

Theclinae of Rondônia, Brazil: *Gigantorubra* and *Angulopsis*, with descriptions of new species (Lepidoptera: Lycaenidae)

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Abstract: The species of *Gigantorubra* and *Angulopsis* encountered in the Cacaúlândia area of central Rondônia, Brazil, are reviewed. These include ten species (all new) of *Gigantorubra* (*G. microserrata*, *G. divergens*, *G. quadramacula*, *G. ampla*, *G. fuscafascia*, *G. silva*, *G. rondonia*, *G. obscura*, *G. perplexa*, *G. purpura*) and one new species of *Angulopsis* (*A. tenuis*). *Thecla sangala* Hewitson (1868) is recognized as having priority over *Thecla autoclea* Hewitson (1863-1878 [1877]), new synonym. Rondônia continues to appear as a center of thecline endemism and to provide abundant examples of sibling species diversity.

Key words: *Angulopsis*, Brazil, *Gigantorubra*, hairstreaks, Lepidoptera, Lycaenidae, Theclinae, tropical.

Introduction

Our studies on the Theclinae of the vicinity of Cacaúlândia in central Rondônia, Brazil, were introduced by Austin and Johnson (1995). The region, in typical lowland tropical rainforest, supports the richest butterfly fauna known (Emmel and Austin 1990, Austin and Johnson 1995). What initially appeared to be a rather straightforward assessment of the genus *Angulopsis* and related taxa in the area became complicated as many more species existed than were superficially evident. This necessitated detailed studies of each group; we herein examine the genera *Gigantorubra* and *Angulopsis*.

Methods and Materials

Abbreviations are FW and HW for forewing and hindwing and D and V for dorsal and ventral, respectively. Capitalized color names are after Smithe (1975, 1981). FW length is length of costa from base to apex. Numbers associated with types and other specimens refer to genitalia vial numbers. The type locality for each new taxon is the location of capture for the holotype.

Males and females of a species were tentatively associated by the near identity in details of their ventral patterns. Due to the many superficially very similar species, this method, however, may not be infallible. Whenever there was some doubt in our correct association of the sexes, we used only one sex as types to avoid potential future taxonomic

problems. In these cases, specimens of the presumed opposite sex are listed as additional material. In copula pairs and reared series from individual females will eventually allow unequivocal association of males and females.

Primary types are deposited at the Departamento de Zoologia, Universidade Federal do Paraná, Curitiba, Paraná, Brazil. Paratypes and other material are deposited at the Universidade Federal do Paraná, The Natural History Museum, American Museum of Natural History, and the Nevada State Museum.

Gigantorubra Johnson

Johnson (1993) proposed *Gigantorubra* for a group of nineteen species of Eumaeini ranging from central Mexico to Argentina. His study was based upon historical material, particularly type material, and it was acknowledged that additional species would no doubt become apparent from contemporaneous collections.

Gigantorubra was characterized by broad wings, no scent brand (*sensu* Eliot 1973), a distinctive ventral pattern often with broad bands of brown or red over variegated beige to blackish ground colors, and robust male genitalia having the falces serrated or toothed. Females are recognized by their variously sculptured lamellae terminating at elongated, fluted, ductus bursae. The closest relative of *Gigantorubra*, *Angulopsis* (Johnson 1991) shows generally narrow ventral pattern elements over

concolorous grounds, has falces of even contour, and far less elaborate female terminalia. Both genera have widespread and generally overlapping Neotropical distributions.

Johnson (1993) divided *Gigantorubra* into four species groups based, for simplicity, largely on the VHW pattern. The fauna of central Rondônia contains at least ten species of *Gigantorubra*, all of which are undescribed taxa.

"simplica" group

Species of the "simplica" species group of *Gigantorubra* are typified by brown color on both wing surfaces, simple postmedian lines on the venter, and rather slender genitalia. Four species, occurring south of the Amazon River to Bolivia, northern Argentina, and southeastern Brazil, were recognized by Johnson (1993). At Cacaupônia, the following additional two species are evident.

Gigantorubra microserrata, new species (Figs. 1, 10, 18, 27)

Diagnosis. Wings. Both sexes nondescript brown above and below, distinguished from congeners by the very narrow postmedian lines on the V and by the genitalia; the latter and the shallow W-shape of the VHW postmedian line distinguish the species from superficially similar *Angulopsis*. Morphology. Male genitalia differ from similar species by the falces being finely serrate for much of their length, the vincular processes being narrower and longer than on other congeners, the valvae having broadly shouldered bilobes and narrow caudal extensions, and the saccus being short and broad. Female genitalia are distinctive with a broadly ovate lamellar plate with a highly sculptured caudal margin.

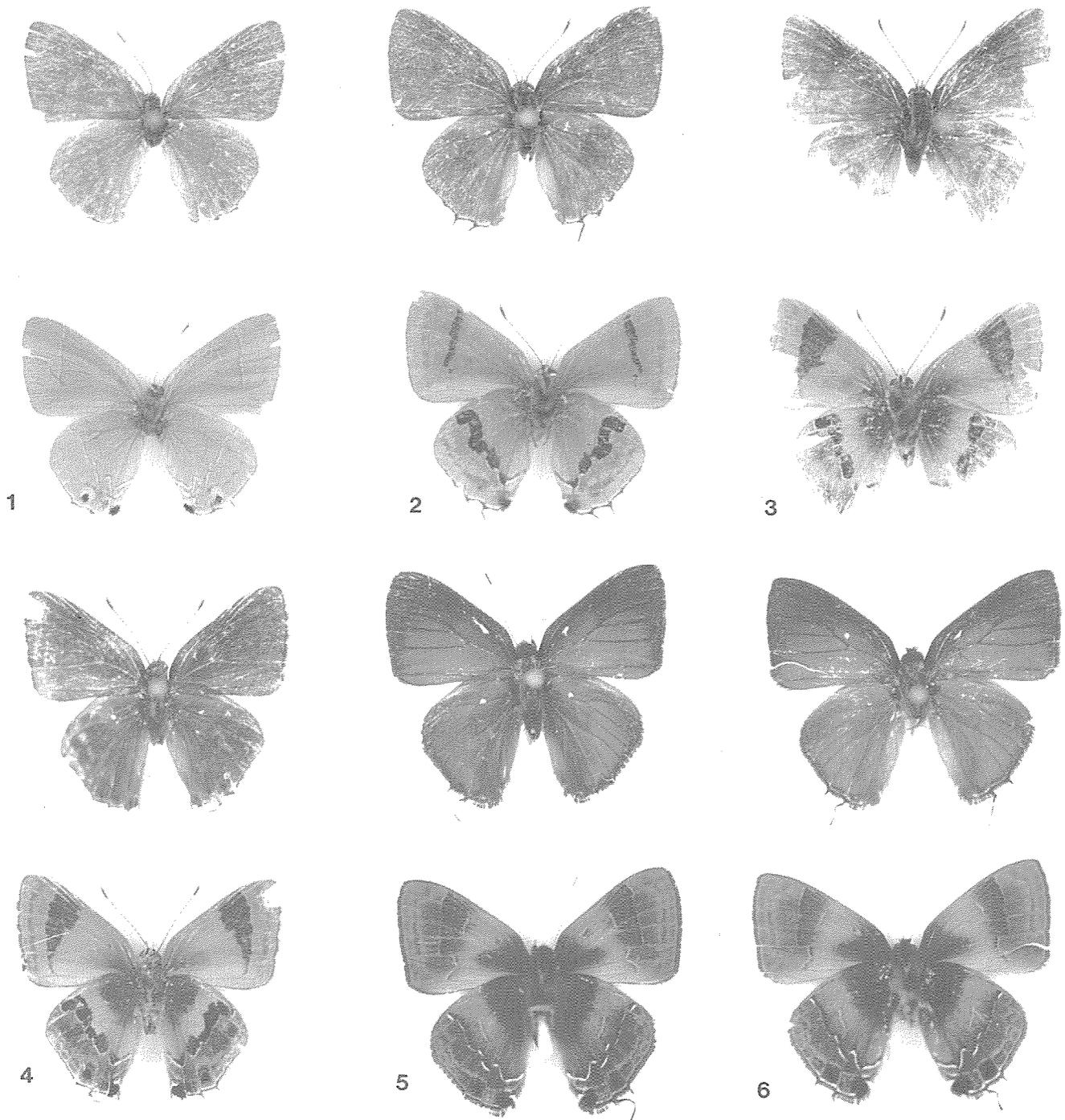
Description. Male. FW length = 14.1 mm (holotype); single known male worn; dorsum uniform brown; HW tornus with vaguely yellow-tan (faded?) macule; white marginal line from CuA_1 to 2A; fringes worn. Venter tan; FW pale tan line at distal end of discal cell; bipartite (pale tan distad, brown proximad) postmedian line, nearly straight from R_2 to CuA_2 , very vague submarginal brown bars; HW with vague pale tan line at distal end of discal cell edged proximad with slightly darker brown than ground color; bipartite (white distad, dark brown [black?] proximad) postmedian line, element in $Sc+R_1$ slightly offset distad; elements in Rs , M_1 , and M_2 in straight line; element in M_3 offset proximad; deep W-shape from CuA_1 to 3A; submar-

gin with vague brown line; thecla-spot yellow-tan [faded?] with large round black pupil; CuA_2 with scattered white scales over dark brown field; tornus with marginal black macule, short white slash from margin, and broad yellow-orange [faded?] proximad. Male Genitalia - genital capsule slender; saccus short, stoutly triangular, expanding gradually caudad to vinculum; vinculum with narrow protruding processes; valvae with triangular bilobes, broadly shouldered, caudal extensions very thin throughout their length, serrated on outer edges; falces finely serrated along outer edge of distal 1/2; aedeagus slightly sinuate, 1.5x genital capsule length, caecum 22% of aedeagus length.

Female. FW length = 13.3 mm (N = 1); dorsum brown (Hair Brown), HW costal and anal margin slightly paler; HW tornus with orange macule; white marginal line from CuA_1 to 2A; fringes tan. Venter tan (near Drab); FW with vague pale tan line at distal end of discal cell; bipartite (pale tan distad, brown proximad) postmedian line, nearly straight from R_3 to CuA_2 , very vague submarginal brown bars; HW with vague pale tan line at distal end of discal cell edged proximad with slightly darker brown than ground color; bipartite (white distad, black proximad) postmedian line, element in $Sc+R_1$ slightly offset distad; elements in Rs , M_1 , and M_2 in straight line; element in M_3 offset proximad; W-shape from CuA_1 to 3A, this portion with narrow orange scaling proximad; submargin with vague brown line; a few orange scales in M_3 ; thecla-spot red-orange with large black pupil; CuA_2 with scattered white scales over black field, small orange macule adjacent to vein 2A; tornus with marginal black macule, short white slash from margin, and broad orange proximad; white marginal line from M_2 to 2A. Female Genitalia - ductus bursae straight as typical of genus, not expanded at cervix bursae; lamellae broadly ovate, struts well-developed, terminating in a highly sculptured caudal lamellar margin.

Type. Holotype male, Brazil: Rondônia; 62 km S of Ariquemes; Linha C-20, 7 km E B-65, Fazenda Rancho Grande, 15 Nov. 1990, leg. J. Lane (GTA #5817). Additional material, Brazil: Rondônia; 70 km S Ariquemes, B-80, between linhas C-10 and C-15, 19 Nov. 1991 (1 female, GTA #6129).

Remarks. This species is superficially nondescript. Like some other members of the species group, *G. microserrata* with its narrow VHW postmedian line does not initially appear to be of this genus; the genitalia, however, unequivocally place it there. The male genitalia are unlike any other



Figs. 1-6. Males of new species of *Gigantorubra* from Rondônia, Brazil (all from the vicinity of Cacaulândia); dorsal surface above and ventral surface below. 1. *Gigantorubra microserrata*, holotype; 2. *Gigantorubra quadramacula*, holotype; 3. *Gigantorubra ampla*, holotype; 4. *Gigantorubra fuscafascia*, holotype; 5. *Gigantorubra silva*, holotype; 6. *Gigantorubra rondonia*, holotype.