

**A review of the Neotropical hairstreak genus *Annamaria*
with notes on further genera (Lepidoptera: Lycaenidae)**

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Abstract – The South American lycaenid genus *Annamaria* D'ABRERA et BÁLINT, 2001 is revised. The nomenclatorial and taxonomic history of the genus is presented. *Annamaria* D'ABRERA et BÁLINT, 2001 = *Lamasina* ROBBINS, 2002, new synonym is established. A key for the six species recognised in three species groups is given on the basis of head, androconia and ventral pattern characters: *columbia* group: *A. columbia* sp. n. (type locality: Colombia, Santa Fé de Bogotá); *ganimedes* group: *A. draudti* (LATHY, 1926), *A. ganimedes* (CRAMER, 1775) and *A. lathyi* sp. n. (type locality: Peru, Rio Seco); *rhaptissima* group: *A. rhaptissima* (JOHNSON, 1991) and *A. rhapsodia* sp. n. (type locality: Bolivia, Rio Limatambo, appr. 1600 m). *Thecla mirabilis* LATHY, 1930 = *Evenus mirabilis* D'ABRERA, 1995 (unnecessary replacement name), new synonym is established. A neotype for *Papilio ganimedes* CRAMER, 1775 is designated, and the erroneous type locality "Indiis Occidentalis" is corrected to "Bas Maroni, Guyane Française" (French Guyana: Bas Maroni). The lectotype for *Thecla nobilis* HERRICH-SCHÄFFER, 1853 is designated. The combinal taxon *Denivia saphonota* CONSTANTINO, SALAZAR et JOHNSON, 1993 is transferred to *Brevianta* JOHNSON, KURSE et KROENLEIN, 1997, comb. n. With 40 figures.

Key words – Lycaenidae, Eumaeini, *Annamaria*, genera, new species, new synonyms, Neotropics.

INTRODUCTION

The taxon *Papilio ganimedes* CRAMER, 1775 (Figs 1–2) from "Indiis Occidentalis" represents a group of lycaenid hairstreak butterflies very recently recognised to belong to the genus *Annamaria* D'ABRERA et BÁLINT, 2001 (in D'ABRERA 2001). The three *Annamaria* species distinguished therein are among the most gorgeous butterflies of the Neotropical region. Biogeography and taxonomy of these magnificent creatures are insufficiently known. Representatives of the genus were formerly thought to be close relatives of *Evenus* HÜBNER, 1819 (type species: *Papilio endymion* FABRICIUS, 1781) according to previous literature (GODMAN & SALVIN 1887, DRAUDT 1919, D'ABRERA 1995).

The generic name *Annamaria* was considered unavailable by ROBBINS (2002: 201). Therefore, he introduced *Lamasina* and placed to it all the taxa of *Annamaria* under the new name he proposed, along with establishing a new combination for a fourth taxon, *Lamasina saphonota* (CONSTANTINO, SALAZAR et JOHNSON, 1993), (ROBBINS, 2002) a species originally described in *Denivia* JOHNSON, 1992 (type species: *Thecla deniva* HEWITSON, 1874).

The aims of the present paper are to: (1) review *Annamaria* and move *Lamasina* to synonymy, (2) delineate constituent species of *Annamaria*, including three new species in three species groups, and provide information on the nomenclature, taxonomy, and biogeography of the genus; (3) demonstrate that the original combination of *Denivia saphonota* CONSTANTINO, JOHNSON et SALAZAR, 1993 and the taxonomic action of ROBBINS resulting *Lamasina saphonota* are erroneous; and (4) discuss previous groupings and recent systematics of the genus.

MATERIALS AND METHODS

Specimens have been examined and databased from the following European public collections, abbreviated as follows throughout the text (curators acknowledged herein listed in parentheses): BMNH = The Natural History Museum, London, United Kingdom (Mrs KIM GOODGER and Mr PHILLIP R. ACKERY); NMW = Naturhistorisches Museum, Wien, Austria (Drs SABINE GAAL and MATRIN LÖDL); MNHN = Museum National d'Histoire Naturelle (Dr JACQUES PIERRE); SMN = Staatliches Museum für Naturkunde, Stuttgart, Germany (Dr CHRISTOPH HÄUSER); ZMJU = Zoological Museum of the Jagiellonian University, Krakow, Poland (Dr TOMASZ PYRCZ and Prof JANUSZ WOJTUSIAK); ZSM = Zoologische Staatssammlung, München, Germany (Dr AXEL HAUSMANN). Further abbreviation: ICZN = International Code of Zoological Nomenclature, 1999. Recent data and field observations were shared with the author by Mr HANS DAHNERS (CD, Colombia) and Mr PIERRE BOYER (CB, France).

Specimens in the Hungarian Natural History Museum (HNHM) were examined under light microscopy Olympus SZ60. All microscopic images were taken with an Olympus Camedia Master Digital Camera installed on the microscope. Dissections were made using standard techniques. The genital preparations are placed in plastic microvials and attached to the specimens; they have been documented, numbered and databased in the Hungarian Natural History Museum, Budapest ("BÁ-LINT gen. prep. No. #") or in the Natural History Museum, London ("BMNH vial. No. #"). Anatomical terms follow SCOTT (1990).

SYSTEMATICS

Annamaria D'ABRERA et BÁLINT, 2001

Eucharia BOISDUVAL, 1870: 14. Type species *Papilio ganymedes* CRAMER, 1775, designated by KIRBY (1871: 171); junior primary homonym of *Eucharia* HÜBNER, 1820 (Lepidoptera); invalid (ICZN 1999, Art. 53.2).

Annamaria D'ABRERA et BÁLINT, in D'ABRERA 2001: 194. Type species *Thecla draudti* LATHY, 1926, by original designation.

Lamasina ROBBINS, 2002: 820, unnecessary replacement name (ICZN 1999, Art. 60.2), **syn. n.**

Diagnosis – All *Annamaria* species are middle sized butterflies with typical fore wing costal length (measured from the erection of cubital vein to the terminus of vein R5) reaching 20 mm. The fore wing costal and outer margins are convex with a very short discal cell which has a length from base to apex less than the one fourth of the measured fore wing length. The hind wing veins CuA1, CuA2 and 1A+2A have extended termini. The hind wing anal margin possesses a long tail-like extension in the *drauti* group, which is the result of a shortened vein 3A. This trait is missing in the *columbia* and *rhaptissima* groups. The sexes are dorsally dissimilar. The male dorsal wing surface is shining blue with prominent fore wing discoidal scent pad, postdiscal and tornal androconial patches. Male discal cell is very short (1/6 length of costal length). The female dorsal surface is deeper blue or green with wide marginal border. The sexes are monomorphic ventrally (based on a hypothesis evaluated in the Discussion); three kinds of hind wing pattern-types are existing: (1) *columbia*-type: ground colour pigmental, both wings with white median and submedian line converging to tornus; (2) *ganymedes*-type: ground colour structural, fore wing with a pair of black submedian line, hind wing with red submedian band extending from costa to vein CuA2 with lobated hind wing tornus; (3) *rhaptissima*-type: ground colour structural, fore wing patternless, but hind wing possess complex set of intercellular blotches and patches. The wing outer margin ciliation is uniformly white.

Androconia are complex, constituted by a scent pad and scent patches around the apex of the discal cell. Additional scent patches, depending on the species, can be found in dorsal fore wing tornus, ventral fore wing base and dorsal hind wing base.

Genitalia are commonplace eumaeine (ELIOT 1973: 484, figs 66 and 68). Male copulatory organ is without brush, but the last tergite is covered by hairs. Valva interiorly membranous and fused to a sclerotized fultura inferior, posteriorly fused with a large vinular appendix angularis and the saccus. The internal aedeagus shorter than the external part. The posterior edge opens ventrally and possesses two cornuti. The pointed dorsal cornutus seems to be qualitatively dis-

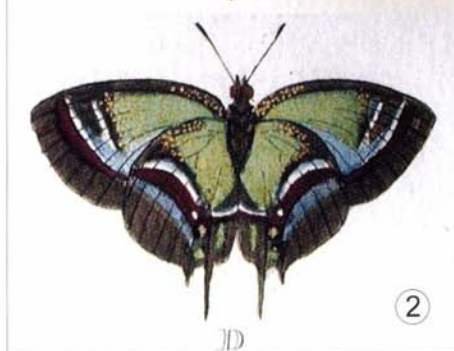
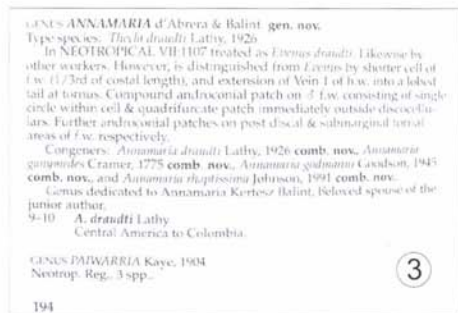
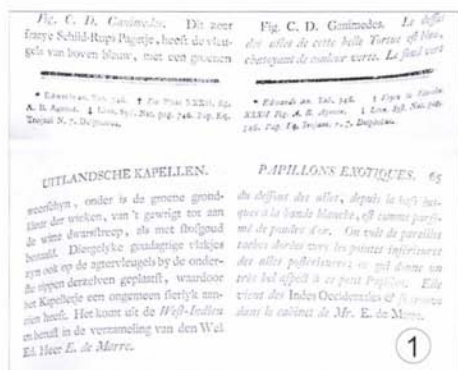
tinct in the examined species. The tegumen is large and heavily sclerotized, the saccus is long. The female genitalia is a membranous, less sclerotized organ. The ductus is relatively strong and wide, ventral membranous lateral plates surrounding the posterior antrum. The cervix is also membranous, but slightly sclerotized and joins the ductus to the bursa laterally. The bursal signa are wide, membranous and slightly pointed.

Unique combination of diagnostic characters – (1) Very short male discal cell with scent pad in the discalis, (2) distinct scent patch in all intercellular space beyond the discal cell is present, (3) hind wing with three tailed vein termini plus an extended (lobated) anal margin in both sexes (restricted to the *draudti* lineage). This combination of characters has not been found in any other eumaeine lycaenids and seems to be unique. Character (1) is not unique in eumaeine lycaenids as male *Micandra platyptera* (FELDER et FELDER, 1865) possesses this trait or certain *Panthiades* HÜBNER, 1819 (type species: *Papilio pelion* CRAMER, 1775) species. However, there is no further trait which could support the tight relationship with any of the mentioned taxa, plus the discoidal scent pad of these genera are very distinct. Character (2) seems to be unique in the tribe; as some other eumaeine hairstreaks have also post discal scent patches, like *Atlides* HÜBNER, 1819 (type species: *Papilio halesus* CRAMER, 1777), *Panthiades* and *Theritas* HÜBNER, 1818 (type species: *Theritas mavors* HÜBNER, 1818), but the patches in these taxa are generally fused together and the scales are often qualitatively distinct in their morphology (cf. for *Atlides* figs 7–11 in BÁLINT *et al.* 2003). Character (3) seems to be also unique excluding the anal lobe, as for example *Paiwarria* KAYE, 1904 (type species: *Papilio venulius* CRAMER, 1779) is also “three tailed” but its hind wing anal angle is lobated like in *columbia* and *rhaptissima* group, or in *Ipo-cia* BRÉVIGNON, 2002 (type species: *Thecla sponsa* HEWITSON, 1867). Therefore an analysis of wide array of related taxa (see Discussion) is necessary for identifying whether the character homoplasious or not and ancestral or derived in the case of the *draudti* group, plus in the whole genus.

Systematic placement – *Annamaria* belongs to the tribe Eumaeini as characterized by ELIOT (1973: 439–440). It has ten fore wing veins, hairy eyes, a stubby tipped male fore leg tarsus and “greyhound-shaped” male genitalia lacking a juxta. The head frontoclypeus is without modified hair-like scales; ordinary scales directed downwards identify probably a broader monophyly which also includes *Arcas* SWAINSON, 1832 (type species: *Papilio imperialis* CRAMER, 1775) and other conspicuous and well known eumaeine lycaenids. However, some of these taxa possess an extraordinary trait, namely a more or less developed ventral hind wing androconial pouch (ELIOT 1973: 402). Accordingly, I am of the opinion that all the taxa which possess this trait like *Arcas* SWAINSON, *Brangas* HÜBNER, 1819

(type species: *Papilio caranus* STOLL, 1780), *Denivia* K. JOHNSON, 1992, *Pseudolycaena* WALLENGREN, 1859 (type species: *Papilio marsyas* LINNAEUS, 1758) and *Theritas* HÜBNER, 1818 (type species: *Theritas mavors* HÜBNER, 1818) belong to a large monophyletic group with distinct clades whose basal taxa have a frontoclypeus similar to *Annamaria* and *Evenus* s. l. without this kind of ventral hind wing apomorphy. The sister group of *Annamaria* is unknown. ROBBINS (2004) suggested *Evenus sensu* D'ABRERA as sister group. No support has been given for this hypotheses, what I think is erroneous (see Discussion).

History of nomenclature – KIRBY (1871: 395) selected *Papilio ganimedes* (Figs 1–2) as type species of *Eucharia* BOISDUVAL, 1870. At the time of its establishment the name *Eucharia* of BOISDUVAL immediately became invalid as a junior homonym of *Eucharia* HÜBNER, 1820 (type species: *Phalaena hebe* LINNAEUS, 1767, Lepidoptera: Arctiidae) (HEMMING 1967: 171). To my knowledge *Eucharia* BOISDUVAL was never in use after 1899, but *Eucharia* HÜBNER was widely misapplied in the European literature for certain arctiid moths (see DE



Figs 1–3. 1–2: *Papilio ganimedes* CRAMER, 1775, original documentation. 1 = description of the species, 2 = dorsal and ventral figures of the syntype(s). 3 = The original description of *Annamaria* D'ABRERA et BÁLINT, 2001, from D'ABRERA (2001)

FREINA & WITT 1984). I consider the name *Eucharia* BOISDUVAL as a nomen oblitum according to the ICZN Art. 23.9.2. (HEMMING 1967: 171).

ROBBINS (2002: 820) considered that "*Annamaria* D'ABRERA et BÁLINT is unavailable under the ICZN Article 13.1.1. (1999)", because "this genus was not accompanied by a description or definition that states in words characters that are purported to differentiate the taxon". Evidently, ROBBINS did not read the description I give in the image of the original description taken from the original source (Fig. 3). Hence, ROBBINS introduced *Lamasina* as a replacement of the homonymous and unavailable *Eucharis*.

The type species has also been figured (D'ABRERA 2001: 347, pl. 147, figs 9–10). I do not know of any other Neotropical eumaeine possessing the same combinations of traits given in the diagnosis of *Annamaria* (see above). ROBBINS did not mention any. The generic name *Annamaria* is objectively available. Its diagnosis fills completely the requirements of the ICZN Article referred by ROBBINS and therefore I consider *Lamasina* as **syn. n.**, being an unnecessary replacement name, because *Annamaria* was available and should be applied by ROBBINS and his colleagues in the sense of the ICZN Art. 60.

The proposal of *Lamasina* by ROBBINS had a subjective intention, which is supported by the following evidence: ROBBINS & LAMAS (2002: 203), and subsequently also ROBBINS (2004: 121), applied the generic name *Salazaria* D'ABRERA et BÁLINT, 2001 (type species: *Thecla sala* HEWITSON, 1867, by original designation), diagnosed by identical manner and style in the same publication in which *Annamaria* was proposed (D'ABRERA 2001: 195). The publication date of the ROBBINS & LAMAS (2002) paper is subsequent to that of ROBBINS (2002); therefore, according to ROBBINS' argument applied for *Lamasina*, the generic name *Salazaria* should also be unavailable.

Checklist and species identification – On the basis of wing shape, dorsal colouration, androconia and ventral wing pattern I distinguish six species in three species-groups.

Annamaria D'ABRERA et BÁLINT, 2001

= *Eucharia* BOISDUVAL, 1870, homonym

= *Lamasina* ROBBINS, 2002, unnecessary replacement name
columbia group

columbia sp. n.

ganimedes group

draudti (LATHY, 1926)

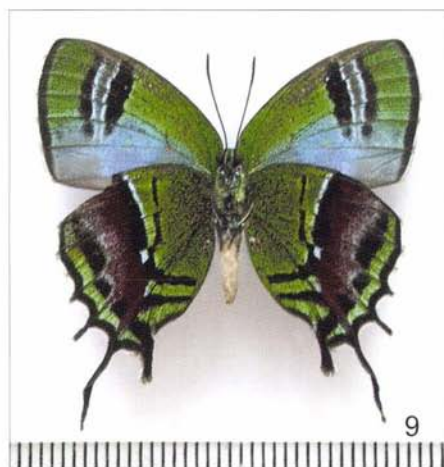
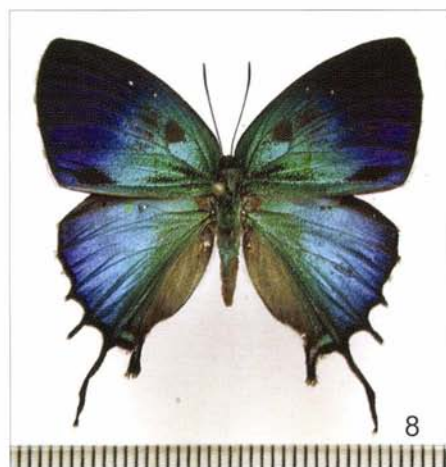
= *nobilis* (DRAUDT, 1919)

- ganimedes* (CRAMER, 1775)
- = *ganymedes* auct.
- = *nobilis* (HERRICH-SCHÄFFER, 1854)
- lathyi* sp. n.
- rhaptissima* group
- rhapsodia* sp. n.
- rhaptissima* (JOHNSON, 1991), replacement name for *mirabilis*
- = *mirabilis* (LATHY, 1930), homonym
- = *mirabilissima* (D'ABRERA, 1995), unnecessary replacement name

The species groups can be easily distinguished by their qualitatively different ventral wing markings. Species within species groups are discriminated on the basis of characters provided by scent patches in males if known, plus ventral wing markings.

Presumably all *Annamaria* species are easy to identify on the basis of wing shape (with three tails), ventral colouration and pattern in the field and discriminate from taxa with similar ventral wing pattern, e.g. species of *Evenus*, *Macusia* KAYE, 1904 (type species: *Macusia satyroides* HEWITSON, 1865) and *Paiwarria* (see Discussion). Only females of the nominal taxa *draudti*, *lathyi* and *ganimedes* are known; therefore, the key for identification presented below is partly based upon the male dorsal colouration of known males, extension, presence or absence of the androconia. Males in collections can be easily distinguished by these traits. I believe that wing ventral colouration and pattern are also useful characters and applicable also to females, therefore I built them into the key.

Biology – *Annamaria* species occur in primary forest with high annual precipitation at low to moderate elevation throughout the year. Individuals are rare. “*T. nobilis*” was considered to be scarce (GODMAN & SALVIN 1887: 12). The museum specimens were encountered individually as the material examined reveals, as well as databases with public access in the Internet (e.g. InBio, Costa Rica). The long series from “Muzo, Colombia” present in many European museum collections must originate from dealer stocks, material acquired from indigenous people who farmed the species or know how or where to collect larger samples. The only modern published record of *Annamaria* behaviour originates from FAYNEL (2001: 54): *A. ganimedes* was nectaring on *Cordia schomburgkii* (Boraginaceae). Two *A. draudti* male specimens have been recently collected by HANS DAHNERS (Cali, Colombia, *pers. comm.*). The individuals were sitting together 5 cm apart on a broad sun lit leaf of a plant, about one meter above ground level. The site was on a path following the Calima river canyon on the Pacific slope of the Western Cordillera at about 50 m above the river bed and at about 1200 m above sea level. They



Figs 4–9. *Annamaria* imagines. 4–5: *A. rhapsodica* (JOHNSON, 1991), male, Peru (NMW): 4 = dorsal view, 5 = ventral view. 6–7: *A. rhapsodia*, sp. n., holotype (MZJU): 6 = dorsal view, 7 = ventral view. 8–9 = *A. draudti* (LATHY, 1926), male, “Colombia, Muzo” (ZSM): 8 = dorsal view, 9 = ventral view

were definitely neither hilltopping nor treetopping. This observation indicates the hypotheses that probably male *A. draudti* individuals aggregate in small (the present case) or larger numbers (the historical Muzo data) at certain sites.

Remarks – An interesting phenomenon is that the two *Annamaria* species groups with known males display contrasted tendencies in the development of androconia: *ganimedes*-group tends toward loose scent patch southwards in the Andes, whilst the *rhaptissima*-group tends to having increasingly large scent patches. This observation needs confirmation, however, since the comparative material of the *rhaptissima*-group supporting this view consists of only eight specimens (see below). However, *A. ganimedes* distributed across the Guyana Shield possesses ventral fore wing basal androconia which are lacking in the Mesoamerican and Andean taxa.

TAXONOMY

Key to the species of *Annamaria*

- 1 Eye orbit white, wing ventra with pigmental colour, fore wing pattern simple with medial and submedial transverse lines converging to tornus: Colombia *columbia* species group: **A. columbia** sp. n.
- Eye orbit with structural colour, wing ventra with structural colour: from Mesoamerica via Andes to Venezuela and Bolivia, Guyanas (*rhaptissima* and *ganimedes* species groups) 2
- 2 Antennal club black with blue scales; fore wing outer margin rounded, ventrum with unicolorous blue subcostal area; ventral hind wing pattern with basal and medial intercellular black blotches and small tornal lobe: from S Colombia to N Bolivia (*rhaptissima* species group) 3
- Antennal club brown, fore wing outer margin straight, ventrum bright green with medial and submedial line; ventral hind wing pattern without basal and intercellular black blotches, but with black medial line and red post-medial band and large tornal lobe: from S Mexico to E Peru and the Guyanas (*ganimedes* species group) 4
- 3 Dorsal fore wing discoidal scent pad small and circular, scent patches in fore wing cells M1, M2 and M3 restricted to area close to veins u, m and l: from Colombia via E Ecuador to E Peru *A. rhaptissima* (JOHNSON, 1991)

- Dorsal fore wing discoidal scent pad larger and rhomboid, postdiscal scent patches in cells M1, M2 and M3 radiating to medial area, additional dorsal scent patches present in fore wing cell 1 basal area and in cell 3 near to discalis plus in hind wing basal area in cell 7 and in discalis: Bolivia
A. rhapsodia sp. n.
- 4 Fore wing dorsum with scent patches in cells between veins M1, M2 and M3, submedian ventral pattern with distal black line conspicuously wider than basal line, hind wing ventral postmedian red band conspicuously black bordered basally: from Panama to C Colombia *A. draudti* (LATHY, 1926)
- Fore wing dorsum without scent patches in cells between veins M1, M2 and M3, submedian ventral pattern black pattern with distal black line equal or narrower than basal line, hind wing ventral postmedian red band not or faintly black bordered basally: Guyanas, Ecuador and Peru 5
- 5 Fore wing dorsal colouration deep azure, submedian ventral pattern with wider basal line than distal line, fore wing ventrum with black scent patch along cubital vein in basal area: Guyanas
A. ganimedes (CRAMER, 1775)
- Fore wing dorsal colouration light azure, submedian ventral pattern with basal and distal black line equally in width, no ventral fore wing androconia: Ecuador, Peru
A. lathyi sp. n.

Annamaria rhapsissima (JOHNSON, 1991) D'ABRERA et BÁLINT, 2001
(Figs 4–5, 25)

Thecla mirabilis LATHY, 1930: 135, pl. 9, fig. 8 (male dorsum, ventrum), "Rio Pastazza, Eastern Ecuador" MNHN holotype male (figured by JOHNSON 1991: 149, fig. 31, holotype ventrum); junior primary homonym of *Thecla mirabilis* ERSCHOFF, 1874 (ICZN Art. 53.3) (see Fig. 16).
[*Thecla*] *rhapsissima* JOHNSON, 1991: 150, as replacement name for *Thecla mirabilis* LATHY; SALAZAR 1993: 48, "La Planada (Nariño)", Colombia, figs 2 (male dorsum) and 3 (male ventrum).
Evenus mirabilissima D'ABRERA, 1995: 1109, "Ecuador", figs "E. mirabilissima", replacement name for *Thecla mirabilis* LATHY, invalid as being unnecessary replacement name, **syn. n.**
Annamaria rhapsissima D'ABRERA, 2001: 194, "Ecuador"; SCHMIDT-MUMM *et al.* 2003: 87, "Colombia".

Material examined – Type material: *Thecla mirabilis* LATHY, 1930: MNHN holotype male, in moderate condition antennae and hind wing tail at vein terminus CuA1 are broken, set dorsally, labelled as (1) "Rio Pastazza [/] Ecuador or" (yellowed, oblong shaped, printed letters), (2) "Thecla ? [/] mirabilis Lathy [/] specimen typicum" (white oblong shaped, handwritten).

Non-type material (6 male specimens in total): ECUADOR: Marcapata, Caradoc, 4000 feet (BMNH: male, specimen figured as "*E. mirabilissima*", by D'ABRERA 1995: 1109); Rio Seco, VII.28, 950 m, Klug (MNHN: male). PERU: "Chanchamayo", IV. 1961, leg. F. König" (NMW: male); Jorge Chavez, 1400 m, Amazonas, I.2003. (CB: male); ditto VIII.2003 (CB: male).

Identification – The specimens can be discriminated by the characters mentioned in the key (see above) from its presumed sister species *A. rhapsodia*. The female is unknown (see Remarks).

Nomenclature and taxonomy – *Thecla mirabilis* was described on the basis of a single male individual from the FOURNIER collection of the MNHN, subsequently documented by LATHY (1930) and JOHNSON (1991). This unique specimen is a holotype. JOHNSON proposed the replacement name *rhapsissima* as *Thecla mirabilis* turned to be a preoccupied name. D'ABRERA (1995) was not aware of JOHNSON's action, therefore his replacement name *mirabilissima* is unnecessary, and a new synonym as it was not formalized in any previous publication.

Biology – SALAZAR (1993) and SCHMIDT-MUMM *et al.* (2003) recorded the occurrence of the species from Ecuador in a region (now natural reserve) covered by primary forest. No further data is available. Specimens were known to be collected in January, April, July and August.

Distribution – Known only from the eastern side of the Andes in Colombia (El Nariño) in Ecuador (Marcapata, Planada, Rivers Pastazza and Seco) and in Peru (Chanchamayo). Spatial: Recorded from the elevations 900 m (Colombia: Nariño), 950 m (Ecuador: River Seco), 1500 m (Ecuador: Marcapata), and 1700 m (Ecuador: Planada).

Remarks – Material examined: The male MNHN non-type specimen was collected by GUILLERMO KLUG, who was active in the Upper Amazonas region (HORN *et al.* 1990: 206). The specimen was sent to Madame FOURNIER as "Neue Thecla". This individual was not mentioned by LATHY, therefore it is certain that it was incorporated into the FOURNIER collection after 1930. The NMW male specimen was misidentified as "*T. draudti*".

The female phenotype: ROBBINS (2004: 275) remarks that the female of "*Lamasina rhapsissima*" possesses some characters of *Phothecla* ROBBINS, 2004 (type species: *Thecla photismos* H. H. DRUCE, 1907), like (1) "ventral ground colour gray-green" and (2) "ventral forewing median and postmedian white lines cross the wing "smoothly" from the costa to the inner margin". I have examined and dissected the individual specimen marked by F. W. GOODSON in the BMNH collection (BÁLINT 2005) as an undescribed species superficially close to *Laothus viridicans* (FELDER et FELDER, 1865) documented as "*T. ? sp.*" by D'ABRERA (1995: 1127). The dissected genitalia prove that the individual represents the genus *Annamaria*. The structures are hardly different from the known ones of the *draudti*

group members. However, the ventral ground colour is not grey-green in the specimen, but pale grey and the fore wing costal length is 22.5 mm. I exclude that this specimen might represent the female of *rhaptissima*, and even I do not agree with the statement of ROBBINS mentioned above that the female ventral pattern of *rhaptissima* is so divergent from the male. My reasons are (1): The ventral pattern and colouration in all the taxa I place in the monophyly of Mithrasiti (see Discussion) are qualitatively identical in both of the sexes. (2) The eye orbit is white in *A. columbia* whilst it is structural green in *A. rhaptissima*. I am not aware about such kind of sexual dimorphism among large eumaeines. (3) The specimen is the largest one I know, so I guess that its male should have the same size representing the largest *Annamaria* species, as all specimens of congeneric taxa I have examined, including *A. rhaptissima*, possess shorter fore wing length.

Annamaria rhapsodia sp. n.

(Figs 6–7, 26, 31)

Type material – Holotype male, in moderate condition, wings worn with slightly damaged margin, legs glued to a separate piece of paper, abdomen missing (dissected) labelled as (1) “Bolivia, Rio Limatambo, appr. 1600 m, 14.VIII.2000, leg. T. Pyrcz.”, (2) “gen. Prep. No. 1065”, (3) “Holotype, *Annamaria rhapsodia*, Bálint sp. n., 2002.I.7.” (hand written); at present deposited in MZJU. Dissection: HNHN BÁLINT gen. prep no. 1070.

Diagnosis – Similar to *A. rhaptissima*, but male dorsal ground colour is bright violet blue (similar to the *ganimedes* group dorsal male ground), and not bright azure. The fore wing postdiscal scent patches are much more extended and can be found also along the anal branch of the cubital vein in the erections of veins 1A+2A and CuA2. There is a large additional scent patch in the basal part of the dorsal hind wing cell C, which is missing in *A. rhaptissima*. Hind wing ventral pattern is similar to *A. rhaptissima*, but the submedian black blotch in cell CuA2 is much larger.

Description – Male. Head: Labial palpus very short, bright blue green black, vertex bright blue. Eye hairy. Antennal segments black with white scalings at base, club black. Thorax: dorsally bright azure blue, ventrally deep bright blue. Wings. Shape: Fore wing costal and distal margins slightly convex, apical part flat, anal margin straight. Apex slightly pointed, tornus rounded. Length from base (erection of cubital vein) to apex (vein Cu5 terminus): 21 mm. Hind wing costal margin highly convex, distal margin undulate having slightly extended vein termini. Veins Cu1, Cu2 and 1A+2A termini extended with tails, tornus lobate as anal margin almost touching vein 2A in tornal area. Colouration and pattern: Fore wing dorsal ground colour bright blue with tinted blue hint in medial and distal areas, bright azure blue in basal and in medial areas in dorsal aspect (laterally it changes indicating a strong structural blue colour). Margin with thin black border, ciliae basally black distally white. Hind wing dorsum similarly coloured and ciliated to that of fore wing, but with marginal area in tornus bright sky blue distally and black basally and marginally. Fore wing ventrum gleaming sil-

very with bright green scaling in costal and apical areas, scent pad vell visible. Hind wing ventrum ground colour bright blue with green basal scaling and with pattern of complex system of intercellular black blotches, cell Rs empty. Androconia: Dorsal fore wing discal cell with rhomboid shaped scent pad situated in apical area; intercellular spaces from vein R3 to CuA2 with joining scent patches (Fig. 26). Legs: Generally femur, tibia and tarsus bright blue with white scalings; fore leg femur and tibia, and coxa and tarsus appr. with same length, tibia with a pair of black apical spurs, tarsus with long sets of lateral puvillae and a single, brown apical claw. Abdomen: dorsally bright azure blue, ventrally bright blue. Copulatory organ: Saccus very long with vinculum length, vinculum strong and relatively broad, valva shorter than sacculus with a distal process with half valval length and very long setae, tegumen sclerotized, appendix angularis large with central straight sclerotized ridge fusing with a sclerotized flat Y-shaped fultura superior around aedeagal tube, commonplace eumaeine uncus and gnathos large and heavily sclerotized, aedeagus very long with almost two times longer than saccus+valva length, distal aedeagus membranous and open with dorsal and ventral cornutus; dorsal cornutus terminally sclerotized and pointed, ventral cornutus membranous and flat (Fig. 31).

Female. Unknown (see Remarks).

Etymology – The name was chosen in rhyme with the sister species name *rhapsissima*. It is also an indication of the individuality of the specimen serving as holotype, as in the original meaning of the Greek word.

Remarks – Even though the condition of the holotype is not perfect, I establish a new *Annamaria* species group taxon on the basis of the holotype specimen because the large series of *A. draudti* and the short series of *A. ganimedes* specimens I examined (see below) show a qualitative consistency in wide individual variations regarding male androconial patches (Figs 25–30). Accordingly, the presence and absence of androconia in the sister lineage of *ganimedes* also indicates distinctness at the species level supported by additional features.

Annamaria draudti (LATHY, 1926) D'ABRERA et BÁLINT, 2001
(Figs 8–11, 27–29, 32)

Thecla nobilis (HERRICH-SCHÄFFER): GODMAN & SALVIN 1887: 12–13, "Guatemala: Rio Chisoy; Nicaragua: Chontales; Panama: Chiriqui, Bugaba, Calobre; Colombia", Pl. 48, figs 20 (Guatemala male dorsum), 21 (Guatemala male ventrum), 22 (Panama female dorsum); misidentification.

Thecla draudti LATHY, 1926: 40, "Columbia and Central America"; LATHY 1930: 137, pl. IX, fig. 10 (male dorsum, ventrum), "Colombia". JOHNSON 1991: 144, "Columbia", lectotype designation.

Thecla godmani GOODSON, 1945: 169, "Chisoy Valley, Guatemala", holotype male (figured in GODMAN & SALVIN 1887: Pl. 48, fig. 20 and in D'ABRERA 1995: 1107, fig. "*E. godmani*"). BÁLINT 2005: 362, as new synonym of *Annamaria draudti*.

Evenus godmanni (GOODSON): D'ABRERA 1995: 1106, "Guatemala", 1107, figs "*E. godmanni*", subsequent misspelling.

Evenus draudti (LATHY): D'ABRERA, 1995: 1107, "Central America to Colombia", figs "E. draudti", new combination.

Annamaria draudti (LATHY): D'ABRERA, 2001: 194, "Central America to Colombia", pl. 147, figs 9, 10, new combination.

Material examined – Primary type material: *Thecla draudti* MNHN, lectotype, male COLOMBIA (Bogota). *Thecla godmani* BMNH(E) 266278 holotype, male, GUATEMALA (Vera Cruz, Rio Chisoy).

Secondary type material: *Thecla draudti* paralectotypes, COLOMBIA (cf. FAYNEL & BÁLINT 2004: 278): "Bogota", FOURNIER coll. (MNHN: male, female); "Bogota, Colombia", FOURNIER coll. (MNHN: female); "Muzo, Colombia", FASSL, FOURNIER coll. (MNHN: two females); "Colombia", LARSEN via STAUNDINGER-BANG-HAAS, FOURNIER coll. (MNHN: male); "Colombia", LARSEN via ALBRECHT, FOURNIER coll. (MNHN: male); "Colombia, Bogota", FOURNIER coll. (MNHN paralectotype: female); "Colombie", FOURNIER coll. (MNHN: three males, five females, including the female specimen labelled by LATHY as "spec. typicum"); "Bogota", CARDERT, FOURNIER coll. (MNHN: male); "Bogota", GROSE-SMITH, FOURNIER coll. (MNHN: female); "Muzo, Colombia", 1924, AP. MARIA, FOURNIER coll. (MNHN: three females). PANAMA: "Chiriqui", FOURNIER coll. (MNHN: male).

Non-type material: COLOMBIA: Bogota, 89–154 (BMNH: two males, female); Bogota, 1907, DOUCHLER, (BMNH: male); Bogota, 1918, APOLLINAIRE, OBERTHÜR coll. (BMNH: seven males, five females); Bogota, CROWLEY bequest (BMNH: three males, two females); Bogota, JOICEY bequest (BMNH: two males, three females); Bogota, 1898, ROTHSCCHILD bequest (BMNH: seven males, eight females); Canache, Cundinamarca, 1900, DE MATHAN (BMNH: two males, female); Muzo, APOLLINAIRE, JOICEY bequest (BMNH: four females); Muzo (ZSM: five males, female); Muzo, JOICEY bequest (BMNH: four males, three females); River Dagua, ROSENBERG (BMNH: female); Rio Minero, 2500 ft, Muzo, WHEELER, GODMAN-SALVIN coll. (BMNH: male); Valle, Calima, Campoalegre, 1200 m, 2001.VII.24. (CD nos 6329–6330, images examined); no locality, 1918, P. BOULÉ, OBERTHÜR coll. (BMNH: male); no locality, GROSE-SMITH coll. (BMNH: three males, two females); no locality, JOICEY bequest (BMNH: three males); no locality, FRUHSTORFER (BMNH: male); no locality, FRUHSTORFER, ADAMS bequest (BMNH: male); no locality, ROTHSCCHILD bequest (BMNH: two males, two females); no locality, SERAPHIM, JOICEY coll. (BMNH: female); no locality, WERNICKE, ADAMS bequest (BMNH: female); no locality ("Interior of Colombia"), WHEELER, GODMAN-SALVIN coll. (BMNH: two females); no locality ("New Granada"), BRABANT coll., JOICEY bequest (BMNH: male, female); no locality ("New Granada"), nobilis 2, HEWITSON coll. (BMNH: male). NICARAGUA: Chontales, BELT (BMNH: female). PANAMA: Bugaba, CHAMPION, GODMAN-SALVIN coll. (BMNH: female); Calobré, ACRÉ, GODMAN-SALVIN coll. (BMNH: female); Chiriqui, JOICEY coll. (BMNH: nine males, six females). VENEZUELA: Merida, BIEZANKO, JOICEY coll. (BMNH: male, two females); no locality, ADAMS bequest (BMNH: male). NO PATRIA: FOURNIER collection (MNHN: two males, female). ex coll. MONTEIRO, FOURNIER collection (MNHN: two males, two females).

Mislabeled specimens: Guyana, STAUNDINGER, DRUCE coll., JOICEY bequest (BMNH: male); Guyana française, Le MOULT, FOURNIER collection (MNHN: two females); Surinam, DANGSTER, DRUCE coll., JOICEY bequest (BMNH: female).

Dissections: BMNH vial no. 5849 (female: Colombia, Muzo); HNHM BÁLINT gen. prep nos 1071, 1172 (males, ZSM nos 145–146: Colombia, Muzo).

Identification – Male typical fore wing length 21 mm. Individuals are readily distinguished from the new species *A. lathyi* described below by the presence of

scent patches in intervenial areas from vein R2 to Cu2. The presence and extension of the patches varies individually but, in cells M1-M2 and M2-M3, there are always scent patches (Figs 27–29). Another distinguishing character between *lathyi* and *draudti* is the width of ventral fore wing medial and submedial lines at vein Cu1: they are equal in *lathyi*, but the postmedial one is narrower in *draudti*.

The other characters which distinguish the species from *lathyi* (and possibly applicable to females), are: (1) the relative width of the postmedian lines in the fore wing ventra: the width of the basal line is larger than that of the distal one. These are equal in *lathyi* but the medial one is wider in *draudti*; (2) on the hind wing ventrum there is very thin black distal border of the white medial line (this border is very thin in *lathyi*, but wide in *draudti*). Comparing with the Guyana sister species (*A. ganimedes*), *A. draudti* is brighter (*A. ganimedes*: deeper blue), possessing postdiscal scent patches (*A. ganimedes*: lacking) without ventral fore wing scent patch in basal area (*A. ganimedes*: possessing), plus the medial line is generally two or three times wider than the submedial line (*A. ganimedes*: both thin, more or less equal in width). This latter mentioned trait is also good for distinguishing females.

Nomenclature and taxonomy – The CRAMER name “*ganymedes*” was misapplied by several authors for this taxon as LATHY demonstrated. LATHY (1926) also pointed out that the species has been widely misidentified as *Thecla nobilis*. He clarified the problem introducing the name “*Thecla draudti*”.

Thecla draudti was described on the basis of an unstated number of male and female syntype specimens from Colombia and Central America all deposited in the MNHN FOURNIER collection. The original syntypic series contains 14 male and 25 female individuals (FAYNEL & BÁLINT 2004). One male and one female specimen from “Colombia, Bogota” have been labelled as “type” by LATHY himself, however, this action was not specified in the text, therefore it cannot be regarded as lectotype designation. Subsequently the male has been designated as lectotype, and the female as paralectotype by JOHNSON (1991: 145). According to the ICZN Art. 74.3.1. beside the lectotype all the remaining specimens of the original syntypic series became automatically paralectotypes.

Thecla godmani was described on the basis of a single (holotype) male specimen from “Chisoy Valley, Guatemala” deposited on the GODMAN-SALVIN collection. This specimen was figured by GODMAN & SALVIN (1887). I examined the holotype and concluded that it represents the phenotype of the taxon described first by LATHY as *Thecla draudti*, therefore the two nominal taxa are subjective synonyms and being the junior, *godmani* is invalid (BÁLINT 2005).

Biology – Unknown.

Distribution – Geographical: Recorded from Costa Rica (InBio data: Guanacaste, Heredia, Limón), Guatemala (Rio Chisoy), Nicaragua (Chontales), Panama (Bugaba, Calobre, Chiriqui), Colombia (Cali, Muzo) and Venezuela. Spatial: 140, 200, 700 and 1200 m (InBio data). Temporal: April, May, July and November (InBio data).

Remarks – This species, primarily because of its beauty, serves well as mercantile item. This is well demonstrated how the large percentage of the specimens I have examined are labelled: practically there is no information about the data of precise capture, geographical and spatial distribution.

Annamaria ganimedes (CRAMER, 1775), D'ABRERA et BÁLINT, 2001
(Figs 1–2, 12–17)

Papilio ganimedes CRAMER, 1775: 64, pl. 40, figs c (male dorsum), d (male ventrum), male syntype(s) “Indes occidentales”; HERBST 1804: pl. 298, figs 7–8 as “Ganymedes”.

Polyommatus ganimedes GODART, 1824: 623, pl. 40, fig. 6, “Indes occidentales”, redescription.

Thecla nobilis HERRICH-SCHÄFFER, 1853: 55, pl. 14, figs 55 (female dorsum), 56 (female ventrum), “Surinam”, syntype female(s); DRAUDT 1919: 747, “Von Guatemala an bis Colombien und Guyana”, pls 147, row a, fig. “nobilis” (female wing dorsum, ventrum), 153, row a, fig. “nobilis” (male wing dorsum).

Thecla bimaculata MÖSCHLER, 1877: 299, pl. III, fig. 3 (male ventrum), “Innern Surinams, 5° nördl. Br.”, two male and one female syntypes; DRAUDT 1919: 747, as synonym of *Thecla nobilis*. LATHY 1926: 40, as synonym of *Thecla ganimedes*.

Thecla ganimedes (CRAMER): LATHY, 1926: 40; 1930: 137, pl. IX, fig. 11 (male dorsum, ventrum), “French Guiana”.

Evenus ganimedes (CRAMER): D'ABRERA 1995: 1106, “Central America, Amazonas, Guianas”, figs “*E. ganimedes*”, (new combination).

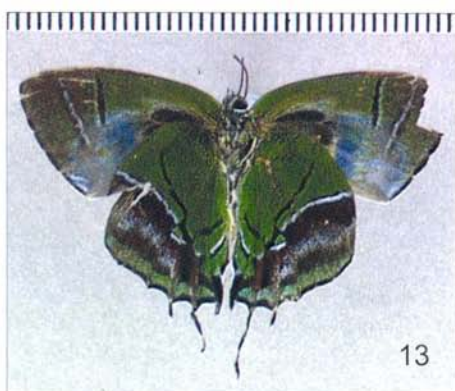
Annamaria ganimedes (CRAMER): D'ABRERA 2001: 194, new combination.

Annamaria ganimedes (CRAMER): BRÉVIGNON 2002: 475, 477, “Montsinéry, Guyane française”, figs 5 (female ventrum), 6 (female dorsum).

Lamasina ganimedes (CRAMER): HÄUSER *et al.* 2003: 17, fig. 13 (*Thecla nobilis* syntype documentation), (new combination).

Material examined – Primary type material: *Papilio ganimedes*, MNHN neotype male (selected in the present paper, see below), FRENCH GUIANA (Fig. 16). *Thecla nobilis*, SNM lectotype female (designated in the present paper, see below), SURINAM.

Non-type material: BRASIL: no locality (“Brésil”), OBERTHÜR coll. (BMNH: female, documented as “*ganimedes* ? V” by D'ABRERA 1995: 1106). BRITISH GUYANA: Junantins, 24.11.75, 77/65 (BMNH: male); Rio Demerara, ROTHSCHILD bequest (BMNH: 2 females, one of them documented as “*ganimedes* ? R” by D'ABRERA 1995: 1106). FRENCH GUIANA: Bas Maroni, Guyane Française, FOURNIER coll. (MNHN: two males, two females); Cayenne, HEWITSON coll. (BMNH: female); Moyon Maroni, Langatbiqui, (MNHN: female); no locality, Bar, OBERTHÜR coll. (BMNH: male); no locality, MONTEIRO coll. (MNHN: female).



Figs 10–15. *Annamaria* imagines. 10–11: *A. draudti* (LATHY, 1926), female, “Colombia, Muzo” (ZSM): 10 = dorsal view, 11 = ventral view. 12–15 = *A. ganimedes* (CRAMER, 1775). 12–13: male, “Junantins” (BMNH), 12 = dorsal view, 13 = ventral view. 14–15: female, “Cayenne” (BMNH): 14 = dorsal view, 15 = ventral view

Identification – *A. ganimedes* is slightly smaller than *A. draudti*, typical fore wing length: 19 mm. The male dorsal wing colouration of *A. ganimedes* is somewhat deeper violet blue than that of *A. draudti* (possessing bright azure blue wing dorsa). Male *A. ganimedes* specimens also differ from that of *A. draudti* by lacking postdiscal scent patches and having ventral fore wing black scent patch along the cubital vein in the anal area close to the base. The fore wing ventral pattern is also distinctive comparing the species with *A. draudti*: the medial and postmedial lines are delicate and more or less equal in width whilst these patterns are heavy in *draudti* and disequal in width; plus the ventral hind wing red band is not black bordered basally, whilst in *A. draudti* there is a conspicuous black bordering stripe.

Nomenclature, taxonomy and typification – The nominal species group taxon *ganimedes* was based on an unstated number of male specimens originating from “Indes Occidentales” and deposited in the collection of “Mr. E. de Marre” (Figs 1–2). The whereabouts of the “de Marre” collection is unknown for me. I consider the type material of *Papilio ganimedes* to be lost and no name-bearing type specimen to be extant. As the CRAMER’s figure is somewhat hypothetical (cf. MÖSCHLER 1883), and the newly described *A. lathyi* shares some traits with *ganimedes* (see below), I am of the opinion that a neotype designation is warranted. I select one of the male specimens from the MNHN material certainly seen by LATHY, the first reviser of *P. ganimedes*, as neotype (Fig. 16). This action objectively fixes the name to the phenotype determined by LATHY and correct the type locality. The specimen is in perfect condition, set dorsally and labelled as “Bas Maroni, Guyane Française”. I add the following label printed on red paper “Neotype // *Papilio ganimedes* // Cramer, 1775 // designated by // Zs. BÁLINT, 2003.II.16 // Budapest” (“//” means new line in the label).

The CRAMER’s name *ganimedes* was “chronically misspelled” as *ganymedes*, which was introduced by FABRICIUS (1787: 66) (ROBBINS & LAMAS 2002: 201). The misspelled name was used subsequently by HERBST (1804) and GODART (1824), both of them illustrating the male (badly copying the image given in CRAMER’s book). GODMAN & SALVIN (1887: 11) wrote that “*T. ganymedes* Cramer” has a silky spot on the fore wings, indicating that they were aware with the identity of the taxon. Interestingly, when they discussed “*Thecla nobilis*” (= *A. draudti*, see that entry), they stated that it has no very near allies.

Beside misapplication and misspelling, the other problem with *ganimedes* is that the type locality “Indes Occidentalis” is most probably erroneous. The species was never recorded from the West Indies in modern times (SMITH *et al.* 1994). Despite of that it cannot be excluded that the species once was native around Trinidad or other West Indian harbours with significance in early colonial history, it is most

probably erroneous (BÁLINT, *in prep.*). The type locality of *P. ganimedes* is corrected now by the neotype designation in accordance of ICZN Art 76.3.

The name was correctly applied to the Guyanese *Annamaria* phenotype as "*Thecla ganimedes*" by LATHY in 1926. The phenotype *ganimedes* sensu LATHY is identical with the phenotype shown on the CRAMER plate. LATHY was the one who pointed out unambiguously the characters which help to distinguish *ganimedes* from the other existing species, for which the name *Thecla nobilis* was misapplied (see above).

The nominal species group taxon *nobilis* was based on an unstated number of female specimens originating from Surinam (HERRICH-SCHÄFFER 1853). This name was correctly applied to the phenotype illustrated by DRAUDT (1919), however the data given on the distribution was erroneous indicating a wide range beyond the Guyanas. LATHY (1926) pointed out the confusion surrounds the name "nobilis, H.-S.", and he described as *Thecla draudti*, because *nobilis* represents the same biological species first described by CRAMER under the name *Papilio ganimedes*. One possible syntypic specimen of *T. nobilis* was segregated by Dr GERARDO LAMAS (Lima, Peru) in the SMN collections and labelled as lectotype (HÄUSER *et al.* 2003, fig. 13). I share the opinion that the specimen is syntypic because of the label no. 1. testifies that it originates from the royal collection used by HERRICH-SCHÄFFER. The lectotype designation was not yet formalized. I designate this specimen as lectotype of *Thecla nobilis* objectively fix the name to the specimen which represents the female phenotype of the taxon *Annamaria ganimedes* in accordance of ICZN Art. 74.1 (Fig. 17).

The nominal species group taxon *Thecla bimaculata* was based on two male and one female specimens collected in "Innern Surinams, 5' nördl. Br." by MÖSCHLER (1877). Subsequently MÖSCHLER himself pointed out the name he introduced is a synonym of "*Thecla ganimedes*" (MÖSCHLER 1883: 307). The MÖSCHLER types are deposited in the Zoologisches Museum zu Humboldt Universität (BRÉVIGNON 2002: 476), I was unable to examine *bimaculata* type material. However, after studying the original description and the accompanying figure I am convinced that the nominal taxon *bimaculata* represents the biological species described first as *P. ganimedes* by CRAMER, because both are from the Guyanas and their fore wing ventral pattern is identical. Consequently *Thecla bimaculata* is a junior subjective synonym of *Papilio ganimedes*.

Annamaria lathyi sp. n.

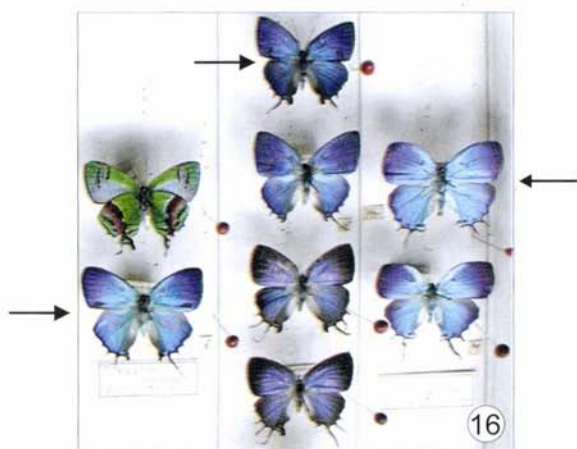
(Figs 16, 18–20, 30, 33)

Type material – MNHN holotype male, labelled as: “Pérou” (white, oblong, printed), “T ? / Rio Seco IX. 28” (folded several times, yellowed white, oblong, handwritten). The specimen is in moderate condition, set dorsally, half of both antennae missing (Fig. 16). Paratype male no. 1: “Jepelecio, Pérou”, viii.1928, FOURNIER collection (set dorsally, left antennal club and entire right antenna, left hindwing CuA2 tail are missing). Paratype male no. 2: “Rio Saco, Pérou”, xii. 1928, FOURNIER collection (set ventrally, both hindwing anal parts broken). Paratype no. 3: “Macas, Ecuador”, 1905–06, FOURNIER collection (set ventrally, in prefect condition). Paratype no. 4: “Ecuador, Podocarpus National Park, cca. 2700–2800 m, Yanagana to Valladolid, 17.VIII.1998, leg. T. Pyrcz”. Paratype nos 1–3 are specimens deposited in MNHN. The female paratype (no. 4.) is deposited in MZUJ. Paratype, male no. 5 (CB): “Lita, 700 m, Esmeraldas, Ecuador, II.1997”; paratype, male no. 6 (CB): “Rio Chuchuni, Lita to San Lorenzo km 12, 700–900 m, Esmeraldas, Ecuador, VIII.2001”.

Dissection: HNHM BÁLINT gen. prep. no 1069 (MNHN holotype).

Diagnosis – Similar to *A. ganimedes* male, *A. lathyi* lacks fore wing scent patches in cells M1, M2 and M3. The fore wing ventral median and postmedian lines are narrow, and more or less equal in width, whilst these are disequal in *draudti* and *ganimedes*. On the hind wing ventrum there is a very thin black distal border of the white medial line. This trait is very wide both in *draudti* and *ganimedes*.

Description – Male. Head: Labial palpus laterally bright green black with white scaling, vertex bright green. Eye hairy. Antennal segments black with white scalings at base, club brown. Thorax: dorsally bright azure blue, ventrally bright goldish green. Wings. Shape: Fore wing costal and distal margins slightly convex, apical part flat, anal margin straight. Apex and tornus slightly pointed. Length from base (erection of cubital vein) to apex (vein Cu5 terminus): 20.5 mm. Hind wing costal margin highly convex, distal margin waved having extended vein termini, anal margin also waved. Vein Cu1, Cu2 and 2A termini with long extended tails (length ratio between them: 1:3:8:2), tornus slightly lobate as anal margin almost touching vein 2A in tornal area. Colouration and pattern: Fore wing dorsal ground colour bright azure blue in basal and medial areas, bright violet blue in submedial and in marginal areas in dorsal aspect (laterally it changes, showing a strong structural blue colour). Margin with thin black border, ciliae white between vein, black at vein termini. Hind wing dorsum similarly coloured and ciliated to that of fore wing, cells Cu2–2A and 2A–3A marginal area in tornus bright sky blue distally and black basally. Anal area from vein 2A to margin covered with long pilose scales. Fore wing ventrum gleaming silvery blue below vein Cu1, above bright green, distal margin black. Median and postmedian line with same width at vein Cu1. Hind wing ventrum basally and marginally bright green with black subbasal line from vein Sc+R1 to erection vein M3 from cubital adjoining median pattern in a break; with another curved black subbasal line erecting from this point and reaching anal margin; the two lines create a delicate hook-like pattern; medial area with wide red stripe bordered basally with very thin black and wider white line, distal part intermediate, with rose hint of scales to suffused black marginal intercellular spots; anal area between margin and vein 2A with well patterned subbasal (the end of the hook-like marking) with black lines (one median, erecting from the median red stripe, and one submedian, entering to tail at terminus vein 2A. Androconia: Dorsal fore wing discal cell with a circular shaped scent pad situated in apical area; tornal part in be-



Figs 16–17. *Annamaria* type documentation. 16 = MNHN *Annamaria* type material, arrow indicates primary type specimen in left column: *A. lathyi* sp. n. holotype; central column: *Papilio ganimedes* CRAMER, 1775, neotype; right column: *Thecla mirabilis* LATHY, 1930, holotype. 17 = SMN *Thecla nobilis* HERRICH-SCHÄFFER, 1853 documentation: the lectotype female (left row), figures from HERRICH-SCHÄFFER, 1853 (top right) and lectotype labels (below right).

tween veins Cu2 and 2A with trapezoidal scent patch (Fig. 27). Legs: Generally femur bright green, tibia and tarsus black with white rings, spots or stripes; fore leg femur and tibia, and coxa and tarsus approximately with same length, tibia with a pair of brown apical spurs, tarsus with long sets of lateral puvillae and a pair of apical claw. Abdomen: dorsally bright azure blue, ventrally grey. Copulatory organ as in *A. draudti* (Fig. 33).

Female. Similar to male in wing shape and ventral pattern, without androconia, and with dorsal violet bright azure blue colouration (but with violet blue scales to basal and subbasal area). Medial and marginal area smokey brown or brown. Wing ventra as in male.

Distribution – Geographical: Recorded only from Ecuador (“Esmeraldas” and “Macas”) and Peru (“Jepeleico” and “Rio Saco”). Spatial: The single known female specimen has been recorded from the relatively high elevation 2750 m (obviously a hilltopping individual; the males were recorded much lower (700–900 m)). Temporal: specimens have been taken in February, August, September and December.

Etymology – The species is dedicated to the memory of PERCY LATHY (1870–1943), who segregated the MNHN type material as “*Thecla draudti*, Pérou”.

***Annamaria columbia* sp. n.**

(Figs 21–22, 38)

Thecla sp. –D’ABRERA 1995: 1127, figs “T. ? sp. ? R” and “T. ? sp. ? V”.

Type material – BMNH 266855 holotype female, labelled as “Santa Fé [/] de Bogotá.” (white paper, printed); “Rothschild [/] Bequest [/] B.M.1939–I.” (white paper, printed); “BMNH # 266855 (white paper, printed); “B.M. (N.H.) [/] Rhopalocera [/] vial number / 5827” (handwritten, black ink; white paper, printed in red); “BÁLINT 11 [/] 28A–68” (white paper, handwritten). It is in modertae condition: right antenna broken, and the tails are broken at left hind wing vein terminus 1A+2A, plus at all the right hind wing vein CuA1, CuA2 and 1A+2A. The abdomen is dissected and placed in glycerin vial curated separately in the BMNH vial collection. Dissection: BMNH vial no. 5827 (holotype female).

Diagnosis – There is no similar species in the genus. It is reminiscent to non-congeneric *Laothus viridicans* (FELDER et FELDER, 1865) BÁLINT, 2002 and its relatives, but dorsal wing ground colour lighter with longer fore wing outer margin, hind wing vein Cu1 terminus tailed and ventral fore wing medial line joins the submedial line at tornus. The wing shape of *A. columbia* is “wide”. In contrary, the wing anal margin of all *Laothus* species is longer than the distal margin, what results an “expanded” shape, they possess a doubled submarginal line, and the median transverse line runs to the medial part of the costa, not to the tornal area. Moreover, the terminus of hind wing vein CuA1 lacks the filamentous tail in all *Laothus* species.

Description – Female: Head: Labial palpus very short, black, vertex bright green. Eye hairy. Antennal segments black with white scalings at base, club black. Thorax: dorsally bright green, ventrally deeper green and brown. Wings: Fore wing costal and distal margins slightly convex, apical part flat, anal margin straight. Length from base (erection of cubital vein) to apex (vein Cu5 terminus): 22.5 mm. Hind wing costal margin convex, distal margin undulate having slightly extended vein termini at veins Cu1, CuA2 and 1A+2A, tornus lobate as anal margin almost touching vein 2A in tornal area. Colouration and pattern: Fore wing dorsal ground colour bright green with extended black costal and distal border, ciliae basally black, distally white. Hind wing dorsum similarly coloured and ciliated to that of fore wing but with narrow (<1mm) marginal border and whitish blue line in tornus. Fore wing ventrum unicolourous dove grey with white median and submedian line converging in tornal area, submarginal and antemarginal area with white shade, outer margin brown; hind wing pattern with median and submedian white line running to the large red black eyed “Thecla spot” CuA2 and 1A+2A in intercellular area, submarginal area deeper brown with white submarginal and antemarginal shade, outer margin darker brown, tornus with black submarginal and antemarginal strip, anal flap with two narrow white lines. Legs: generally femur, tibia and tarsus bright green. Abdomen: Dorsally bright blue ventrally grey. Copulatory organ: as in *A. draudti* (Fig. 38).

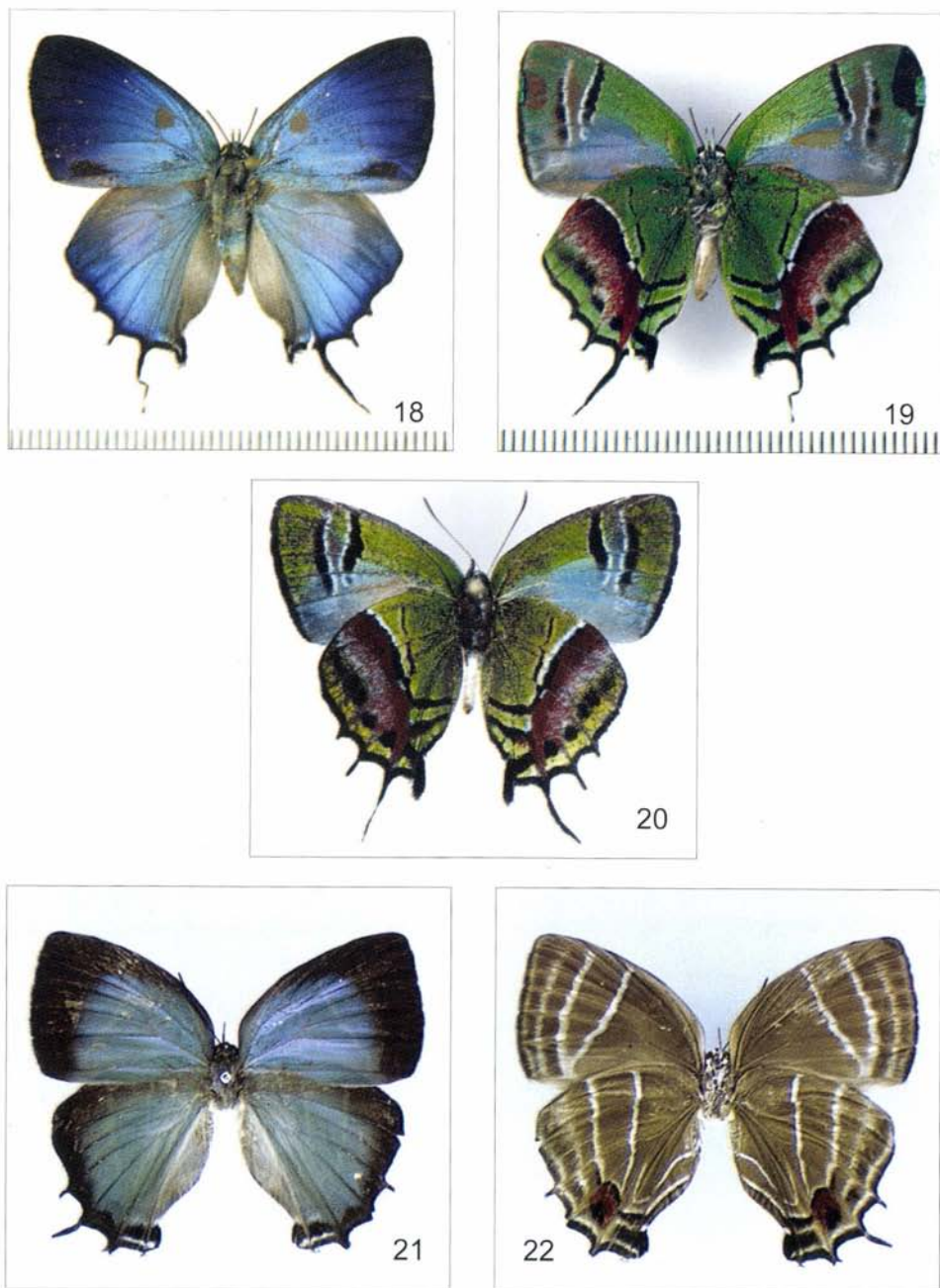
Male. Unknown (see Remarks).

Distribution – Geographical: Recorded only from the type locality. There is no spatial and temporal data.

Etymology – Noun, gender feminine, in use to signify the country of origin (Columbia = Colombia), but it is also a reference to the pigmental coloration of the wing ventral ground colour (*columbia* = dove).

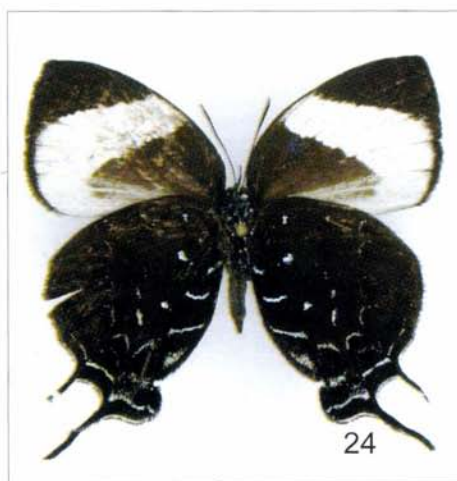
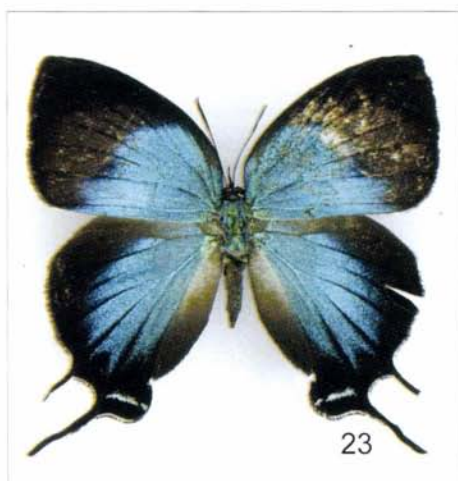
Remarks – Original curation: The holotype specimen was curated by FREDERICK W. GOODSON, who was an authority in neotropical hairstreaks (*Thecla* s. l.) (BÁLINT 2005) as an unknown species in the drawer, that contained various species of the genus *Laothus* JOHNSON, KRUSE et KROENLEIN, 1997 (type species: *Thecla barajo* REAKIRT, 1867) and *Balintus* D’ABRERA, 2001 (type species: *Thecla tityrus* FELDER et FELDER, 1865). The individual taxon has been mentioned as an undescribed species closely related to “*Thecla viridicans*” in the manuscript book of GOODSON. Qualitatively different wing shape (distal and anal wing margin ratio c. 1 : 1, hind wing vein terminus CuA1 tailed) and ventral wing pattern (fore wing white transverse medial line missing) indicated that the original curation of the specimen documented by D’ABRERA (1995) was erroneous.

Indeed, superficially *A. columbia* holotype is most resembling to the species *Balintus tityrus*. The remarkable phenotypic differences between *Balintus* specimens and the holotype are: (1) somewhat larger size of *A. columbia*, (2) the tailed hind wing vein CuA1 terminus of *A. columbia* and (3) the missing ventral hind wing white basal line of *A. columbia*. The genital configurations differ even more remarkably as the examined material testified (BMNH vial nos 5825 (*B. tityrus* female, Bolivia) and 5862 (*L. viridicans* female, Colombia)).



Figs 18–22. *Annamaria eumaeine* hairstreak imagines. 18–20: *Annamaria lathyi*, sp. n. (prior dissection): 18–19 = holotype (MNHN): 18 = dorsal view, 19 = ventral view; 20 = paratype, female, ventral view (MZJU). 21–22: *A. columbia* sp. n., holotype (BMNH): 21 = dorsal view, 22 = ventral view.

The male of *A. columbia*: All the genera closely related to *Evenus* (see Discussion below) are dimorphic sexually, but ventral markings of the sexes are qualitatively identical. Hind wings sometimes are dissimilarly tailed, for example *Ave-xcrenota anna* (DRUCE, 1907) JOHNSON et CONSTANTINO, 1997 and *Paraspi-culatus catrea* (HEWITSON, 1874), BÁLINT et MOSER, 2001. The male fore wing ventra could have structural colouration as in *Atlides polybe* (LINNAEUS, 1767) HÜBNER, 1819 or *Denivia hemon* (CRAMER, 1775) JOHNSON, 1992. Male wing dorsa are more bright, females are darker blue with wide distal margin or even brown (*Macusia* lineage). Their ventral wing is qualitatively different in hue or quantitatively distinct in colour (*D. hemon*, *Margaritheclus danaus* (FELDER et FELDER, 1865) BÁLINT, 2002, *Theritas drucei* LATHY, 1930, but their patterns are always identical qualitatively. Consequently I presume based on analogies of con-generic taxa and other large eumaeines that the male wing ventrum of *A. columbia* similarly patterned as the the holotype female. *A. columbia* male hind wing should have three hind wing tails, the fore wing distal margin should be somewhat shorter resulting slightly narrower shape. The dorsal colouration is certainly somewhat lighter bluish green with fore wing discal scent pad and subdiscal patches and nar-row black marginal border. The ventral wing ground colour should be somewhat lighter, fore wing probably possessing structural blue medial area. There is no evi-dence for that the phenotypes of *A. rhapsissima* and *A. columbia* would represent the same biological species.

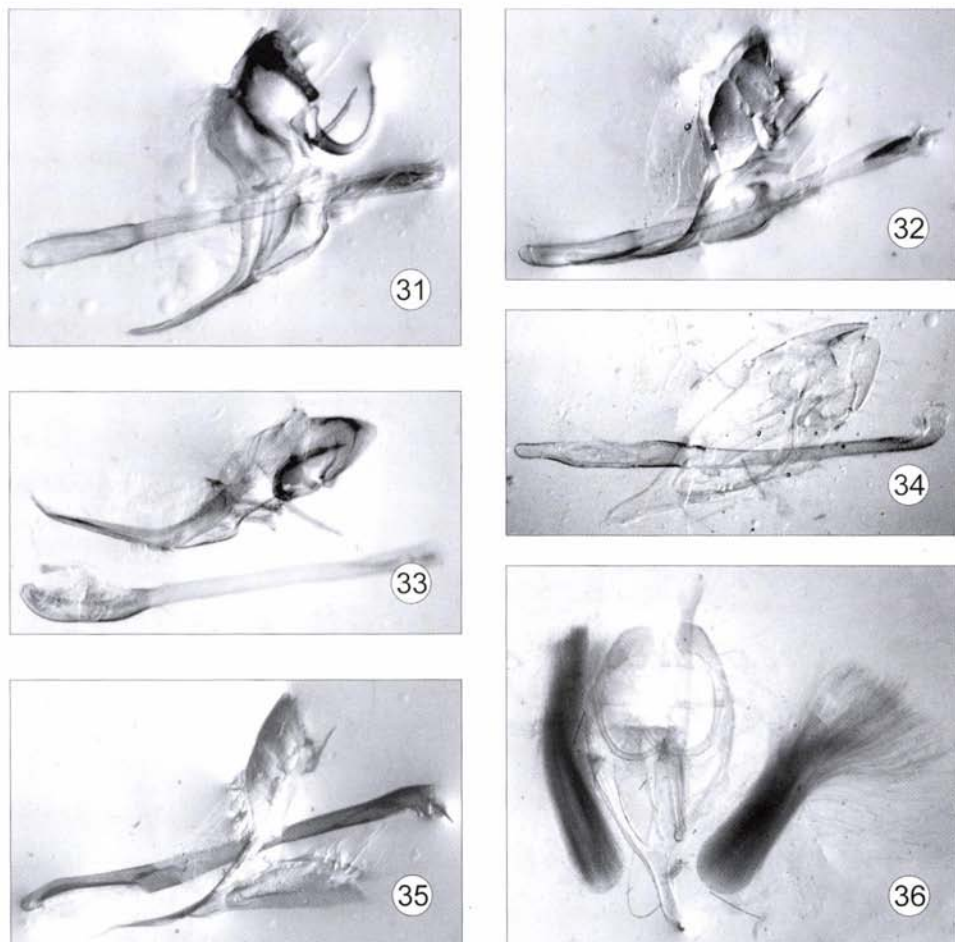


Figs 23–24. *Brevianata saphonota* (CONSTANTINO, SALAZAR et JOHNSON, 1993), comb. n., female, Ecuador, Esmeraldas (coll. P. BOYER): 23 = dorsal view, 24 = ventral view. (Images taken with the same magnification as Figs 4–5)

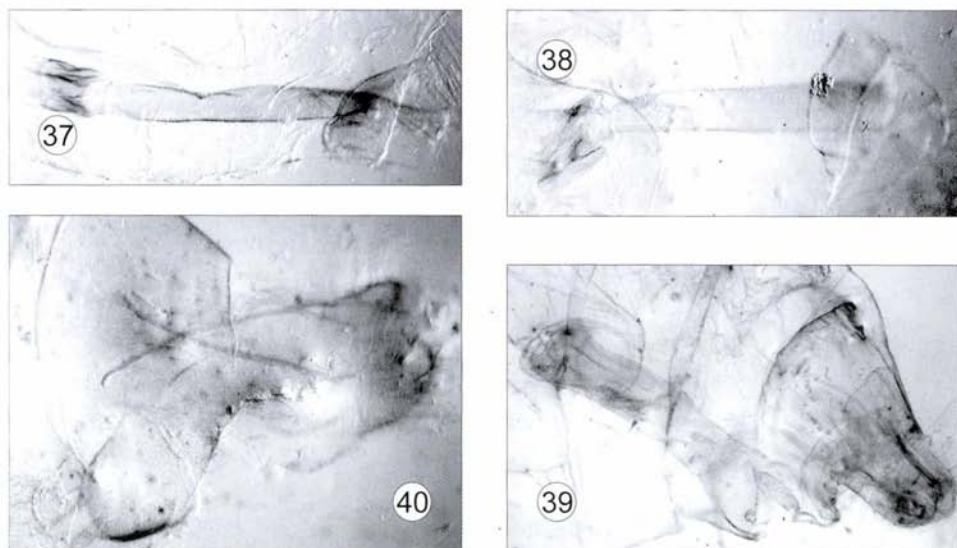


Figs 25–30. *Annamaria* fore wing dorsal androconia: 25 = *A. rhapsissima* (JOHNSON, 1991), Peru; 26 = *A. rhapsodia* sp. n., Bolivia; 27 = *A. draudti* (LATHY, 1926), Colombia, with reduced subdiscal scent patches; 28 = *A. draudti* (LATHY, 1926), Colombia, with developed subdiscal scent patches; 29 = *A. draudti* (LATHY, 1926), Colombia, with extremely developed subdiscal scent patches; 30 = *A. lathyi* sp. n., Peru, without subdiscal scent patch. (Images taken with the same magnification as Figs 4–5 and 25 etc.)

Notes on the type locality: It is questionable that the holotype specimen was collected in the vicinity of Bogotá indeed. One probably answer is that the individual was hilltopping. In that case the type locality could be correct, but the specimen almost certainly originated at much lower elevation from a wider distance (as the female paratype of *A. lathyi*). As the Colombian capital lies in an elevation which is too high for habitats typical for *Annamaria*, it can be ruled out that the breeding habitat of the species is in or somewhat around Bogotá. Moreover, "Bogotá" gen-



Figs 31–36. Eumacine hairstreak male genital organs: 31 = *Annamaria rhapsodia* sp. n. (HNHM 1070); 32 = *A. draudti* (LATHY, 1926) (HNHM 1071); 33 = *A. lathyi* sp. n. (HNHM 1069); 34 = *Theorema eumenia* HEWITSON, 1865 (BMNH 5843); 35 = *T. sapho* (STAUDINGER, 1888) (HNHM 1068), 36 = *Eumaeus toxana* (BOISDUVAL, 1870) (HNHM 1074) (images taken under the same magnification, brush organ removed in Figs 34–35).



Figs 37–40. Eumaeine hairstreak female genital organs: 37 = *Annamaria draudti* (LATHY, 1926) (BMNH 5849); 38 = *A. columbia* sp. n. (BMNH 5827); 39 = *Theorema eumenia* HEWITSON, 1865 (BMNH 5844), 40 = *Eumaeus toxana* (BOISDUVAL, 1870) (HNHM 890).

erally considered to be an erroneous locality given for many Neotropical butterflies (BÁLINT & GOODGER 2003: 85–86). If the species was collected in the one-day-ride vicinity of Bogotá in reality, in that case it can be presumed that *A. columbia* will be never collected again in that region. Furthermore it would be easy to speculate upon that the species is perished as modern lepidopterists active in Colombia nowadays never encountered *A. columbia* (H. DAHNERS, L. M. CONSTANTINO, J. F. LE CROM and J. A. SALAZAR).

DISCUSSION

The combination Lamasina saphonota

The taxon was described on the basis of a single female taken in Colombia (type locality: Valle Alto Anchicayá, 700 m), and was originally placed in the genus *Denivia*, most probably because of the homoplasious ventral hind wing pattern resembling *Denivia hemon*. Hitherto this was the single known individual of the species. In the CB there are two recently collected females: one from Cali (Colombia) and another one from Ecuador (Figs 37–38). The original placement of the

nominal taxon *saphonota* is erroneous as I characterise *Denivia* females as having strongly sclerotized bipartite ductus bursae with asymmetrical terminal plates, often bristled. Moreover, male *Denivia* possess a deep ventral hind wing pouch (BÁLINT & MOSER, *in prep.*). The discoverer of *saphonota* remarked that the newly described species probably belongs also to the Muellerian mimicry ring long-recognized for *Theorema sapho* (STAUDINGER, 1888), which is probably a human artefact (KASSAROV 2004), but indicative for species groups or in a given monophyly where it is displayed.

ROBBINS (2002, 2004) placed *D. saphonota* in his “*Lamasina*” without any supportive text. The only clue that I could ascertain concerning his transfer of *D. saphonota* to another genus is the dorsal green colouration, which resembles to the supposed female of *A. rhaptissima* or the newly described *A. columbia* (see above). However, that green is not unique in the tribe and the original documentation of the *saphonota* female genital structures, wing shape with lacking tail at vein Cu1 terminus and qualitatively distinctive pattern contradicts the placement by ROBBINS. The nominal taxon *saphonota*, whose male is unknown to me belongs to another lineage. The transverse white dorsal fore wing stripe (as in *sapho*) and the identical gleaming ventral hind wing pattern of the female could support the placement in *Theorema* HEWITSON, 1865 (type species *Theorema eumaenia* HEWITSON, 1865). Moreover, the holotype female and another the recently collected female individual (Figs 23–24) suggests that this taxon actually belongs to the lineage of the genus *Brevianta* JOHNSON, KRUSE et KROENLEIN, 1997 (type species: *Thecla undulata* HEWITSON, 1867). This placement is fully supported by the followings: (1) the shape, dorsal colouration and pattern of the wings and (2) the membranous large and wide female genital ductus bursae (cf. vial preparations of BMNH 5831 (*B. busa*) and BMNH 5832 (*B. undulata*)). Consequently, I introduce the new combination *Brevianta saphonota* (CONSTANTINO, SALAZAR et JOHNSON, 1993), BÁLINT 2005, **comb. n.**

Notes on *Theorema*

STAUDINGER (1888: 289) described *Micandra sapho* on the basis of a single female specimen (= holotype) originated from Colombia (Rio San Juan). DRAUDT (1919: 756) mentioned that *sapho* is probably a *Theorema* species. This combination appeared in BRIDGES (1988: II.110), who gave two sources of it: the compilation-list of COMSTOCK & HUNTINGTON (1959–1964) and an unpublished document of JOHNSON (BRIDGES 1988: IV.53). The nominal taxon *sapho* was formally transferred to *Theorema* by SALAZAR (1993), who identified the male phenotype and associated it with the only known female (CONSTANTINO *et al.* 1993). The

type species of *Theorema* and also *T. sapho* possess the unique male character of sclerotized terminal hook in the aedeagus (Figs 34–35). The “traditional” close relationship of *Theorema* with *Eumaeus* HÜBNER, 1819 (type species: *Rusticus minijas* HÜBNER, 1809) is not supported by this character as male *Eumaeus* does not possess this aedeagal hook (Fig. 36) and has different brush organ. The ventral hind wing pattern is also qualitatively different from that of *Eumaeus*. More conspicuously, the characteristic hind wing ventral *Eumaeus* red spot in the basal area is missing in *Theorema*, which has no reddish tint in its lower abdomen (D’ABRERA 1995: 1100–1102). Therefore the opinion, that *Theorema* represents only a clade of *Eumaeus* expressed by ROBBINS (in SALAZAR 1993: 48) is not well supported.

ROBBINS delineated his *Eumaeus* section on the basis of the brush organs (when present) that surround (or nearly surround) the genital capsule. He placed *Theorema* next to *Eumaeus* in the same section. One argument against the *Eumaeus* section as identified ROBBINS is that the definition is based on one character, which displays multiple states, and there is no further support. Moreover, there are numerous eumaeine genera whose taxa possess brush organs which surround or nearly surround the genital capsule or have no this kind of organ at all (e.g. in certain *Atlides* and *Denivia*). The other problem with the *Eumaeus* section *sensu* ROBBINS is that the taxa he clustered are completely divergent in almost every other respect: wingshape, dorsal colouration, ventral pattern, androconia, brush organ and female genitalia. I am convinced that *Theorema* is more closely related to other eumaeines than to *Eumaeus*. This is supported by the female genital structures, which exhibit a membranous ductus with wide terminal opening and simple ductus seminalis (Fig. 39), whilst and the anal part of the *Eumaeus* female genitalia is heavily sclerotized (figures in CONSTANTINO & JOHNSON 1997) (see Fig. 40).

Previous groupings

GODMAN & SALVIN (1887: 10–14) clustered eight species (“*Thecla coronata*”: #1, “*Thecla teresina*”: #2, “*Thecla temathea*”: #3, “*Thecla regalis*”: #4, “*Thecla nobilis*”: #5, “*Thecla imperialis*”: #6, “*Thecla cypria*”: #7 and “*Thecla telemus*”: #8”) on the basis of the character “interocular space covered with closely depressed scales with no hairs”. The group was divided for two groups: (1) “scales of interocular space directed upwards” (species nos 1–3) and (2) “scales of interocular space directed downwards” (species nos 4–8). I have examined further characters in all of the taxa mentioned by GODMAN & SALVIN plus in additional species (BÁLINT, *in prep.*). I have found that the GODMAN & SALVIN’s impression of closely depressed scales arises from the optical effect caused by luminescent

scales. The scale arrangement on the frontoclypeus of *Mithras nautes* (CRAMER, 1779) and *Theorema sapho* are similarly depressed without “hairs”. Consequently, the character is not a synapomorphy of the group represented by the species nos 1–8 listed by GODMAN & SALVIN but it probably indicates a larger monophylum. This is also mirrored in the checklist of ROBBINS (2004) who placed the eight species mentioned above into three different sections. The monophyly of the sections created by ROBBINS was stressed, but their relationship was not elaborated.

The frontoclypeus with scales directed upwards seems to be restricted to the lineage represented by species nos 1–3 according to GODMAN & SALVIN numbering. This is the *Macusia* s. str. clade, which could be characterised also by the presence of a peculiar fore wing costal androconia described by HEWITSON (1865: 70, 74) as “singular hirsutae base of the costal margin of the anterior wing” or GODMAN & SALVIN (1887) as “the transverse hair-like scales of the costa” sensu GODMAN & SALVIN (1887: 10; illustrated on Pl. 48, fig 7b). This character can be polarized according to the lineages, but I am of the opinion that HEWITSON and GODMAN & SALVIN discovered different characters, which are analogies but not homoplasious (BÁLINT, *in prep.*).

DRAUDT (1919: 747) created “Nobilis-Gruppe” placing “*Thecla nobilis*” and “*Thecla telemus*” together. These two taxa have very few common characters as I could detect on the basis of the material I have examined (BMNH vial no. 5799 (female *Paiwarria aphaca* (HEWITSON, 1867), Brazil: Rio Grande). My observations support their placements in different genera as mirrored in D’ABRERA (1995: 1106–1107 and 1109–1110). Beyond their different genital structures, male androconia, wing shape and ventation, their scale nanostructures are also qualitatively different generating distinct structural colours. *Annamaria* uses single chrySTALLINE photonic crystal for generating dorsal and ventral gleaming colours, whilst *Paiwarria* utilizes dual generating system: single chrySTALLINE for dorsal and polychrySTALLINE for ventral colour (BIRÓ *et al. in prep.*).

Subsequently D’ABRERA placed the nominal taxa *ganimedes*, *draudti* and *rhaptissima* in *Evenus* (cf. D’ABRERA 1995: 1107, 1109), most probably influenced by SMART, who placed the nominal taxa *coronata*, *gabriela* and *regalis* in *Evenus*, and indicating its diversity as “appr. ten species” (SMART 1975: 172, 263). The placement of *coronata* and *gabriela* in *Evenus* were unjustified. The species *coronata* has a sibling in NE South America (A. NEILD, *pers. comm.*), and I am of the opinion that this pair of species could not be placed in *Evenus* as they are distinct in many traits from *E. regalis*. Similarly, *gabriela* and its relatives differ in many characters from *Evenus* s. str. hence *Evenus sensu* SMART and *sensu* D’ABRERA are paraphyletic.

Recent systematics

ROBBINS (2004: 118–119) listed his “*Lamasina*” (= *Annamaria*) as belonging to the newly established *Brangas* section. However the entity has not been diagnosed, not even cryptically in the text like some other sections newly proposed. Consequently, I cannot use his system, but will propose some distinct tribe (BÁLINT, *in prep.*), which will include most of the genera of the “large” eumaeines (I list them in brackets; authors and dates can be taken from LAMAS 2004) placed by ROBBINS in his sections *Atlides* (genera *Arcas*, *Atlides*, *Aveexcrenota*, *Denivia*, *Lucilda*, *Margaritheclus*, *Pseudolycaena*, *Riojana*, *Theritas*), *Brangas* (genera *Annamaria*, *Brangas*, *Chopinia*, *Cryptaenota*, *Enos*, *Evenus*, *Ipocia*, *Macusia*), and *Eumaeus* (genera *Mithras*, *Paiwarria*, *Paraspiculatus*, *Theorema*) and still some others.

Why I disagree with the system proposed by ROBBINS? According to ROBBINS 2004: xxv) this group is monophyletic on the basis of biological homogeneity, which is also supported by genital character structures and unique androconia considered to be lost by ROBBINS in certain taxa for example in “*Evenus*” (BRÉVIGNON 2002). In my opinion this particular “*Evenus*” character is not apomorphy (see above), as its absence indicates plesiomorphy but not a derivative character state. I presume that the development of a special kind of androconia is so costly for a clade that if it is derived in the lineage, the character is kept as far as possible. Somehow similar situation was speculated for Riodinidae by HALL & HARVEY (2003: 192–193). Moreover *via* such lumping classification for *Evenus* and its related genera results tremendous information loss in the case of these particularly gorgeous butterflies.

ROBBINS (2004: 119) placed *Annamaria* in an intermediate position between the genus *Enos* JOHNSON, KRUSE et KROENLEIN, 1997 (type species: *Thecla thara* HEWITSON, 1867) and *Evenus*, as members of the newly established *Brangas* section. This hypothesis has to be evaluated since ROBBINS did not present any diagnosis or description for this assemblage (which harbors groups of superficially very different eumaeines inhabiting different types of habitats). Since the genus *Brangas* has been mentioned first indicating as to be the basal taxon, I express again my doubts also in the correctness of the *Brangas* section *sensu* ROBBINS as a monophyly: *Brangas* possesses a peculiar hind wing ventral androconia discovered and figured by GODMAM & SALVIN (1887: 24; pl. 50, fig. 13a). It should be a derivative genus.

*

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I dedicate this paper to my wife ANNAMÁRIA KERTÉSZ for the 20th anniversary of our marriage.

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Checklist of the Diptera of Hungary

Edited by L. Papp

This is an international undertaking of 20 authors: a checklist of the dipterous species found through the end of 2000 in Hungary, with references to their first reliable records in the territory of modern Hungary. The "minimum requirements" for a "first record" are to have the name of the identifier and the place of deposition, and to have evidence that the site is a locality of present-day Hungary. The starting point for most parts is Thalhammer's *Fauna Regni Hungariae* in 1900 and every family part has a short introduction. These parts contain data on the number of recorded species and on the number of species expected to occur in Hungary. Most of the voucher specimens are deposited in the Diptera collection of the Department of Zoology, Hungarian Natural History Museum, Budapest (HNHM); in exceptional cases the name of the relevant institution is given. There are numerous species new to Hungary reported here for the first time, however, the dipterous fauna of Hungary is still poorly known with 5550 species in this book. According to our present knowledge no less than 10000 species may occur in the country.

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