

New taxa of Neotropical Riodinidae (Lepidoptera)

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ABSTRACT. Thirteen new riodinid taxa are described: *Euselasia azurea* sp.n., *Euselasia albomaculiga* sp.n., *Euselasia pseudomys* sp.n., *Euselasia pance* sp.n., *Euselasia eberti* sp.n., *Mesosemia bahia* sp.n., *Pterographium elegans chochoensis* ssp.n., *Ematurgina grandis* sp.n., *Pachythone sumare* sp.n., *Audre middletoni diamantina* ssp.n., *Synargis calyce pernambuco* n.ssp., *Nymphidium trinidadii* sp.n., *Nymphidium smalli* sp.n.. Notes are presented on relationships, habits, habitat and range of each taxon. The foodplant of *N. trinidadii* in Colombia is *Inga coruscans* H. & B.

KEY WORDS. Neotropics, Colombia, Brazil, Peru, Panamá

Over the last six years numerous faunal surveys of reserves and parks have been carried out, especially in the Amazon basin, with each resultant species list sporting the usual quota of "n.sp?", "nr.?", or "?" with respect to the riodinids cited. In many cases, these turn out to be undescribed taxa. The purpose of this paper is to make descriptions of these taxa available for inclusion in future regional faunal lists, as well as to increase our general knowledge of this fascinating group of butterflies.

MATERIAL AND METHODS

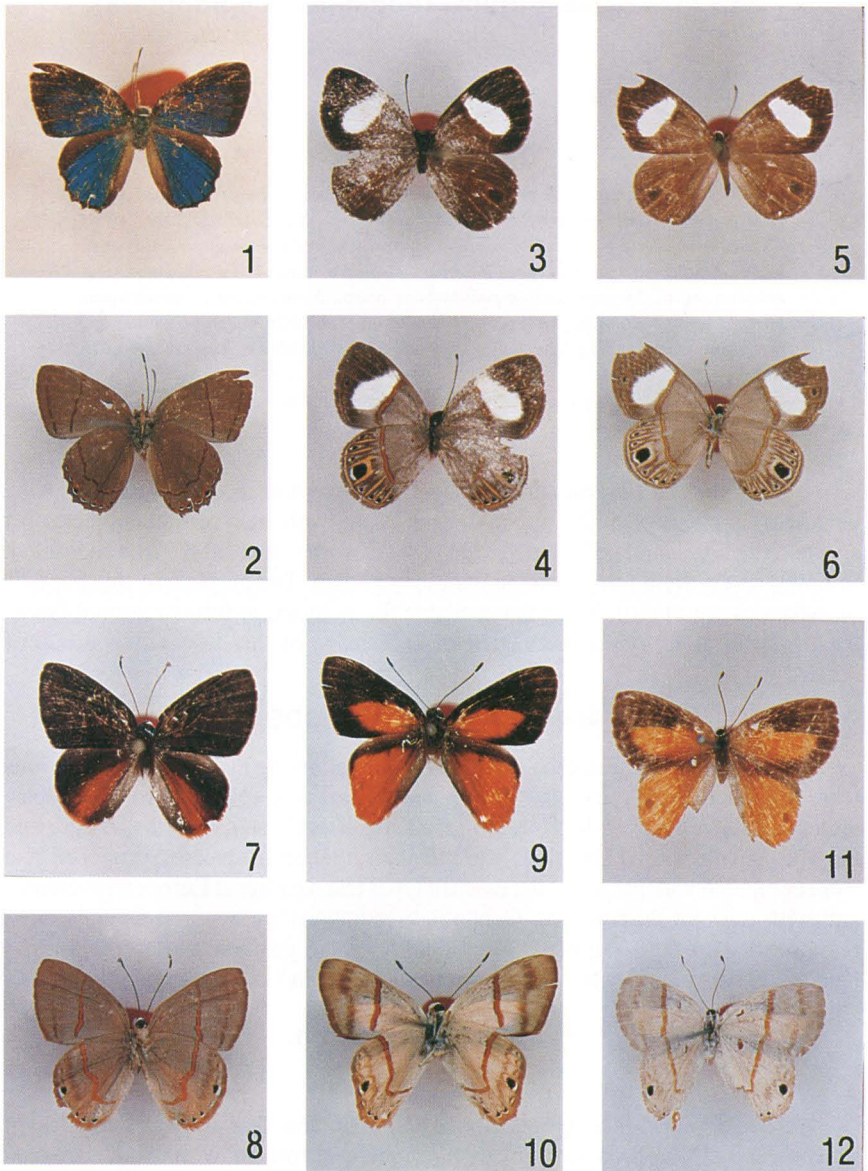
In addition to the author's collection, the following institutional collections were studied: Museu Nacional, Rio de Janeiro, Brazil; the collection of the "Departamento de Zoologia" of the Universidade Federal de Paraná, Curitiba, Brazil; and the Museum National d'Histoire Naturelle, Paris, France. In all cases, proposed taxa were compared with photos of the existent types taken earlier at European museums and with relevant descriptions. Genitalic preparations were stored in vials cross referenced with the specimens. Terminology of the genitalic structures follows KLOTS (1970), and the wing veins and cells follow MILLER (1969).

Euselasia azurea sp.n.

Figs 1-2, 45

Description. Male: Head, thorax and abdomen dark brown dorsad, light brown ventrad, appendages light orange; antennae ringed with white between segments, 39% forewing length; orbit, frontoclypeus white; palpi light orange, short, scaly, not protruding beyond face when viewed dorsally; tegula dark brown. Forewing length of Holotype 13.5 mm. Dorsal surface: Wing ground color metallic blue. Forewing with costa and margin black, and slight black scaling along the veins,

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Figs 1-12. (1-2) *Euselasia azurea* sp.n.: (1) male holotype, dorsal; (2) same, ventral; (3-6) *Euselasia albomaculiga* sp.n.: (3) male holotype, dorsal; (4) same, ventral; (5) female, dorsal; (6) same, ventral; (7-8) *Euselasia pseudomys* sp.n.: (7) male holotype, dorsal; (8) same, ventral; (9-12) *Euselasia pance* sp.n.: (9) male holotype, dorsal; (10) same, ventral; (11) female, dorsal; (12) same, ventral.

base black; hindwing margin cerated between veins, with costa above cell black, inner margin light gray, margin black with some penetration of black scaling basad along the veins. Ventral surface: uniform gray brown, with a thin irregular dark brown median band dusted basad with orange scaling between costa and 2A on forewing and curved between the costa and inner margin on hindwing; forewing with a thin brown submarginal band broken by the veins; hindwing with a row of submarginal black spots ringed distad with white and basad with indistinct orange scaling; margin distad of spots with faint orange scaling. Male genitalia (Fig. 45) with uncus slightly bilobed; tegumen humped with long extensions supporting falces; vinculum narrow; valvae short, tips widely bifurcate; aedeagus wide, blunt.

Female. Unknown.

Types. **Holotype** male with label: "Brazil, Rio de Janeiro, Xerem Reserve, 25-VI-1977, leg. Callaghan" a red Holotype label and a yellow genitalia label #539. *Paratypes*: two males, from same locality, dates 25-VI-1977 and 11-IX-1977. The holotype is deposited in the Museu Nacional, Rio de Janeiro and the paratypes in the collections of the author and the National Museum of Natural History (Smithsonian Institution), Washington, D.C., USA.

Etymology. The name refers to the brilliant blue color of the dorsal surface.

Diagnosis. *Euselasia azurea* is close to *E. pellowia* Stichel, 1919 from the Amazon drainage, differing in the lighter brown color and less extensive orange scaling and more irregular median band of the ventral surface. The genitalia of *E. azurea* differs in the humped tegumen, and wider, slightly bifurcate tips of the valvae.

Range and habits. *Euselasia azurea* inhabits the foothills of the Serra do Mar in Rio de Janeiro state, Brazil. The males fly between 0730 and 0830 on sunlit forest margins, resting beneath leaves with wings closed 4-6 m above the ground.

Euselasia albomaculiga sp.n.

Figs 3-6, 46-47

Description. Male: head, thorax and abdomen dark brown dorsad, ventrad white, appendages reddish white; antennae ringed with white scaling between segments, 50% forewing length; orbit black, frontoclypeus white with black mark in center, palpi white, short, scaly, not protruding beyond face when viewed dorsally. Forewing length of Holotype 15 mm. Dorsal surface: Forewing brown with a white oval spot from costa to CuA₂; hindwing costa and inner margin light brown with paler scaling along the veins and a faint dark brown submarginal oval spot between M₃ and CuA₁. Ventral surface: discal and basal areas gray, with orange 1 mm wide irregular median band bordered on both sides with black reaching 1 mm from costa to 1 mm from inner margin on forewing, and on hindwing curving from costa to 2A, whence it angles basad to inner margin. Forewing with a limbal white oval spot; apex and submarginal area dark brown, with a row of indistinct submarginal white spots, those in cells M₁-M₂ and M₂-CuA₁ with black center, and a faint marginal orange line; hindwing with area distad of median band with yellow scaling along veins and a row of submarginal black spots surrounded with

light brown scaling bordered distad by a white line between the veins, the spot in cell M3-CuA1 larger with yellow scaling basad, and a yellow marginal line bordered on both sides with black. Male genitalia (Fig. 46) with uncus narrow; vinculum narrow with a pointed projection, or spur; valvae pointed, transtilla with a dorsad projection; aedeagus wide, slightly pointed.

Female. Forewing length 14 mm. Wing pattern exactly like male, including presence of oval spot on forewing; ground color slightly lighter and forewings more rounded at apex.

Female genitalia (Fig. 47) with blade-like papillae anales fused dorsad; ostium bursae forming a wide sclerotized cup; corpus bursae with two small crescent signa.

Types. **Holotype** male with label: "Colombia, Rio Negro, Meta 600 m, 5-iv-80, CJC", a red holotype label and a yellow genitalia label #540. **Paratypes**: one male same locality as holotype and the date Nov, 78, leg. Schmidt-Mumm and one female "Villa Garzon, Caquetá, Colombia".

The holotype is deposited in the Museo de la Universidad Nacional, Bogotá, Colombia and the Paratypes in the collection of the author and the National Museum of Natural History (Smithsonian Institution), Washington, D.C., USA..

Etymology. The name refers to the large white spot on the forewing of both sexes

Diagnosis. *Euselasia albomaculiga* is close to *Euselasia arbas* (Stoll, 1781), and belongs in Stichel's "Arbiformes". The male differs from *E. arbas* in the presence of the white oval spot on the forewing, lack of blue scaling, the spurs on the vinculum and wider, shorter valvae.

Range and habits. *Euselasia albomaculiga* ranges from near the town of Macoa, Caquetá Department north to the Rio Negro near Villavicencio in south Meta Department. The males perch in sun flecks in the deep forest at midday, resting under leaves with wings together.

Euselasia pseudomys sp.n.

Figs 7-8, 48

Description. Male: head, thorax and abdomen dark brown dorsad with long reddish scales, white ventrad, middle and hind legs light orange, forelegs white; antennae with white scales between segments, 62% forewing length; orbit, frontoclypeus white with dark brown center, forming a "V" when viewed head on; palpi white, short, not protruding beyond face when viewed dorsally. Forewing length of Holotype 13 mm. Dorsal surface: Wing ground color dark brown. Forewing dark brown with slight reddish scaling in distal area; hindwing costa, inner margin light gray, area between M3 and CuA2 red-orange with long orange scent hairs in discal cell and cell CuA1-CuA2. Ventral surface: light gray with orange median line outlined with black across both wings bending basad below the cell on hindwing, curving convex to base, then distad before turning sharply toward inner margin. Forewing with faint submarginal black line; hindwing submarginal area light yellow with black shadow basad and a submarginal row of small triangular black spots

edged distad with white between the veins, those in cells A2-CuA2, CuA2-CuA1 elongated, largest in cell M2-M3; fringe orange. Male genitalia (Fig. 48) with uncus broad with small teeth; vinculum narrow, widest at base; valvae tips rounded, transtilla pointed, aedeagus long, narrow.

Female. Unknown.

Types. **Holotype** male with label: "Brazil, RO [Rondônia], Cacauplandia, Rancho Grande, Aug. 1, 1993, leg. Callaghan" and a red Holotype label. **Paratypes**: 3 males, Jaru, RO [Rondônia], 250 m, Aug. 10, 1973, leg. Callaghan; 1 male same locale as Holotype, Aug. 6, 1993. The holotype is deposited in the Museu Nacional, Rio de Janeiro and the paratypes in the collections of the author and the National Museum of Natural History (Smithsonian Institution), Washington, D.C., USA..

Etymology. This species is named after *Euselasia mys* (Herrich-Schäffer, 1853), with which it is easily confused.

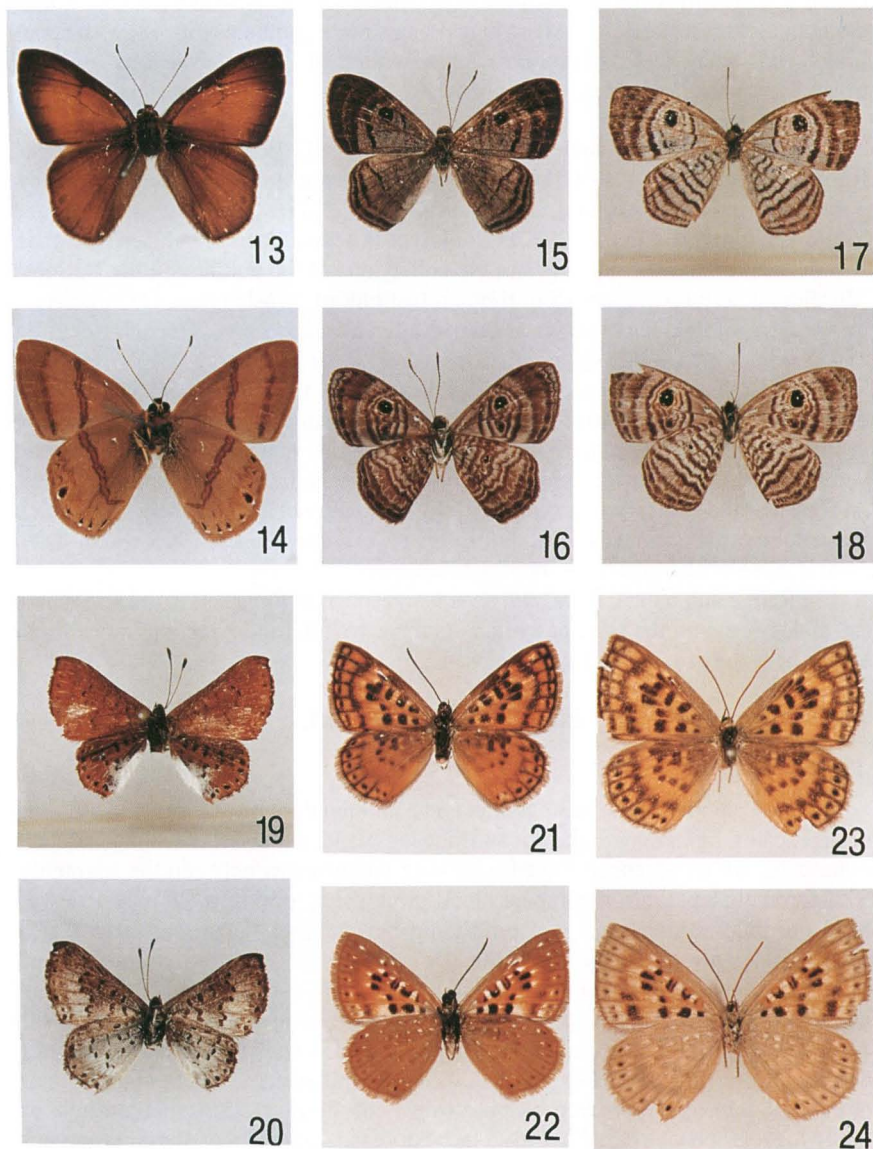
Diagnosis. *Euselasia pseudomys* belongs to the *mys-crinon* complex. It differs from Herrich-Schäffer's type of *E. mys* in the Stuttgart Museum in the lighter ground color and light orange median band, and smaller marginal spots on hindwing ventral surface, a narrower aedeagus, shorter valvae, and a less projecting transtilla. At Cacauplandia and Jaru it is sympatric with *E. crinon crinon* Stichel, 1919 which has a solid white frontoclypeus, and *E. mys* f. *crinina* Stichel, 1925 which has a ventral surface identical to the nominate subspecies.

Range and habits. *Euselasia pseudomys* inhabits forests in Rondonia where the males perch on the edge of treefalls in the early afternoon, resting under sunlit leaves near the ground with wings closed.

Euselasia pance sp.n.

Figs 9-12, 49-50

Description. Male: head, thorax and abdomen dark brown dorsad with long orange scales, lighter ventrad, mid- and hind legs white with orange scaling, forelegs pubescent, white; antennae ringed with long white scales between the segments, 57% forewing length; frontoclypeus black, orbit white, forming a "V" when viewed head on; palpi white, short, not protruding beyond face when viewed dorsally. Forewing length of Holotype 14 mm. Dorsal surface: Wing ground color dark brown, hindwing anal angle elongated. Forewing with discal area below middle of discal cell and CuA1 to inner margin bright orange; hindwing bright orange with costa above RS dark brown and inner margin gray brown, with long scent hairs on inner margin of FW and HW cell CuA2-2A. Ventral surface: cream color with an orange median band bordered on both sides with black crossing both wings, on hindwing it is concave basad to CuA2, then curves sharply to inner margin; forewing with submarginal brown band between costa and inner margin slightly displaced basad along M3; margin brown, fringe black; hindwing with submarginal irregular black shadow basad of a submarginal row of crescent lines between veins, that in cell CuA1-CuA2 containing a large black spot edged basad with white; in cell 2A-3A two elongated black spots and one more at anal angle; fringe orange. Male genitalia (Fig. 49) with uncus wide and toothed; vinculum narrow, uniform; valvae short with tips pointed, turned up and out, transtilla pointed; aedeagus long.



Figs 13-24. *Euselasia eberti* sp.n.: (13) male holotype, dorsal; (14) same, ventral; (15-18) *Mesosemia bahia* sp.n.: (15) male holotype, dorsal; (16) same, ventral; (17) female, dorsal; (18) same, ventral; (19-20) *Pachythone sumare* sp.n. (19) male holotype, dorsal; (20) same, ventral; (21-24) *Audre middletoni diamantina* ssp.n.: (21) male holotype, dorsal; (22) same, ventral; (23) female, dorsal; (24) same, ventral.

Female. Forewing length 13 mm, hindwing and forewing rounded. Dorsal surface: forewing ground color dark brown, with cell and discal area below M3 yellow- orange; hindwing yellow-orange with costa dark brown and inner margin light gray. Ventral surface: white with same pattern as male, markings lighter. Female genitalia: (Fig. 50) with blade-like papillae anales fused dorsad; ostium bursae with wide flange at entrance, sclerotized tube- like ductus; corpus bursae with elongated narrow signa.

Types. **Holotype** male with label: "Colombia, Río Pance, 1200 m, Valle, 21-x-81 leg. Callaghan", a red Holotype label and a yellow genitalia label #542. **Paratypes**: 13 males, 1 female same locality and date, 1 male 31 Jan, 1982; 3 males, 1 female 11 May 1982; 3 males Colombia, Cerro Ingrumá, 2200 m, Río Súcio, Caldas, 22-Feb. 1997 leg. Callaghan; 2 males, same locality 10 July 94 and December, 1991, leg. Salazar; Colombia, Cerro Aguatal, Caldas 30 April 1994, leg. Salazar.

The holotype is deposited in the Museo de la Universidad Nacional, Bogotá, Colombia and the paratypes in the collections of the author and the National Museum of Natural History (Smithsonian Institution), Washington, D.C., USA.

Etymology. This species is named after the type locality.

Diagnosis. *Euselasia pance* belongs to the *E. crinon* complex, which includes *E. hygenius* and *E. mys*. While superficially resembling *Euselasia crinon*, *E. pance* differs in the frontoclypeus being black, with the white orbits forming a "V", whereas in *E. crinon* it is white; on the forewing ventral surface the submarginal line is offset instead of being straight; the hindwing on *E. pance* is elongated instead of round; the valvae of *E. crinon* are straighter, narrower and blunter. The ranges of the two species are allopatric. *Euselasia crinon* is not known west of the Cordillera Oriental in Colombia.

Range and habits. The habitat of *E. pance* is the Cauca river drainage in the Cordillera Occidental from 1200 to 2300 m. Males perch inside the woods edge between 0900 and 1100, 3 to 5 m above the ground, always under leaves with wings folded, sometimes in groups of 5 to 10 individuals. Females are less common, remaining in the forest.

Euselasia eberti sp.n.

Figs 13-14, 51

Description. Male: Head, thorax and abdomen brown dorsad with long tan scales on thorax, lighter ventrad, appendages light tan, forelegs pubescent; antennae ringed with long, white scales between segments, and 60% forewing length; orbit white, frontoclypeus and palpi tan, palpi short, scaly, not protruding beyond face when viewed dorsally. Forewing length of holotype 17 mm. Dorsal surface: Wing ground color golden orange. Forewing costa, apical and submarginal areas infused with brown scales, inner margin with long scent hairs; hindwing with costa light brown, inner margin brown-gray, base and cells CuA2-2A and 2A-3A with long scent scales, margin brown. Ventral surface: ground color light brown, with irregular dark red median band outlined in black crossing both wings, which on hindwing

continues to 2A, then angles sharply to inner margin; an indistinct submarginal band crosses both wings, on hindwing reduced to a series of vague angular spots, distad of which is a series of black triangular spots between the veins bordered distad with white, that in cell M3-CuA1 larger; margin orange outlined in brown. Genitalia (fig. 51) with uncus toothed; vinculum wide but uniform; valvae truncated with indented tip, transtilla with long caudad projection; aedeagus wide, tip unsclerotized, amorphous.

Female. Unknown.

Types. **Holotype** male with label: "Umuaramá 1800 m São Paulo, Brasil, 29-XII-1937", a red Holotype label and a yellow genitalia label #544. **Paratypes**: six males, all same locality and date; 8 males Serra de Bocaina, São Paulo, 8-I-1937.

The holotype is deposited in the Museu Nacional, Rio de Janeiro. The paratypes are in the collection of the Museu Nacional, and one male in the collection of the author.

Etymology. This species is named in memory of Dr. Heinz Ebert, who was the first to notice the uniqueness of this butterfly.

Diagnosis. *Euselasia eberti* belongs in the *E. crinon hygenius* complex in view of its similar genitalia and external morphology.

Range and habits. The species is unknown outside the type locality and the type series, but may be more widespread in the Serra da Mantiqueira in São Paulo and southern Minas Gerais.

Mesosemia bahia sp.n.

Figs 15-18, 52-53

Description. Male: head, thorax and abdomen black dorsad with long blue scales, white ventrad, appendages white and light brown, forelegs pubescent, light brown; antennae with white scales between segments, 54% forewing length; orbit white, frontoclypeus brown; palpi white, short, not protruding beyond face when viewed dorsally. Forewing length of Holotype 14 mm. Dorsal surface: wing ground color blue-gray. Forewing with a round black ocellus with three white dots at the end of the discal cell and a short black line basad in the discal cell, distad of the discal cell are three bands: a thin band convex to the base reaching from costa to 2A; a wide dark brown limbal band and submarginal bands connected to a dark brown margin. Hindwing with an irregular broken black median band from apex to inner margin and two curved irregular narrow submarginal bands from apex to inner margin, distal border black with brown fringe. Ventral surface: gray with dark brown markings. Forewing with round black ocellus with three white dots at end of discal cell, and a small brown spot below, both surrounded by four concentric brown bands, two basad, and two distad reaching from costa to inner margin; limbal area dark brown with a black-brown band of diamond shaped spots extending from costa to anal angle, and a thin wavy marginal band and brown fringe; hindwing with irregular black dot outlined in yellow at end of cell with three irregular bands basad and three distad, all reaching from costa to inner margin; limbal and submarginal areas darker brown with same markings as forewing. Genitalia (Fig. 52) with uncus narrow;

vinculum slightly wider in middle; valvae truncated with bifurcated pointed tip; aedeagus long with rounded tip.

Female. Forewing length 14 mm. Dorsal surface: wing ground color light blue. Forewing with black ocellus with three white dots at end of discal cell surrounded by four concentric black bands, two basad and two distad, inner two indistinct; limbal area with two brown bands narrower than male, and brown apex; hindwing with small black dot at end of discal cell, three wavy narrow evenly spaced bands basad, five similar bands distad, margin dark brown. Ventral surface: same as male, but lighter. Genitalia: (Fig. 53) with papillae anales fused dorsad; ostium bursae as a wide round funnel, with ductus bursae wide, ductus seminalis equally as large, joining ostium bursae at base; corpus bursae with two large, blunt signa.

Types. **Holotype** male with label: "Brazil: Minas Gerais, Parque do Rio Doce [Marliéria], Pau Caido, 12 November 1977 leg. Benson" and a red Holotype label. **Paratypes**: one female "Brazil: Bahia, Ubatá, 18-XII-66", and one male "Brazil: Espírito Santo, Linhares, 24-XI-77, leg. Callaghan".

The holotype is deposited in the Museu Nacional, Rio de Janeiro and the paratypes in the collection of the author.

Etymology. The species is named for the state of Bahia, where it was first captured.

Diagnosis. *Mesosemia bahia* is close to *M. coelestis* Godman & Salvin, 1885, from Panama and Costa Rica, differing from that species in its rounded hindwing, pattern of bands on the ventral surface and genitalia.

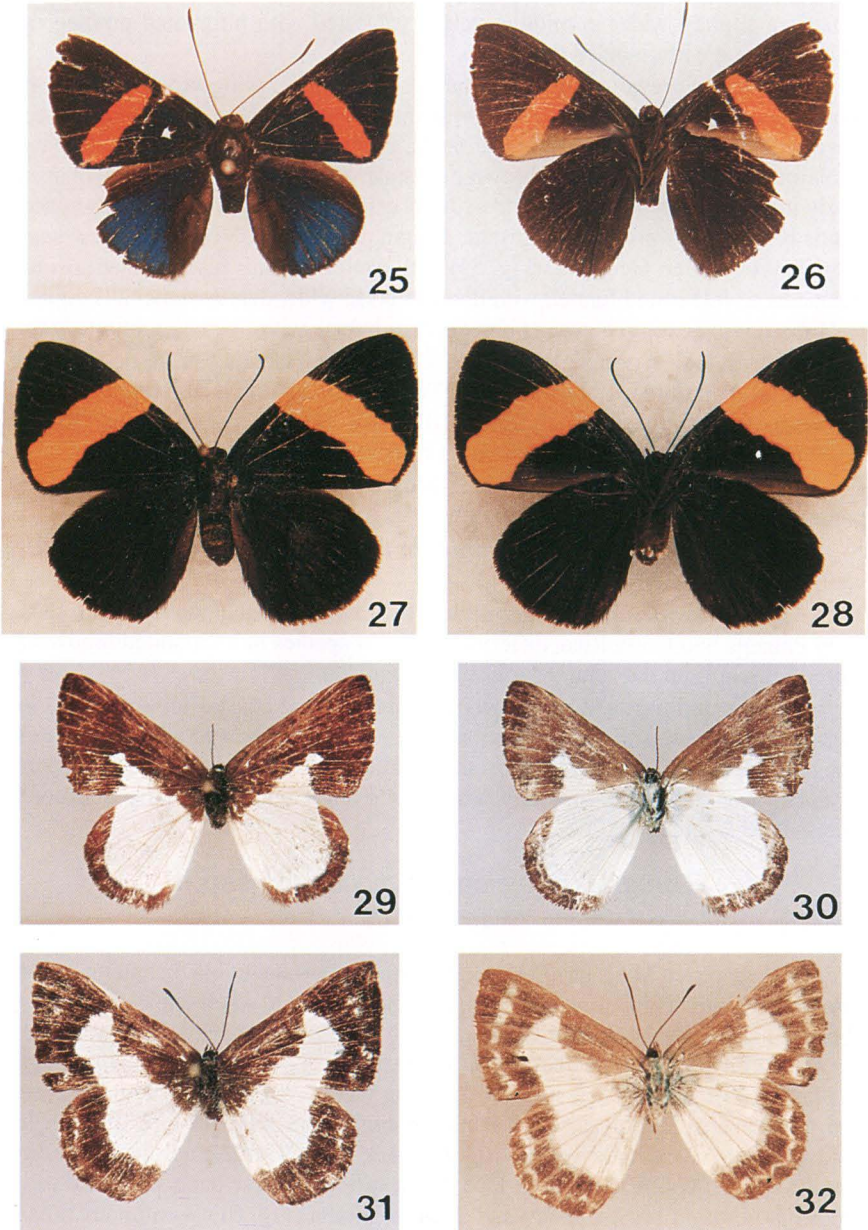
Range and habits. *Mesosemia bahia* inhabits the coastal forests from southern Bahia to central Espírito Santo and the Rio Doce drainage to Minas Gerais. The habitat is primary forest where both sexes may be found resting near the ground on dorsal leaf surfaces with wings raised at 45° angle during the early afternoon. The species is rare.

Pterographium elegans chocoensis ssp.n.

Figs 25-28, 61

Description. Male: head, thorax, abdomen, appendages black; antennae 70% forewing length, palpi protruding slightly beyond face when viewed dorsally; abdomen segments A4 and A5 with two round patches of concealed androconia on the anterior margins of the abdominal tergites of both segments. Forewing length of Holotype 21 mm. Dorsal surface: forewing black with faint purple iridescence and a transverse 3 mm wide red band reaching from R1 nearly to anal angle; hindwing with costa, inner margin to CuA2 black, M1 to CuA2 blue, erectable scent hairs in cell CuA2-2A. Ventral surface: black with transverse band same as dorsal, inner margin light brown; hindwing black. Genitalia (Fig. 61) with uncus broad; tegumen notched posteriorad, vinculum narrow, uniform, saccus long; valvae bifurcated at tip, transtilla thick, broad; aedeagus wide with brush-like tip.

Female. Dorsal surface: black, forewing with 6 mm wide yellow band extending from costa to 1 mm from anal angle. Ventral surface: same as dorsal, only lighter.



Figs 25-32. (25-28) *Pterographium elegans chocoensis* ssp.n.: (25) male holotype, dorsal; (26) same, ventral; (27) female, dorsal; (28) same, ventral; (29-34) *Ematurgina grandis* sp.n.: (29) male holotype, dorsal; (30) same, ventral; (31) female, dorsal; (32) same, ventral.

Types. **Holotype** male with label: "Colombia, Aguas Claras, 100 m, Rio Anchicayá, Valle, 6-VI-1982, leg. Callaghan" and a red Holotype label. Paratypes: two males, same locality as Holotype, on 21 Feb. 1982, and one female, same locality, 13 Feb. 1982, leg. Callaghan.

The holotype is deposited in the Museo de la Universidad Nacional, Bogotá, Colombia, and the paratypes in the collections of the author and the National Museum of Natural History (Smithsonian Institution), Washington, D.C., USA.

Etymology. The name of this species refers to the Colombian pacific coast region where it is found.

Diagnosis. *Pterographium elegans* (Schaus, 1928) was described in the genus *Panara*. CALLAGHAN (1995) in his revision of *Panara* removed *P. elegans* provisionally to *Pterographium* until such time as a proper phylogenetic ordering of the tribe is undertaken. *Pterographium elegans chocoensis* males differ from the nominate subspecies from Panamá in having a red instead of a yellow band on the forewing, and the females in having a wider yellow band.

Range and habits. *Pterographium elegans chocoensis* inhabits the lowland rain forest to 300 m on the Colombian Pacific coast. Males perch on hilltops between 1000 and 1200, resting under leaves with wings outspread 2-3 m above the ground.

Ematurgina grandis sp.n.

Figs 29-32, 62-64

Description. Male: head, thorax and abdomen reddish brown dorsad, white ventrad, appendages white; antennae with white scales at segments, 42% forewing length; orbit white, frontoclypeus light brown; palpi white with brown tips, protruding slightly beyond face when viewed dorsally. Forewing length of Holotype 20 mm. Dorsal surface: forewing ground color reddish brown with white triangular area from middle of inner margin to CuA1, the apex pinched along CuA2; hindwing white with red-brown base, red brown 2 mm wide margin from apex to anal angle. Ventral surface: forewing ventral same as dorsal surface, only lighter; hindwing similar to dorsal, but with a thin white submarginal line forming slight crescents between the veins; long white scent scales on inner margin; fringe brown. Genitalia (Fig. 62) with uncus broad; vinculum narrow, saccus long and bulbous; valvae long, tips with small teeth, transtilla broad; aedeagus long, pointed, rami (Fig. 63) bifurcated with tips pointing outwards.

Female. Palpi dimorphic, long, protruding beyond face. Forewing length 21 mm. Dorsal surface: Wing ground color dark brown. Forewing discal area with 5 mm wide white bar from inner margin curving basad to a point at M1, scattered indistinct submarginal white spots in cells C2-2A, CuA1-CuA2, M1-M2 and M2-M3; hindwing with discal area white, base and submarginal areas dark brown, two white submarginal lines in cells M1-M2 and M2-M3. Ventral surface: with same pattern as dorsal but lighter; forewing and hindwing with submarginal row of white crescent spots between the veins. Genitalia (Fig. 64) with blade-like papillae anales reduced in size; ostium bursae with round flanges flanking opening and sclerotized spots along ductus; corpus bursae with two small, blunt signa.

Types. **Holotype** male with label: "Brazil Acre, Alto Juruá, Piasabal, Lago Ceará, 11-IV-1995, leg. K.S. Brown Jr.", a red Holotype label and a yellow genitalia label #526. **Paratypes**: 1 male, "Peru, Loreto, Pucallpa, 2-VII-1960, ex. coll. Jae"; one female same locality and date as holotype.

The holotype is deposited in the Museu Nacional, Rio de Janeiro, Brazil. One male and one female paratype are deposited in the collection of the author.

Etmology. The name refers to the size of this species, easily the largest of the *Ematurgina* known.

Diagnosis. The similarity in genitalia, venation and wing pattern places this species in the genus *Ematurgina*.

Range and habits. *Ematurgina grandis* inhabits primary tropical forest in the Amazon lowlands of Peru and the state of Acre in Brazil.

Pachythone sumare sp.n.

Figs 19-20, 54

Description. Male: head, thorax and abdomen reddish brown dorsad, thorax dark brown ventrad, abdomen white, appendages white; antennae with white scales between segments, 54% forewing length, club wide; orbit, frontoclypeus dark brown; palpi light brown, protruding beyond face when viewed dorsally. Forewing length of holotype 14 mm. Dorsal surface: wing ground color reddish brown, forewing slightly falcate, forewing with row of submarginal black dots between veins, and faint black marks reflecting ventral surface pattern. Hindwing red-brown, a row of submarginal black spots between the veins, cell with three black linear marks, limbal area with irregular row of black spots between veins, inner margin to 2A white. Ventral surface: light gray with variable infusion of darker scaling, with same pattern as dorsal; forewing three spots in cell, two below, limbal row of irregular black spots, submarginal row of black spots; hindwing with two black spots in cell and a line at end, two additional spots below and two above, a row of irregular limbal spots and a row of marginal black spots ringed in white, fringe checkered white and dark brown. Genitalia (Fig. 54) with uncus bilobed; vinculum wider in middle and base, saccus tubular; valvae long, pointed; aedeagus long, pointed.

Female. Unknown.

Types. **Holotype**: male with label "Brazil: Sumaré, Rio de Janeiro, 14-VIII-1970, leg. Callaghan", a red Holotype label and a yellow genitalia label #581. **Paratypes**: three males, same locality as holotype, with dates 14-VIII-1970, 21-IX-1975 and 16-V-1976.

The holotype is deposited in the Museu Nacional, Rio de Janeiro, Brazil, and the paratypes in the collections of the author and the National Museum of Natural History (Smithsonian Institution), Washington, D.C., USA.

Etmology. This species is named for the type locality.

Diagnosis. The genitalia and venation place this taxon in the genus *Pachythone*.

Range and habits. *Pachythone sumare* males perch on the Sumaré hilltop in the Parque de Tijuca, Rio de Janeiro, Brazil, 450 m. They appear between 1200 and 1400 resting 4-5 m above the ground under leaves with wings spread. This species is unknown outside the type locality.

Audre middletoni diamantina **ssp.n.**

Figs 21-24, 55-57

Description. Male: head, thorax and abdomen dorsad black with yellow scaling, ventrad dark gray, appendages black with white scaling; antennae ringed with small white scales between segments, 56% forewing length; orbit white, frontoclypeus dark brown with a white line down the center; palpi brown, protruding beyond face when viewed dorsally, probocis inflated at base. Forewing length of Holotype 15 mm. Dorsal surface: ground color gold-brown, costa brown, three large black spots in discal cell, three below in CuA2-2A and one in CuA1-CuA2, three connected black spots distad of discal cell, indistinct black limbal band curving from costa to inner margin with black scaling distad along the veins to margin, intersecting a thin submarginal band and terminating at the black margin; hindwing gold-brown with three brown spots in cell, costa with brown scaling, discal area with a curved row of brown spots between the veins, submarginal row of brown spots separated by lines along the veins connecting with the black margin; fringe light brown. Ventral surface: forewing with discal area orange and same pattern of spots as dorsal surface, but edged distad with white; submarginal row of black spots between the veins with a similar row of white spots basad, margin brown; hindwing uniform light brown with pattern of brown dots dorsad reflected as indistinct brown-white dots ventrally. Genitalia: (Fig. 55) uncus bilobed and wide; vinculum narrow, uniform, saccus long, tubular; valvae elongated with small teeth on tip; aedeagus long pointed; rami unsclerotized.

Female. Palpi dimorphic, longer than male. Forewing length 16 mm. Wing dorsal ground color yellow brown, pattern identical to male, only lighter. Genitalia: (Fig. 56) with blade-like papillae anales fused dorsad; ostium bursae rounded with edges of opening sclerotized, and a wide, crescent shaped flange below, ductus strongly sclerotized; corpus bursae with very long, pointed signa (Fig. 57).

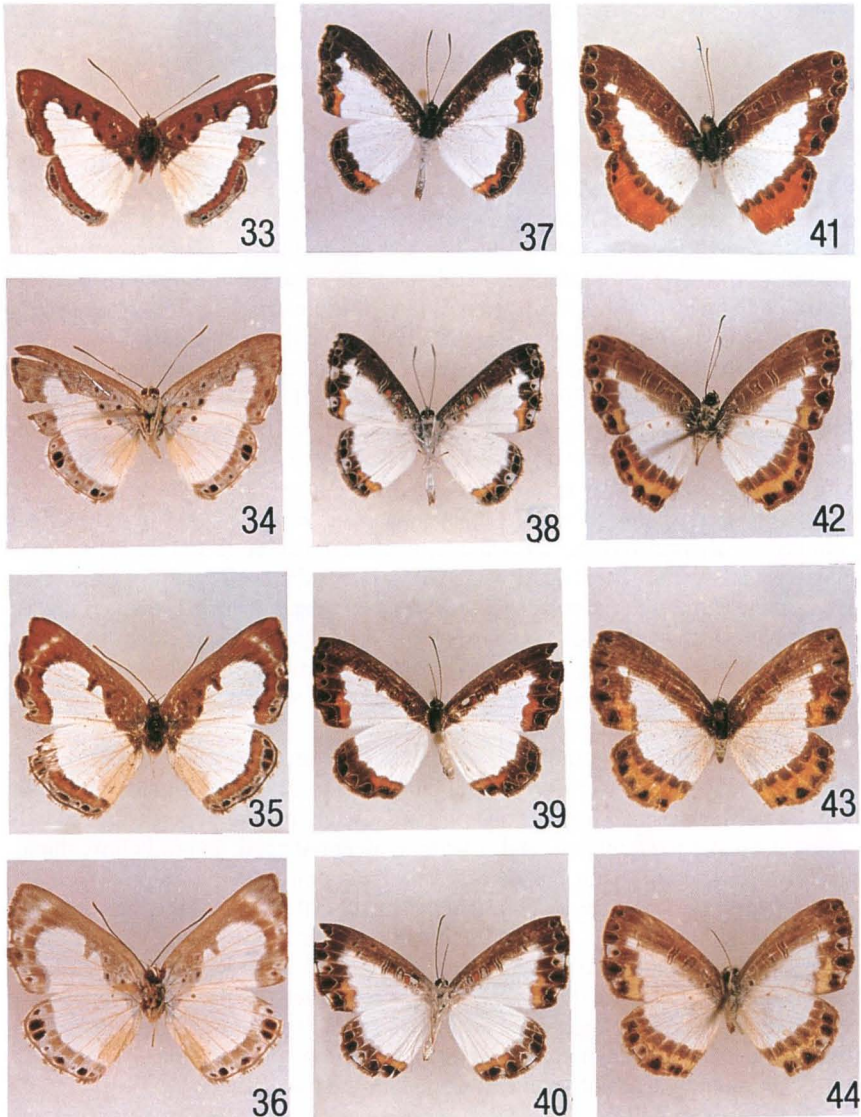
Types. **Holotype** male with label: "Brazil: Alto Rio Arinos, Fazenda São João, Diamantina, MT leg. Furtado" and a red holotype label. **Paratypes**: 3 males 7 and 10-IX-1978 and 7 females 6, 7 and 10-IX-1978, same locality.

The holotype and the paratypes are deposited in the collection of the "Departamento de Zoologia" of the Universidade Federal do Paraná, Curitiba, Brazil, one male and female paratype in the collection of the author.

Etymology. The subspecies is named for the type locality.

Diagnosis. *Audre middletoni diamantina* differs from the nominate subspecies from Goiás in the heavier forewing markings and more extensive yellow hindwing scaling of the male and the lighter yellow dorsal surface and smaller black markings in the female, as well as the lack of white markings on the ventral surface. The type series shows no significant variation. The male genitalia are identical to the nominate subspecies.

Range and habits. *Audre middletoni diamantina* is found in central Mato Grosso where it flies in the open cerrado, its flight resembling a satyrid.



Figs 33-44. (33-36) *Synargis calyce pernambuco* ssp.n.: (33) male holotype, dorsal; (34) same, ventral; (35) female, dorsal; (36) same, ventral; (37-40) *Nymphidium trinidad* sp.n.: (37) male holotype, dorsal; (38) same, ventral; (39) female, dorsal; (40) same, ventral; (41-44) *Nymphidium smalli* sp.n.: (41) male holotype, dorsal; (42) same, ventral; (43) female, dorsal; (44) same, ventral.

Synargis calyce pernambuco ssp.n.

Figs 33-36, 58-60

Description. Male: head, thorax and abdomen reddish brown dorsad, white ventrad, appendages white; antennae with white scales between segments, 72% forewing length; orbit white, frontoclypeus white, reddish-brown dorsad; palpi long, protruding beyond face when viewed dorsally. Forewing length of Holotype 16 mm. Dorsal surface: ground color red-brown, discal area occupied by white triangle extending from inner margin to slightly beyond M2, costal edge wavy, penetrating discal cell at one point, two black spots in discal cell and a black line at end and two similar spots below in cell CuA1-CuA2; a broken submarginal blue-gray line parallel to margin extending from anal angle to M3, then diverging to apex; distad, a marginal blue gray line bordered with black, fringe red-brown except at cell M3-CuA1 and CuA2-2A where it is white; hindwing base red-brown, discal area white from costa to inner margin, submarginal red-brown, bordered basad in black and distad by a gray-blue marginal band in which are black spots between the veins and dividing between M3-RS before joining at apex, the largest in M1-M2/M2-M3, margin black, fringe white, 2A to inner margin with long white scent hairs. Ventral surface: same pattern as dorsal, only lighter; hindwing with two brown dots at base above discal cell and with submarginal black spots more prominent. Genitalia (Fig. 58) with uncus bilobed and prominent socci connecting uncus to falces; vinculum wider in middle, with large saccus; valvae long, thick with two small flanges on tip; aedeagus long, pointed; rami (Fig. 59) bifurcated in two long pencil-shaped projections connected by lightly sclerotized tissue.

Female. Forewing length 18 mm. Palpi sexually dimorphic, second segment three times that of male. Wing pattern similar to male. Differences are forewing distal margin more rounded, dorsal surface with apex of white triangular area rounded with deeper penetration of white into discal cell such that black line at end of discal cell is nearly isolated. Genitalia (Fig. 60) with blade-like papillae anales fused dorsad, nearly joined at top; ostium bursae as a wide, round bowl encircling the ductus, which is flanked by two sclerotized processes, ductus sclerotized with row of cornuti; corpus bursae with two pointed signa.

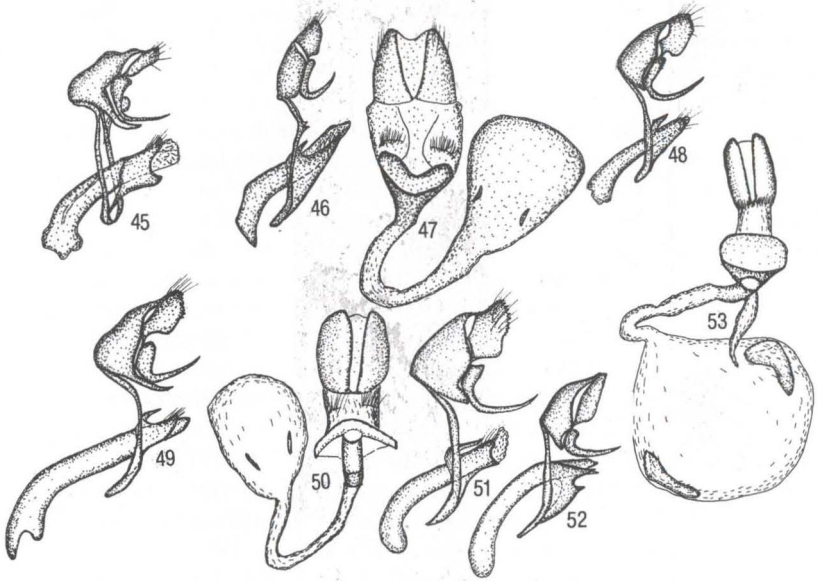
Types. **Holotype** male with label: "Brasil: Küstengebiet von Paraiba, João Pessoa, 29-III-1953 J. Kesselring" and a red Holotype label. **Paratypes**: 4 males, 1 female, same locality, Museu Nacional, Rio de Janeiro, and 2 females Rio Claro, Trinidad, 15-VII-73, leg. Keith Brown Jr., and 2 females N. Shore, Trinidad, 9-I-65, leg. Keith Brown Jr.

The holotype is deposited in the Museu Nacional, Rio de Janeiro. The paratypes are deposited in the collections of the Museu Nacional, Rio de Janeiro, the author and the National Museum of Natural History (Smithsonian Institution), Washington, D.C., USA.

Etymology. This subspecies is named after the type locality.

Diagnosis. *Synargis calyce pernambuco* differs from the nominate subspecies and subspecies *S. c. brennus* (Stichel, 1910) by the wavy proximal border of the white triangular area, and the penetration of the cell by the white triangular area of the forewing.

Range and habits. *Synargis calyce pernambuco* ranges from the Zona da Mata of coastal Pernambuco state in northeast Brazil to Trinidad. The distribution is broken from Belem, Pará to Trinidad, where *S. c. pernambuco* is replaced by nominate *S. calyce*. Subspecies *pernambuco* is apparently absent from French Guiana. (C. Brévignon, **pers comm.**) Males perch inside the forest edge from 1200 to 1500 resting under leaves with wings outspread.

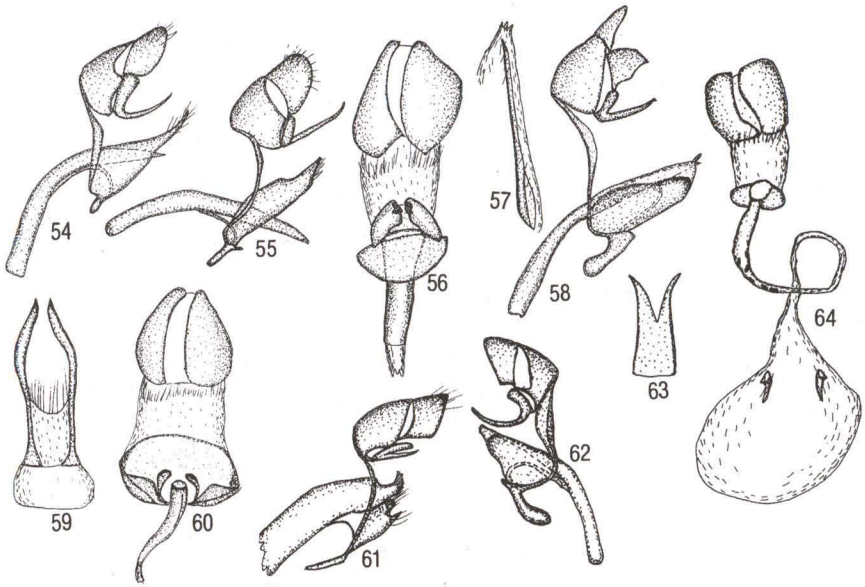


Figs 45-53. (45) *Euselasia azurea*, male genitalia; (46) *Euselasia albomaculiga*, male genitalia; (47) same, female genitalia; (48) *Euselasia pseudomys*, male genitalia; (49) *Euselasia pance*, male genitalia; (50) same, female genitalia; (51) *Euselasia eberti*, male genitalia; (52) *Mesosemia bahia*, male genitalia; (53) same, female genitalia.

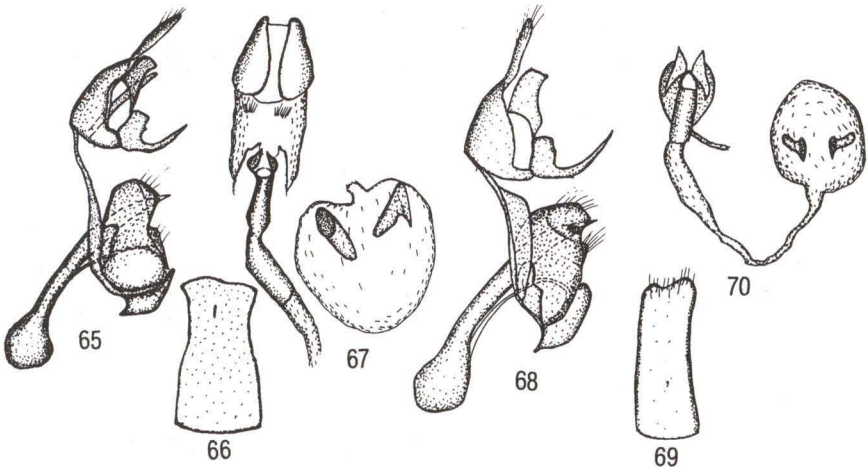
Nymphidium trinidad sp.n.

Figs 37-40, 65-67

Description. Male: head, thorax dark brown dorsad, white ventrad, abdomen white, appendages white; antennae with segments separated by white scaling, 58% forewing length; orbit white, frontoclypeus brown with scattered white scaling; palpi white, protruding slightly beyond face when viewed dorsally. Forewing length of Holotype 15 mm. Dorsal surface: forewing with submargin and apex to base dark brown, discal area occupied by a white triangle with base on inner margin and apex reaching M1, apex pinched along M3 and indents brown distal margin at cell CuA1-CuA2, discal cell containing two round brown spots outlined in black and a line at end of cell, alternating with two red spots; four small subapical streaks between the veins; a submarginal row of black crescent spots outlined distad and basad with



Figs 54-64. (54) *Pachythone sumare*, male genitalia; (55) *Audre middletoni diamantina*, male genitalia; (56) same, female genitalia; (57) *Audre middletoni diamantina*, female signa; (58) *Synargis calyce pernambuco*, male genitalia; (59) same, male rami; (60) same, female genitalia; (61) *Pterographium elegans chocoensis*, male genitalia; (62) *Ematurgina grandis*, male genitalia; (63) male rami; (64) same, female genitalia.



Figs 65-70. (65) *Nymphidium trinidadi*, male genitalia; (66) same, male rami; (67) same, female genitalia; (68) *Nymphidium smalli*, male genitalia; (69) same, male rami; (70) same, female genitalia.

blue; basad of the tornus an irregular orange patch edged basad in black. Hindwing base dark brown; discal and limbal areas white from costa to inner margin, submarginal area dark brown, containing black crescent spots outlined in blue between the veins with traces of red scaling, and at tornus an irregular patch of orange scaling outlined basad in dark brown. Ventral Surface: with same pattern as dorsal but lighter, markings in discal cell white, and white marginal spots on both wings in cells M3-CuA1 and CuA2-2A. Genitalia: (Fig. 65) uncus bilobed, prominent socci connecting tegumen and falces; vinculum wider in middle, saccus wide, forming base for rami; valvae truncated, tips sclerotized and turned inwards, transtilla sclerotized at base; aedeagus long, pointed, rami (Fig. 66) broad, slightly flaired posteriorad with small flange dorsad.

Female. Forewing length 16 mm, longer than male. Wing pattern same as male, except that white triangular area of forewing not pinched. Genitalia: (Fig. 67) papillae anales fused dorsad; ostium bursae small with two sclerotized processes on either side of opening of ductus bursae, ductus sclerotized; corpus bursae with two large blunt signa.

Types. **Holotype** male with label: "Arima District, Trinidad, Jan.-March, 1922, A. Hall" and a red holotype label. **Paratypes**: Trinidad: 3 males, 1 female, Rio Claro, 15-VII-73, *leg.* Keith Brown Jr.; 1 female, Siparia; 2 males, Arima District; Venezuela: 1 male, Maracay, Aragua, 700 m.; 1 male Charoni, Aragua; 1 male, 5 females, El Limon, Rio Castaño, Aragua; 6 males, Polo Diablo, Maracay, Aragua; 2 males, Montecal, Bolivar; Colombia: 1 male, 2 females, Remolinos, Meta 1-III-1995, *leg.* LeCrom; 16 males, 9 females, Cunday, Tolima 700 m, 3-X-1982, *leg.* Callaghan; 2 males, 1 female, same locality, 25-III-1997, *leg.* Callaghan; 10 males, 8 females, Chaparral, Tolima; 3 males, 1 female, Rio Ariari, Meta, *leg.* Callaghan; 6 males, Villavicencio, Meta, *leg.* Callaghan.

The holotype is deposited in the Allyn Museum of Entomology, Sarasota, Florida. The paratypes are in the collections of the author, the Museu Nacional, Rio de Janeiro, Brasil, and the National Museum of Natural History (Smithsonian Institution), Washington, D.C., USA.

Etymology. This species is named for the island of Trinidad, where it was first recorded.

Diagnosis. *Nymphidium trinidad* has long been masquerading in collections and the literature (BARCANT 1970), as *Nymphidium onaeum* Hewitson, 1869. The range of *N. onaeum* is Panama to Costa Rica. While superficially similar, the genitalia of the two phenotypes are distinct and *N. trinidad* lacks the red spots below the cell found on *N. onaeum*.

Nymphidium trinidad is related to *Nymphidium caricae* (Linn) and *N. lisimon* (Stoll) as all share the sclerotized base of the transtilla.

Range and habits. *Nymphidium trinidad* ranges from the island of Trinidad across northern Venezuela south to Meta department, Colombia and into the upper Magdalena valley at Cunday. It is apparently unknown from the Guianas (C. Brévignon, **pers. comm.**) It inhabits disturbed humid tropical forest. At Cunday, Tolima, I observed a female ovipositing on *Inga coruscans* H & B. Males perch inside the forest edge from 1100 to 1400, resting under sunlit leaves with wings outspread.

Nymphidium smalli sp.n.

Figs 41-44, 68-70

Description. Male: head, thorax dark brown dorsad, white ventrad, abdomen white, appendages white; antennae with segments separated by white scaling, 58% forewing length; orbit and frontoclypeus brown with scattered white scaling; palpi white, protruding slightly beyond face when viewed dorsally. Forewing length of Holotype 17 mm. Dorsal surface: submargin and apex to base dark brown with some random infusion of orange scaling; discal area occupied by a white triangle with base on inner margin and apex reaching M2, pinched off in a ball along M3; distal margin wavy, discal cell containing two long spots outlined in white and a line at end of cell, and two others beneath in cell Cu2-2A, in subapical area are four small streaks between the veins; distad a submarginal row of black crescent spots outlined with a blue line distad and basad, and some scattered orange scaling between Cu2 and tornus; hindwing base dark brown, discal area white from costa to inner margin, submarginal and limbal areas dark brown, containing a large patch of orange scaling extending from distal and inner margin to apex where there are three black submarginal spots, and penetrating the brown limbal area along the veins; long white scent hairs found along inner margin; fringe brown. Ventral surface: same pattern as dorsad but lighter with white marginal spots on both wings in cells M3-Cu1 and Cu2-2A; submarginal red orange area of hindwing reduced to an irregular band connected to the white discal area by white lines along the veins; distad are black crescent marginal spots between the veins. Genitalia: (Fig. 68) uncus bilobed, prominent socci connecting tegumen and falces; vinculum very wide in middle; saccus wide, forming base for rami; valvae slightly truncated, tips wide, sclerotized, turned only slightly inwards, transtilla unsclerotized at base; aedeagus long, pointed, rami (Fig. 69) broad, slightly bifurcated and asymmetric, longer on right side posteriorad.

Female. Forewing length 16 mm, forewings shorter than male, palpi slightly dimorphic, female middle segment longer. Wing pattern same as male, except on hindwing, where red band is separated from distal margin by black crescent spots; margin orange, connected to orange band by orange scaling along the veins. Genitalia (Fig. 70) ostium bursae small with two sclerotized lateral flanges on either side of opening of ductus bursae, ductus sclerotized; corpus bursae with two large rounded signa.

Types. **Holotype**: male with label "Cerro Jefe, Panamá 2500", G. Small, collector" and a red Holotype label. **Paratypes**: 10 males, 5 females, Cerro Jefe, 800m Panamá, IV-71, leg. G. Small.

The holotype and a female paratype are deposited in the Allyn Museum of Entomology, Sarasota, Florida.

The paratypes are deposited in the collection of the author and the National Museum of Natural History (Smithsonian Institution), Washington, D.C., USA.

Etymology. This species is named in memory of my friend and colleague, the late Gordon Small who discovered it.

Diagnosis. *Nymphidium smalli* is close to *Nymphidium balbinus* of western Colombia, but differs from it in the lack of blue scaling on edge of white triangular area with apex completely separated, and orange area less extensive and lighter color. On the female of *N. balbinus*, the apex is not pinched, and the red darker and more extensive.

Range and habits. *Nymphidium smalli* inhabits subtropical humid forests, especially secondary growth in the Cerro Jefe where it forms the watershed of the Chagres river. The species is most common in April. Males perch from about 1430 to 1600. (Gordon Small, **pers. comm.**).

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