

NOTES ON THE GENUS *ARGYROGRAMMANA*, PART 2, WITH ONE NEW SPECIES (LEPIDOPTERA: RIODINIDAE)

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ABSTRACT.— The species of the *Argyrogrammana trochilia* (Westwood, [1851]) complex and *Argyrogrammana stilbe* (Godart, [1824]) complex (groups "Trochiliiformes" and "Stilbeiformes" respectively, of Stichel, 1911, 1930) are illustrated (including many type specimens), with notes on taxonomy and distribution. In addition, a new species (*A. pastaza* n. sp.) is described from the cloud forests of eastern Ecuador, and a revised classification is proposed for the entire genus *Argyrogrammana* Strand, 1932.

KEY WORDS: *Argyrogrammana pastaza* n. sp., *Baeotis*, Bolivia, Brazil, cloud forest, Clusiaceae, Colombia, Costa Rica, Ecuador, French Guiana, Guttiferae, hilltopping, hostplants, Neotropical, perching behavior, Peru, taxonomy.

The genus *Argyrogrammana* Strand, 1932, contains a number of species of Neotropical riodinids which are usually rare, often extremely similar in appearance, and occasionally quite variable. All species in the genus possess a thin gold or silver-blue submarginal line, traversing both wings on both dorsal and ventral surfaces, and often kinked basally in the forewing apex. In addition, all species appear to have a black medial stripe across the eyes, which may or may not appear on the frons. This combination of characters is unique among genera in the *incertae sedis* section (4 forewing radial veins) (*sensu* Harvey, 1987) of the Riodinidae, in which *Argyrogrammana* is currently placed.

The genus may be roughly divided into three main species complexes on the basis of external morphology. However, there are species intermediate between all these groups, and they are used here for the sake of convenience and are not intended to indicate any necessary monophyletic relationship between included species. The first group, the "*amalfreda* complex," we discussed in a previous paper (Hall and Willmott, 1995). This paper represents the second and concluding part of a review of *Argyrogrammana*, in which we critically examine the existing systematic arrangement and reassess the species diversity of the genus. Here we treat the "*trochilia* complex", characterised by banded females and often blue banded males, and the "*stilbe* complex," characterised by an orange or yellow dorsal surface mottled with small black spots (groups "Trochiliiformes" and "Stilbeiformes" respectively, of Stichel, 1911, 1930), illustrate many type specimens, and give notes on distribution, taxonomy and identification.

Among species of the "*trochilia* complex," we have found that the angle of the blue bands, the pattern of blue along the anal margin, and the shape of the silver submarginal line near the apex on the forewing dorsal surface are reliable characters for species diagnosis. Within the "*stilbe* complex," the precise pattern of

black spots in the forewing ventral surface apex and the shape of the silver submarginal line are both useful characters in identifying both males and females. The male genitalia are relatively homogenous, but some interspecific variation may be observed in the shape of the valvae and uncus. The diagnostic characters mentioned in each species account are consistent throughout the known ranges for all the specimens examined by us.

As a result of field work in Ecuador, it became apparent that there was a species in the "*trochilia* complex" from mid-altitude Andean cloud forest sites that was in need of description, and this is also formally described and named below. Finally, we present a new classification for the entire genus *Argyrogrammana*, incorporating information from our previous paper on the genus (Hall and Willmott, 1995).

Argyrogrammana Strand, 1932

Argyrogramma Stichel, 1910, preoccupied (Hübner, [1823])

"*trochilia* complex"

A. saphirina (Staudinger, [1887])

Fig. 1a,b. Male type, Río San Juan, W. Colombia (Zoologische Museum Humboldt Universität, Berlin, Germany, ZMHU).

Fig. 1c,d. Female type, Río San Juan, W. Colombia (ZMHU).

Fig. 15a-c. Male, nr. San Lorenzo, W. Ecuador (coll. of the authors).

Distribution: Panamá (Darién) - W. Ecuador.

This rare species is restricted to a rather small geographic range, where it can be found only in very wet lowland rainforest. It can immediately be distinguished from its close Amazonian relatives by its larger size and the interlocking pattern of blue squares towards the outer margins of both wings. The male genitalia are also distinctive (see Fig. 15a-c), with long pointed valvae which are joined at the tip by a sclerotized process (unique in the "*trochilia* complex"), and a pronounced bilobed uncus, in ventral view.

***A. trochilia* (Westwood, [1851])**

Fig. 2a,b. Male type, no locality data (Natural History Museum, London, England, BMNH).

Fig. 2c,d. Female, Pará, Brazil (BMNH).

Fig. 2e; 16. Male, nr. Tena, E. Ecuador (coll. of the authors).

Distribution: E. Colombia-Bolivia, Brazil (Amazon), Guianas.

Foodplant: *Tovomitopsis* sp., *Garcinia* sp. (Clusiaceae) (DeVries et al., 1994). These records may also be referable to *A. johannismarci* and/or *A. rameli*.

Although there is no specific type locality stated in the original description or accompanying the type specimen, it is clear from the heavy blue patterning on the hindwing dorsal surface that the type originates from the lower Amazon. Specimens from the base of the eastern Andes have the blue hindwing bands separate in the tornal area, and reduced orange submarginal lines on the forewing dorsal surface; these specimens might represent a distinct subspecies, but as we have seen no specimens from western Brazil we are unable to assess whether the observed differences are simply clinal. In addition, females from the base of the eastern Andes have wider white bands. *A. trochilia* can be quickly distinguished from other Amazonian congeners in this group by the steep (nearly vertical) blue transverse bands on the forewing, and by the blue line along the anal margin of the forewing dorsal surface, which joins the first three bands and then reappears below the fourth band (a "3-1 pattern") (see Fig. 14a). The male genitalia are rather distinctive in that the apical tip of the valve is sharply squared off, and slightly serrate (see Fig. 16).

***A. rameli* (Stichel, 1930)**

Fig. 3a. Male type (as figured in Meier-Ramel (1928)) Tefé, W. Brazil (*biblio*).

Fig. 3b,c; 17. Male, nr. Tena, E. Ecuador (coll. of the authors).

Fig. 3d,e. Female, Carimang River, Guyana (BMNH).

Distribution: E. Ecuador-Peru, Brazil (Amazon), Guianas.

This species was originally described by Meier-Ramel (1928) as *A. trochilia boyi*, but since this name is a junior homonym of *A. boyi* (Röber, 1926), Stichel (1930) proposed the replacement name *rameli*. However, this taxon was still regarded as a subspecies of *A. trochilia* until Brévignon and Gallard (1995) finally raised it to full specific rank. *A. rameli* shows little variation throughout its range, except that Peruvian specimens have slightly broader blue bands. *A. rameli* can be distinguished from the sympatric *A. trochilia* and *A. johannismarci* by the less steeply inclined forewing dorsal surface blue bands, and by the blue line along the anal margin of the forewing dorsal surface, which joins the first two bands and then appears again below the third band (a "2-1 pattern") (see Fig. 14b). The shape of the valvae of the male genitalia (Fig. 17) resembles that of *A. johannismarci*, but it is more elongate, and the uncus is deeper and bilobed in lateral view.

***A. johannismarci* Brévignon, 1995**

Male holotype, female allotype, Galion, Roura, French Guiana (coll. L. & C. Brévignon, LCB).

Fig. 4a,b. Male, Ecuador (BMNH).

Fig. 18. Male, nr. Tena, E. Ecuador (coll. of the authors).

Distribution: E. Ecuador-Peru, French Guiana.

The diagnostic characters for this recently described species are blue bands which traverse the forewing dorsal surface at an angle intermediate to that of *A. trochilia* and *A. rameli*, and a blue line along the anal margin of the forewing dorsal surface which joins

the first pair of bands and then the second pair of bands (a "2-2 pattern"). On the ventral surface of the forewing, the yellow band which is just basal to the submarginal silver line curves towards the apex as it nears the costal margin, instead of being straight (see Fig. 14c). The shape of the uncus, tegumen and valvae in the male genitalia (Fig. 18) differs from that of *A. rameli* (see above). *A. johannismarci* varies little throughout its range, although we have collected two specimens from Ecuador which appear to be melanic forms, both with little or no blue on the dorsal surface. *A. johannismarci* is the least well represented species of the *trochilia* species group in collections, and although Brévignon and Gallard (1995) designate and illustrate a female allotype for this species, its great similarity to their figure of female *A. trochilia* casts some doubt on its validity as the true female of *A. johannismarci*, and consequently we do not figure a female of this species, uncertain of its real identity.

***Argyrogrammana pastaza* Hall & Willmott, new sp.**

Fig. 5a-d; 19

Description.—MALE: forewing length 13mm. *Dorsal surface*: forewing ground color black; very thin silver-blue submarginal line; outer margin fringe black, white in 1A+2A, Cu₁, M₂ and M₁; five diagonal, broad, shining pale blue bands, all except the most distal extending from costa to 1A+2A; most distal band terminates at Cu₁; space between anal margin and 1A+2A entirely shining pale blue, from base to midpoint of the most distal blue band terminating at the anal margin. Hindwing ground color black; outer margin fringe black, white in 1A+2A, Cu₁ and M₂; very thin silver-blue submarginal line, bordered distally by a thin orange-brown submarginal line; five diagonal, broad, shining pale blue bands, all except the most distal extending from costa to 1A+2A; most distal band terminates at Cu₁; space between anal margin and 1A+2A entirely shining pale blue, from base to midpoint of the most distal blue band terminating at the anal margin. *Ventral surface*: forewing ground color pale yellow; very thin silver-blue submarginal line, which is kinked basally at M₁; more basal submarginal dark brown line extending and thinning from costa to Cu₂, where it surrounds the submarginal blue macula; four further diagonal dark brown lines extending from costa to anal margin, the most distal bordered distally in M₁ and M₂ by a dark brown patch with pale blue scaling; a small dark brown dash just basal of the cell end, between the second and third dark brown lines. Hindwing ground color pale yellow; very thin silver-blue submarginal line, bordered basally by a dark brown line; more basal submarginal dark brown line extending and thinning from costa to Cu₂, where it meets the submarginal dark brown line; four further diagonal dark brown lines extending from costa to anal margin. Labial palpi pale yellow, tip black. Eyes brown with a black medial stripe and bare. Frons pale yellow crossed by black stripe. Antennae black and banded with pale yellow, clubs black. Thorax and abdomen dorsal surface dark brown, thorax with shining blue scales, ventral surface brown. Legs pale yellow. Genitalia (Fig. 19): uncus and tegumen elongate, valvae slightly pointed and broad in lateral view.

FEMALE: not known with certainty (see discussion).

Types.—*Holotype* ♂: ECUADOR.—*Pastaza Prov.*, km 25 Puyo-Tena, Río Llandia, San José, 900m, 10 Sept 93 (K. R. Willmott); to be deposited in the BMNH.

Paratypes: ECUADOR.—1 ♂: same data as above; 2 ♂: *Tungurahua Prov.*, Río Machay, 1700m, 5 Feb 95 (J. P. W. Hall); 2 ♂: *Zamora-Chinchipec Prov.*, km 7 Zamora-Loja, Quebrada de Chorillos, 1250m, 3 Apr 95 (J. P. W. Hall); in the coll. of the authors. 3 ♂: *Napo Prov.*, km 16 Hollín-Loreto rd., 1200m, 46°S 77°41'W, 9 Nov 88 (R. Robbins); in the United States National Museum, Washington, DC, USA (USNM).

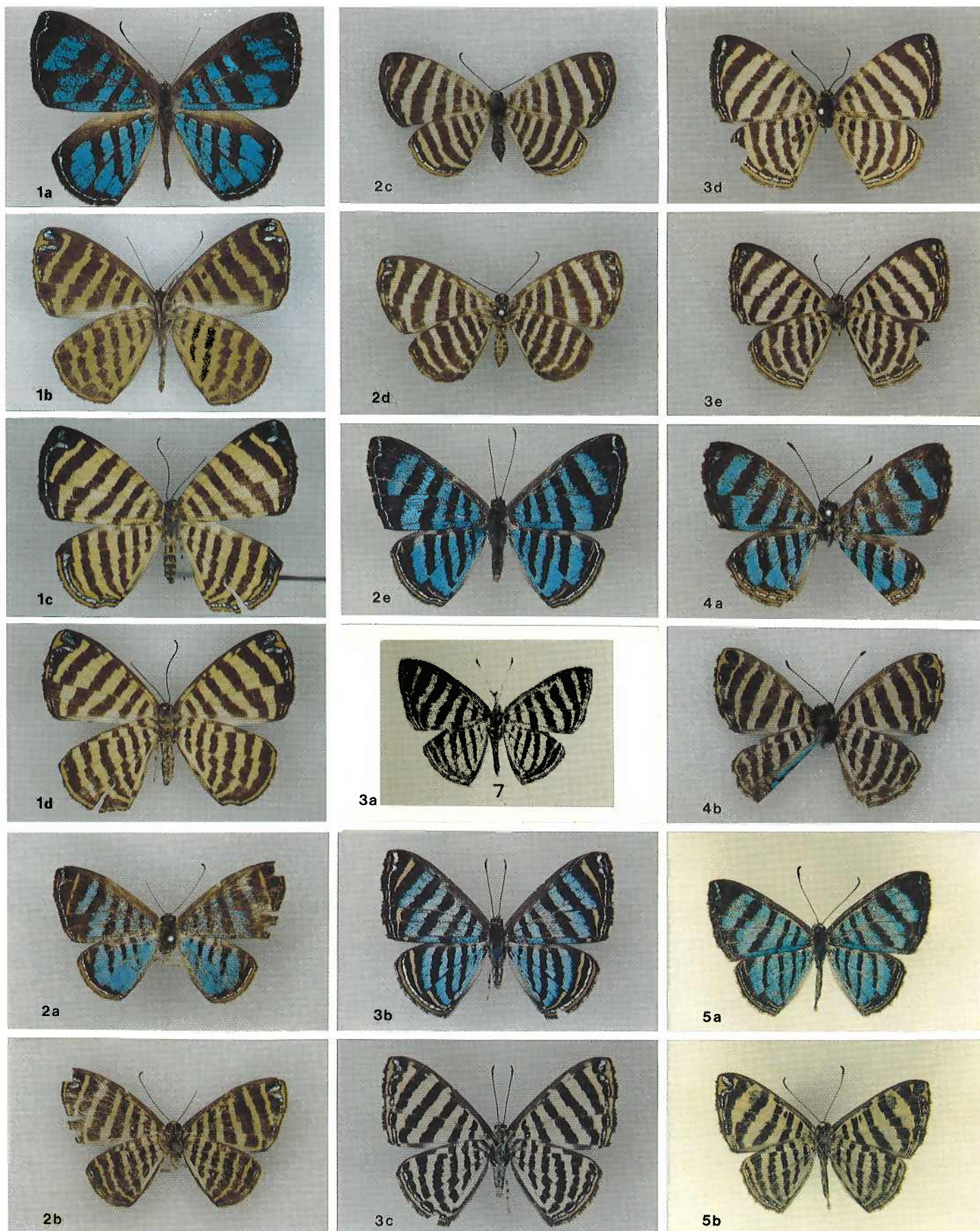


Fig. 1-5. 1. *Argyrogrammana saphirina*, type ♂: a) dorsal surface; b) ventral surface. Type ♀: c) dorsal surface; d) ventral surface. 2. *A. trochilia*, type ♂: a) dorsal surface; b) ventral surface. Brazilian ♀: c) dorsal surface; d) ventral surface. Ecuadorian ♂: e) dorsal surface. 3. *A. rameli*, type ♂, illustration in Meier-Ramel (1928): a) dorsal surface. Ecuadorian ♂: b) dorsal surface; c) ventral surface. Guianan ♀: d) dorsal surface; e) ventral surface. 4. *A. johannismarci*, Ecuadorian ♂: a) dorsal surface; b) ventral surface. 5. *A. pastaza* n. sp., holotype ♂: a) dorsal surface; b) ventral surface.



Fig. 5-9. 5. *A. pastaza* ♀ (tentative determination): c) dorsal surface; d) ventral surface. 6. *A. leptographia*, type ♂: a) dorsal surface; b) ventral surface. Ecuadorian ♀: c) ventral surface. 7. *A. glaucopsis virgata*, French Guianan ♂: a) dorsal surface. *A. glaucopsis glaucopsis*, type ♂: b) dorsal surface; c) ventral surface. Brazilian ♀: d) dorsal surface; e) ventral surface. 8. *A. subota*, type ♀: a) dorsal surface; b) ventral surface. 9. *A. placibilis*, type ♂: a) dorsal surface; b) ventral surface. Brazilian ♀: c) dorsal surface; d) ventral surface. *A. perone*, syntype ♂ (= *A. placibilis*): e) dorsal surface; f) ventral surface.

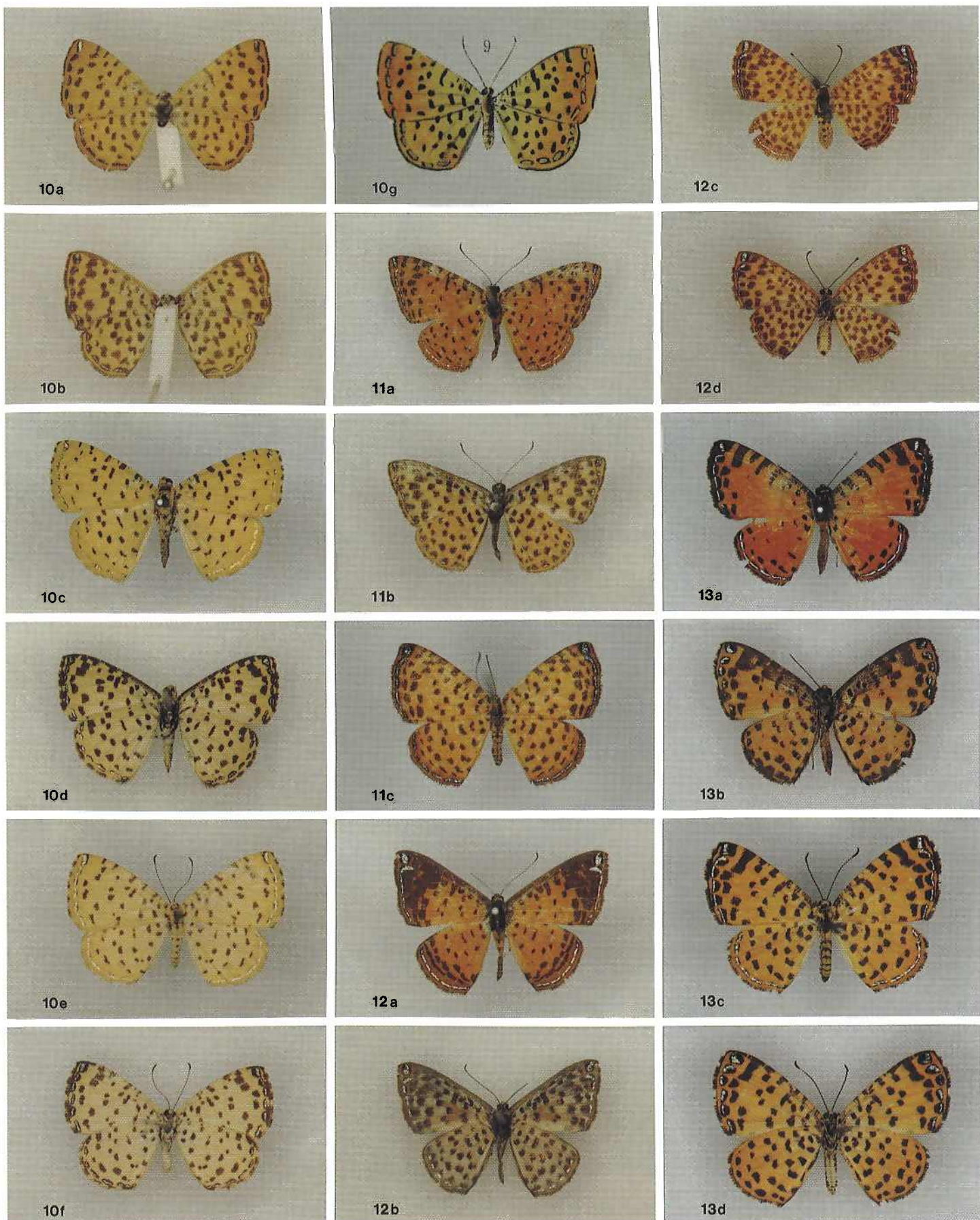


Fig. 10-13. **10.** *A. perone*, (type?) ♂ (= *A. stilbe stilbe*): a) dorsal surface; b) ventral surface. *A. holosticta*, type ♂ (= *A. stilbe holosticta*): c) dorsal surface; d) ventral surface. Panamanian ♀: e) dorsal surface; f) ventral surface. *A. perone*, type ♂ illustration in Westwood ([1851]) (= *A. stilbe stilbe*): g) dorsal surface. **11.** *A. sublimis*, Costa Rican ♂: a) dorsal surface; b) ventral surface. Brazilian ♀: c) dorsal surface. **12.** *A. occidentalis*, type ♂: a) dorsal surface; b) ventral surface. Guianan ♀: c) dorsal surface; d) ventral surface. **13.** *A. crocea*, type ♂: a) dorsal surface; b) ventral surface. Colombian ♀: c) dorsal surface; d) ventral surface.

1 ♂: Satzayacu, Apr 68 (R. de Lafebre); in the Allyn Museum of Entomology, Sarasota, FL (AME). 1 ♂: *Pastaza* Prov., La Victoria, Río Pastaza, 3500ft [1065m] (M. G. Palmer. Joicey Bequest 1934); 1 ♂: Puyo, 1000m, 17 Apr 50 (W. Clark-Macintyre) (fig. in D'Abrera (1994:1052) as *A. saphirina* ? forma ? subsp.); in the BMNH. 1 ♂: Baños; in the Musée Nationale d'Histoire Naturelle, Paris, France (MNHN). PERU.— 1 ♂: Pumayacu, Huallaga; 1 ♂: Chanchamayo; 1 ♂: La Merced; in the MNHN.

Etymology.— This species is named after the province of Pastaza, in which many of the type specimens, including the holotype, were captured.

Diagnosis.— *A. pastaza* n. sp. is very close in appearance to several other Amazonian species in the "*trochilia* complex", namely *A. trochilia*, *A. rameli*, and *A. johannismarci*. However, in *A. pastaza* the blue bands traverse the forewing at a lower angle than the bands of *A. trochilia* and *A. johannismarci*, thus most closely resembling those of *A. rameli*. The diagnostic characters which most easily separate *A. pastaza* from *A. rameli* and all others are: 1) the anal margin of the forewing dorsal surface has (in most specimens) blue coloration which joins all four transverse bands which reach this margin, 2) on the ventral surface of the forewing, distal to the cell end, there are two blue marks inset into a broadened transverse yellow band, 3) the outermost yellow band on the ventral surface of the forewing, proximal to the submarginal silver line, is very much reduced, and 4) there is a dark brown spot near the end of the forewing cell on the ventral surface. All of these diagnostic characters can easily be seen in the schematic comparative drawings in Fig. 14. The valvae of the male genitalia are also distinctive, being broad in lateral view with the upper edge turned over to create a lip all the way around.

Discussion.— This species is not uncommon in nature, and this is reflected by its representation in most major collections among jumbled "*trochilia*" material. We have found *A. pastaza* at several sites in eastern Ecuador in an altitudinal range of 900-1700m, always in association with cloud forest streamsides. Pairs or small groups of males can regularly be found perching on the same specific bushes, usually several meters above the water, between approximately 1400-1630h. Males are quite variable within Ecuador, some having slightly thinner blue bands and thin orange submarginal lines on the dorsal surface, thus resembling the Ecuadorian specimen of *A. rameli* figured here. The size of the blue markings on the forewing ventral surface distal to the cell end is also variable. As is true with all species in the genus, it is extremely difficult to match males to females with any certainty. However, there is one female specimen in our collection from "Shell, Río Pindo Grande, 1050m, Pastaza Prov., E. Ecuador, 12 Apr 95," which appears to be a plausible female of *A. pastaza* and is figured here, but not formally designated as an allotype. This female has a dark brown spot near the end of the forewing cell on the ventral surface, a diagnostic character of male *A. pastaza*, and the position and angle of the white transverse bands on the forewing are a very close match with the male holotype.

To date, we have only seen specimens of *A. pastaza* from Ecuador and Peru, but it seems likely that this species will eventually be found in suitable cloud forest habitats throughout the eastern Andes.

A. leptographia (Stichel, 1911), n. stat.

Fig. 6a,b. Male type, Río San Juan, W. Colombia (ZMHU).

Fig. 20. Male, Cana, Darién, Panamá (USNM).

Fig. 6c. Female, nr. Lita, W. Ecuador (coll. of the authors).

Distribution: Costa Rica to W. Ecuador.

A. leptographia is somewhat variable throughout its small geographic range, and the turquoise blue of the dorsal surface may be reduced compared to the type, giving the impression of distinct bands, or increased, blurring this banded effect. *A. leptographia* was originally described as a subspecies of *A. trochilia*; however, the very different ventral surface of *leptographia* when compared with *trochilia* (and indeed all other members of the "*trochilia* complex"), also reflected in the appearance of their respective females, indicates that the two are actually separate species. The female of *A. leptographia* is rare in collections and is figured here for the first time. While closely resembling the females of several species in the "*stilbe* complex," particularly *A. stilbe* itself, the almost linear arrangement of black spots in the distal half of the forewing is diagnostic of the female of *leptographia*, and is observed on the ventral surface of the male.

A. glaucopsis (Bates, 1868)

ssp. *glaucopsis* (Bates, 1868)

Fig. 7b,c. Male type, Ega, W. Brazil (BMNH).

Fig. 21. Male, nr. Tena, E. Ecuador (coll. of the authors).

Fig. 7d,e. Female, Ega, W. Brazil (BMNH).

Distribution: E. Ecuador-Peru, W. Brazil.

ssp. *virgata* Brévignon & Gallard, 1995

Male holotype, pk35, Route Nationale 2, Roura, French Guiana (LCB).

Female allotype, Aloiké, Maripasoula, French Guiana (LCB).

Fig. 7a. Male, French Guiana (BMNH).

Distribution: French Guiana, E. Brazil.

The recently described subspecies *A. g. virgata* differs from the nominate primarily by the reduced size of the blue forewing band, which does not extend into the tornus, and a slightly increased amount of orange in the basal area of the dorsal surface of both wings. Intergrades can be found in the lower Amazon region around Belém (Pará). As mentioned elsewhere (Hall and Willmott, 1995), *A. glaucopsis* appears to be most closely related to *A. praestigiosa* (Stichel, 1929), and together they probably form a distinct lineage within the genus, close to but distinct from the "*trochilia* complex".

A. subota (Hewitson, 1877)

Fig. 8a,b. Female type, nr. Gima, Ecuador (BMNH).

Distribution: E. Ecuador.

Despite efforts by the authors to locate this species in Ecuador, the female type still remains the only known specimen and it appears to represent a valid taxon for which the male has not yet been discovered. The female differs from all other species of *Argyrogrammana* in that the black spots in the basal half of the wings are arranged in lines, as in the "*trochilia* complex," while those in the distal half are not, as in the "*stilbe* complex." Thus the phylogenetic relationships between *A. subota* and other species in the complex, or indeed within the genus, are unknown. The type locality of Gima is a small village in southeast Ecuador at an altitude of approximately 3000m, but judging by the other

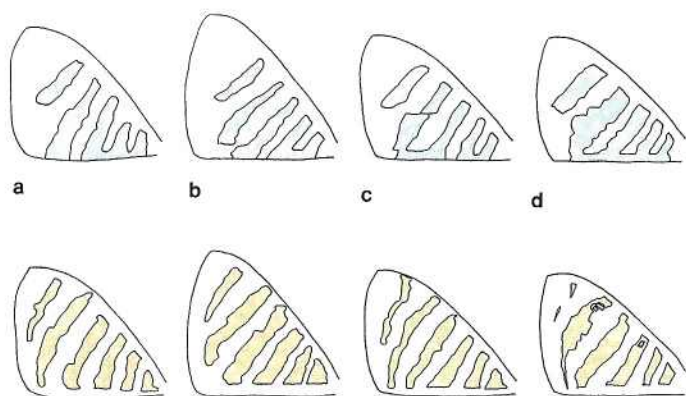


Fig. 14. Schematic drawings of male forewings for species in the *trochilia* sibling species group to aid identification (top line dorsal surface, bottom line ventral surface): a) *A. trochilia*. b) *A. rameli*. c) *A. johannismarci*. d) *A. pastaza* n. sp.

material collected by Mr. Buckley in this area and later described by Hewitson (1877), we predict that this species will eventually be rediscovered in east Andean cloud forest habitats from 1000-2000m.

"*stilbe* complex"

A. stilbe (Godart, [1824])

ssp. *stilbe* (Godart, [1824])

Male type, Brazil (type specimen lost).

= *perone* (Westwood, [1851])

Fig. 10g. Male type illustration (in Westwood, [1851]).

Fig. 10a,b. Male (type specimen ?), no locality data (BMNH).

= *holosticta orientalis* Brévignon & Gallard, 1995, n. syn.

Male holotype, Matoury, French Guiana (in coll. J.-Y. Gallard, JYG).

Female allotype, Montsinery, French Guiana (JYG).

Distribution: E. Colombia-Bolivia, Brazil (Amazon), Guianas.

ssp. *holosticta* (Godman & Salvin, 1878), n. stat.

Fig. 10c,d. Male type, Veraguas, Panamá (BMNH).

Fig. 23. Male, San Miguel de los Bancos, W. Ecuador (coll. of the authors).

Fig. 10e,f. Female, Matachin, Panamá (BMNH).

Distribution: Mexico-W. Ecuador.

Argyrogrammana stilbe is the type species for the genus, but unfortunately it appears that the type specimen is lost. This species is not mentioned by Callaghan (1995), who lists most of the riodinid types held at the MNHN in Paris (where Godart's other riodinid types are located), and a thorough search of both the old collection and the Fournière collection at the MNHN by the authors proved unsuccessful in locating the type specimen. A translation of the original French description in Godart ([1824]) for *Erycina stilbe* reads as follows: "It is small. The wings are in part yellowish and in part covered with a multitude of black spots, and a silver line near the margins. This line and the maculations continue on the underside. From Brazil."

The lack of a type specimen for this species has greatly complicated the taxonomy of the "*stilbe* complex". When Westwood ([1851]) described the second species of *Argyrogrammana* as *Charis perone*, only a quarter of a century later, he was clearly not familiar with the taxon *stilbe*, as he included it in a final section with other species unknown to him that he was unable to place to genera. Both of these taxa were described from

the lower Amazon, and in the Fournière collection in Paris *A. perone* (as treated in this paper-see below) is curated as *A. stilbe*, perhaps with pre-war knowledge of the identity of the type (it is thought (Callaghan, 1995) that some types in Paris might have been lost during the upheaval of the Second World War). These pieces of evidence add weight to the widely accepted view of earlier authors that *A. perone* is a synonym of *A. stilbe* (Seitz, [1917]; Stichel, 1930). However, there is also confusion regarding the identity of the type specimen of *A. perone*. Brévignon and Gallard (1995) incorrectly state that the type of *A. stilbe* is in the BMNH, in London, but they are presumably referring to the syntype of *A. perone* (designated by J. Pope at the BMNH in 1993), which as stated above is deemed to be synonymous with *A. stilbe*. The type illustration of *A. perone* (Fig. 10g), painted by Hewitson in Westwood ([1851]), does not resemble the aforementioned proposed syntype of *A. perone* (Fig. 9e-f). Instead, it bears a remarkable resemblance to another specimen in the BMNH (Fig. 10a,b), which unlike the proposed syntype even bears a Hewitson label. We suggest that this specimen may have been the very one from which Hewitson painted his type illustration. The "*perone* syntype" is in fact a specimen of *A. placibilis*, n. stat.

Godman and Salvin ([1886]) described *A. holosticta* on the basis that it was more yellow than its close Amazonian relative *A. perone*. Shortly after this, Staudinger ([1887]) noted that *holosticta* was probably only a "local form" of *perone*, a statement with which we agree, and as we believe *perone* to be synonymous with *stilbe*, we thus conclude that *holosticta* represents the Central American subspecies of *A. stilbe*. Central American specimens are a slightly lighter color and have heavier markings on the ventral surface. In fact, *holosticta* and *stilbe* appear to be rather weakly defined subspecies, and may prove not worthy of recognition. However, specimens from the base of the eastern Andes seem to have reduced brown spots on the ventral surface, and more material may indicate that this is a distinct, and new, subspecies. Perhaps as a result of the erroneous syntype designation mentioned above, Brévignon and Gallard (1995) described *A. holosticta orientalis* from French Guiana, unwittingly describing a synonym of *A. perone* which is in turn a synonym of *A. stilbe stilbe*.

A. stilbe is distinguished from phenotypically similar species by the rounded wings, the goldish submarginal line split into dashes which is not kinked basally in the forewing apex, and the non-linear pattern of black spots. The valvae of the male genitalia are long, thin, and triangular with a pointed tip (see Fig. 23).

A. sublimis Brévignon & Gallard, 1995, n. stat.

Male holotype, Galion, Roura, French Guiana (LCB).

Fig. 11a,b. Male, Costa Rica (BMNH)

Fig. 24. Male, Durango, W. Ecuador (coll. of the authors).

Fig. 11c. Female, Pará, E. Brazil (BMNH).

Distribution: Costa Rica-W. Ecuador, French Guiana, Brazil (Amazon).

No doubt due to the confusion over the types of *A. stilbe* and *A. perone* mentioned in the previous species account, this taxon was described as a subspecies of *A. stilbe*. In fact, *A. stilbe* is sympatric with *A. sublimis* throughout much of its range, including French Guiana. In the northeast of South America, *A. placibilis* is also sympatric with these two species and a female

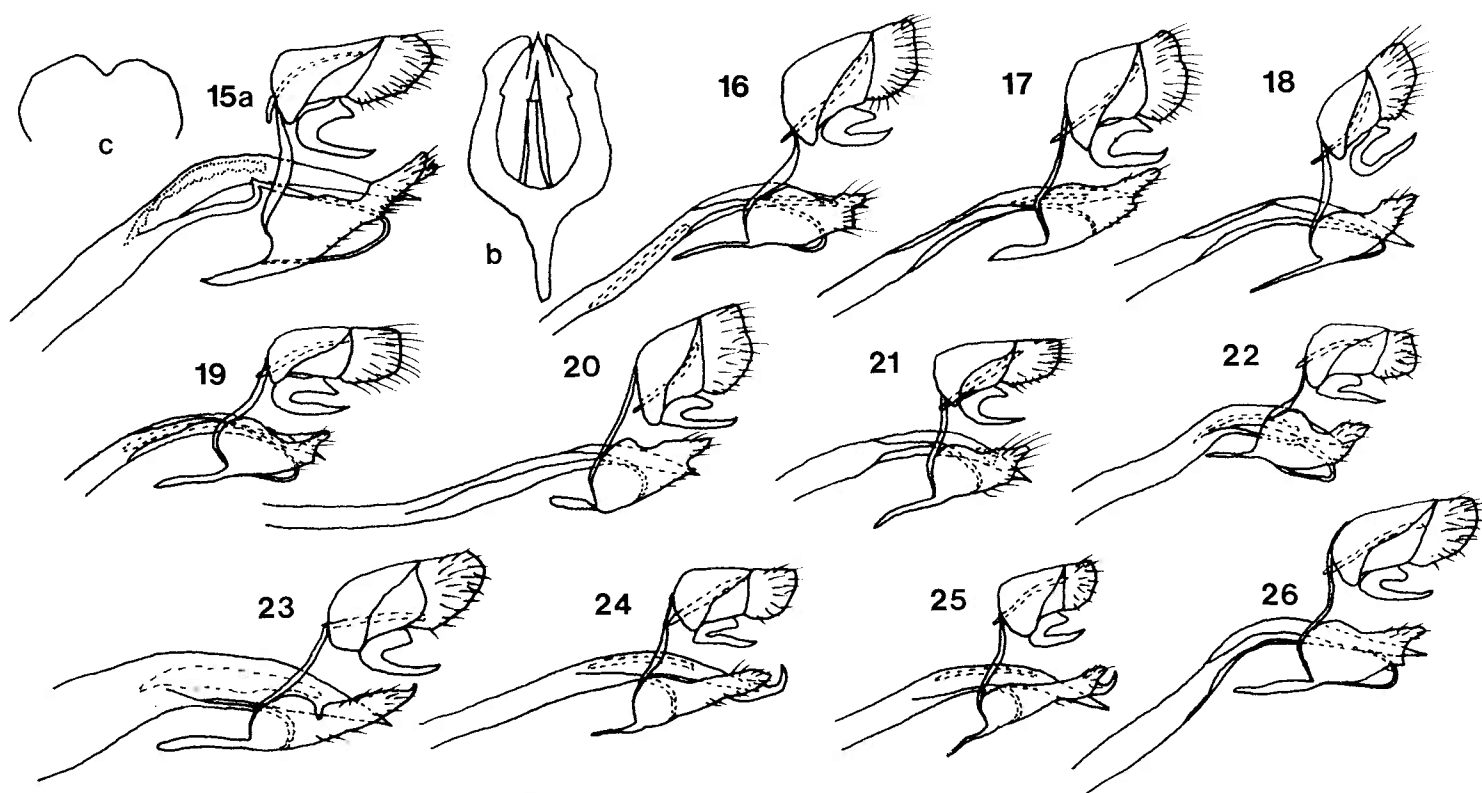


Fig. 15-26. Male genitalia (see text for capture locality of specimen): 15. *A. saphirina*: a) lateral view; b) ventral view; c) ventral view of uncus. Lateral views: 16. *A. trochilia*. 17. *A. rameli*. 18. *A. johannismarci*. 19. *A. pastaza* n. sp.. 20. *A. leptographia*. 21. *A. glaucopsis glaucopsis*. 22. *A. placibilis*. 23. *A. stilbe holosticta*. 24. *A. sublimis*. 25. *A. occidentalis*. 26. *A. crocea*.

of *A. placibilis* was erroneously designated as the allotype of *A. sublimis* by Brévignon and Gallard (1995). *A. sublimis* can be distinguished from *A. placibilis* in both sexes by having the most distal submarginal black spots in the apex of the forewing ventral surface small and separate, whereas in *A. placibilis* they are joined into a thick line. In *A. sublimis* this most distal line of spots joins the silver submarginal line near M_3 , whereas in *A. placibilis* it continues to the anal margin. In the male genitalia of *A. sublimis*, the valvae possess a characteristic hook at the tip (see Fig. 24) which is shared only with *A. occidentalis*. Male *A. sublimis* differs from *A. occidentalis* in the reduced black markings in the apex of the forewing dorsal surface, and in having a less kinked silver submarginal line in the apex of the forewing ventral surface. Otherwise the ventral surface patterns are very similar, and identifying females is difficult. However, we suggest that the female illustrated by Brévignon and Gallard (1995) as *A. occidentalis* is probably the real female of *A. sublimis*. This is based on the shape of the silver submarginal line, as observed in the male, and the fact that in *sublimis* the final three black submarginal spots on the forewing ventral surface are separated from the silver submarginal line, whereas in *occidentalis* they are partly fused to it. The appropriate females of the two species are tentatively illustrated in this paper according to the above diagnosis.

A. sublimis shows little variation throughout its range, although the only specimen known to us from west Ecuador has reduced black markings on the dorsal surface compared to the holotype illustration.

A. placibilis (Stichel, 1910), n. stat.

Fig. 9a,b. Male type, Juruty, Brazil (ZMHU).

Fig. 9c,f. Male syntype of *perone* (= *placibilis*), Pará, E. Brazil (BMNH).

Fig. 22. Male, Pará, E. Brazil (BMNH).

Fig. 9c,d. Female, Río Tapajós, Brazil (BMNH).

Distribution: Peru, Brazil (Amazon), French Guiana.

With few specimens and an incomplete knowledge of the distributional data for species in the "*stilbe* complex," Stichel described *placibilis* as a subspecies of *A. occidentalis*. Since it is now known that the distribution of these two species overlaps in the northeast of South America, it is clear that *A. placibilis* is a separate entity and it is here raised to full specific rank. *A. placibilis* may be distinguished from *A. occidentalis* in the same way as it is distinguished from *A. sublimis*, as discussed above. As mentioned in a previous species account, the syntype designated at the BMNH for *A. perone* is in fact *A. placibilis*. This specimen is morphologically typical for the species whereas the type of *A. placibilis* has unusually heavy black markings.

A. occidentalis (Godman & Salvin, [1886])

Fig. 12a,b. Male type, San Pablo, Río San Juan, W. Colombia (BMNH).

Fig. 25. Male, Cayenne, French Guiana (BMNH).

Fig. 12c,d. Female, French Guiana (BMNH).

= *juanita* (Staudinger, [1887])

Distribution: W. Colombia, Guianas, Trinidad.

A. occidentalis is a quite variable species, especially in the ground color of the ventral surface, which can vary from dark grey to light orange. The male of this species may be distin-

guished from similar species by the predominantly black apical area on the forewing dorsal surface. The female is extremely similar to that of *A. sublimis* and its diagnostic characters are discussed under the account for that species.

***A. crocea* (Godman & Salvin, 1878), n. stat.**

Fig. 13a,b. Male type, Calobre, Panamá (BMNH).

Fig. 26. Male, Calobre, Panamá (BMNH).

Fig. 13c,d. Female, Cananche, Cundinamarca, Colombia (BMNH).

Distribution: Nicaragua - W. Ecuador.

Foodplant: *Rheedia edulis* (Guttiferae) (Robbins and Aiello, 1982).

A. crocea was described as a subspecies of *A. venilia*, which was at that time only known from female specimens. Since the male of *A. venilia* is now known to be what Röber (1926) described as *A. boyi* (Brévignon and Gallard, 1995; Hall and Willmott, 1995), which is in the "*amalfreda* complex", we here raise *crocea* to full specific rank. *A. crocea* differs from all other members of the "*stilbe* complex" in having a thick black bar in the apex of the forewing dorsal surface, in both sexes.

SUMMARY

Bridges (1994) lists only 19 species in the genus *Argyrogrammana*, but as a result of field work in Ecuador and research done by the authors, and the timely concomittant work of Brévignon and Gallard (1995) in French Guiana, this number now totals 31. It is our hope that we have contributed in a small way to readdressing the imbalance of knowledge regarding the diversity of these elusive forest denizens. There are still further undescribed species known to the authors in the Smithsonian Institution (USNM) (work in prep., by D. Harvey), and there are undoubtedly more species awaiting discovery. However, below we present our current revised classification for the genus (we follow Bridges (1994) in using "-" to mean subspecies and "--" to represent a synonym). The taxon *sulphurea* Felder, 1869, is not included here since its genitalia indicate that it belongs in the tribe Riordini (*sensu* Harvey, 1987), which does not include *Argyrogrammana*. The external phenotype, genitalia and adult behavior are entirely characteristic of the genus *Baeotis* Hübner, [1819], and we formally remove it from the genus *Argyrogrammana* and designate it as *Baeotis sulphurea*, **n. comb.**

***Argyrogrammana* Strand, 1932**

alstonii Smart, 1979

amalfreda (Staudinger, [1887])

aparamilla Hall & Willmott, 1995

barine (Staudinger, [1887])

bonita Hall & Willmott, 1995

caelestina Hall & Willmott, 1995

caesarion Rebillard, 1958

celata Hall & Willmott, 1995

chicomendesi Gallard, 1995

crocea (Godman & Salvin, 1878), **n. stat.**

denisi Gallard, 1995

glaucopis (Bates, 1868)

- *virgata* Brévignon & Gallard, 1995

johannismarci Brévignon, 1995

leptographia (Stichel, 1911), **n. stat.**

natalita Hall & Willmott, 1995

nurtia (Stichel, 1911)

- *ludibunda* Brévignon & Gallard, 1995

occidentalis (Godman & Salvin, [1886])

-- *juanita* (Staudinger, [1887])

pastaza Hall & Willmott, 1996, **n. sp.**

placibilis (Stichel, 1910), **n. stat.**

physis (Stichel, 1911)

- *phyton* (Stichel, 1911)

praestigiosa (Stichel, 1929)

pulchra (Talbot, 1929)

rameli (Stichel, 1930)

saphirina (Staudinger, [1887])

sebastiani Brévignon, 1995

sticheli (Talbot, 1929)

stilbe (Godart, [1824])

-- *perone* (Westwood, [1851])

-- *orientalis* Brévignon & Gallard, 1995, **n. syn.**

- *holosticta* (Godman & Salvin, 1878), **n. stat.**

sublimis Brévignon & Gallard, 1995, **n. stat.**

subota (Hewitson, 1877)

trochilia (Westwood, [1851])

venilia (Bates, 1868)

-- *boyi* (Röber, 1926)

-- *amazonica* (Meier-Ramel, 1928)

ADDENDUM.— In Hall and Willmott (1995), the illustrated type of *A. alstonii* Smart, from the BMNH, is a paratype. The phenotypically identical holotype is in the AME and has the following label data: Trinidad, Cumberland Hill, 10 Dec 1977 (E. Rooks).

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