

**Beatheclus beatrizae, a new eumaeine species
and genus from Colombia
(Lepidoptera: Lycaenidae, Eumaeini)**

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Abstract – *Beatheclus beatrizae* sp. n. is described on the basis of 50 male and 1 female specimens (type locality: 2200 m, San Antonio, Rio Aguacatal, Valle, Colombia). The new species has distinctive dorsal ground colour, ventral pattern and male genitalia. *Beatheclus* gen. n. (type species: *Beatheclus beatrizae* sp. n.) is erected on the basis of male genital and wing pattern characters, and is placed in the *Panhiades* Section sensu ROBBINS. With 13 figures and one table.

Key words – South America, Eumaeini, *Panhiades* section, aedeagus, structural colour, new species, new genus.

INTRODUCTION

During extensive field work in Colombia a large lycaenid species was discovered in the San Antonio area of province Valle. It was immediately recognised that the species belongs to the *Panhiades* lineage of the Eumaeini, because of the wing pattern and dorsal forewing androconia. However, its generic placement aroused controversy: none of the genera of the *Panhiades* Section as defined by ROBBINS (2004: 277) offered a convincing solution. The male phenotype has a relatively large circular scent pad in the apex of the forewing discal cell like *Michaelus phoenissa* (HEWITSON, 1867) ROBBINS, 2004 (Figs 1–2), but the wing shape, dorsal ground colour, and ventral pattern diverge from *Michaelus* NICOLAY, 1979 (type species: *Thecla vibidia* HEWITSON, 1868). All the other *Panhiades* Section genera are more different in wing shape, colouration and pattern, or their combina-

tions, but a similarly ciliated lobe suggested some relationship with the genera *Panhiades* HÜBNER, 1819 (type species: *Papilio pelion* CRAMER, 1775), *Porthocla* ROBBINS, 2004 (type species: *Thecla porthura* H. H. DRUCE, 1907), *Thepytus* ROBBINS, 2004 (type species: *Thecla epytus* GODMAN et SALVIN, 1887), *Oenomaus* HÜBNER, 1819 (type species: *Papilio narbal* STOLL, 1790), *Parrhasius* HÜBNER, 1819 (type species: *Papilio polibetes* STOLL, 1871), *Ignata* JOHNSON, 1992 (type species: *Ignata ignobilis* JOHNSON, 1992) and *Olynthus* HÜBNER, 1819 (type species: *Papilio narbal* STOLL, 1790) (Figs 3–4).

However, the greatest controversy has been stirred up by the male genitalia (Figs 5–8). It is not as stout as ROBBINS indicated for *Panhiades* genera (we understand the word “stout” also means that its is rather difficult to take out the heavily sclerotised and rigid male genital capsule from the abdomen), plus the vinculum is associated at its anterior end with a pair of brush organ, which is attached also to the last abdominal segment with a membrane, plus the posteriorly upturned aedeagus possesses a complex terminus. We are of the opinion that this species represents a hitherto unrecognised lineage of the *Panhiades* Section, and because of the peculiar genital characters, distinctive wing colouration and pattern, we erect a new genus for it.

Consequently, the present paper has the purpose to formally describe this species and place it in the *Panhiades* Section as a distinct genus.

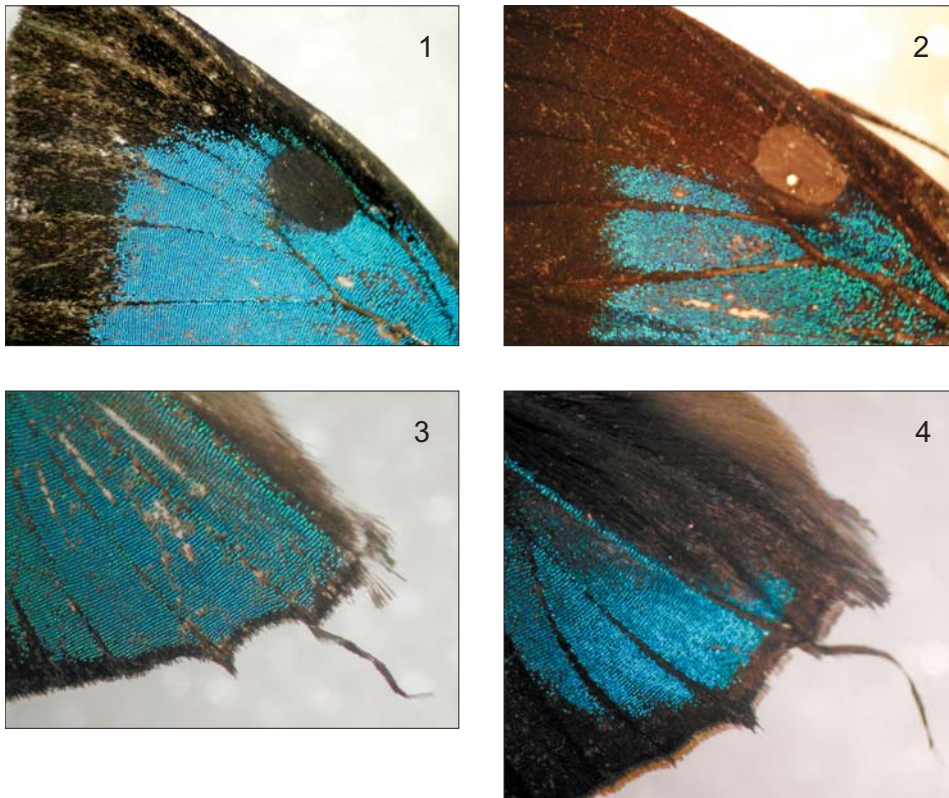
Beatheclus gen. n.
(Figs 1, 3, 5–12)

Type species – *Beatheclus beatrizae* sp. n., herewith designated.

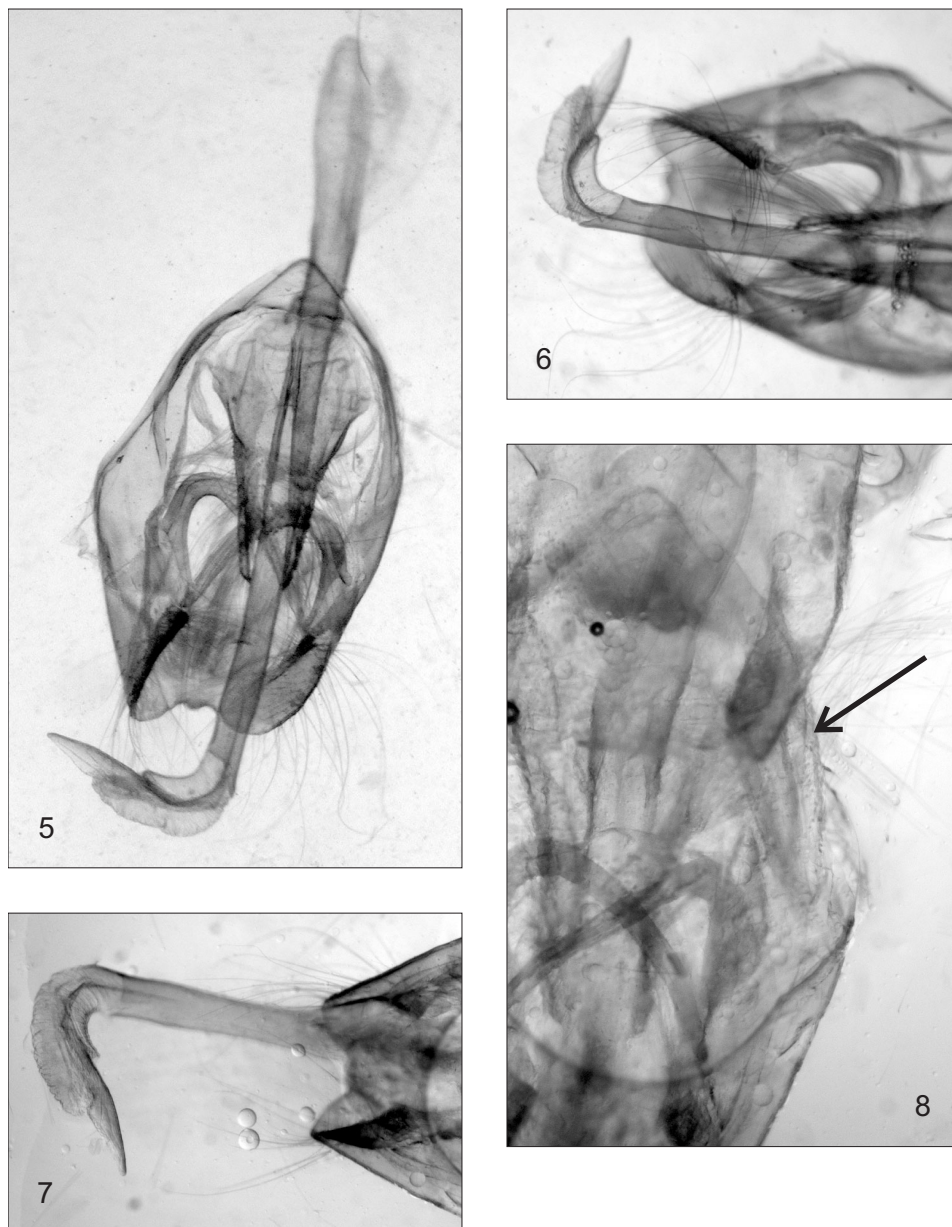
Diagnosis – *Beatheclus* shares the following characters of the *Pathiades* Section: (1) genitalia with a broad vinculum (Fig. 5), (2) vinculum with groove in the outer edge (Figs 5, 8), (3) dorsal forewing scent pad centered on the middle and upper disco-cellular veins (Fig. 1) and (4) hindwing tornus with long ciliation (Fig. 3). *Beatheclus* is distinguished by (a) its distinctive dorsal ground colour (Figs 9, 11), (b) submedian forewing ventral pattern (Figs 10, 12) and (c) male genitalia with brush organ (Fig. 8) and complex posterior terminus (Figs 5–6).

Remarks – The species *Porthocla barba* (H. H. DRUCE, 1907) ROBBINS, 2004 and some of its close relatives possess somewhat similar dorsal colouration, but *Porthocla* structural colour turns violet blue at 45° incidence, while *Beatheclus* becomes more reflective keeping the original colour. The ground colour of *Thepytus arindela* (HEWITSON, 1874) ROBBINS, 2004 also seems to be similar, but again it turns blue with decreasing incidence. In *Panhiades* Section all the genera possess

either medial or submarginal pattern in forewing ventra. The *Beatheclus* forewing ventral pattern is submedial. The only *Panthiades* Section species possessing a brush organ is *Thepytus epytus* (GODMAN et SALVIN, 1887) ROBBINS, 2004 according to ROBBINS (2004: 280). The brush organ of *Beatheclus* is attached to the anterior edge of the dorsal vinculum and the last segment of the abdomen by a membrane; the hair pencils are scattered and not numerous. The brush organ of *Thepytus epytus* possesses dense hair pencils that are situated in the middle side of the vinculum and are not attached to the abdomen. The upturned posterior aedeagus of *B. beatrizae* is also unique: it is a membranous tube with bellows turned anteriorly by 90 degree supported by a single sclerotised cornutus, turned also by 90 degree anteriorly providing a flat basis. Because of the similarly large size and identical dorsal forewing scent pad, we place the genus after the *Panthiades* Sec-



Figs 1–4. 1–2 = Forewing androconial scent pads: 1 = *Beatheclus beatrizae* sp. n., 2 = *Michaelus phoenissa* (HEWITSON, 1867). 3–4 = Hindwing tornal ciliations: 3 = *B. beatrizae* sp. n., 4 = *M. phoenissa* (HEWITSON, 1867)



Figs 5–8. *Beatheclus beatrizae* male genitalia. 5 = entire organ in ventral view, 6 = posterior aedeagus in ventral view, 7 = posterior aedeagus in lateral view, 8 = genital capsule (arrow indicating the brush organ)

tion genus *Michaelus*. We remark that the genera from *Panthiades* to *Michaelus* possess a conspicuously ciliated hindwing lobe, which is probably a character indicative of their closer relationship (Figs 3–4). However, we are not satisfied with this placement. It is also necessary to study the female for further characters, which either confirms or falsifies our hypothesis that the taxon belongs to the *Panthiades* monophyly.

***Beatheclus beatrizae* sp. n.**

(Figs 9–12)

Type material – Holotype male, deposited in the Instituto de Ciencias Naturales de la Universidad Nacional en Bogotá, Colombia, with the printed label: “Colombia // Valle: // R. Agucatal // S. Antonio // 11.6.2004 // 2200 m [vertical]” (Figs 9–10). The data of 50 male and one female paratype (Figs 11–12) specimens are listed in the Appendix 1.

Diagnosis – With the metallic green forewing dorsum this taxon is unique in the *Panthiades* Section. It is also unique because of having a male genital brush organ situated at the anterior part of the male genital vinculum. The male genital aedeagus is uniquely structured posteriorly (see above). The green *Michaelus* (sensu ROBBINS) species with similarly large discal scent pad is *M. phoenissa*, which possesses deeper, almost blue dorsal structural colour, strongly changing reflectivity according to incidence. All the other *Michaelus* species are lighter blue dorsally. In *phoenissa* the black marginal band reaches the discalis, while in the case of *B. beatrizae* it is restricted to marginal and submedian areas. The forewing ventral pattern is medial in *M. phoenissa*, while this is submedial in *B. beatrizae* (c.f. D’ABRERA 1995: 1179, figures “T. (? P.) phoenissa”).

Description – Male: forewing length measurement based on 50 paratypic specimens and varies between 16–22 mm with a mean of 20.1 mm; with standard deviation of 1.3 mm.

Dorsal wing colouration and pattern: Forewing metallic greenish blue with high reflectivity. Androconial scent pad circular, large and filling discoidal cell distal apex. Veins standing out sharply. Forewing black marginal border 3–4 mm wide; costal, submedial and apical areas also black. Hind wing vein Cu1 terminus with short (< 1 mm), vein CuA2 with longer (> 3mm) filamentous tail, ciliae short but in tornal area conspicuously long. Veins standing out, distally with black scaling. Ground colour as that of in forewing, costa and apex black, marginal border black and thin. Ventral wing colouration and pattern: Forewing grey with structural reflectivity between costa and vein CuA1. Submedial intercellular area between costa and CuA1 with narrow white lines. Submarginal pattern crescent shaped but faint, antemargin dark grey, margin white with dark ciliae. Hindwing with forewing ground colour, but different pattern: cell Sc+R1 with subbasal and antemarginal white line; intercellular shapes between veins R1 to CuA1 with a continuous straight submedian white line; white patterns between veins CuA1 and anal margin displaced distally or basally; submargin with intercellular white crescent pattern supplemented by an orange spot with black

iris in cell CuA1 and by a faint blue spot in cell CuA2; antemargin and margin as in forewing, but tornus white with black marginal spot and long ciliation. Body. Head: vertex black with white central streak, antennal club rufous. Thorax: gleaming green dorsally, grey ventrally with normal eumaeini legs. Abdomen dark grey dorsally, lighter grey ventrally with pubescent like scales. Genital capsule typical eumaeine shaped: in lateral view vary flat and narrow, but broad in dorsal view, with sclerotized vinculum and uncus without saccus, ganthos curved and pointed posteriorly, valvae sclerotized with posteriorly pointed apices, aedeagus very long with upturned posterior terminus with tubular bellows and enlarged cornutus (see above). Female: as male but without androconia.

Etymology – The genus and the type species are dedicated to BEATRIZ DAHNERS, the wife of the second author, in appreciation of her company and assistance during the collecting trips taken in Colombia.

Biology – All 51 specimens of *B. beatrizae* (50 males and one female) were collected during the years 2003 to 2005 at La Horqueta (2180 m above sea level), the main peak of the Cerro San An-



Figs 9–12. *Beatheclus beatrizae* sp. n., type material: 9 = holotype dorsum, 10 = holotype ventrum, 11 = paratype female dorsum, 12 = paratype female ventrum

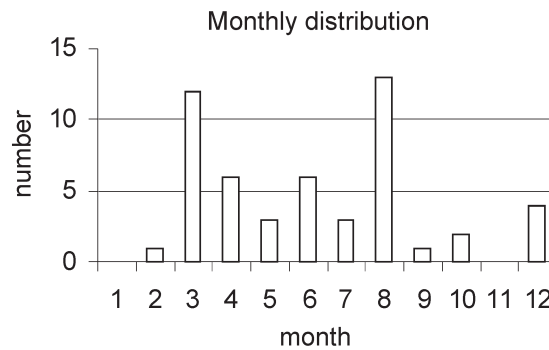


Fig. 13. Temporal distribution of *Beatheclus beatrizae* sp. n. in the type locality

tonio in the Colombian Western Cordillera, which separates the river basins of the Rio Aguacatal and the Rio Dagua. The site is accessible on a secondary road, which branches off from the national road Cali-Buenaventura at kilometre 15.

The top of the mountain's main peak is formed by a 17m × 12m plain area covered with shrubs, ferns and a few medium-size trees. Here the perching sites of *B. beatrizae* are the uppermost treetops. There is some competition for the perching sites among various taxa of Eumaeini (listed in alphabetical order according their generic placement), namely *Atlides browni* CONSTANTINO, SALAZAR et JOHNSON, 1993, *Atlides polybe* (LINNAEUS, 1763), *Cyanophrys agricolor* (BUTLER et H. DRUCE, 1872), *Erora* sp. n., and occasionally *Atlides atys* (CRAMER, 1779) and *Brangas coccineifrons* (GODMAN et SALVIN, 1887). The species is present at those sites throughout the year, its number peaking in March and August (Fig. 13).

On a sunny day, the first specimens appear at about noon, while the presence of clouds will delay their appearance. The males alight on certain preferred perching sites. Occasionally, they engage in mating flight attempts, and then return to the same perching site or to another one. At about 2 p.m., their activity level drops rapidly and after 2.30 p.m., hardly any specimen can be noted at the site.

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Appendix 1. Data of type specimens of *Beatheclus beatrizae* sp. n. Type locality: Colombia, Valle, Río Aguacatal, San Antonio, 11.6.2004, 2200 m a.s.l. (HNHM = Hungarian Natural History Museum, ICNC = Instituto de Ciencias Naturales de la Universidad Nacional en Bogotá, Colombia).
SN = Serial number in coll. Dahners

SN	Sex	day	month	year	Depository/type status and serial number
7130	male	29	6	2003	Dahners/ paratype no.1
7328	male	10	8	2003	Dahners/ paratype no.2
7329	male	11	8	2003	Dahners/ paratype no.3
7437	male	17	8	2003	Dahners/ paratype no.4
7435	male	19	8	2003	Dahners/ paratype no.5
7436	male	19	8	2003	Dahners/ paratype no.6
7382	male	23	8	2003	HNHM/ paratype no.7, gen. prep. No. 1091
7383	male	26	8	2003	Dahners/ paratype no.8
7384	male	26	8	2003	Dahners/ paratype no.9
7385	male	26	8	2003	Dahners/ paratype no.10
7447	male	13	10	2003	Dahners/ paratype no.11
7531	male	1	12	2003	Dahners/ paratype no.12
7532	male	1	12	2003	Dahners/ paratype no.13
7540	male	16	12	2003	Dahners/ paratype no.14
7566	male	30	12	2003	Dahners/ paratype no.15
7629	male	1	2	2004	Dahners/ paratype no.17
7726	male	13	3	2004	Dahners/ paratype no.18
7727	male	13	3	2004	Dahners/ paratype no.19
7728	male	14	3	2004	Dahners/ paratype no.20
7729	male	14	3	2004	Dahners/ paratype no.21
7783	male	18	3	2004	Dahners/ paratype no.22
7778	male	20	3	2004	Dahners/ paratype no.23
7779	male	22	3	2004	Dahners/ paratype no.24
7780	male	24	3	2004	HNHM/ paratype no. 25, gen. prep. No 1092
7781	male	24	3	2004	Dahners/ paratype no.26
7782	male	24	3	2004	Dahners/ paratype no.27
7807	male	30	3	2004	Dahners/ paratype no.28
7808	male	31	3	2004	Dahners/ paratype no.29
7843	male	5	4	2004	Dahners/ paratype no.30

SN	Sex	day	month	year	Depository/type status and serial number
7844	male	5	4	2004	Dahners/ paratype no.31
7878	male	28	4	2004	Dahners/ paratype no.32
7879	male	28	4	2004	Dahners/ paratype no.33
7880	male	29	4	2004	Dahners/ paratype no.34
7907	male	5	5	2004	Dahners/ paratype no.35
7908	male	7	5	2004	Dahners/ paratype no.36
7909	male	10	5	2004	Dahners/ paratype no.37
7963	male	7	6	2004	Dahners/ paratype no.38
7964	male	7	6	2004	Dahners/ paratype no.39
7969	male	11	6	2004	ICNC/ holotype
7970	male	16	6	2004	Dahners/ paratype no.40
7998	male	24	6	2004	Dahners/ paratype no.41
8012	male	18	7	2004	Dahners/ paratype no.42
8029	male	6	8	2004	Dahners/ paratype no.43
8163	male	16	8	2004	Dahners/ paratype no.44
8238	male	31	8	2004	Dahners/ paratype no.45
8239	male	31	8	2004	Dahners/ paratype no.46
8240	male	2	9	2004	Dahners/ paratype no.47
8558	male	9	10	2004	Dahners/ paratype no.48
9886	male	26	7	2005	Dahners/ paratype no.49
9887	male	26	7	2005	Dahners/ paratype no.50
6896	female	2	4	2003	Dahners/ paratype no.51