

A new species of *Apechoneura* Kriechbaumer (Hymenoptera, Ichneumonidae, Labeninae) from Colombia

Andrés Fabián Herrera Flórez^{1,†}

¹ *University of Manitoba, Department of Entomology, 214 Animal Science Bldg, Winnipeg, Manitoba, Canada R3T 2N2*

[†] *urn:lsid:zoobank.org:author:BF9E198B-42B1-43AF-A926-5F6F7A62CB2F*

Corresponding author: *Andrés Fabián Herrera Flórez* (andresfhf@gmail.com)

Academic editor: *Gavin Broad* | Received 30 April 2012 | Accepted 24 July 2012 | Published 1 August 2012

urn:lsid:zoobank.org:pub:B01D6845-04D4-45F9-8145-4DE10E0801CF

Citation: Flórez AFH (2012) A new species of *Apechoneura* Kriechbaumer (Hymenoptera, Ichneumonidae, Labeninae) from Colombia. ZooKeys 213: 41–49. doi: 10.3897/zookeys.213.3309

Abstract

A new species of the ichneumonid subfamily Labeninae, *Apechoneura seminigra* **sp. n.**, is described. Specimens were collected from the Amazon Rainforest of Colombia.

Keywords

Ichneumonoidea, Labenini, South America, Neotropics, *nigricornis* species-group, taxonomy

Introduction

The Labeninae is a subfamily of Ichneumonidae containing approximately 150 described species classified in four tribes and 12 genera. Compared with other subfamilies, this group is quite well-known worldwide (Gauld 2000). The Labenini is a Gondwanan group comprising five genera: *Torquinsha* Gauld & Wahl and *Gauldi-*

anus Lanfranco which are both endemic to Chile; *Labena* Cresson from Australia, Neotropical and Nearctic regions; *Certonotus* Kriechbaumer from the Australasian region; and *Apechoneura* which is found in tropical America. Because *Certonotus* shares several autapomorphies with *Apechoneura* (e.g. mesoscutal rugae), *Apechoneura* was considered part of *Certonotus* (Wahl, 1993), but after a phylogenetic study (Gauld and Wahl 2000), *Apechoneura* has been hypothesized as the sister group of the clade embracing *Certonotus* and *Torquinsha*. Some of the autapomorphies of *Apechoneura* are the presence of a highly raised interantennal lamella and a submetapleural carina lacking an anterior lobe, but with a median denticle. *Apechoneura* has 24 described species and 30 estimated (Gauld 2000; Yu et al. 2005). This genus has been found in Bolivia (Mocsary 1905; Townes and Townes 1966), Brazil (Kriechbaumer 1890; Mocsary 1905; Townes and Townes 1966; Gauld 2000), Chile (Lanfranco 1980), Colombia (Enderlein 1919; Townes and Townes 1966; Gauld 2000; Herrera 2006), Costa Rica (Mocsary 1905; Townes and Townes 1966; Gauld 2000; Gauld and Wahl 2000), Ecuador (Morley 1913; Townes and Townes 1966; Gauld 2000), Mexico (Hernández-Aguilar et al. 2000; Ruíz-Cancino et al. 2002), Nicaragua (Cameron 1886; Maes 1989), Panama (Cameron 1886; Townes and Townes 1966), Paraguay (Schrottky 1911; Cushman 1920; Townes and Townes 1966), Peru (Carrasco 1972; Mocsary 1905; Gauld 2000) and Venezuela (Gauld 2000). Costa Rica and Brazil are the countries with the most species (17 and 6 respectively).

Three species of *Apechoneura* are found in Colombia (Yu et al. 2005): *A. longicauda* Kriechbaumer, 1890 (Enderlein 1919; Gauld 2000; Herrera 2006), *A. nigricornis* Mocsary, 1905 (Townes and Townes 1966; Herrera 2006) and *A. nigritarsis* (Cameron, 1886) (Townes and Townes 1966; Herrera 2006). Another species, *A. tricoloripes* (Mocsary, 1905), may also be present in Colombia because it occurs in Costa Rica (Mocsary 1905; Townes and Townes 1966; Gauld 2000), Paraguay (Cushman 1920; Townes and Townes 1966) and Brazil (De Santis et al. 1973). Gauld (2000) divided the genus into six species-groups; the species described here, like *A. nigricornis*, belongs to the *nigricornis* species-group.

Material and methods

During an undergraduate project focused on the subfamily Labeninae, 14 of the main entomological collections of Colombia were reviewed (view Appendix). The specimens described here are deposited in the insect collection of the Instituto de Ciencias Naturales (ICN), Universidad Nacional de Colombia, Bogotá, Colombia. The nomenclatural treatment, morphological terminology and taxonomic characters used here follow Gauld (1991, 2000). The species treated in this study were compared with the descriptions made by Brullé (1846), Cameron (1886), Cushman (1920), Gauld (2000), Kriechbaumer (1890), Mocsary (1905), and Schrottky (1911).

Systematics

Genus *Apechoneura* Kriechbaumer, 1890

Apechoneura seminigra Herrera, sp. n.

urn:lsid:zoobank.org:act:4CFB6077-71E1-42D0-92FB-77907767B3CC

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

Figures 1–13

Material examined. HOLOTYPE: Female, Colombia, Amazonas: Parque Nacional Natural Amacayacu Caño Mata Matá, 3°41'N, 70°15'W, Malaise trap, Martin Kelsey: 200 m, II-III.1989 (ICN 083474). PARATYPES: 1 female, same data as holotype (ICN 083472); 1 female, same locality, 300 m, 1.III.1988, bosque de tierra firme (ICN 083471).

Non-type material: 1 male, same locality, bosque de várzea (ICN 083473).

Diagnosis. This species can be diagnosed from all other Neotropical *Apechoneura* by the combination of the following: head orange; mesosoma and legs mostly orange (hind leg partly black); metasoma black. Epicnemial carina absent. Metapleuron with a conspicuous sharp lateral denticle. Hind wing with first abscissa of *Cu*1 0.2× as long as *cu-a*.

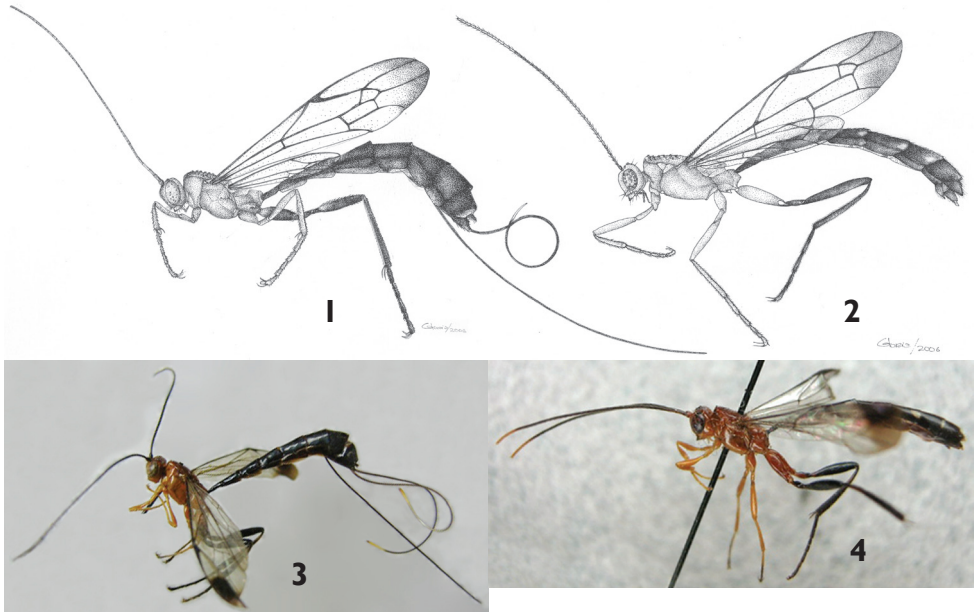
Description. Female. Fore wing length 15.0 mm.

Head. Clypeus almost flat, with a weak transverse ridge near apex; malar space 0.6× as long as basal mandibular width; lower face at narrowest point 0.9× as wide as height from clypeofacial suture to level of insertion of antenna; hypostomal carina joined to occipital carina far from base of mandible; posterior ocellus separated from eye by 1.3–1.5× its own maximum diameter. Antenna with flagellomeres 1 and 2 subequal by length; subapical flagellomere slightly elongate.

Mesosoma. Pronotum with upper hind margin swollen, forming a small conical projection; scutoscuteellar groove broad and shallow; scutellum with three evident rugae posteriorly; epicnemial carina absent (Figs 1, 3, 5); sternal region of mesothorax smooth and polished; metapleuron with a rather conspicuous sharp lateral projection near posterior end; submetapleural carina narrow with a distinct low median denticle (Fig. 1). Propodeum in profile more or less flat; anterior transverse carina complete laterally, separating area spiracularis from area lateralis, mediodorsally incomplete so area basalis is not enclosed posteriorly; area basalis slightly transverse; lateromedian longitudinal carina not present behind anterior transverse carina (Figs 7, 9).

Legs. Fore leg with tibia slightly inflated, tarsus with long hairs on inner surface; mid leg with tibia bearing several stout spines.

Wings. (Fig. 12) Fore wing with areolet large, anteriorly narrowly truncate, with *2m-cu* joining it very slightly basal of middle; second discal cell short, with vein *1m-cu* about half as long as abscissa of *Cu*1 between *Rs&M* and *1m-cu*; hind wing with apical abscissa of *Cu*1 joining *cu-a* clearly closer to *M* than to *1A*; first abscissa of *Cu*1 0.2× as long as *cu-a*.



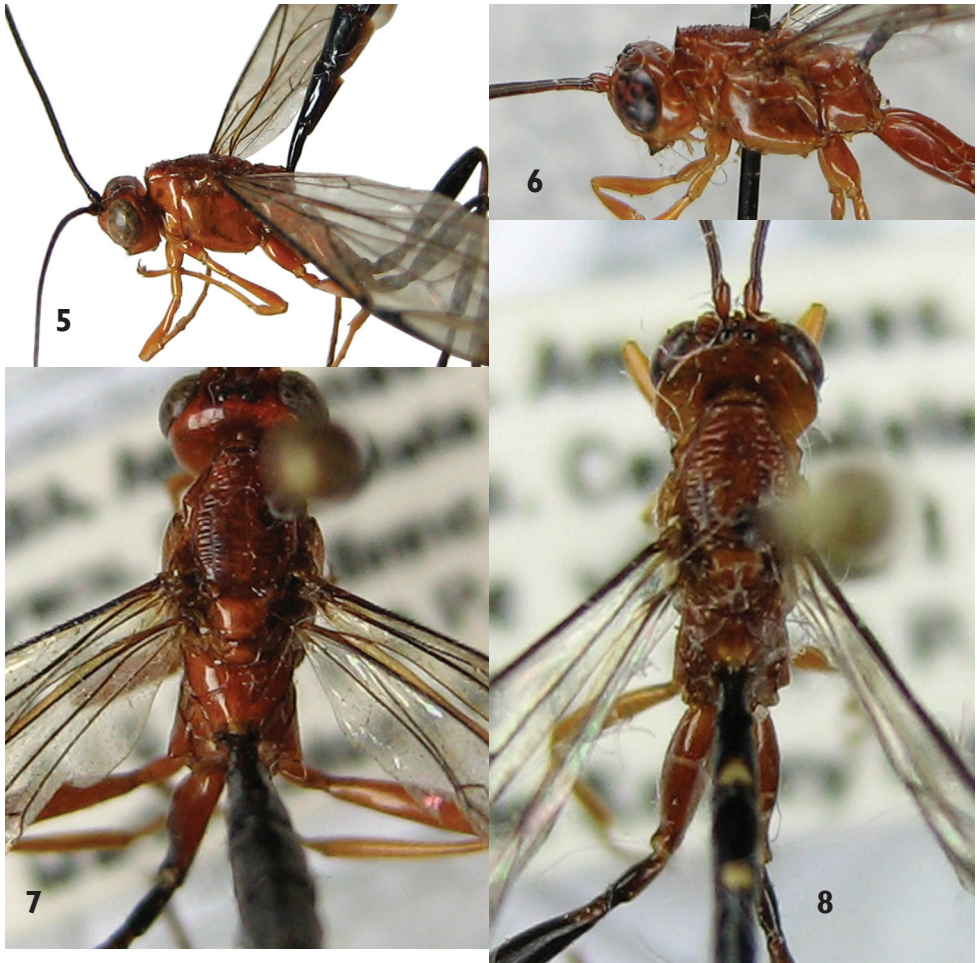
Figures 1–4. Habitus of *Apechoneura seminigra* sp. n. **1, 3** female, holotype **2, 4** putative male **1, 2** line drawings **3, 4** photographs.

Metasoma. Tergite 1 slender, 3.5–4.0× as long as posteriorly broad; sternite 1 short, reaching about 0.3–0.4 of length of tergite, with a median swelling centrally. Tergite 2 1.9–2.3× as long as posteriorly broad, with isolated pubescence; tergite 7 mediodorsally without an indentation posteriorly; tergite 8, in lateral view, tapered to a bluntly rounded apex, without a cornus, and with uniformly scattered pubescence; tergite 9 bearing long pubescence. Ovipositor, at rest extending beyond apex of metasoma by 3.5–3.8× the length of the metatibia.

Color. (Figs 3, 5, 7, 10) Head orange; flagellum predominantly black, two basal flagellomeres ventrally reddish. Mesosoma orange. Fore and mid legs orange; hind leg with coxa orange with a ventro-lateral black spot on the apex of the outer side, trochanter and trochantellus black except for some small orange spots, femur, tibia and tarsus black. Metasoma black, hypopygium centrally orange. Ovipositor sheath black except for subapical whitish wide band. Fore wing hyaline, with a distinctive apical black band; pterostigma black.

Variation. The female identified with the code ICN 083471 has the fore wing with the areolet petiolate.

Putative Male. Similar to female in structure, but smaller (fore wing length 10.0 mm). Hind wing with apical abscissa of *Cu*1 arising from *M* apical to junction of *M* + *Cu*1 with *cu-a* (Figs 11, 13). Antenna black with apical flagellomeres pale (Fig. 4). Metasoma mostly black, tergites 1–6 with a yellow triangular spot at posterior margin (Figs 4, 8). Metapleuron with denticle smaller and paler than in the female.



Figures 5–8. *Apechoneura seminigra* sp. n. **5, 7** female, holotype **6, 8** putative male **5, 6** Head, mesosoma and part of metasoma, lateral view **7, 8** head, mesosoma and part of metasoma, dorsal view.

Specimen condition. The male exemplar was deteriorated during the drawing process. Its antenna was broken and lost.

Etymology. The species name refers to its color (i.e. metasoma and most part of hind leg black).

Remarks. *Apechoneura seminigra* sp. n., just like *A. nigricornis*, lacks an epicnemial carina; this characteristic separates them from the rest of the species of the genus. As *A. nigricornis*, *A. seminigra* sp. n. possesses a conical projection on the metapleuron and lacks an indentation on tergite 7. However, the metasoma is orange in *A. nigricornis* and black in *A. seminigra* sp. n. Also, in the hind wing, the first abscissa of *Cu*1 is 0.4× as long as *cu-a* in *A. nigricornis* and 0.2 in *A. seminigra* sp. n. Although these two species are rather similar morphologically, the difference in color

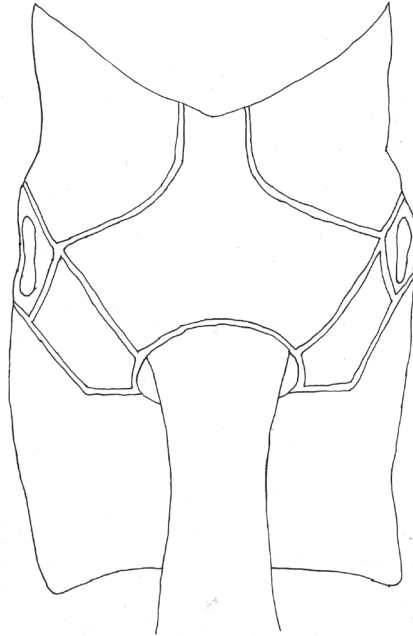
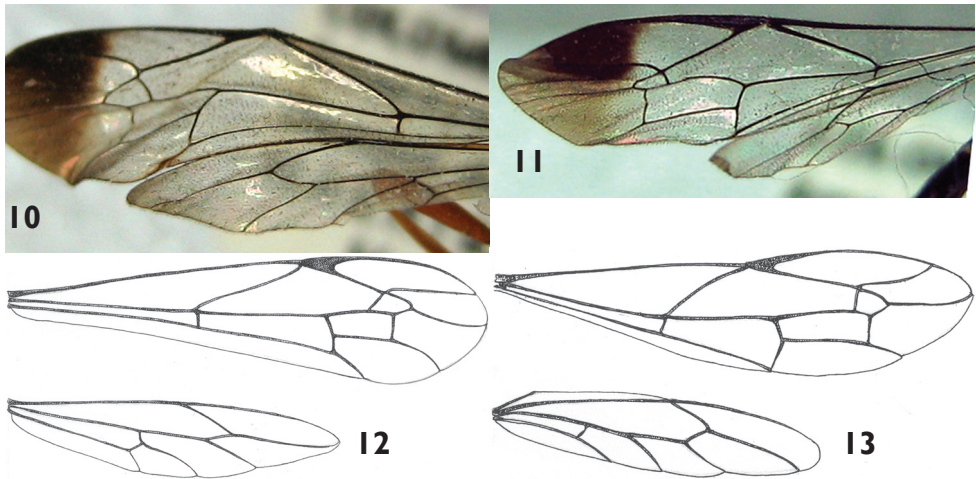


Figure 9. *Apechoneura seminigra* sp. n., female, holotype - propodeum, dorsal view.



Figures 10–13. Wings of *Apechoneura seminigra* sp. n. **10, 12** female, holotype; **11, 13** putative male.

pattern makes in this case their separation reliable. Gauld (2000) examined extensive material of *A. nigricornis* from Costa Rica but also some material from Brazil and Peru, and Herrera (2006) examined one specimen of *A. nigricornis* collected in Porc (Antioquia, Colombia) in 1998 and no color variation compared to the holotype of this species was found.

Comments. *Apechoneura seminigra* sp. n. is so far only known from Colombia, Amazonian Region, northwest of Leticia. According to Gauld (2000) there is significant sexual dimorphism in *Apechoneura* and the sex association is often difficult, in part because the male specimens are less frequently collected. Despite the differences between the female specimens and the male specimen of *Apechoneura seminigra* sp. n., especially in the hind wing venation, they are tentatively considered here as belonging to the same species, mainly because all the specimens were collected in the same exact locality, in two consecutive years.

Acknowledgements

Edgard E. Palacio loaned to me the specimens that during the study belonged to his personal collection and deposited them into the ICN insect collection. Thanks to Carlos E. Sarmiento (ICN) for housing the type material. Gloria Echeverri from the Herbarium of Universidad de Antioquia (HUA) made the drawings (except Figure 9). Luciana Bueno dos Reis Fernandes edited the figures. Thanks to Ricardo Callejas, Fernando J. Muñoz-Quesada, Fernando Fernández, John Alveiro Quiroz, Diego Campos, Allan H. Smith, Víctor Hugo González and Juan Manuel Vargas who advised me during my undergraduate project. Also special thanks to the two reviewers for their helpful comments.

References

- Brullé MA (1846) Hyménoptères, 4. In: Lepeletier de Saint-Fargeau A (Ed.) Histoire Naturelle des Insectes. Paris, 56–521.
- Cameron P (1886) Hymenoptera. In: Godman FD, Salvin O (Eds) *Biologia Centrali Americana*; or, Contributions to the knowledge of the fauna and flora of Mexico and Central America, Zoology 1: 241–328.
- Carrasco ZF (1972) Catalogo de la familia Ichneumonidae peruanos. *Revista Peruana de Entomologia* 15(2):324–332.
- Cushman RA (1920) Viereck's family Labenidae with description of a new species of *Apechoneura* (Hymenoptera., Ichneumonidae). *Proceedings of the Entomological Society of Washington* 22: 76–80.
- De Santis L, Urban D, Graf V (1973) Sobre Himenópteros parásitos de Brasil y Argentina. *Acta Biologica Paranaense* 2(1/4):41–50.
- Enderlein G (1919) Beiträge zur Kenntnis aussereuropäischer Ichneumoniden IV. Einige neue Pimpliden. *Sitzungsberichte der Gesellschaft Naturforschender Freunde, Berlin*, 146–153.
- Gauld ID (1991) The Ichneumonidae of Costa Rica 1. *Memoirs of the American Entomological Institute* 47: 1–589.
- Gauld ID (2000) The Ichneumonidae of Costa Rica 3. *Memoirs of the American Entomological Institute* 63: 1–453. doi: 10.1111/j.1096-3642.2000.tb00015.x

- Gauld ID, Wahl DB (2000) The Labeninae (Hymenoptera: Ichneumonidae): a study in phylogenetic reconstruction and evolutionary biology. *Zoological Journal of the Linnean Society* 129: 271–347. doi: 10.1111/j.1096-3642.2000.tb00015.x
- Hernández-Aguilar SG, Kasparyan DR, Ruíz-Cancino E, Covarrubias Dimas CA (2000) Especies de Labeninae y Brachycyrtinae (Hymenoptera: Ichneumonidae) en la reserva “El Cielo”, Tamaulipas, Mexico. *Memorias XXIII Congreso Nacional de Control Biológico*, 228–230.
- Herrera AF (2006) Labeninae (Hymenoptera: Ichneumonidae) de Colombia. Estudio taxonómico preliminar. Undergraduate thesis, Universidad de Antioquia, Medellín, Antioquia.
- Kriechbaumer J (1890) Ichneumoniden- Studien. Neue Ichneumoniden des Wiener Museums. II. *Annalen des Naturhistorischen Hofmuseums Wien* 5: 479–491.
- Lanfranco LD (1980) Contribución al conocimiento de los Ichneumonidos de Chile (Hymenoptera: Ichneumonidae). *Revista Chilena de Entomología* 10: 77–84.
- Maes J (1989) Catalogo de los Insectos controladores biológicos en Nicaragua. Volumen III. Insectos parasitoides. *Revista Nicaraguense de Entomología* 10: 1–138.
- Mocsáry A (1905) Rhyssae sociarumque species in collection Musei Nationalis Hungarici. *Annales Musei Nationalis Hungarici* 3: 1–20.
- Porter CC (1981) *Certonotus* Kriechbaumer (Hymenoptera: Ichneumonidae), an Australian genus newly recorded in South America. *Florida Entomologist* 64: 235–244. doi: 10.2307/3494575
- Ruíz-Cancino E, Kasparyan DR, Coronado-Blanco JM (2002). 37. Ichneumonidae. In: Llorente Bousquets J, Morrone JJ (Eds). *Biodiversidad, Taxonomía y Biogeografía de Artrópodos de México: Hacia una síntesis de su conocimiento*. CONABIO-ECOSUR-BAYER, México, 631–646.
- Schrottky C (1911) Ichneumonidarum species quatuor novae. *Bollettino del Laboratorio di Zoologia. Portici* 5: 34–36.
- Townes HK (1969) Genera of Ichneumonidae 1. *Memoirs of the American Entomological Institute* 11: 1–300.
- Townes HK, Townes M (1960) Ichneumon-flies of America north of Mexico: 2. Subfamilies Ephialtinae, Xoridinae, Acaenitinae. *United States National Museum Bulletin* 216(2): 1–676. doi: 10.5479/si.03629236.216.1-2
- Townes HK, Townes M (1966) A catalogue and reclassification of neotropic Ichneumonidae. *Memoirs of the American Entomological Institute* 8: 1–367.
- Wahl DB (1993) Cladistics of the ichneumonid subfamily Labeninae (Hymenoptera: Ichneumonidae). *Entomologia Generalis* 18: 91–105.
- Yu DS, van Achterberg K, Horstmann K (2005) *World Ichneumonoidea 2004. Taxonomy, Biology, Morphology and Distribution*. Taxapad, CD/DVD, Vancouver, Canada.

Appendix

List of collections

- Instituto Humboldt (Acronym: **IAvH-E**)
- Insect Collection, Instituto de Ciencias Naturales, Universidad Nacional de Colombia, Bogotá (Acronym: **ICN**)
- Museo de Entomología “Francisco Luis Gallego”, Universidad Nacional, sede Medellín. (Acronym: **UNCM**)
- Instituto de Biología, Universidad de Antioquia, Medellín. (Acronym: **CEUA**)
- Facultad de Agronomía, Universidad Nacional de Colombia; Bogotá (Acronym: **UNAB**)
- Museo de Historia Natural, Pontificia Universidad Javeriana; Bogotá (Acronym: **MUJ**)
- Corporación para Investigaciones Biológicas; Medellín (Acronym: **CIB**)
- Universidad Pedagógica Nacional; Bogotá (Acronym: **UPNC**)
- Edgard Palacio Insect Collection- Colección Personal; Bogotá (Acronym: **EPIC**)
- Museo Universidad La Salle, Bogotá. (Acronym: **U La Salle**)
- Colección Entomológica “Luis María Murillo”, Instituto Colombiano Agropecuario, Tibaitabá. Bogotá (Acronym: **CELM**)
- Museo de Ciencias Naturales, Colegio San José. Medellín, Barrio Boston. (Acronym: **CSJ**)
- Colección entomológica Piedras Blancas (Comfenalco) (Acronym: **CEPB**)
- Colección personal del profesor Oscar E. Ortega M. (Oficina- Unalmed) (Acronym: **OOCP**)