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Review of the genus Brangas Hübner, 1819 (Lepidoptera: Lycaenidae) with description of a new genus

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Abstract – The genus *Brangas* Hübner, 1819 is reviewed. Generic limits and the male wing secondary characters are briefly discussed. Five species groups (*caranus, carthaea, dydimaon*, *insolitus* and *torfrida* species group) are established. Six new species are described *: Brangas contrastus* sp. n. (Ecuador: Morona-Santiago, Macas), *Brangas insolitus* sp. n. (Peru: Amazonas, Rodriguez de Mendoza), *Brangas polonus* sp. n. (Peru: Amazonas, Mendoza-Cedro), *Brangas moserorum* sp. n. (Brazil: Sao Paulo), *Brangas neildonatus* sp. n. (Venezuela: Aragua, Choroní, Puerto Colombia), *Brangas rambutorum* sp. n. (Colombia: Sierra Nevada de Santa Martha). The neotype for *Papilio dydimaon* Cramer, 1777 is selected. The lectotype for *Thecla teucria* Hewitson, 1868 is designated and the species is placed in a newly described genus *Dabreras* gen. n. A key to all *Brangas* species is presented using male wing characters. With 89 figures.

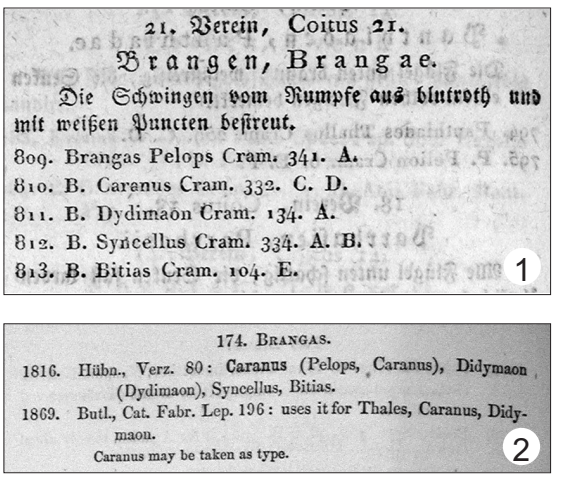
Key words – Taxonomy, neotype, lectotype, species group, male secondary characters, new species, new genus, new combination, South America.

INTRODUCTION

The genus *Brangas* was established by Hübner (1819: 80) with the diagnosis "Die Schwingen vom Rumpfe aus blutroth und mit weissen Punkten bestreut" (= the wings from the body are sprinkled with blood red and white spots) for five nominal species of neotropical hairstreaks (Fig. 1). This grouping turned out to be not supporting common ancestry, therefore the taxa were later placed in different species groups or genera (Draudt 1919, d'Abrera 1995, Robbins 2004). Scudder (1875: 128) wrote that *Papilio caranus* Stoll, 1790 may considered to be the type of *Brangas* (Fig. 2), and

this was accepted by HEMMING (1967: 80) as a valid type designation. Nor GODMAN & SALVIN (1887), neither DRAUDT (1919) applied the Hübnerian name, which was later considered to be a junior synonym of *Atlides* HÜBNER, 1819 (type species: *Papilio halesus* CRAMER, 1775) by HEMMING (1967). This nomenclature was applied by DE LA MAZA (1987) for the Mexican representatives of the genus.

ELIOT (1973: 440) listed *Brangas* as a valid genus and not as a synonym of *Atlides* without any note suggesting that he did not accept the synonymization of HEMMING. According to our best knowledge, *Brangas* was resurrected from synonymy by ROBBINS (1991: 3) providing a brief characterization of the genus. BROWN (1993: 53) listed *Brangas* amongst the better defined hairstreak genera giving the species number as 18 to 20 and indicating the larval host plants as Loranthaceae and Sapindaceae. Two years later, D'ABRERA (1995: 1124–1125) presented a synoptic overview for *Brangas* also on the basis of the material curated by GOODSON (BÁLINT 2005). *Brangas* was also used in the first revision of Neotropical Eumaeini which attempted to avoid the application of the name "*Thecla*" for the Neotropical fauna (BÁLINT & D'ABRERA in D'ABRERA 2001).


21. Verein, Coitus 21.

Brangen, Brangae.

Die Schwingen vom Rumpfe aus blutroth und mit weißen Puncten bestreut.

809. Brangas Pelops Cram. 341. A.
810. B. Caranus Cram. 332. C. D.
811. B. Dydimaon Cram. 134. A.
812. B. Syncellus Cram. 334. A. B.
813. B. Bitias Cram. 104. E.

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174. BRANGAS.

1816. Hübn., Verz. 80: Caranus (Pelops, Caranus), Didymaon (Dydimaon), Syncellus, Bitias.

1869. Butl., Cat. Fabr. Lep. 196: uses it for Thales, Caranus, Didymaon.

Caranus may be taken as type.

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Figs 1–2. 1 = The establishment of the scientific name of *Brangas* in the publication of HÜBNER (1819), 2 = The type species designation of *Brangas* in the publication of SCUDDER (1875)

In the recently published checklist of Neotropical butterflies (LAMAS 2004), the genus *Brangas* was clustered with further four genera in the "*Brangas* Section" (ROBBINS 2004: 118). In this publication, there was an indication to the existence of seven undescribed *Brangas* species, and the combination *Brangas teucria* (HEWITSON, 1868) (ROBBINS *et al.* 1996) was also presented. This transfer of *Thecla teucria* to *Brangas* made the genus difficult to characterize.

The existence of several undescribed *Brangas* species was known prior to the publication of the checklist edited by LAMAS (2004) by examining museum collections and via personal correspondences. Besides *Brangas* being diverse, also variable are the male secondary sexual characters including the hind wing ventral alar pouch (first recorded by GODMAN & SALVIN 1887), the various dorsal alar organs (discussed in some detail by ELIOT 1973) and the ventral fore wing blue reflector (mentioned as "blue scaling on the ventral fore wing" by ROBBINS 2004: xxvii; *cf.* BÁLINT 2004).

MATERIALS AND METHODS

The results are based on the comparison of the *Brangas* material of the following institutes (in brackets with abbreviations used throughout the text and with names of curators): Museum national d'Histoire naturelle, Paris, France (MNHN: Dr JACQUES PIERRE); Naturhistorisches Museum, Wien, Austria (NMW: Drs SABINE GAAL-HASZLER and MARTIN LÖDL); Natural History Museum, London, United Kingdom (BMNH: Mrss KIM GOODGER, BLANCA HUERTAS and Mr PHILLIP R. ACKERY); Zoological Museum, Jagiellonian University, Kraków, Poland (MZUJ: Drs TOMASZ PYRCZ and JANUSZ WOJTUSIAK); Zoologisches Museum des Bayerisches Staates, München, Germany (ZSM: Dr AXEL HAUSMANN). Material preserved in the private collection of the junior author (CF) was also examined as well as private collections in Venezulea as collection of MAURO COSTA, Caracas (CC); collection of the ROMERO family, Maracay (CR) and collection of JUAN CARLOS DE SOUSA-COELHO, Maracay (CS), who also checked for us the Lepidoptera collection of Museo de Zoología Agrícola de la Universidad Central de Venezuela, Maracay (MIZA). MZUJ: Holotype specimens with Peruvian locality will be deposited in the Lepidoptera Collection of the Museo de Historia Natural Universidad Nacional Mayor de San Marcos (Zima, Peru).

Species groups are defined on the basis of male wing characters (*sensu* ELIOT 1973) and pattern, plus genital structures. Generalized geographical distributions are given on the basis employed for the Neotropical region by BROWN (1993).

All the male *Brangas* specimens can be identified without examination of genital structures (but these are also included in the descriptive texts). Dissections were done by

well known methods under a stereo microscope. The dissected abdomen was macerated in diluted caustic potash, then the dissected organ was placed in plastic microvials containing glycerol and placed to the pin under the specimen. The dissections are databased in the Hungarian Natural History Museum (gen. prep. nos BÁLINT).

Female individuals are rare in collections. Although they share the characteristic ventral wing pattern with the males, but females of closely related *Brangas* species sometimes are difficult to identify. Hence females are not taken into consideration in the species level discrimination. It is worth to mention that females provide less taxonomic characters in eumaeines, hence males serve a more sound basis to diagnose species (*cf.* ROBBINS 2004: xxiv).

GENERIC LIMITS OF *BRANGAS* HÜBNER, 1819

Type species – Papilio caranus CRAMER, 1775 (designated by SCUDDER 1875: 128).

Diagnosis – Brangas is characterized by (1) a red pigmental spot or long patch of the ventral wing subbasal area in the discal cell along the subcostal vein, (2) a series of gleaming blue, green or white intercellular spots arranged in median area along the discal cell and/or a darkened discal area, (3) a ventral hind wing androconial pouch in the postmedian area between veins 3A and 1A+2A or a dorsal fore wing discal or a dorsal hind wing subcostal androconia plus (4) a male appendage in the dorsal side of the genital capsule supporting the brush organ.

Remarks – ROBBINS (1991: 3) transferred "*Thecla neora* GODMAN & SALVIN" [sic] [= *neora* HEWITSON, 1867] from *Thecla* to *Brangas* "on the basis of wing pattern (a red spot in the ventral fore wing discal cell) and genitalic character states (form of the male anterior vinculum process, shape of the female genitalia cervix). Thus he effectively redefined the genus. Independently, D'ABRERA (1995: 1124–1125) presented a synoptic overview of *Brangas*, and his definition was "the males of this genus differ from the otherwide [sic] similar closely related *Atlides* in the absence of androconial patches of the f. w. r. [= fore wing recto]".

In *Brangas*, the red scaling along the postbasal portion of the subcostal vein in the discal cell can be considered as a synapomorphy. This character state appears in all the species groups we establish below (Figs 3–7). In some cases, it is well developed (as in *B. caranus* and its relatives) or turns to be faint but observable even in worn specimens (*B. felderi, insolitus* and *polonus*; in these species the discal area is darkened). There are many eumaeine genera in the Neotropics besides *Atlides*, for example *Ipidecla* DYAR, 1916

(type species: *Ipidecla miadora* DYAR, 1916) and *Olynthus* HÜBNER, 1819 (type species: *Papilio narbal* STOLL, 1790), which possess basal red pattern in their ventral wing surfaces, but none of them have it in the discalis.

Other wing pattern characters, like gleaming spots around the discalis or a darkened discal area seem to be also unique in neotropical eumaeines, thus they can indicate monophyly. Similarly, the hind wing androconial pouch is also unique within Eumaeini, but scent patches and the pad in the wing surfaces, as well as the absorber and reflector need more study within and outside of the genus (see below).

Characters like "anterior process of the genital vinculum, which lies under the brush organ" (*sensu* ROBBINS), as well as a sclerotized dorsal posterior pouch of the ductus bursae occur in many eumaeine genera, which seem to be also closely related to *Brangas*, are also in need of more evaluation (*cf.* BÁLINT & MOSER 2001).

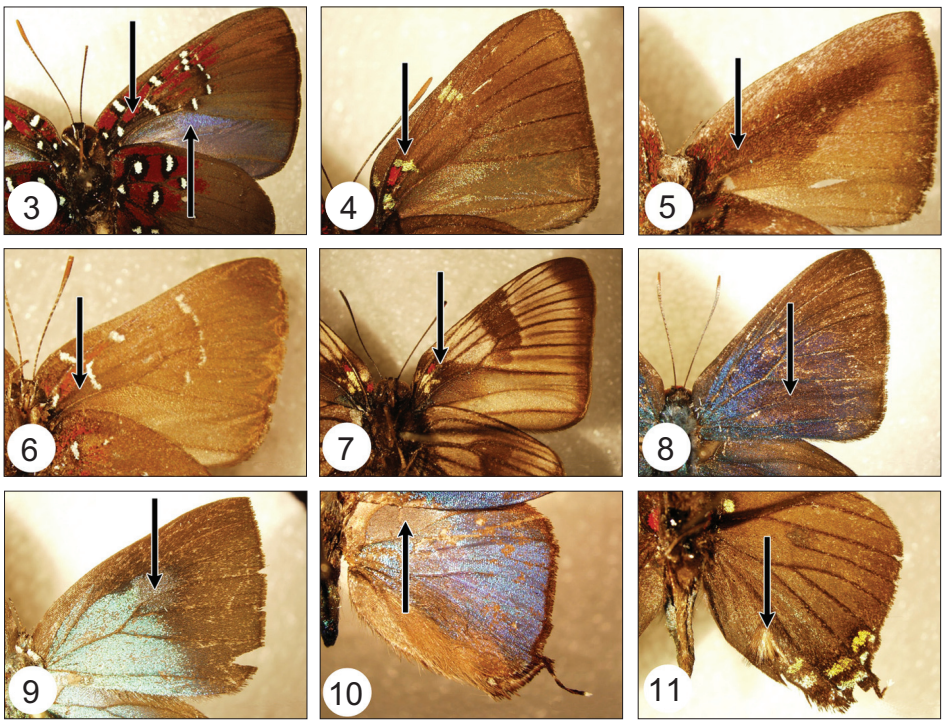
MALE SECONDARY SEXUAL CHARACTERS OF *BRANGAS*

(1) Dorsal fore wing visual brand (sensu ELIOT 1973): an absorber (Fig. 8). This appears as a darker patch in the postmedian area of the wings. The reflectivity of the wing area with absorber is reduced, the intensity of the colour does not depend on the angle of the falling light. The scales which comprise this visual brand also generate structural blue colour but probably they contain more melanin as the spectral maxima measured in these wing parts are shifted to violet (BÁLINT & KERTÉSZ *in prep.*). It is hypothesised here that this wing area functions as a light absorber and play a role in the signal composition by the male wings in motion or it collects heat to activate scent molecules in the scales. This trait is not unique in eumaenies, there are many genera possessing such scales, for example in *Brevianta* JOHNSON, KRUSE et KROENLEIN, 1997 (type species: *Thecla undulata* HEWITSON, 1867), *Denivia* JOHNSON, 1992 (type species: *Thecla deniva* HEWITSON, 1870) and *Panthiades* HÜBNER, 1819 (type species: *Papilio pelion* CRAMER, 1775), just to mention a few.

(2) Ventral fore wing blue scalings (*sensu* ROBBINS 2004): a reflector (Fig. 3). This appears as an iridescent blue or violet (with bronze hint) pattern in the wing area below the cubital vein. The intensity of the colour depends strongly on the incident of the light. In certain angle it is very efficient, therefore we hypothesise that it is a multilayered structure (KERTÉSZ *et al.* 2006). We presume that this wing area functions as an efficient reflector and play a role in the signal composition given by the male wings in motion.

(3) Dorsal fore wing alar organ: a scent pad and a scent patch (Fig. 9). These appear in the apical part of the fore wing discal cell as a spot of black or gleaming grey scales and in the postdiscal area of the wing as intervenial patches of grey but iridescent scales. The discoidal androconial cluster is probably a scent pad *sensu* ROBBINS (1991), because on the

ventral side of the fore wing where it is situated in the dorsal surface the wing membrane shows modification. The postdiscal androconial cluster is likely a scent patch *sensu* ROBBINS (1991), because it has no trace on the ventral side of the wing membrane. According to our knowledge, there is only one species within *Brangas* which possesses this character (see below) and there is no data which supports that these organ function as scent disseminating organs (*cf.* COURVOISIER 1916, SEITZ 1919, ELIOT 1973, BÁLINT *et al.* 2007). These organs are widely distributed in eumaeine lycaenids, but can be found also in the lycaenid butterfly tribe Tomarini. Their phylogenetic interpretation is difficult in certain lineages because of the diversity of the organs.



Figs 3–11. Characters of *Brangas*. 3–7: Hypothetical synapomorphy of *Brangas* species groups: the arrow indicates the discoidal red scaling along the subcostal vein in the ventral fore wing surface: 3 = *B. caranus* (STOLL, 1790) (the lower arrow indicates ventral fore wing blue scalings), 4 = *B. carthaea* (HEWITSON, 1868), 5 = *B. insolitus* BÁLINT et FAYNEL, sp. n., 6 = *B. neora* (HEWITSON, 1867), 7 = *B. torfrida* (HEWITSON, 1867). **8–11**: Male secondary characters: 8 = dorsal fore wing visual brand (absorber) in *B. coccineifrons* (HEWITSON, 1867), 9 = dorsal fore wing alar organ (scent pad and scent patch) in *B. insolitus* BÁLINT et FAYNEL, sp. n., 10 = dorsal hind wing alar organ (scent patch) in *B. neora* (HEWITSON, 1867) (hind wing attached to the body artificially in a lower, unnatural position), 11 = ventral hind wing scent pouch in *B. carthaea* (HEWITSON, 1868)

(4) Dorsal hind wing alar organ: a scent patch (Fig. 10). This appears in the postbasal and medial area of the cell Sc+R1 covered by grey but iridescent scales. This is probably a scent patch *sensu* ROBBINS, but again, there is no evidence that this organ functions in scent dissemination. There are some eumaeine genera which possess similar organ for example *Enos* JOHNSON, KRUSE et KROENLEIN, 1997 (type species: *Thecla thara* HEWITSON, 1867) and *Suneve* BÁLINT, 2006 (type species: *Thecla coronata* HEWITSON, 1865). As this character is rare and the listed genera were placed in the same section by ROBBINS (2004), most probably it is indicative of phylogenetic relationship.

(5) Ventral hind wing androconia: a scent pouch (Fig. 11). This appears in the medial area of cells 2A-3A as a pocket comprised by long and caudally erecting hair tufts in the pocket margin and brown scales packed with melanin in the pocket; this character was first noticed and figured as "tuft of hair near inner margin of secondaries beneath" by GODMAN & SALVIN (1887: 23, Pl. 50, fig. 13a).

Further sources of characters are the male head, thorax and abdomen, where hair tufts and presumable scent bearing scales also exist. Further investigations need to be focused on these details and pose the question whether there is any correlation between alar and abdominal androconia.

SPECIES DIVERSITY OF *BRANGAS*

Caranus species group (Figs 12–13, 39–47): fore wing costal length >15mm, male with ventral fore wing reflector and hind wing scent pouch, brush organ supporting by short vinculum appendage, female genitalia tubular with a wide anterior part attached to bursa in lateral view, posterior lamellal plate divided in dorsal or ventral view. This is a Panamerican group known to occur in the Transandean-Andean, Amazonian and in the Atlantic regions. The type locality of *Thecla silumena* is most probably erroneous. HEWITSON did not give any locality in the original description. KIRBY (1879) catalogued the type material as "Ecd.". Modern *B. silumena* data suggest that the species is restricted to the Atlantic region in distribution. One male and one female specimen of a phenotype close to *caranus* and collected in the first half of the 19th century in Santa Catharina state (Brazil) were located in old samples. Statistical analysis of certain characters is necessary to prove or falsify the hypothesis that these two old specimens represent an extinct taxon. Another apparently very rare phenotype close to *caranus* has been recently recorded from Venezuela in several specimens (CR), which seems to be an undescribed species.

Included species:

Brangas caranus (STOLL, 1780) HÜBNER, 1819; type not extant (*cf.* BÁLINT 2005);

Brangas contrastus BÁLINT, sp. n.;

Brangas getus (FABRICIUS, 1787) HÜBNER, 1819 (BMNH *Papilio getus* neotype 701315: "Surinam", designated by BÁLINT 2005);

Brangas felderi (GOODSON, 1945) D'ABRERA, 1995 (BMNH *Thecla felderi* syntype 265985 (male): "Colombia" (figured as "B. felderi ♂ R" by D'ABRERA 1995: 1124–1125); BMNH *Thecla felderi* syntype 266404 (female): "Ecuador"; examined);

Brangas neildonatus BÁLINT et FAYNEL, sp. n.;
Brangas polonus BÁLINT, sp. n.;
Brangas rambutorum BÁLINT et FAYNEL, sp. n.;
Brangas silumena (HEWITSON, 1868) D'ABRERA, 1995 (BMNH *Thecla silumena* lectotype 266405 (male): "Ecuador" (figured as "*B. silumena* ♂ R" and designated by D'ABRERA 1995: 1124–1125; examined).

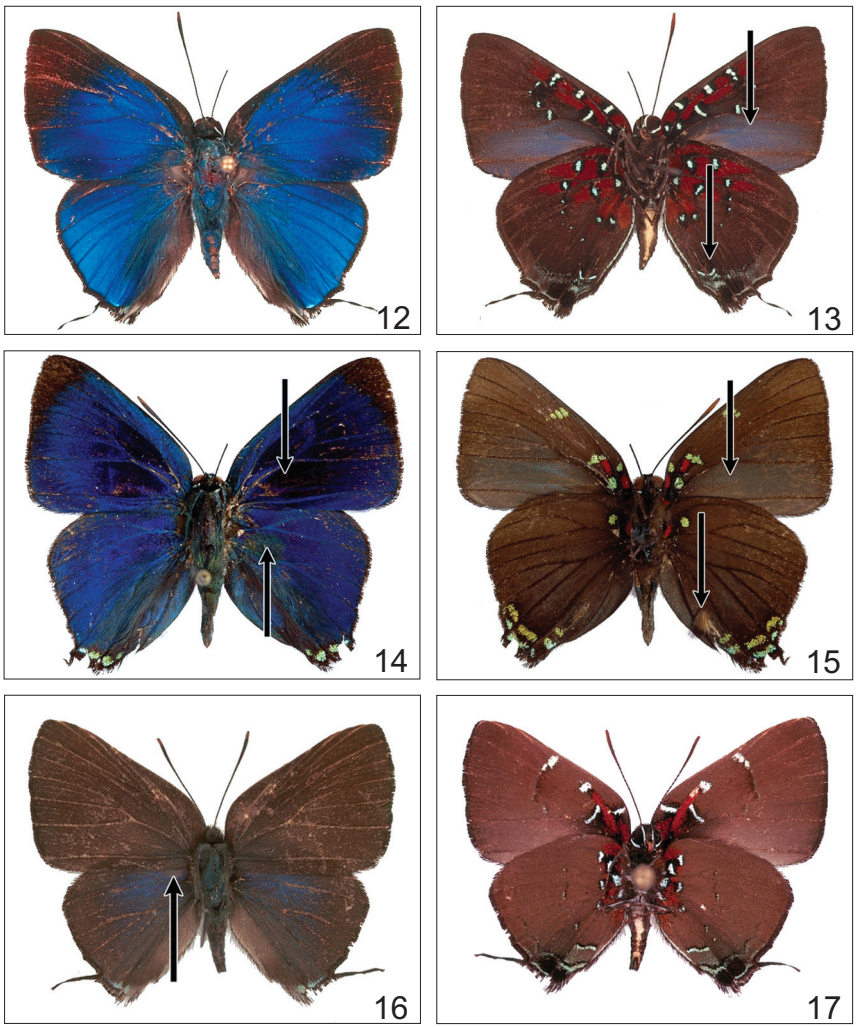
Carthaea species group (Figs 14–15, 48–49): fore wing costal length >15mm, with dorsal fore wing absorber, dorsal hind wing scent patch, ventral hind wing scent pouch and brush organ supporting by small vinculum appendage (female genitalia not examined). Typical shape of male genitalia, recalling that of *torfrida* with the following characteristic elements shared with other congeneric species : (1) large vinculum ventrally prominent; (2) short and pointed saccus; (3) two dorsal projections of the vinculum supporting a tuft of hairs directed posteriorly; (4) subunci with an elongate pointed end after the bulge; (5) cone-shaped valvae with a very widened base and two elongated extensions, very thin at their end and covered with setae on the posterior half; (6) elongated aedeagus with two sclerotized and prickly terminal cornuti ; (7) eight tergite rectangular with a characteristic spike in the middle of the posterior edge. This is a Mesoamerican-Transandean group. In the checklist of ROBBINS (2004), an undescribed species next to *carthaea* is indicated from Mexico. From this taxon, we have seen only a single specimen, which is not in our disposal at the moment.

Included species:
Brangas carthaea (HEWITSON, 1868) D'ABRERA, 1995 (BMNH *Thecla carthaea* holotype 266402 (male): "Mexico"; examined).

Dydimaon species group (Figs 16–17, 50–58): fore wing costal length < 15mm, with dorsal hind wing scent patch (missing in one species), brush organ supported by long vinculum appendage; female genitalia tubular and anterior ductus moderate in size attaching to bursa in lateral view, posterior lamellal plate not divided. This is a Panamerican group distributed in Mesoamerica, in the Transandean-Andean, Amazonian and in the Atlantic regions. We are aware of the existence of two undescribed species, which live in south and southeastern Brazil. They are closely related to the newly described *B. moserorum*. During the preparation of this article there was not enough material in our disposal to diagnose and document satisfactory these taxa, which are under evaluation. Because of the *dydimaon* species group diversity, it is important to objectively fix the name *Papilio dydimaon* to the phenotype, which occurs in the Guianas (including Surinam), and the male possesses a hind wing dorsal androconial patch (see the entry typification below).

Included species:
Brangas dydimaon (CRAMER, 1777) HÜBNER, 1819 (original material lost; see neotype designation);
Brangas moserorum BÁLINT et FAYNEL, sp. n.;
Brangas neora (HEWITSON, 1868) D'ABRERA, 1995 (BMNH *Thecla neora* holotype 266407 (female): "Guatemala, Vera Paz"; examined);

Brangas rita (GOODSON, 1945) D'ABRERA, 1995 (BMNH *Thecla rita* holotype 266408 (male): "Colombia, Santa Rita, Cauca River" (figured as "B. rita ♂ R" and designated by D'ABRERA 1995: 1125); examined).



Figs 12–17. Characters of *Brangas* and certain type specimens. **12–13**: The *caranus* species group: 12 = male fore wing dorsal surface, 13 = male fore wing ventral surface (arrows indicate fore wing reflector and hind wing scent pouch). **14–15**: The *carthaea* species group: 14 = male fore wing dorsal surface (arrow indicate the fore wing absorber and the hind wing scent patch), 15 = male fore wing ventral surface (arrow indicates the hind wing scent pouch). **16–17**: The *dydimaon* species group: 16 = male fore wing dorsal surface (arrow indicates the hind wing scent patch) (neotype of *Papilio dydimaon* CRAMER, 1777), 17 = male fore wing ventral surface (neotype of *Papilio dydimaon*)

Insolitus species group (Figs 18–19, 59–60): fore wing costal length >15mm, with dorsal fore wing scent pad and scent patch, brush organ supporting by short vinculum appendage (female genitalia not examined). It is known only from the border of the Amazonian and the Andean regions.

Included species:

Brangas insolitus BÁLINT et FAYNEL, sp. n.

Torfrida species group (Figs 20–21, 61–68): fore wing costal length >15mm, with dorsal wing absorber, ventral fore wing reflector and ventral hind wing scent pouch, brush organ supported by small vinculum appendage, female genitalia tubular and anterior ductus moderate in size attaching to bursa in lateral view, posterior lamellal plate large and divided. This is a Panamerican group known to occur in the Transandean-Andean, Amazonian and Atlantic regions. There is a pair (male and a female specimen) from the Peruvian Andes at our disposal, which seems to represent an undescribed taxon closely related to *B. torfrida*. More material is needed to make a decision about the identity of these specimens.

Included species:

Brangas coccineifrons (GODMAN et SALVIN, 1887) D'ABRERA, 1995 (BMNH *Thecla coccineifrons* syntype 266400 (male): "Colombia, Santa Marta", syntype 266401(male): "Nicaragua" (figured as "B. coccineifrons ♂ V" by D'ABRERA 1995: 1124) and syntype 266402 (female): "Nicaragua, Chontales" (figured as "B. coccineifrons ♀ R" by D'ABRERA 1995: 1124); all examined)

Brangas torfrida (HEWITSON, 1867) D'ABRERA, 1995 (female syntype(s) "Brazil, Pará"; not located in BMNH)

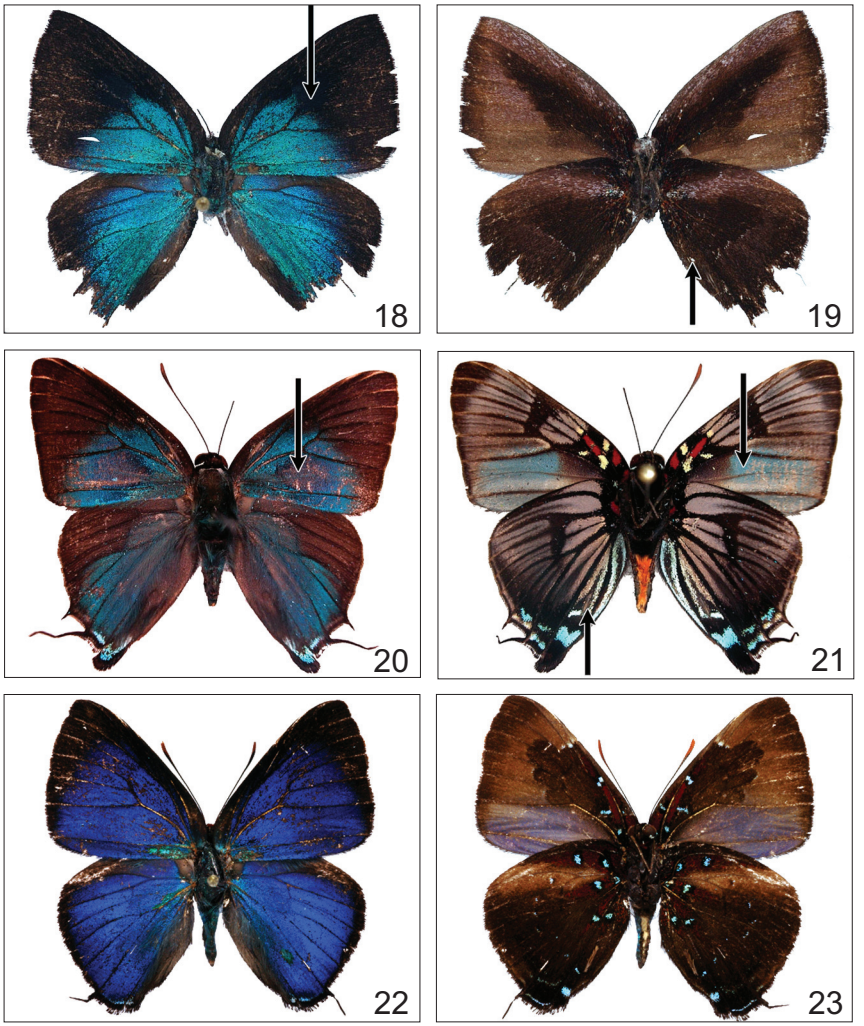
SPECIES DESCRIPTIONS

Brangas contrastus BÁLINT, sp. n.
(Figs 22–23, 69–70)

Type material – MZUJ holotype male, fore wing costal length 21 mm, labelled as "ECUADOR [//] Prov. Morona-Santiago; [//] 9 de Octubre n/Macas [//] 1700 m, 08.2001 [//] Coll. J. Wojtusiak", set dorsally, in good condition, left wing slightly worn. Paratype nos 1–5 (all males, all from Ecuador): with holotype data except one labelled "07.2001" instead of "08.2001" (paratype nos 1–2: MZUJ, no. 3: HNHM); Morona-Santiago, Macas, X. 2001. (paratype no. 4: MZUJ; paratype no. 5: HNHM).

Diagnosis and description – It is a typical *Brangas*, which belongs to the *caranus* species group with blue dorsal wing surface, brown ventral wing surface with red and gleaming basal and medial markings. The species can be distinguished from its closest relatives by the following characters: (1) male dorsal wing structural colour violet blue with wide

black costal and limbal area; (2) ventral fore wing with dark brown discal cell contrasting lighter brown limbal area and (3) ventral hind wing with lighter colour along the radial vein contrasting the otherwise dark brown ground colour.



Figs 18–23. Characters of *Brangas* and certain type specimens. **18–19**: The *insolitus* species group: 18 = male fore wing dorsal surface (arrow indicates the fore wing scant pad and scent patch) (holotype of *Brangas insolitus*), 19 = male fore wing ventral surface (arrow indicates the hind wing scent pouch) (holotype of *Brangas insolitus* BÁLINT et FAYNEL, sp. n.). **20–21**: The *torfrida* species group: 20 = male fore wing dorsal surface (arrow indicates the fore wing absorber), 21 = male fore wing ventral surface (arrows indicates the fore wing reflector and the hind wing scent pouch). **22–23**: *Brangas contrastus* BÁLINT, sp. n.: 22 = holotype (dorsum), 23 = ditto (ventrum)

The only *Brangas* species with somewhat similar dorsal wing colour (character no. 1) is the new species *B. polonus*, which is smaller and lacks the contrasting light areas in the ventral surfaces of the wings. Similar contrasting patterns (character nos 2 and 3) can be detected in the Colombian species *B. felderi*, but the gleaming spots in both of the wings and the ventral fore wing blue reflector are more extensive and brightly coloured in the latter species. Male genitalia close to *polonus* with the following characters, shared for a large part of them with other *Brangas* species (Figs 69–70): (1) large vinculum ventrally prominent; (2) short and wide saccus; (3) two dorsal projections of the vinculum supporting a tuft of long hairs directed posteriorly; (4) subunci with an elongated pointed apices; (5) cone-shaped valvae with setae on the posterior half which length exceeds the uncus, widened base with the external angle either salient or rounded; (6) elongated aedeagus with two thorny cornuti at its end; (7) shape of eighth tergite variable, rectangular or like a portion of a ring.

Distribution – Known only from the types.

Etymology – The species group name is a Latinized noun with masculine gender formed from the English *contrast*, to signify the characteristic ventral wing pattern of the species.

Brangas insolitus BÁLINT et FAYNEL, sp. n.
(Figs 18–19, 59–60)

Type material – MZUJ holotype male, fore wing costal length: 16 mm, labelled as: "Peru [//] Amazonas, Chachapoyas [//] Molinopampa-Granada, [//] September, 2002, 2800 m [//] Leg. B. Calderon", in moderate condition, wing and palpi broken, partly missing. Paratypes: 1 female, Peru, JORGE CHAVEZ. IX. 2003. (KÖNIG Sammlung II, NMW); 1 male, coll. J.-F. LE CROM, Bogotá, Colombia (digital image examined).

Description and diagnosis – It is an unusual middle sized *Brangas*, which belongs to its own species group, with dorsal fore wing scent pad and scent patch, greenish blue dorsal wing structural colour and very wide pigmental border in the costal and submarginal areas, and almost patternless brown ventral wing surfaces. There is no similar species in the Neotropics and it can be immediately recognized by the following composition of characters present on the ventral wing surfaces: (1) no spots or streaks in fore wing; (2) costa covered with pinkish scales in fore wing and (3) discal area below medial vein monotonous brown in both wings. To our best knowledge, this species stands alone in the genus having a fore wing scent pad in the apex of the discal cell and a scent patch in the postmedian area. The red scaling in the basal area in the discalis is apparent but faint. The holotype is a damaged specimen, the paratype female is in almost perfect condition. From this latter mentioned specimen and the other paratype male, it is apparent that the *insolitus* hind wing is also tailed, and the tail has the largest base in the genus. Typical shape of male genitalia (Figs 59–60) with the following characteristic elements shared with other congeners (*caranus*, *getus*, *torfrida*, etc.): (1) large vinculum with ventral appendage; (2) short saccus; (3) two dorsal

projections of the vinculum supporting a tuft of long hairs directed posteriorly (brush organs *sensu* CLENCH; *cf.* ELIOT 1973); (4) subunci with an elongated pointed end after the bulge; (5) cone-shaped valvae with a widened base, covered with setae on the posterior half; (6) elongated aedeagus with two sclerotized and prickly terminal cornuti; (7) eighth tergite rectangular without the anterior edge modified.

Distribution – Known only from types.

Etymology – The species group name is a Latin noun with masculine gender and means curious or isolated; used to refer to the fact this species is isolated in the genus according to phenotypic appearance.

Brangas moserorum BÁLINT et FAYNEL, sp. n. (Figs 24–25, 71–72)

Brangas c. didymon: BROWN 1993: 46, fig 1, 13 (misidentification, misspelling).

Brangas dydimaon (CRAMER): D'ABRERA 1995: 1125, fig. "B. neora ♀ V" (misidentification).

Type material – ZMS holotype male, fore wing costal length 13 mm, labelled as: "S. Paul [//] Br." (handwritten, black ink); "# ♂ Th. neora S. Paulo" (handwritten, pencil); "751 didymaon" (handwritten, pencil), in perfect condition. Paratype nos 1–9 (all from Brazil): Rio Grande do Sul, Hamburgo Velho, Brasilien C. ERTL (no. 1, male: ZSM); Cavallao, Icarahy, (no. 2, female: coll. Fournier, MNHN); Gavéa, Rio (nos 3–5, males, no. 6, female: coll. FOURNIER, MNHN); St. Catharina (no. 7, male: coll. FOURNIER, MNHN), Minas Gerais (no. 8, female: BMNH, figured by D'ABRERA as "B. neora # ♀ R"); Parana (no. 9, female: BMNH, figured by D'ABRERA as "B. neora # ♀ V").

Description and diagnosis – It is a small *Brangas*, which belongs to the *dydimaon* species group, with blue male wing dorsa and brown wing ventra with red basal and gleaming basal and medial markings. The species can be distinguished from its closest relatives by the following characters: (1) ventral wing ground colour dark brown with faint or without postmedian pattern; (2) quadrant shaped light spot in the postbasal part of the costal cell and in the submedial part of the subcostal cell. The Mesoamerican species *Brangas neora* is similar, but the medial pattern in the ventral surface of the wings is always developed with light elements (character 1) and the costal spots in the fore wing ventral surface appear as narrow lines (character 2). But the more distinguishing character between *moserorum* and *neora* is the dorsal scent patch in the hind wing cell Sc+R1, only present for the latter (Fig. 10). Male genitalia similar to the other species (Figs 71–72) with a few differences concerning the brush organs, the saccus and the valvae: (1) large vinculum, ventrally prominent; (2) short pointed saccus; (3) two dorsal projections of the vinculum supporting huge brush organs (longer than the genital capsule lenght) and directed posteriorly; (4) subunci with an elongated pointed end after a slight bulge; (5) cone-shaped valvae covered with setae on the

posterior half with an underdeveloped base compared to the other species; (6) elongated aedeagus with two sclerotized and prickly cornuti at its end; (7) eighth tergite not modified, rectangular in shape.

Distribution – Known only from types.

Etymology – The species group name is a Latinized noun with masculin gender and the species is dedicated to ALFRED and HANNELORE MOSER (São Leopoldo, Brasil).

Discussion – The male genital structures are closer to *dydimaon* than to *neora* with the following characters : (1) large vinculum ventrally prominent; (2) short and square saccus; (3) two elongated dorsal projections of the vinculum supporting a tuft of very long hairs directed posteriorly; (4) subunci with pointed apices; (5) valvae large at their base with two elongated extension which bear setae on the posterior half; (6) short aedeagus with one cornutus at its end; (7) shape of eight tergite rectangular with a W-shaped anterior edge (cf . Figs 50–53 and 73–74).

Brangas neildonatus BÁLINT et FAYNEL, sp. n.
(Figs 26–27, 75–76)

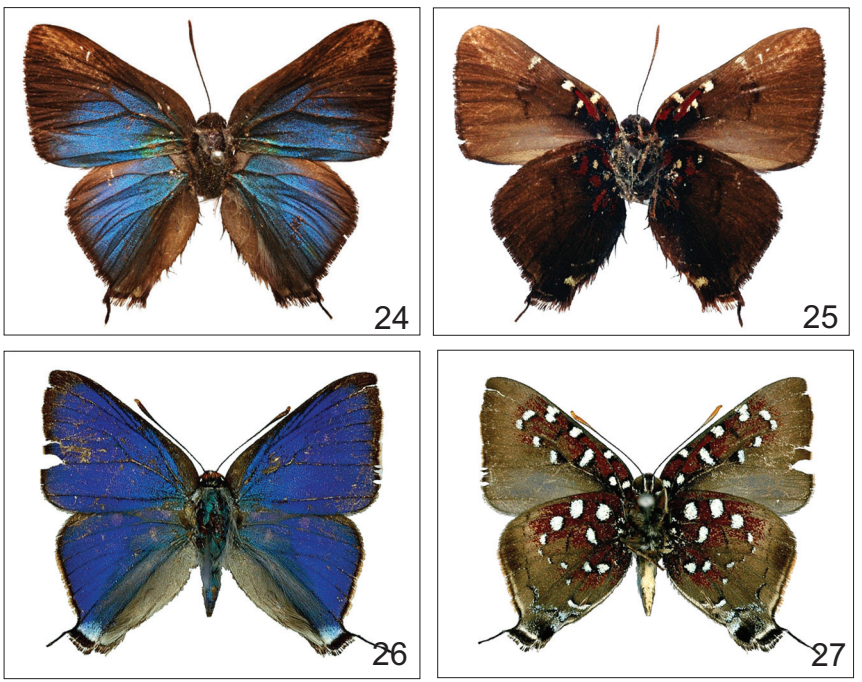
Brangas sp.: RAYMOND 1982: pl. 43, fig. 6.

B.? sp. n.: D'ABRERA 1995: 1124, figs "B.? sp. # ♂ R" and "B.? sp. # ♂ V".

Type material – BMNH holotype male (BMNH 701385), fore wing costal length 16 mm, labelled : (1) "Local Pto. Colombia [//] Henri Pittier N.P., Aragua [//] Coll. Andrew Neild [//] Venezuela [//] [verso:] BMNH 28A-96" (oblong, white, printed and handwritten in capitals); (2) "Gen "Thecla" [//] Sp Brangas # ♂ [//] Date 8/8/84 [//] Alt 100 m, 9 a.m." (oblong, white, printed and handwritten in capitals), (3) "Donated by [//] Andrew Neild" (oblong, white, handwritten in capitals), (4) "DET.: F. YEPEZ in [//] consultation with Bob Robbins." (oblong, white, handwritten); (5) "Brit. Mus. [//] 1989-167" (oblong, white, handwritten); "Para- [//] type" (confetti, yellow-framed, printed); (7) "Holotype [//] Brangas [//] donatus [//] det. Zs. Bálint [//] London, 2003. [//] VIII. 5. [//] [verso:] 2003.VIII.5. [//] manuscript // name !" (oblong, red with black line-frame, printed and handwritten). The holotype is in good condition, set dorsally, left fore wing margin slightly broken. Paratype nos 1–10 (all from Venezuela): Rancho Grande, 1100 m, Edo. Aragua, I-1964 (no. 1, male: CR); Villa de Cura, Edo. Aragua, VIII–1992 Col. PEDRO BERMUDEZ (no. 2, male: CR); La Laguna, Maracay, 450 m, Edo. Aragua, IV–1993, Col. PEDRO BERMUDEZ (no. 3, male: CR); Las Acacias, Maracay, 450 m, Edo. Aragua, I–1980 (no. 4, male: CR); ditto, I. 1981 (no. 5, male: CR); Las Delicias, Maracay, 450 m, Edo. Aragua, X.1981 (no. 6, male: CR); Maracay, 450 m, Edo. Aragua, X. 1964 (nos 7–8, females: CR); ditto, I.1980 (no. 9, female: CR); ditto, IX. 1988 (no. 10, female: CR).

Description and diagnosis – It is a typical *Brangas*, which belongs to the *caranus* species group, with light blue male dorsal wing surface, brown ventral wing surface with very extensive red and gleaming basal and medial markings. The species can be distinguished from its closest relatives by the following characters: (1) dorsal wing structural colour almost sky blue with violet hint; (2) dorsal hind wing with larger light blue area caudally bordered white and black in the anal angle; and (3) ventral wing pattern with enlarged and circular shaped gleaming elements and red scalings reaching the submarginal area. The only *Brangas* with somewhat similar dorsal wing colour (character no. 1) is the species *B. getus*, which lacks character no. 2 (dorsal hind wing lacks the white scaling in the anal angle area) and no. 3 (gleaming elements of the ventral wing pattern are not circular and enlarged but elongated in shape), plus the fore wing ventral area below the first cubital vein is covered by gleaming blue structural colour (this area is also gleaming in *B. neildonatus* but bronze with blue hue).

The ventral pattern of the sexes are identical, but the female dorsal wing surfaces possess extensive black scalings in the costal and marginal area, the ventral wing surface in the tornal and lower limbal area is white.



Figs 24–27. Certain type the specimens *Brangas*. **24–25**: *Brangas moserorum* BÁLINT et FAYNEL, sp. n.: 24 = holotype (dorsum), 25= ditto, ventrum. **26–27**: *Brangas neildonatus* BÁLINT et FAYNEL, sp. n.: 26 = holotype (dorsum), 27= ditto, ventrum

Male genitalia (Figs 75–76) as in other *Brangas* species with (1) large vinculum, with ventral extension towards the valvae; (2) short and large saccus in the continuation of the vinculum; (3) two dorsal projections of the vinculum supporting thin brush organs directed posteriorly; (4) subunci with an elongated pointed end after the bulge; (5) cone-shaped valvae with shouldered base, covered with setae on the posterior one-third; (6) elongated aedeagus which enlarges at its end and bears only one cornutus; (7) eighth tergite rectangular.

Distribution – Known only from types.

Etymology – The species group name is a Latinized noun with masculine gender, referring to that the holotype specimen was donated by the British lepidopterist ANDREW NEILD (London) to the BMNH.

Brangas polonus BÁLINT, sp. n.
(Figs 28–29, 77–78)

Type material – MZUJ holotype male, fore wing costal length 17 mm, labelled as: "Peru [//] Amazonas [//] Mendoza-Cedro [//] 29.8.1998 [//] 2200-2400 m [//] leg. T. Pyrcz [//]" (printed) and "Brangas sp. p. [//] caranus [//] det. Zs. Bálint (handwritten and printed), [%:] "1999.X. [//] Budapest" (handwritten), set dorsally, in prefect condition. Paratype nos 1–17, PERU (nos 1–16 males, no. 17 female): Amazonas, Rodriguez de Mendoza, 1500–2000 m, VI. 2000 (nos 1–4: HNHM); Pasco, Yanachaga Chemilien NP, 1005–1100 m, HNHM Peru no. 61, 09. II. 2003., leg. BENEDEK-KUN (no. 5: HNHM); Amazonas, Rodriguez de Mendoza, 5.VIII.2000, 1700 m (nos 6–7: MZUJ); Amazonas, Rodriguez de Mendoza, 1600–1800 m (no. 8: MZUJ); Amazonas, Rodriguez de Mendoza, 1400 m, II.2003., coll. WOJTUSIAK (nos 9-10: MZUJ); Amazonas, Rodriguez de Mendoza, IV.1972. (nos 11–12: NMW); Amazonas, Rodriguez de Mendoza, XI.1989. (no. 13: NMW); Amazonas, Rodriguez de Mendoza, V.1990. (no. 14: MNW; gen. prep. BÁLINT no. 1109); Amazonas, Pomacochas, 2200–2400 m, VI.2002. (nos 15–16); Amazonas, Chanchamayo, 30.III.1971, coll. KÖNIG (no. 17, female, HNHM).

Description and diagnosis – It is a typical *Brangas*, which belongs to the *caranus* species group, with blue male dorsal wing surface, brown ventral wing surface with red and gleaming basal and medial markings. The species can be distinguished from its closest relatives by the following characters: (1) male dorsal wing structural ground colour gleaming deep violet blue with wide black apical and limbal area in the fore wings; (2) ventral wing surfaces with reduced gleaming postmedian pattern. There are certain *Brangas* with somewhat similar dorsal wing colour (character no. 1) but these taxa (*B. caranus* and *B. getus*) do not possess character no. 2 as the ventral surfaces of the wings are more richly patterned by postmedian gleaming marking and the hind wing submarginal area is gleaming green between the cubital vein and the anal margin in these species. Male genitalia typical of the genus (Figs 77–78): (1) large vinculum with ventral appendage turned towards the valvae; (2) short and wide saccus; (3) two dorsal projections of the vinculum supporting a tuft of

long hairs directed posteriorly; (4) subunci with an elongated pointed end; (5) cone-shaped valvae with a widened base, setae on the posterior half; (6) elongated aedeagus with two thorny cornuti at its end; (7) eighth tergite rectangular.

Distribution – Known only from the types.

Etymology – The species group name is a Latin noun with masculine gender, referring to the fact that the holotype specimen was collected by Dr TOMASZ PYRCZ, Polish butterfly specialist.

Brangas rambutorum BÁLINT et FAYNEL, sp. n.
(Figs 30–31, 79–80)

Type material – MNHN holotype male, fore wing costal length: 16 mm, labelled as: (1) "5" (handwritten); (2) "Suchemena" (handwritten, black ink, folded several times); (3) "T. silumena Hewt." (handwritten, pencil, folded several times, teared off); (4) "M. Martha" (handwritten, black ink); (5) "Ex [//] Grose Smith, [//] 1910." (printed); set dorsally, in perfect condition. Paratype nos 1–7: COLOMBIA:, Colombie, Santa Marta, Fontanier, 24–53 (no. 1, male: HNHM); VENEZUELA: Aragua, Rancho Grande, 1100 m, 19.VI. 1998 (no. 2, female: MIZA); Apure, Jobo, Dulce, carretera a San Juan de Payare, 22.VIII.1984, PABLO HIDALGO (no. 3, male: MIZA); Lara, Barquisimeto, 5.VII.1985 (no. 4, female: CS); ditto, 1984 (no. 5, female: CS); ditto, 625 m, 8.V.2005 (no. 6, male: CS); Caradobo, El Palito, 0 m, I.1969 (no. 7, female: CR).

Description and diagnosis – It is a typical *Brangas*, which belongs to the *caranus* species group, with blue male dorsal wing surfaces, brown ventral wing surfaces with red and gleaming basal and medial markings. The species can be distinguished from its closest relatives by the following characters: (1) male dorsal wing structural ground colour deep violet blue with wide black limbal area; (2) dorsal hind wing anal angle area white and black bordered caudally; (3) ventral wing pattern with enlarged and elongated gleaming elements. Character 3 is unique in the genus, hence the species is easy to distinguish. The superficially closest species in the genus is *B. neildonatus*, which possesses lighter dorsal wing colouration (character 1) and faint and reduced black border (character 2). The ventral pattern of the sexes are identical, but the female structural colouration is restricted to the basal and subbasal area in the dorsal wing surfaces and it is lighter.

Male genitalia (Figs 79–80) as in other *Brangas* species with (1) large vinculum, with ventral extension towards the valvae; (2) short and large saccus in the continuation of the vinculum; (3) two dorsal projections of the vinculum supporting thin brush organs directed posteriorly; (4) subunci with an elongated pointed end after the bulge; (5) cone-shaped valvae with shouldered base, covered with setae on the posterior one-third; (6) elongated aedeagus which enlarges at its end and bears only one cornutus; (7) eighth tergite rectangular.

Distribution – Known only from the types.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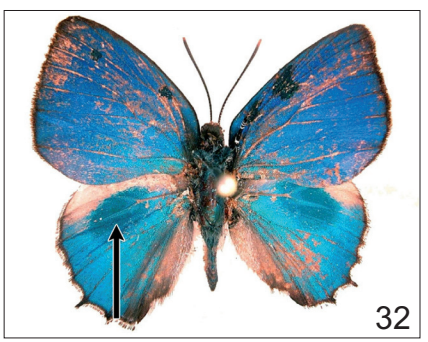
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Etymology – The species group name is a Latinized noun with masculine gender formed from the French family name Rambuteau as the species is dedicated to FRANÇOIS RAMBUTEAU (Paris, France) and his family, who supported the research visits of ZSOLT BÁLINT in the MNHN.

TYPIFICATION

Neotype designation of *Papilio dydimaon* (Figs 16–17)

Papilio dydimaon CRAMER, 1777: 59, pl. 134, fig. a (male ventrum), "Suriname".

Brangas dydimaon (CRAMER): D'ABRERA 1995: 1125, figs "B. dydimaon # ♂ R" [Para, "Thecla didymaon", Hewitson coll.], "B. dydimaon # ♀ R" [Para, A. M. Moss; Rothschild bequest], "B. dydimaon # ♂ V" [Itaituba to Obidos, Hoffmans].

Remarks – The nominal taxon *Papilio dydimaon* was described from an unstated number of male specimens (= "...est d'une couleur brune avec un reflet bleu") collected in Suriname and deposited in the collection of "Excellence Mr. le Baron Rengers". Besides a possible type specimen of *Papilio demolion* CRAMER, 1776, the papilionid and pierid material originated from the RENGERS collection (that served for species descriptions by CRAMER in between 1775–1777) were not located (CHAINEY 2005), and can be considered as lost.

This is also the case for the lycaenid taxa, no type material could be found (BÁLINT, *in prep.*), therefore we consider the type material of *Papilio dydimaon* to be non-existent. The *dydimaon* species group of *Brangas* harbors several species, and for a taxonomic revision it is important to fix the application of the name to one of the taxa present in the Guiana shield.

Figs 28–35. *Brangas* type material and *Dabreras teucria* (HEWITSON, 1868). **28–29**: *Brangas polonus* BÁLINT, sp. n.: 28 = holotype (dorsum), 29 = ditto, ventrum. **30–31**: *Brangas rambutorum* BÁLINT et FAYNEL, sp. n.: 30 = holotype (dorsum), 31 = ditto, ventrum. Scale bar = 1 mm **32–35**: *Dabreras teucria* (HEWITSON, 1868): 32 = male dorsal wing surfaces (arrow indicates the hind wing absorber), 33 = male ventral wing surfaces (arrow indicates the fore wing reflector), 34 = female dorsal wing surfaces, 35 = female ventral wing surfaces

The specimen is in perfect condition, deposited in the MNHN, and labelled as follows "Guyane française, Crique Toussaint, 28.03.01, C. Faynel Leg, Ex coll. C. Faynel n°1366"; we add a red label with the following printed script ("[//]" means line break in the text): "Neotype [//] Papilio dydimaon Cramer, 1777 [//] designated by Zs. Bálint and Chr. Faynel [//], January, 2008, Budapest". The type specimen represents the taxon *Brangas dydimaon* of the *dydimaon* species group, which has a dorsal hind wing scent pad but lacks the hind wing ventral androconial pouch, the fore wing dorsal surface is dark pigmental brown or black and the hind wing dorsal surface is structural blue with a wide dark pigmental margin. This phenotype is included also in the key. The neotype specimen (Figs 16–17) orginates from the lowland area of the Guiana shield of South America where the original *Papilio dydimaon* material was collected.

Lectotype designation of *Thecla teucria* (Figs 36–38)

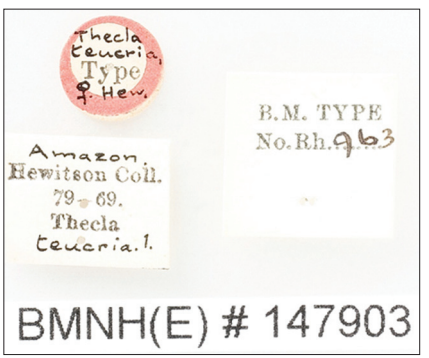
Thecla teucria HEWITSON, 1868: 3; HEWITSON 1869: 129, pl. 52, fig. 290 (female ventrum); DRAUDT 1919: 801, pl. 158, row i; D'ABRERA 1995: 1227 (figs "*T. teucria*", male dorsum and ventrum, female ventrum).

Brangas teucria (HEWITSON, 1868) [ROBBINS *et al.*] 1996: 242; ROBBINS 2004: 118.

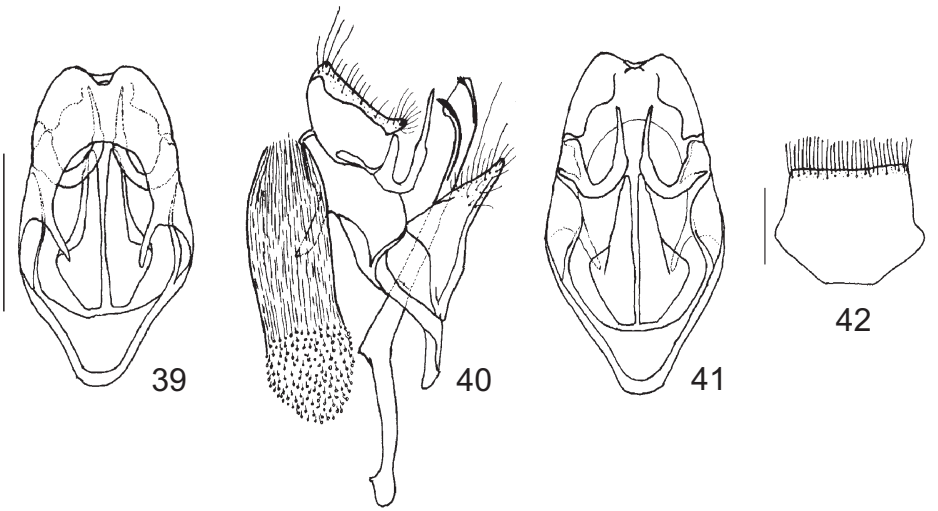
Remarks – *Thecla teucria* was described from an unstated number of female syntypes from "Amazon", deposited in the HEWITSON and SAUNDERS collections. Subsequently HEWITSON (1869) redescribed and figured the species. Despite the fact that the name *Thecla teucria* was applied in consistency with the original description, there is a need for a lectotype to support objectivity and taxonomic stability, because of existing superficially similar species, which possess some characters of *Thecla teucria* but belong to different Neotropical lycaenid lineages. This similarity resulted in for example the polyphyletic "Teucria Gruppe" of DRAUDT (1919: 801) which included species of the genus *Magnastigma* NICOLAY, 1977 (type species: *Thecla tegula* HEWITSON, 1868) considered to be the component of the *Satyrium* Section of ROBBINS (2004). The characters upon, which *Thecla teucria* can be differentiated from other taxa will be discussed in the forthcoming section.

We designate the female specimen "Thecla teucria 1." originating from

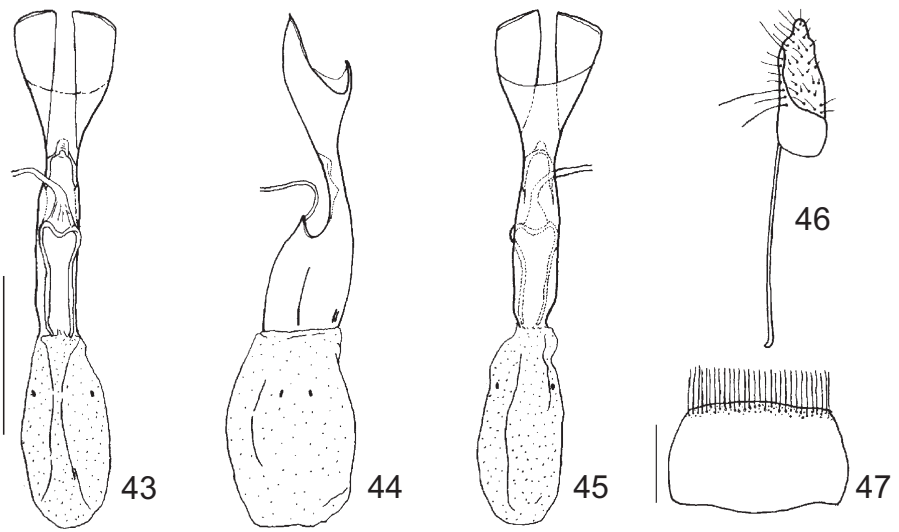
the HEWITSON collection as lectotype. This specimen was segregated and curated as "B.M. Type, No. Rh. 963" in the special Type Collection of the BMNH. Subsequently it has been databased for the electronic specimen register under the serial number "147903". The specimen is set ventrally in a minuten pin, antennae are broken, abdomen and right hind wing tails are missing. Four labels are attached to the pin which holds the small piece of soft wood, in which the minuten pin with the specimen is pinned: (1) "*Amazon*. [//] Hewitson Coll. [//] 79–69. [//] Thecla [//] *teucria*" (white, oblong, printed, filled by hand), (2) "*Thecla* [//] *teucria*, [//] Type [//] # ♀ Hew." (white, round with red frame, printed, filled by hand), (3) "B. M. TYPE // No. Rh. *963*" (white, rectangular, printed, filled by hand) and (4) "BMNH(E) # 147903" (white, rectangular, printed). A red label is attached to the specimen with handwritten inscription: "Thecla teucria Hewitson [//] Lectotype [//] designated by Zs. Bálint Zs. [//] 26.VII.2006., Budapest."



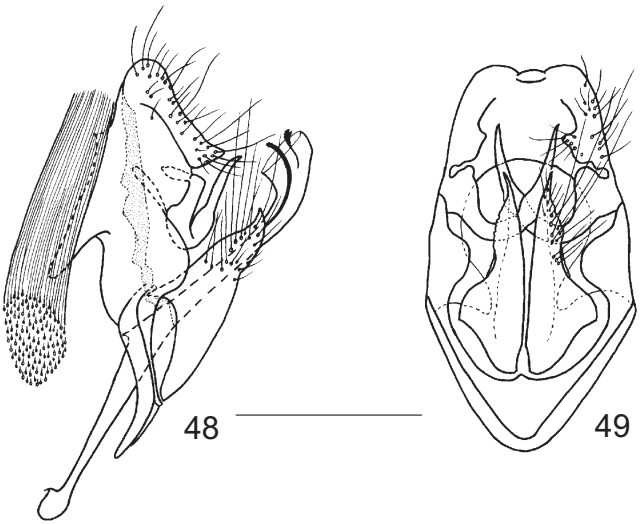
Figs 36–38. *Thecla teucria* HEWITSON, 1868: 36 = lecotype female (dorsum), 37 = ditto, ventrum, 38 = labels



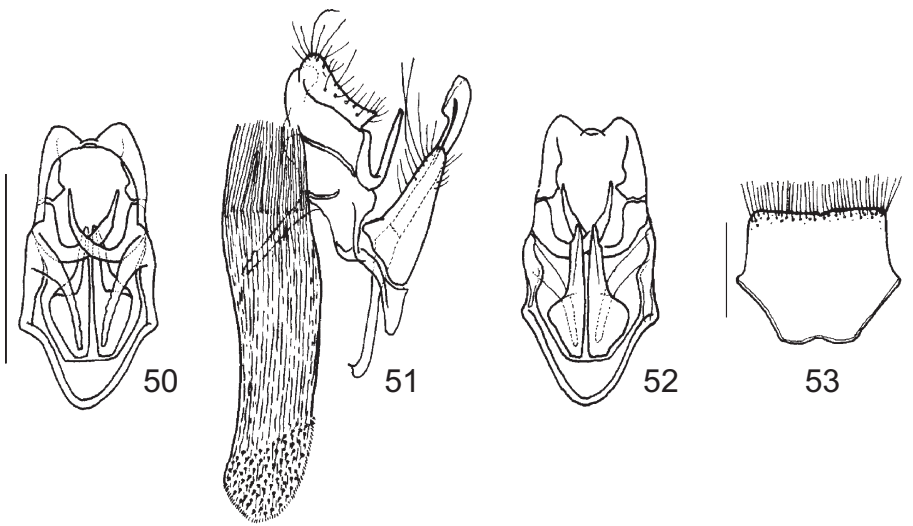
Figs 39–42. *Brangas caranus* (STOLL, 1790) male genitalia. 39 = genital capsule in dorsal view, 40 = genital capsule with aedeagus and brush organ in lateral view, 41 = genital capsule in ventral view, 42 = 8th abdominal segment flattened. Scale bars = 1 mm



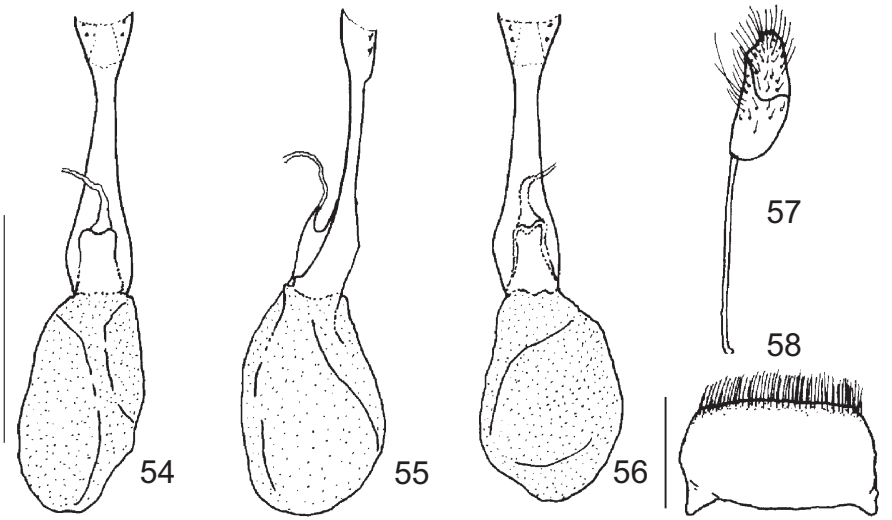
Figs 43–47. *Brangas caranus* (STOLL, 1790) female genitalia. 43 = genital organ in dorsal view, 44 = ditto, in lateral view, 45 = ditto, in ventral view, 46 = papillae anales in lateral view, 47 = 8th abdominal segment flattened. Scale bars = 1 mm



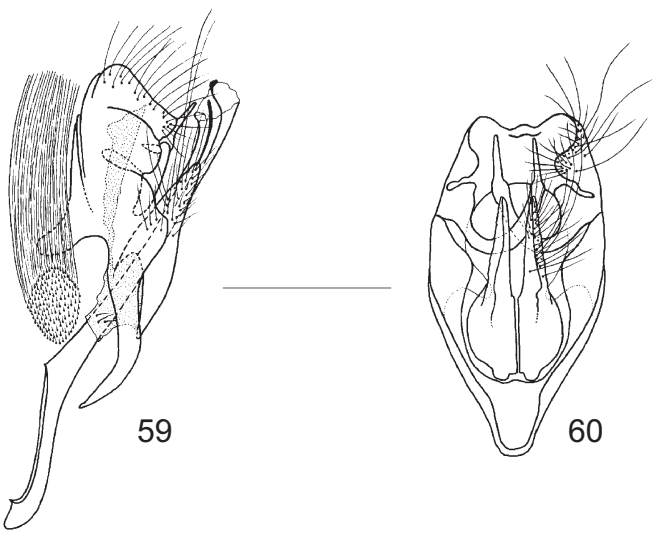
Figs 48–49. *Brangas carthaea* (HEWITSON, 1868) male genitalia. 48 = genital organ in lateral view, 49 = genital capsule (without aedeagus and brush organ) in ventral view. Scale bar = 1 mm



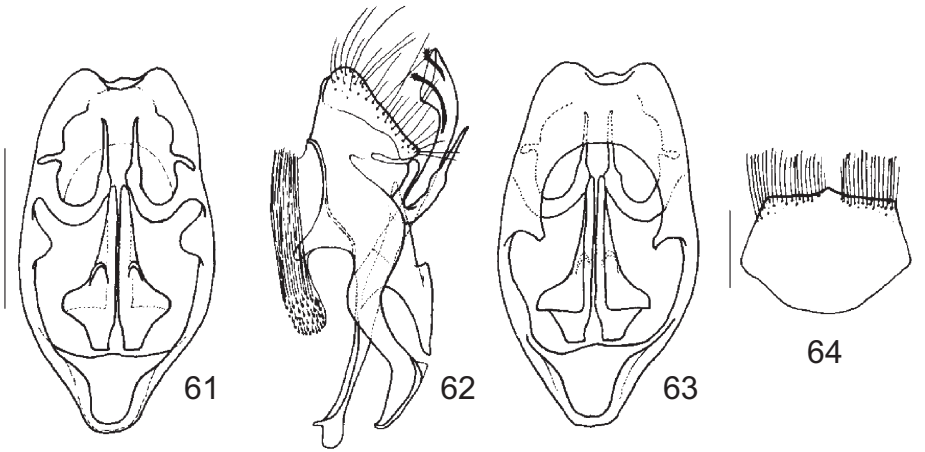
Figs 50–53. *Brangas dydimaon* (CRAMER, 1777) male genitalia. 50 = genital capsule in dorsal view, 51 = genital capsule with aedeagus and brush organ in lateral view, 52 = genital capsule in ventral view, 53 = 8th abdominal segment flattened. Scale bars = 1 mm



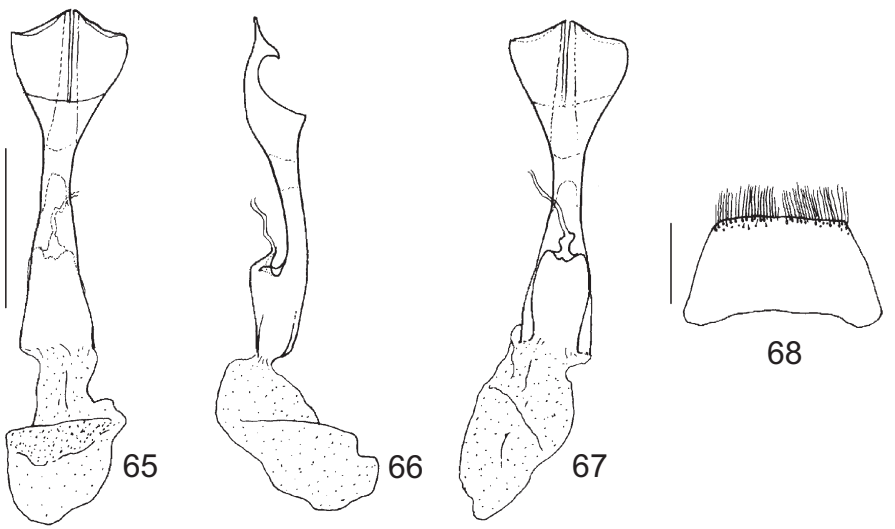
Figs 54–58. *Brangas dydimaon* (CRAMER, 1777) female genitalia. 54 = genital organ in dorsal view, 55 = *ditto*, in lateral view, 56 = *ditto*, in ventral view, 57 = papillae anales in lateral view, 58 = 8th abdominal segment flattened. Scale bars = 1 mm



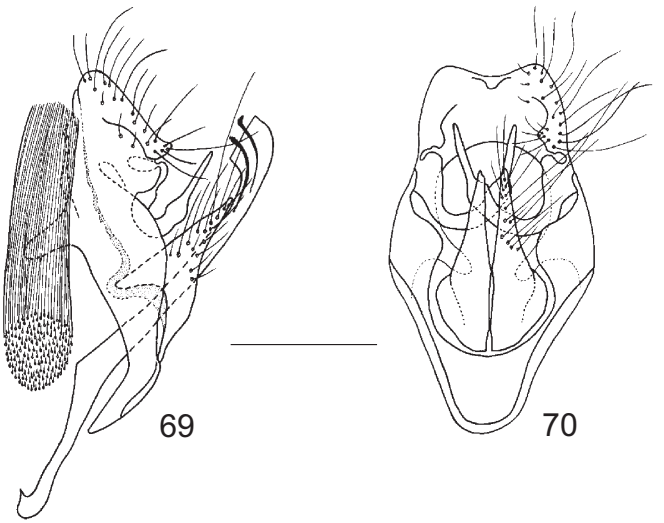
Figs 59–60. *Brangas insolitus* BÁLINT et FAYNEL, sp. n. male genitalia. 59= genital organ in lateral view, 60 = genital capsule (without aedeagus and brush organ) in ventral view. Scale bar = 1 mm



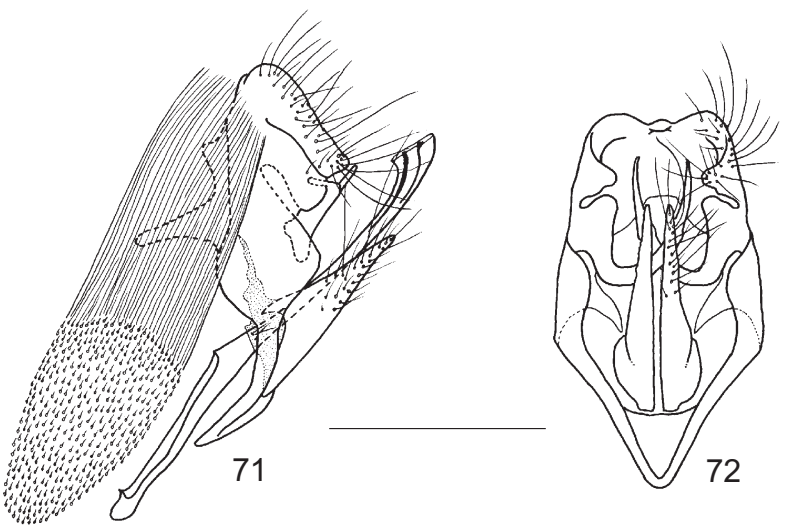
Figs 61–64. *Brangas torfrida* (HEWITSON, 1867) male genitalia. 61 = genital capsule in dorsal view, 62 = genital capsule with aedeagus and brush organ in lateral view, 63 = genital capsule in ventral view, 64 = 8th abdominal segment flattened. Scale bars = 1 mm



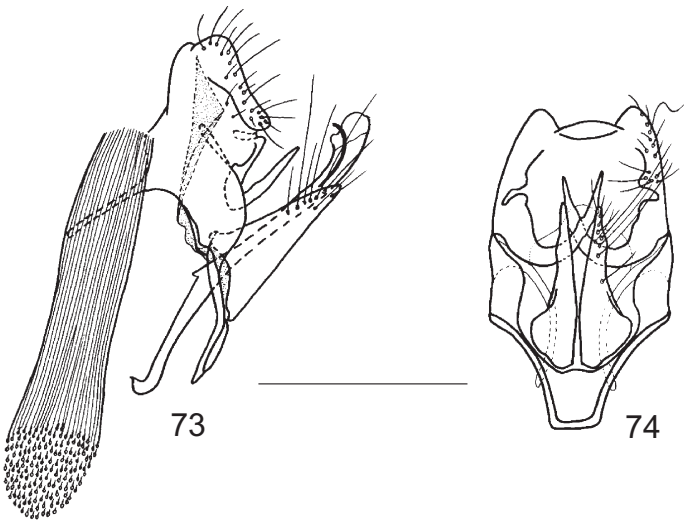
Figs 65–68. *Brangas torfrida* (HEWITSON, 1867) female genitalia. 65 = genital organ in ventral view, 66 = ditto, in lateral view, 67 = ditto, in dorsal view, 68 = papillae anales in lateral view, 58 = 8th abdominal segment flattened. Scale bars = 1 mm



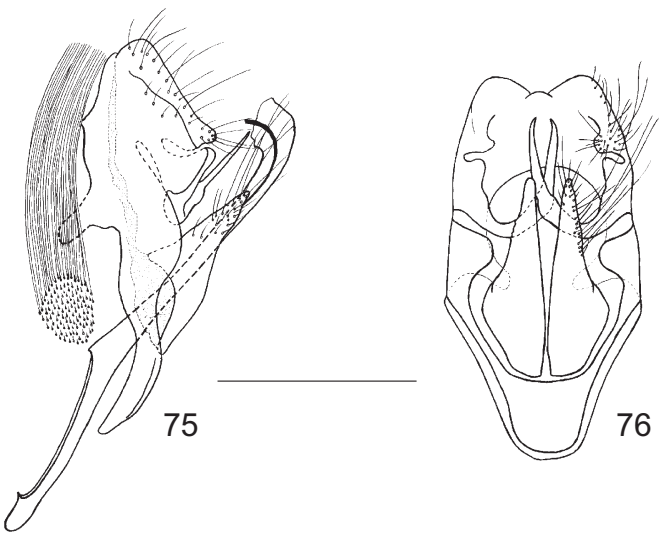
Figs 69–70. *Brangas contrastus* BÁLINT, sp. n. male genitalia. 69 = genital organ in lateral view, 70 = genital capsule (without aedeagus and brush organ) in ventral view. Scale bar = 1 mm



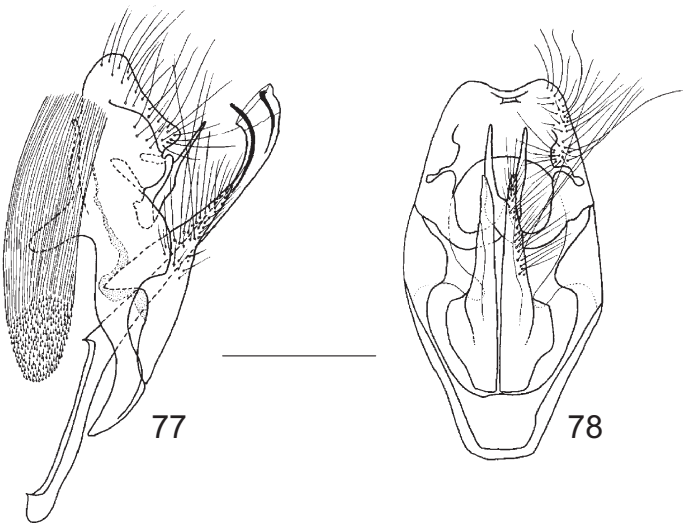
Figs 71–72. *Brangas moserorum* BÁLINT et FAYNEL, sp. n. male genitalia. 71= genital organ in lateral view, 72 = genital capsule (without aedeagus and brush organ) in ventral view. Scale bar = 1 mm



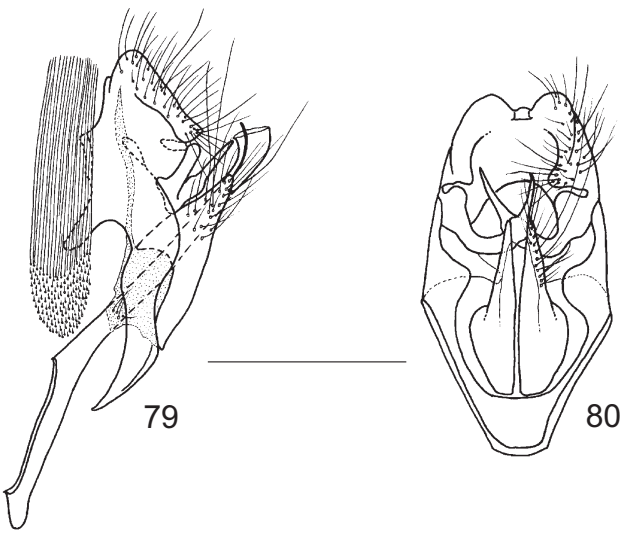
Figs 73–74. *Brangas neora* (HEWITSON, 1867) male genitalia. 73 = genital organ in lateral view, 74 = genital capsule (without aedeagus and brush organ) in ventral view. Scale bar = 1 mm



Figs 75–76. *Brangas neildonatus* BÁLINT et FAYNEL, sp. n. male genitalia. 75 = genital organ in lateral view, 76 = genital capsule (without aedeagus and brush organ) in ventral view. Scale bar = 1 mm



Figs 77–78. *Brangas polonus* BÁLINT, sp. n. male genitalia. 77 = genital organ in lateral view, 78 = genital capsule (without aedeagus and brush organ) in ventral view. Scale bar = 1 mm



Figs 79–80. *Brangas rambutorum* BÁLINT et FAYNEL, sp. n. male genitalia. 79 = genital organ in lateral view, 80 = genital capsule (without aedeagus and brush organ) in ventral view. Scale bar = 1 mm

DESCRIPTION OF A NEW GENUS

Dabreras BÁLINT, gen. n.
(Figs 32–38, 81–89)

Type species – *Thecla teucria* HEWITSON, 1868, designated here.

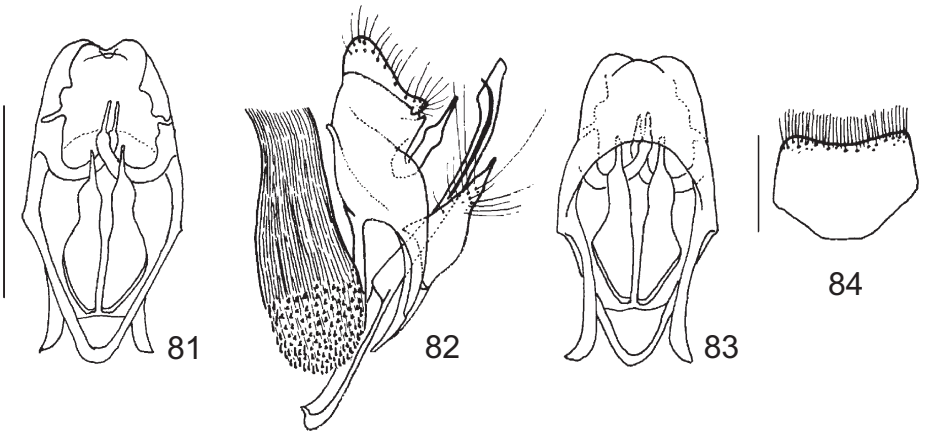
Diagnosis and description – *Dabreras* is characterized by (1) undulate male fore wing anal margin, (2) white furried male pterothoracic legs, (3) an absorber in the male dorsal hind wing, (4) a circular shaped reflector below the vein cubitus in the male ventral fore wing and (5) a red spot at the apex of the hind wing ventrum. The genus belongs to the tribe Eumaeini of the family Lycaenidae as defined by ELIOT (1973: 416, 439–440).

Fore wing length measured from the erection of the cubital vein to the terminus of vein R3 is 11-12 mm. The male phenotype is dorsally blue, the female is brown, the hind wing veins CuA1 and CuA2 are tailed. Male fore wing dorsal surface is structurally blue, the inner margin is slightly lobated caudally, the ventral surface possesses a postmedian reflector, the hind wing dorsal surface possesses a postmedian absorber. The ventral wing surfaces of the sexes are identical in pattern and colouration having a postmedian line black basally and white distally, hind wing submarginal area with large vivid red patches close to the outer and anal angles, the entire ground colour in both sexes has a greenish tint.

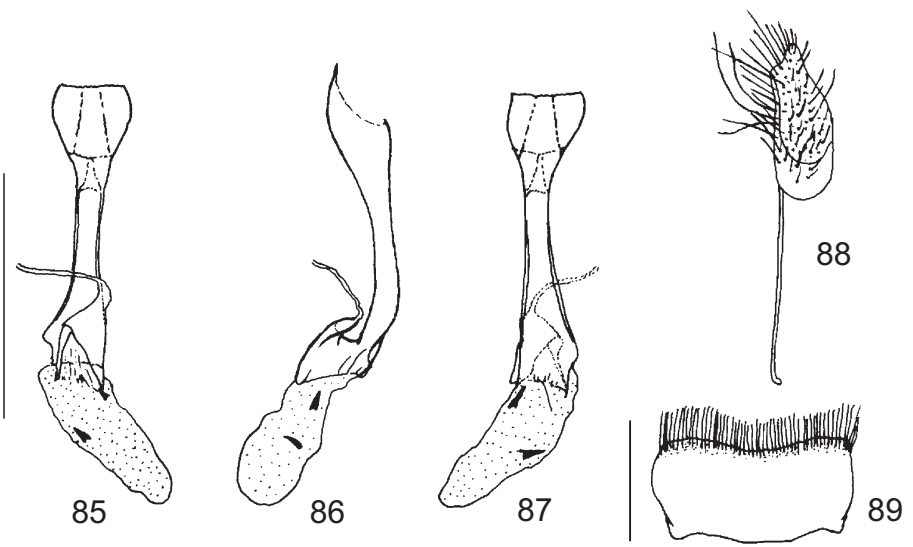
Etymology – The generic name is feminine and is intended to be a euphonious name that is dedicated to BERNARD and LUCILLA D'ABRERA, producers of the magnificent book series Butterflies of the World.

Remarks – All the characters given above distinguish the genera *Dabreras* from *Brangas*; moreover character (4) is unique in the tribe; somewhat similar character can be found in *Annamaria* BÁLINT, 2005 (type species: *Papilio ganimedes* CRAMER, 1775). This latter genus is probably closer related to *Dabreras* than *Brangas* which is supported by similar ventral hind wing pattern and venation (tails), plus the greenish female ventral scaling, which can be also discovered in the single known female specimen of *Annamaria colombia* BÁLINT, 2005.

ROBBINS (in ROBBINS *et al.* 1996: 242) presented the combination *Brangas teucria* (HEWITSON, 1868), simply repeated in the Neotropical Butterfly Checklist (LAMAS 2004). This placement is in conflict with the previous concept of *Brangas* (*sensu* ROBBINS 1991), as "Thecla teucria" does not possess the discoidal red pattern in the ventral fore wing. Presumably, this new concept of *Brangas* was based solely on genital characters of *B. teucria*. The genital structures of these butterflies were never studied and figured.



Figs 81–84. *Dabreras teucria* (HEWITSON, 1868) male genitalia. 81 = genital capsule in dorsal view, 82 = genital capsule with aedeagus and brush organ in lateral view, 83 = genital capsule in ventral view, 84 = 8th abdominal segment flattened. Scale bars = 1 mm



Figs 85–89. *Dabreras teucria* (HEWITSON, 1868) female genitalia. 85 = genital organ in dorsal view, 86 = ditto, in lateral view, 87 = ditto, in ventral view, 88 = papillae anales in lateral view, 89 = 8th abdominal segment flattened. Scale bars = 1 mm

The morphology of the sexual organs are somewhat similar to those of *Brangas*, thus the similarities may or may not indicate tight (sister) relationship. The presence of male genital appendage in the dorsal side of the tegumen can be an analogy or result of homoplasy in *Brangas* and *Dabreras*. The *dydimaon* species group possesses an appendage most similar to that of *Dabreras*, but in lateral view the appendage is situated parallel to the saccus in *Dabreras* (Figs 81–84), whilst this appendage projects dorsally approximately 90 degree in *Brangas dydimaon* (Fig. 21). This indicates that the structures in the two genera are not homologies. The less differentiated female genitalia of *D. teucria* is very similar to that of *B. dydimaon*, but again, there are differencies: the size and shape of bursae are different and this is also the case with the signa (*cf.* Figs 54–58 and 85–89).

Dabreras teucria is an isolated species, and because it possesses a unique character plus several characters on which *Brangas* and *Dabreras* can be differentiated, this lineage has to be named. The generic status is supported by the unique reflector of the male *Dabreras*. Phenotypic appearances also suggest that *Brangas* and *Dabreras* have different biology.

Dabreras teucria (HEWITSON, 1868) BÁLINT, **comb. n.** is a rare species and occurs in wet lowlands from the Atlantic coast (BMNH: British Guiana: River Demerara; MNHN: French Guiana: Parish; CF: Galion, Montagne des Chevaux, RN 2, PK 26, 14.XII.1997, J. Y. Gallard leg., n° 354), Venezulea (BMNH: Suapure) to the Amazon Basin (BMNH: "Amazon"; MNHN: Amazonas: Obidos; ROBBINS *et al.* 1996: Peru: Manu; CF: Serra do Tiracambu, Source du Rio Bananal, Entre km 32 et 35, Janvier 2006, Pará–Brésil, n° 10209).

KEY TO THE SPECIES OF *BRANGAS* BASED ON MALE CHARACTERS

1 Ventral fore wing discalis with red postbasal pattern
2 (genus *Brangas*)

– Ventral fore wing discalis without red postbasal pattern outgroups

2 Male dorsal fore wing with androconia, ventral pattern without gleaming spots (*insolitus* species group). Amazonian
B. insolitus BÁLINT et FAYNEL, sp. n.

– Male dorsal fore wing without androconia, ventral pattern with gleaming spots at least in basal area 3

3 Fore wing costal length shorter than 15 mm, ventral wing surface brown 4 (*dydimaon* species group)

– Fore wing costal length longer than 15 mm, ventral wing surface with black scaled veins or lighter limbal area 7

4 Male dorsal fore wing black 5

– Male dorsal fore wing blue with black margin 6

5 Male dorsal hind wing blue with black border. Amazonian
B. dydimaon (CRAMER, 1777)

– Male dorsal hind wing black. Transandean-Andean
B. rita (GOODSON, 1945)

6 Male dorsal hind wing with scent patch in cell Sc+R1 medial area. Transandean *B. neora* (HEWITSON, 1867)

– Male dorsal hind wing without scent patch in cell Sc+R1 medial area. Atlantic *B. moserorum* BÁLINT et FAYNEL, sp. n.

7 Male dorsal fore wing with absorber in medial area, wing ventral surface with black scaled veins 8

– Male dorsal fore wing without absorber, wing ventral surface with intensive gleaming pattern 10

8 Wing ventral surface with distinctive discoidal line (*torfrida* species group) 9

– Wing ventral surface without distinctive discoidal line (*carthaea* species group) *B. carthaea* (HEWITSON, 1868)

9 Male ventral fore wing with bright reflector, frons red. Transandean-Andean *B. coccineifrons* (GODMAN et SALVIN, 1887)

– Male ventral fore wing with pale reflector, frons not red. Transandean, Amazonian, Atlantic *B. torfrida* (HEWITSON, 1867)

10 Ventral fore wing discalis lighter with heavy red suffusion, gleaming pattern extensive (*caranus* subgroup) 11

– Ventral fore wing discalis darker with reduced red scaling, gleaming pattern faint or missing (*felderi* subgroup) 14

11 Dorsal hind wing with extensive light blue tornal suffusion, ventral fore wing with faint blue reflector and extensive gleaming pattern 12

– Dorsal hind wing blue tornal suffusion restricted to antemarginal region, ventral fore wing with intensive violet reflector and delicate gleaming pattern 13

12 Ventral fore wing with large and circular shaped gleaming pattern and extensive red scaling reaching submarginal area. Transandean
B. neildonatus BÁLINT et FAYNEL, sp. n.

– Ventral fore wing with large but elongated gleaming pattern, red scaling slightly extends beyond discal area. Transandean
B. rambutorum BÁLINT et FAYNEL, sp. n.

13 Male dorsal fore wing deep violet blue with wide black margin. Transandean-Andean, Amazonian-Guianan, Atlantic
B. caranus (STOLL, 1780)

– Male dorsal fore wing light violet blue with thin black margin. Amazonian-Guianan *B. getus* (FABRICIUS, 1787)

14 Ventral hind wing vein Rs area lighter 15

– Ventral hind wing vein Rs area not ligher 16

15 Male dorsal fore wing light blue with thin black border, ventral fore wing reflector and gleaming pattern intensive. Andean
B. felderi (GOODSON, 1945)

– Male dorsal fore wing dark blue with wide black border, ventral fore wing reflector and gleaming pattern less intensive. Andean
B. contrastus BÁLINT, sp. n.

16 Ventral wing surfaces with pinkish scaling, pattern extensive. Atlantic
B. silumena (HEWITSON, 1867)

– Ventral wing surfaces without pinkish scaling and almost uniformly brown, pattern vestigial. Transandean-Andean
B. polonus BÁLINT, sp. n.

*

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