

Case 3320

***Papilio sapho* Drury, 1782 (currently *Heliconius sapho*; Insecta, Lepidoptera): proposed conservation of the specific name**

Gerardo Lamas

Museo de Historia Natural, Universidad Nacional Mayor de San Marcos, Apartado 14-0434, Lima-14, Peru (e-mail: glamasm@unmsm.edu.pe)

James L.B. Mallet

The Galton Laboratory, Department of Biology, University College London, 4 Stephenson Way, London NW1 2HE, U.K. (e-mail: j.mallet@ucl.ac.uk)

Abstract. The purpose of this application, under Article 23.9.5 of the Code, is to conserve the specific name *Papilio sapho* Drury, 1782 (currently *Heliconius sapho*) (NYMPHALIDAE). The name has been in use for more than 220 years, but is a junior primary homonym of *Papilio sappho* Pallas, 1771 (currently *Neptis sappho*); the names have been placed in separate genera since 1816. They belong to different subfamilies of brush-footed butterflies, *Neptis sappho* inhabiting the Palaearctic, *Heliconius sapho* the Neotropics, and their names are in common and widespread use.

Keywords. Nomenclature; taxonomy; Lepidoptera; NYMPHALIDAE; *Heliconius*; *Ajantis*; *Heliconius sapho*; *Neptis sappho*; Neotropics; Palaearctic; brush-footed butterflies.

1. Pallas (1771, p. 471) introduced the name *Papilio sappho* for a Palaearctic species, currently known as *Neptis sappho* (NYMPHALIDAE, LIMENITIDINAE), distributed from eastern Europe, across Russia and central Asia to Japan.

2. Drury (1782, first page of the Index) introduced the name *Papilio sapho* for a New World species, supposedly from Jamaica, which he described and illustrated (p. 54, pl. 38, fig. 4). It does not occur in Jamaica, but is widely distributed in southern Mexico, Central America and northwestern South America. It is currently regarded as a member of the genus *Heliconius* Kluk, 1780 (NYMPHALIDAE, HELICONIINAE). *Heliconius* Kluk was placed on the Official List of Generic Names in Zoology (Opinion 382, January 1956), with type species *Papilio charithonia* Linnaeus, 1767 by subsequent designation by Hemming (1933, p. 223), although the date of the generic name was wrongly given as 1802. In fact, Paclt (1955) and Bálint et al. (2001) have demonstrated that *Heliconius* was made available by Kluk in 1780 (p. 82). *Papilio sapho* Drury is the type species of the genus-group name *Ajantis* Hübner, 1816 (p. 13) by subsequent designation by Scudder (1875, p. 106). *Ajantis* Hübner was recorded as a junior synonym of *Heliconius* Kluk by Neustetter (1929, p. 4).

3. Despite their slightly different spellings, *P. sappho* Pallas and *P. sapho* Drury are primary homonyms under Article 58.7 of the Code, which states that names differing in spelling only by the use of single or double consonants are homonyms. Although neither Pallas (1771) nor Drury (1782) provided an etymology for the names they proposed, it is evident that both names are of the same derivation and meaning, referring to the classical poetess Sappho, born at the island of Lesbos in 630 B.C.

(see Seyffert, 1995). Indeed, as early as 1790, Herbst (p. 159) had already spelled Drury's specific name as *Papilio sappho*, and called attention to its distinctiveness from Pallas's species. Interestingly, Fabricius (1793, p. 165) spelled Drury's name as *P. sappho*, whereas (p. 246) he cited Pallas's name as *P. sapho*.

4. The name *Papilio sappho* Pallas, 1771 has priority over *P. sapho* Drury, 1782 and the latter is permanently invalid under Article 57.2 unless conserved by the Commission, which we here propose. *Papilio sapho* Drury would have to be replaced by its oldest subjective synonym, *Heliconia leuce* Doubleday, 1847 (p. 102), which has long been regarded as a valid subspecies of *Heliconius sapho* (Drury) (see Neustetter, 1929). The nominotypical subspecies *H. sapho sapho* (Drury) has no available and potentially valid synonyms, and a substitute name (*nomen novum*) would have to be proposed. Such an action would produce considerable confusion and is highly undesirable, as *Heliconius sapho* is a common species, widely cited in the literature for over 220 years, with numerous biological, systematic, ecological and genetic research papers published on it (e.g. Brown & Benson, 1975; Brown, 1976; Young, 1981; DeVries, 1987; Raguso & Gloster, 1996; Brower & Egan, 1997; Mallet & Joron, 1999; Kapan, 2001; Luis et al., 2003; Gilbert, 2003). Furthermore, *Papilio sappho* Pallas and *P. sapho* Drury have long been assigned to widely separate genera in the NYMPHALIDAE, ever since Hübner (1816, p. 13) proposed *Ajantis* to accommodate *P. sapho* Drury and two other related species. *Neptis sappho* (Pallas) belongs to the LIMENITIDINAE, and *Heliconius sapho* (Drury) to the HELICONIINAE.

5. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to rule that the specific name *sapho* Drury, 1782, as published in the binomen *Papilio sapho*, is not invalid by reason of being a junior primary homonym of *Papilio sappho* Pallas, 1771;
- (2) to emend the entry on the Official List of Generic Names in Zoology for *Heliconius* Kluk to record that the date of publication was 1780 and not 1802;
- (3) to place on the Official List of Specific Names in Zoology the following names:
 - (a) *sappho* Pallas, 1771, as published in the binomen *Papilio sappho*;
 - (b) *sapho* Drury, 1782, as published in the binomen *Papilio sapho* (ruled in (1) above to be not invalid by reason of being a junior primary homonym of *Papilio sappho* Pallas, 1771);
- (4) to emend the entry on the Official List of Specific Names in Zoology for *charithonia* Linnaeus, 1767, as published in the binomen *Papilio charithonia*, to record that it is the type species of *Heliconius* Kluk, 1780 and not 1802;
- (5) to emend the entries for the following names entered on the Official Index of Rejected and Invalid Generic Names in Zoology to record that the date of publication of *Heliconius* Kluk was 1780 and not 1802:
 - (a) *Heliconius* Latreille, 1804;
 - (b) *Heliconia* Godart, 1819;
 - (c) *Apostraphia* Hübner, 1816.

References

- Bálint, Z., Guppy, C.S., Kondla, N.G., Johnson, K. & Durden, C.J. 2001. *Plebeius* Kluk, 1780 or *Plebejus* Kluk, 1802? (Lepidoptera: Lycaenidae). *Folia Entomologica Hungarica*, **62**: 177–184.

- Brower, A.V.Z. & Egan, M.G.** 1997. Cladistic analysis of *Heliconius* butterflies and relatives (Nymphalidae: Heliconiini): a revised phylogenetic position for *Eueides* based on sequences from mtDNA and a molecular gene. *Proceedings of the Royal Society of London (B)*, **264**: 969–977.
- Brown, K.S., Jr.** 1976. Geographical patterns of evolution in Neotropical Lepidoptera. Systematics and derivation of known and new Heliconiini (Nymphalidae: Nymphalinae). *Journal of Entomology (B)*, **44**(3): 201–242.
- Brown, K.S., Jr. & Benson, W.W.** 1975. West Colombian biogeography, notes on *Heliconius hecalesia* and *H. sapho* (Nymphalidae). *Journal of the Lepidopterists' Society*, **29**(4): 199–212.
- DeVries, P.J.** 1987. *The butterflies of Costa Rica and their natural history*. Papilionidae, Pieridae, Nymphalidae. xxii, 327 pp., 50 pls. Princeton University Press, Princeton.
- Drury, D.** 1782. *Illustrations of Natural History*. Wherein are exhibited upwards of two hundred figures of exotic insects. According to their different genera; very few of which have hitherto been figured by any author, being engraved and coloured from nature, with the greatest accuracy, and under the author's own inspection, on fifty copper-plates. With a particular description of each insect: interspersed with remarks and reflections on the nature and properties of many of them, 3. xxvi, 76, [2] pp., 50 pls. White, London.
- Fabricius, J.C.** 1793. *Entomologia systematica emendata et aucta. Secundum classes, ordines, genera, species adjectis synonymis, locis, observationibus, descriptionibus*, vol. 3. iv, 487 pp. Christian Gottlieb Proft, Fil. et Soc., Hafniae.
- Gilbert, L.E.** 2003. Adaptive novelty through introgression in *Heliconius* wing patterns. Evidence for a shared genetic ‘toolbox’ from synthetic hybrid zones and a theory of diversification. Pp. 281–318 in Boggs, C.L., Watt, W.B. & Ehrlich, P.R. (Eds.), *Butterflies. Ecology and evolution taking flight*. University of Chicago Press, Chicago and London.
- Herbst, J.F.W.** 1790. In Jablonsky, C.G., *Natursystem aller bekannten in- und ausländischen Insekten als eine Fortsetzung der von Buffonschen Naturgeschichte. Nach dem System des Ritters Carl von Linné. Der Schmetterlinge*, vol. 4. viii, 208 pp., pls. 53–80. Joachim Pauli, Berlin.
- Hemming, A.F.** 1933. Additional notes on the types of certain butterfly genera. *Entomologist*, **66**: 222–225.
- Hübner, J.** 1816. *Verzeichniss bekannter Schmettlinge*, 1: 1–16. Jacob Hübner, Augsburg.
- Kapan, D.D.** 2001. Three-butterfly system provides a field test of Müllerian mimicry. *Nature*, **409**: 338–340.
- Kluk, K.** 1780. *Zwierzat domowych i dzikich, osobliwie kraiowych, historyi naturalney poczatki i gospodarstwo*, vol. 4. [4], 500 pp., 9 pls. J.K. Mości, Warszawa.
- Luis, A., Llorente, J.E. & Vargas, I.** 2003. *Nymphalidae de México I (Danainae, Apaturinae, Biblidinae y Heliconiinae): Distribución geográfica e ilustración*. [ix], 249 pp., 30 pls. Universidad Nacional Autónoma de México, Mexico City.
- Mallet, J.L.B. & Joron, M.** 1999. Evolution of diversity in warning color and mimicry: Polymorphisms, shifting balance, and speciation. *Annual Review of Ecology and Systematics*, **30**: 201–233.
- Neustetter, H.** 1929. Nymphalidae: Subfam. Heliconiinae. *Lepidopterorum Catalogus*, **36**: 1–136.
- Paclt, J.** 1955. Die Gattungsnamen von Kluk 1780: *Danaus*, *Heliconius*, *Nymphalis* und *Plebejus* (Lepidoptera). *Beiträge zur Entomologie*, **5**: 428–431.
- Pallas, P.S.** 1771. *Reise durch verschiedene Provinzen des russischen Reichs. Erster Theil*. [x], 504 pp. Kayserlichen Academie der Wissenschaften, St. Petersburg. [Available online at <http://visualiseur.bnf.fr/Visualiseur?Destination=Gallica&O=NUMM-97333>]
- Raguso, R.A. & Gloster, O.** 1996. Preliminary checklist and field observations of the butterflies of the Maquipucuna Field Station (Pichincha Province, Ecuador). *Journal of Research on the Lepidoptera*, **32**: 135–161.
- Scudder, S.H.** 1875. Historical sketch of the generic names proposed for butterflies. *Proceedings of the American Academy of Arts and Sciences*, **10**: 91–293.
- Seyffert, O.** 1995. *The Dictionary of Classical Mythology, Religion, Literature, and Art*. [vii], 714 pp. Gramercy Books, New York.

- Young, A.M.** 1981. Over-exploitation of larval host plants by the butterflies *Heliconius cydno* and *Heliconius sapho* (Lepidoptera: Nymphalidae: Heliconiini) in Costa Rica? *Journal of the New York Entomological Society*, **88**(3): 217–227.

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Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).