panama. A new country record from Colombia (Risaralda) is added.

SPECIMENS EXAMINED: COLOMBIA, Risaralda: Pueblo Rico (Santa Cecilia, Amurrapá 1.1 km SW de Santa Cecilia, 05.33783°N 76.15532°W, 402 m), 1 female, 19-23.II.2018, C. Pineda, N. Cossio col., MPUJ\_ENT0060493 (MPUJ).

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