TROPICAL LEPIDOPTERA 9 (Suppl. 1): 27-35

NINE NEW SPECIES AND ONE NEW SUBSPECIES OF *EUSELASIA* FROM ECUADOR (LEPIDOPTERA: RIODINIDAE)

JASON P. W. HALL AND KEITH R. WILLMOTT

Dept. of Entomology and Nematology, University of Florida, Gainesville, Florida 32611, USA

ABSTRACT.– Nine new species and one new subspecies in the euselasiine genus *Euselasia* Hübner, [1819] (*Euselasia andreae* **n. sp.**, *Euselasia cyanofusa* **n. sp.**, *Euselasia hieronymi bianala* **n. ssp.**, *Euselasia illarina* **n. sp.**, *Euselasia jigginsi* **n. sp.**, *Euselasia mapatayna* **n. sp.**, *Euselasia nauca* **n. sp.**, *Euselasia palla* **n. sp.**, *Euselasia pillaca* **n. sp.**, and *Euselasia thaumata* **n. sp.**), are described from Ecuador, with brief notes on their habitats and behavior.

KEY WORDS: behavior, Brazil, Central America, *Charis*, cloud forest, conservation, Costa Rica, deforestation, *Diaethria*, *Dynamine*, endemism, *Eueides*, *Eresia*, *Euptychia*, ***Euselasia andreae*** n. sp. ***Euselasia cyanofusa*** n. sp., ***Euselasia hieronymi bianala*** n. ssp., ***Euselasia illarina*** n. sp., ***Euselasia jigginsi*** n. sp., ***Euselasia mapatayna*** n. sp., ***Euselasia nauca*** n. sp., ***Euselasia palla*** n. sp., ***Euselasia pillaca*** n. sp., ***Euselasia thaumata*** n. sp., Euselasiinae, *Hades*, *Hamadryas*, *Hyposcada*, *Ithomeis*, *Melanis*, *Methone*, Mexico, mimicry, *Myscelia*, Neotropical, Nicaragua, Nymphalidae, Panama, Peru, *Phoebis*, Pieridae, South America, *Stalachtis*, *Symmachia*, taxonomy.

Euselasia Hübner, [1819], is the largest riodinid genus with approximately 152 described species (Hall and Willmott, unpubl. data), and contains all members of the subfamily Euselasiinae Kirby, 1871, except the three species in *Hades* Westwood, 1851, and *Methone* Doubleday, 1847 (Harvey, 1987). *Euselasia* species are widespread throughout the Neotropics and form a significant proportion of the riodinid fauna in all wet forest habitats up to about 1700m. While some species are common and likely to be seen by the casual observer, many are very rare and poorly known.

Seitz (1916) and D'Abrera (1994) both gave pictorial overviews of the genus, but the only attempt at a comprehensive taxonomic revision of *Euselasia* was that of Stichel (1928), who recognised 133 species. However, his appraisal is now woefully outdated by information collated over the last 25 years during intensive regional studies. These have usually resulted in the recognition of previously confounded sibling species (Brévignon, 1995, 1996, 1997; Callaghan, 1997) but quite novel phenotypes continue to be discovered, especially in the comparatively less well studied Andean cloud forest habitats (Hall and Willmott, 1995a). The purpose of this paper is to describe a number of *Euselasia* taxa from both of the above categories. The majority of these taxa have been collected by the authors during a faunistic study of Ecuadorian butterflies over the last five years, but the last two originate from the private collection of R. C. Busby, with whom those species descriptions are co-authored.

Approximately 92% of extant holotype specimens representing *Euselasia* taxa reside in the four museums listed below and all have been examined. Type illustrations and/or descriptions have been consulted for the remainder (we follow Heppner and Lamas (1982) in using the following acronyms throughout the text):

BMNH	British Museum (Natural History), London, England
MNHN	Muséum National d'Histoire Naturelle, Paris, France
USNM	United Sates National Museum, Washington, DC, USA
ZMHU	Zoologische Museum, Humboldt Universität, Berlin, Germany

Euselasia palla Hall & Willmott, **new sp.**

Fig. 1a,b.

Description.– MALE: unknown.

FEMALE: forewing length 26mm. Outer forewing margin convex, four radial veins; hindwing rounded with slightly dentate distal margin. *Dorsal surface*: forewing ground color dark brown; orange extends from wing base to cell end, with some black scaling at the costal edge of the cell, and two-thirds distance from cell base to distal wing margin as ellipsoids in cells Cu_1 and Cu_2, a similar distance from wing base to distal margin in cell 1A+2A, with extensive black scaling occurring in the central area of the distal half and along the anal margin; one tiny, faint costal white fleck in cells R_4+R_5 and R_3, one large elongate submarginal white spot in cells M_1, M_2 and M_3, and increasingly smaller submarginal spots in cells Cu_1, Cu_2 and 1A+2A. Hindwing ground color dark brown; large orange patch extends from wing base three-quarters distance to distal wing margin, becoming darker at its distal edge and paler along anal margin. *Ventral surface*: forewing ground color pale brown; dull orange extends from wing base two-thirds distance to distal wing margin, outer edge convex; uneven, dark orange-brown line, 1mm thick, extends from cell R_2 at costa to vein 1A+2A at a point two-thirds distance from wing base to tornus; thin line of dark orange-brown scaling extends along costal edge of discal cell; one small submarginal white spot in cells R_4+R_5 and R_3, one large elongate submarginal white spot in each of cells M_1, M_2 and M_3, the latter two containing a pale brown macule across their middle, and three parallel pairs of submarginal spots in cells Cu_1, Cu_2 and 1A+2A that are all white except the proximal spot in Cu_2, which is dull orange. Hindwing ground color pale brown; dull orange extends from wing base three-quarters distance to distal wing margin; uneven, dark orange-brown line, 1mm thick, extends from distal end of vein Sc+R_1 at costa almost to edge of orange in cell 1A+2A, then at a right angle up to anal margin; a pair of parallel submarginal white spots in cells M_1-Cu_2, two pairs partially joined in cell 1A+2A, two thin white dashes in cell 3A; thin, orange-brown marginal line at tornus. *Head*: labial palpi white. Eyes black and bare. Frons white with orange scaling beneath antennae. Dorsal surface of antennae black, ventral surface black with brown band at base of each segment; clubs black, tips orange-brown. *Body*: thorax black; abdomen orange-brown, slightly paler on ventral surface. Legs orange-brown.

Types.– *Holotype female*: ECUADOR.– *Esmeraldas Prov.*: km 44 Lita-San Lorenzo rd., La Punta, 300m, 21 Jun 1994 (K. R. Willmott); to be deposited in the BMNH.

Paratypes: ECUADOR.– same data as above, 1 ♀ (J. P. W. Hall); in coll. of the authors.

Etymology.– This species is named after the Quechua word "palla", which means a woman of the Inca nobility, in reference to its impressive size and the fact that it is currently known only from female specimens.

Diagnosis.– *Euselasia palla* n. sp. is uniquely patterned amongst the Euselasiinae, bearing a fleeting resemblance only to the female of *Euselasia aurantiaca* (Salvin & Godman, 1868), which lacks the subapical white forewing markings and the broad distal black margin on the hindwing. It has been suggested to us (Harvey, pers. comm.) that the female specimens of *E. palla* match a small series of male

specimens (in the USNM and ZMHU) from Costa Rica that belong to an undescribed species close to *E. aurantiaca*. However, we think it unlikely that these males are conspecific with *E. palla* for two reasons. Firstly, males and females of *Euselasia* species always have virtually identical ventral pattern elements and, in particular, the ventral hindwing of female *E. palla* lacks the central black triangular eyespot at the distal margin seen in the male of the undescribed species, a character also seen in both sexes of *E. aurantiaca* and the great majority of other *Euselasia*. Instead, female *E. palla* has a parallel series of white spots reminiscent of those found on both sexes of the southeast Brazilian species *Euselasia zara* (Westwood, 1851). Secondly, it would be reasonable to assume that the female belonging with the male of the undescribed species would be of a similar size to that of female *E. aurantiaca* (i.e., forewing length about 20-22mm, rather than 26mm) since the males of the two species are similar in size (with forewing lengths 16-17mm). We thus expect the male of *E. palla* to be considerably larger than the males of either *E. aurantiaca* or the undescribed species.

Discussion.– Athough both females were caught on a single morning, no more individuals were subsequently seen despite numerous return visits to the type locality and other locations in the vicinity. This particular day, towards the end of the wet season, was exceptional for riodinid abundance and species diversity, and the capture of *E. palla* heralded the discovery of several additional undescribed species (Willmott and Hall, 1994; Hall and Willmott, 1995b, 1996, in prep.). Both females were encountered between 1000h and 1100h near the forest edge, one along a recent logging road (now the main Ibarra-San Lorenzo road), flying about 3-5m above the ground with a slow, fluttering flight reminiscent of an ithomiine or acraeine. This flight behavior is all the more noteworthy as *E. palla* has a wing pattern that clearly places it in an orange and white mimicry complex which involves a number of lowland Chocó butterflies, including the riodinids *Ithomeis eulema serena* (Stichel, 1910), and *Stalachtis magdalenae* Westwood, 1851, the ithomiine *Hyposcada illinissa aesion* (Godman & Salvin, 1878), the heliconiine *Eueides lybia olympia* (Fabricius, 1793) and the orange and white female form of the nymphaline *Eresia sestia* Hewitson, 1869.

Euselasia thaumata Hall & Willmott, **new sp.**

Fig. 2a,b; 11a,b.

Description.– MALE: forewing length 17mm. Forewing vein R_3 splits from R_4+R_5 in the very wing apex; hindwing is produced at tornus. *Dorsal surface*: forewing ground color black; in a view perpendicular to wing surface, a deep purplish blue extends from wing base to discal cell end and along anal margin to tornus, occupying entire wing area between anal margin and vein Cu_2, and basal half of cell Cu_2; in oblique view, blue extends additionally throughout cell Cu_2 and much of Cu_1. Hindwing ground color black, slightly paler at anal margin; in perpendicular view, deep purplish blue extends along distal wing margin from end of cell M_1 to tornus, broadening at the mid-point; in oblique view, blue additionally seen at base of cell 1A+2A. *Ventral surface*: forewing ground color pale brown; six dark brown bands vertically traverse wing from costa to near vein 1A+2A: one marginal, one submarginal and two postdiscal are roughly evenly spaced and of even width, except the most proximal which is slightly concave at its center, one broader discal band is slightly convex and wider centrally, and the basal sixth is largely restricted to the cell; dark yellow scales line proximal edges of brown bands one and three (numbered in from distal margin), and the distal edges of bands two and four. Hindwing ground color pale brown; six dark brown bands variably traverse the wing: one marginal and one submarginal extend from apex to tornus paralleling wing margin; outer postdiscal band extends from costa to vein M_3, forms a very pointed triangle in cell Cu_2, a less pointed triangle in 1A+2A, then extends at right angles up to anal margin, all sections of this band being edged distally with white scales between anal margin and M_3; inner postdiscal band, which is thicker especially in the costal half, extends in concave shape from costa to near tornus then diverts at an angle of 60 degrees as a thinner line to base of anal margin; discal band extends straight from costa towards tornus, slightly thicker at costa, then thinner, then markedly wider centrally before angling sharply towards wing base; thick, sharply convex, basal band extends from costa to tornal angle of discal band; dark yellow scales line the proximal edges of brown bands one and three (numbered in from distal margin), and the distal edges of bands two and four, and sparsely fill space proximal to basal band; elliptical black spot present in cell Cu_1 between bands two and three, with dark yellow scaling proximally and white scaling distally. *Head*: labial palpi very pale brown. Eyes black and bare. Frons brown with white at margins. Antennal segments black with brown scales laterally and white scales basally, increased white scaling before clubs, especially on ventral surface; clubs black, tips orange-brown. *Body*: thorax black; dorsal surface of abdomen black, ventral surface brown. Forelegs dark brown, mid and hindlegs yellow-brown. *Genitalia* (Fig. 11a,b): uncus rounded, aedeagal tip rounded, valvae upwardly curved in lateral view and slightly inwardly curved at tip in ventral view, tip rounded, scales elongate with bifid tips, transtilla evenly triangular.

FEMALE: unknown.

Types.– *Holotype male*: ECUADOR.– *Napo Prov.*: km 49 Tena-Loreto rd., 1300m, 31 Aug 1997 (K. R. Willmott); to be deposited in the BMNH.

Paratypes: ECUADOR.– same data as above, 2 ♂, in coll. of the authors; same locality data as above, 17 Sept 1995, 1 ♂ (A. F. E. Neild), to be deposited in the Museo Nacional de Ciencias Naturales, Quito, Ecuador (MNCN). *Morona-Santiago Prov.*: km 20 Macas-Nueve de Octubre rd., 1600m, 29 Sept 1997, 1 ♂ (R. C. Busby), in coll. of the authors; same data as preceding, 1 ♂, in coll. of G. W. Busby III, Boston, MA; same locality data as preceding, 1800m, 27 Sept 1997, 1 ♂ (R. C. Busby), in coll. of R. C. Busby, Boston, MA.

Etymology.– The name of this species is derived from the Greek word "thaumatos", meaning wonderful.

Diagnosis.– *Euselasia thaumata* n. sp. is clearly a member of the "*Euselasia eucritus* (Hewitson, [1855]) group", but although it has a similar dorsal surface to species such as *E. eucritus* and *Euselasia toppini* Sharpe, 1915, its almost uniformly brown ventral surface, which lacks basal and marginal red or orange coloration and has postdiscal bands of markedly varying widths, is diagnostic.

Discussion.- *E. thaumata* is currently known from primary cloud forest habitats between 1300m and 1800m. It has only been found at ridgetop sites, where solitary males perch on low sunlit bushes, about one meter above the ground, in open areas within the forest in the early morning from 0845h to 0945h. They rest on the tops of leaves with their wings shut and make brief sorties before returning to the same perching spot, in flight closely resembling members of the satyrine genus *Euptychia* Hübner, 1818. One male individual was attracted to a trap baited with rotting fish in the early afternoon (R. Busby, pers. comm.).

The species seems to be geographically local and to fluctuate in abundance. Seasonality may explain why it has been collected only in August and September, despite further visits to the type locality during March, April and October. However, it is also worth mentioning that males were common on the day the holotype was collected but absent only a few weeks later. We have also observed this phenomenon in *Euselasia pillaca* n. sp. (described below) and *Euselasia chinguala* Hall & Willmott, 1995. It is possible that the gregarious and synchronously processional feeding behavior of *Euselasia* larvae (DeVries *et al.*, 1994; DeVries, 1997; Brévignon, 1997) might accentuate the temporally restricted emergence of certain adult *Euselasia* and thus their perceived rarity.

Euselasia pillaca Hall & Willmott, **new sp.**

Fig. 3a,b; 12a,b.

Description.– MALE: forewing length 17.5mm. Forewing apex rounded; hindwing somewhat elongate, tornus rounded. *Dorsal surface*: forewing ground color black; dull, dark purple, in small patch at wing base, extends along costal margin above discal cell, then forms broad band tapering towards tornus at two-thirds distance between wing base and distal margin,

leaving fainter purple area in apex. Hindwing ground color black; dull, dark purple marginal band of roughly even width (2mm) extends from apex to tornus; especially when viewed obliquely, an almost colorless iridescence (greenish-purple under microscope) fills cells 1A+2A, Cu_1 and Cu_2. *Ventral surface*: forewing ground color pale brown; broad, darker brown band at base, rich red-brown postdiscal band (1.5mm wide) edged proximally with iridescent purple, and both proximally and distally with dark brown, vertically traverses wing from costa to vein 1A+2A, crossing discal cell end; distal area darker brown with thin pale brown submarginal line and three black ovoid spots (iridescent purple at oblique angle) in each of cells M_1-M_2 (increasing in size in that order), each surrounded by paler brown scaling that forms a point proximally, and proximally directed triangular outlines in pale brown in cells Cu_1-1A+2A, with some chestnut brown scaling distally, especially in cell Cu_2. Hindwing ground color pale brown; broad darker brown band at base, rich red-brown band (1.5mm wide) edged proximally with iridescent purple, and both proximally and distally with dark brown, traverses wing from a point on costa two-fifths distance from base to apex to a similar point near anal margin, stopping at vein 3A in which space band widens; distal area darker brown with thin orange marginal line, then thinner pale blue-gray line, then broader red-brown line, all extending from apex to vein 1A+2A; within distal dark area are elongate black streaks surrounded by pale brown (that is proximally pointed) in cells M_1-M_3 and Cu_2-1A+2A, smaller in M_1 and paired in 1A+2A, and an ovoid black spot, with a large, somewhat distally positioned iridescent purple pupil, surrounded by pale brown, in cell Cu_1; purple extends along anal margin and in cell 3A up to and including discal red-brown band. *Head*: labial palpi pale brown. Eyes black and bare. Frons black edged with dirty cream. Antennal segments black with some white scaling before clubs; clubs black, tips orange-brown. *Body*: dorsal surface of thorax and abdomen black, ventral surface pale brown. Forelegs brown, mid and hindlegs yellow-brown. *Genitalia* (Fig. 12a,b): uncus rounded, valvae elongate, roundly pointed and inwardly curved at tip in ventral view, scales roundly elongate, aedeagal tip roundly pointed and slightly upturned, transtilla dorso-ventrally flattened against dorsum of aedeagus.

FEMALE: unknown.

Types.– *Holotype male*: ECUADOR.– *Napo Prov.*: km 49 Tena-Loreto rd., 1300m, 11 Oct 1996 (K. R. Willmott); to be deposited in the BMNH.

Paratypes: ECUADOR.– same data as HT, 2 ♂; in coll. of the authors.

Etymology.– The species name is derived from the Quechua word "pillaca", meaning purple and black.

Diagnosis.– *Euselasia pillaca* n. sp. is the fourth known member of the "*Euselasia euodias* (Hewitson, [1856]) group", the remaining three, *E. euodias*, *Euselasia issoria* (Hewitson, 1869) and *Euselasia orba* Stichel, 1919, all being illustrated in color by Brévignon (1996). *E. euodias* has a pronouncedly elongate hindwing tornus and purple iridescence over the entire dorsal forewing and at the apex of the dorsal hindwing, and *E. issoria* has a similarly elongate hindwing, postdiscal cyan iridescence on the ventral forewing and mauve subapical coloration on the dorsal forewing, often with dark brown scaling basally on both wings. Since both of these species also have reddish-purple extending along the entire length of the ventral hindwing anal margin, *E. pillaca* can be placed closest to *E. orba*, as neither of them possess this character. *E. pillaca* differs from *E. orba* on the dorsal surface by having darker purple coloration that is more extensive at the base of the forewing, in the distal forewing band and at the hindwing distal margin, where it extends to the tornus. On the ventral surface, *E. pillaca* has a darker brown ground color, purple instead of reddish-purple coloration at the hindwing tornus, a smaller central hindwing eyespot with pale brown distally instead of white and a larger, more centrally positioned, darker purple pupil, and it lacks a purple suffusion distal to the medial red-brown band on both wings. The hindwing of *E. pillaca* is the least elongate of the species group and it has a short rounded extension to the tornus that is not seen in the other species. The inwardly curved valve tips of the male genitalia in ventral view are also diagnostic, those in the other "*euodias* group" species being straight and spatulate in shape.

Discussion.– This species is currently known only from a single ridgetop cloud forest site at 1300m. A small group of males was found perching beneath leaves with their wings shut at the top of a small tree, about 6-8m high, in a small light gap between 0900h and 1015h. The other three closely related species in the "*E. euodias* group" are all confined to lowland forest and in eastern Ecuador exhibit similar perching behaviors to this new species, though none perch as high above the ground as *E. pillaca*. Despite numerous other visits to the type locality, the species has only been seen on the single day that the type series was collected (see Discussion under *Euselasia thaumata* n. sp.).

Euselasia mapatayna Hall & Willmott, **new sp.**

Fig. 4a,b; 13a,b.

Description.– MALE: forewing length 16mm. Forewing distal margin notably straight. *Dorsal surface*: both wings entirely dark brown, hindwing paler at anal margin. *Ventral surface*: forewing ground color dark brown, paler brown in distal third of wing; thin, uneven, dark red-brown band edged with black vertically traverses wing from end of cell R_2 at costa to vein 1A+2A at a distance three-fifths from wing base to tornus; submarginal chestnut-brown band vertically traverses wing from vein 1A+2A to costa where it curves shallowly inwards as it approaches, thin chestnut-brown line at margin. Hindwing ground color dark brown; thin, dark red-brown band edged with black vertically traverses wing from costa, at a point three-fifths distance from base to apex, to vein M_3, where it kinks sharply inwards to vein Cu_2 then outwards to center of cell 1A+2A before angling in sharply to anal margin, creating a large "U" shape; thin line of dark orange at margin, edged proximally with dark brown, becomes paler towards tornus; pale brown submarginal rectangles in cells M_1-M_3 and Cu_2 have a dark brown bar through middle and are edged proximally by dark brown, cell 1A+2A has two and cell 3A has one elongate submarginal triangle consisting of white scaling distally, then black, then mostly pale brown edged with dark brown; submarginal, black semicircular eyespot in Cu_1 edged with white distally and pale brown proximally. *Head*: labial palpi pale brown. Eyes black and bare. Frons dark brown edged with pale brown. Antennal segments black with basal white scaling, increased white scaling before clubs; clubs black with white distal scaling, tips orange-brown. *Body*: dorsal surface of thorax and abdomen black, ventral surface pale brown. Forelegs brown, femur of mid and hindlegs brown, remainder yellow-brown. *Genitalia* (Fig. 13a,b): uncus rectangular and toothed distally, falci long, valvae short with broadly rounded tip, scales not visible (but may have become detached), aedeagus pointed, transtilla elongate.

FEMALE: unknown.

Types.– *Holotype male*: ECUADOR.– *Sucumbíos Prov.*: nr. Rosa Florida, Río Palmar, 1200m, 23 Nov 1996 (K. R. Willmott); to be deposited in the BMNH.

Paratypes: COLOMBIA.– *Nariño*: below Monopamba on road to Orito, Río Sucio, San Pablo, 1200m, Sept 1987, 1 ♂ (J. H. Vélez), in the Museo de Historia Natural de la Universidad del Caldas, Manizales, Colombia; same locality data as preceding, 2 ♂, in coll. of J. Salazar, Manizales, Colombia.

Etymology.– This name is based on the Quechua word "mapatayna", meaning dark reddish-brown, in reference to the color of the ventral medial band in this species.

Diagnosis.– *Euselasia mapatayna* n. sp. is phenotypically most similar to *Euselasia ella* Seitz, 1916, which occurs from Colombia to Bolivia at similar elevations. It differs from *E. ella* by having a more angular forewing shape and a more rounded hindwing, a dark brown instead of a paler chestnut brown dorsal surface, a darker ventral ground color with a rich red-brown instead of plain brown discal line on both wings that is markedly more jagged, especially near the hindwing tornus, orange at the distal margin of the ventral hindwing, and a smaller eyespot in cell Cu_1 of the ventral hindwing that is more distally positioned and lacks an accompanying smaller spot in M_3. Most of the wing pattern characters of *E. ella* actually place it closer to the smaller, lowland Amazonian species *Euselasia eulione* (Hewitson, [1856]).

Fig. 1-8. **1.** *Euselasia palla* Hall & Willmott **n. sp.**, holotype female: a) dorsal surface; b) ventral surface. **2.** *Euselasia thaumata* Hall & Willmott **n. sp.**, holotype male: a) dorsal surface; b) ventral surface. **3.** *Euselasia pillaca* Hall & Willmott **n. sp.**, holotype male: a) dorsal surface; b) ventral surface. **4.** *Euselasia mapatayna* Hall & Willmott **n. sp.**, holotype male: a) dorsal surface; b) ventral surface. **5.** *Euselasia nauca* Hall & Willmott **n. sp.**, holotype male: a) dorsal surface; b) ventral surface. **6.** *Euselasia jigginsi* Hall & Willmott **n. sp.**, holotype male: a) dorsal surface; b) ventral surface. Allotype female: c) dorsal surface; d) ventral surface. **7.** *Euselasia cyanofusa* Hall & Willmott **n. sp.**, holotype male: a) dorsal surface; b) ventral surface. **8.** *Euselasia hieronymi bianala* Hall & Willmott **n. ssp.**, holotype male: a) dorsal surface; b) ventral surface.

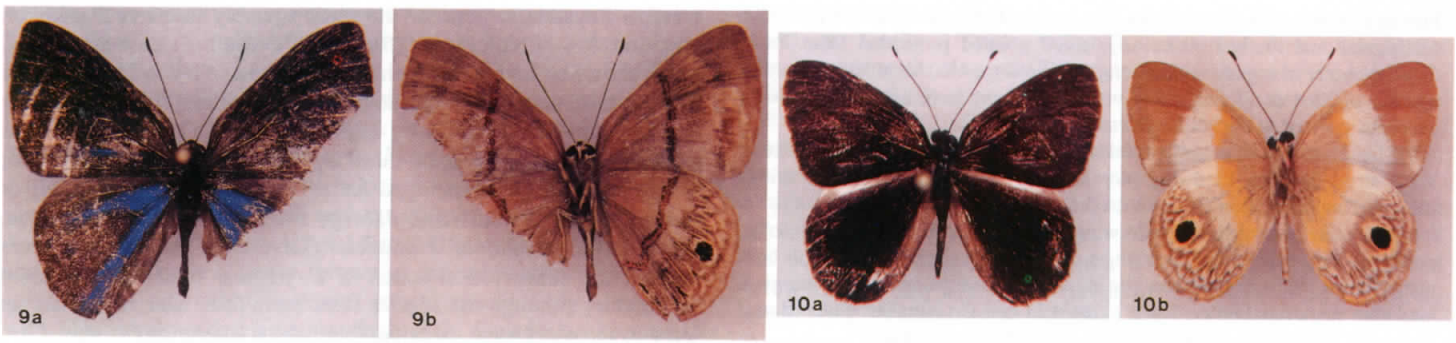

Fig. 9-10. **9.** *Euselasia illarina* Hall, Willmott & R. Busby **n. sp.**, holotype male: a) dorsal surface; b) ventral surface. **10.** *Euselasia andreae* Hall, Willmott & R. Busby **n. sp.**, holotype male: a) dorsal surface; b) ventral surface.

Discussion.– *E. mapatayna* is currently known only from a small geographic area that encompasses northeast Ecuador and south Colombia. In Ecuador, a small group of males of *E. mapatayna* was encountered along a narrow river through a steeply forested valley at 1200m. Males were perching both on top of and beneath the leaves of a small number of sunlit bushes 4-5m high that arched out over the water surface. They were only active between 0845h and 0930h, making frequent sorties out over the water, occasionally engaging in brief, spiralling flights with other conspecific males.

Euselasia nauca Hall & Willmott, **new sp.**

Fig. 5a,b; 14a,b.

Description.– MALE: forewing length 16.5mm. Forewing distal margin convex; hindwing rounded. *Dorsal surface*: both wings entirely dark brown, hindwing paler at anal margin. *Ventral surface*: forewing ground color pale brown; very thin, uneven, dark orange-brown postdiscal line vertically traverses wing from middle of cell 1A+2A to vein M_1, curving slightly inwards in last two cell spaces; broad, diffuse, darker brown submarginal band curves slightly inwards towards apex. Hindwing ground color pale brown; dark orange line vertically traverses wing from costa, near end of vein $Sc+R_1$, to M_3, then shifts proximally and thickens until vein Cu_2, then shifts distally in cell 1A+2A before undulating in to almost touch anal margin, all sections except those in cells Cu_1-1A+2A edged with darker brown scales; thin orange line at margin extends from apex to tornus but very faint above Cu_1; a series of submarginal spots in cells M_1-3A, dark brown in cells M_1-Cu_2 and black in cells Cu_1-3A, a pair of spots in 1A+2A, all spots lined distally with white; broad, diffuse darker brown band extends from apex to tornus in cell 1A+2A. *Head*: labial palpi brown. Eyes black and bare. Frons dark brown edged with pale brown. Antennal segments black with small amount of basal white scaling, increased white scaling before clubs; clubs black, tips orange-brown. *Body*: dorsal surface of thorax and abdomen black, ventral surface pale brown. Forelegs pale brown, mid and hindlegs yellow brown. *Genitalia* (Fig. 14a,b): uncus rounded and toothed posteriorly, falci robust, valvae somewhat elongate and tube-shaped, scales not visible (but may have become detached), aedeagus narrow and pointed, transtilla triangular.

FEMALE: unknown.

Types.– *Holotype male*: ECUADOR.– *Napo Prov.*: nr. Talag, Río Jatunyacu, Pimpilala, 600m, 14 Sept 1996 (K. R. Willmott); to be deposited in the BMNH.

Etymology.– The name of this species is derived from the Quechua word "ñauca", meaning blind, in reference to the lack of a central submarginal eyespot on the ventral hindwing.

Diagnosis.– The disjointed ventral hindwing discal line and reduction of ventral hindwing submarginal markings give *Euselasia nauca* n. sp. a superficial resemblance to members of the "*Euselasia pelor* (Hewitson, [1855]) group", especially *Euselasia eumedia* (Hewitson, [1855]), but the male genitalia place it closer to the "*Euselasia hygenius* (Stoll, 1790) group" [*sensu lato*]. Within this group, its large size, rounded wing shape, markedly disjointed ventral hindwing discal line and lack of a central submarginal eyespot on the ventral hindwing make it quite distinctive.

Discussion.– The holotype was found at 1410h resting beneath a leaf around 3m above the ground in forest understory below a butterfly trap. It is assumed that the individual was attracted to the rotting fish in the trap or residues on the trap string, as *Euselasia* is one of the most commonly attracted genera to such bait (Hall and Willmott, in prep.).

The type locality for *E. nauca*, Pimpilala, is situated at the very base of the eastern Andes and its butterfly fauna is thus somewhat ecotonal. Although the vast majority of riodinid species occurring there have entirely lowland distributions, we have collected a few species, such as *Symmachia fassli* Hall & Willmott, 1995, and "*Calydna*" *volcanicus* Callaghan & Salazar, 1997, that were described from cloud forest localities at around 1300m (Hall and Willmott, 1995a; Callaghan and Salazar, 1997). Given this and the fact that, to our knowledge, no other material of *E. nauca* has been found in the vast expanse of the Amazon basin, we suggest that it may be predominantly a low elevation cloud forest species that is restricted to the base of the eastern Andes.

Euselasia jigginsi Hall & Willmott, **new sp.**

Fig. 6a-d; 15a,b.

Description.– MALE: forewing length 12.5mm. Forewing pointed; hindwing slightly angular. *Dorsal surface*: forewing and hindwing dark brown, setae in discal cell and along anal margin of hindwing noticeably pale brown. *Ventral surface*: forewing ground color pale gray-brown; thin, postdiscal, dark orange line edged with dark brown diagonally traverses wing at very shallow angle from near mid-point of costa to vein 1A+2A at a distance three-fifths from base to tornus, kinking slightly proximally at vein Cu_1; broad, very diffuse darker brown band distal to postdiscal line, especially diffuse near anal margin; better defined, thinner, dark brown submarginal band extends from near tornus to subapex, curving inwards towards costa. Hindwing ground color pale gray-brown; thin, uneven, dark orange postdiscal line edged with dark brown vertically traverses wing from end of cell $Sc+R_1$ at costa to vein Cu_2, then kinks distally to middle of cell 1A+2A before angling at about 90° into anal margin; broad band of dark brown distal to postdiscal line in cells Rs-M_3; thin marginal line of orange, edged proximally with dark brown, extends from near apex to tornus where it becomes brighter; pale brown submarginal rectangles in cells M_1-M_3 bisected with a dark brown bar through middle and edged proximally by dark brown; small submarginal, triangular black spot in cell Cu_1 lined with white distally and pale brown, then dark brown proximally; tiny black triangle edged with white distally and with a few dark brown scales proximally in cells Cu_2 and 3A, and a pair of pronouncedly elongate spots in cell 1A+2A. *Head*: labial palpi pale brown. Eyes black and bare. Frons dark brown edged with pale brown. Antennal segments black with basal white scaling, increased white scaling at base of antennae and before clubs; clubs black, tips orange-brown. *Body*: dorsal surface of thorax and abdomen black, ventral surface pale brown.

Forelegs brown, mid and hindlegs pale brown. *Genitalia* (Fig. 15a,b): uncus rectangular and toothed posteriorly, small pointed projection from lower anterior corner of tegumen, falci long, valvae somewhat short and upwardly, roundly pointed at tip, scales not visible (but may have become detached), aedeagus pointed at tip, transtilla rather elongate.

FEMALE: differs from male in following respects: forewing length 12mm. Wing shape broader, hindwing more angular. *Dorsal surface*: both wings paler brown, faint orange-brown scaling in the basal half of cell Cu_1 on forewing. *Ventral surface*: both wings have paler brown ground color, postdiscal line paler orange-brown, postdiscal dark brown scaling on both wings fainter, submarginal forewing band paler chestnut-brown, submarginal hindwing markings fainter, black eyespot in cell Cu_1 smaller. *Body*: dorsal surface of thorax and abdomen brown. All legs pale brown.

Types.– *Holotype male*: ECUADOR.– *Cotopaxi Prov.*: km 14 La Maná-Latacunga rd., Hacienda El Dorado, 750m, 16 Aug 1996 (K. R. Willmott); to be deposited in the BMNH.

Allotype female: ECUADOR.– *Manabí Prov.*: south of Pedernales, Palmarcito, 150m, 9 Aug 1996 (K. R. Willmott); to be deposited in the BMNH.

Paratypes: ECUADOR.– *Cotopaxi Prov.*: Latacunga-Quevedo rd., nr. Guayacán, San Marcos, 500m, 6 Aug 1996, 1 ♂ (C. D. Jiggins), to be deposited in the MNCN; same data as preceding, 1 ♂ (K. R. Willmott), deposited in the USNM. Same data as HT, 1 ♂, 1 ♀, both in coll. of the authors. *El Oro Prov.*: Pasaje-Cuenca rd., Uzhcurrumi, 300m, 14 May 1994, 1 ♂ (F. Piñas), in coll. Quito Católica Zoología, Quito, Ecuador (QCAZ). *Loja Prov.*: Río Puyango, Hacienda Banderones, 700m, 6 Nov 1997, 2 ♂ (C. D. Jiggins); in coll. of the authors.

Etymology.– This species is named for our good friend Chris Jiggins, who furnished a fine jeep to accompany KRW on a trip through western Ecuador, and inadvertently captured the first specimen we saw of this species.

Diagnosis.– *Euselasia jigginsi* n. sp. is a member of the complex "*Euselasia hygenius* group", whose diversity has only recently begun to be realised (Brévignon, 1996; Hall and Willmott, unpubl. data). Male *E. jigginsi* is most similar to the widespread Amazonian species *Euselasia eustola* Stichel, 1919, but it has a narrower forewing, a more elongate and angular hindwing, a narrower ventral discal line, reduced and more diffuse ventral hindwing submarginal markings, a slightly paler dorsal ground color, and, most notably, dark brown postdiscal shading in the apical areas of the ventral surface of both wings. This last character can be seen on some specimens of the southeast Brazilian subspecies *E. eustola occulta* Stichel, 1919, but these wing pattern elements are deemed to be convergent, perhaps resulting because both species live in drier habitats. The male genitalia of *E. jigginsi* differ from those of *E. eustola* by having a small pointed projection from the lower anterior corner of the tegumen, behind the falci. The female of *E. jigginsi* differs from that of *E. eustola* by having orange-brown at the base of cell Cu_1 on the dorsal forewing, a character that is shared only by females of the Amazonian species *Euselasia cafusa* (Bates, 1868), and *Euselasia janigena* Stichel, 1919, which have quite different ventral patterns.

Discussion.– Males of *E. jigginsi* were found perching in a forested ridgetop light gap at around 1530h, as well as on 2m high bushes amongst secondary growth streamside vegetation between 1330h and 1400h. Females were encountered during the mid to late afternoon flying slowly along the edge of secondary growth areas.

E. jigginsi is only known from the central and southern provinces of western Ecuador, usually in association with relatively moist semi-deciduous forest, although it occurs in wet rain forest near La Maná. It appears to form part of a large assemblage of butterfly species and subspecies endemic to southwest Ecuador and northwest Peru, some of which also stray into the wetter forests of central-west Ecuador. Such species include the riodinids *Charis calagutis* Hewitson, 1871, *Melanis aegates leucophlegma* (Stichel, 1910), the pierid *Phoebis bourkei* (Dixey, 1933), and the nymphalids *Dynamine haenschi* Hall, 1917, *Diaethria ceryx* (Hewitson, 1864), *Myscelia cyaniris millerorum* Jenkins, 1984, and *Hamadryas amphichloe amphichloe* (Boisduval, 1870). Dodson and Gentry (1991) cite western Ecuador as "one of the most severely threatened areas on earth in terms of biological extinction as a result of deforestation and other activities of humans" and estimate that 96% of moist forest habitats have already disappeared. Many of the important remaining forest patches were listed by Parker and Carr (1992), and it was during a tour of several of these by KRW and Chris Jiggins that several specimens of the type series were captured. Sadly, all of these forests were suffering damage from logging and agriculture, particularly the site of Palmarcito. Given the continued loss of habitat, the conservation status of *E. jigginsi* must be considered vulnerable, although the species does seem to be able to tolerate, at least in the short term, considerable habitat alteration.

Euselasia cyanofusa Hall & Willmott, **new sp.**

Fig. 7a,b; 16a,b.

Description.– MALE: forewing length 13.5mm. Hindwing rounded. *Dorsal surface*: forewing ground color dark brown; dull, faint, iridescent dark purple covers entire wing except costa and apex. Hindwing ground color dark brown, paler at costal and anal margins; dull, faint, iridescent dark purple covers entire wing except costal and anal margins, under microscope scales in lower half of cell M_3 and throughout cells $1A+2A$-Cu_2 additionally have greenish-purple iridescence along their distal edge giving this portion of the wing slightly enhanced iridescence. *Ventral surface*: forewing ground color pale gray-brown; thin, postdiscal orange line edged with dark brown vertically traverses wing from vein 1A+2A, at a point three-fifths distance from base to tornus, to costa at end of vein R_1, curving slightly inwards as it approaches; thin, dark brown submarginal line extends from near tornus to subapex curving inwards towards costa. Hindwing ground color pale gray-brown; slightly broader postdiscal orange line edged with dark brown curves inwards from costa, at end of vein $Sc+R_1$, to M_3, then kinks inwards to Cu_2, then outwards to middle of vein 1A+2A before turning at right angles into anal margin; thin line of orange at margin extends from apex to tornus, but more orange-brown and very faint above vein Cu_1; pale yellow-brown submarginal rectangles in cells M_1-M_3, each split through middle with a dark brown bar and edged proximally with dark brown; small, submarginal semicircular black spot in cell Cu_1 edged with a thick area of white, then a few black scales distally and a broad area of pale yellow-brown fading to dark brown proximally; tiny submarginal speck of black in Cu_2 edged distally with white then some black scales, proximally with a very broad area of pale yellow-brown fading to darker brown; large pair of submarginal black triangles in cell 1A+2A, single elongate submarginal black triangle in cell 3A, all proximally pointed with pale yelow-brown and distally with white then black. *Head*: labial palpi pale brown. Eyes black and bare. Frons dark brown edged with white. Antennal segments black with basal white scaling gradually increasing towards base of antennae and clubs; clubs black, tips orange-brown. *Body*: dorsal surface of thorax and abdomen black, ventral surface pale brown. Legs pale brown. *Genitalia* (Fig. 16a,b): uncus rectangularly flared and toothed posteriorly, falci long, valvae of medium length and tube-shaped, narrowing towards tip in ventral view, scales not visible (but may have become detached), aedeagal tip blunt, transtilla elongate.

FEMALE: unknown.

Types.– *Holotype male*: ECUADOR.– *Napo Prov.*: Coca-Tiguino rd., Río Tiputini, 300m, 20 Sept 1996 (K. R. Willmott); to be deposited in the BMNH.

Paratypes: ECUADOR.– *Napo Prov.*: km 21 Coca-Loreto rd., 300m, 8 Mar 1995, 1 ♂ (J. P. W. Hall); in coll. of the authors. PERU.– *Madre de Dios*: Parque Nacional Manu, Pakitza, 11°53'S 70°58'W, 400m, 1 ♂ (G. Lamas); same data as preceding, 1 ♂ (R. K. Robbins) (USNM). Reserva Tambopata, 12°50'S 69°17'W, 300m, 5 ♂ (R. K. Robbins) (USNM).

Etymology.– The species name is in reference to the iridescent purple of the dorsal surface.

Diagnosis.– *Euselasia cyanofusa* n. sp. is another member of the "*Euselasia hygenius* group", but this new species occurs in broad sympatry in the eastern lowlands of Ecuador with a number of similar congeners. The species with the most similar ventral patterns are *Euselasia alcmena* (H. Druce, 1878) and *Euselasia janigena*

Stichel, 1919. However, *E. alcmena* is a smaller species with a black dorsal surface, a paler ventral ground color, a paler ventral yellow-orange discal line, reduced paler yellow-brown hindwing submarginal coloration and male genitalia with an elongate anterior extension of the tegumen, perhaps suggesting that it is closer phylogenetically to *Euselasia mys* (Herrich-Schäffer, [1858]), and *Euselasia crinon* Stichel, 1919, which both share this character. *E. janigena* has a brown dorsal surface, a more rounded hindwing, a darker and markedly more jagged discal line on both ventral wings, and, importantly, less yellow-brown at the submargin of hindwing cell Cu_2. The only other "*hygenius* group" specimens we have seen with blue dorsal iridescence are three male Ecuadorian specimens which may represent another undescribed species. In these specimens the iridescence is a darker, brighter blue-purple overlayed on a darker, black dorsal surface, and it is very faint, only visible at certain oblique angles. The ventral surface of this taxon is also paler with paler yellow-brown, reduced submarginal hindwing markings, especially in cell Cu_2, and its genitalia differ most notably from *E. cyanofusa* by having a rounded uncus and shorter falci.

Discussion.– The holotype was found near trap string in the forest understory at 1325h. As mentioned under the account of *E. nauca*, it is assumed that *E. cyanofusa* was attracted to the odor of rotting fish in the trap or as residue on the string. The species is currently known only from Ecuador and Peru, but it probably has a wider west Amazonian distribution.

Euselasia hieronymi (Salvin & Godman, 1868)
E. h. bianala Hall & Willmott, **new ssp.**

Fig. 8a,b; 17a,b.

Description.– MALE: forewing length 14.5mm. Forewing pointed; hindwing elongate and somewhat pointed. *Dorsal surface*: forewing ground color dark brown; dark orange at extreme base of discal cell, in basal three-quarters of cell 1A+2A and very base of cell Cu_2 (latter absent in some specimens). Hindwing ground color dark brown, paler at anal margin; dark orange occupies entire cell 1A+2A, some orange scales along lower distal edge of cell Cu_2. *Ventral surface*: forewing ground color pale gray-brown; uneven, postdiscal red-brown line vertically traverses wing from end of vein R_1 at costa, to near vein 1A+2A; broad, darker brown submarginal band extends from near tornus to subapex curving inwards towards costa. Hindwing ground color pale gray-brown; postdiscal red-brown line vertically traverses wing from end of vein $Sc+R_1$ at costa to Cu_1, then kinks slightly outwards to middle of cell 1A+2A before curving inwards to anal margin, creating a "U" shape; thin line at margin edged proximally with dark brown, orange in tornal area, fainter orange-brown above vein Cu_2; pale brown submarginal triangles in cells M_1-M_3 and Cu_2 with a dark brown triangle through the middle of each, edged proximally with dark brown; submarginal, black ovoid spot in cell Cu_1 lined with white distally, pale brown then small amount of brown proximally; a pair of elongate black streaks with some white scaling distally and pale brown then dark brown scaling proximally in cell 1A+2A, a single similar streak in cell 3A. *Head*: labial palpi pale brown. Eyes black and bare. Frons dark brown edged with dirty white. Antennal segments black with basal white scaling gradually decreasing towards clubs; clubs black, tips orange-brown. *Body*: dorsal surface of thorax black, ventral surface pale brown; dorsal surface of abdomen dark orange, ventral surface pale brown. Legs pale brown. *Genitalia* (Fig. 17a,b): uncus unevenly rounded and posteriorly toothed, medium length valvae curve somewhat downwards at middle and upwards at tip, which is rounded, aedeagal tip pointed, transtilla triangular.

FEMALE: differs from male in following respects: forewing length 15mm. Wing shape broader, both wings more angular especially hindwing. *Dorsal surface*: pale brown. *Ventral surface*: ground color and all ventral markings paler.

Types.– *Holotype male*: PANAMA.– *Chiriquí*: Potrerillos, 3600', 10 Feb 1970 (S. S. Nicolay); in the USNM.

Paratypes: PANAMA.– same locality data as HT, 14 Feb 1970, 2 ♂ (S. S. Nicolay). *Darién*: Caña, 1000m, 10 Jan 1984, 2 ♂ (G. B. Small); all in the USNM. COSTA RICA.– *Heredia Prov.*: Río Sarapiqui, 700m, 29 Jun 1976, 1 ♂ (G. B. Small) (USNM). ECUADOR.– *Cotopaxi Prov.*: km 14 La Maná-Latacunga rd., Hacienda El Dorado, 750m, 16 Aug 1996, 1 ♂ (K. R. Willmott). *Carchi Prov.*: nr. Lita, ridge to east of Río Baboso, 900m, 25 Mar 1995, 1 ♂ (J. P. W. Hall); both in coll. of the authors.

Etymology.– The name of this subspecies refers to the presence of dorsal orange along the anal margin of both wings.

Diagnosis.– *Euselasia hieronymi bianala* ssp. n. differs from the nominate primarily by having dark orange along the anal margin of the dorsal forewing; the nominate has an entirely brown dorsal forewing with only a few dark orange-brown scales at the base of the discal cell. Ventral wing pattern characters are most variable throughout the range of the species and none can be used to consistently differentiate the two subspecies, microclimatic conditions appearing to play a more dominant role in development than gross geographic location. The male genitalia of the two taxa do not differ.

Discussion.– Although it is not our intention to describe many riodinid subspecies from Ecuador, the two phenotypes of *E. hieronymi* seem sufficiently different and to occupy sufficiently large, discrete geographical ranges that recognition of distinct subspecies seems warranted. The nominate subspecies occurs from Mexico to Nicaragua and the new subspecies occurs from Costa Rica to western Ecuador.

Euselasia illarina Hall, Willmott & R. Busby, **new sp.**

Fig. 9a,b; 18a,b.

Description.– MALE: forewing length 16.5mm. Hindwing somewhat elongate. *Dorsal surface*: forewing ground color dark brown; iridescent purple fills cells 1A+2A-M_3 except for narrow marginal portion. Hindwing ground color dark brown; iridescent purple covers wing between veins M_3 and 1A+2A, including discal cell, although cells Cu_1 and Cu_2 appear dark brown in perpendicular view. *Ventral surface*: forewing ground color brown; thin, slightly uneven postdiscal red-brown band lined by dark brown traverses wing from costa to vein 1A+2A, slightly darker brown area distal to this between costa and upper half of cell Cu_1, broad dark red-brown postmedial band extends from vein 1A+2A to costa where it curves inwards, thin, faint darker brown submarginal line. Hindwing ground color brown; thin, uneven postdiscal red-brown band lined by dark brown traverses wing from costa to middle of anal margin with small outward kink at base of cell Cu_1 and larger "U"-shaped kink centered on vein 1A+2A; thin marginal area of orange in tornus is edged proximally with darker brown line until vein Cu_1, where latter becomes displaced proximally, extending to apex; broad postmedial area consists of thin wavy yellow line with proximally elongate points extending from apex to anal margin (except in cell Cu_1) with thin dark brown line distally and a broad dark brown area proximally, veins in this area outlined with yellow; round black eyespot in cell Cu_1 has large, central, dark iridescent purple pupil, is surrounded by yellow and has dark brown proximally and distally. *Head*: labial palpi pale brown. Eyes dark brown and bare. Frons dark brown edged with cream. Antennae brown with white scaling at base of each segment that is increased towards base and clubs; clubs black. *Body*: dorsal surface of thorax and abdomen black, ventral surface pale brown. Legs brown. *Genitalia* (Fig. 18a,b): uncus a rounded rectangle; valvae elongate and slightly inwardly curved in ventral view, tip rounded, upper anterior corner extended into rounded point, scales elongate; aedeagus bluntly pointed, contains layers of internal sclerotised striations, transtilla very reduced.

FEMALE: unknown.

Types.– *Holotype male*: ECUADOR.– *Morona-Santiago Prov.*: km 20 Macas-Nueve de Octubre rd., 1800m, 27-29 Sept 1997 (R. C. Busby); to be deposited in the USNM.

Etymology.– The name for this species is derived from the Quechua word "yllarina" meaning to shine, flash or light up, in reference to the appearance of blue on the hindwing in cells Cu_2 and Cu_1 only at certain angles.

Diagnosis.– The ventral surface of *Euselasia illarina* n. sp. superficially resembles that of *Euselasia ella* Seitz, 1916, and *Euselasia mapatayna* n. sp. (described in this paper), but the blue

iridescence in the hindwing eyespot and the purple dorsal iridescence suggest that *E. illarina* should be loosely placed in the "*Euselasia arbas* (Stoll, 1782) group". However, within this group, the dark ventral ground color, which is more somberly brown even than that of *Euselasia rasonea* (Schaus, 1902), and the pattern of dorsal purple iridescence, which is "stepped" below the discal cell on the forewing and contains a black area in cells Cu_2 and Cu_1 on the hindwing in perpendicular view, are diagnostic.

Discussion.– We have no information on the biology of this species and we have seen no other specimens. It is clearly a rare inhabitant of east Andean cloud forest habitats.

Euselasia andreae Hall, Willmott & R. Busby, **new sp.**
Fig. 10a,b; 19a,b.

Description.- MALE: forewing length, HT 13.5mm, PT 15mm. Wing shape compact, hindwing rounded. *Dorsal surface*: forewing ground color dark brown; iridescent purple-blue entirely occupies cells Cu_2 and Cu_1 and distal half of cell 1A+2A. Hindwing ground color dark brown, cream at costa; iridescent purple-blue extends in even, narrow band around distal margin from vein M_1 to tornus. *Ventral surface*: forewing pale gray-brown in basal third, yellow-orange band traverses distal portion of discal cell into base of cell Cu_2, cream-white band contiguous with orange traverses middle of wing, diagonally from costa to vein Cu_2, then vertically to anal margin; distal third of wing darker brown with thin, faint cream-white subapical band that is most visible in cells 1A+2A-Cu_1. Hindwing pale gray-brown at base, ground color slightly darker brown distally; discal yellow-orange band diagonally traverses wing from costa to anal margin, where it is slightly enlarged, broader cream-white distally contiguous band traverses middle of wing from costa, where it is broadest, to vein 1A+2A; thin yellow submarginal line extends from apex to anal margin where it becomes darker; more proximal wavy cream line extends from vein Rs-M_3 and from vein Cu_1-3A, more proximal wavy yellow line with more exaggerated proximally directed points similarly extends from vein Rs-M_3 and from vein Cu_1-3A; black eyespot with central iridescent purple pupil in cell Cu_1 broadly surrounded by yellow that replaces the aforementioned most proximal line. *Head*: labial palpi cream. Eyes dark brown and bare. Frons dark brown edged with white. Antennae brown with very sparse white scaling at base of each segment, increased white scaling before clubs; clubs black. *Body*: dorsal surface of thorax and abdomen black, ventral surface cream-brown. Legs brown. *Genitalia* (Fig. 19a,b): uncus rectangularly flared; valvae of medium length, somewhat elongate, tip rounded, upper anterior corner extended into small point, scales simple or bifid; aedeagus bluntly pointed, containing layers of internal sclerotised striations, transtilla very reduced.

FEMALE: unknown.

Types.– *Holotype male*: ECUADOR.– *Pichincha Prov.*: Las Palmeras, junction of old and new Quito-Sto. Domingo roads, 900m, 15-17 Oct 1987 (R. C. Busby); to be deposited in the USNM.

Paratypes: ECUADOR.– same data as above, 1 ♂; in coll. of R. C. Busby, Boston, MA.

Etymology.– This species is named for Andrea Martinson, my long time companion and enthusiastic supporter of my research efforts (RCB).

Diagnosis.– Although the ventral surface of *Euselasia andreae* n. sp. presents a quite novel phenotype, the pattern of dorsal iridescence loosely places it in the "*Euselasia arbas* group". The restriction of purple iridescence to the tornal corner of the dorsal forewing is only found elsewhere in the much larger *Euselasia eurymachus* (Hewitson, 1872), although in this species the iridescence has a slightly different distribution and, in addition, *E. eurymachus* has a different pattern of dorsal hindwing iridescence and a somber brown banded ventral surface. The ornate postmedial and submarginal undulating lines on the ventral hindwing of *E. andreae* are somewhat reminiscent of *Euselasia violetta* (Bates, 1868), but this species has an orange-brown ventral ground color typical of the "*E. arbas* group" and a quite different pattern of dorsal iridescence.

Discussion.– Males of *E. andreae* were encountered perching between 1400h and 1430h, about 5-8m above the ground on streamside vegetation that formed a remnant portion of gallery forest. It is probable that the species is endemic to premontane cloud forest habitats in the Chocó region.

ACKNOWLEDGEMENTS

We are very grateful to P. Ackery at the BMNH, Dr. J. Pierre at the MNHN, M. Nuß, graduate student at the ZMHU and Drs. D. Harvey and R. Robbins at the USNM for giving us access to the riodinid collections in their care. We thank A. Neild, Dr. C. Jiggins and R. Busby for donating paratype material to us, and Dr. G. Busby and R. Busby for information on *E. thaumata*. We also thank an anonymous reviewer for comments on the manuscript, Dr. T. Emmel for supporting us with research assistantships, and the Balfour-Browne Fund, the Worts Fund (KRW, 1994), Sigma Xi the Scientific Research Society (JPWH, 1995-6; KRW, 1996) and Equafor (1996) for assisting with the costs of field work; field and museum research in 1997/8 was funded by National Geographic Society Research and Exploration Grant No. 5751-96. We also thank INEFAN, the Pontificia Universidad Católica and the Museo de Ciencias Naturales, Quito, for arranging the necessary permits for research in Ecuador. This is Florida Agricultural Experiment Station, Journal Series number R-06357.

LITERATURE CITED

Brévignon, C.
1995. Description de nouveaux Riodinidae de Guyane Française (Lepidoptera). *Lambill.* (Tervuren), 95:553-560.
1996. Notes sur les Nemeobiinae de Guyane Française I - Etude de sept groupes d'especes jumelles du genre *Euselasia* Kirby, 1871. (Lepidoptera: Riodinidae). *Lambill.* (Tervuren), 96:722-732.
1997. Notes sur les Nemeobiinae de Guyane Française II - Le groupe de *Euselasia euryone* (Hewitson, 1856). (Lepidoptera: Riodinidae). *Lambill.* (Tervuren), 97:116-120.

Callaghan, C. J.
1997. A revision of the *Euselasia orfita* complex (Riodinidae). *J. Lep. Soc.* (Los Angeles), 51:62-74.

Callaghan, C. J., and J. Salazar
1997. A new species of Riodinidae from Colombia. *J. Lep. Soc.* (Los Angeles), 51:57-61.

D'Abrera, B. L.
1994. *Butterflies of the Neotropical Region, Part VI. Riodinidae.* Victoria: Hill House. Pp. 880-1096.

DeVries, P. J.
1997. *The Butterflies of Costa Rica and their Natural History. Volume II: Riodinidae*. Princeton: Princeton Univ. Pr. 288pp.

DeVries, P. J., I. A. Chacón, and D. Murray
1994. Toward a better understanding of host use and biodiversity in riodinid butterflies (Lepidoptera). *J. Res. Lep.* (Beverly Hills), 31: 103-126.

Dodson, C. H., and A. H. Gentry
1991. Biological extinction in western Ecuador. *Ann. Missouri. Bot. Gard.* (Missouri), 78:273-295.

Hall, J. P. W., and K. R. Willmott
1995a. Five new species and a new genus of riodinid from the cloud forests of eastern Ecuador (Lepidoptera: Riodinidae). *Trop. Lepid.* (Gainesville), 6:131-135.
1995b. Two new species of *Mesene* from western Ecuador (Lepidoptera: Riodinidae). *Trop. Lepid.* (Gainesville), 6:110-112.
1996. Systematics of the riodinid tribe Symmachiini, with the description of a new genus and five new species from Ecuador, Venezuela and Brazil (Lepidoptera: Riodinidae). *Lambill.* (Tervuren), 96:637-660.
[in prep.]. Patterns of feeding behaviour in adult male riodinid butterflies and their relationship to morphology and ecology. *Biol. J. Linn. Soc.* (London), [accepted].

Harvey, D. J.
1987. The Higher Classification of the Riodinidae (Lepidoptera). Austin: Univ. Texas. (unpubl. Ph.D. Dissertation). 216pp.

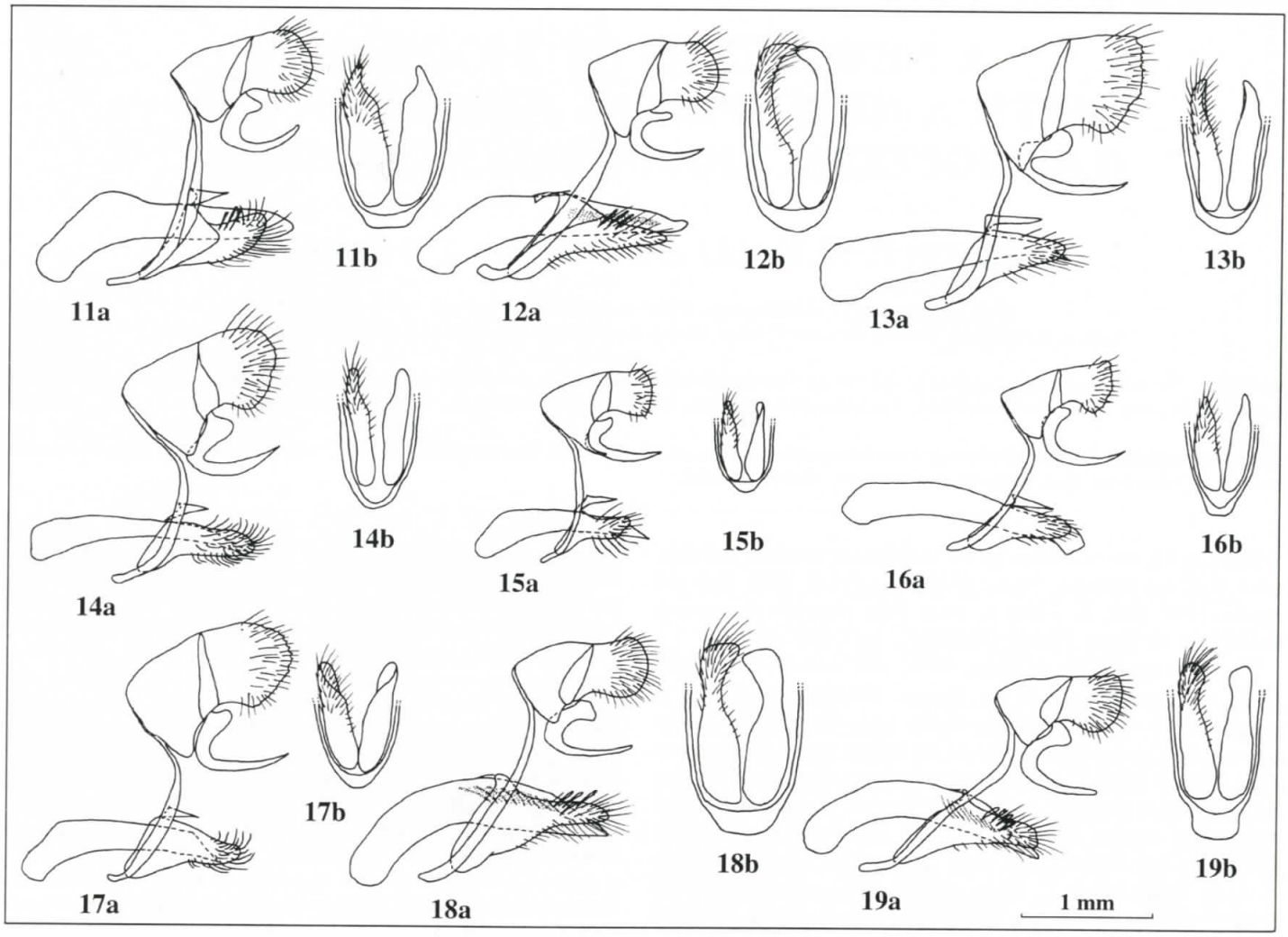

Fig. 11-19. Male genitalia: a) lateral view; b) ventral view of valvae: **11.** *Euselasia thaumata* **n. sp.**. **12.** *Euselasia pillaca* **n. sp.**. **13.** *Euselasia mapatayna* **n. sp.**. **14.** *Euselasia nauca* **n. sp.**. **15.** *Euselasia jigginsi* **n. sp.**. **16.** *Euselasia cyanofusa* **n. sp.**. **17.** *Euselasia hieronymi bianala* **n. ssp.**. **18.** *Euselasia illarina* **n. sp.**. **19.** *Euselasia andreae* **n. sp.**.

Heppner, J. B, and G. Lamas
1982. Acronyms for World Museum Collections of Insects, with an Emphasis on Neotropical Lepidoptera. *Bull. Ent. Soc. Amer.* (Maryland), 28:305-315.

Parker, T. A., and J. L. Carr (eds.)
1992. Status of forest remnants in the Cordillera de la Costa and adjacent areas of south western Ecuador. In *Conservation International. RAP Working Papers 2*. 172pp.

Seitz, A.
1916-20. *8. Familie Erycinidae*. In: *Die Gross-Schmetterlinge der Erde*, 5:617-738. Stuttgart: A. Kernen.

Stichel, H.
1928. Lepidoptera Nemeobiinae. In *Das Tierreich*, 51: i-xxx, 1-330.

Willmott, K. R., and J. P. W. Hall
1994. Four new species of riodinids from western Ecuador (Lepidoptera: Riodinidae). *Trop. Lepid.* (Gainesville), 5:87-91.