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Source: The Journal of the Lepidopterists' Society, 64(3) : 172-174

Published By: The Lepidopterists' Society

URL: <https://doi.org/10.18473/lepi.v64i3.a7>

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Journal of the Lepidopterists' Society
64(3), 2010, 172–174

A NEW SUBSPECIES OF *EUEIDES LAMPETO* BATES, 1862 (NYMPHALIDAE: HELICONIINAE) FROM SURINAME

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ABSTRACT. A new subspecies of *Eueides lampeto* Bates, 1862 (Nymphalidae: Heliconiinae), *E. l. brownsbergensis*, is described from Suriname; its sexual dimorphism and involvement in mimicry complexes in Suriname is discussed.

Additional key words: butterflies, neotropics, mimicry, Surinam.

As currently known, the butterfly *Eueides lampeto* Bates, 1862 (Nymphalidae: Heliconiinae), is distributed from Ecuador and Peru through Venezuela and Guiana to western and northwestern Brazil (Holzinger 1994, pp. 27-28). Six subspecies have been described (Lamas 2004, p. 266):

- *E. l. lampeto* Bates, 1862; type location Brazil (Amazonas); distribution: western Brazil to eastern Peru.
- *E. l. acacetes* Hewitson, 1869; type location Ecuador; distribution: Ecuador, Peru.
- *E. l. apicalis* Röber, 1927; type location Ecuador; distribution: Ecuador.
- *E. l. carbo* Seitz, 1913; type location Ecuador; distribution: Ecuador.
- *E. l. concisa* Lamas, 1985; type location Peru; distribution: southern Peru.
- *E. l. nigrofulva* Kaye, 1906; type location Guiana; distribution: Venezuela, Guiana and adjacent Brazil.

In addition, it has been known for 30 years that an unnamed subspecies occurs in French Guiana (Brown 1979, p. 59, Brévignon 1995), also mentioned by Lamas (2004, p. 266) as 'n. ssp. KS Brown, MS'.

We describe a hitherto undescribed, sexually dimorphic subspecies from Suriname, first identified from the collection of D. Schilder, donated in 2007 to the National Centre for Biodiversity Naturalis, Leiden, the Netherlands (NCB Naturalis). Forewing length was measured from base to apex.

Eueides lampeto brownsbergensis Gernaat & Beckles,
new subspecies
(Fig. 1)

Description. MALE: forewing length (FWL) 31-36 mm. Antennae: black-brown, ventral side of clubs yellow-orange. *Dorsal*

forewing (FW): ground colour bright orange tawny without yellow; apex black with a faint trace of three white spots; subapical orange band broader; postmedial black markings barely continuous; orange-brown, at times faintly black, spots in spaces M3 and Cu1; outer margin continuously black with two triangular black spots near tornus, the posterior one faintly connected to the black horizontal bar. *Dorsal hindwing (HW)*: transverse medial band consists of considerably shorter black spots, which are ill defined proximally and clearly separated from marginal border; black marginal border with white paired dots faintly visible. *Ventral FW*: subapical band and medial area subdued yellow ground colour; ill-defined grey-black spots in spaces M3 and Cu1; outer margin with two triangular black spots near tornus, the posterior one faintly connected to the black horizontal bar. *Ventral HW*: submedial area subdued yellow ground colour; black spots of transverse medial band larger, better defined than on dorsal side and clearly separated from marginal border.

FEMALE: FWL 35-39 mm. Differs from the male as follows: Antennae: yellow-orange colored. *Dorsal FW*: wing shape more rounded; one faint yellow spot in apex; yellow ground colour medial and subapical areas; postmedial black markings clearly continuous; ill-defined black spot in space Cu1; outer margin continuously black with two triangular black spots near tornus, the posterior one connected to the black horizontal bar. *Dorsal HW*: subcostal black band; discal area yellow-orange coloured; black spots of transverse medial band larger; black marginal border with white paired dots. *Ventral FW*: subapical band and medial area light yellow ground colour; ill-defined grey-black spots in space Cu1; black horizontal bar clearly connected to posterior triangular marginal spot. *Ventral HW*: subcostal band yellowish-orange; black markings somewhat more extensive.

Diagnosis. The male differs from *E. l. lampeto* and *E. l. nigrofulva* mainly by two triangular black spots near the tornus, a more extensive postmedial black patch at the cell end and orange-brown spots in spaces M3 and Cu1 on the dorsal FW, and on the dorsal HW a less prominent black transverse medial band. The female differs from *E. l. lampeto* and *E. l. nigrofulva* mainly by a yellow ground color of the medial and subapical areas, continuous postmedial black markings and two triangular black spots near the tornus on the dorsal FW, and on the dorsal HW a less prominent black transverse medial band.

Holotype: male. Label: "3423. Brownsberg, Suriname, 22 January 1973, leg. D. Schilder 2007". FWL 36 mm. Collection NCB Naturalis (Fig. 1).

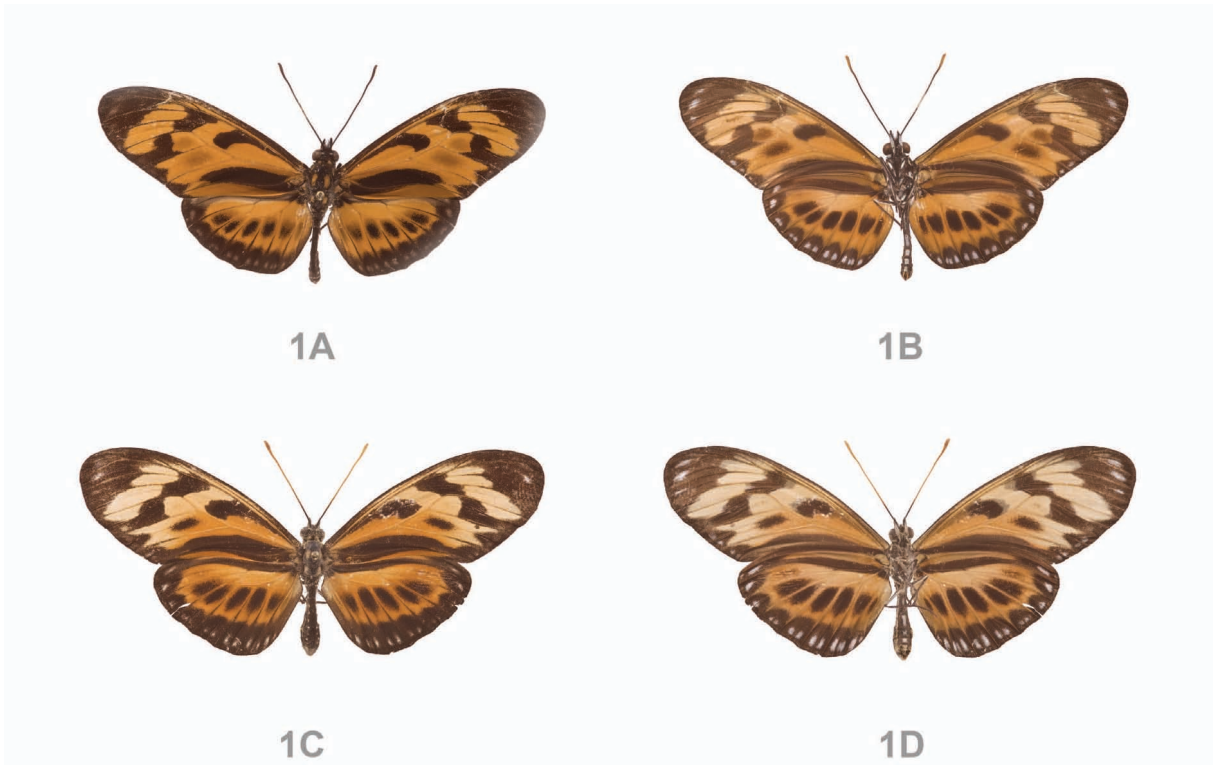


FIG.1. *Eueides lampeto brownsbergensis*. **A and B.** Holotype (data in text). **A:** dorsal surface, **B:** ventral surface. **C and D.** Allotype (data in text). **C:** dorsal surface, **D:** ventral surface.

Paratypes:

1. allotype: female. Label: "3425. Brownsberg, Suriname, 22 January 1973, leg. D. Schilder 2007". FWL 38 mm. Collection NCB Naturalis (Fig. 1).
2. male. Label: "3424. Brownsberg, Suriname, 22 January 1973, leg. D. Schilder 2007". FWL 33 mm. Collection NCB Naturalis.
3. male. Label: "3426. Brownsberg, bosgebied [forest area], Suriname, 2 September 1972, leg. E.H. Jonkers". FWL 36 mm. Collection NCB Naturalis.
4. male. Label: "RMNH.INS 382035, nr. 3427. Brownsberg, bosgebied [forest area], Suriname, 2 September 1972, 450 m, leg. E.H. Jonkers". FWL 31 mm. Collection NCB Naturalis.
5. female. Label: "RMNH.INS 382040, nr. 3428. Brownsberg, bosgebied top [forest area, summit], Suriname, 17 July 1969, 550 m, leg. E.H. Jonkers". FWL 35 mm. Collection NCB Naturalis.
6. female. Label: "RMNH.INS 382039, nr. 3429. Brownsberg, bosgebied [forest area], Suriname, 12 October 1972, 450 m, leg. E.H. Jonkers". FWL 37 mm. Collection NCB Naturalis.
7. female. Label: "RMNH.INS 382038, nr. 3430. Brownsberg, bosgebied [forest area], Suriname, 2 September 1972, leg. E.H. Jonkers". FWL 39 mm. Collection NCB Naturalis.
8. female. Label: "RMNH.INS 382037, nr. 3431. Brownsberg, bosgebied aan Brokopondomeer [forest area on lake Brokopondo], Suriname, 28 January 1973, 250m, leg. E.H. Jonkers". FWL 36 mm. Collection NCB Naturalis.
9. female. Label: "3432. Albina, Marowijne, Suriname, don 1879, leg. A. Kappler, Museum Natura Artis Magistra." FWL 35 mm. Collection Zoological Museum Amsterdam.

Etymology: *brownsbergensis* refers to the Brownsberg Nature Park in Suriname (type location).

DISCUSSION

Species of Heliconiinae, including members of the genus *Eueides*, are well known for the extent of involvement in mimicry complexes as well as intraspecific variation. Therefore, it might seem preliminary to describe a new subspecies, in this case of *E. lampeto*, without further data on its biology. However, one of the striking features of *brownsbergensis* is its phenetic stability: label data of specimens range from 1879 to 1973 and there is very little variation, both among males and among females. Therefore, we consider *brownsbergensis* a valid subspecies.

As currently known, *E. l. brownsbergensis* is restricted to Suriname, although it is quite possible that the French Guianese specimens, reported as *E. l. copiosus* (a junior homonym of *E. l. nigrofulva*) (Lacomme 2003; Lamas 2004), also belong to *ssp. brownsbergensis*. Also, there are two possible records from the Guianan-Suriname-border (Dr. K.S. Brown Jr. pers. com.).

Eueides lampeto is considered a local and rarely encountered species, possibly because it is mainly restricted to the canopy. For *ssp. brownsbergensis* we

only found ten specimens, of which nine came from the same locality (Brownsberg Nature Park, 250–550m altitude), taken in the months January, July, September and October. In French Guiana, the species has been recorded from January, October and November (Lacomme 2003). In Brazil, larvae have been reported to feed on various species of the *Granadilla* subgroup of *Passiflora* (Passifloraceae), notably *P. quadrangulares* L. and *P. laurifolia* L. (Brown 1981, p. 446). Its hostplant(s) and early stages in Suriname are not known. *P. laurifolia* ('paramarkoesa' in Suriname) is known to occur at the Brownsberg plateau (ter Steege 2007, p. 206).

A conspicuous feature of subspecies *brownsbergensis* is its sexual dimorphism, which does not occur in other subspecies of *E.lampeto*, although it is known in other Heliconiinae (e.g. *Eueides vibilia* (Godart, 1819)). Generally, sexual dimorphism is thought to be the result of selective forces working separately on males and females. Males spend most of their lives searching for and chasing females interspersed with feeding on flowers, whereas females mainly search for suitable locations to oviposit and occasionally feed on flowers. As such, males and females often occupy different microhabitats, may be part of different prey-predator regimes and therefore have evolved to be participants of different mimicry complexes (Mallet 1995; Willmott 2004). Judging from phenetic similarity, female *E.lampeto brownsbergensis* seem to be part of an extensive mimicry complex in Suriname comprising, among others, Danainae (*Lycorea halia halia* (Hübner, 1816), *Lycorea pasimuntia* (Stoll, 1780)), Ithomiinae (*Tithorea harmonia harmonia* (Cramer, 1777), *Melinaea mneme mneme* (Linnaeus, 1763), *Forbestra equicola equicola* (Cramer, 1780), *Mechanitis polynnina polynnina* (Fabricius, 1793), *Mechanitis mazaesus pannifera* Butler, 1877, *Hypothyris euclea forbesi* R.M. Fox, 1941, *Hypothyris ninonia latefasciata* (Haensch, 1909)), Nymphalinae (*Eresia eunice eunice* (Hübner, 1807)) and Heliconiinae (*Eueides isabella isabella* (Stoll, 1781), *Heliconius ethilla thielei* Riffarth, 1900, *Heliconius numata numata* (Cramer, 1780)). Male *E.lampeto brownsbergensis* appear to belong to another, less extensive group of mimetic species (Riodinidae: *Stalactis calliope calliope* (Linnaeus, 1780)); Heliconiinae: *Eueides aliphera aliphera* (Godart, 1819),

Eueides vibilia vibilia (Godart, 1819), *Eueides lybia lybia* (Fabricius, 1775), and possibly the larger species *Dione juno juno* (Cramer, 1779), *Dryadula phaetusa* (Linnaeus, 1758) and *Dryas iulia alcionea* (Cramer, 1779)). Why sexual dimorphism has evolved in ssp. *brownsbergensis* in Suriname as opposed to other subspecies of *E.lampeto* in other regions, merits further study.

Note: National Museum of Natural History, Naturalis, Leiden, the Netherlands (RMNH) is currently named the National Centre for Biodiversity Naturalis, Leiden, the Netherlands (NCB Naturalis).

ACKNOWLEDGEMENTS

The authors wish to thank Dr. Keith S. Brown Jr (Departamento de Zoologia, Instituto de Biologia, UNICAMP, São Paulo), Behnaz Ansari, Dr. Erik J. van Nieukerken and Dr. Rien de Jong (National Museum of Natural History, Naturalis, Leiden) for the loan of specimens, encouragement and critically reviewing the manuscript, Ch. Brévignon for providing information, D. Schilder for donating his collection to Naturalis and kindly providing additional information, and Godard Tweehuyzen for help with the literature search.

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Received for publication 5 November 2008; revised and accepted 16 September 2009.