SYSTEMATICS OF THE RIODINID TRIBE SYMMACHIINI, WITH THE DESCRIPTION OF A NEW GENUS AND FIVE NEW SPECIES FROM ECUADOR, VENEZUELA AND BRAZIL (Lepidoptera: Riodinidae)

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Abstract: We preliminarily examine the systematics of the riodinid tribe Symmachiini Bates, 1859, and isolate an apparently monophyletic assemblage of species formerly included within the genera *Stichelia* and *Phaenochitonia,* which we describe as a new genus *Pirascca* **gen. nov.**. A summary of the taxa within the genera *Pirascca, Phaenochitonia, Stichelia* and *Pterographium* and a comparative table of their morphological differences are also presented, and four new species in the genera *Symmachia, Pirascca* and *Phaenochitonia* are described from western Ecuador, Venezuela and Brazil. We also describe a new species from eastern Ecuador in the genus *Comphotis,* which we hypothesise to be the ancestral genus to the tribe Symmachiini. We further discuss the taxonomic importance of the concealed androconial scales found on the abdominal tergites of all species in the tribe, first noted bv HARVEY (1987).

Key-words: androconial scales, Brazil, Chocó, Colombia, *Comphotis apachita* sp. nov., Ecuador, endemism, *Esthemopsis,* foodplant, hilltopping, *Lucillella, Menander, Mesene, Mesenopsis,* Neotropical, Nymphidiini, Panama, *Panara,* perching behaviour, *Periplacis, Phaenochitonia gallardi* sp. nov., *Phaenochitonia pseudodebilis* sp. nov., *Pirascca* gen. nov., *Pirascca polemistes* sp. nov., *Pterographium,* Riodinini, *Stichelia, Symmachia hazelana* sp. nov., Symmachiini, Venezuela, *Xenandra.*

Introduction

The discovery of two phenotypically unusual new riodinid species from western Ecuador, in the tribe Symmachiini Bates, 1859, has prompted us to examine more closely the systematics of this tribe at the generic level. HARVEY (1987) defined the tribe Symmachiini by the presence of concealed androconial scales on the anterior margins of abdominal tergites 4 to 7 in males. The resulting group of genera closely corresponds to STICHEL's (1910-11, 1930) tribe Mesenini, except for the exclusion of the genus *Argyrogrammana* Strand, 1932, and inclusion of the genus *Lucillella* Strand, 1932. It should be noted that abdominal androconial scales also occur in the nymphidiine genera *Menander* Hemming, 1939, and *Periplacis* Geyer, 1837, but the position (tergites 5 to 7) and ultrastructure of these scales (which lack longitudinal ribs and acanthae [acellular projections] between the androconial scales), suggests that they have evolved independently (HARVEY, 1987).

The genera within the Symmachiini are often poorly defined, and taxonomic research is usually hindered by the rarity of most species and their consequently sparse representation in the world's entomological collections. The problem is particularly acute in the largest genus, *Symmachia* Hübner, [1819], but a full analysis of species group relationships in this genus is beyond the scope of this paper. Instead we attempt to create a generic framework for species formerly included in the phenotypically similar and historically confused genera *Phaenochitonia* Stichel,

1910, *Pterographium* Stichel, 1910, and *Stichelia* Zikán, 1949, and in the process describe the new genus *Pirascca* gen. nov.. In addition to describing the two new symmachiine species from western Ecuador, mentioned above, in the genera *Pirascca* and *Symmachia,* we take this opportunity to describe two unnamed species of *Phaenochitonia,* located in European museums, from Venezuela and Brazil. We also more fully elucidate the characters defining the genus *Comphotis,* transferring to it several species formerly placed in *Phaenochitonia* and describing a new species from eastern Ecuador, and hypothesise that it is immediately ancestral to *Phaenochitonia* and hence to the tribe Symmachiini.

***Symmachia* hazelana** Hall & Willmott, **sp. nov.** (Fig. 1 a-c; 4a-c).

Description: Male: forewing length 18mm. Dorsal surface: forewing ground colour dark iridescent blue (lighter blue at an oblique angle); thin black outer margin, thicker black costal margin thinning towards apex. Hindwing ground colour a similar dark iridescent blue; thin black anal and distal margins, black at apex; yellow along central half of anal margin and in a shallow semi-circle at costal margin (slightly darker at basal edge). Ventral surface: forewing ground colour dark brown; rich, broad yellow band vertically traversing middle of wing, tapering towards costal margin, outer edges broken and uneven; faint darker brown band immediately distal to yellow, and faint, thin darker brown submarginal line; two darker brown spots at base of wing; small section of white fringe at apex. Hindwing ground colour dark brown; rich, broad yellow band of even thickness traversing middle of wing, edges uneven; faint darker brown band immediately distal to yellow. Labial palpi black. Eyes brown and bare. Frons black. Antennae black with cream scales at the base of each segment, clubs slightly flattened and yellow. Thorax black; abdomen dorsal surface black, ventral surface yellow, yellow hairs at tip; single dense medium-sized patch of androconial scales on anterior margins of tergites 4 and 5 (see Table 3). Legs black. Genitalia (Fig. 4a-c): uncus angular; vinculum with a tiny central projection; valvae bifurcate with upper projection longer than lower projection; aedeagus short, large, pointed and open on dorsal side to expose two large internal scobinate patches; saccus short.

Female: unknown.

Types: Holotype ♂: Ecuador, *Esmeraldas Province,* km. 44 rd. Lita-San Lorenzo, La Punta, nr. El Durango, 300m, 21 June 1994 (K. R. Willmott). To be deposited in the Natural History Museum, London, England (BMNH).

Etymology: This species is named for my mother, Hazel WILLMOTT, who instilled in me an appreciation for the beauty of nature (KRW).

Diagnosis: *Symmachia hazelana* sp. nov. has a very distinctive and unique wing pattern that is only comparable to *Symmachia rita* Staudinger, 1887. Both species have dark blue dorsal iridescence, but in *S. rita* the blue on the forewing is restricted to the outer margin. *S. rita is* also smaller, has a more pointed wingshape, and lacks the yellow colouration on the dorsal surface of the hindwing and on both ventral wing surfaces.

Discussion: A single individual was found resting beneath a leaf with its wings outspread, around 5 metres above the ground. It was perching in a large forested ridgetop lightgap at approximately 7.30 a.m. in overcast conditions. We have not

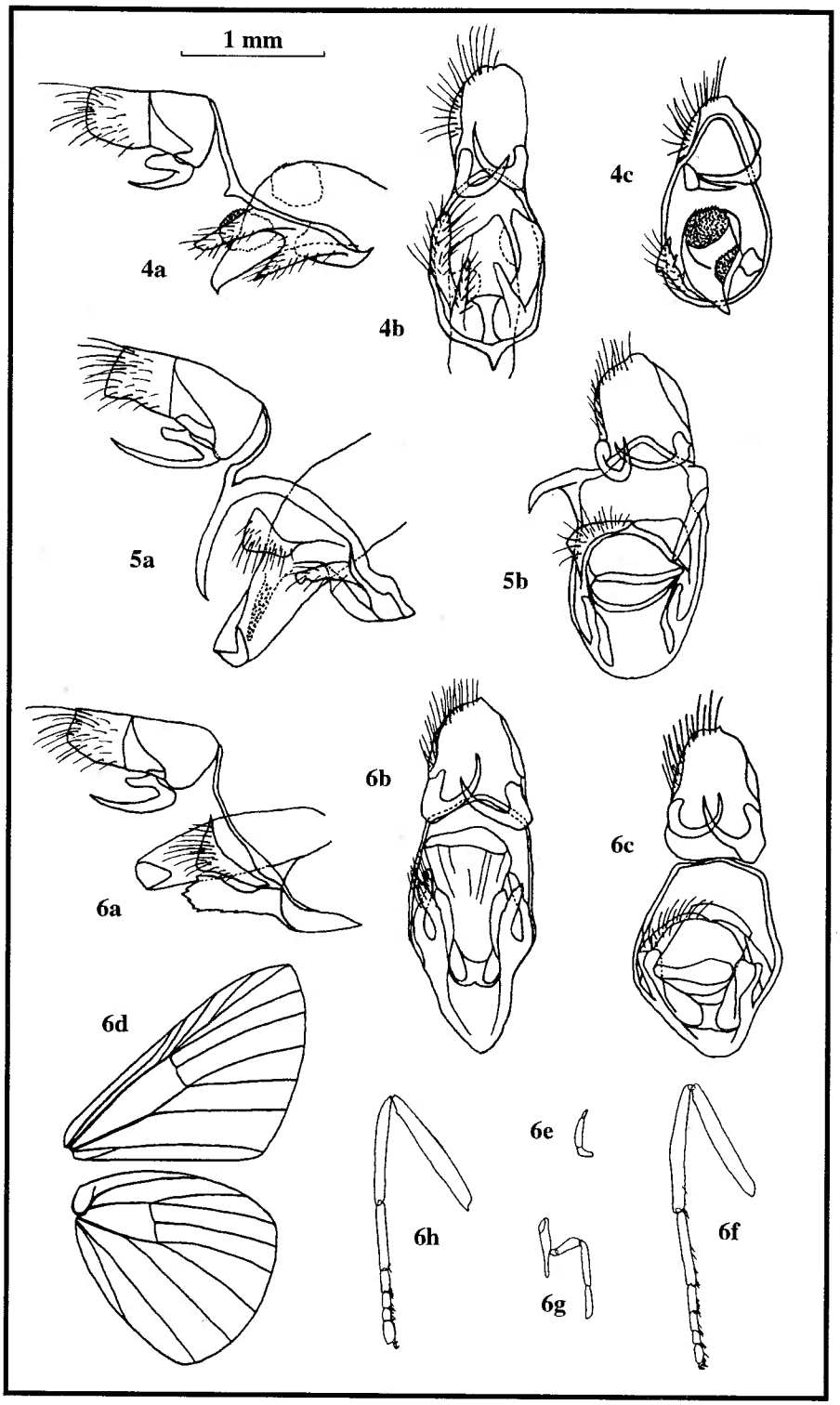
located any further specimens in major European or American museums and this extremely rare species is currently only known from the lowland pluvial forests of north-west Ecuador, although it will almost certainly be found in the Chocó region of west Colombia. Its rarity is no doubt due in part to the fact that this area has been seldom visited by lepidopterists, in addition to its behaviour of perching early in the morning.

Although the wing pattern and, to a lesser extent the wing shape, of *S. hazelana* are not wholly typical of *Symmachia,* the male genitalia and abdominal androconial patch distribution (see Table 3) suggest that this species is best placed at present within this genus. However, a detailed phylogenetic analysis of the heterogeneous group of species currently included in *Symmachia* will no doubt highlight the existence of several lineages of generic worth. Since *S. hazelana is* morphologically quite distinct from the type species of the genus, *Symmachia probetor* (Cramer, 1782) (see D'ABRERA (1994: 1044) for an illustration), it may eventually need to be placed in a separate genus.

Pirascca Hall & Willmott, **gen. nov.** (Fig. 2a-d; 3a,b; 5a,b; 6a-h; 7a-c).

Type species: *Papilio sagaris* Cramer, 1775

Description: Male: Dorsal surface (Fig. 2c): ground colour entirely black, or with several slightly paler basal brown bands, sometimes with a dark blue sheen when viewed obliquely. Most species characterised by either having red/orange as a band oriented in a line joining forewing apex to hindwing anal margin or as a patch in the centre of the hindwing. Ventral surface (Fig. 2d): usually entirely black, often with a dark blue sheen when viewed obliquely, rarely with a similarly coloured mirror image of the dorsal red-orange markings, forewing anal margin paler grey-yellow. Venation (Fig. 6d): four forewing radial veins, R_1, R_2 and R_{3-4} all arising basal to cell end. Eyes: bare and brown. Palpi (Fig. 6e): black; short, not projecting, closely pressed to head, third segment one third the length of the second. Frons: black. Antennae: usually black, rarely with sparse white scales at the base of each segment, slender and slightly laterally compressed at club; 36 (*sagaris* and *tyriotes*) - 40 (*iasis*) segments in length. Thorax and abdomen: black, some species with a red/orange dorsal abdominal stripe. Legs (Fig. 6f,g): hindleg and midleg with a single posterior tibial spur, and a series of spines along each tarsal segment; foreleg without spurs or spines. Genitalia (Fig. 5a,b; 6a-c): uncus often narrow and elongate, mid-point of posterior edge projecting slightly; vinculum often with a very small upper projection but occasionally with a projection that is longer than the falci; valve split into two distinct components, usually only joined by lightly sclerotised tissue: the upper triangular in shape and fused above aedeagus, the lower more heavily sclerotised, often lacking setae and usually modified with the edges serrate or bearing numerous small thick spines; aedeagus wide, widening posteriorly, with posterior tip vertically compressed to form a long, narrow opening; usually with small, simple internal sclerotised structures but occasionally with numerous long pencillate cornuti (e.g. *tyriotes);* saccus small. Secondary sexual structures: long, erectile androconial hairs located along a fold in the wing membrane mid-way between 1A+2A and Cu_2 (Fig. 7a); single wide, long and dense patch of androconial scales on anterior margins of abdominal tergites 4 and 5 (Fig. 7b,c), usually greater in extent on tergite 5.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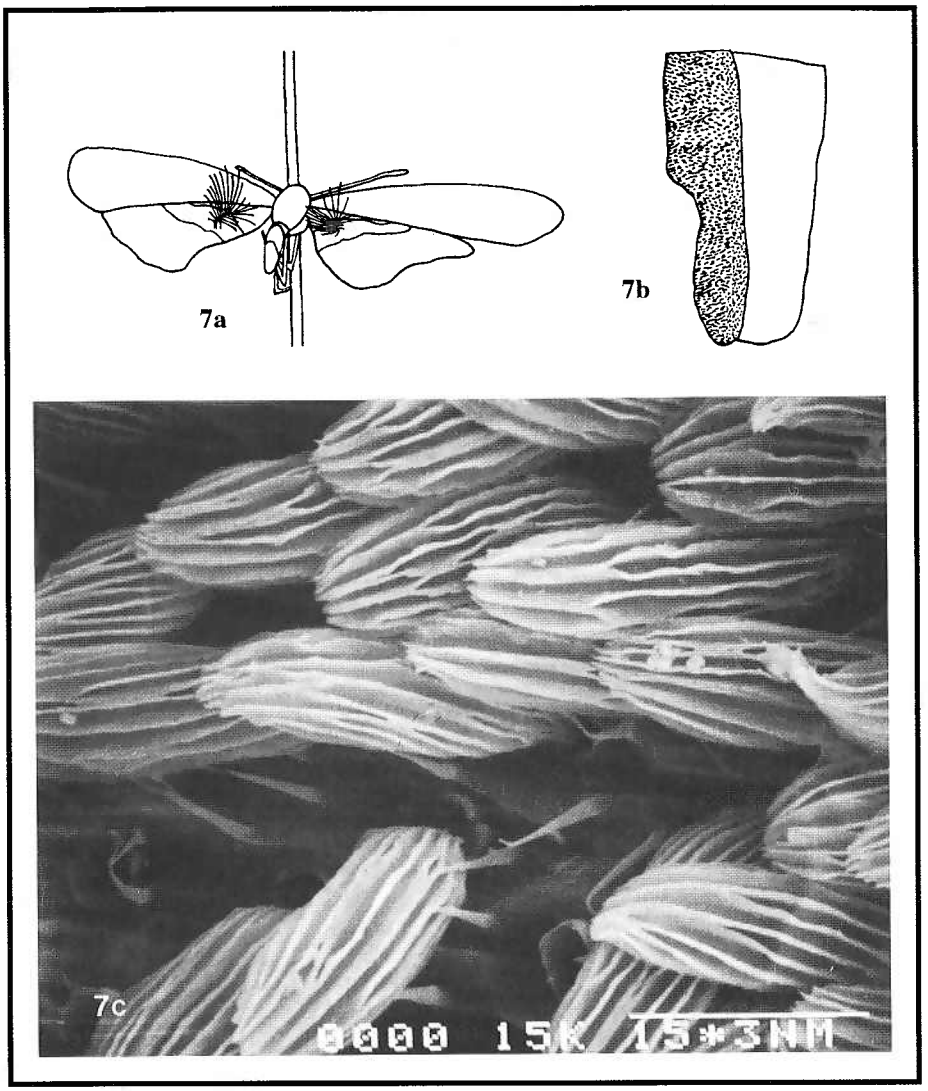

Fig. 7 (above) **Male secondary sexual characters.** a) An oblique view of *Pirascca tyriotes* (Godman & Salvin, 1878), showing the position of the erectile androconial hairs on the hindwing; b) arrangement of androconial scales on the anterior portion of the tergite of abdominal segment 5 in male *Pirascca sagaris* (Cramer, 1775); c) a scanning electon micrograph (SEM) of the androconial scales illustrated in (b) with the acanthae (acellular projections) also visible (x 2100).

Fig. 4-6 (left). **Morphology.** 4. *Symmachia hazelana* sp. nov., holotype ♂ genitalia: a) lateral view; b,c) ventral views. 5. *Pirascca polemistes* sp. nov., holotype ♂ genitalia: a) lateral view; b) ventral view. 6. *Pirascca sagaris* (Cramer, 1775) ♂: a) genitalia, lateral view; b,c) genitalia, ventral views; d) wing venation; e) palpus; f) hindleg; g) foreleg. ♀: h) foreleg.

Female: Differs from the male as follows: Dorsal surface (Fig. 2a): usually unicolourous dark brown to black, occasionally with darker basal markings on both wings, usually with an oblique orange-yellow band extending from costa to tornus on forewing and sometimes also on hindwing. Ventral surface (Fig. 2b): similar to dorsal surface except very slightly paler. Thorax and abdomen: always dark brown to black. Legs (Fig. 6h): foreleg with tarsal spines on all except terminal segment, without tibial spur. Also lacks long hindwing androconial hairs and abdominal androconial scales.

Etymology: The name is derived from the Inca term "pirascca", meaning "striped with blood", and refers to the typical male dorsal wing pattern of species in this genus. It is considered masculine.

Diagnosis: The possession of a pedicel in the male genitalia places *Pirascca* gen. nov. in the subfamily Riodininae Grote, 1895 (*sensu* Harvey, 1987), and the presence of concealed androconial scales (with longitudinal ribs) on the anterior margins of certain abdominal tergites in males places it in the tribe Symmachiini Bates, 1859 (*sensu* Harvey, 1987). Species placed here in *Pirascca* are phenotypically most similar to and have previously been included in the genera *Phaenochitonia, Stichelia,* and *Pterographium*; these four genera may be distinguished by the series of characters given in Table 1. The characters highlighted in bold type do not occur elsewhere within the tribe Symmachiini or, to our knowledge, outside of the tribe, and they appear to represent synapomorphies for *Pirascca.* Thus, these characters, in addition to the distinctive wing pattern, hindwing androconial hairs and distribution of abdominal androconial scales, also serve to distinguish *Pirascca* from the remaining genera in the Symmachiini.

Discussion: The species in the genus *Pirascca* have generally had confused taxonomic histories and were originally described in a diverse array of genera, including *Mesene* Doubleday, 1847, *Symmachia* Hübner, [1819], and *Charis* Hübner, [1819]. Stichel (1910) described the genus *Phaenochitonia* and subsequently (1910, 1930) divided it into two species groups ("Cohors"); the "Cinguliformes", which included species placed here in *Phaenochitonia* and *Comphotis* (see later discussion), and the "Sagariformes", which included an equally heterogeneous group of species placed here in *Pirascca, Stichelia* and *Symmachia* (see Table 2).

Zikán (1949) attempted to split Stichel's "Sagariformes" into more natural groups, based largely on the form of the male hindwing androconial hairs, but unfortunately only discussed species from south-east Brazil. He described a new genus *Stichelia* to include species that possessed simple "odoriferous hairs" at the anal margin of the hindwing, and placed the remaining species into the genus *Pterographium* Stichel, 1910, on the basis of their "odoriferous erectile hair pencils". In this latter genus he included *aphaniodes* Stichel, 1910 (= *sicora* Hewitson, 1875 - see Table 2), a new species *similatum* Zikán, 1949 (= *semiota* Bates, 1868 - see Table 2), and *satnius* Dalman, 1823. The taxon *satnius* is a south-east Brazilian subspecies of *sagaris* Cramer, 1775, but Zikán regarded the two taxa as separate species, since he only had female specimens of what he believed to be typical *sagaris.* He thus placed the species *sagaris* into two genera; males (as *satnius*) into *Pterographium,* on the basis of hindwing hair pencils, and females (as *sagaris*) into *Stichelia,* due to the presence of dark spots at the base of the wings on the ventral surface (a poor generic character). This mistake has led to subsequent confusion as to whether species in Stichel's "Sagariformes" should correctly be placed in the genera *Stichelia, Pterographium* or the earliest established genus *Phaenochitonia* (Lewis, 1973;

BIEZANKO *et al.*, [1979]; CALLAGHAN, 1985, 1989; BRIDGES, 1988; BROWN, 1993; D'ABRERA, 1994).

ZIKÁN (1949) correctly noted that the hindwing androconial hairs of *sagaris* (as *satnius*) were of the same form as those in *Pterographium sicora* (as *aphaniodes*). However, *sagaris* and its closest relatives also share a number of characters of wing pattern and morphology that distinguish them from *Pterographium* (see Table 1), and they appear to form a monophyletic group worthy of generic recognition. Thus we divide the species of Stichel's "Sagariformes" between the two genera *Stichelia* and *Pirascca* (additionally placing a single species in the genus *Symmachia*), and we present a summary of the taxa in these genera and in *Phaenochitonia* and *Pterographium* in Table 2.

The species in *Pirascca* range throughout Central and South America, and are most diverse in the lowland Amazon basin, although some species also occur in cloud forest habitats (e.g. *P. pluto, P. iasis, P. tyriotes*). All the species are uncommon to very rare and the females of several species are still unknown. They are usually encountered as solitary individuals, although males of certain species may be locally common (e.g. *P. sagaris* - SEITZ, 1917; BARCANT, 1970), especially on hilltops and ridgetops (e.g. *P. iasis* - pers. obs.), as is typical for members of the tribe (CALLAGHAN, 1983; BRÉVIGNON & GALLARD, 1992; HALL & WILLMOTT, 1995a). The only taxon with any published information on its early stages is *P. sagaris satnius;* Callaghan (1989) describes the larval morphology and behaviour, and reports the foodplant as being in the Melastomataceae.

***Pirascca* polemistes** Hall & Willmott, **sp. nov.** (Fig. 3a,b; 5a,b)

Description: Male: forewing length 18mm. Dorsal surface: forewing ground colour dark brown; slightly paler brown basally with a few faint darker spots at base of anal margin. Hindwing ground colour dark brown; three darker brown spots in discal cell; large light orange patch at outer margin extending from tornus to near apex, tapering slightly toward apex, proximal edge uneven, thin black distal margin. Ventral surface: forewing ground colour black with a faint and subtle dark blue iridescence; pale brown at anal margin, fringe with tiny white section at apex. Hindwing ground colour black with a faint dark blue iridescence; large dark orange patch at outer margin whose shape and position mirrors that of dorsal surface. Labial palpi brown, tips black. Eyes brown and bare. Frons black. Antennae black with cream scales at the base of each segment, clubs black. Thorax and abdomen black; single dense, long and wide patch of androconial scales on anterior margins of abdominal tergites 4 and 5 (see Table 3), greater in extent on tergite 5. Legs black. Genitalia (Fig. 5a,b): uncus long and slender with posterior ventral angle square; falci long and thin; vinculum with a long, thin downward-pointing upper projection; valvae split into two distinct components and joined only by very lightly sclerotised tissue: an upper triangular shaped part fused above the aedeagus, a lower, slightly serrate, more heavily sclerotised part; aedeagus wider and compressed vertically at tip, only a few very small internal sclerotised structures on the surface of the vesica; saccus very short.

Female: unknown.

Types: Holotype ♂: Ecuador, *Esmeraldas Province*, Río San Miguel, nr. San Miguel, 100m, 11 June 1994 (J. P. W. Hall). To be deposited in the BMNH.

Paratypes: 2 ♂♂: Panama, *Panama Province*. 1 ♂ Cerro Jefe, 900m, 29 April 1977 (G. B. Small); 1 ♂ Altos de Pacora, April 1975 (G. B. Small). Both in the United States National Museum, Washington, USA (USNM).

Etymology: The name is derived from the Greek for "warrior", with reference to the sharp, sword-shaped upper projection of the vinculum of the male genitalia.

Diagnosis: The hindwing orange patch of *Pirascca polemistes* sp. nov. is much larger than that of any other species in the genus and its placement at the distal margin is unique. This orange patch is also mirrored on the ventral surface, a character that is shared only with the otherwise phenotypically different *Pirascca apolecta* (Bates, 1868) and *Pirascca pluto* (Stichel, 1910).

Discussion: A single individual was captured in flat lowland pluvial forest. It was observed to fly slowly into a lightgap adjoining a trail at 3.30 p.m. and come to rest beneath a leaf with its wings outspread. The discovery of this species and *Symmachia hazelana,* described above, further highlights how much there is still to learn about the butterfly fauna of the forests of north-west Ecuador (see also WILLMOTT & HALL, 1994; HALL & WILLMOTT, 1995a), and how important research is in this area where the remaining natural vegetation is being so rapidly cleared for agriculture (DODSON & GENTRY, 1991; PARKER & CARR, 1992).

***Phaenochitonia* gallardi** Hall & Willmott, **sp. nov.** (Fig. 9a-d; 14a-c).

Description: Male: forewing length 10.5mm. Dorsal surface: forewing entirely black. Hindwing black except for an elongate ovoid blood red patch at the costal margin, extending from base to near apex. Ventral surface: forewing ground color brown; four dark brown spots in discal cell, one marking cell end; two spots below cell; dark brown postdiscal transverse line that curves around cell end and moves inwards to reach the anal margin; indistinct, broader, more distal postdiscal dark brown band; faint dark brown ocelli at outer margin encircled by paler brown/grey; two faint apical, one medial and one tornal section of white fringe. Hindwing ground colour brown, faint red area mirroring red patch on dorsal surface; five dark brown spots in discal cell, one marking cell end; two spots above and below cell; dark brown postdiscal transverse line that curves around cell end creating a semi-circular area between the cell end and postdiscal lines; indistinct, broader, more distal postdiscal dark brown band; faint dark brown ocelli at outer margin encircled by paler brown/grey. Labial palpi pale yellow, tips brown. Eyes brown and bare. Frons brown with yellow scaling in basal half. Antennae brown with cream scales at the base of each segment, clubs brown. Thorax black; abdomen black with paler scaling along the ventral surface; single long, thin and sparse patch of androconial scales on anterior margins of tergites 4 and 5 (see Table 3). Legs brown. Genitalia (Fig. 14a-c): mid-point of posterior edge of uncus projecting and pointed downwards; valvae dorsoventrally compressed and heavily sclerotised with a single upper rounded projection that curves slightly inwards, less sclerotised tissue joins the valvae above the aedeagus; aedeagus cylindrical and split at the apex along the dorsal side; saccus long and thin.

Female: unknown.

Types: Holotype ♂: Venezuela, no specific locality, 1923 (Mayol Gusol). In the "Old Collection" (drawer no. 31) of the Muséum National d'Histoire Naturelle, Paris, France (MNHN).
Paratypes: 1 ♂: Venezuela, *Amazonas,* Río Orinoco, Maipures [nr. Puerto Ayacucho], December 1898 (Cherrie). In the BMNH.

Etymology: This species is named for Jean-Yves GALLARD, who, with Christian BRÉVIGNON, has contributed so much to our knowledge of French Guianan riodinid systematics and ecology.

Diagnosis: The dorsal colour pattern of *Phaenochitonia gallardi* sp. nov. is shared by several other symmachiines, including *Xenandra helius* (Cramer, 1779), *Symmachia probetor* (Cramer, 1782), to a lesser extent *Symmachia threissa* Hewitson, 1870, and *Mesene boyi* Stichel, 1925, and by the euselasiine *Euselasia gelon* (Stoll, 1787). However, none of these species exhibit the small size, rounded wing shape, and characteristic "signature" pattern of ventral markings of *Phaenochitonia* (see Fig. 8a). Within the genus *Phaenochitonia, P. gallardi* is unique in possessing an ovoid red patch at the costal margin of the hindwing dorsal surface. It is probably most closely related to *P. fuliginea* (Bates, 1868) which has a very similar ventral colour pattern, a completely black dorsal surface and very similar male genitalia that differ only by having a more angular shaped valve that is slightly shorter and broader.

***Phaenochitonia* pseudodebilis** Hall & Willmott, **sp. nov.** (Fig. 10a,b; 15a-c).

Description: Male: forewing length 9mm. Dorsal surface: forewing ground colour dark brown; small triangle of red at the centre of the anal margin that is slightly curved inwards at its tip to touch the cell end. Hindwing ground colour dark brown; thick red band diagonally traverses basal half of the wing, leaving a small dark brown area at the wing base. Ventral surface: forewing ground color brown; four dark brown spots in discal cell, one marking cell end; two spots below cell; dark brown postdiscal transverse line that curves around cell end and moves inwards to reach the anal margin, small orange-red patch distal to this line at the anal margin; indistinct, broader, more distal postdiscal dark brown band; dark brown ocelli at outer margin encircled by paler brown (or grey towards the tornus); two apical, one medial and one tornal section of white fringe. Hindwing ground colour brown, faint orange-red area at wing base mirroring red marking on dorsal surface; five dark brown spots in discal cell, one marking cell end; two spots above and below cell; dark brown postdiscal transverse line that curves around cell end creating a semi-circular area between the cell end and postdiscal lines; indistinct, broader, more distal postdiscal dark brown band; dark brown ocelli at outer margin encircled by paler brown (or grey towards the tornus). Labial palpi pale yellow, tips brown. Eyes brown and bare. Frons a mixture of brown and yellow scaling. Antennae brown with cream scales at the base of each segment, clubs brown. Thorax black; abdomen red on dorsal surface yellow-brown on ventral surface; single long, thin and sparse patch of androconial scales on anterior margins of tergites 4 and 5 (see Table 3). Legs missing. Genitalia (Fig. 15a-c): mid-point of posterior edge of uncus projecting and pointed downwards; valvae dorsoventrally compressed and heavily sclerotised with a long upper flattened projection that curves slightly inwards, less sclerotised tissue joins the valvae above the aedeagus; aedeagus cylindrical with a cluster of small pencilate cornuti towards the tip; saccus long and broad.

Female: unknown.

Character	*Pirascca* gen. nov.	*Phaenochitonia*	*Stichelia*	*Pterographium*
Male dorsal wing surface	black/dark brown, either with red/orange as a band oriented in a line joining FW apex to HW anal margin or as a patch on the hindwing; occasionally with dark blue iridescence or dark brown basal markings	black/dark brown, usually with red markings that traverse both wings in a band or are restricted to the inner margins of the HW	black/dark brown often with darker brown markings basally, with oblique orange/red band(s) from costa to distal or anal margin, on only FW or on both wings	black/dark brown, with oblique dark orange FW band from costa to distal margin; type species with dark blue iridescence
Male ventral wing surface	almost uniform black/dark brown ground colour, usually with dark blue iridescence; sometimes dorsal red/orange HW patch is also visible on ventral surface	brown, rarely with orange along FW anal margin, always with a characteristic pattern of darker brown basal spots (see fig. 8a), submarginal ocelli encircled by pale brown	same as dorsal surface but paler	same as dorsal surface but paler and lacking blue iridescence
Female dorsal wing surface	very different from male; black/dark brown, often with darker brown basal spots, and usually with an oblique orange band from costa to tornus on FW, sometimes also on HW	the few known females are very different from males; black/dark brown with transverse orange/red bands on only FW or on both wings	similar to male but paler	similar to male but paler, and lacking any blue iridescence
Wing fringe	FW usually with an apical white section and sometimes with a tornal section	FW with two apical, one medial and sometimes one tornal section of white	FW apex sometimes white; entire HW margin white in type species	entirely black
Male wingshape	FW costa straight, distal margin slightly convex, apex acute; HW tornus pointed	FW costa and distal margin more strongly convex, HW rounded	FW costa straight, distal margin slightly convex; HW slightly rounded	FW costa straight, distal margin slightly convex, apex acute; HW tornus pointed
Hindwing androconial hairs	long erectile hairs on HW densely packed along a short line mid-way between 1A+2A and Cu_2	hairs extremely sparse or absent	evenly scattered shorter hairs on posterior half of HW	long erectile hairs on HW densely packed along a short line mid-way between 1A+2A and Cu_2
Collar	black	black	red or black	black
Dorsal surface of abdomen	black or with a red/orange stripe	black or with a red/orange stripe	black	black