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## New record and redescription of the monotypic genus *Comefulvius* Carvalho & Carpintero, 1985 (Hemiptera: Heteroptera: Miridae: Cylapinae)

FRÉDÉRIC CHÉROT<sup>1</sup>, DIEGO L. CARPINTERO<sup>2</sup> & ANDRZEJ WOLSKI<sup>3,4</sup>

<sup>1</sup>Service Public de Wallonie, DGO3, DEMNA, Av. Maréchal Juin, 23, BE-5030 Gembloux, Belgium, U.E.

E-mail: frederic.cherot@spw.wallonie.be

<sup>2</sup>División Entomología, Museo Argentino de Ciencias Naturales “Bernardino Rivadavia”. Av. Ángel Gallardo 470 (1405), Ciudad Autónoma de Buenos Aires, Argentina. E-mail: dcarpint@macn.gov.ar

<sup>3</sup>Department of Biosystematics, Opole University, Oleska 22, 45-052 Opole, Poland. E-mail: andrzej.wolski@uni.opole.pl

<sup>4</sup>Corresponding author

### Abstract

*Comefulvius chingonus* Carvalho & Carpintero, the only representative of the genus *Comefulvius*, previously known only from Córdoba Province, Argentina, is recorded from Ecuador. Redescription of *Comefulvius* is given along with color photographs of the adult and illustrations of the male genitalia.

**Key words:** *Comefulvius chingonus*, taxonomy, Neotropics

### Introduction

The New World Cylapinae, currently including 136 species classified in 25 genera (Schuh 1995, 2002–2013; Gorczyca 2006; Henry et al. 2011), are mostly known only from the original generic and species descriptions. Carvalho & Ferreira (1994) provided a key to the New World cylapine genera. Carvalho & Costa (1994), Wolski & Henry (2012), and Wolski (2013) revised the New World representatives of the genera *Fulvius* Stål, *Peritropis* Uhler, and *Cylapocoris* Carvalho. Gorczyca (2006) published a worldwide catalog of the subfamily.

Carvalho & Carpintero (1985) described the genus *Comefulvius* to accommodate the species *C. chingonus*. There are no subsequent citations in the literature, excepted in faunal lists and catalogs (e.g. Schuh 1995, 2002–2013; Gorczyca 2000, 2006). This paper provides a new record of *Comefulvius chingonus* from Ecuador, along with its redescription. We also provide color photographs of the adult and drawings of the male genitalia.

### Material and methods

Observations were made using an Olympus SZX12 stereomicroscope and an Olympus BX50 optical microscope. Color photographs of the adults (Figs. 1–9) were taken with an Olympus ALTRA 20 and an Canon EOS 300D digital cameras.

Measurements were taken using an eyepiece (ocular) micrometer; all measurements are given in millimeters. Body length was measured from the apex of the clypeus to the posterior margin of the membrane. Body width was measured between the lateral margins of the hemelytra. Length of the head was measured from the apex of the clypeus to the posterior margin of vertex; width of the head between the outer margins of each eye; interocular distance, minimum distance between inner margins of each eye; length of the antennal and labial segments, between the base and apex. Lengths and widths of the pronotum were measured as follows: length, between the anterior and posterior margins; width of the anterior margin, between anterior angles; length of lateral margin, between the anterior and humeral angles; width of posterior margin, between the humeral angles.

Dissections of male genitalia were performed using the technique mentioned by Kerzhner and Konstantinov (1999). The terminology of the male genitalic structures follows Konstantinov (2003) and Cassis (2008).

The examined material, including the holotype and the specimen collected in Ecuador, was borrowed from institutions listed below:

MACN, División Entomología, Museo Argentino de Ciencias Naturales “Bernardino Rivadavia”, Buenos Aires, Argentina.

USNM, Systematic Entomology Laboratory [SEL], ARS, USDA, c/o National Museum of Natural History, Smithsonian Institution, Washington D.C., USA.

## Taxonomy

### *Comefulvius* Carvalho & Carpintero, 1985

(Figures 1–13)

*Comefulvius* Carvalho & Carpintero, 1985: 510 (as new genus) [type species: *Comefulvius chingonus* Carvalho & Carpintero, 1985, by original designation].

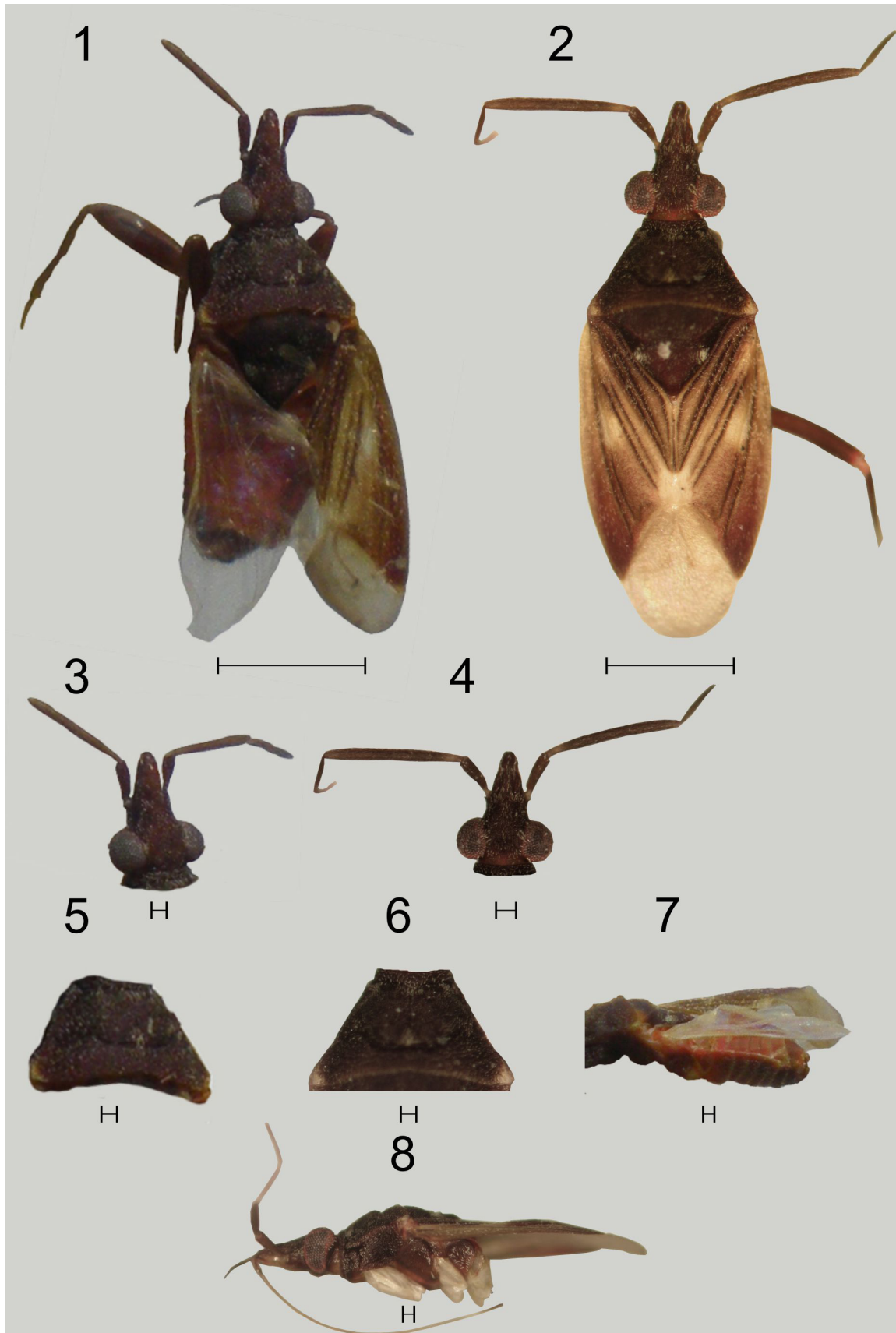
*Comefulvius*: Carvalho & Froeschner, 1990: 319 (catalog of Carvalho’s types); Carvalho & Ferreira, 1994: 328 (key of Neotropical genera of Cylapinae); Schuh, 1995: 21 (catalog), 2002–2013 (online catalog); Gorczyca, 2000: 49 (list of genera of the tribe Fulviini), 2006: 27 (catalog).

**Diagnosis.** Easily distinguished from other Cylapinae by the following set of characters: head strongly elongated and pointed, horizontal (Figs. 1–4); labium very long and thin, with segment I very short, barely reaching buccula medially (Fig. 8); labial segment II longest, reaching metacoxae; scent gland efferent system absent; costal fracture absent (Figs. 1–2); corium and clavus with several rows of black punctures (Fig. 2).

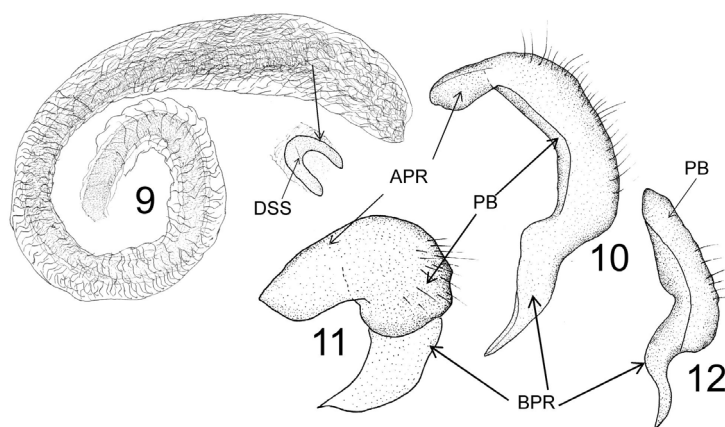
**Redescription.** *Male. Structure, texture, and vestiture.* Body suboval; dorsal surface matte, covered with dense, scalelike setae. **Head.** Strongly elongated horizontally, rugose with verrucose areas, also covered with scalelike setae; eye large, contiguous with pronotal collar, occupying practically entire head height in lateral view; antenniferous tubercle separated of anterior margin of eye; clypeus elongate, antenna short; antennal segment I relatively short, not reaching the apex of head, almost cylindrical, slightly thickened toward apex, mixed with sparse, simple, semirecumbent setae and very sparse, scalelike, adpressed setae; segment II cylindrical, covered with dense, semirecumbent setae; segments III and IV somewhat more slender than segment II, mixed with relatively dense, semirecumbent setae and with sparse, erect, relatively long setae; labium very thin, reaching slightly beyond metacoxae; labial segment I somewhat thicker than segments II–IV, very short, barely reaching posterior portion of buccula; remaining segments very thin, with segment II very long, much longer than III and IV combined. **Thorax. Pronotum.** Rugose, with verrucose areas, trapezoidal; collar distinct, well separated from remainder of pronotum; calli large, occupying 2/3 of pronotal disk area, not strongly raised; lateral margin with indistinct carina along entire length; posterior margin slightly arcuate. **Scutellum and mesoscutum.** Mesoscutum large, uncovered, posterior margin rounded; scutellum pointed, flat, verrucose, covered with relatively sparse setae, except for two characteristic bundles of contrastingly whitish setae, each situated basolaterally. **Thoracic pleura.** Covered with scalelike setae, being more densely distributed on proepisternum and metepisternum; proepisternum and proepimeron strongly rugose; remaining pleura, except for metepisternum weakly rugose; metepisternum verrucose; scent gland efferent system absent. **Hemelytron.** Matte, not rugose or verrucose as remainder of dorsum; corium with four rows of punctures: two present along medial fracture and R+M vein and two present along the latter; clavus with row of punctures along claval suture and along claval margin; embolium (exocorium) wide; costal fracture absent; membrane with single cell, reduced. **Legs.** Tarsus two-segmented; tarsomere II subdivided medially; pretarsal claw strongly toothed subapically.

**Male genitalia.** *Aedeagus* (Fig. 9). Endosoma strongly elongate, broader toward apex, membranous; *ductus seminis* long, reaching subapical portion of endosoma, relatively thick, terminating in a small, horseshoe-shaped sclerite. *Left paramere* (Figs. 10–11). Moderately curved; apical process relatively short, broad and obtuse at apex; paramere body thick, covered with sparse setae. *Right paramere* (Fig. 12). Apical process strongly reduced; paramere body with rounded dorsal margin and strongly sinuate ventral margin.

*Female.* Unknown.



**FIGURES 1–8.** *Comefulvius chingonus*: 1, 3, 5, 7. Male holotype from Argentina. 2, 4, 6, 8: Male from Ecuador. 1–2. Habitus in dorsal view. Scale = 1 mm. 3–4. Head in dorsal view. 5–6. Pronotum in dorsal view. 7–8. Body in lateral view. Scales = 0.1 mm.



**FIGURES 9–12.** Male genitalia of *C. chingonus* (specimen from Ecuador). 9. Endosoma (lateral view); 10–11. Left paramere (10: left lateral view; 11: dorsal view); 12. Right paramere (left lateral view). APR = apical process; BPR = basal process; DSS = sclerotized portion of ductus seminis inside endosoma; PB = paramere body.

**Discussion.** *Comefulvius* is most similar to *Incafulvius* Carvalho and *Xenocylapus* Bergroth in sharing the peculiar, very long and thin labium, with the segment I very short, not reaching the middle of the gula and with segment II much longer than segments III and IV (Fig. 8; Carvalho 1976; van Doesburg 1985: Fig. 5). Such distinctive shape of the labium clearly delimits these three genera as a distinct group within Cylapinae. Additionally, *Comefulvius* shares with *Incafulvius* and *Xenocylapus* the lack of the scent gland efferent system of the metepisternum; Carvalho 1976; Wolski pers. obs.) and the absence of costal fracture (Carvalho 1976: Fig. 1; van Doesburg 1985: Fig. 1). *Comefulvius* is also similar to *Xenocylapus* in sharing the compact, strongly elongated and apically broad endosoma (Fig. 9; Wolski pers. obs.). *Comefulvius* is distinguished from *Incafulvius* and *Xenocylapus* by the strongly elongated head, the shape of clypeus and the shape of pronotal callosities (Figs. 1–2, 5–6; Carvalho 1976: Fig. 1; van Doesburg 1985: Fig. 1). *Comefulvius* can be also distinguished from both genera in possessing seven rows of punctures on the hemelytron (Figs. 1, 6) whereas *Incafulvius* has one and *Xenocylapus* has three to five punctured hemelytral rows (Carvalho 1976; van Doesburg 1985).

### *Comefulvius chingonus* Carvalho & Carpintero

*Comefulvius chingonus* Carvalho & Carpintero, 1985: 510 (new species).

*Comefulvius chingonus*: Carvalho & Froeschner, 1990: 319 (list of Carvalho's types); Carpintero & Carvalho 1993: 400 (list); Schuh, 1995: 21 (catalog), 2002–2013: (online catalog); Gorczyca, 2006: 27 (catalog).

**Redescription. Coloration** (Figs. 1–2). Dorsum dark brown to black with developed brown, yellow and dark reddish areas. **Head.** Mostly dark brown to black; maxillary plate and buccula dark brownish anteriorly, dirty yellowish posteriorly; antenna dark brown; segment I varying from pale to dark brown with a pale brown annulation basally; labial segment I dark brown; segments II–IV dirty yellowish. **Thorax. Pronotum.** Varying from dark brown to black, except for yellowish humeral angles. **Mesoscutum and scutellum.** Blackish. **Thoracic pleura.** Proepisternum and proepimeron blackish; remaining pleura dark brownish. **Hemelytron.** Basal half fuscous, apical half dark reddish to brownish; corium with relatively large, yellow patch medially, contiguous with inner margin of embolium, corium also with smaller yellowish patch on apex of inner angle; rows of punctures blackish. **Legs.** Dark brown fuscous with yellowish areas; coxae contrastingly yellow.

**Structure, texture, and vestiture.** Same as generic description.

**Measurements.** Male (n=2; based on original Carvalho & Carpintero 1985 measurements and additional measurements of the holotype and the USNM specimen; \*: holotype measurements; when measurements of holotype and USNM specimen are identical, value is not repeated). **Body.** Length: 4.2–4.7\*, width 1.5–1.6\*. **Head.** Length: 0.8\*–0.9, width: 0.7\*–0.8, interocular distance: 0.3. **Antenna.** Length of segment I: 0.4, II: 0.7\*–1.2, III: 0.4\*–0.5, IV: 0.4\*–0.6. **Labium** (USNM specimen only, immeasurable in holotype; partially damaged and obscured by glue). Length of segment I: 0.2, II: 3.1, III: 0.2, IV: 0.2. **Pronotum.** Length: 0.6\*–0.7, width of anterior margin: 0.5–0.6\*, length of lateral margin: 0.8\*, width of posterior margin: 1.3\*.

**Distribution.** Argentina (Córdoba Province), Ecuador (Orellana Province).

**Type material. Holotype** ♂: Argentina, Córdoba, La Serranita (31°43'58.64"S., 64°27'08.64"O), xi.1981, D. L. Carpintero leg. (transferred from D. L. Carpintero collection to MACN).

**Additional examined material. 1** ♂: Ecuador: Orellana Prov. (labeled Napo in error) Tiptutini Biodiversity Stn., Tower 1, 0° 37'55" S, 76°08'39 W, 216 m, 3 February 2002, T.J. Henry & P.S.F. Ferreira, ex mercury vapor light (USNM).

**Discussion.** The authors were not authorized to dissect the holotype of *Comefulvius chingonus* to compare its genital structures with those of the USNM specimen. However, the two specimens are very similar by measurements, external morphology and dorsal pattern (Figs 1–2, 3–4, 6–7) and we are confident the minor differences of coloration are only intraspecific variability.

*Comefulvius chingonus*, previously known from Argentina (Córdoba province), is here mentioned from Ecuador (Orellana province) for the first time. At first glance, it may seem surprising to find a species described from Argentina in Ecuador. However, our knowledge on distribution of the New World clypine, remains poorly known and the biology of *C. chingonus* is practically unknown. Similar distribution has been already noted for several New World clypine. *Fulvius bisbistillatus* Stål, 1860, widely distributed from Argentina to Mexico (Gorczyca 2006; Carpintero & Chérot, under press), is recorded from dry ecosystems such as Chaco National Park in Argentina (Melo et al. 2011) or Chiquitano forest in Bolivia (Wolski, unpublished) as well as tropical rainforest in Panama (Carvalho & Costa 1994). *Peritropis amphicyrta* Wolski & Henry is known from Argentina (Misiones Province) and Ecuador (Orellana Province) (Wolski & Henry 2012). It is also the case of different mirine and orthotyline such *Calocorisca sticticollis* (Stål, 1860), *Monalocorisca conspurcata* Reuter, 1913, *Taedia incaica* Carvalho & Gomes, 1971 (Mirini), *Chiloxionotus nigrofasciatus* Reuter, 1907, *Prepops bachmanni* Carvalho & Carpintero, 1990, *P. costalis* (Stål, 1860), *P. flavoniger tucumanensis* (Carvalho & Fontes, 1969), *P. nitidipennis* (Reuter, 1910) *P. persimilis* (Reuter, 1907) (Restheniini), *Adxenetus petiolatus* (Stål, 1860), *Lepidoxenetus amyioti* (Stal, 1860), *Herdonius armatus* Stål, 1860 and *H. vittatus* Carvalho & Ferreira, 1973 (Herdoniini) or *Orthotylylus* (*Melanotrichus*) *sumalaoensis* (Carvalho & Carpintero, 1992) for example (Carpintero & Carvalho, 1993).

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