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FIVE NEW RIODINID SPECIES FROM THE NAPO REGION OF ECUADOR AND PERU (LEPIDOPTERA: RIODINIDAE)

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ABSTRACT.– Five new riodinid species in the genera *Euselasia* Hübner, [1819] (*Euselasia michaeli* **n. sp.** and *Euselasia rufomarginata* **n. sp.**), *Mesosemia* Hübner, [1819] (*Mesosemia kahuapayani* **n. sp.** and *Mesosemia quadralineata* **n. sp.**), and *Calospila* Geyer, [1832] (*Calospila napoensis* **n. sp.**), are described from the Napo river region of Ecuador and northern Peru. We make the following nomenclatural changes: *Mesosemia materna* Stichel, 1909, and *M. subtilis* Stichel, 1909 = *M. thymetus umbrosa* Stichel, 1909 (**n. syns.**), *M. sylvina* Bates, 1868 = *M. cippus* Hewitson, 1859 (**n. syn.**), *Calospila cerealis* (Hewitson, 1863) = *C. rhesa* (Hewitson, 1858) (**n. syn.**), and *C. pirene* (Godman, 1903) and *C. caecina* (C. & R. Felder, 1865) are reinstated to species status (**stat. revs.**).

KEY WORDS: bioinventory, Bolivia, Brazil, ***Calospila napoensis*** n. sp., Colombia, Ecuador, ***Euselasia michaeli*** n. sp., ***Euselasia rufomarginata*** n. sp., ***Mesosemia kahuapayani*** n. sp., ***Mesosemia quadralineata*** n. sp., Neotropical, South America, taxonomy.

The upper Amazon basin is well known to be the center of riodinid butterfly diversity (Robbins *et al.*, 1996; Robbins & Opler, 1997), but to date detailed results of long-term bioinventory work have only been reported for southwestern Brazil and southern Peru (Emmel & Austin, 1990; Lamas *et al.*, 1991; Lamas, 1994; Robbins *et al.*, 1996), and very little such data have yet been published for the riodinid faunas of eastern Colombia, Ecuador and northern Peru. However, recent intensive fieldwork by Jason Hall and Keith Willmott (unpubl. data) in the upper Ecuadorian Napo region, and Gerardo Lamas and Smithsonian colleagues in the lower Peruvian Napo region (Lamas *et al.*, 1996) as part of the BIOLAT program (Biological diversity of Latin America), has begun to redress this imbalance of knowledge. Despite being an important commercial thoroughfare in the past, the Napo river has historically been poorly explored entomologically, especially in its middle and upper reaches, and Conde de Castelnau (1845-1846), Henry Whitely (1870's), Padre Sarkady (1879), and Harvey Bassler (1921-1931) were the only prominent pre-war butterfly collectors to travel in the region (Lamas, 1976, 1981).

The purpose of this paper is to describe five new riodinid species from the Napo region, in the genera *Euselasia* Hübner, [1819], *Mesosemia* Hübner, [1819], and *Calospila* Geyer, [1832], that have come to light during our bioinventory studies. Morphological terms for genitalia follow Eliot (1973) and Klots (1956), and terminology for wing venation follows Comstock & Needham (1918). We largely follow Heppner and Lamas (1982) in using the following acronyms throughout the text:

BMNH	The Natural History Museum, London, England
JHKW	Collection of Jason P. W. Hall and Keith R. Willmott, Washington, DC, USA
MUSM	Museo de Historia Natural, Universidad Nacional Mayor de San Marcos, Lima, Peru
PJD	Collection of Philip J. DeVries, Milwaukee Public Museum, Milwaukee, WI, USA
USNM	National Museum of Natural History, Smithsonian Institution, Washington, DC, USA
ZMHU	Zoologisches Museum für Naturkunde, Humboldt Universität, Berlin, Germany

Euselasia rufomarginata Hall & Harvey, new sp.

Fig. 1a,b; 6a,b

Description.– MALE: forewing length 18mm. Forewing slightly pointed, four radial veins; hindwing somewhat elongate. *Dorsal surface*: forewing ground color black; in a view perpendicular to wing surface, broad, postdiscal, dark iridescent purple band extends from costa, narrowing to tornus; in oblique view, distal apical area and remaining proximal area also darker iridescent purple; fringe brown. Hindwing ground color black, paler at costal and anal margins; in perpendicular view, broad area of iridescent purple occupies distal half of wing, extending from vein Rs to vein 2A, brighter and paler at submargin, darker more proximally; in oblique view, dark purple extends to wing base; fringe brown. *Ventral surface*: forewing ground color rich orange-brown; gray-brown along anal margin below vein Cu_2, except in upper third of cell Cu_2 and at very margin; thin, slightly uneven, orange-brown postdiscal line extends vertically from middle of cell Cu_2 to vein M_3 before angling slightly inwards towards costa, heavy black scaling proximally, light black scaling distally around portion of line below vein Cu_2; broad, indistinct band of darker postmedial scaling extends from vein M_3 to vein 2A. Hindwing ground color rich orange-brown; thin, slightly uneven, orange-brown postdiscal line extends diagonally from costa to vein M_3, kinks outward very slightly in cell M_3, then continues to middle of cell Cu_2, then horizontally to vein 3A at anal margin, heavy black scaling lines it proximally, light black scaling distally; broad, postmedial band of darker scaling leaves veins in distal half of wing, and distal and tornal margins, outlined in orange-brown; very elongate, proximally pointed triangles in center of each of cells R_5 to M_2 and Cu_1, two in cells Cu_2 and 2A, with small black triangle at distal base then a dirty pale gray line; large, ovoid, iridescent dark purple-blue (black at an oblique angle) eyespot in cell M_3, lined proximally with broad area of orange-brown, distally with a curved dirty pale gray line. *Head*: labial palpi orange-cream. Eyes black and bare, margins with orange scaling. Frons black edged with orange-cream. Antennal segments black with basal white scaling that is more extensive in segments immediately before clubs; clubs black, tips orange-brown. *Body*: dorsal surface of thorax and abdomen black, ventral surface cream-brown. Forelegs pale orange; femur of mid and hindlegs cream, remainder pale orange. *Genitalia* (Fig. 6a,b): uncus rounded; short, broad saccus; valvae elongate, abruptly produced into a small posterior projection towards tip which curves inwards in ventral view, small shallow concavity at inner basal margin of valvae in ventral view, transtilla small; aedeagus of approximately even width, gradually becoming pointed towards tip, everted vesica broadens medially and gradually narrows towards tip which curves to the left-hand side, ventrally and anteriorly.

FEMALE: unknown.

Types.– *Holotype male*: PERU.– *Loreto*, Río Sucusari, Explornapo-ACEER, 03°14'S 72°55'W, 140m, 18 Sept 1995 (J. Grados) (# 574, diss. # 1999-93); to be deposited in the MUSM.

Fig. 1-5. **1.** *Euselasia rufomarginata* Hall & Harvey **n. sp.**, holotype male: a) dorsal surface; b) ventral surface. **2.** *Euselasia michaeli* Hall & Harvey **n. sp.**, holotype male: a) dorsal surface; b) ventral surface. **3.** *Mesosemia kahuapayani* Hall & Harvey **n. sp.**, holotype male: a) dorsal surface; b) ventral surface. Allotype female: c) dorsal surface; d) ventral surface. **4.** *Mesosemia quadralineata* Hall & Harvey **n. sp.**, holotype male: a) dorsal surface; b) ventral surface. **5.** *Calospila napoensis* Hall & Harvey **n. sp.**, holotype male: a) dorsal surface; b) ventral surface.

Paratypes: 1 male: PERU.- *Loreto*, Río Lagartococha, Aguas Negras, 0°31'38"S 75°15'41"W, 150m, 5 Mar 1994 (R. K. Robbins); in the USNM.

Etymology.– The name of this species is derived from the Latin words for "orange-brown" and "margin", in reference to the atypical orange-brown scaling around the margins of the eyes, which is usually white in its species group.

Diagnosis.– The dorsal purple iridescence and orange-brown ventral ground color of *Euselasia rufomarginata* n. sp. clearly place it in the "*Euselasia arbas* (Stoll, 1782) group". Its ventral surface is not remarkable and closely resembles that of species such as *Euselasia euoras* (Hewitson, 1856) and particularly *Euselasia manoa* Brévignon, 1996, although it has a richer, darker ground color and darker postmedial shading. However, the pattern of dorsal iridescence on both wings, which is essentially postdiscal in perpendicular view but in fact covers the entire wings in an oblique view, is unique within the species group. It is noteworthy that the scaling surrounding the eyes is orange-brown since this is white in all described species of

the group. The fact that the species described below shares this character suggests that the two may be most closely related to each other. The male genitalia of *E. rufomarginata* differ from those of the species described below by having a more rounded uncus, narrower valvae in ventral view and a shallow concavity at the inner basal margin of the valvae in ventral view, but given the small number of specimens available for examination it is not known which of these might constitute consistent differences.

Discussion.– This species is currently known only from two localities on the Napo river in Peru, but since one of these localities lies on the Ecuadorian border, the species is certain to occur in that country and also very probably in Colombia.

Euselasia michaeli Hall & Harvey, new sp.

Fig. 2a,b; 7a,b

Description.– MALE: forewing length 17mm. Both wings rounded, four forewing radial veins. *Dorsal surface*: forewing ground color black; iridescent purple occupies distal three-quarters of wing, leaving black only in basal half of cell and area below it; fringe brown. Hindwing ground color black; iridescent purple occupies distal half of wing; fringe brown. *Ventral surface*: forewing ground color rich orange-brown; dark gray-brown at anal margin below vein Cu_2 except at very margin; thin, indistinct postdiscal orange-brown line vertically traverses wing from vein Cu_2 to costa, most visible up to vein M_3, thin area of diffuse darker scaling proximally, broader area distally. Hindwing ground color rich orange-brown; thin, postdiscal orange-brown line traverses wing from costa to vein M_3, kinks inwards very slightly until vein M_1, then curves diagonally inwards until middle of cell Cu_2 before curving sharply outwards to anal margin, creating a proximally directed "V" shape in cell Cu_2; thin area of diffuse darker scaling proximal to line and in remaining distal portion of wing, becoming paler towards margin, leaves distal portion of veins, and distal and tornal margins, outlined in orange-brown; very elongate, proximally pointed triangles in center of each of cells R_5 to M_2 and Cu_1, two in cells Cu_2 and 2A, with small black triangle at distal base then a pale orange-brown line; large, round, iridescent dark purple-blue (black at an oblique angle) eyespot in cell M_3 slightly pointed proximally, lined proximally with broad area of orange-brown, distally with a curved dirty pale orange-brown line. *Head*: labial palpi orange-cream. Eyes black and bare, margins with orange scaling. Frons black edged with orange-cream. Antennal segments black with basal white scaling that is more extensive in segments immediately before clubs; clubs black, tips orange-brown. *Body*: dorsal surface of thorax and abdomen black, ventral surface cream-brown. Forelegs pale orange; femur of mid and hindlegs cream, remainder pale orange. *Genitalia* (Figs. 7a,b): uncus roundly rectangular; short, broad saccus; valvae elongate, abruptly produced into a small posterior projection towards tip which curves inwards in ventral view, transtilla small; aedeagus of approximately even width, gradually becoming pointed towards tip, vesica only partially everted but appears to be very similar to that of *E. rufomarginata*.

FEMALE: unknown.

Types.– *Holotype male*: PERU.– *Loreto*, Río Aguarico, Castaña, 0°48'22"S 75°14'40"W, 150m, 21 Oct 1993 (G. Lamas) (diss. # 1999-92); to be deposited in the MUSM.

Paratypes: 1 male: BRAZIL.– *Amazonas*, São Paulo de Olivença, 1891 (O. Michael); in the ZMHU.

Etymology.– This new species is named for the German entomologist Otto Michael, who, while tirelessly collecting butterflies in Peru and Brazil during the latter part of the nineteenth and early part of the twentieth centuries (see Lamas, 1979), discovered the first known specimen.

Diagnosis.– The dorsal purple iridescence and orange-brown ventral ground color of *Euselasia michaeli* n. sp. also place it in the "*Euselasia arbas* group". Its rounded wing shape makes it most easily confused with *Euselasia fabia* (Godman, 1903), but it differs in the following ways: the dorsal purple iridescence forms markedly broader bands on both wings, the ventral ground color is a darker, richer orange-brown with contrasting darker postmedial areas, the anal margin of the forewing is darker and the postdiscal line is not present below vein Cu_2, the eyespot in cell M_3 of the hindwing is larger and less prominently iridescent purple, the hindwing submarginal markings are more prominent, especially above vein M_3, and, most diagnostic of all, the postdiscal hindwing line is much more proximally positioned without an outward kink in cell M_3 and an inward instead of outward kink in cell Cu_2. The fact that *E. michaeli* shares the possession of orange or orange-cream instead of white scaling around the eyes and at the edge of the frons with *E. rufomarginata* (described above), suggests that the two may be closely related. The male genitalia of "*arbas* group" species, as with most species groups in the genus, are too homogeneous to be helpful in elucidating species relationships.

Discussion.– This species is currently known only from northeast Peru and west Brazil but it undoubtedly has a broader west Amazonian distribution that will include Ecuador and Colombia.

Mesosemia kahuapayani Hall & Harvey, new sp.

Fig. 3a-d; 8a,b

Description.– MALE: forewing length 16.5mm. Forewing costal margin convex near apex, distal margin nearly straight; hindwing slightly angular. *Dorsal surface*: forewing ground color brown; very large, round black eyespot at discal cell end, lined proximally and distally with yellow-brown, contains three white pupils, one large and central, two small and distal; two thick, parallel dark brown lines diagonally traverse wing immediately proximal to eyespot from costal edge of discal cell to anal margin, two slightly thinner, parallel dark brown lines traverse wing immediately distal to eyespot from anal margin to costa, curving smoothly but sharply around eyespot towards it, inner line of these two groups joins with horizontal line at anal margin, area below eyespot contains dark brown scaling divided by pale yellow-brown along vein Cu_2; postmedial dark brown band extends from anal margin to curve in towards costa where it becomes broader and undulating along distal margin, similar submarginal dark brown band is thinner and undulates in cell Cu_2 and above vein M_3, dark brown marginal area with undulating proximal edge is broadest at apex; fringe brown. Hindwing ground color brown; small, ovoid, dark brown spot at discal cell end contains tiny distal pale brown fleck; three thick, dark brown, undulating lines diagonally traverse wing from costa to anal margin proximal to eyespot, three thick, dark brown, straight lines diagonally traverse wing from costa to anal margin distal to eyespot, innermost one curves inwards to costa above eyespot; broad, dark brown, postmedial band curves parallel to distal margin from apex, narrowing towards tornus, undulating submarginal, dark brown line extends from apex to tornus with a broad semicircular portion in cell M_3, thin dark brown marginal area has undulating proximal edge; fringe brown. *Ventral surface*: forewing differs from dorsal surface in following ways: ground color paler, discal eyespot smaller, yellow scaling between lines that encircle eyespot, proximal to postmedial dark brown band, and proximal and distal to undulating submarginal band; all veins in distal half of wing outlined in yellow-brown. Hindwing differs from dorsal surface in following ways: ground color paler, discal eyespot smaller and black, dark brown lines immediately distal and proximal to eyespot join above eyespot and in cell 2A, yellow scaling between all dark brown lines surrounding eyespot, proximal to postmedial dark brown band, which is reduced to only a few scales that are most prominent in cells M_1 and M_2, and proximal and distal to undulating submarginal band; all veins distal to innermost dark brown band outlined in yellow-brown. *Head*: labial palpi brown. Eyes brown and setose, margins with brown scaling. Frons brown. Dorsal surface of antennal segments brown, ventral surface brown with broad area of white scaling at base; clubs brown, tips dark orange-brown. *Body*: dorsal surface of thorax and abdomen dark brown, ventral surface pale brown. All legs brown. *Genitalia* (Figs. 8a,b): uncus rounded and most elongate dorsally, shallow indentation at distal margin dorsally; vinculum produced into a very short and broad saccus ventrally; valvae markedly bifurcate with processes not joined by sclerotised tissue at base, upper projection rounded at base, broadening towards ubruptly upturned tip, lower projection broad at base, gradually narrowing towards shallowly upturned tip, small dorsal projection before tip, both tips curve inwards in ventral view; aedeagus gently curved and of even width to near tip where it narrows and opens dorsally; pedicel bulbous ventrally, desclerotized medially as it joins base of valvae.

FEMALE: differs from male in following ways: forewing slightly convex at tornus, hindwing slightly more angular; dorsal ground color of both wings

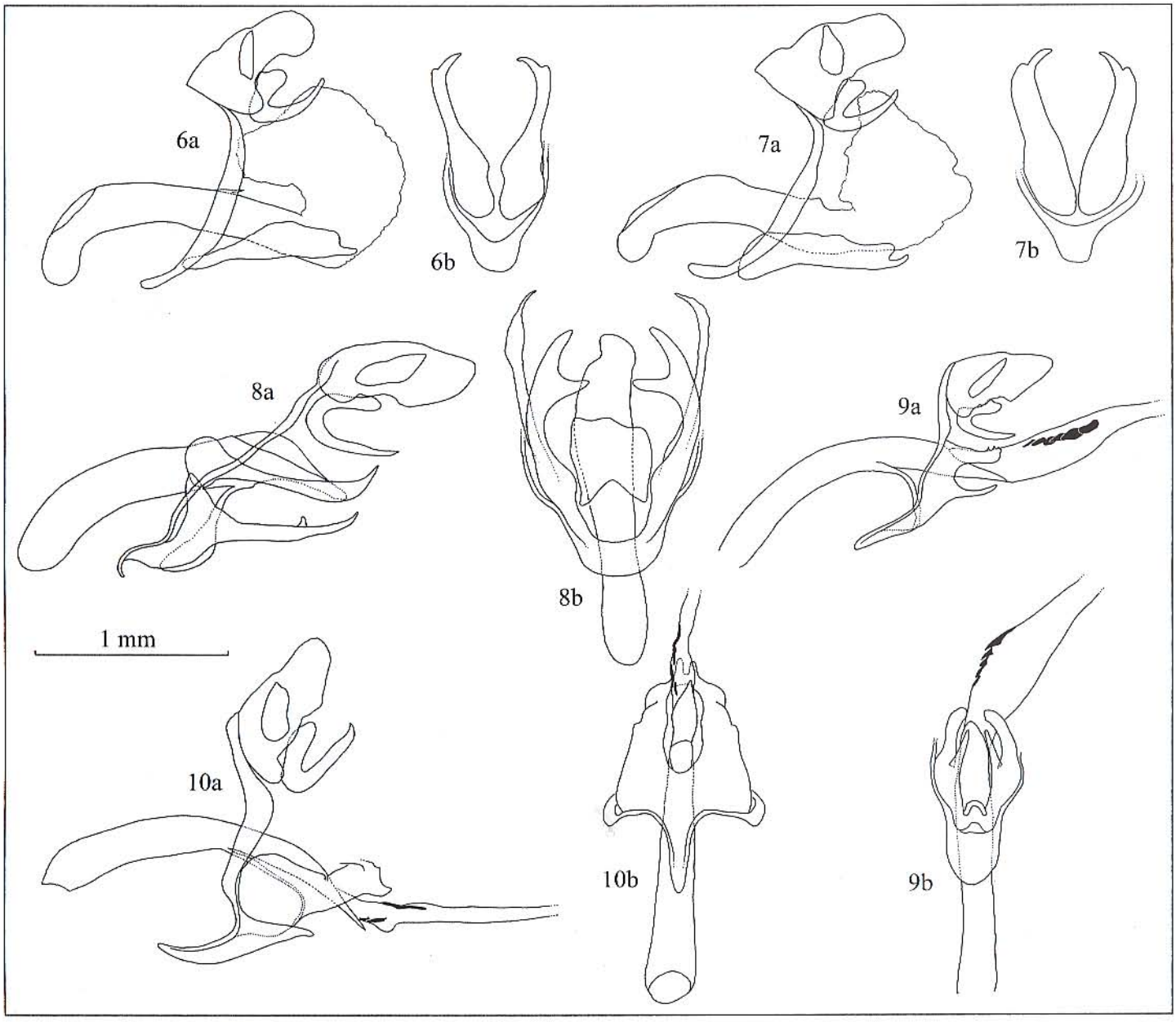

Fig. 6-10. Male genitalia: lateral view (a), ventral view (b): **6.** *Euselasia rufomarginata* **n. sp.. 7.** *Euselasia michaeli* **n. sp.. 8.** *Mesosemia kahuapayani* **n. sp.. 9.** *Mesosemia quadralineata* **n. sp.. 10.** *Calospila napoensis* **n. sp.**.

paler, yellow-brown scaling on ventral surface paler.

Types.– *Holotype male*: ECUADOR.– *Napo*, Tena-Baeza rd., Cotundo, 800m, 16 Dec 76 (S. S. Nicolay) (diss. # 1996-8); in the USNM. *Allotype female*: ECUADOR.– *Napo*, Río Napo, Garzacocha, La Selva, 200m, 13 Jun 1993 (P. J. DeVries); in the coll. of PJD. *Paratypes*: 1 male: same locality data as HT, 3 Oct 1976 (S. S. Nicolay). 1 male: Río Napo, Limoncocha, 240m, 5 Oct 1973 (S. S. Nicolay); both in the USNM. 1 male: *Pastaza*, Río Pindo Grande, Shell, 1050m, 8 Feb 1995 (J. P. W. Hall). 2 males: *Morona-Santiago*, nr. Gualaquiza, Bomboiza, 850m, 26 Jul 1993 (K. R. Willmott); all in the JHKW. 2 males: PERU.- *Loreto*, Río Aguarico, Castaña, 0°48'22"S 75°14'40"W, 150m, 20 Oct 1993 (G. Lamas) (diss. # 1996-9); to be deposited in the MUSM.

Etymology.– The name of this species is derived from the Quechua word "kahuapayani", meaning "to stare", in reference to its unusually large forewing eyespot.

Diagnosis.– *Mesosemia kahuapayani* n. sp. belongs in the "*cippus* Hewitson, 1859 group", whose species all have entirely brown dorsal surfaces, and male genitalic valvae with upper and lower processes that are not joined basally by sclerotized tissue and a bifid tip to the lower process. Superficially similar species such as *Mesosemia melese* Hewitson, 1860, and *Mesosemia harveyi* DeVries & Hall, 1996, do have entirely brown dorsal surfaces, but have different banding patterns and, more importantly, different male genitalia that place them outside the "*cippus* group" (DeVries & Hall, 1996). *M. kahuapayani* is most closely related to the other "*cippus* group" species *Mesosemia cippus* and *Mesosemia walteri* Brévignon, 1998, the latter often being confused with the former in collections and in the literature (Brévignon & Gallard, 1997, 1998). The most similar of these, *M. walteri*, is a geographically quite variable species in the tone of the dorsal and ventral ground colors and extent of yellow-brown scaling around the eyespots and between the discal lines of the ventral surface, but *M. kahuapayani* can always be distinguished from it by its larger dorsal forewing eyespot and by having three dark brown lines proximal and distal to the discal eyespot on the hindwing instead of two. The same characters also distinguish *M. kahuapayani* from *M. cippus*, which is additionally a larger species that always has paler dorsal and ventral ground colors and lacks any ventral yellow-brown scaling.

The male genitalia of all three species are very similar, but those of *M. kahuapayani* differ from those of *M. walteri* (seven individuals examined) by having a rounded asymmetrical aedeagal tip instead of a pointed symmetrical one, and from those of *M. cippus* (five individuals examined) by lacking a small sclerotized tooth on the left side of the aedeagus immediately before the tip.

An examination of the types of *M. cippus* and *M. sylvina* Bates, 1868, and series of similar specimens from the type and other localities leads us to conclude that the latter is a variant of the former, as suggested by Brévignon & Gallard (1998), and we synonymise *sylvina* with *cippus* (**n. syn.**).

Discussion.– *M. kahuapayani* is currently known only from a small area from the base of the Ecuadorian Andes at 1050m to the far eastern Ecuador/Peru border at 150m, and is thus seemingly restricted to a small strip along the base of the eastern Andes that undoubtedly will also include Colombia. Here, all three "*cippus* group" species occur sympatrically.

Mesosemia quadralineata Hall & Harvey, new sp.

Fig. 4a,b; 9a,b

Description.- MALE: forewing length 18.5mm. Both wings elongate and rounded. Forewing ground color brown, darker in distal portion; broad, white postdiscal band traverses wing from near tornus to costa, towards which it curves inwards and narrows; large, ovoid black eyespot at end of discal cell contains three white pupils, one large and central, two small and distal; two, thin, wavy dark brown lines with white scaling in between traverse inner edge of white band from costa to anal margin; two, thin, wavy slightly thicker dark brown lines with white scaling in between encircle eyespot, outermost one extends from costal edge of discal cell to vein 2A, innermost one extends from costal edge of discal cell to middle of cell Cu_2 and has white scaling between it and eyespot; proximal to these latter lines are two thick, parallel, diagonal dark brown lines that extend from lower edge of discal cell to vein 2A, one across discal cell in between these two; distal fringe brown. Hindwing ground color brown, darker in distal portion; broad, white postmedial band traverses wing from near apex to near tornus, towards which it curves inwards and narrows sharply, some distal contiguous gray-white scaling in apex, two slightly separated gray-white patches in tornal portion of cell Cu_2, very faint scaling in cell Cu_1; four, thick, dark brown wavy parallel lines proximal to white band with white scaling in between, faint dark brown spot at discal cell end divided by pale brown, five, faint, wavy dark brown lines traverse base of wing from costa to anal margin. *Ventral surface*: forewing differs from dorsal surface in following ways: ground color paler, at distal edge of white band white extends slightly along veins, an additional inner black line is discernible encircling eyespot. Hindwing differs from dorsal surface in following ways: ground color paler with a suffusion of white scaling proximally, at distal edge of white band white extends slightly along veins, thicker white area proximal to distal-most dark brown line, gray-white patches in cell Cu_2 absent, spot at end of discal cell more prominent and black with medial white spot, basal dark brown lines more prominent. *Head*: labial palpi brown. Eyes brown and setose, margins with brown scaling. Frons brown. Dorsal surface of antennal segments brown, ventral surface brown with broad area of white scaling at base; clubs brown, tips orange-brown. *Body:* dorsal surface of thorax and abdomen dark brown, ventral surface pale brown. All legs brown. *Genitalia* (Figs. 9a,b): uncus angular and most elongate dorsally, shallow indentation at distal margin dorsally; vinculum slightly swollen medially, produced into elongate saccus ventrally; valvae markedly bifurcate, with upper projection broad with uneven dorsal margin towards tip, lower projection narrower and shorter with tips convergent in ventral view; aedeagus gently curved and of even width to near tip where it narrows and opens to right, everted vesica a narrow tube with row of four or five anteriorly directed teeth dorsolaterally on left, distal-most tooth largest, tube beyond cornuti with small ventral swelling; pedicel small, desclerotized medially as it joins base of valvae.

FEMALE: differs from male in following ways: wing shape slightly more rounded, white transverse band slightly broader on both wings.

Types.– *Holotype male*: ECUADOR.– *Napo*, Río Napo, Limoncocha, 240m, 5 Oct 1973 (S. S. Nicolay) (diss. # 1999-30); in the USNM.

Allotype female: PERU.– *Pasco*, Pozuzo, 800-1000m (W. Hoffmanns); in the BMNH. *Paratypes*: ECUADOR.– 1 male: *Napo*, same locality data as HT, 5 Feb 1971 (S. S. & S. Nicolay). 1 male: Río Napo, Chichicorrumi, 450m, 9 Jul 1993 (J. P. W. Hall); in the JHKW. PERU.– 6 males: *Loreto*, Río Sucusari, Explornapo-ACEER, 03°14'S 72°55'W, 140m: 1 male, 5 Sep 1995 (D. J. Harvey) (# 860, diss. # 1996-18); 1 male, 9 Sept 1995 (J. Grados) (# 861); 1 male, 20 Sep 1995 (J. Grados) (#862); to be deposited in the MUSM; 2 males, 12 Sep 1995 (J. Grados) (#865, 867); 1 male, 13 Sep 1995 (D. J. Harvey) (#866, diss. # 1996-19); in the USNM. 5 males, 3 females: *Madre de Dios*, Parque Nacional Manu, Pakitza, 11°55'48"S 71°15'18"W, 340m: 1 male, 9 Sep 1989 (R. K. Robbins); 1 male, 5 Oct 1990 (G. Lamas) (diss. # 1999-28); 1 male, 25 Oct 1990 (R. K. Robbins); 1 female, 12 Oct 1991 (O. Mielke); 1 female, 27 Sep 1991 (G. Lamas); to be deposited in the MUSM; 1 male, 13 Nov 1990 (W. Rowe); 1 male, 29 Sep 1990 (O. Mielke) (diss. # 1999-29); 1 female, 1 Oct 1991 (M. Casagrande); in the USNM. BOLIVIA.- 1 male: *Cochabamba*, Yungas del Espiritu Santo, 1888-89 (P. Germain). *Santa Cruz*: 1 female, Mar-Apr 1904, 1 female, Feb 1904, 1 female, Apr 1904, 1 female, 1905-6 (all J. Steinbach); all in the BMNH. 1 male: 17°05'55"S 63°05'34"W (diss. # 1999-20); in the USNM.

Etymology.– The name of this species refers to the diagnostic four black lines distal of the eyespot on the dorsal forewing.

Diagnosis.– *Mesosemia quadralineata* n. sp. belongs to the taxonomically complex "*thymetus* (Cramer, 1777) group" of white banded *Mesosemia* species and is very similar to the sympatric *Mesosemia latizonata* Butler, 1874, and *Mesosemia thymetus umbrosa* Stichel, 1909. It differs from both, however, by having four instead of two and three rings respectively encircling the eyespot on the dorsal forewing. *M. quadralineata* additionally differs from the most similar of these, *M. thymetus umbrosa*, by lacking a short brown streak that runs through the center of the white hindwing band from the anal margin and by always having grayish-white hindwing tornal and apical scaling that in some specimens almost join to become a faint submarginal band. The male genitalia of *M. quadralineata* (seven individuals examined) consistently differ from those of *M. thymetus* (ten individuals examined) by having an upper valve process that is twice as broad as the lower process instead of being of equal width, a lower valve process that is slightly shorter instead of slightly longer than the upper process, convergent instead of divergent tips to the lower processes of the valvae, and four to five aedeagal cornuti instead of eight to twelve.

To clarify the application of species-group names in the "*thymetus* group", we take this opportunity to synonymize with *M. thymetus umbrosa*, two taxa that were described in the same paper as full species by Stichel (1909) and subsequently maintained as such (Stichel, 1910, 1930a; Bridges, 1994). An examination of the types of *umbrosa* (TL: Mapiri, Bolivia), *materna* (TL: La Paz, Bolivia) and *subtilis* (TL: Cuzco, S. Peru) (all in the ZMHU) and series of similar specimens from the same and neighboring localities allows us to assess the variation exhibited by the types of the latter two taxa (e.g. width of white bands) as falling within the boundaries of variation for the single subspecies *umbrosa* into which we synonymize them (**n. syns.**). We only tentatively retain the subspecies *umbrosa*, and further detailed investigations may well show that it and the subspecies *thymetina* Butler, 1869 (TL: Colombia) do not constitute populations sufficiently phenotypically discrete from the nominate to warrant recognition. To further avoid confusion, the following are relevant errors of identification in d'Abrera (1994: pp. 912-913): the dorsal male of *M. subtilis* is *M. latizonata*; the ventral female of *M. subtilis* is *M. hedwigis* Stichel, 1910; the dorsal male (not "female") of *M. materna* is *M. quadralineata*; and the ventral male of *M. materna* is *M. thymetus umbrosa*.

Discussion.- This species is uncommon and localised in forested habitats of the western Amazon, where it is currently known from Ecuador to Bolivia, although it undoubtedly also occurs in Colombia.

***Calospila napoensis* Hall & Harvey, new sp.**
Fig. 5a,b; 10a,b

Description.– MALE: forewing length 14.5mm. Both wings somewhat pointed. *Dorsal surface*: forewing ground color black; orange occupies basal half of wing, distal edge extending from a point at anal margin four-fifths distance base to tornus to a point just distal of discal cell, leaving costa above discal cell black; within orange: three black marks in discal cell, at end, middle and toward base, two at base of cell Cu_2, postdiscal black line immediately distal of discal cell curves inwards and becomes faint in cell Cu_2; broad, pale blue, postmedial patch extends from vein R_4+R_5 to middle of cell Cu_1, broadening at middle, tapering towards end, a faint blue fleck at base of cell R_3 and in middle of cell R_2; thin, pale blue, submarginal line extends from middle of cell Cu_2 to cell R_3 with black indentations along proximal edge in each cell; white fringe elements at distal margins of cells Cu_2, M_3 (large), M_1 and R_4+R_5. Hindwing ground color orange, paler at anal margin; thin black margin, black square in submargin of each of cells 2A to R_4+R_5, two in cell Cu_2, those in 2A and R_4+R_5 smaller, those in Cu_2, and M_2 and M_1 partially coalesced; fringe black. *Ventral surface*: forewing ground color pale blue, pale gray-brown along base of anal margin; three black marks in discal cell surrounded by paler whitish-blue, at end, middle and toward base, two at base of cell Cu_2, postdiscal black line immediately distal of discal cell curves from costa around discal cell end then, thickening, extends vertically to vein 2A, some distal whitish scaling, especially in cell Cu_2; even, postmedial black band extends from anal margin to costa, curving slightly outwards to cell M_3, then sharply but smoothly inwards; black spot in submargin of each of cells Cu_2 to R_4+R_5, two in cell Cu_2, that in cell M_3 smaller, all with some proximal whitish scaling, those in cells M_3 and Cu_2 with some white scaling distally; margin of apex black except for small pale blue fleck in middle of cell R_3. Hindwing ground color pale blue; three black marks in discal cell, at end, middle and toward base, two at base of cell Cu_2, two in middle of cell Sc+R_1, distal one forming beginning of postdiscal black line immediately distal of discal cell that curves around discal cell end then extends diagonally to vein 2A with a small, faint vertical streak in cell 2A, some proximal whitish scaling in upper half; postmedial black band extends from anal margin to costa, paralleling distal margin, becoming faint and constricted below vein 2A and in cells M_2 and M_1; black spot in submargin of each of cells 2A to R_4+R_5, two in cell Cu_2, that in cell M_3 smaller, those in tornus, and M_2 and M_1 partially coalesced, all with some whitish scaling proximally and distally; fringe black with some blue scales in each cell. *Head*: labial palpi whitish-blue, second segment elongate. Eyes brown and bare, margins with whitish-blue scaling. Frons dark brown edged with whitish-blue. Antennal segments black with white scaling at base; clubs black, tips orange-brown. *Body*: dorsal surface of thorax and abdomen orange, ventral surface cream. All legs whitish-blue. *Genitalia* (Figs. 10a,b): uncus most posteriorly elongate dorsally, shallow "V"-shaped indentation at posterior margin dorsally; vinculum broad, especially medially, produced into relatively long and narrow saccus ventrally; valvae elongate with small, broad, slightly downwardly pointed posterior projection at tip; aedeagus of approximately even width, narrowing gradually towards tip, everted vesica an elongate tube with small ventral swelling towards base, two small cornuti positioned ventrally immediately anterior to ventral swelling, one elongate cornutus positioned dorsally above and posterior to ventral swelling; pedicel elongate and narrow.

FEMALE: not known with certainty.

Types.– *Holotype male*: PERU.- *Loreto*, Río Sucusari, Explornapo-ACEER, 03°14'S 72°55'W, 140m, 6 Sept 1995 (G. Lamas) (# 1704, diss. # 1996-108); to be deposited in the MUSM.

Paratypes: ECUADOR.– 1 male: *Napo*, Río Napo, Garzacocha, La Selva, 200m, 3 Nov 1996 (T. R. Walla); 1 male: same locality data as previous; both in the coll. of PJD.

Etymology.– This species is named after the Napo River, along whose drainage the species is currently known.

Diagnosis.- Based on wing pattern, as the male genitalia of *Calospila* are remarkably homogeneous, *Calospila napoensis* n. sp. can be placed in the "*zeanger* (Stoll, 1790) group", whose diversity has only recently begun to be understood (Brévignon, 1995). On the dorsal surface, it most closely resembles two species whose own taxonomic status need clarifying, *Calospila pirene* (Godman, 1903) and *Calospila caecina* (C. & R. Felder, 1865). The former was described as a full species (Godman, 1903), but subsequently treated as a subspecies of *Calospila zeanger* (Stichel, 1911, 1930b; Bridges, 1994). Since the two taxa occur sympatrically in the western Amazon and differ in numerous aspects of the wing facies, including the reduction in *C. pirene* of dorsal forewing orange and the great enlargement of the postmedial blue patch on the same wing surface, we reinstate *pirene* to full species status (**stat. rev.**). *C. napoensis* differs from *C. pirene* by having a black instead of brown dorsal forewing ground color, more orange on the dorsal forewing with blue flecks at the base of cell R_3 and in the middle of cell R_2, larger black spots around the entire submargin of the dorsal hindwing, a pale blue instead of brown ventral ground color on both wings, and a different ventral spotting pattern that most notably has a very proximally positioned postdiscal forewing line of spots.

Calospila caecina was described from a female (C. & R. Felder, 1865), making its systematic placement in the genus uncertain and it has recently been regarded as a synonym of *Calospila cerealis* (Hewitson, 1863) (Stichel, 1930b; Bridges, 1994). However, by comparing the female type of *C. cerealis* with the matching pairs of males and females in the "*zeanger* group" illustrated by Brévignon (1995) from French Guiana, it can be seen that *C. cerealis* is synonymous with *Calospila rhesa* (Hewitson, 1858) (**n. syn.**). We thus reinstate *C. caecina* as a full species (**stat. rev.**), whose male (if correctly associated in d'Abrera (1994: 1035)) differs most notably from that of *C. napoensis* by having a large, rectangular postdiscal blue patch on the dorsal forewing that occupies a third of the wing, and a straight, steeply diagonal postdiscal line on the ventral forewing.

Based on ventral patterning, which is presumably less evolutionary labile than dorsal pattern elements, *C. napoensis* is actually probably most closely related to *Calospila thara* (Hewitson, 1858), whose western Amazonian subspecies, *pulchra* (Lathy, 1904), is present in nearvy areas of Peru. Although both species share a very similar ventral pattern (*thara* has a lilac instead of pale blue ground color), with the characteristic proximally positioned postdiscal forewing line of spots, and broad, curving black postmedial bands on both wings, *C. thara pulchra* is readily distinguished by its broad distal blue bands on both wings. The male genitalia of the two species do not differ significantly.

Discussion.– *C. napoensis* is currently known only from the middle and lower Napo basin, encompassing Ecuador and Peru, but it undoubtedly has a wider west Amazonian distribution.

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