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## HESPERIIDAE OF RONDÔNIA, BRAZIL: A NEW GENUS AND SPECIES OF CARCHARODINI (PYRGINAE)

George T. Austin

McGuire Center for Lepidoptera and Biodiversity, Florida Museum of Natural History,  
University of Florida, P. O. Box 112710, Gainesville, Florida 32611-2710

**ABSTRACT:** A new genus and species of the pyrgine tribe Carcharodini (Hesperiidae) is named, described, and illustrated from Rondônia, Brazil. It is potentially related to five genera grouped by Evans (1953) as possessing a black, sometimes pupiled, macule in the discal cell of the forewing. It is defined by a unique combination of superficial and genital characters seen on various members of those genera.

**KEY WORDS:** *Cyclosemia*, genitalia, *Morvina*, *Myrinia*, *Ocella*, South America, *Xispia*

### INTRODUCTION

Samples of diurnal Lepidoptera from tropical regions invariably include a subset that initially defy identification. As these are sorted, a majority is eventually determined through careful comparisons with descriptions and material in collections. Despite this, there frequently remains an unidentifiable segment often representing theretofore undescribed entities. Among neotropical butterflies, this circumstance is experienced with more recurrence among skippers (Hesperiidae) than within perceived 'better' known families. The phenomenon is seen particularly at the species-level, but undescribed genera are also encountered. Most often new genera are erected from careful scrutiny of samples of known taxa, but occasionally undescribed species are discovered that are embraced by no known genus.

An intensive investigation of butterflies at a single site dominated by typical tropical rainforest near Cacaulândia in Rondônia, Brazil (Emmel and Austin 1990) has produced heretofore undescribed species (*e.g.*, Austin 1995, 1996; Austin and Steinhäuser 1996; Austin and Mielke 1997, 2000; Austin *et al.* 1997) and genera (*e.g.*, Austin 1997, 2008a) and has allowed reviews of generic limits for a number of taxa (*e.g.*, Austin 2008b). This presentation adds yet another genus and species to the ever growing knowledge of

neotropical hesperiids. Forewing length was measured from base to apex. Terminology for structures of the genitalia follows that used by Austin & Mielke (1997). Voucher specimens and comparative material are deposited at the Departamento de Zoologia, Universidade Federal do Paraná, Curitiba, Brazil (UFPC) and the McGuire Center for Lepidoptera and Biodiversity, Florida Museum of Natural History, University of Florida, Gainesville, Florida (MGCL).

***Fuscocimex* Austin, new genus**

(Figs. 1-8)

**Type species.** *Fuscocimex caecus* Austin, 2008, **new species.**

**Description.** Male (Figs. 1-2). Forewing with no costal fold; costa slightly and evenly convex; apex pointed, not produced; termen slightly and evenly convex; anal margin nearly straight, slightly concave beyond middle; discal cell about 2/3 length of costa, not produced; vein  $CuA_2$  originating midway between base of wing and  $CuA_1$ ; vein Sc ending on costa cephalad of end of discal cell.

Hindwing with base of costa slightly produced, that portion with a few short, stout, setiform scales at its apex; costa then slightly convex distad; apex not produced; termen evenly convex; vein 2A with tuft of short hair-like scales along proximal 2/3; ventral surface of cell 2A-3A slightly grooved proximad.

Dorsal wings brown with darker bands, these especially prominent on paler ventral surface; indistinct, square, dark macule in discal cell of forewing without white pupil; postmedial band nearer termen than to macule in discal cell, continuous.

Palpi short, porrect, 3rd segment barely protruding beyond scales of 2nd segment; antennae short, about 1/2 length of costa (left missing, right with tip missing); legs (middle pair missing) smooth, hind tibia with paired proximal and distal spurs and a short pale tan recumbent hair tuft positioned on inner surface, tuft apparently not entering prominent thoracic pouch, both spurs and tuft nearly concealed among the shorter and more erect setiform scales covering posterior, dorsal, and ventral tibial surfaces.

Genitalia (Fig. 7) - uncus very narrow caudad, divided; tegumen with pair of rather long lateral processes, pointed in lateral view, broad and blunt in dorsal view, extending laterad and then curving inward over lateral edges of anterior portion of uncus; gnathos narrowing to sharply pointed caudal end in lateral view, undivided, broad with a curved caudal edge in ventral view; combined ventral arm of tegumen and dorsal arm of saccus short, weakly sinuate, cephalic arm of saccus short, curved slightly dorsad; valvae symmetrical, ampulla produced caudad where curved somewhat inward to slightly expanded and rounded caudal end, harpe slender, curved upward caudad of ampulla, distal end lightly spiculate; juxta V-shaped; aedeagus symmetrical except at caudal end where offset to the right, robust, relatively straight, about length of valva; vesica with two clusters of numerous and slightly curved spike-like cornuti.

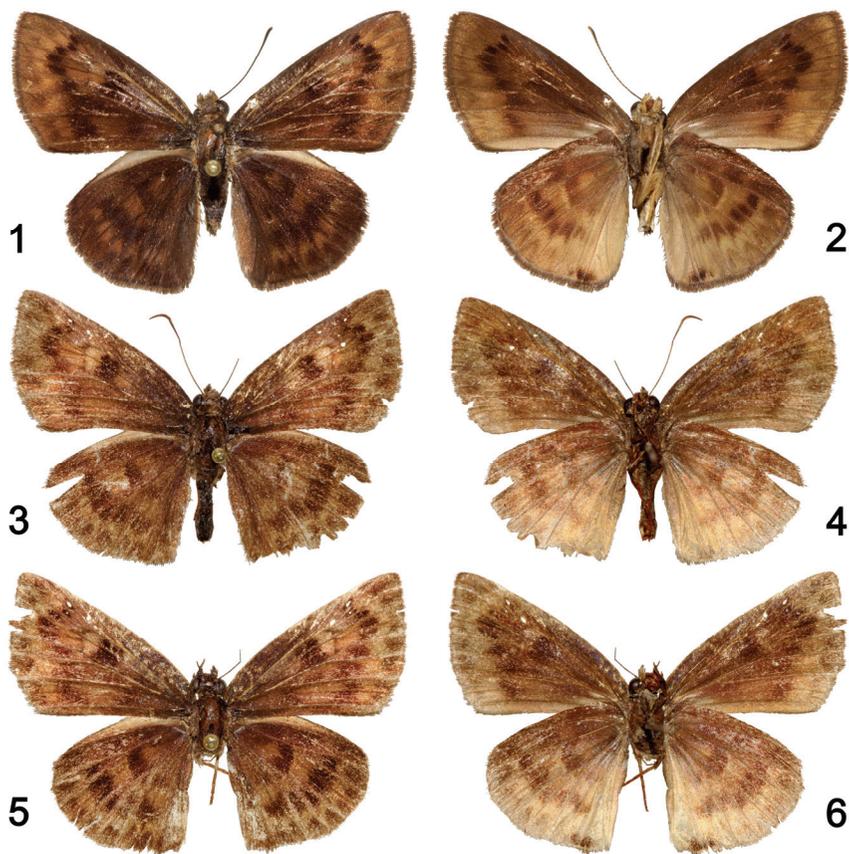
Female (Figs. 3-6). Similar to male, paler brown. Antenna with arcuate club bent to apiculus from thickest part, nudum 19+ segments (extreme tip missing on only extant antenna), all except 3 or 4 segments of nudum on apiculus; all tibiae smooth, mid-tibia with a distal pair of spurs, hind tibia with two pairs of spurs.

Genitalia (Fig. 8) - sterigma broad, oval in overall shape, complex; lamella postvaginalis broadly excavate; lamella antevaginalis divided, ventral portion twisted inward; ostium bursae broad, antrum short, sclerotized, asymmetrical to left; ductus

bursae broad with indistinct internal sclerotization; corpus bursae oval, relatively short with small globular appendix bursae.

**Distribution.** *Fuscocimex* is known only from central Rondônia, Brazil, in the vicinity of Cacaulândia.

**Etymology.** The name of this genus was inspired by the frustrations of trying to identify relatively undistinguished brown skippers. “Fusco” refers to brown and “cimex” is a masculine noun meaning bug.



**Figures 1-6.** *Fuscocimex caecus* adults (dorsal surface on left, ventral view of right). 1-2) holotype male (UFPC), 3-4) paratype female (UFPC), 5-6) paratype female (MGCL).

**Diagnosis and discussion.** *Fuscocimex* appears to belong to Evans’ (1953) group of pyrgine genera with a black, white-pupiled or not, macule in the discal cell of the forewing included in tribe Carcharodini by Warren (2006) and Warren *et al.* (2008): *Morvina* Evans, 1953; *Myrinia* Evans, 1953; *Xispia* Lindsey, 1925; *Ocella* Evans, 1953; and *Cyclosemia* Mabille, 1878. Like all of the foregoing genera, *Fuscocimex* has neither

a costal fold nor the tuft of elongated scales near the base of vein Sc+R<sub>1</sub> present on many other Carcharodini (Warren 2006). *Fuscocimex*, however, has a unique combination of characters separating it from the others. These include the antennae with most of the nudum on the apiculus (about equal on *Myrinia*, *Xispia*, and *Ocella*), a recumbent hair tuft on the hind tibia (this held by a thoracic pouch on *Myrinia*, altogether absent on *Ocella*), no pale macules (subapical macules present on *Morvina* and sometimes on *Ocella*), unpupiled dark macule in the discal cell of the forewing (pupiled or bipupiled on all except *Xispia*), evenly convex termen on the hindwing (tornus somewhat produced on *Morvina* and *Myrinia*, toothed on *Xispia*), divided uncus (undivided on all except *Morvina*), no style on the ampulla (usually present on all except *Ocella*), unswollen base to the cubitus vein on the forewing (swollen on *Myrinia*), symmetrical valvae (asymmetrical on *Myrinia* and *Ocella*), and prominent lateral processes from the tegumen (processes present on *Myrinia* and *Xispia* but not extended laterally).

### *Fuscocimex caecus* Austin, new species

Figs. 1-2 (♂ holotype), 3-6 (♀ paratypes), 7 (♂ genitalia), 8 (♀ genitalia)

**Description.** Male - forewing length = 17.8mm (holotype), wing and other structural characters given above in description of genus; dorsal ground color brown; forewing with posterior half darker; postmedial band from vein 2A to R<sub>3</sub> still darker, nearly black, relatively straight cephalad to vein M<sub>1</sub>, then curved basad; postmedial band margined distad by band of similar width, paler than ground color, crossed by dark veins; latter margined by indistinct dark band in submargin, not as dark as postmedial band, narrower; distal end of discal cell paler brown than ground color before square, very dark brown (nearly black) macule. Hindwing dark brown as posterior forewing with broad blackish marginal, postmedial, and postbasal bands; veins dark between marginal and postmedial bands; terminal line blackish, fringes of ground color on both wings.

Venter paler than dorsum, marked similarly to dorsum; forewing without dark posterior shade; anal margin paler gray-brown. Hindwing distinctly pale between bands (except at costa) and along anal margin; tornus with relatively distinct, small, blackish macule at termen.

Head brown, ochreous line beneath antennae and at front of vertex, scattered ochreous scales beneath eyes, palpi brown on dorsum, ochreous on venter, antennae black dorsally, mostly ochreous on venter with black at segments, this broadest proximad; dorsal thorax and abdomen dark brown, ventral thorax medium brown, pectus gray-brown, legs ochreous, tibial tuft and other setiform scales on legs reddish ochreous; ventral abdomen ochreous.

Genitalia - as described in generic description.

Female - forewing lengths = 17.8, 18.7mm; paler brown than male; shapes of the wings and markings virtually identical.

Genitalia - as described in generic description.

**Types.** Holotype male with the following labels: white, printed - / BRASIL: Rondonia / 62 km S Ariquemes / linea C-20, 7 km E / B-65, Fazenda / Rancho Grande/ 21 July 1991 / leg. G. Bongiorno /; white, printed and hand printed - / Genitalia Vial / GTA - 1702 /; white, printed and hand printed - / Genitalia Vial / SRS -4298 / File No. /; red, printed - / HOLOTYPE / *Fuscocimex caecus* / Austin /. Paratypes - same location as holotype, 19 March 1989, leg. G. T. Austin (2 females). The holotype and one female paratype will be deposited at the Departamento de Zoologia, Universidade Federal do

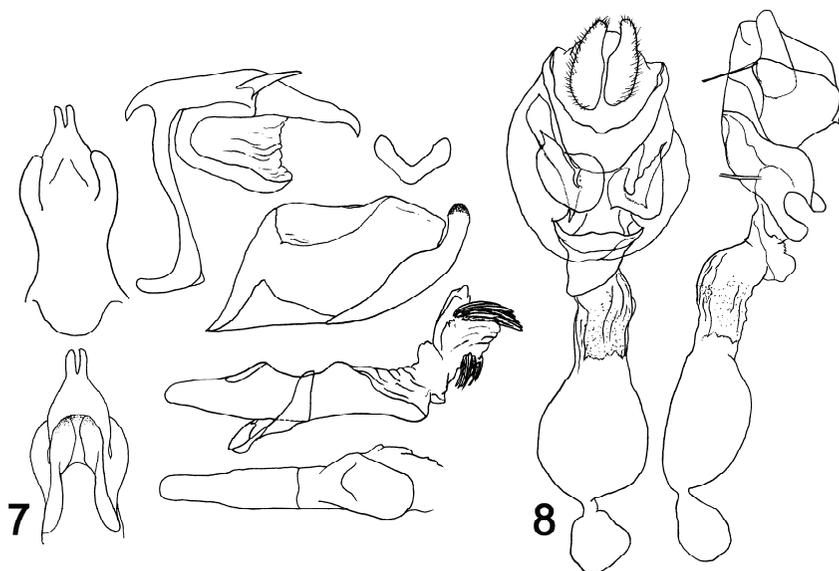
Paraná, Curitiba, Brazil. The remaining paratype is deposited at the McGuire Center for Lepidoptera and Biodiversity, Florida Museum of Natural History, Gainesville, Florida.

**Type locality.** BRAZIL: Rondônia; 62 kilometers south of Ariquemes, Linha C-20, 7 kilometers (by road) east of route B-65, Fazenda Rancho Grande, 180m in elevation. This is approximately 5 kilometers northeast of Cacaulândia, in typical lowland tropical rainforest.

**Etymology.** The name of this insect, “caecus” has several connotations. First it means blind, referring to the absence of a pupil in the macule within the discal cell of the forewing (present on most supposed relatives); thus *Fuscocimex caecus* being the alliteration in English of “blind brown bug.” “Caecus” also translates to hidden (*i.e.*, heretofore hidden from science), obscure, and dark (both apt epithets to the species’ superficial appearance).

**Distribution and phenology.** The species is known only from the types from Rondônia, Brazil taken in March and July.

**Diagnosis and discussion.** This brown skipper with darker bands is superficially similar to many other neotropical species. The combination of generic characters discussed above (no pale macules, unpupiled macule in discal cell, evenly curved hindwing termen, unswollen base to the cubitus on the forewing, almost no nudum on the antennal club proper, a recumbent hair tuft on the hind tibia that is not held by a thoracic pouch, and the male genitalia with a divided uncus, lateral processes from the tegumen, no style, and symmetrical valvae) will serve to distinguish both genus and species.



**Figures 7-8.** Genitalia of *Fuscocimex*. **7)** Male, structures shown include lateral view of uncus, gnathos, tegumen, and saccus; dorsal view of uncus and tegumen; ventral view of uncus, tegumen, and gnathos; internal view of right valva, ventral view of juxta; lateral (with everted vesica) and ventral view of aedeagus. **8)** Female, shown are ventral and lateral views.

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