

Revisional notes on the genus *Melucha* (Hemiptera, Heteroptera, Coreidae)

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Abstract

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Melucha grandicula **sp. n.** and *M. perampla* **sp. n.**, (Hemiptera: Heteroptera: Coreidae: Coreinae: Nematopodini) are described from Bolivia, Colombia, Paraguay and Peru. *Melucha quadrivittis* Stål, 1862, **stat. restit.**, is resurrected from synonymy under *M. phyllocnemis* (Burmeister, 1835). *Melucha ruficornis* Breddin, 1903, **syn. n.**, is synonymized under *M. lineatella* (Fabricius, 1803). An identification key for the known species of *Melucha* Amyot & Serville, 1843 is given. New distributional records for some previously known species are added.

Key Words

Insecta
Hemiptera
Heteroptera
Coreidae
Nematopodini
Melucha
new species
new synonym
Neotropical

Introduction

The genus *Melucha* Amyot & Serville, 1843, is distributed in Mexico, Central America (Guatemala, Costa Rica) and South America (Colombia, French Guiana, Brazil, Paraguay, Bolivia, Peru). It belongs to the tribe Nematopodini of the family Coreidae and is characterized by having: postocular tubercles not evident, forming a smooth curve with eye; antenniferous tubercles wide, not projecting far anteriorly; tylus projecting anteriorly of antenniferous tubercle; antennal segment I longer than length of head, thicker than following segments and

curved; segment II cylindrical, III cylindrical or dilated, and IV fusiform; anterolateral and posterolateral borders of pronotal disk smooth or conspicuously nodulose and spinate; mesosternum lacking sulcation; and abdominal spiracles rather large, transversely elliptical, situated nearer to anterior than to lateral margins (O'Shea 1980).

The genus currently includes 11 species considered as valid: *M. aculeata* Montandon, 1895, *M. acutispina* Breddin, 1903, *M. bicolor* Distant, 1892, *M. biolleyi* Distant, 1900, *M. chapadana* Brailovsky, 1993, *M. dilatata* (Fabricius, 1798), *M. gladiator* (Fabricius, 1803), *M. lineatella* (Fabricius, 1803), *M. phyllocnemis* (Bur-

meister, 1835), *M. quinquelineata* Stål, 1865, and *M. ruficornis* Breddin, 1903 (Brailovsky 1993, Packauskas 2010). In this contribution, *M. quadrivittis* Stål, 1862, is resurrected from synonymy under *M. phyllocnemis* and considered a valid species; *M. ruficornis* Breddin, 1903 is synonymized under *M. lineatella* (Fabricius). Two new species, *M. grandicula* sp. n. and *M. perampla* sp. n., are described from Bolivia, Colombia, Paraguay and Peru. New distributional records for *M. phyllocnemis* and *M. quadrivittis* are added. With these additions and changes the number of known species of *Melucha* is fixed in 13. A key to separate all the species of the genus is presented.

Material and methods

The following collection acronyms are used for the institutions cited in this paper:

- AMNH American Museum of Natural History, New York, USA;
 CDFA California State Collection of Arthropods, Sacramento, California, USA;
 DEIC Deutsches Entomologisches Institut, Müncheberg, Germany;
 INBIO Instituto Nacional de Biodiversidad, Santo Domingo de Heredia, Costa Rica;
 MABR Museo Argentino de Ciencias Naturales “Bernardino Rivadavia”, Buenos Aires, Argentina;
 MELN Museo Entomológico, Leon, Nicaragua;
 NHMW Naturhistorisches Museum, Wien, Austria;
 NHRS Naturhistoriska Riksmuseet, Stockholm, Sweden;
 TAMU Texas A & M University, College Station, Texas, USA;
 UGAG University of Georgia, Athens, Georgia, USA;
 UMSP University of Minnesota, Insect Collection, USA;
 UNAM Instituto de Biología, Universidad Nacional Autónoma de México;
 USNM Smithsonian Institution, National Museum of Natural History, Washington, DC, USA;
 ZMUH Zoologisches Museum, Universität Hamburg, Hamburg, Germany.

All measurements are given in millimeters.

Results

Melucha grandicula sp. n.

<http://zoobank.org/3A82C0B5-2929-44C9-A97B-F5846317BFEC>

http://species-id.net/wiki/Melucha_grandicula

Fig. 11.

Type material. Holotype, female, Peru, Loreto, Headwaters, Río Loreto-Yacu, Indian Vill., 21-IV-1-V-1970, Malkin (AMNH). Paratypes, 1 female, Colombia, Meta, El Buque, silv., 1200 m, 18-II-1947 (NHMW); 1 female, Colombia, without date (UNAM).

Description (female, holotype). **Dorsal color.** Head and antennal segments I to III shiny orange, segment IV pale yellowish orange; pronotum coarsely punctate, strongly striate, reddish brown, with a single, longitudinal, median dark line, diffuse, with pigment in the punctures; scutellum reddish brown with basal third, lateral borders and apex shiny orange; clavus and corium finely punctate, reddish brown, moderately infuscate; hemelytral membrane amber, translucent, veins darker; connexival segments reddish brown with posterior spines black; dorsal abdominal segments dark orange with irregular dark marks.

Ventral color. Rostral segments (apex of IV dark brown), legs, and anterior and posterior lobe of metathoracic scent gland peritreme shiny to dull orange; pro- and mesopleura coarsely punctate with black elongate mark; hind femur dull orange with dorsal and ventral tubercles and spines black; hind tibiae dark orange with posterior third yellowish orange; middle and hind tarsus yellowish orange.

Structure. Body large-sized (above 22.00 mm), robust, almost glabrous.

Head. Antennal segment III cylindrical; rostrum reaching anterior margin of mesosternum.

Thorax. Pronotal disk declivent; anterolateral borders obliquely straight, nodulose, armed with five or six subacute spines; humeral angles prominent, laterally expanded, apically sharply pointed; posterolateral borders almost straight, nodulose, with three or four subacute spines; posterior border smooth, straight; callar region evident.

Legs. Fore and middle femora not incrassate; dorsal surface smooth, ventral surface distally armed; hind femur incrassate its dorsal surface with two rows of tubercles, ventral surface armed with two rows of spines increasing in size distally; fore and middle tibiae sub-cylindrical, unarmed, sulcate; inner and outer surfaces of hind tibiae markedly dilated; outer surface smooth, inner surface with short tubercles on the border.

Scutellum. Triangular, wider than long, transversely striate and punctate; apex subacute.

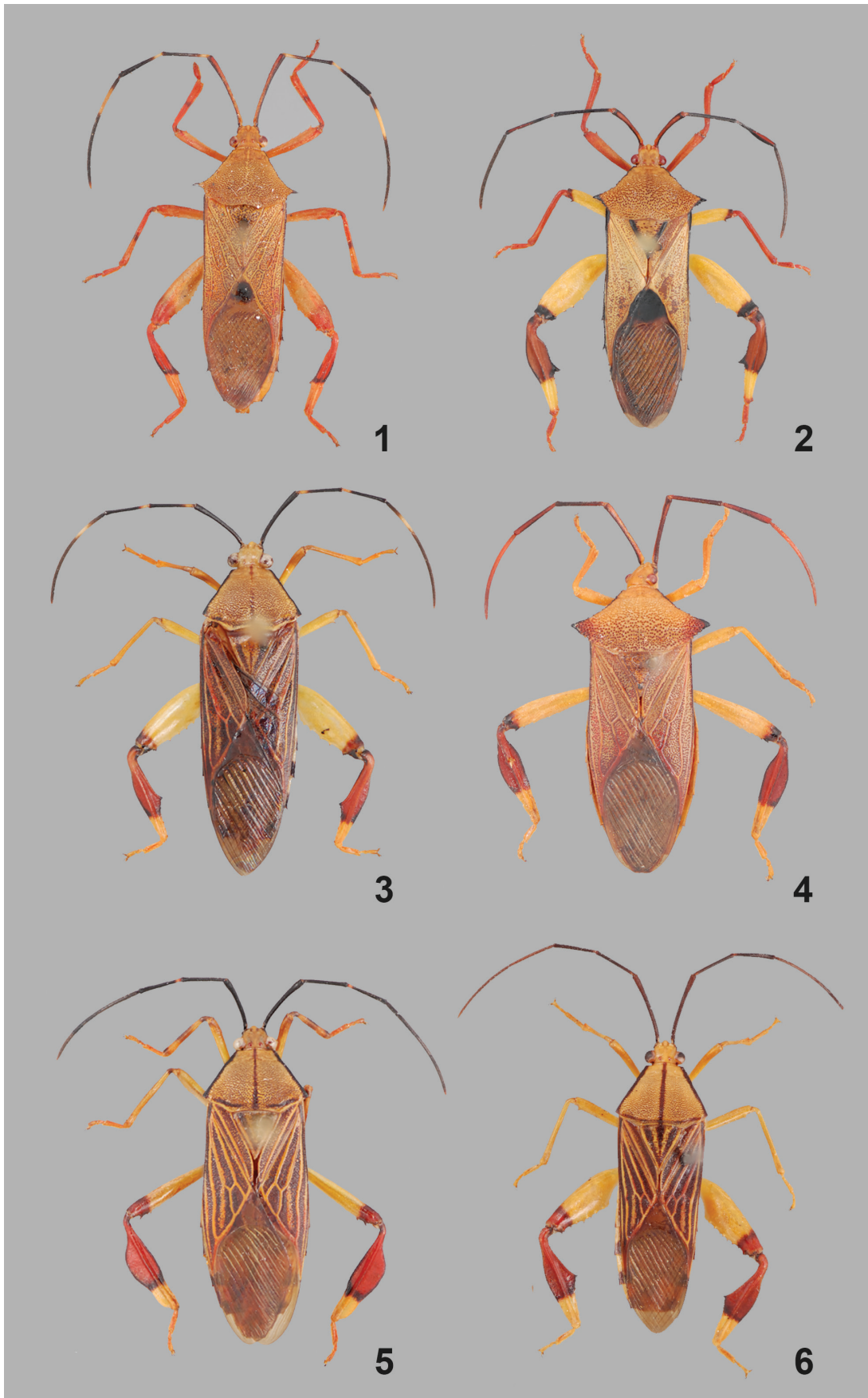
Abdomen. Posterior angle of abdominal segments III to VI armed with short but distinct spine.

Male. Unknown.

Measurements (holotype; mm). Total body length 27.50. Head length 2.28; width across eyes 2.98; interocular space 1.74; interocellar space 0.92; preocular distance 1.61; length of antennal segments: I, 6.15; II, 4.25; III, 3.80; IV, 7.60. Pronotal length 6.53; width across humeral angles 11.78. Scutellar length 3.19; width 3.57. Maximum width of abdomen 9.70.

Differential diagnosis. This species is closely related to *M. phyllocnemis* and *M. quadrivittis*, which are also robust and larger than 23.00 mm; the other species in the genus are slender and shorter than 20.00 mm.

Melucha grandicula sp. n. is distinguished by having a single median dark line on the pronotal disk, the humeral angles prominent, laterally expanded, and apically sharply pointed (Fig. 11) and connexival segment VII en-



Figures 1–6. Dorsal view of *Melucha* spp. 1, *M. aculeata* Montandon, 1895 (male). 2, *M. biolleyi* Distant, 1900 (male). 3, *M. dilatata* (Fabricius, 1798) (male). 4, *M. acutispina* Breddin, 1903 (female). 5, *M. chapadana* Brailovsky, 1993 (female). 6, *M. lineatella* (Fabricius, 1798) (male).

tirely dark orange. In the other two species the pronotal disk is yellow and has four longitudinal dark lines and the midline unpigmented, the humeral angles prominent, laterally expanded, and apically blunt (Figs. 8, 9) and connexival segment VII is yellow, with posterior half or posterior third dark brown.

Etymology. Named for the comparatively large size of this species, after the Latin adjective “*grandiculus*, -a, -um” meaning rather large.

Distribution. Known from Colombia and Peru.

Melucha perampla sp. n.

<http://zoobank.org/7FF2B7CC-BBA3-48A7-A251-894AE1C92AE8>

http://species-id.net/wiki/Melucha_perampla

Fig. 12.

Type material. Holotype: female, Bolivia, Departamento La Paz, Prov. Sud-Yungas, Puente Villa, 4300', 19-24-V-1989, J. E. Eger (UNAM). Paratypes: 1 female, Paraguay, Cororo, X-1979, M. Viana (UNAM); 3 females, Departamento San Pedro, Cororo, Rio Ypane, 12-XI-1983, G. J. Williner (UNAM).

Description (female, holotype). **Dorsal color.** Head yellow; preocular area and two short, diffuse stripes laterally to midline pale brown; antennal segments I to III black, IV yellow; pronotum finely punctate, yellow, pronotal disk with four longitudinal dark brown lines with pigment in the punctures and midline unpigmented; anterolateral spines of pronotum reddish brown; scutellar disk yellow with punctures reddish brown; clavus and corium dark yellow with punctures reddish brown; hemelytral membrane dark amber, veins brown and darker; connexival segments III to V dark brown with anterior third yellow, VI–VII with anterior half yellow and posterior half dark brown, and VIII–IX yellowish orange; upper border of connexivum anteriorly yellow and posteriorly black; posterolateral spines black; dorsal abdominal segments dark yellow with irregular dark brown marks.

Ventral color. Rostral segments (apex of IV dark brown), legs, anterior and posterior lobe of metathoracic scent gland peritreme and abdominal sterna yellow; hind femur yellow with ventral spines and apical border reddish brown to black; hind tibia yellowish orange, posterior third yellow with dark reddish brown transverse mark near posterior third.

Structure. Body large-sized (above 22.00 mm), robust, almost glabrous.

Head. Antennal segment III dilated; rostrum reaching anterior margin of mesosternum.

Thorax. Pronotal disk declivent; anterolateral borders obliquely straight, armed with 15 or more acute spines; humeral angles prominent, laterally expanded and apically blunt; posterolateral borders nodulose with three or four subacute spines; posterior border smooth, straight; callar region evident.

Legs. Fore and middle femora not incrassate their dorsal surface smooth, ventral surface distally armed; hind

femur incrassate its dorsal surface smooth, ventral surface armed with two rows of spines increasing in size distally; fore and middle tibiae sub-cylindrical, unarmed, sulcate; inner and outer surface of hind tibiae markedly dilated; outer surface smooth, inner surface with short tubercles on the border.

Scutellum. Triangular, longer than wide, transversely striate, punctate; apex subacute.

Abdomen. Posterior angle of abdominal segments III to VII armed with short but distinct spine.

Male. Unknown.

Measurements (holotype; mm). Total body length 25.75. Head length 1.90; width across eyes 2.59; interocular space 1.55; interocellar space 0.77; preocular distance 1.38; length of antennal segments: I, 5.77; II, 4.10; III, 4.25; IV, 6.84. Pronotal length 5.74; width across humeral angles 8.76. Scutellar length 3.66; width 3.37. Maximum width of abdomen 9.73.

Differential diagnosis. Like *M. phyllocnemis* and *M. quadrivittis*, the humeral angles of *M. perampla* sp.nov., are prominent, laterally expanded and apically blunt; the pronotal disk has four longitudinal dark brown lines with the midline unpigmented; total body length over 20 mm. *Melucha perampla* differs by having the antennal segments I to III black, antennal segment III clearly dilated at inner and outer faces and mesopleura and metapleura without black marks. In the other two species the antennal segments I to III are yellowish orange, antennal segment III is almost cylindrical, not dilated and mesopleura and metapleura have reddish brown to black elongate marks. The dorsal surface of the hind femur of *M. quadrivittis* is armed with two rows of black nodules and tubercles (Fig. 8) while in *M. phyllocnemis* and *M. perampla* those are smooth (Figs. 9, 12).

Etymology. Named for the large size of this species, after the Latin adjective “*peramplus*, -a, -um”, meaning very large.

Distribution. Known from Bolivia and Paraguay.

Melucha lineatella (Fabricius, 1803)

http://species-id.net/wiki/Melucha_grandicula

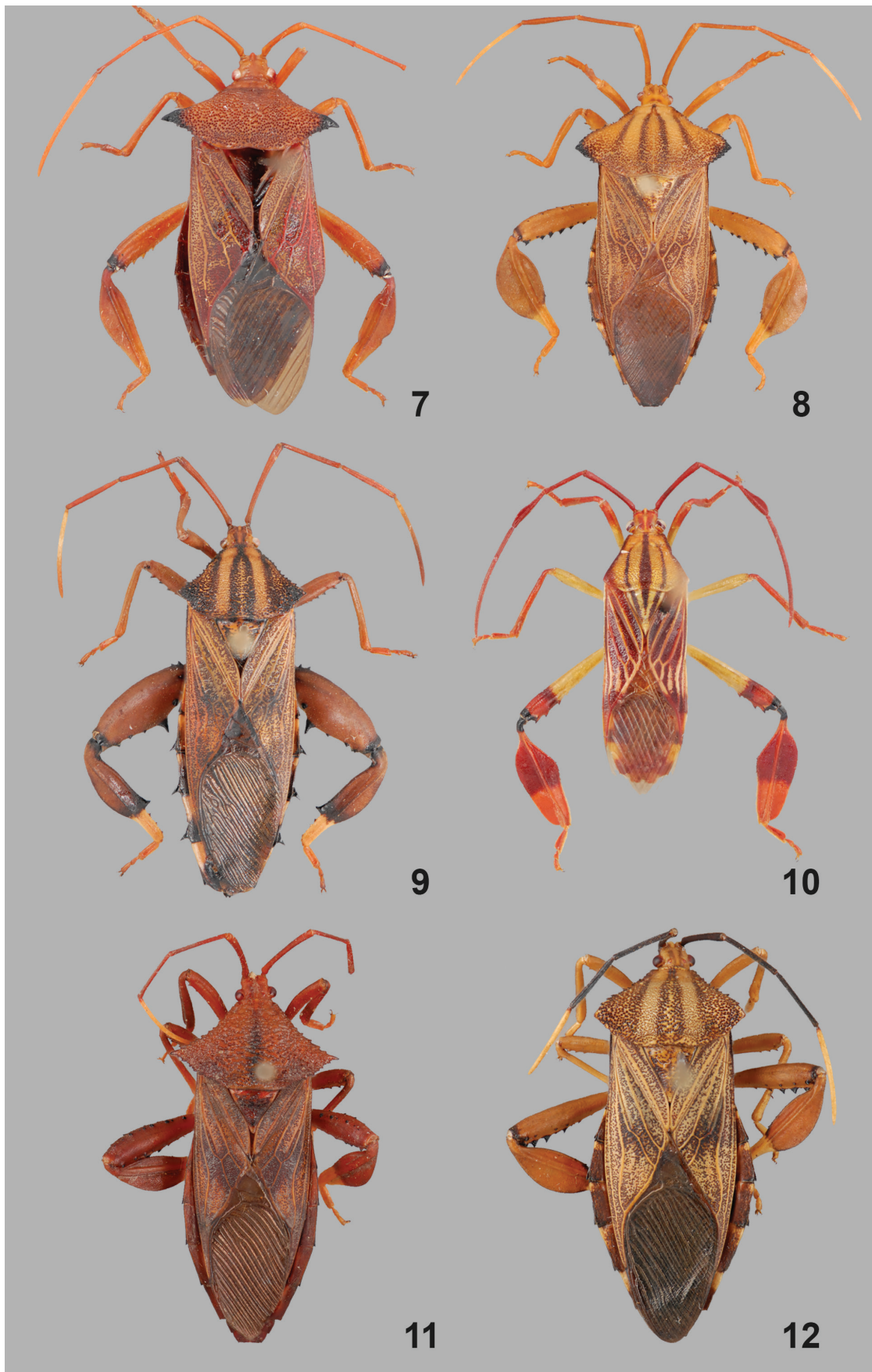
Fig. 6.

Lygaeus lineatellus Fabricius, 1803: 216.

Melucha ruficornis Breddin, 1903: 379-380, **syn. n.**

Type material examined. *Melucha ruficornis*: female, Bolivia, La Paz, Yungas (DEIC).

Taxonomy. *Melucha ruficornis* Breddin, 1903, was described based on a single female from Bolivia and here is considered a junior synonym of *M. lineatella* (Fabricius, 1803). The holotype of *M. ruficornis* was examined and compared with several specimens of *Melucha lineatella*. The features considered by Breddin as diagnostic characters like the total length of the body, the shape of the humeral angles, and the color of antennal segments, pronotal disk and hind femora are shared with *M. lineatella* and this reinforces the proposed synonymy.



Figures 7–12. Dorsal view of *Melucha* spp. **7**, *M. gladiator* (Fabricius, 1803) (female). **8**, *M. quadrivittis* Stål, 1862 (female). **9**, *M. phyllocnemis* (Burmeister, 1835) (male). **10**, *M. quinquelineata* Stål, 1865 (male). **11**, *M. grandicula* sp. n. (female). **12**, *M. perampla* sp. n. (female).

***Melucha phyllocnemis* (Burmeister, 1835)**

http://species-id.net/wiki/Melucha_phyllocnemis

Fig. 9.

Cerbus phyllocnemis Burmeister, 1835: 340.

Distribution. Bolivia: Coroico Yungas. Brazil: Sao Paulo, Rio de Janeiro, Rio Grande do Sul. Colombia: Nova Granada (Stål 1870). Paraguay (Stål 1870, Blöte 1938, Osborn 1904, Packauskas 2010).

Material examined. New records. Argentina: 2 males, Misiones, Posadas, VII-1972, D. Carpintero (UNAM); 3 females, Misiones, Iguazu, III-1954, III-1981, 14-XI-1981, A. Martinez, R. Foerster (MABR, UNAM); 1 male, Entre Rios, I-1974, Zelich (UNAM); 1 male, Formosa Estancia, Guaycolec, 25 km N Formosa, 185 m, 26-II-10-III-1999, S. L. Heydon, J. Ledford (UCDC). **Brazil:** 1 female, Espiritu Santo, Santa Teresa, 18-23-XII-1967, C. Elias (UNAM); 1 female, Nova Teutonia, 17-XII-1935, F. Plaumann (USNM). **Paraguay:** 1 male, District Villarrica, Mbebo, XI-1926, P. Jorgensen (ZMUH); 1 female, San Pedro, General Resquin, Naranjito, 1-I-1994, B. Garcete (MELN); 1 female, Depto. San Pedro, Coroño, Rio Ypane, 12-XI-1983, G. Willner (CDFA); 1 male, Depto. San Pedro, Coroño, 1-30-X-1979, G. J. Willner (CDFA).

***Melucha quadrivittis* Stål, 1862**

http://species-id.net/wiki/Melucha_quadrivittis

Fig. 8.

Melucha quadrivittis Stål, 1862: 276, **stat. restit.**

Melucha quadrivittis: Stål, 1870: 133 (synonymized with *M. phyllocnemis*)

Type material examined. *Melucha quadrivittis*: male (NHRS).

Distribution. Mexico, Oaxaca, Veracruz, Atoyac and Orizaba (Stål 1862, Walker 1871, Distant 1893, Packauskas 2010).

Material examined. New records. Belize: 1 female, Grano de Oro, Chiquibul Forest Reserve, 4-7-IV-1995, T. King, A. Howe (UNAM). **Costa Rica:** 4 males, 4 females, Provincia Guanacaste, estacion Las pailas, P. N. Rincon de la Vieja, 800 m, 27-VII-12-X-1992, 15-V-11-VI-1993, 8-26-V-1994, C. Cano, D. Garcia, K. E. Taylor (INBIO); 3 males, 3 females, Provincia Guanacaste, Estacion Santa Rosa, P. N. Santa Rosa, 300 m, VIII-1980, VII-1989, II-1992, (without collector) (INBIO); 5 females, Provincia Puntarenas, Fca. Cafrosa, Estacion Las Mellizas, P. N. Amistad, 1300 m, X-1989, 7-XII-1989, 17-I-1990, M. Ramirez, G. Mora (INBIO). **Honduras:** 1 male, Liberia, 6-IX-1984, C. W. O'Brien (UNAM); 1 female, Olancho, La Murala, 24-V-1995, R. Morris (UGAG); 1 male, Copan, 19 km SW Santa Rosa de Copan, 8-X-1993, R. Turnbow (UGAG); 1 female, Cedros, Francisco Morazan, 2-XII-1976 (UMSP). **Mexico:** 1 female, Campeche, 6 mi N de

Xpujil, Chicana Ruins, 27-VII-1980, Schaffner, Weaber (TAMU); 1 male, 13.8 mi E Escarcega, 26-27-VII-1980, Schaffner, Weaber (TAMU). 1 female, Chiapas, 2 mi E Rizo de Oro, 2900', 1-VIII-1974, C. W. and L. O'Brien and Marshall (UNAM); 2 males, Chiapas, Municipio de Ocozocoautla, Reserva El Ocote, 2 km de A. Obregon, 14-IV-1994, O. Gomez (UNAM); 1 female, Chiapas, Bonampak, 21-V-1980, J. Bueno (UNAM); 1 female, Chiapas, Reserva El Ocote, 2-10-XII-1993, G. Ortega-Leon, E. Barrera and A. Casasola (UNAM); 1 male, Chiapas, Villa Corzo, 2-XI-1983, J. Morales (UNAM); 1 male, Nuevo Leon, Guadalupe, X-1980, A. Ortiz (UNAM); 2 females, Nuevo Leon, Rayones, 17-IV-1974, Patton (UNAM); 1 female, Oaxaca, Tuxtepec, 24-IX-1947 (UNAM); 1 male, Oaxaca, 2 mi N Candelaria Loxicha, 17-VII-1974, Clark, Schaffner (TAMU); 2 males, 1 female, Quintana Roo, X-Can Nuevo, 17-IX-1983, E. Welling (UNAM); 1 female, Quintana Roo, 8 mi N Felipe Carrillo Puerto, 1-VII-1970, R. E. Beer (UNAM); 1 female, Quintana Roo, 26 km SE Valle Hermoso, 22-VI-1989, A. Cadena, L. Cervantes (UNAM); 1 male, Quintana Roo, 3-VIII-1981, E. Pech (UNAM); 1 female, Quintana Roo, 2 km NE El Ramonal, 10-IX-1983, O. Canul (UNAM); 1 female, Quintana Roo, Puerto Morelos, 11-VIII-1982, V. Hernandez (UNAM); 1 female, San Luis Potosi, El Salto, IX-1959, D. Pelaez (UNAM). 1 male, Tabasco, Campo Experimental CSAT, Cardenas, 13-IX-1976, J. Rivera (UNAM). 1 male, 1 female, Tamaulipas, Ciudad Victoria, 17-XI-1977, H. Brailovsky (UNAM); 1 male, Tamaulipas, Tula, km 20 Tula-Ocampo, Colonia Guadalupe, 446 m, 22°53'13"N-99°28'34"W, 12-V-2007, H. Brailovsky, E. Barrera and L. Cervantes-Peredo (UNAM). 7 males, 7 females, Veracruz, Estación de Biología Tropical Los Tuxtlas, III-1978, 20-XII-1984, 25-VIII-1998, 27-X-4-XI-1988, 15-27-VI-1989, 21-VII-1989, 6-IX-1989, 30-X-2007, H. Brailovsky, E. Gonzalez, E. Mejorada, H. Rojas, J. L. Colin and R. Mariño (UNAM). **Nicaragua:** 1 male, Chinaniloga, Volcan Casita, 10-VI-1985, Maes, Jolivet (MELN); 1 female, Matagalpa, Selva Negra, 1375 m, 28-XII-1991, A. E. Mahler (UNAM). **Panama:** 1 male, Chiriqui, Chiriquicito, 16-V-1996, R. Turnbow (UGAG); 1 male, Panama Prov., Cerro Campana, 11-IX-1998, Gillogly, Stockwell (TAMU).

Taxonomy. Burmeister (1835) described *M. phyllocnemis* from Brazil, and Stål (1862) *M. quadrivittis* from Mexico. Dallas (1852) recorded *M. phyllocnemis* from Colombia and years later Stål (1870) synonymized *M. quadrivittis* under *M. phyllocnemis* and recorded this species from Mexico, Colombia (Nova Granada), Brazil and Paraguay. Packauskas (2010) summarized the known information and cited *M. phyllocnemis* s. lato from Bolivia, Brazil, Mexico, Colombia and Paraguay. The type material of *M. quadrivittis* was examined and compared with the original description of *M. phyllocnemis*, as well as with more than 110 specimens. Two different species were clearly recognized, therefore *M. quadrivittis* was resurrected here as valid species.

Both species share the following characters: total body length over 23.00 mm; anterolateral borders of pronotum coarsely serrate; pronotal disk yellow with four longitudinal dark lines; the humeral angles prominent, laterally expanded; and antennal segments II and III pale orange to yellowish orange.

In *M. quadrivittis* the dorsal surface of hind femur is armed with two rows of black nodules and tubercles; it is distributed from Mexico to Panama (Fig. 8). In *M. phyllocnemis* the dorsal surface of hind femur is smooth. It is distributed from Colombia to Paraguay, including Bolivia and Brazil (Fig. 9).

Key to the known species of *Melucha* Amyot & Serville, 1843

- 1 Anterolateral borders of pronotum very coarsely serrate; total length of body longer than 23.00 mm..... 2
- Anterolateral borders of pronotum smooth or finely serrate; total length of body shorter than 20.00 mm 6
- 2 Antennal segments II and III dark reddish-brown to black 3
- Antennal segments II and III pale orange to pale yellowish orange..... 4
- 3 Pronotal disk dark reddish-brown; dorsal surface of hind femora dark reddish-brown and ventral surface dull orange..
..... *M. bicolor* Distant, 1892
- Pronotal disk yellow with four longitudinal dark brown lines; hind femora yellow with ventral spines black (Fig. 12).....
..... *M. perampla* sp. n.
- 4 Pronotal disk reddish-brown, with a single longitudinal median dark line; humeral angles of pronotum prominent, laterally expanded, and apically sharply pointed (Fig. 11).....*M. grandicula* sp. n.
- Pronotal disk yellow with four longitudinal dark lines; humeral angles of pronotum prominent, laterally expanded, and apically blunt to nodulose..... 5
- 5 Dorsal surface of hind femur armed with two rows of black nodules and tubercles (Fig. 8) *M. quadrivittis* Stål, 1862
- Dorsal surface of hind femur smooth (Fig. 9).....
.....*M. phyllocnemis* (Burmeister, 1835)
- 6 Anterolateral borders of pronotum uniformly crenulate; humeral angles laterally expanded, apically sharply pointed.. 7
- Anterolateral borders of pronotum smooth; humeral angles obtuse, not exposed, with or without short spine directed backward 10
- 7 Antennal segments I to III entirely shiny orange; anterolateral borders of pronotum shiny orange (Fig. 7).....
..... *M. gladiator* (Fabricius, 1803)
- Antennal segments I to III predominantly or entirely black or dark reddish brown; anterolateral borders of pronotum black..... 8
- 8 Antennal segment IV dark brown with basal third (except basal joint) yellow (Fig. 1)*M. aculeata* Montandon, 1895
- Antennal segment IV entirely dark brown to black..... 9
- 9 Hemelytral membrane brassy with basal third black; antennal segment III bicolorous (Fig. 2) ..*M. biolleyi* Distant, 1900
- Hemelytral membrane uniformly brassy, without black spot basally; antennal segment III entirely black (Fig. 4)
..... *M. acutispina* Breddin, 1903
- 10 Antennal segment IV dark brown with basal third (except basal joint) yellow (Fig. 3)*M. dilatata* (Fabricius, 1798)
- Antennal segment IV entirely dark brown or dark reddish brown or shiny reddish orange 11
- 11 Antennal segments I to III shiny orange to shiny reddish brown; pronotal disk shiny yellow with three black to reddish-brown longitudinal stripes (Fig. 10).....*M. quinquelineata* Stål, 1865
- Antennal segments I to III never shiny orange; pronotal disk yellow with one black to reddish brown longitudinal stripe running mesially..... 12
- 12 Antennal segments II and III reddish-brown with basal joint yellow (Fig. 5).....
.....*M. chapadana* Brailovsky, 1993
- Antennal segments II and III entirely reddish-brown (Fig. 6).....*M. lineatella* (Fabricius, 1798)

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