

Two new species of *Clinocentrus* Haliday (Hymenoptera: Braconidae) from Argentina, with notes on South American species

Juan José Martínez*

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

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The Argentine species of the genus *Clinocentrus* Haliday are revised. Two new species are described, *Clinocentrus mamull* sp. nov. and *Clinocentrus roigi* sp. nov., which represent the southernmost records of the genus in South America. Additionally *Clinocentrus nigripectus* Enderlein is redescribed and a key to known South American species is provided.

Keywords: Rogadinae; Clinocentrini; new species; key; South America

Introduction

Clinocentrus Haliday is the only rogadine genus of the tribe Clinocentrini known to occur in the New World (Shaw 1997). It is cosmopolitan in distribution with more than 30 described extant species (Belokobyl'skij 1995; Chen and He 1997; Tenma and Hirowatari 1999; Yu et al. 2005). Its known members are solitary larval endoparasitoids of the families Tortricidae, Pyralidae, Momphidae, Choreutidae, Epermeniidae, Yponomeutidae and Oecophoridae (Lepidoptera) (Belokobyl'skij 1995).

The most recent taxonomic studies of the genus have dealt with Palearctic and Oriental species (van Achterberg 1991; Belokobyl'skij 1995; Chen and He 1997; Tenma and Hirowatari 1999) and no recent studies have been conducted regarding the Neotropical fauna. Six species have been reported from the New World, two of them from South America: *Clinocentrus seminiger* Szépligeti from Bolivia (Szépligeti 1906) and *Clinocentrus nigripectus* Enderlein from southern Brazil (Enderlein 1920). An additional Neotropical species, *Clinocentrus flaviventris* Ashmead, was described from the Caribbean island of St Vincent (Ashmead, 1894) and may reach continental areas of South America. More recently, unidentified species of the genus have been mentioned from Colombia (Campos 2004) and Venezuela (Torres and Briceño 2005).

The aim of this work is to describe two new species of *Clinocentrus* which extend the known distribution of the genus to central Argentina.

Material and methods

The specimens examined were collected with light traps or with a net by sweeping the vegetation. They are deposited in the Entomology Division, Museo Argentino de Ciencias Naturales “Bernardino Rivadavia”, Buenos Aires, Argentina (MACN). In

*Email: jjmartinez@macn.gov.ar

addition, the type of *C. nigripectus* Enderlein housed at the Museum and Institute of Zoology, Warsaw (MIZ) was examined. The type of *C. seminiger* Szépligeti could not be traced and is presumed lost (Papp and Ronkay, personal communication).

Morphological terminology follows Sharkey and Wharton (1997) and surface sculpture terminology follows Harris (1979).

Key to South American species of the genus *Clinocentrus*

1. Antenna short, 20-segmented *C. seminiger* Szépligeti
 Antenna longer, with 28 segments or more..... 2
2. Metasomal terga II and III entirely and uniformly covered with setae, malar space about as long as basal width of mandible (Figure 3C), mandibles slender in lateral view, propodeum almost entirely areolate rugose, not acinose or coriaceous anteriorly, body colour mostly brown
 *C. nigripectus* Enderlein
 Metasomal terga II and III devoid of setae medially and basally, setae present only on lateral and apical areas, malar space distinctly shorter than basal width of mandible (Figures 1C, 2C), mandibles broader, subtriangular in lateral view; propodeum acinose to coriaceous anteriorly, body colour mostly yellow 3
3. Wings infusate basally (Figure 2A,B), metasoma always uniformly yellow, mesosoma mostly yellow with black markings on the ventral area of the mesopleuron.....*C. roigi* sp. nov.
 Wings entirely hyaline (Figure 1A,B), at least tergum III and frequently terga II and IV brownish to brown, mesosoma mostly yellow to honey-yellow without distinct black markings on the ventral area of the mesopleuron *C. mamull* sp. nov.

Descriptions

Clinocentrus mamull sp. nov.
 (Figure 1)

Female

Body length. 3.2–3.8 mm.

Body colour. Mostly honey yellow, antenna, apex of mandibles and ovipositor sheaths black; lateral lobes of mesoscutum and axillar depression usually with black or dark brown markings, sometimes uniformly yellow; metasomal tergum III always brown, often terga II and IV also brownish; hind tibia gradually darkened towards apex; tarsi brownish; wings hyaline, veins brown.

Head. Almost entirely smooth, as high as it is long and 1.4–1.7 times higher than wide (Figure 1C–E); occipital carina complete, reaching hypostomal carina; eye large, 1.4–1.8 times higher than wide; temple 0.3–0.4 times as long as eye width, eye height

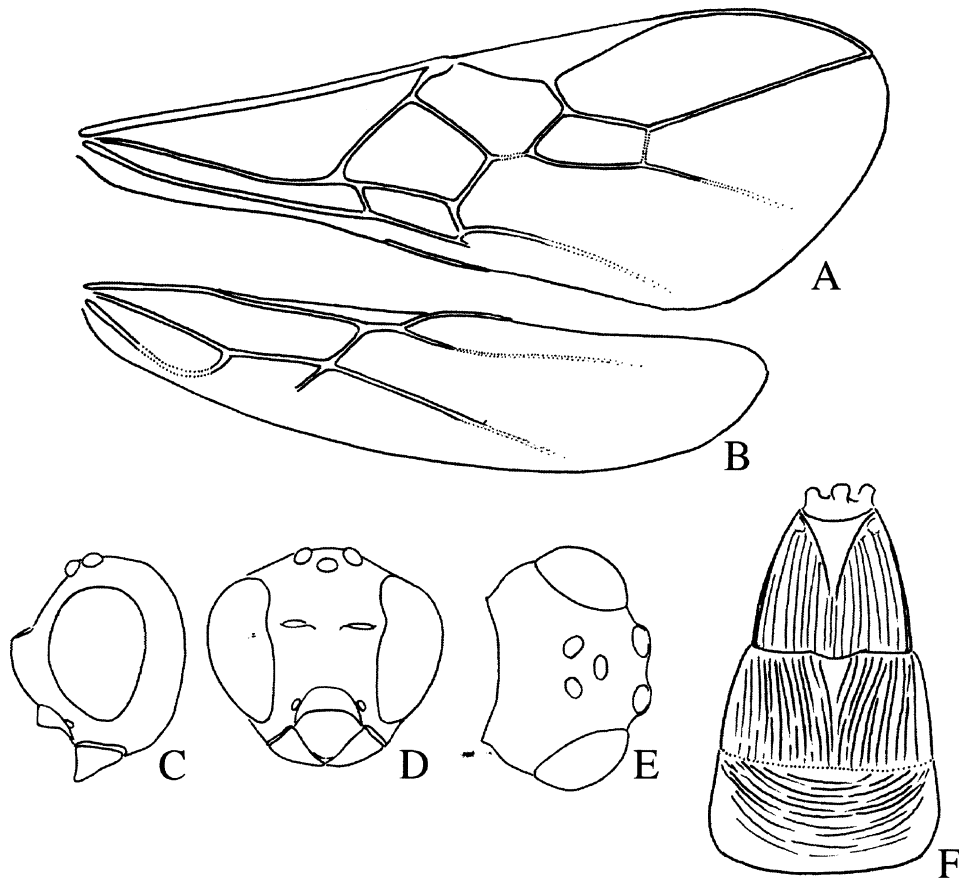


Figure 1. *Clinocentrus mamull* sp. nov. (A) Forewing; (B) hindwing; (C) head in lateral view; (D) head in anterior view; (E) head in dorsal view; (F) metasomal terga I to III in dorsal view.

about 8.0 times longer than malar space; malar space one-half to one-third basal width of mandible (Figure 1C); mandibles subtriangular in lateral view; hypoclypeal depression slightly wider than basal width of mandible; ocello-ocular distance 1.5–2.3 times the diameter of lateral ocellus and 1.5–1.7 times posterior ocellar line (Figure 1E); antenna with 28–30 segments, first flagellar segment 3.0 times longer than wide and only slightly longer than second flagellar segment.

Mesosoma. 1.8–2.0 times longer than wide and slightly higher than wide. Mesoscutum smooth; notauli present and complete, scrobiculate, enclosing a rugulose-striate median area posteriorly; prescutellar depression rugulose, scutellar disc subtriangular and smooth. Mesopleuron mostly smooth, except for subalar depression and sternaulus, which are scrobiculate; sternaulus weakly sinuate. Metapleuron rugulose. Propodeum mostly rugose-areolate but with two distinct acinose-coriaceous basal areas.

Wings. Forewing (Figure 1A) with marginal cell elongate; first submarginal cell 2.0 times as long as broad or longer; RS + Mb one-half to more than two-thirds the

length of 2RS; r about two-thirds the length of 3Rsa. Hindwing (Figure 1B) with vein M + CU slightly longer than 1M; junction between veins 1A and cu-a broadly rounded and desclerotized.

Metasoma. Tergum I 1.0–1.1 times longer than wide (Figure 1F), without spiracular tubercles, striate, with two more clearly defined anterior carinae converging posteriorly and enclosing a triangular smooth area. Tergum II striate, striations slightly convergent on median anterior area. Tergum III with transverse and broadly curved striations (Figure 1F). Terga II and III mostly devoid of setae anteriorly and medially. Metasomal terga beyond tergum III weakly sclerotized and collapsed in air-dried specimens. Ovipositor sheaths about 0.4 times the total body length.

Male

Unknown.

Distribution

Central Argentina. This species was always collected in the Espinal biogeographical province, as defined by Cabrera and Willink (1973), in semiarid forests dominated by the legume genus *Prosopis*.

Biology

Unknown.

Etymology

The specific epithet derives from the native word “*mamüll*”, meaning wood or stick, which is also used to describe animal or plant species from the deciduous semiarid forests in which this species was collected, meaning “from the *monte*”.

Material examined

Argentina: holotype female, La Pampa, Parque Luro, 09 January 2003, Martinez col. Paratypes: two females, La Pampa, Santa Rosa, 28–31 December 2007, Martinez col.; one female, La Pampa, General Acha, March 2008, Carpintero col.; one female, Buenos Aires prov., Médanos, 10 March 2008 Carpintero col.

***Clinocentrus roigi* sp. nov.**

(Figure 2)

Female

Body length. 3.8–4.0 mm.

Body colour. Mostly yellow; antenna, apex of mandibles and ovipositor sheaths black; mesopleuron with distinct well-defined black ventral area; lateral lobes of mesoscutum with black or dark brown markings; metasomal terga uniformly yellow; hind tibia dark brown apically, tarsi dark brown; wings infuscate basally, veins dark brown to black.

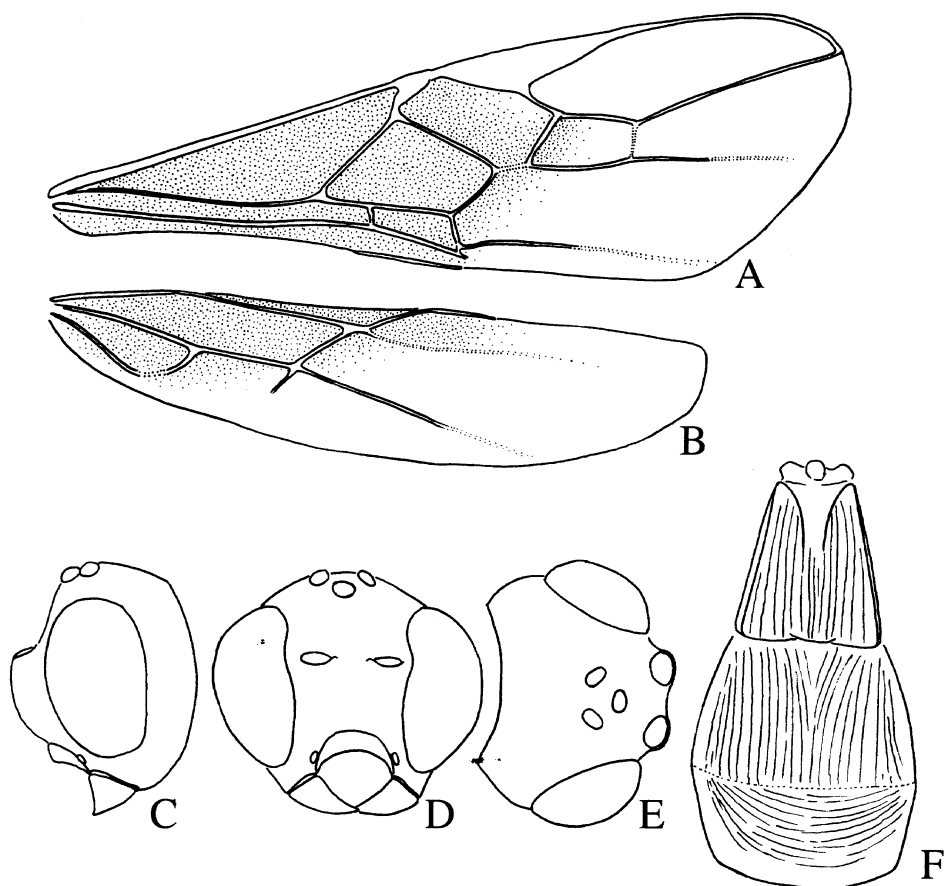


Figure 2. *Clinocentrus roigi* sp. nov. (A) Forewing; (B) hindwing; (C) head in lateral view; (D) head in anterior view; (E) head in dorsal view; (F) metasomal terga I to III in dorsal view.

Head. Almost entirely smooth, as high as long and 1.3–1.7 times higher than wide (Figure 2C–E); occipital carina complete, reaching hypostomal carina; eye large, 1.2–1.3 times higher than wide; temple 0.5 times as long as eye width, eye height 7.8–8.0 times longer than malar space; malar space one-half to one-third the basal width of mandible (Figure 2C); mandibles subtriangular in lateral view; hypoclypeal depression slightly wider than basal width of mandible; ocello-ocular distance 1.5–3.0 times the diameter of lateral ocellus and 1.2–1.7 times posterior ocellar line (Figure 2E); antenna with 30 to 32 segments, first flagellar segment 2.5 times longer than wide and only slightly longer than second flagellar segment.

Mesosoma. 2.0 to 2.1 times longer than wide and slightly higher than wide. Mesoscutum smooth, notauli present and complete, scrobiculate, enclosing a rugulose–striate median area posteriorly; prescutellar depression rugulose, scutellar disc subtriangular and smooth. Mesopleuron mostly smooth, except for subalar depression and sternaulus which are scrobiculate, sternaulus weakly sinuate. Metapleuron rugulose. Propodeum mostly rugose areolate but with two distinct acinose–coriaceous basal areas.

Wings. Forewing (Figure 2A) with marginal cell elongate, first submarginal cell 2.0 times as long as broad or longer, RS + Mb about two-thirds the length of 2RS; r about two-thirds the length of 3RSa. Hindwing (Figure 2B) with vein M + CU slightly longer than 1M; junction between veins 1A and cu-a broadly rounded and desclerotized.

Metasoma. Tergum I 1.0–1.1 times longer than wide (Figure 2F), without spiracular tubercles, striate, with two more clearly defined anterior carinae converging posteriorly and enclosing a triangular anterior smooth area. Tergum II striate, striations slightly convergent on median anterior area. Tergum III with transverse and broadly curved striations (Figure 2F). Terga II and III devoid of setae anteriorly and medially. Metasomal terga beyond tergum III weakly sclerotized and collapsed in air-dried specimens. Ovipositor sheaths about 0.4 times the total body length.

Male

Essentially as in female, slightly smaller and lighter in body colour.

Distribution

Eastern Argentina. This species was collected in one locality at the Delta of the Parana river.

Biology

Unknown.

Etymology

This species is named after the hymenopterist Arturo Roig-Alsina, for his support and advice during my work.

Material examined

Argentina: holotype female, Buenos Aires province, Reserva Natural Otamendi, 28 November 2007, Martinez col. Paratypes: one female and five males, same data as holotype.

Clinocentrus nigripectus Enderlein

(Figure 3)

Clinocentrus nigripectus Enderlein, 1920: 146 (type male, Museum and Institute of Zoology, Warsaw; examined)

Male

Body length. 4.5 mm.

Body colour. Mostly dark brown; head, lateral areas of pronotum, metapleuron, basal area of tergum I and legs except tarsi lighter; wings hyaline, veins brown.

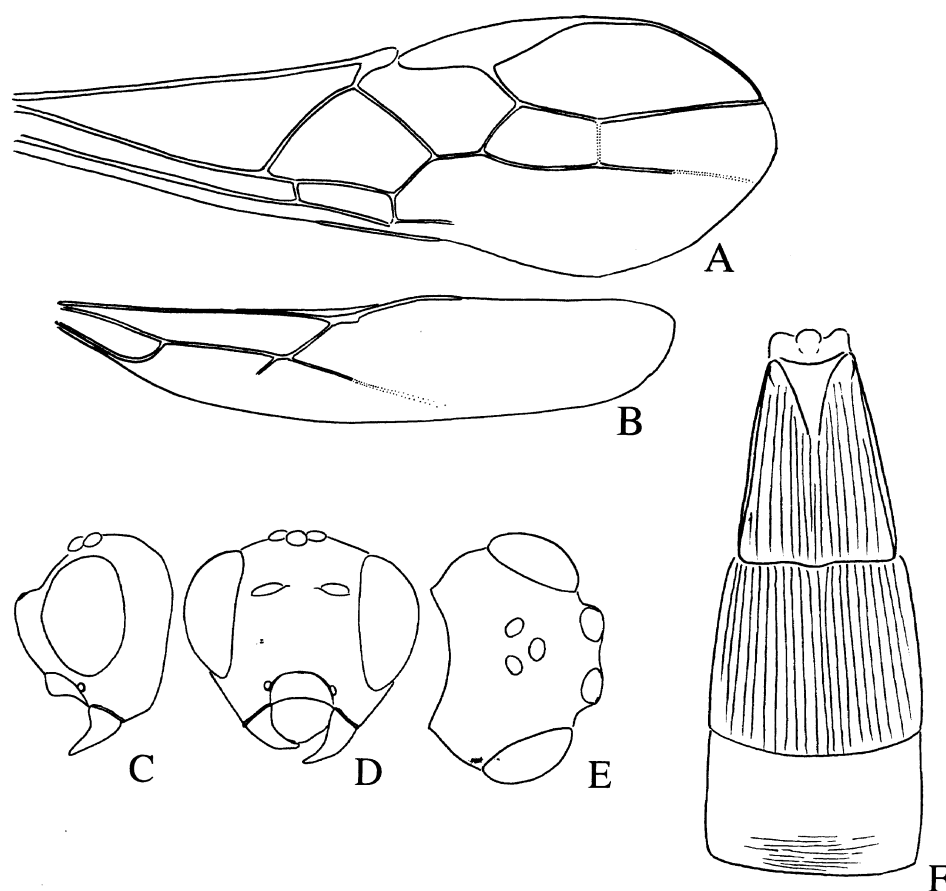


Figure 3. *Clinocentrus nigripectus* Enderlein. (A) Forewing; (B) hindwing; (C) head in lateral view; (D) head in anterior view; (E) head in dorsal view; (F) metasomal terga I to III in dorsal view.

Head. Almost entirely smooth, slightly higher than long and 1.3 times as high as wide (Figure 3C–E), occipital carina complete, reaching hypostomal carina; eye medium sized, 1.3 times higher than wide; temple 0.7 times as long as eye width, eye height 3.3 times longer than malar space; malar space about as long as basal width of mandible (Figure 3C), mandibles slender; hypoclypeal depression slightly wider than basal width of mandible, ocello-ocular distance 2.0 times the diameter of lateral ocellus and 1.6 times posterior ocellar line (Figure 3E); antenna with 35 segments, first flagellar segment 4.3 times longer than wide and 1.3 times longer than second flagellar segment.

Mesosoma. 2.1 times longer than wide and slightly higher than wide. Mesoscutum smooth, notauli present and complete, scrobiculate, enclosing a rugulose median area posteriorly; prescutellar depression rugulose, scutellar disc subtriangular and mostly smooth. Mesopleuron mostly smooth, except for subalar depression and sternaulus which are scrobiculate. Metapleuron rugulose. Propodeum rugose-areolate without acinose-coriaceous basal areas.

Wings. Forewing (Figure 3A) with marginal cell not shortened, first submarginal 2.1 times as long as broad, RS + Mb two-thirds the length of 2RS; r 0.6 times the length of 3RSa. Hindwing (Figure 3B) with vein M + CU slightly longer than 1M; junction between veins 1A and cu-a rounded.

Metasoma. Tergum I about 1.2 times longer than wide (Figure 3F), without spiracular tubercles, striate, with two more clearly defined anterior carinae converging posteriorly and enclosing a triangular smooth area. Tergum II striate, striation parallel not convergent on median anterior area. Tergum III mostly smooth, with very weak transverse apical striations (Figure 3F). Terga II and III uniformly covered with setae. Metasomal terga beyond tergum III not distinctly desclerotized as mentioned for *C. roigi* and *C. mamull*.

Female

Unknown.

Distribution

Known only from the State of Santa Catarina, Brazil.

Biology

Unknown.

Comments

Clinocentrus nigripectus was described based on a single male specimen from an unknown locality in Santa Catarina, Brazil. The study of the holotype male allows the distinction of this species from the other South American species of *Clinocentrus* based on body colour, wing pigmentation, mandible morphology, number of antennal segments and metasomal setae and sculpture.

Material examined

Brazil: holotype male (MIZ), with the following labels: "S. Catharina/Lüderwalt S.", "Type", "*Clinocentrus nigripectus*/type Enderl./Dr. Enderlein det. 1919", "♂ *Clinocentrus nigripectus* Enderlein/C. van Achterberg, 1990/Holotype".

***Clinocentrus seminiger* Szépligeti**

Clinocentrus seminiger Szépligeti, 1906: 608 (type female, not examined, presumed lost)

Comments

This species was described based on a single female specimen from Mapiri, Bolivia. The description is fairly short and does not mention many characters other than those usually constant in the genus. The colour pattern described for *C. seminiger* is similar to that described here for *C. mamull* and *C. roigi* with a mostly yellowish body and black markings on the lateral lobes of the mesoscutum; it could be distinguished

from *C. mamull* by the darkened dorsal areas of the mesopleuron, and from *C. roigi* by its uniformly hyaline wings. In the original description, Szépligeti specifically stated that metasomal terga I and II are striate, but the sculpture on tergum III is not mentioned (Szépligeti 1906). It is possible that *C. seminiger* is a species with a smooth third metasomal tergum. Additionally, the description of *C. seminiger* mentions an unusually short antenna for the genus, with only 20 segments. Based on the variation of the number of antennal segments reported for previously described species of *Clinocentrus*, it is unlikely that *C. seminiger* is conspecific with any of the other Neotropical species of the genus.

Distribution

The original description only mentions “Mapiri, Bolivia” as the type locality. Two probable type localities named Mapiri are known in Bolivia, in the departments of La Paz and Pando.

Biology

Unknown.

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