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A PRELIMINARY REVISION OF THE GENUS *NYMPHIDIUM* (RIODININAE)

Part II The *azanoides* Complex

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The *azanoides* complex consists of a single species which is intermediate between the *mantus-baoetia* complex and the more recently evolved groups. The male genitalia retain the simple valvae, skewed rami and small point between the lobes of the uncus. However, the lobes of the uncus are rounded as in the more "modern" groups. Superficially *azanoides* may be recognized by its large size (forewing length often exceeding 20 mm), and the white triangular area of the forewing, which is serrate, being "stepped" between the veins. Another character is the palpi, which are sexually dimorphic, the third segment of the male palpi being slightly over half that of the female.

I recognize three subspecies, which may be separated by the following key:

- 1a. Dorsad, white triangular area of forewing reaching to M_3 ; red submarginal lines from inner angle basad of black crescent spots on both forewing and hindwing limited to a thin, broken line in both sexes *azanoides* Butler
- 1b. Dorsad, white triangular area of forewing reaching beyond M_3 ; red submarginal lines from inner angle basad of black crescent spots on forewing and hindwing wider in both sexes 2
- 2a. Apex of white triangular area of forewing separated along M_3 ; submarginal red lines in male limited to submarginal area basad of crescent spots in hindwing, but following their contour. Female with submarginal red band 2 mm. wide, extending from close to inner margin to M_2 , with small orange spots on forewing Cu_2-2A *occidentalis*, n. ssp.
- 2b. Apex of white triangular area of forewing not separated along M_3 ; submarginal lines light, irregular, varying from 1-3 mm. in both sexes, extending from inner margin nearly to costa in hindwing and often to M_2 *amazonensis*, n. ssp.

Nymphidium azanoides ranges from northern Argentina (Salta) to Costa Rica, throughout the lowland tropical areas (Fig. 3). The subspecies have a very interesting geographical distribution. The nominate subspecies inhabits the extra Amazonian tropical regions of southeast Brazil to Argentina, then north up the foothills of the Andes to Colombia, Venezuela and Trinidad. The lowland areas of the Amazon Valley are inhabited by *amazonensis*. The subspecies *occidentalis* is found on the Pacific slope of Columbia north to Costa Rica.

The terminology and discussions of each of the subspecies follow the format outlined in the Introduction (Part I) (Callaghan 1985).

***Nymphidium azanoides azanoides* Butler**

N. azanoides Butler, 1867, p. 221

N. lisimon H. W. Bates, 1868 (not Stoll, 1791): p. 452, Herr. Schäffer, 1868, p. 129

N. azan Doubleday, 1847 (not Westwood, 1851): p. 10

N. molpe Godman & Salvin 1886 (not Hübner, 1808): p. 473

ORIGINAL DESCRIPTION: "Wings above brown, median area with a white triangle reaching to the first discal nervule. On the margin, an undulating grey-white line outlining crescent-shaped spots; on the hindwing, a reddish interrupted line. Thorax brown, abdomen white. Antennae brown. Underside paler, with black marks and grey submarginal line, the rest as on the upper surface.

Female with upperside brown, white median band inward side irregular, terminating beyond the cell, the black marginal spots surrounded by grey lines which are elongated towards the base. Beyond the margin there is a reddish line starting at the anal angle. Body brown, abdomen white, antennae brown. Underside very pale, median band irregular, marginal spots black. The rest as above, body white. 2 examples, male Brazil, female Para."

To Butler's description I add: Palpi sexually dimorphic; third distal segment of female nearly twice as long as that of the male. White triangular area on forewing with serrated edge, in form of steps between the veins, particularly pronounced in male, less so in female. Forewing length (FWL), 21 mm.

GENITALIA: Male (Fig. 13) with lobes of uncus rounded and small point between them. Valvae simple, turned inwards with sclerotized, pointed tip. Rami (Fig. 14) small with point rounded, and slightly skewed to one side. In females (Fig. 15) ductus bursae tubular with caudal portion rounded, cup shaped, with thickened walls. Signae pointed, with ductus seminalis attachment on sclerotized portion.

TYPE MATERIAL: Through the kindness of Mr. Ackery of the British Museum, I received a slide of the syntype of *N. azanoides*. The label attached to the specimen only indicates "Butler Type" with a smaller one on which is written the number 2480b. There is no reference to locality. The specimen itself is quite different from Brazilian specimens I have seen, but similar to those from Panama, in which the white triangular area of the forewing extends beyond M_3 , usually being pinched off in a small ball (Fig. 3). In this respect also, it does not fit Butler's description. There is a female in the British Museum collection with the label "azan" and another "syntype *N. azanoides* det. P. Ackery." This female, however, is not that of *azanoides*, but of *Juditha molpe* (Hübner).

DISCUSSION: The nominate subspecies may be easily separated from *amazonensis* and *occidentalis* by the white triangular area of the forewing, which rarely ever passes vein M_3 , and by the reduced, dark red lines on the tornus of the hindwing, rarely extending to the forewing in the males. The females have rounded wingtips, a wider white triangular area on the forewing, and the orange lines of the tornus may be slightly longer, although in some specimens they may be totally lacking.

The habitat of *N. azanoides azanoides* is forest, where the males may be found perching 1-3 m. above the ground, in the afternoon from about midday to 5 o'clock in forest clearings or inside the woods edge. The females are rarer, being encountered in the woods in the afternoon flying from leaf to leaf in search of oviposition sites, sometimes high in the trees.

DISTRIBUTION: *N. azanoides azanoides* (Map 1) is found up the Brazilian coast from Santa Catarina to Bahia, across the Planalto and Parana river basins to northern Argentina (Salta) then north along the foothills of the Andes to eastern Colombia, Venezuela and Trinidad.

MATERIAL EXAMINED: BRAZIL: Santa Cruz, ES. 1 ♂, 2 ♀; Linhares, ES. 1 ♂, 1 ♀; Rio das Ostras, RJ. 1 ♀; 8 km north Barra Itapemirim, ES. 1 ♂, 1 ♀; km 235 Belo-Brazilia, MG. 1 ♂, 1 ♀; Paracatu, MG. 1 ♂, 1 ♀; Sao Joao del Rey, MG. 4 ♂, 1 ♀; km 490, Belo-Brazilia, 1 ♀; km 390 Belo-Brazilia, MG. 3 ♂; CEPLAC, Barrolandia, Bahia 1 ♂; Serra Dourada,

Goias. 1 ♂, 1 ♀; Belem-Brazila, km 40, Goias, 1 ♂; Ubata, Bahia 1 ♂, 1 ♀; Barao de Melgaco 1 ♂; Alto Paraguay, MG. 1 ♂; ARGENTINA: Pichanal, Salta, 1 ♂; PERU: Tingo Maria, 4 ♂; Juanjui, SM 1 ♂; Rio Saniria, Est. Biol. Pithecia, 180 m, LO. 1 ♂; Boca Rio La Torre, MD 300 m, 1 ♂; COLOMBIA: Villavicencio, Meto 6 ♂, 2 ♀; TRINIDAD: 1 ♂

Nymphidium azanoides amazonensis, new subspecies

DESCRIPTION: Male, with white triangular area of forewing extending slightly past M_3 but never cut off, as in *occidentalis*. Submarginal line yellow-orange up to 2 mm wide, and extends from the tornus to the costal margin of the hindwing and from the tornus to Cu_1 in the forewing. Ventrally the orange scaling permeates the greater part of the brown limbal area. General shade of the underside lighter than in *azanoides*.

Forewing length of HOLOTYPE 21.5 mm (Fig. 8).

Female, with white discal area narrower than in the nominate ssp. Submarginal lines light orange-yellow, irregular and wide (2.5 mm); on hindwing reaching from tornus to the costa, and to M_3 on the forewing. This extensive orange scaling is reflected on the ventral surface.

Forewing length of female (average) 20 mm. (Fig. 10).

GENITALIA: As in nominate subspecies (Fig. 13-15).

TYPE MATERIAL: Holotype, Sao Paulo de Olivencia, Amazonas, Brazil, MN57.255. The Allotype from the same locality. The Holotype will be placed in the Museu Nacional, Rio de Janeiro, Brazil, and the Allotype and Paratypes in the Allyn Museum, Sarasota, Florida and in the author's collection.

DISCUSSION: *N. azanoides amazonensis* may be easily separated from the other two subspecies of *azanoides* by the wide submarginal orange bands in the fore- and hindwings. The orange bands are quite variable within populations, sometimes being fuller in some individuals than others. It inhabits the forests of the Amazon basin where the males may be found perching in small clearings or "treefalls" during the afternoon hours. I have never found *amazonensis* in numbers, one or two being a good day's catch. It appears to be rare throughout its range.

DISTRIBUTION: (Map 1) *N. azanoides amazonensis* ranges throughout the lowland forested areas of the Amazon Basin, from Para, Brazil, to Ecuador and Colombia, and south to Rondonia, Brazil.

MATERIAL EXAMINED: BRAZIL: Benjamin Constant, Amaz. 1 ♂; Manaus, Amaz. 1 ♀; Belem, Pa. 1 ♂; Cuiaba-Santarem km 1666, Pa. 1 ♂; Jaru, Ro. 5 ♂, 2 ♀; Itaituba. Pa. 1 ♂; Manicore, Amaz. 2 ♀; PERU: Iquitos, 1 ♂; ECUADOR: Rio Napo, Limoncocha 1 ♂; COLOMBIA: Leiticia, Amaz. 1 ♂.

Nymphidium azanoides occidentalis, new subspecies

DESCRIPTION: Male (Fig. 9, 10) differs from nominate species in that the white triangular field of the forewing extends beyond M_3 with the apex separated to form a small ball between M_3 and M_2 , by the lowest of the four subapical spots. Submarginal dark red line on hindwing extends from tornus to M_2 .

Female (Fig. 11, 12) with submarginal orange band on hindwing, continuous from just inside tornus to M_2 , about 2 mm wide. Small variable spot of orange scaling between $2A$ and Cu_1 on forewing.

GENITALIA: Identical to nominate subspecies.

TYPE MATERIAL: Holotype with label "Pina, Canal Zone; King, coll Allyn Museum", and a red label "Holotype *N. azanoides occidentalis*, C. Callaghan".

DISCUSSION: *N. azanoides occidentalis* represents the western and northern limits of the range of *azanoides*. The males can be easily separated by the reduced red bands and the apex of the white triangular area separated along M_3 . The females are intermediate with the red more extensive than on *azanoides*, but less than *amazonensis*.

N. azanoides azanoides is local, but common in the lower elevation forest in the Canal Zone and Pacific coastal plain in Colombia where the males are particularly fond of hilltopping. I have observed them perching in the trees 5 - 10 meters off the ground between

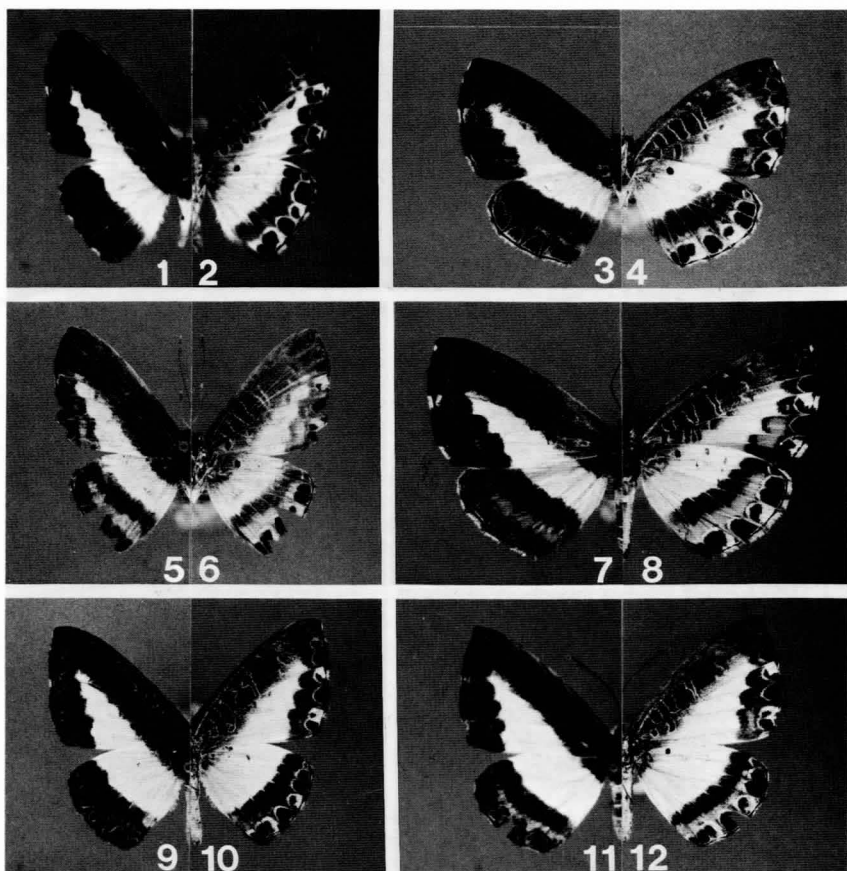
12:00 and 15:00. They have a rapid, jerky flight, and spend much time chasing each other. The females remain in the shadows of the woods, where, during the afternoon hours, they may be observed flying from leaf to leaf near the forest floor. When males are scarce the females can also be found congregating on hilltops. This behavior contrasts with that of both *azanoides* and *amazonensis*, which perch in the woods edge and small forest clearings, but in my experience, never on hilltops. This is true, even when hilltops have been available, such as on the Brazilian Planalto or eastern Colombia.

DISTRIBUTION: (Map 3): *N. azanoides occidentalis* is found from Costa Rica and Panama south to the Choco and the Ecuadorian border in Colombia. Strangely, it is apparently absent from the interandean valleys in Colombia.

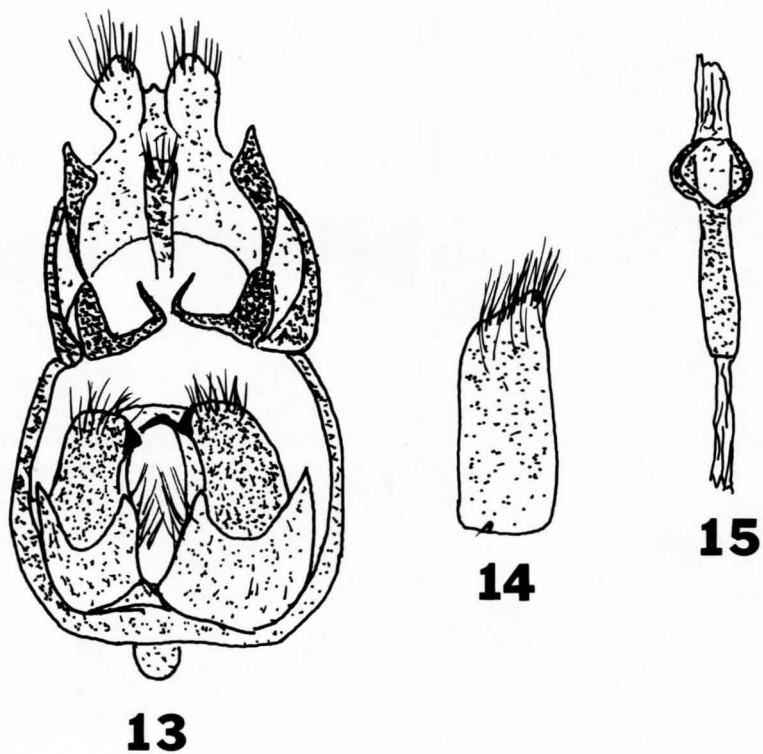
MATERIAL EXAMINED: PANAMA: Pina, Canal Zone, 31 ♂, 2 ♀; Gamboa, Canal Zone, 3 ♂, 1 ♀; 3 mi E. El Llano, Panama Prov. 1 ♀; COSTA RICA: La Selva, 1 ♀; COLOMBIA: Aqua Claras, Valle (Rio Anchicaya) 3 ♀.

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Figures 1-12: *Nymphidium azanoides*. 1-4: *N. a. azanoides* ♂ (1-2), upper (1) and under (2) surfaces and ♀ (3-4), upper (3) and under (4) surfaces. 5-8: *N. a. amazonensis*, n.ssp., ♂ Paratype (5-6), upper (5) and under (6) surfaces; and ♀ (7-8), upper (7) and under (8) surfaces. 9-12: *N. a. occidentalis*, n.ssp., ♂ Holotype (9-10), upper (9) and under (10) surfaces; and ♀ Allotype (11-12), upper (11) and under (12) surfaces.



Figures 13-15: genital structures of *Nymphidium azanoides*; 13, ♂ genitalia, ventral view; 14, ♂ rami; 15, ♀ ostium bursae, ventral view.

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