



First record of the assassin bug genus *Coilopus* Elkins, 1969 (Hemiptera: Heteroptera: Reduviidae) from Colombia

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Abstract: The assassin bug genus *Coilopus* Elkins, 1969 is recorded for the first time from Colombia. *Coilopus vellus* Elkins, 1969 is a wasp mimic that was previously recorded from Costa Rica, French Guiana, and Brazil. The Colombian specimens fill the distributional gap between the known Central and South American records. In addition, based on collected wasps from the same place as *Coilopus*, *Mischocyttarus* sp. (Vespidae: Polistinae) is proposed as the hymenopteran model of this mimetic harpactorine.

Key words: Harpactorinae, Harpactorini, mimetism, Neotropical region

Reduviidae, or assassin bugs, are the second-most speciose family of Heteroptera, with nearly 7,000 species described (Maldonado 1990; Henry 2009). Of the 25 subfamilies recognized (Villiers 1963; Davis 1969; Putshkov and Putshkov 1985; Hwang and Weirauch 2012), Harpactorinae is the largest and most diverse, with more than 2,000 described species (Putshkov and Putshkov 1988; Maldonado 1990; Zhang and Weirauch 2014). In the Neotropical region two tribes are recognized (Schuh and Slater 1995), Apiomerini with 12 extant genera (Forero et al. 2011), and Harpactorini with 52 native genera (Bérenger 2003, 2007; Forero et al. 2008; McPherson and Ahmad 2011; Forero 2012), and one introduced, *Ampibolus* Klug, 1830 (Forero et al. 2004).

For most genera of Neotropical Harpactorini the only available data is their original description, in most cases without any mention in the literature afterwards (e.g., *Ambastus* Stål, 1872; *Carmenula* Maldonado, 1992; *Ecelenodulus* Elkins & Wygodzinsky, 1957; *Thysanuchus* Bergroth, 1918), or without any modern taxonomic treatment (Forero et al. 2008). This has led to confusion about the generic circumscription of a number of taxa

and resulted in a number of synonyms among Neotropical genera (Gil-Santana and Forero 2009; Swanson 2012). If taxonomic information is scant, biological data are basically non-existent for most Neotropical Harpactorini. *Coilopus* Elkins, 1969 is a harpactorine genus resembling wasps (Elkins 1969), for which no biological information is available. *Coilopus* has been recorded from Costa Rica, French Guiana, and Brazil (Elkins 1969; Gil-Santana and Forero 2009).

During fieldwork at Reserva El Caduceo (Colombia, Meta, San Martín), a few specimens of *Coilopus* were found. They represent a new generic record from Colombia.

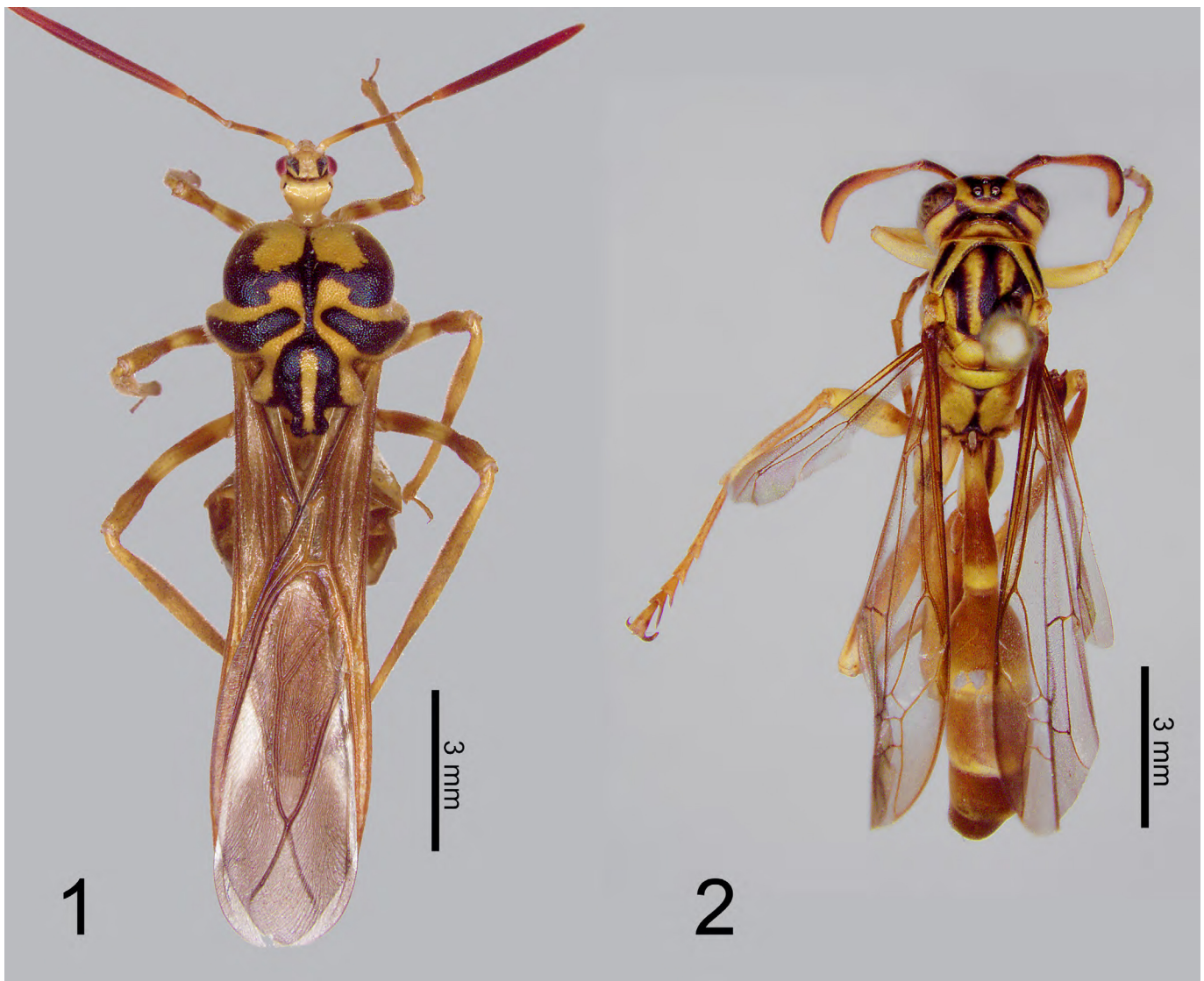
The Reserva Natural El Caduceo is located in the municipality of San Martín (Meta, Colombia), at 03.66553° N, 073.65831° W, with an elevation of 309 m above sea level. The specimens were manually collected between 10–14 March 2014. All examined specimens are deposited in the Entomological collection of the Museo Javeriano de Historia Natural (MPUJ), of the Pontificia Universidad Javeriana, Bogotá, Colombia.

MATERIAL EXAMINED: 1 female, COLOMBIA, Meta, San Martín, Reserva Natural El Caduceo, km 4.5 to San Francisco, 309 m, 03.66553° N, 073.65831° W, 10–14 March 2014, L. Rodríguez leg. / Pastizal / *Coilopus vellus* Elkins, 1969 det. D. Forero 2014 / MPUJ_ENT 0017415; 1 female, idem, L. García leg. / Bosque de Galería / *Coilopus vellus* Elkins, 1969 det. D. Forero 2014 / MPUJ_ENT 0017416.

***Coilopus* Elkins, 1969**

Coilopus Elkins (1969): 456 [gen. nov., description]; Putshkov and Putshkov (1985): 39 [catalog]; Maldonado (1990): 178 [catalog].

Notocyrtoides Carvalho, Costa and Gil-Santana (2001): 1 [gen. nov., description]; Gil-Santana and Forero (2009): 56 [synonym of *Coilopus*].



Figures 1 and 2. *Coilopus vellus* Elkins and its putative model. **1:** Female dorsal habitus of *C. vellus* [MPUJ_ENT 0017416]. **2:** Dorsal habitus of *Mischocyttarus* sp. (Vespidae), the putative mimic model of *C. vellus* [MPUJ_ENT 0017414].

DIAGNOSIS: Medium sized (11–14 mm); head with paired, long spine-like post antennal tubercles; antenna with basiflagellomere incrassate; legs long and narrow, all femora slender, mid and hind tibiae slightly incrassate; pronotum inflated, finely punctuated, prolonged posteriorly covering at most basal abdominal segment, divided in three lobes, first lobe broadly rounded on anterior margin, second lobe laterally expanded as sharp lateral prolongations, third lobe constricted basally with paired lateral prolongations and apically truncate; hemelytron surpassing abdomen for about a third of its length; abdomen strongly constricted at base; male paramere well developed and externally visible.

Coilopus vellus Elkins, 1969 (Figure 1)

Coilopus vellus Elkins (1969): 460 [sp. nov., description]; Putshkov and Putshkov (1988): 42 [catalog]; Maldonado (1990): 178 [catalog]; Zhang and Weirauch (2013): 4 [sticky glands].

Notocyrtoides tuberculatus Carvalho, Costa and Gil-Santana (2001): 1 [sp. nov., description]; Gil-Santana and Forero (2009): 56 [as synonym of *Coilopus*].

DIAGNOSIS: Foretibia with apical spur; longitudinal median sulcus of pronotum reaching hind lobe of pronotum; male genitalia with dorsal phallosclerite broad, anteriorly pointed.

Maldonado and Lozada (1992) stated that *Coilopus* resembles bees, although Elkins (1969) had already suggested it to be a wasp mimic, similar to *Dolichovespula* Rohwer or *Vespa* Linnaeus. The Colombian specimens of *C. vellus* when alive resembled a small wasp in their movements and general appearance. Several species of Vespidae occur in the reserve, but there is a species of *Mischocyttarus* (Vespidae: Polistinae) at El Caduceo which is very similar to *C. vellus*, both in structure and coloration (Figure 2). Unlike *Dolichovespula* and *Vespa*, which do not have Neotropical distribution, *Mischocyttarus* is mostly Neotropical in distribution (Carpenter 1993; Silveira 2008). This species

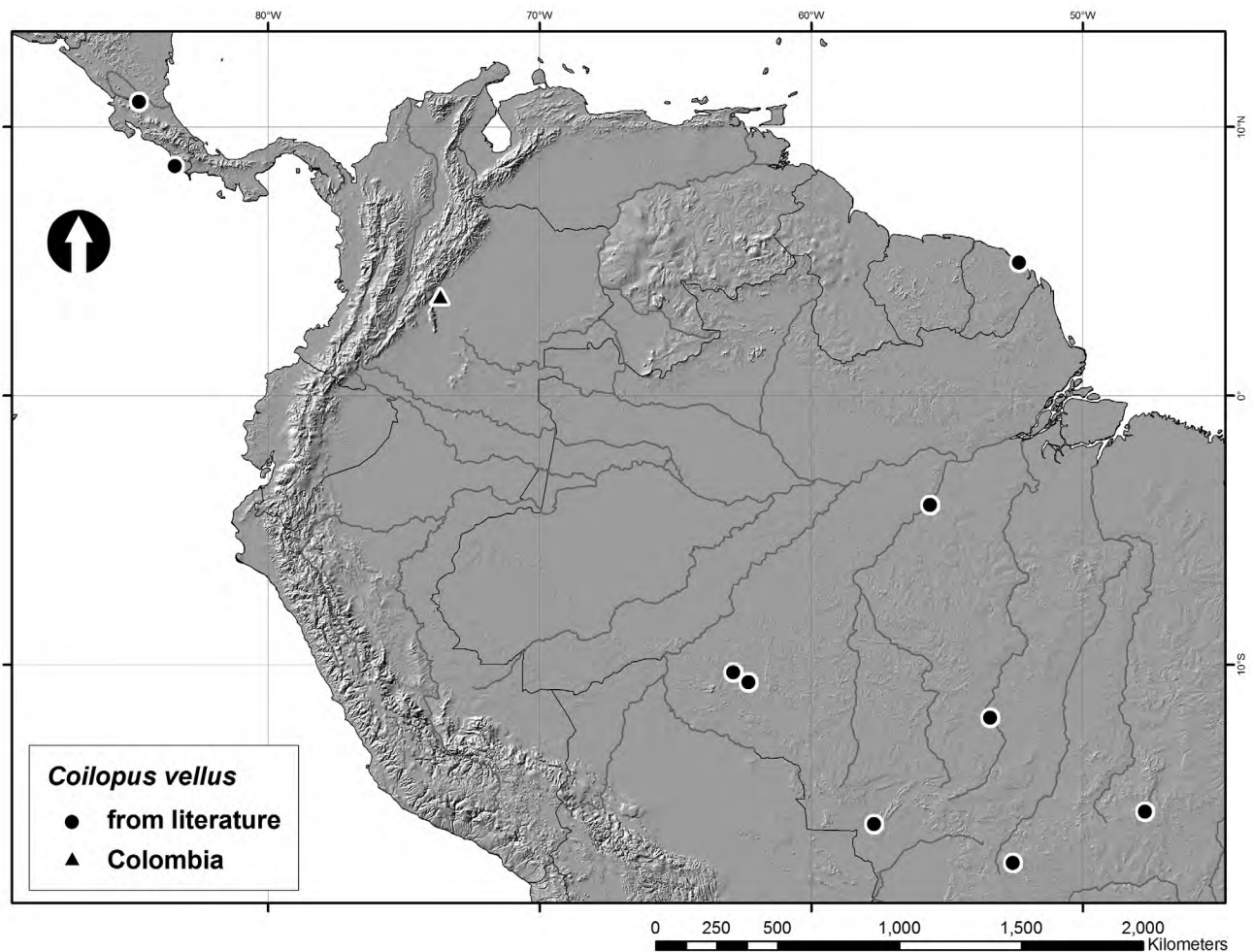


Figure 3. Distribution of *Coilopus vellus* Elkins. Circles are recorded localities from the literature and the triangle indicates the placement of the Colombian locality of the examined specimens.

of *Mischocyttarus* has a similar coloration to *C. vellus*, being mostly pale yellow, with the pronotum yellow with a contrasting dark pattern, and a banded abdomen with pale brown tergites (Figure 2). Although *C. vellus* is more robust than this *Mischocyttarus* species, it structurally resembles this wasp due to the similar total length, enlarged antennal basiflagellomere, and constricted abdominal base (Figure 2). Despite some structural and minor obvious color differences, we think that the resemblance is striking. The black markings on the rounded anterior lobe of the enlarged pronotum in *Coilopus* might correspond to the pair of compound eyes of the vespid, with the black markings of the other lobes of the pronotum vaguely resembling the dark markings on the thorax of *Mischocyttarus*. Nonetheless, the nearly horizontal black markings on the second pronotal lobe in *Coilopus* do not fully correspond to any structure or color pattern in the wasp. Overall, the striking black and yellow color pattern and the particular structural modifications in *Coilopus* might be considered a case of imperfect mimicry, which might be still advantageous (e.g., Penney et al. 2012).

El Caduceo reserve protects a relict of gallery forest surrounded by a matrix of anthropogenic grassland.

Specimens of *C. vellus* were collected in both types of habitats. The area where the reserve is located belongs to the biogeographic Sabana province (Hernández et al. 1992; Morrone 2014), an area which is currently a highly transformed landscape (Etter et al. 2008). Given that *C. vellus* was found in both a gallery forest and open grassland, this might indicate that this species is not habitat specific, explaining in part its widespread distribution in the Neotropical region.

Coilopus vellus was previously known from Costa Rica (Provincia Puntarenas: Estacion Agujas [08.5348° N, 083.4267° W]; Provincia Alajuela: Playuelas [10.9553° N, 084.7496° W]), French Guiana (Cayenne), and Brazil (Goiás: Mineiros; Pará: Serra Norte Pedreira; Rondônia: 62 km southwest of Ariquemes, Ouro Preto do Oeste; Mato Grosso: Parque Nacional do Xingu, Cáceres; Distrito Federal: 32 km north of Brasilia at Embrapa [15.5833° S, 047.7000° W], 32 km north of Brasilia near Planaltina) (Elkins 1969; Carvalho et al. 2001; Gil-Santana and Fore-ro 2009). All the known localities for this species are in lowland areas. The presence of this species in Colombia not only represents a new record from Colombia but fills the distributional gap for this species as well (Figure 3).

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