An illustrated and annotated checklist of Jamides Hübner, 1819, taxa occurring in the Indonesian provinces of North Maluku and Maluku (Lepidoptera: Lycaenidae)

Andrew Rawlins, Alan Cassidy, Chris J. Müller, Stefan Schröder and W. John Tennent

Abstract: This paper recognises 55 taxa (21 species) of the polyommatine lycaenid genus Jamides Hübner, 1819, occurring on the islands of the Indonesian provinces of Maluku and North Maluku. Nine new subspecies are described: Jamides seminiger richardi ssp. n. (holotype = HT male, BMNH), J. amarauge amandae ssp. n. (HT male, BMNH), J. cyta stevei ssp. n. (HT female, BMNH), J. fractilinea saraharum ssp. n. (HT male, BMNH), J. aratus vignei ssp. n. (HT male, BMNH), J. aratus roberti ssp. n. (HT female, BMNH), J. aratus samueli ssp. n. (HT male, BMNH), J. halus carnegii ssp. n. (HT male, CMNH) and J. artai sabina ssp. n. (HT male, BMNH). A lectotype is designated for Lampides buruana Holland, 1900 (male, in CMNH), a junior synonym of Lycaena aleto C. Felder, 1860. Numerous new island records are introduced, new synonymy is proposed (see checklist at the end) and some errors and areas of confusion in the literature are discussed and resolved as far as possible. All known taxa are illustrated in colour and maps show all the islands mentioned in the text.

Keywords: Lepidoptera, Lycaenidae, Jamides, new taxa, new locality records, Indonesia, Maluku.

Introduction

This paper provides an illustrated and annotated checklist of all species and subspecies of the genus Jamides Hübner, 1819 (Lycaenidae, Polyommatinae) known to occur in the Indonesian provinces of North Maluku and Maluku, together with their known ranges. It includes a large number of island locality records presented here for the first time.

Jamides is a complex genus, and some classification issues have resulted in significant confusion in the literature. Where these issues affect Maluku taxa they are discussed and clarified as far as possible. Synonyms are included where they are directly relevant to Maluku and new synonymy is introduced where appropriate.

We describe 9 new subspecies and recognise 55 taxa, comprising 21 Jamides species, as occurring in the Maluku area. Following the main checklist, we summarise all Maluku Jamides taxa and provide detailed island distribution maps within Maluku, incorporating all Maluku islands named in the text. Where available to the authors, photographs of both surfaces of both sexes of each taxon are provided.

Predictably, some “loose ends” remain unresolved and are likely to remain so pending availability of additional material and further research. Dates of some Fruhstorfer publications have been subject to confusion — for accurate dates, see Lamas (2005).

In preparing this checklist, we have relied heavily on the collections of the Natural History Museum, London. Collections in the Naturhistorisches Museum Basel and the Carnegie Museum, Pittsburgh, have also been examined, as have a number of private collections.

Definition of Maluku and biogeography

There is some potential for confusion between our use of the name “Maluku”, the Indonesian provincial names of Maluku and North Maluku, and some of the geographical terms we will use in this paper including “northern Maluku” and “central Maluku”.

We use the term Maluku to incorporate the two Indonesian provinces of North Maluku and Maluku (see Map 1), together often referred to as the “Moluccas” or the “Spice Islands”. For the sake of clarity, since use of these terms by different authors has been occasionally inconsistent, we provide detailed description of our terminology as follows (Maps 2a, 2b):
The political province of North Maluku (Maluku Utara) comprises:

1. The Sula Islands of Taliabu, Mangole and Sanana, which lie midway between Sulawesi and Maluku and are faunistically included in the “Sulawesi Region” by Vane-Wright & de Jong (2003).

2. The islands that we refer to as “northern Maluku”: Morotai, Halmahera, Ternate, Kayoa, Bacan, Kasiruta, Mandioli and their associated smaller islands. The islands of Obi and Gebe were included in northern Maluku by Peggie et al. (1995, 2005). For reasons outlined below we treat them separately.

3. The island of Obi, though traditionally grouped with northern Maluku, is biogeographically intermediate between the islands of the remainder of northern Maluku and central Maluku (see below). It has a notably high level of endemism at the subspecies level (over 50% of Papilionidae, Pieridae and Nymphalidae), in addition to at least 5 endemic butterfly species.

4. Gebe Island lies between Halmahera and the offshore islands of West Papua Province, with which the fauna has clear affinities. Most butterfly species that occur on Gebe are widespread species that are also found in northern Maluku as well as in the New Guinea Region, albeit often in different subspecies. No endemic butterfly species are known from Gebe although there are many endemic subspecies. A significant percentage of Gebe species also occur in the New Guinea Region but not in northern Maluku (e.g., Delias gavia (Boisduval, 1832), Neptis brebissonii (Boisduval, 1832), and Ornithoptera priamus (Linnaeus, 1758) [in northern Maluku this is replaced by Ornithoptera croesus (Wallace, 1859)], suggesting a closer affinity with New Guinea than with northern Maluku. Very few species occur both on Gebe and in northern Maluku but not in the New Guinea Region. Those that do so include Appias placidia (Stoll, 1790) (hitherto unpublished record for Gebe), Parantica cleona (Stoll, 1782), and Danaus ismare (Cramer, 1780).

The political province of Maluku comprises:

1. The islands we refer to as “central Maluku”. They include the islands recognised as central Maluku by Peggie et al. (1995, 2005) – excepting that we exclude the Banda Islands (see below) and add Ambelau, a small island about 15 km off southeastern Buru. Thus we consider central Maluku to include: Buru, Ambelau, Manipa, Kelang, Buano, Seram, Ambon, Haruku, Saparua, Nusa Laut, Geser and Seram Laut. Geser and Seram Laut lie fewer than 10 km southeast of the southeastern tip of Seram. They are included within the eastern limit of central Maluku by Peggie et al. (2005), who stated: “Reasons for accepting Seram Laut as this eastern limit include the presence, on the Gorong group, of species such as Papilio aegaeus (Donovan, 1805) (not known from Seram Laut, Geser or Seram: D’Abera 1990), and the change in colour pattern and mimicry complex centred on Euploea leucostictos (Gmelin, 1790).” The Gorong Islands, the next group to the southeast, are a further 30 km distant.

2. The Gorong, Watubela and Tayandu (including Kur) island groups which lie to the southeast of Seram between Seram (and its offshore islands of Geser and Seram Laut) and the Kei Islands.

3. The Banda Islands; included by Peggie et al. (1995, 2005) within their definition of central Maluku. We
of this area is still hotly debated (Hinschberger et al. 2005, Hill 2012). The synformal geometry of the arc and deep marine troughs are in part explained by slab rollback and associated delamination of the continental crust (Spackman & Hall 2010). Seram is comprised of Tertiary and Mesozoic carbonates and clastics, with a Paleozoic basement of schists and gneiss (Darman & Reemst 2012). The islands of Seram, Ambon and Buru (part of what we term “central Maluku”) have been rotated and/or displaced over a long tectonic history dating back to at least the Miocene, more than 15 million years ago. Conversely, the Banda Islands, including Gunung Api, are relatively recent volcanic islands that have formed in situ within the Banda Arc (Hill 2012). The Bandas consist of more than 10 small volcanic islands with, collectively, a total land area of only 180 km² arising out of 4–6 km deep ocean bed. The islands form part of the Banda Sea Islands moist deciduous forests ecoregion, which reaches east to the Tanimbar and Kei Islands. Two of the three *Jamides* species known from the Bandas occur as subspecies distinct from those of central Maluku.
4. The Kei Islands — Kei has no endemic butterfly species, but like most island groups in Maluku, support many endemic subspecies. There are a number of species which are, within Maluku, restricted to Kei, Aru and Gebe, as well as occurring in the New Guinea Region, reflecting Kei’s relatively close faunal links to Aru and New Guinea. Examples include Elymnias agondas (Boisduval, 1832), Mymes geoffroyi (Guérin-Méneville, 1831) and Phaedyma shepherdii (Moore, 1858).

5. The islands of Southwest Maluku (District), also known as the Western Daya Islands or Maluku Barat Daya — these are the islands that extend beyond Timor and the Lesser Sunda Islands from Wetar eastwards to, but not including, the Tanimbar Islands. The Southwest Maluku Islands include Wetar, Roma, Damar, Kisar, Leti, Moa, Lakor, Sermata Islands and Babar Islands.

6. The Tanimbar Islands, which lie at the end of the island chain extending from the Lesser Sunda Islands east through the Southwest Maluku Islands. They represent the most eastern limit of the range of a number of butterfly species that occur from Timor eastwards, such as Pachliopta iris Godart, [1819], Papilio pericles Wallace, 1865, and Delias timorensis Boisduval, 1836.

7. The Aru Islands, which lie on the New Guinea continental shelf and are faunistically closely associated with the main island of New Guinea.

The islands of Maluku have huge biogeographical interest and include a variety of faunistic regions — the Sulas belong to the Sulawesi region; the islands from Wetar to Tanimbar display a gradually weakening connection of the Lesser Sunda Island fauna; Aru and Gebe share many significant features of the New Guinea fauna, while northern Maluku and central Maluku represent the biogeographical heart of Maluku. The islands between Seram and Kei see a gradual change from central Maluku fauna to more typically Kei fauna, which itself shares some faunal characteristics with Aru and New Guinea.

Three of the 21 Jamides species known to occur in Maluku are endemic to the area — seminiger Grose Smith, 1895 (four subspecies across Maluku), titei Tennent & Rawlins, 2012 (two subspecies both restricted to northern Maluku) and euchylas Hübner, 1819 (endemic to central Maluku in two subspecies).

A total of 41 of the 55 Jamides taxa recorded from Maluku (almost 75%) are restricted to the region. Nine of these are endemic to one or more islands within northern Maluku, four to the Sula Islands and Central Maluku, three each to Obi, the Tanimbar and Aru groups and two to the Kei Islands. The Watubela group, Bandas and Gebe each have one. The remaining taxa endemic to Maluku range across more than one of the island groups we have elucidated above. In common with some other butterfly genera and families, Maluku is a region of high endemcity in Jamides.

The Indonesian western half of the Island of New Guinea with its associated offshore islands, which has been previously variously known as Irian Jaya or West Irian (= Irian Barat), now consists of two provinces: West Papua and Papua. The term “New Guinea” is used in this paper in its geographical sense meaning the whole island including both Indonesian provinces of West Papua and Papua, and the State of Papua New Guinea.

**Abbreviations used**

and. antennal length.
BMNH The Natural History Museum (formerly British Museum [Natural History]), London, U.K.
CARR coll. Andrew Rawlins, Rainham, Kent, U.K.
CASS coll. Alan Cassoy, Maidenhead, Berkshire, U.K.
CMNH Carnegie Museum of Natural History, Pittsburgh, USA.
CSSK coll. S. Schröder, Köln, Germany.
fw. forewing.
fwl. forewing length.
GP [no.] genitalia preparation [no.].
HT[s] holotype[s].
hw. hindwing.
LT[s] lectotype[s].
NHMB Naturhistorisches Museum Basel, Switzerland.
PLT[s] paralectotype[s].
PT[s] paratype[s].
ST[s] syntype[s].
uns. underside.
ups. upperside.
ZSM Zoologische Staatssammlung München (Munich), Germany.

**Jamides Hübner, 1819**

The type species of Jamides Hübner, 1819, selected by Scudder (1875), is bochus Stoll, 1782.

There are approximately 60 described species (Hirowatari 1992 recognised 57) of Jamides occurring across the Oriental, Australian and Pacific regions. Here we record 21 species from Maluku, and following Hirowatari (1992) we divide the genus into two species-groups: the bochus- and celeno-groups, with the celeno-group further divided into seven subgroups.

**The bochus species-group**

Hirowatari (1992) listed 12 species in this group, of which three occur in Maluku.

**Jamides bochus (Stoll, 1782)**

_Papilio bochus_ Stoll (1782 [in Cramer & Stoll] 4: 210, pl. 391, figs. C, D); TL: S. India.

**Range:** Widespread in the Oriental, Australian and Pacific Regions including Sri Lanka, India, Nepal, Bangladesh, Burma (= Myanmar), Andaman and Nicobar Islands, Thailand, Laos, Vietnam, southern China, Hainan, Taiwan, the Malay Peninsula, Philippines, Palawan, Borneo, widespread in Indonesia, Christmas Island, New Guinea, Palau, Federated States of Micronesia (Vane-Wright & de Jong 2003, Rawlins 2007). Other closely associated species of the bochus species-group occur further east on some islands of Polynesia and Micronesia (Tennent 2006).
Notes: Parsons (1998, often cited as 1999, but see Tennent 2004) stated: “About 22 races of bochus are known.” However, as Tennent (2009) observed: “This is a particularly difficult group of butterflies to identify and reliably assign geographical distribution.” With this in mind, we recognise 6 subspecies in Maluku and present one new synonym.

The name pulchrior Grose Smith, 1895 was based on what were said to be a pair from Pura and a ♀ from Halmahera. Grose Smith compared the taxon to J. pulcherrima Butler, 1884, stating that the ♀ ups. “differs from J. pulcherrima Butl. in having the black marginal band on the anterior wings broader, and on the posterior wings in the absence of the black outer-marginal band of that species” and was of the opinion that pulchrior closely resembled astraptes Felder, 1860, but that the ♀ of pulchrior had the ups. blue area more restricted than the astraptes ♀ (Grose Smith 1895: 510).

We have examined ♂ and ♀ pulchrior specimens bearing Grose Smith’s handwritten labels, declaring type status, in the BMNH, each of which carries the same locality label: “Pura, Oct. 1891, W. Doherty”. These specimens are similar to, but clearly different from bochus toscius from Halmahera. We believe Grose Smith included Halmahera in error, and here restrict the distribution of J. bochus pulchrior to its type locality – Pura Island – and some nearby islands in the Lesser Sundas.

Jamides bochus phaidon (Frühstorfer, 1916)

(Pl. 1, Fig. 1: ♂ Taliabu, Fig. 2: ♀ Sulawesi.)

Lampides bochus phaidon: Frühstorfer (1916: 37); TL: Sulawesi.


Note: This is the first record of J. bochus from the Sulawis.

Jamides bochus toscius (Frühstorfer, 1916)

(Pl. 1, Figs. 3–5: ♂ HT, Halmahera; Fig. 6: ♂ Halmahera; Fig. 7: ♀ Bacan.)

Lampides bochus toscius: Frühstorfer (1916: 37); TL: Halmahera.

Range: endemic to northern Maluku: Halmahera, Ternate, Bacan (BMNH) and new records from Morotai (2 ♀♂, vi. 2006) and Mandioli (1 ♀, 11. xi. 2006) (CARR).

Jamides bochus polassar (Frühstorfer, 1916), stat. rev.

(Pl. 1, Figs. 8–10: ♂ HT, Obi; Fig. 11: ♀ Obi.)

Lampides bochus polassar: Frühstorfer (1916: 37); TL: Obi Island.

Range: Obi (BMNH).

Note: Frühstorfer described only the ♀ of polassar but a ♀ bearing a Frühstorfer collection label is illustrated here (Pl. 1, Fig. 11). He compared the ♂ to astraptes Felder, 1860, saying polassar was paler in colour on both surfaces and that the upperside black borders were not as wide in his specimens from Ambon. Seitz (1923: 902) followed Frühstorfer in treating polassar as a valid subspecies of bochus.

D’Abera (1971 [et seq.]) listed polassar as a synonym of astraptes without explanation. There is little to separate the ♂ HTs of each taxon, but the ♀ polassar clearly differs from both toscius and astraptes, particularly in the extent of the upperside forewing purple patches, in which respect polassar is intermediate between the other two, but closer to toscius. This feature is consistent in series of astraptes and toscius. We therefore follow Frühstorfer and retain polassar as the subspecific name for J. bochus from Obi, stat. rev.

Jamides bochus astraptes (C. Felder, 1860)

(Pl. 1, Figs. 12, 13: ♂ HT, Ambon; Fig. 14: ♀ Seram; Fig. 15: ♀ Seram; Figs. 16–17: ♂ Aru; Figs. 18–19: ♀ Aru; Fig. 20: ♀ Kur; Fig. 21: ♀ Kur; Fig. 22: ♀ Banda; Fig. 23: ♀ Banda.)

Lycaena astraptes: C. Felder (1860: 456); TL: Ambon.

= Lampides bochus soarchad: Frühstorfer (1916: 37), syn. n., see note 1; TL: Kei Islands.

Range: Buru, Seram, Ambon, Nusa Laut, Geser (labelled Gisser), Seram Laut, Gorong Islands (Gorong, labelled Goram Laut), Watubela Islands, Tayandu Islands (Kur, Tayandu & Taam), Kei Islands (Kei Kecil & Kei Besar), Aru Islands (Wamar) – see note 2; (BMNH), and new island records from central Maluku; Manipa (1 ♂, Tomaleh Barat, 18. ix. 1993), Kelang (5 ♀♂, xi. 2003; 1 ♂, viii. 2008), Kasa Island, off Seram (3 ♀♂, xii. 2004), Haruku (4 ♀♂, 1 ♀, x. 2006) and Bandana Islands (1 ♂, Banda Besar, 30. v. 1998; 1 ♀, Naira, 4. t. 1991, see note 3) (CARR).

Note 1: Frühstorfer (1916), in describing soarchad, wrote: “The ♂ differs from grata [Grose Smith, 1895] and herdonius [Frühstorfer, 1916] in having distinctive black markings on the upperside of hw. Its underside is darker with more prominent black marginal spots.” He did not compare soarchad to astraptes. D’Abera (1971) listed “J. bochus soarchard” (sic) and recorded the range as “Kai (Ewab)”. We have examined BMNH specimens of “soarchad” from the Watubela Islands, Tayandu Islands and Kei and cannot identify any features to separate them from specimens of J. bochus astraptes from central Maluku (Ambon, Seram).

Note 2: Neither D’Abera (1971) nor Parsons (1998) mentioned Aru in the range of bochus. However there are 2 ♀♂ and 3 ♀♀ from Aru in the BMNH. Frühstorfer (1916) listed specimens from Aru as “L. bochus subspec. nova. Aru-Inseln” without providing a name, suggesting it was the same as “Plebeius campanulata var. Ribbe, Iris 1886, p. 85”. Ribbe (1886) merely listed species he found on Aru and included “Plebeius Campanulata Butler var.:” in his lycaenid list, noting that it was rare. The type locality of campanulata Butler, 1884 is Fiji (see Tennent 2006: 165–167, note 91) and the name is synonymised with candra reginna Herrich-Schäffer 1869 (TL: Fiji) (Hironawati 1992, Tennent 2006).

We have examined specimens from Aru and find them clearly different from Fiji candra reginna material. They are also unlike J. bochus grata from Tanimbar and easily separable from specimens from Fakfak (= Kapura) in West Papua Province on the main island of New Guinea. New Guinea ♀♂ are distinctly more purple, with less sheen than the more royal blue colour of Aru (which matches Kei and central Maluku) specimens. New Guinea ♀♀ are also more tinged with purple than those from Aru.

Parsons (1998) noted the occurrence of J. bochus on New Guinea, acknowledging it was probably an unnamed subspecies. New Guinea specimens in the BMNH are placed above a label saying “J. bochus ssp.” and we agree with Parsons that this material probably represents an undescribed subspecies. However, Aru bochus in the BMNH are provisionally treated as astraptes, a placement with which we agree, as we cannot identify any consistent differences between bochus specimens from Aru and those from central Maluku and Kei/Kur (see Pl. 1, Figs. 12–19, 20–21).

Note 3: There are no specimens of bochus from the Banda Islands in the BMNH but we have seen 1 ♂ (Banda Besar Island, 30. v. 1998; Pl. 1, Fig. 22) in good condition provided by K. Naga, who reported the species was not uncommon on the islands. Apart from its small size (2.2 cm wingspan), this ♂ is very similar to bochus astraptes from central Maluku (♀ wingspan usually 2.5–3 cm). In addition we have one faded ♀ (Naira Island, 4. t. 1991; Pl. 1, Fig. 23), which is also relatively small (2.4 cm) and has slightly broader upperside forewing marginal black borders than typical central Maluku astraptes. It is otherwise similar. On the basis of these two specimens we provisionally place bochus from Banda with J. bochus astraptes.
Plate 1, Figs. 1–32: Subspecies of *Jamides bochus*. — Figs. 1–2: *J. bochus phaidon*, 1: ♂, ups./uns., Taliabu (i. 2005; CARR); 2: ♀, ups./uns., Sulawesi (Makassar, 1896, W. Doherty). — Figs. 3–7: *J. bochus toscius*. Figs. 3–5: ♀ “type”, Halmahera; 3: ups.; 4: uns.; 5: label. Fig. 6: ♂, ups./uns., Halmahera (viii. 1892, W. Doherty). Fig. 7: ♀, ups./uns., Bacan (viii. 1897, W. Doherty). — Figs. 8–11: *J. bochus polysar*. Figs. 8–10: ♂ HT, Obi; 8: ups., 9: uns., 10: label. Fig. 11: ♀, ups./uns., Obi (FRUHSTORFER coll.; BMNH Accessions). — Figs. 12–13: *J. bochus astraptes*. Figs. 12–13: ♂ HT, Ambon; Fig. 12: ups./uns.; Fig. 13: label. Fig. 14: ♂, ups./uns., Seram (Manusela, 6000ft, x.–xi. 1919, C. F. & J. Pratt). Fig. 15: ♀, ups./uns., Seram (in. 2009; CARR). Figs. 16–17: ♂, Aru (v.–vi. 1896, Webster); 16: ups., 17: uns. Figs. 18–19: ♀, Aru (Dobo, 5. iii. 1911, C. B. Kloss); 18: ups., 19: uns. Figs. 20–21: *J. bochus herdonius* (formerly soarchad). Fig. 20: ♂, ups./uns., Kur (13. vii. 1898, H. Kühn). Fig. 21: ♀, ups./uns., Kur (29. vi. 1898, H. Kühn). Figs. 22: ♂, ups./uns., Banda (Banda Besar, 30. v. 1998; CARR). Fig. 23: ♀, ups./uns., Banda (Naira Island, 4. i. 1991; CARR). — Figs. 24–25: *J. bochus grata*. Fig. 24: ♂, ups./uns., Wetar (v. 1892, W. Doherty). Fig. 25: ♀, ups./uns., Wetar (v. 1892, W. Doherty). — Fig. 26: *J. bochus ssp.*, ♂, ups./uns., Leti (1885, H. O. Forass). — Figs. 27–32: *J. bochus grata*. Figs. 27–29: ♂ HT, Tanimbar (v.–vi. 1892, W. Doherty); 27: ups., 28: uns., 29: label. Figs. 30–32: ♀ PT, Tanimbar (v.–vi. 1892, W. Doherty); 30: ups., 31: uns., 32: label. — All specimens deposited in BMNH, if not indicated otherwise. — Scale bar (top centre) for all specimens = 1 cm (= ca. 1.2 times natural size; labels may differ).
Jamides bochus herdonius (Fruhstorfer, 1916)
(Pl. 1, Fig. 24: ♂ Wetar; Fig. 25: ♀ Wetar.)

Lampides bochus herdonius: Fruhstorfer (1916: 37); TL: Wetar.
Range: Timor, Wetar (Rawlins 2007).
Note: The BMNH also has 1 ♂ bochus (Pl. 1, Fig. 26) from the island of Leti which has significantly broader black forewing marginal borders than typical herdonius. We illustrate this but hesitate to ascribe subspecific status based on only one specimen.

Jamides bochus grata Grose Smith, 1895
(Pl. 1, Figs. 27–29: ♂ ST grata, Taninbar; Figs. 30–32: ♀ ST, Taninbar.)

Jamides grata: Grose Smith (1895: 510); TL: Taninbar.
Range: endemic to the Taninbar Islands: Larat, Yamdena (BMNH).

Jamides seminiger Grose Smith, 1895

Jamides seminiger: Grose Smith (1895: 509); TL: Bacan.
Range: endemic to Maluku.
Note: D’Abrera (1971, 1986) accorded species status to seminiger, porphyris and tiglath. Hiwasatani (1992) placed both porphyris and tiglath as subspecies of seminiger and we follow that here. Cassidy (2003) subsequently described a fourth subspecies of the species, vanlithi, and below we describe a fifth.

All five subspecies occur in Maluku.

Jamides seminiger tiglath (Fruhstorfer, 1916)
(Pl. 2, Figs. 33–34: ♂ HT, Mangole; Fig. 35: ♂ Mangole; Fig. 36: ♀ Mangole.)

Lampides bochus tiglath: Fruhstorfer (1916: 37); TL: Mangole, Sula Islands.
Range: only known from Mangole in the Sula Islands (BMNH).
Note: D’Abrera (1971) recorded the range as the Sula Islands, illustrating a ♂ and stating that the ♀ was unknown. In fact there are 2 ♀♀ in the BMNH with the labels: “Sula Mangoli, Oct [18]97, W. Doherty”. We have not seen any specimens from the other Sula Islands.

Jamides seminiger seminiger Grose Smith, 1895
(Pl. 2, Fig. 37: ♂ Bacan; Fig. 38: ♀ Bacan; genitalia: Figs. 45, 47 [see below under ssp. richardi n. ssp.])

Jamides seminiger: Grose Smith (1895: 509); TL: Bacan.
Range: endemic to northern Maluku; Halmahera, Bacan (BMNH), Morotai (new island record: 4 ♂♂, Daeo, vi. 2006, CARR).
Note: D’Abrera (1971) also listed “Ternate(?)”.

Jamides seminiger porphyris Holland, 1900
(Pl. 2, Fig. 39: ♂ Buru; Fig. 40: ♂ Obi.)

Jamides porphyris: Holland (1900: 75); TL: Buru.
Range: Obi, Buru, Seram, Ambon (BMNH).
Note: We have not seen a ♀.

Jamides seminiger vanlithi Cassidy, 2003
(Pl. 2, Fig. 41: ♂ Tioor; Fig. 42: ♀ Tioor.)

Jamides seminiger vanlithi: Cassidy (2003: 80, figs. 14, 15, 25); TL: “Klein Kei, Tioor”; see note.
Range: Watubela Islands (Tioor) (BMNH).
Note: This subspecies was described by Cassidy (2003) from a series of 3 ♂♂ in the van GROENENDAEL collection in the Natural History Museum, Amsterdam University (now incorporated with the Naturalis Biodiversity Center, Leiden), all with the same collection data in Dutch language. At the time of his publication Cassidy assumed that “Teeor” was a village in “Klein-Kei” (= Kei Kecil, = Small Kei). Although this is possible, we can find no record of such a village in Kei and believe these may have been “group location” labels meaning Kei Kecil and/or Tioor (historical spellings include Teeor and Teoer) Islands. Tioor is one of the two main islands in the Watubela Island group to the northwest of Kei. There are 2 ♂♂ in the BMNH main collection from Tioor which match photographs of the vanlithi type and this confirms the presence of vanlithi there. There is also 1 ♀ which we illustrate for the first time.

There is a short series of specimens, 1 ♂ from Aru and 4 from Kei, of an undescribed taxon associated with a label reading “Jamides sp.” in the BMNH. They clearly belong to the bochus species-group but differ from known subspecies of seminiger and soemias Druce, 1891. Based on phenotype it is difficult to assign specific status. We have examined the genitalia of the ♂ from Aru and one of the Kei ♂♂ and conclude that they represent a new subspecies of seminiger, described below. We have not seen a ♀. This new subspecies differs from its nearest geographical relative, vanlithi, in a number of external characters as described below.

Jamides seminiger richardi ssp. n.
(Pl. 2, Figs. 43–44: ♂ HT, Kei; Figs. 46, 48: genitalia.)

Holotype ♂: Indonesia, Maluku, Kei, Little Kei [Kei Kecil], H. Künn, Rorthschlo bequest B.M. 1939-1. GP: Rhopalocera vial number 8969 (BMNH).
Etymology: named for Richard Gnias, friend of the first author.
Range: Kei (Kei Kecil, Kei Besar) and Aru Islands (BMNH).

Diagnosis

♂ (Pl. 2, Figs. 43–44): Fw. 12.5 mm, antl. 6.5 mm (HT). Fw. ups. with ground colour deep lustrous blue (darker and less iridescent than J. s. vanlithi), termen broadly black, approximately 1 mm in width, cilia black; fw. uns. uniform grey-brown; an adjacent terminal and subterminal band of similar colouring and each approximately 0.5 mm wide, edged with white (less distinctly than in J. s. vanlithi) and darkening towards the inner margin; a postmedian band parallel to termen approximately 1.5 mm wide, edged with white (less distinctly than in J. s. vanlithi), distinctly stepped at vein 3 and angled towards tornus below this vein; an additional band 1.5 mm wide at end of cell (wider than in J. s. vanlithi), edged white.

Hw. ups. deep lustrous blue (darker and less iridescent than J. s. vanlithi), broadly grey-brown at costa above vein 7; termen narrowly black (<1 mm wide) (broadly black in J. s. vanlithi); a subtornal spot in space 2; a faint subterminal band, cusp-shaped between veins inward of the tornal spots between the inner margin and vein 4 (band more prominent in J. s. vanlithi, and extended to inner margin as pale chevron mark in space 1b); inner margin broadly grey, cilia dark grey; hw. uns. uniform
grey-brown; an adjacent terminal and subterminal band of similar colouring, each approximately 1 mm wide, cusp-shaped between veins, edged with white; terminal band replaced with large black tornal spot approximately 1 mm diameter in space 2, conspicuously rimmed with orange except along termen, where it is faintly marked with pale iridescent blue; a postmedian band similar to ground colour, approximately 1 mm wide, edged white and distinctly stepped at vein 4 and at vein 7, between inner margin and vein 3 this band is arcuate between veins; a band 1 mm wide at end of cell (wider than in \textit{J. s. vanliithi}), edged white, strongly oblique to termen; an additional band 1 mm wide at base, subparallel to termen.

\textbf{♂ genitalia} (Pl. 2, Figs. 46, 48) (BMNH Rhopalocera vial number 8969): The ♂ genitalia are typical of \textit{Jamides seminiger}, which were illustrated in Hirowatari (1992: figs. 20A–D). For comparison, and with that author’s kind permission, we show the uncus, valvae and phalliculus of nominotypical \textit{seminiger} from Bacan, as drawn by Hirowatari, in Figs. 45, 47 (Pl. 2). The equivalent structures of \textit{richardi} from Little Kei and Aru are shown in Figs. 46 and 48.

\textbf{♀: unknown.}

\textbf{Notes:} In Pl. 2, Figs. 49–56, we present images of \textit{Jamides soemias parpurata Goss. Smith}, 1894, from Humboldt Bay and Simbang in New Guinea, and of \textit{Jamides soemias soemias Druce}, 1891 from the Solomon Islands. The ♂ GP of \textit{J. seminiger} and \textit{J. soemias} confirm that these two species are closely related. Current knowledge suggests that the eastern limit of the distribution of \textit{J. seminiger} is Aru and that \textit{J. soemias} does not occur as far west as Maluku.

\textbf{Jamides amarauge DRUCE, 1891}

\textit{Jamides amarauge} DRUCE (1891: 366, pl. 31, figs. 20, 21); TL: Alu (Solomon Islands).

\textbf{Range:} mainland New Guinea, Bismarcks, many of the Solomon Islands and Darnley Island in Torres Strait (Parsons 1998, Tenent 2006) and Aru and other islands off West Papua — see notes.

\textbf{Notes:} DRUCE (1891) described \textit{amarauge} from Alu Island in the west of the Solomons Archipelago; \textit{J. a. hepworthi} TENENT, 2001 was subsequently described from Nendo and Vanikoro in the north of the New Hebrides Archipelago.


A note in G. E. Trir’s handwriting accompanies \textit{amarauge} specimens from New Guinea and reads: “ssp. from New Guinea. The dark margins are narrower and the green ground colour less brilliant than in true \textit{amarauge} from the Solomons.” We have examined these specimens and agree with Trir that New Guinea specimens differ from Solomon Island (= nominotypical) specimens (Pl. 2, Figs. 63–64) in two notable features. Firstly, the ground colour of Solomons \textit{♂♀} is a paler shade of blue (Trir calls it green), verging on blue-green and is more lustrous, and secondly, Solomons \textit{♂♀} and \textit{♀♀} have significantly broader ups. fw. dark borders. BMNH specimens from the Indonesian islands of Misool, Waigeo, Aru, Numfoor (labelled Mefor) and Supiori (labelled Korrido) closely match the New Guinea mainland phenotype described below.

\textbf{Jamides amarauge amandae ssp. n.}

(Pl. 2, Figs. 57–58: ♂ HT, Aru; Figs. 59–60: ♀ PT, Aru; Fig. 61: ♂ PT, Humboldt Bay; Fig. 62: ♀ PT, Humboldt Bay.)

\textbf{Holotype ♂: Indonesia, Aru, Hewitson Coll. 79-69. “Lycena pavuna.” (BMNH).}


\textbf{Etymology:} named for Amanda, the sister of the second author.


\textbf{Diagnosis}

♂ (Pl. 2, Figs. 57–58): FwL. 14 mm (HT), antennae missing [therefore not measured]; fw. ups. ground colour shining pale sky blue (deeper blue, less lustrous than nominotypical \textit{amarauge}); termen broadly black (narrower than nominotypical \textit{amarauge}), increasing in width from 3 mm at tornus to 7 mm at apex, boundary between border and ground colour diffuse; cilia black; uns. uniformly grey; an adjacent terminal and subterminal band of similar colouring, each approximately 1 mm wide, edged with white; a postmedian band parallel to termen also approximately 1 mm wide, incrementally stepped towards base from costa, edged with white; additional band 1 mm wide at cell end, edged white.

Hw. with tails missing; ups. shining pale sky blue, tinged with brown at costa above vein 6; termen narrowly black (<1 mm wide); a row of subterminal black spots, each between veins and ringed with pale blue and outwardly broadly with dark brown; inner margin broadly grey, cilia black; uns. uniformly grey; an adjacent terminal and subterminal band of similar colouring, each approximately 1 mm wide, cusp-shaped between veins, edged with white, above vein 6 vestigial and darkened; terminal band replaced with prominent black, rectangular tornal spot approximately 1.5 mm in width in space 2, conspicuously rimmed with orange except along termen, where it is faintly marked with pale iridescent blue; a postmedian band similar to ground colour, approximately 1 mm wide, edged white and distinctly stepped at vein 4 and at vein 7; between inner margin and vein 3 this band is arcuate between veins; 1 mm wide band at end of cell, edged white; additional 1 mm wide band at base, distinctly stepped at either side of cell.

♀ (Pl. 2, Figs. 59–60): FwL. 15 mm, antennae missing; Fw. ups. with ground colour shining pale sky blue, ter-
men broadly black (narrower than nominotypical ama-
range), increasing in width from 3 mm at tornus to 6 mm
at apex and 2 mm along costa; boundary between bor-
der and ground colour diffuse; cilia black; fw. uns. uni-
formly grey; an adjacent terminal and subterminal band
of similar colouring and each approximately 1 mm wide,
edged with white; a postmedian band parallel to termen
approximately 2 mm wide distinctly stepped at vein 3
and angled slightly towards tornus below this vein; an
additional band 1 mm wide at end of cell, edged white.

Hw. ups. shining pale sky blue, tinged with brown at
costa above vein 6; termen narrowly black (<1 mm wide);
a row of subterminal black spots, each between veins
and ringed with pale blue and outwardly broadly with dark
brown; inner margin broadly grey, cilia black; hw. uns.
uniformly grey; an adjacent terminal and subterminal band
of similar colouring, each approximately 1 mm wide,
cusp shaped between veins, edged with white, above vein
6 vestigial and darkened; terminal band replaced with
large black, oblong-shaped tornal spot approximately
1.5 mm diameter in space 2, conspicuously bordered
orange except along termen, where it is faintly marked
with pale iridescent blue; a postmedian band similar to
ground colour; approximately 1 mm wide, edged white
and distinctly stepped at vein 3 and at vein 7, between
inner margin and vein 1b; this band is arcuate between
veins; a band 1 mm wide at end of cell, edged white;
an additional band 1 mm wide at base, distinctly stepped at
either side of cell.

The celeno species-group

Hirowatari (1992) subdivided the celeno species-group
into seven subgroups, of which six occur in Maluku.

The cyta subgroup

Hirowatari (1992) listed seven species in this subgroup,
to which J. titei Tennent & Rawlins, 2012 is added. Two
species of this subgroup occur in Maluku.

Jamides cyta (Boisdruval, 1832)

*Catachrysops cyta*: Boisdruval (1832: 87); TL: New Ireland.

**Range:** Burma (= Myanmar), Thailand, Malay Peninsula, Sumatra,
Java, Lesser Sunda Islands, Borneo, Palawan, Philippines, Sulawesi Region,
northern Maluku, New Guinea region, northern Australia
(Vane-Wright & de Jong 2003).

**Notes:** Parsons (1998) noted “about 22 races” and included “Solo-
mons” in the distribution of *J. cyta* (as *J. cyta*). *J. cyta* has not been
reported from the Solomon Islands (Tennent 2002).

Seven subspecies occur in Maluku.

Jamides cyta hellada (Fruhstorfer, 1916)

(Pl. 2, Fig. 65: ♂ Mangleo; Fig. 66: ♀ Sanana.)

*Lampides amphissa hellada*: Fruhstorfer (1916: 28); TL: Sula Islands.

**Range:** endemic to the Sula Islands: Mangleo, Sanana (Vane-
Wright & de Jong 2003), Taliabu (new island record: 1 ♂, 1. 2005;
1 ♀, 11. 2008; CARR).

Jamides cyta amphissa (C. & R. Felder, 1860)

(Pl. 2, Fig. 67: ♂ Bacan; Fig. 68: ♀ Bacan.)

*Lycaena (Catachrysops) amphissa*: C. & R. Felder (1860: 244);
TL: Bacan.

**Range:** endemic to northern Maluku; Halmahera, Ternate, Bacan
(BMNH). We add new island records from Morotai (1 ♂, 8. 2003;
1 ♂, 1 ♀, xt. 2004; 1 ♂, 1 ♀, 2006; 3 ♀♂, Daceo, 17. 1995, x. 2002,
xt. 2004), Kasiruta (4 ♀♂, 1 ♀, 3. 2003) and Mandioli (1 ♂, 2 ♀♂,

**Note:** J. cyta amphissa specimens in the BMNH said to be from Obi
are disregarded (see notes following *J. cyta megdora*, below).

Jamides cyta megdora (Fruhstorfer, 1916)

(Pl. 2, Fig. 69: ♂ Obi; Fig. 70: ♀ Obi.)

*Lampides amphissa megdora*: Fruhstorfer (1916: 28): TL:
Obi Island.

**Range:** Obi (BMNH).

**Note:** There is a series of both sexes of *J. megdora* from Obi in
the BMNH with data labels from a number of sources including
Doherty and Foest. There is also a series of 5 ♂♂ and 1 ♀ of *J. cyta
amphissa*, each bearing the same typed labels: “Obi, ex J. Water-
stadt 1904, ex Oberthur Coll. Brit Mus. 1927-3”. These, and
other similar labels concerning other taxa in this paper, are belie-
ved to be erroneous, as Tennent & Rawlins (2012) explained. A
drawer label in the BMNH questions the accuracy of these Water-
stadt labels associated with *J. cyta amphissa* and, in research-
ning the present paper, the authors encountered identical labels
on specimens of *J. titei pseudocyta* and *J. schazi schazi*, neither of
which are otherwise known to occur on the island of Obi. It is
strongly suspected that all are from Bacan but we are confident
that, whatever their true provenance, none originated on Obi. See
also note following *J. philatus enmetallicus*.

Jamides cyta madara (Fruhstorfer, 1916)

(Pl. 2, Fig. 71: ♂ Kei; Fig. 72: ♀ Kei.)

*Lampides amphissa madara*: Fruhstorfer (1916: 28); TL: Kei
Islands.

**Range:** Tayandu Islands (Kur), Kei Islands (Kei Kecil) (BMNH).

**Note:** D’Abrera (1971) noted the range as “Kai (Ewab) Island”.
Ewab is an old name for Kei.

Jamides cyta nemea (C. Felder, 1860)

(Pl. 3, Figs. 73–75: ♂ HT, Ambon; Figs. 78–80: ♀ PT, Ambon; Fig.
76: ♂ Ambon; Fig. 77: ♀ Ambon.)

*Lycaena nemea*: C. Felder (1860: 453); TL: Ambon.

= *Plebeius callinicus* Röber (1886: 58, pl. 4, fig. 15), syn. n.;
see notes 1 and 2; TL: Seram.

**Range:** Seram, Ambon, Saparua, Gorong Islands (Manawoka;
labelled Manovoka) (BMNH), Buru (see note 1 below), Haruku
(new island record: 1 ♀, x. 2006, CARR).

**Note 1:** Röber (1886) described and illustrated *callinicus* from a ♀
from Seram. He then described the ♂ based on a specimen from
Bacan and another from Nias (off the west coast of Sumatra)
and noted they differed from each other. We have not been able to
examine these ♀♀, or pictures of them, but note that it is high-
ly unlikely that the same *cyta* subspecies occurs on islands over
3000 km apart, with a number of different subspecies in between.
We cannot comment on whether either or neither of the ♀♀ men-
tioned by Röber were correctly associated with the ♀♂ of *J. c.
nemea*. Fruhstorfer (1916) considered *callinicus* a subspecies of
*philatus* Snellen, 1878 from Seram, and Seitz (1923: 910) followed
this. Röber’s illustration appears typical of *cyta* and shows the uns./fw. postdiscal band moved basal forward of vein 6, which is usual
in *cyta* but not in *philatus*, where it is in line with spaces 4 and 5.
We therefore consider *callinicus* to be a junior synonym of *nemea.*
Note 2: Holland (1900) noted “a few males and more numerous females” from Buru under the name *Lampides callinica*. We have examined these specimens in the Carnegie Museum, Pittsburgh, and confirm that they are indistinguishable from *J. c. nemea* from Ambon. Holland also listed 2 ♂♂ of “*Lampides nemea*” from Buru, but expresses some doubt as to their diagnosis. We deal with these in the section below on *Jamides halus*.

**Jamides cyta aruanus** (Röber, 1886)

(Pl. 3, Fig. 81: ♂ Aru; Figs. 82–83: ♀ Aru.)

*Plebeius aruanus* Röber (1886: 57, pl. 4, fig. 12); TL: Aru Islands.

= *Jamides aruensis*: Swinhoe (1915: 175), syn. n. (Pl. 3, ♂ HT, Aru, Figs. 84–86; see note; TL: Aru.

**Range:** endemic to the Aru Islands; Wamar Island (BMNH) and de
cyta, ge

The holotype of *Jamides aruensis* Swinhoe, 1915, is in the BMNH and is clearly a subspecies of *cyta*, and also matches Röber’s description of *aruanus* (see Pl. 3, Figs. 81 & 84–85).

**Jamides cytea stevi** sp. n.

(Pl. 3, Figs. 87–88: ♀ HT, Tanimbar.)

**Holotype ♀**: Indonesia, Tanimbar, Yamdena Island, 20 miles N of Saumlaki, xn. 2006 (BMNH). — No paratypes.

**Etymology:** named for Steve Clare, friend since University of the first author.

**Range:** Tanimbar; known from just 1 ♀ from Yamdena Island.

Note: Despite having only one specimen available, it is so distinctive that we feel it appropriate to describe it as a new subspecies.

**Diagnosis**

♀ (Pl. 3, Figs. 87–88): Fw. 16 mm, anttl. 7.5 mm (HT). Fw. ups. with ground colour shining light sky blue (much brighter and more lustrous than *J. c. madara*), termen broadly black, increasing in width from 1 mm at tornus to 4 mm at apex, boundary between border and ground colour diffuse; clia black; fw. uns. pale grey; adjacent terminal and subterminal band of similar colouring, each approximately 1 mm wide, broadly edged with white; postmedian band parallel to termen approximately 1 mm wide stepped at vein 3, broadly edged with white (unlike ♀ of *J. c. madara*), diffuse on basal margin below vein 3; an additional band 1 mm wide at end of cell, edged white.

Hw. ups. shining pale sky blue (much brighter and more lustrous than *J. c. madara*), tinged with brown at costa above vein 7; termen very narrowly black hairline width (unlike broad margin of *J. c. madara*); a row of indistinct subterminal brown spots, each between veins; hw. uns.

pale grey; an adjacent terminal and subterminal grey band each approximately 0.5 mm wide, arrow shaped between veins, broadly edged with white, inner row darker grey, above vein 7 represented as dark irregular spot, approximately 1 mm diameter; terminal band replaced with large black, arrow-shaped tornal spot approximately 1 mm diameter in space 2, with arrow-shaped orange patch on basal side and bordered narrowly by blue scales; additional small black spot at tornus, similarly bordered with orange and blue (orange and blue scaling much more restricted than in *J. c. madara* and only vestigial towards costa beyond vein 3); postmedian band darker than ground colour, approximately 0.5 mm wide, broadly edged white and distinctly stepped at vein 3 and at vein 7, between inner margin and vein 7 this band is arcuate between veins and between veins 6 and 7 is strongly oblique to the costa; a band 1 mm wide at end of cell, edged white; an additional band 1 mm wide at base, distinctly stepped at either side of cell.

♂: Unknown.

**Jamides titei** Tennent & Rawlins, 2012

*Jamides titei* Tennent & Rawlins (2012: 140, figs. 1–7); TL: Halmahera.

**Range:** endemic to northern Maluku.

Note: Tennent & Rawlins (2012) stated that the species was phenotypically like *Jamides cyta Boursinval*, 1832, and that the male genitalia also appeared typical of the cyta subgroup.

Jamides titei titei TENNENT & RAWLINS, 2012
(Pl. 3, Figs. 89-90: ♂ HT, Halmahera; Figs. 91-92: ♀ PT, Halmahera.)

Jamides titei: TENNENT & RAWLINS (2012: 140, figs. 1-7); TL: Halmahera.

Range: Morotai and Halmahera.

Jamides titei pseudocycta TENNENT & RAWLINS, 2012
(Pl. 3, Figs. 93-94: ♂ HT, Bacan; Figs. 95-96: ♀ PT, Bacan.)

Range: Bacan and Mandoli.

Note: A pair of J. titei pseudocycta in the BMNH labelled: “Obi, ex J. Waterstradt 1904, ex Oberti’s Coll. Brit Mus. 1927-3” are almost certainly wrongly labelled (see notes following J. cyta megdora).

The celeno subgroup

Hirowatari (1992) included three species, celeno CRAMER, 1775, fractilinea TITHE, 1960 and pura MOORE, 1886, in this subgroup. The status of the taxon butleri ROTHSCILD, 1915 is in doubt and though it may be a subspecies of celeno we have tentatively placed it as a distinct species (see discussion under J. butleri). We therefore recognise four species in this subgroup, all of which occur in Maluku.

Jamides celeno (CRAMER, 1775)

Papilio celeno: Cramer (1775: 51, pl. 31, figs. C, D); TL: Surinam [Sumatra]; see note 1.

Range: Widespread in the Oriental and Australian Regions from southern China, India and Sri Lanka to Vanuatu, including Indonesia, Palawan, Philippines, the New Guinea region and the Solomon Islands, but absent from Australia (Parsons 1998, Vane-Wright & de Jong 2003).

Note 1: Cramer, and subsequently Fabricius, erroneously gave the type locality as “Surinam”, where the species does not occur. Its true source is now widely accepted to be Sumatra.

Note 2: Parsons (1998) stated: “J. celeno is represented by about 17 spp. throughout its range.” In Maluku we recognise three subspecies. Subpopulations of celeno from Sulawesi and the Sula Islands are similar, and in order to correctly assign Sulawesi populations, the many celeno subspecific names associated with Sulawesi populations are considered here in some detail.

Jamides celeno optimus (RÖBER, 1886)
(Pl. 3, Fig. 98: § Sanana; Fig. 99: § Sanana; Figs. 100 & 102: § Sulawesi; Fig. 101: § Sulawesi.)

Plebeius optimus: Röber (1886: 56, pl. 4, fig. 16); TL: Tombugu, East Sulawesi — see note 2.

= Lampides kalawarus punctatus: Riebe (1926: 90); TL: Kalawara, Sulawesi — see note 5.

= Plebeius griseus: Röber (1886: 60, pl. 4, fig. 18), syn. n.; TL: Tombugu, East Sulawesi — see notes 2 & 3.

= Lampides griseus kalawarus: Riebe (1926: 90), syn. n.; TL: Kalawara, Sulawesi — see note 5.


Range: Talaul, Sulawesi, Tukangbesi and Peleng (Vane-Wright & de Jong 2003; see note 1), Sula Islands (Mangole and Sanana) (BMNH), see note 5.


Note 2: RÖBER (1886) described Plebeius optimus and gave the type locality as: “Malacca (Péra) und Ost-Celebes (Tomboego)”. Malacca is in West Malaysia where J. celeno eleanus Fruhbusius, 1793 occurs. Röber also described a ♀-form of optimus which he called var. obscurus. Takanami (1989: 48) designated a ♂ LT of optimus from Tombugu. A further ♀ specimen from Tombugu, Sulawesi, with the same collection data as the lectotype exists in the Courvoisier collection at the NHMB (Cassidy 2013).

Note 3: Later in the same paper Röber described Plebeius griseus from an unnumbered number of ♀♀, giving the type locality as “Ost-Celebes (Tomboego)”. His illustration of griseus shows a ♀ with a uniformly grey-brown ups. Throughout Sulawesi the majority of celeno ♀♀ are of this uniformly grey-brown phenotype, and griseus is clearly synonymous with optimus. Fruhstorfer (1916) was aware of this and considered “griseus Röhr.” to be one of two ♀-forms of optimus. It should be noted that a minority of ♀♀ do not conform to the usual phenotype and have distinctly paler areas in the middle of the fw. ups. Takanami (1989: 65) stated “The ♂ [of optimus] is entirely dark brown on the ups. of both wings.” We note that this matches Röber’s description and illustration of griseus. Vane-Wright & de Jong (2003) made no mention of griseus.

Note 4: Bridges (1988) created further confusion. He listed grisea [sic] Röber, 1886, stating that it was published by Röber in Band [volume] 1, part 1, page 60. There is no page 60 in this part, and we have found no other source document combining grisea with Plebeius, Lampides or Jamides. He implied that grisea was first described under Lampides but listed it as a subspecies of Jamides celeno. He also listed the taxon griseus Röber, 1886 correctly citing Band [volume] 1, part 3, page 60, and stating it was originally described in the genus Plebeius [sic] and retaining it as “Plebeius (?) griseus”. In his 1994 edition, Bridges correctly transcibed the original genus as Plebeius, while still referring to the current genus as “Plebeius (?) griseus”.

Takanami (1989: 65) stated “The female [of optimus] is entirely dark brown on the ups. of both wings.” We note that this matches Röber’s description and illustration of griseus.

Vane-Wright & de Jong (2003) noted two subspecies occurring in Sulawesi itself — optimus and kalawarus (see below); they did not mention griseus.

Note 5: We have examined a long series of Jamides celeno from both north and south Sulawesi and observed variation in the width of the fw. and hw. dark marginal areas of ♀♀ throughout the island. In addition, some specimens have darkened ups. fw. discocellular veins, a form which Riebe (1926) named “Lampides kalawarus punctatus” (n. subs.), referring to it as “ab. punctatus” later in the same paragraph. Takanami (1989) synonymised punctatus with kalawarus.

Riebe (1926) described the taxon kalawarus from “Kalawara, Celebes” (Kalawara is near Palu, central west Sulawesi). He said that the kalawarus ♀ has much broader borders on both wings than griseus [= optimus] and more heavily blackened veins. Takanami (1989: 50, 65) designated a ♂ LT and noted of ♀♀: “The specimens which occur around Palu at the base of the Minahassa Peninsula are remarkable in having much wider marginal borders, which cover almost a third of the wings.” We have seen the photograph of Takanami’s LT (1989: 56, fig. B-21) and it is only a marginally more extreme dark form than the specimen from north Sulawesi we illustrate (Pl. 3, Fig. 100). We consider that kalawarus is merely an extreme form of the subspecies optimus.

Note 6: Vane-Wright & de Jong (2003) noted an unnamed subspecies of J. celeno from Mangole and Sanana in the Sula Islands based on specimens in the BMNH. However, we can see no co-
sistent differences between these specimens and those from Sulawesi. The 8 ♂♂ from the Sula islands are very consistent in their markings and are similar both to Takanami’s optimus LT and the paler Sulawesi specimens (Pl. 3, Fig. 102). The 4 ♂♂ in BMNH are uniformly grey-brown matching the “usual” Sulawesi ♂ form and we include them with optimus.

Note 7: Takanami (1989: 50) published the names minisculus and flavomaculata in relation to 2 ♂♂ Jamides specimens from Kalawara, Sulawesi, held in the Senckenberg Naturhistorische Sammlungen (formerly Staatliches Museum für Tierkunde) in Dresden. Both specimens bear labels apparently written by Ribbe, identifying them as minisculus and flavomaculata. Takanami appears to have believed both names had been published by Ribbe without adequate description (i.e., nomina nuda). However, neither name appears in Ribbe’s 1926 paper (in which he first raised the name kalawara), nor have we been able to find these names in any other of Ribbe’s publications. We suspect that both names were actually manuscript names and that they became nomina nuda — attributed to Takanami — on publication of Takanami’s paper. Takanami referred both specimens to kalawara Ribbe, 1926; in accordance with our synonymy of “griseus kalawarus” with celeno optimus, above, the names are placed here.

**Jamides celeno sandya** (Fruhstorfer, 1916)

(Pl. 3, Fig. 103: ♂ Gebe; Fig. 104: ♂ Gebe; Pl. 4, Fig. 105: ♂ Ambon; Figs. 106, 107: ♂ ST sandya, Halmahera; Fig. 108: ♂ ST, Halmahera; Fig. 109: ♂ ST; Fig. 110: ♂ ST.)


Range: Halmahera, Ternate, Baco, Obi, Seram, Ambon (see notes following J. butleri), Aru (Wamam, Kobroor; see note) (BMNH) and new island records from Morotai (3 ♂♂, 3 ♀♀, Nov. 2006; 1 ♂, Daeo, 20. VIII. 1995; 1 ♂, Buho Buho, 8. XII. 1990), Kasirata (1 ♂, xi. 2007), Mandololi (4 ♂♂, 2 ♀♀, Waya, 11. xi. 2006), Gebe (4 ♂♂, 1 ♀, 20. x. 2010), Manipa (1 ♂, iv. 2009) and within Aru, Maikoor (1 ♂, 1 ♀, Gardekau, 30. iii. 1995) (CARR) and Trangan Island (K. Nagai, pers. comm.).

Note: ♂♂ of a series of celeno from Aru appear more typical of the darker sandya phenotype (Pl. 4, Fig. 110). D’Abrera (1971) recognised J. celeno lucianus Röber, 1886 as the celeno subspecies occurring in Aru and stated “Smaller than sundana [ssc], recte sundara, but with more contrasted markings of the verso surface.” However, the name lucianus is a synonym of batjanensis Röber, 1886, a subspecies of aratus Stoll, 1781, and will be discussed under that species.

**Jamides celeno sundara** (Fruhstorfer, 1916)

(Pl. 4, Fig. 111: ♂ Tanimbar; Fig. 112: ♂ Tanimbar; Figs. 113–115: ♂ ST sundara, Bandja; Fig. 116: ♂ ST, Bandja.)

Lampides celeno sundara: Fruhstorfer (1916: 6); TL: Tanimbar.

Range: Buru (see note 1), Banda (Banda Besar, labelled Greater Banda), Watubela Islands (Tioor, see note 2), Tanimbar Islands (Fruhstorfer, 1916) (Rothschild, 1915) considered butleri to be a species of Lampides, a genus now considered monobasic for Lampides boeticus. The taxon was not included in Fruhstorfer’s (1916) Lampides revision and hence is also not mentioned in Seitz (1923). D’Abrera (1971) and Kato (1972) both considered butleri to be a distinct species whereas Bridges (1988) listed it as a subspecies of celeno. Hirowata (1992) did not mention butleri in his list of Jamides species, and we assume he considered it to be a subspecies of celeno.

The uns. is indistinguishable from that of celeno sandya and celeno sundara but the ups. in both sexes clearly differs from both in several features (see Pls. 34), and the butleri ♂ is immediately separable from any subspecies of J. celeno. The butleri phenotype appears stable across its entire range.

Examination of ♂ genitalia of specimens of butleri from Seram and Ambon show them to be indistinguishable from those of celeno from northern Maluku, suggesting that butleri and celeno may be conspecific. However, overlapping distribution of butleri and celeno phenotypes suggests otherwise. The situation is something of an enigma, as the following discussion of the distribution of the three taxa J. celeno sundara, J. celeno sandya and J. (celeno?) butleri within Maluku illustrates. In northern Maluku sandya is a widespread and commonly encountered butterfly throughout the islands with many historical and contemporary records; this appears to be its geographical centre. In contrast, butleri has not been recorded from northern Maluku, although there are specimens in the BMNH of both butleri and celeno sandya from the island of Obi, which lies between northern and central Maluku.

We have not seen contemporary specimens of celeno from any of the three largest central Maluku islands of Seram, Buru and Ambon. The only recent celeno record from central Maluku we know of is a ♂ received by S. Schröner purportedly from Manipa.
(between Buru and Seram). We also have recent records of _butleri_ from Manipa. However, there are a number of historical specimens of _celeno sandhya_ from Ambon (9♂♂, 8♀♀) and Seram (1♂), and _celeno sundara_ from Buru (11♂♂, 2♀♀) in the BMNH. Many, but not all, bear the same label. For example, of the 9♂♂ and 8♀♀ Ambon specimens, 6♂♂ and 6♀♀ have the identical label: “Amboina, September, H. Fruhstorfer”. The authors have seen in excess of 150 contemporary specimens of _butleri_ from Seram and Ambon. Likewise Kato (1982) recorded 42 specimens of _butleri_ but none of _celeno_ during three short separate visits to Ambon at different times of the year. There are too many historical records of _celeno_ from central Maluku to dismiss them, but it remains the case that the species appears to be now either absent or very rare on those islands.

We have seen specimens of both _butleri_ and _celeno sundara_ from the Watabela islands, and one _butleri_♂ from Mangole in the Sula islands where _celeno optimus_ is widespread. In the BMNH there is also one specimen of _butleri_ from New Guinea, where _celeno sundara_ is widespread.

The absence of _butleri_ in northern Maluku suggests it is not a form of _celeno_. So far as we are aware, all subspecies of _celeno_ are typically widespread lowland butterflies as is _butleri_. It will be seen therefore that _butleri_ and _celeno_ phenotypes appear to be sympatric on many islands, and we believe that the absence of any hybrid specimen suggests that they are distinct species, despite closely similar male genitalia. That said, we consider it unusual that, apart from one Manipa specimen, we have not seen any recent _celeno_ specimens from central Maluku. For the purposes of this paper, we tentatively place _butleri_ as a distinct species but note its very close affinity to _celeno_.

In his paper describing _spitamenes_ (Suèvras, 1912: 7); TL: Obi.

Range: Obi.

Notes: _Fruhstorfer_ (1916) described _spitamenes_ from Obi and placed it as one of 10 subspecies of the Philippine species _Jamides suidas_ C. & R. Felder, 1865. He also compared it to _aetherialis_, which is unlike _suidas_. He did not record how many specimens he examined and only described the ♂. Following _Fruhstorfer_, _Seitz_ (1923: 906) said of _spitamenes_: “it has a conspicuous white blue with the upper surface of a dull mother-of-pearl lustre. Upper surface without markings except two small very faint anal spots. Under surface pale grey with very distinct white transverse strokes” (_Seitz_ 1923, in translation). _Hirowatari_ (1992) did not include _spitamenes_ in his _Jamides_ species list but included _suidas_ in the _aleus_ subgroup.

In his paper describing _spitamenes_, _Fruhstorfer_ (1916: 3) noted that a number of the “interesting” specimens are from the Courvoisier collection in the NHMB. This collection does include a number of ex- _Fruhstorfer_ butterflies bearing “Type” labels. _Cassidy_ (2013) visited the NHMB and located a single ♂ specimen labelled “_spitamenes_, Type, Obi 1909 Fried.”. The specimen was dissected (Pl. 8; genitalia, Fig. 256), and comparison with other _Jamides_ taxa indicated a close affinity with _J. pura_. This specimen is considered to be the holotype by monotypy and was labelled accordingly (_Cassidy_ 2013).

The immaculate upper surface of _spitamenes_ corresponds more closely with _pura_ than with _celeno_ which is always quite heavily marked on the termen of both wings of the ♂. The subspecies of _pura_ geographically closest to Obi are _J. pura tenus_ _Fruhstorfer_, 1916, from Borneo and _J. pura eordaea_ _Fruhstorfer_, 1916, from Palawan. In external appearance, _spitamenes_ differs from _tenus_ by lacking the darker ground colour between the submarginal striae on the uns. of the hw. and by having a larger orange crown to the tornal black spot. It differs from _eordaea_ by having the ups. ground colour slightly more blue, with finer marginal borders on the fw. and by the absence of marginal striae in spaces 1a and 1b of the hw. On the uns., _eordaea_ has an even larger, and quite distinctive, orange crown in the tornal area than _spitamenes_.

Although we treat _spitamenes_ as a subspecies of _J. pura_, we have seen no other specimen of _spitamenes_, and it is noted that _J. pura_ has yet to be recorded from any locality between Borneo, Palawan, Balacab and eastern Indonesia. It appears to be unknown from the Sula- wesie Region and, with exception of this one specimen from Obi, anywhere else in Maluku. The possibility of the specimen being wrongly labelled is not discounted, and until further material becomes available, its presence on Obi is regarded as requiring confirmation.

_Jamides fractilinea_ **Titte, 1960**

_Jamides fractilinea_: **Titte** (1960b: 335, Figs. C, F, G); TL: Sulawesi.

Range: Sulawesi and the Sula Islands (Mangole) (BMNH).

_Jamides fractilinea_ **Titte, 1960**

(Pl. 4, Figs. 121–123: ♂ HT, Sulawesi; Figs. 124–126: ♀ PT, Sulawesi.)

Range: Sulawesi (BMNH).

Notes: In his original description, _Titte_ (1960b) noted that _fractilinea_ was similar to _aratus lunata_, especially on the ups., and specified some minor, but diagnostic, differences in the uns. hw. markings. He went on to discuss the ♂ GP and stated: “The ♂ armature [of _fractilinea_] points to kinship with _Jamides celeno Cramer_, and shows no affinities at all with the externally similar _J. aratus lunata_.” He designated ♂ HT and ♂ allotype (i.e., PT), both from Macassar, Celebes (Sulawesi), and included ♂ from Mangole (Sula Islands) in a list of “Other material examined”._

_Titte_ (1960b) made no comment on the differences between the Sulawesi ♂♂ and the Mangole specimen. He did examine the genitalia of the latter, considering it to be conspecific with the Sulawesi ♂♂ and the Mangole specimen.

wesi fractilinea series. We have examined this GP at the BMNH (slide number 28145) and confirm that it matches his fractilinea genitalia drawings (Tritte 1960b: 334). However, the Mangole ♂, and a second ♂ in t postmedian band similar to ground colour, ap large dark spots approximately 1.5–2 mm in diameter; a in spaces 6 and 7 the subterminal band is replaced with veins, distinctly separate from subterminal row of spots by up to 1.5 mm (the postmedian band is connected to

**Jamiades fractilinea sarahrarum ssp. n.**

(Pl. 4, Figs. 127–128: ♂ HT, Mangole.)


*Etymology*: Named for Sarah Miller and Sarah Sonley, friends and colleagues of the first author.

*Range*: The Sula Islands (Mangole).

**Diagnosis**

♂ (Pl. 4, Figs. 127–128): Fwl. 17.5 mm, antl. 8.5 mm (HT). Head grey; labial palpus grey-cream, eye ringed with grey-cream; antenna black, ringed with white. Thorax and legs grey-cream. Abdomen deep grey dorsally, ventrally grey-cream.

Fw. with termen straight between vein 4 and inner margin (slightly convex in *J. f. fractilinea*), fw. ups. with ground colour very pale blue-white, termen narrowly black, consistently < 0.5 mm in width (much broader margin, widening towards tornus, in *J. f. fractilinea*); cilia deep grey; uns. uniform deep grey-brown (paler than in *J. f. fractilinea*); an adjacent terminal and subterminal band of similar colouring, each approximately 1 mm wide; a straight postmedian band oblique to termen approximately 1.5 mm wide (in *J. f. fractilinea* this band is subparallel to termen and slightly disjunct at veins), completely offset towards tornus from costa at vein 3, edged with white; additional band 1.5 mm wide at end of cell, edged white.

Hw. ups. very pale blue-white; termen narrowly grey-brown (hairline width); a narrow row of vestigial subterminal grey-brown spots between veins (significantly less pronounced than in *J. f. fractilinea* which has an additional row of heavily marked subterminal spots); cilia black; hw. uns. uniform grey-brown (paler than in *J. f. fractilinea*); an adjacent terminal and subterminal band of similar colouring, each approximately 1 mm wide, arrow-shaped inwardly and sharply edged with white; terminal band replaced with large black, rounded tornal spot approximately 1.5 mm diameter in space 2, heavily rimmed with orange except along termen, where it is faintly marked with pale iridescent blue, orange is also present on inner side of subterminal band in space 1b, in spaces 6 and 7 the subterminal band is replaced with large dark spots approximately 1.5–2 mm in diameter; a postmedian band similar to ground colour, approximately 1 mm wide, edged white and distinctly stepped at veins, distinctly separate from subterminal row of spots by up to 1.5 mm (the postmedian band is connected to the subterminal band in *J. f. fractilinea*); in space 1b the V-shaped postmedian band is consistent in width (pinched and narrowed markedly along the axis in *J. f. fractilinea*); a band 1.5 mm wide at end of cell, edged white; an additional irregular band 1 mm wide at base, extending from vein 1b to vein 8.

♀: Unknown.

**The aratus subgroup**

Two of the four species in this subgroup occur in Maluku: *aratus* Stoll, 1781 and *aetherialis* Butler, 1884.

As there has been much confusion over the status and range of these two species we feel it necessary to discuss this in some detail even though this takes us, in part, outside Maluku.

D’Abrera (1971) considered that *aetherialis* and *aratus* were conspecific and listed *aetherialis* as a subspecies of *aratus*. Hirowatari (1992) stated “real aratus occurs from Peninsular Malaya eastwards to the Moluccas”. He went on to give the distribution of *aetherialis* as “East Moluccas, New Guinea, Bismarcks, Solomons” and stated that “this species is easily distinguished from aratus by the shape of its valva”. He did not specify a geographical boundary between the two species and gave no indication as to which of these two species the taxon *ses­tus* Fruchtstorfer, 1916 (TL: Timor; but see notes under *J. aratus sestus*) belonged. Hirowatari further stated that Fruchtstorfer (1916) “treated these species correctly.” However, Fruchtstorfer placed *sustes* with *aetherialis*, whereas Rawlins (2007) included *sustes* as a subspecies of *aratus*. Genitalic dissection of the *sustes* HT (Pl. 5, Figs. 159–160; genitalia: Pl. 8, Fig. 246) located at the NHMB (see Cassidy 2013) reveals it belongs to *aratus*. However, to complicate matters further, the *sustes* HT (TL supposedly Timor) is dissimilar to *aratus* specimens from Timor and South West Maluku Islands but is very similar indeed to *aratus* specimens from Tanimbar. We thus consider Tanimbar to be the true type locality of *sustes*; see notes following *J. aratus sestus*.

Parsons (1998) stated: “The ranges of the 2 species overlap on certain Moluccan islands.” He continued: “For example, Seitz (1923) pointed out that *aetherialis* flies together with *aratus* on Sumba and Sumbawa Islands.” In fact neither of these islands are part of the Moluccas (i.e., Maluku). Seitz (1923: 909, 910) (following Frucht­torfer 1916; see below) placed *masu* Doherty, 1891 as a subspecies of *aratus* from Sumba, Sumbawa, Flores and Timor, and placed *anops* Doherty, 1891 (TL: Sumba) as a subspecies of *aetherialis* “from Sumba and Sumbawa, where it flies beside *aratus masu*”. He placed *sustes* as a subspecies of *aetherialis* from Timor claiming, by implication, sympathy with *aratus masu*. It is noted that Seitz accepted Fruchtstorfer’s (1916) classification, and made no changes to the group in his subsequent work (Seitz 1923). Bridges (1988) mistakenly assigned the name *masu* to Druce instead of Doherty.
Doherty (1891) described and illustrated anops (as Lampides anops). He noted it was "confined to the mountain-forests above 2000 feet" on Sumba and made no mention of it occurring on Sumbawa. Frühstorfer (1916) considered anops a subspecies of aetherialis noting that it came from Sumba and Sumbawa. The present authors have not seen any material of anops from Sumbawa (there are 11♂♂ and 2♀♀ from Sumba and none from Sumbawa in the BMNH), and suspect that Frühstorfer’s inclusion of Sumbawa was based merely on the title of Doherty’s paper. This error has subsequently been perpetuated by other authors (e.g., D’Abrera 1986, Hirowatari 1992).

A handwritten note by Tite in the BMNH states “J. anops has quite different genitalia than aetherialis and aratus”, and Hirowatari (1992) likewise considered anops (Pl. 5, Sumba, ♂ Fig. 167; ♀ Fig. 168) a distinct species and placed it in the aleuas subgroup based on ♂ genitalic morphology, illustrating the ♂ GP of aetherialis, anops and aleuas (Hirowatari 1992: 85, 86). We agree with Hirowatari (1992) in recognizing anops as a distinct species, as evidenced by its very different appearance and genitalia compared to aratus or aetherialis.

Doherty (1891) described “Lampides masu” without indicating whether it came from Sumba or Sumbawa, or both. He compared the ♂ to anops and subditus Moore, 1886, which he said was “very close to amphissa Felder, from Ambon”, comparing the ♀ to aratus from Ambon. Later that year, de Niceville (1891) placed masu as a synonym of aratus, without explanation.

Dissection of ♂ GP of “masu” from Sumba (Pl. 8, ♂ genitalia Fig. 245) and Flores (specimen and GP in coll. S. Schröder) shows them both to be typical aratus. We have compared a series of specimens of “aratus masu” with nominotypical aratus from Ambon and Seram and consider they warrant recognition as a distinct subspecies (see Pl. 5), effectively restricting the range of nominotypical aratus to central Maluku and Obi (see below). The BMNH has typical “aratus masu” specimens from Sumba (Pl. 5, Figs. 153–154), Sumbawa, Flores and Adonara; and S. Schröder has a specimen from Lombok which is also of the masu phenotype.

Specimens of J. aratus from Alor appear intermediate between subspecies masu and samueli ssp. n. (see below), which occurs from Timor eastwards as far as Babar. Since examination of the genitalia of the sestus type shows this to be a subspecies of aratus and not aetherialis (see above), we conclude that only J. aratus occurs on the Lesser Sunda Islands, extending eastwards to the Tanimbar Islands, and that J. aetherialis occurs on the Kei and Aru groups to the east of Tanimbar.

The TL of aratus is Ambon; that of aetherialis is Kei. The former taxon is also known from Seram and other islands of central Maluku, but little has been reported regarding which species occurs on the islands between Seram and Kei. Rawlins (2007) stated: “Specimens from Gorong and Watubela Islands in the BMNH will need further study and probably genitalia dissection to establish whether they are aratus or aetherialis.”

The BMNH has specimens from Seram Laut (Pl. 5: ♂ Fig. 143; ♀ Fig. 144), the Gorong Islands (Pl. 5: ♂ Fig. 145) and the Watubela Islands (Pl. 5: ♀ Fig. 146). We have been unable to obtain specimens for genitalic dissection but as can be clearly seen from the illustrations on Pl. 5 they are phenotypically indistinguishable from nominotypical aratus, and distinct from nominotypical aetherialis. They have the duller and whiter ups. ground colour typical of nominotypical aratus compared to the more lustrous blue of nominotypical aetherialis.

As might be predicted the same taxon occurs on Geser and Seram Laut as on Seram and it seems that aratus occurs through the Gorong Islands at least as far south-east as the Watubela Islands. Although we have not seen any aratus/aetherialis from the Tayandu group, these islands almost always share the same taxa with the Kei Islands (a notable exception being the presence of Cethosia lamarcchi Godart, 1819 on the Tayandu Islands, but not on Kei), and so consider that if either is present there, it is highly likely to be aetherialis. Therefore, from Seram to Kei the aratus/aetherialis species boundary is likely to lie between the Watubela and Tayandu Island groups. We have found no island on which both species occur, and expect the two species to be allopatric.

To the east of northern Maluku it has not previously been clear where the boundary between the two species lies. J. aratus occurs in northern Maluku and Misool, whereas aetherialis is present on Waigeo, Batanta and mainland New Guinea. We have examined the genitalia of one of a short series of ♂♂ captured in ix. 1991 on Kofiau Island (Pl. 8, genitalia Fig. 252) and confirm that this population is aetherialis. We have not seen any aratus/aetherialis specimens from Salawati but with aetherialis confirmed as occurring on Kofiau, Waigeo, Batanta and the New Guinea mainland, it is very likely that the population there will also be found to be aetherialis.

As discussed in detail below, we have dissected the genitalia of a ♀ from Gebe, identifying it as aratus. Travelling east from northern Maluku, Gebe marks the eastern end of the range of aratus. We believe aratus and aetherialis are allopatric species — the boundary between them is illustrated on Map 3.

In summary we consider:

- **J. anops** (see Pl. 5, Figs. 167–168) is a distinct species endemic to Sumba and not a subspecies of aetherialis (or aratus).
- **J. aratus** and **J. aetherialis** are almost certainly allopatric with the boundary between them as discussed and illustrated (Map 3, red).
- The taxon *masu* Doherty is a distinct subspecies of aratus occurring on the Lesser Sunda Islands of Sumba, Sumbawa, Flores, Adonara and Lombok. It is not a synonym of nominotypical aratus.
- The taxon *sestus* is a subspecies of *aratus*, not of *aetherialis*. 

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The population from Ambelau (see later) may re-
Within Maluku we recognise 8 subspecies including 3 new ones.
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Jamides aratus (STOLL, 1781)

Papilio aratus: Stoll (1781 [in Cramer & Stoll]: 144, pl. 395, figs. A, D); TL: Ambo.
Range: Malay Peninsula, Sumatra, Java, Lesser Sunda Islands, Bor-
neo, Sibutu, Palawan, Balabac, Sulawesi Region, northern & cen-

Note: D’Abera (1971), as discussed above, included all aetheria-
lis taxa within aratus and therefore mistakenly included Kei, New
Britain, Duke of York and Solomons(?), and “West Irián” within
the range of the species aratus.
Within Maluku we recognise 8 subspecies including 3 new ones.
The population from Ambelau (see later) may represent an ad-
additional newssp., but further material is needed to confirm this.

Jamides aratus vignei ssp. n.

(Pl. 4, Figs. 129–130: ♂ HT, Morotai; Figs. 131–132: ♀ PT, Morotai;
Pl. 8, genitalia ♀ PT, Fig. 247.)

Holotype ♂: Indonesia, Maluku, Morotai, Daeo, vn. 2003
(BMNH).

Paratypes (7 ♀♀, 4 ♂♂): 1 ♀, Morotai, Pilowo, 10. xii. 1990
(BMNH); 1 ♂, 1 ♀, Buho Buho, 8. xii. 1990; 1 ♂, Daeo, vn.
1994; 1 ♂, Daeo, x. 2002; 1 ♂, x. 2002; 1 ♀, vn. 2003; 1 ♂, t.
2006; 1 ♂, 1 ♀, 2009; 1 ♂, xi. 2010 (all CARR).

Etymology: named for the first author’s childhood friend,
Patrick Vigne.

Range: Morotai.

Note. 8 aratus ♂♂ examined from Morotai were similar in most
respects to aratus batjanensis ♂♂ from Halmahera, Bacan, Man-
diol and Kasiruta, but differed in the notably wider ups. fw. mar-
ginal black borders. The overall length and the extent of the
black borders is slightly variable in northern Maluku aratus ♀♀
but the 4 Morotai ♂♂ we have seen are significantly darker on the
ups., with the palest of them being darker than the darkest ty-
batjanensis specimen seen from the rest of northern Maluku.
Geni-
tal dissection of one of the Morotai ♂♂ confirms it as aratus (Pl.
8: Fig. 247) and we therefore consider the Morotai subpopulation
to represent a distinct subspecies of aratus, which we describe
below.

Diagnosis

♂ (Pl. 4, Figs. 129–130): Fw. 19 mm, antl. 9.5 mm (HT).
Fw. ups. with ground colour very pale blue-white, termen
narrowly black, approximately 1 mm in width (much
broader than very narrow border of J. a. bat-
janensis); cilia black; fw. ups. uniform deep grey-brown;
an adjacent terminal and subterminal band of similar
colouring, each approximately 1 mm wide, widening to
2 mm at inner margin; a postmedian band subparallel
to termen approximately 2 mm wide, completely offset
towards tornus at vein 3 from costa, edged with white;
an additional band 1.5 mm wide at end of cell, edged white.

Hw. ups. very pale blue-white; termen very narrowly
grey-brown (hairline width); a row of very faint subter-
mental grey-brown spots between veins; prominent spots
in spaces 1b and 2; the latter irregular and wavy, subpar-
allel to termen; cilia black; hw. ups. uniform grey-brown;
adjacent terminal and subterminal bands of similar
colouring, each approximately 1 mm wide, arrow-sha-
oped inwardly and sharply edged with white; terminal
band replaced with large black, rounded tornal spot
approximately 1.5 mm diameter in space 2 heavily rim-
mmed with orange except along termen, where it is faintly
marked with pale iridescent blue, orange is present on
inner side of subterminal band between tornus and half-
way between veins 3 and 4; between vein 6 and costa
the subterminal band is replaced with large dark spots
approximately 1.5 to 2 mm in diameter; a postmedian
band similar to ground colour, approximately 1 mm
wide, edged white and distinctly stepped at veins; a band
1.5 mm wide at end of cell, edged white; an additional
irregular band 1 mm wide at base, extending from vein
1b to vein 8.

♀ (Pl. 4, Figs. 131–132): Fw. 16 mm, antl. 7 mm. Fw.
ups. with ground colour very light grey, termen broadly
grey-brown (overall, ups. is much darker than that of J.

Plate 4, Figs. 105–116: Jamides celeno. — Figs. 105–110: J. cele-
no sonda. Fig. 105: ♂, ups./uns.; Ambon (ix., H. FRUHSTORFER).
Figs. 106–109: ♂ ST, Halmahera (ex coll. FRUHSTORFER); 106: ups./uns.;
label. Fig. 108: ♂ ST, ups./uns., Halmahera (ex coll. FRUHSTORFER);
label. Fig. 109: ♂, ups./uns., Aru (ix.–xii. 1896, WEBSTER).
Fig. 110: ♂, ups./uns., Aru (Dono, 4. iii. 1911, C. B. KLOSS).
♀, 111: ♀; 112: ♀. Figs. 113–116: Banda (FRUHSTORFER); 113–115: ♀ ST, ups./uns.,
label; & ST, ups./uns. — Figs. 117–120: Jamides butleri. — Fig. 117–
118: ♂ ST, ups./uns., label; Seram (Manusa, 650 m, 1912, E.
STREETZEMANN).
Figs. 119: ♂, ups./uns., Tigor (17. x. 1899, KLÜPFEL).
Fig. 120: ♂, ups./uns., Seram (Kairatu, 11. ii. 1892, Exp. MARTIN). – Figs.
Figs. 121–123: ♂, HT, Sulawesi (Makassar, 1899, W. Doherty);
♀, 121: ups./uns.; 122: ups./uns.; label. Fig. 124–126: ♂ PT, Sulawesi (Makassar, 1896, W.
Doherty); 124: ups./uns.; 125: ups./uns.; label. — Figs. 127–128: J. fractilinella
soraholinssp. n. ♂, HT, Mangole (x. 1897, W. Doherty); 127: ups./uns.;
♀. — Figs. 129–166: Jamides aratus. — Figs. 129–132: ♂ aratus vignei
ssp. n. Figs. 129–130: ♂ HT, Morotai (Daeo, vn. 2003); 129: ups./uns.
♀, 130: ups./uns.; ♂, 131–132: ♂ PT, Morotai (Pilowo, 10. xii. 1990); 131: ups./uns.;
♀. — Figs. 133–166: J. aratus batjanensis. Fig. 133: ♂, ♂, ups./uns., Bacan
(vii. 1897, W. Doherty); Fig. 134: ♂, ups./uns., Bacan (KÜNN, SEMPER
coll. 1897). Figs. 135–136: (formerly venusio syn. n.) ups./uns., Halmahera
(Patani, SE, Halmahera, xii. 1929, F. SCHAFFHAUSER); 135: ♂, 136: ♀.
— All specimens deposited in BMNH, if not indicated otherwise. — Scale bar
top centre) for all specimens = 1 cm.
a. batjanensis), up to 7 mm at tornus and apex and 4 mm along centre of termen; cilia grey-brown; fw. uns. uniform grey-brown; an adjacent terminal and subterminal band of similar colouring and each approximately 1 mm wide, very broadly edged with white and increasing in width towards inner margin; a postmedian band subparallel to termen approximately 1.5 mm wide, completely offset towards base at vein 3 from costa, edged with white; an additional band 1.5 mm wide at end of cell, edged white.

Hw. ups. pale blue-grey; termen very broadly grey-brown, occupying at least three quarters of the wing area; a row of conspicuous cusp-shaped subterminal pale grey spots between veins, with that between veins 2 and 3 more prominent; cilia light grey, darkened along veins; hw. uns. uniform grey-brown; an adjacent terminal and subterminal band of similar colouring and each approximately 1 mm wide, cusp-shaped inwardly and sharply edged with white; terminal band replaced with large black, rounded tornal spot approximately 1.5 mm diameter in space 2, heavily rimmed with orange except along termen, where it is faintly marked with pale iridescent blue; an additional small black spot at tornus, similarly bordered with orange and blue; a postmedian band similar to ground colour, approximately 1 mm wide, edged white and distinctly stepped at vein 3 and at vein 7; a band 1.5 mm wide at end of cell, edged white; an additional irregular band 1 mm wide at base, extending from vein 1b to vein 8.

Jamides aratus batjanensis (Röber, 1886)
(Pl. 4, Fig. 133: ♂ Bacan; Fig. 134: ♂ Bacan; Fig. 135: ♀ Halmahera; Fig. 136: ♀ Halmahera.)

× Plebeius batjanensis: Röber (1886: 54, pl. 4, fig. 10); TL: Bacan.
= × Plebeius lucianus: Röber (1886: 54, pl. 4, fig. 11); TL: Bacan; see note 1.
= × Lampides aetherialis vuniya: Friustorfer (1916: 23), syn. n.; see note 2; TL: Halmahera.

Range: Halmahera, Bacan (BMNH) and new island records from Ternate (1 ♀, 1. iii. 1985), Kasiruta (1 ♂, iii. 2003) and Mandioli ♂ (♀, Waya, 11. xi. 2006) (CARR).

Note 1: Röber (1886) described lucianus immediately after batjanensis, saying it was found on Aru and Bacan. The taxa were synonymised by Takanami (1989: 50), who designated LTs for both of them. In addition we have compared a series of Bacan ♂♂ and ♀♀ with the ♂ and ♀ lucianus (Pl. 1, Fig. 133: ♂ Bacan; Fig. 134: ♀ Bacan; Fig. 135: ♀ Halmahera; Fig. 136: ♀ Halmahera), comparing them to known lucianus (Pl. 4, fig. 133: ♂ Bacan; Fig. 134: ♂ Bacan; Fig. 135: ♀ Halmahera; Fig. 136: ♀ Halmahera), which we describe here.

Note 2: Having examined long series of both Bacan and Halmahera specimens of J. aratus we can see no consistent differences between them. In addition we have compared a series of Bacan ♂♂ and ♀♀ with the ♂ and ♀ vuniya types from Halmahera in the BMNH. We have also compared a series of Halmahera ♀♀ with the photograph of the ♀ LT of batjanensis (designated by Takanami 1989: 65) from Bacan and found no consistent differences, though it should be noted that the LT has an unusually restricted hw. darkened area (the “almost black hw.” of Friustorfer, see below). Friustorfer (1916) separated vuniya from batjanensis on the basis of the ♀ vuniya having a broader fw. margin than batjanensis, together with an almost black hw.; this is not — aside from the LT — supported by our own observations.

Jamides aratus minthe (Friustorfer, 1916)
(Pl. 5, Fig. 137: ♂ Sula; Fig. 138: ♀ Sanana.)

Holotype ♀: Indonesia, Maluku, Gebe, x. 2010 (BMNH).
Paratype: 1 ♀, same data as HT (CARR).

Etymology: named for a friend of the third author, the late Robert Suttie, Sydney, Australia, who died some years ago of leukemia.

Range: Gebe Island.

Note: We have examined 2 ♀♀ from Gebe which show consistent markings. Phenotypically they appear mid-way between aratus batjanensis to the west and aetherialis caerulina to the east but clearly differ from both. Unfortunately we have not been able to examine any ♂♂ but we have dissected the genitalia of one of the ♀♀ and compared them to known aratus and aetherialis ♀ genitalia (see below) and find that they match aratus (Pl. 8, ♀♀ genitalia, Figs. 233-254). We consider the Gebe population to be a distinct subspecies of aratus which we describe here.

Diagnosis
♀ (Pl. 5, Figs. 139-140): Fwl. 16.5 mm, antl. 7.5 mm (HT). Head grey; labial palpus grey-cream, eye ringed with grey-cream; antenna black, ringed with white. Thorax and legs grey-cream. Abdomen dark grey dorsally, ventrally grey-cream.

Fw. ups. with ground colour very pale blue-grey, termen broadly black (significantly narrower than that of J. a. batjanensis which is predominately grey above, while J. a. roberti is mostly blue-grey) up to 3.5 mm at tornus and apex and 2.5 mm along centre of termen and extending some distance along veins; cilia deep grey; fw. uns. uniform grey-brown; an adjacent terminal and subterminal band of similar colouring and each approximately 1 mm wide, very broadly edged with white and increasing in width towards inner margin (much broader than in J. a. batjanensis); a postmedian band subparallel to termen approximately 1.5 mm wide, completely offset towards base at vein 3 from costa, edged with white; an additional band 1.5 mm wide at end of cell, edged white. Hw. ups. very light blue-grey; termen broadly grey-brown (but much narrower than in J. a. batjanensis); a row of prominent cusp-shaped subterminal pale grey spots between veins, with that in space 2 more prominent (subterminal spots in J. a. batjanensis are diffuse, and in space 6 absent); cilia light grey, darkened along veins; hw. uns. uniform grey-brown; an adjacent terminal and subterminal band of similar colouring, each approximately 1 mm wide, cusp-shaped inwardly and sharply edged with white; subapical spots in spaces 6
and 7 are pronounced and rectangular-shaped (rectangular and rounded basally in _J. a. batjanensis_); terminal band replaced with large black, rounded tornal spot approximately 1.5 mm diameter in space 2, heavily rimmed with orange except along termen, where it is faintly marked with pale iridescent blue; an additional small black spot at tornus and another in space 3, similarly bordered with orange and blue; postmedian band similar to ground colour, approximately 1 mm wide, edged white and distinctly stepped at vein 3 and at vein 7; a band 1.5 mm wide at end of cell, edged white; an additional irregular band 1 mm wide at base, extending from vein 1b to vein 8.

♂: Unknown

♀ genitalia remarks: Hirowatari (1986) made a study on _Jamides_ from the Malay Peninsula based substantially on the ♀ genitalia. He noted that the ♀ genitalia in _Jamides_ are “very different from species to species and may be available for not only identifying the species but also considering the natural grouping of the latter.” His figs. 6H and 6j depict the caudal end of the duc parsae and genital plate of _J. aratus adana_ Drury, 1873. They show that the duc parsae is strongly waisted near the junction with the duc parsae seminals. Posterior to this narrowing, there are two relatively large, anteriorly-angled, laterally disposed “arrowhead” processes. Further in the posterior direction the duc parsae is enclosed by a long tapering sheath which in turns gives way to the spatulate apex. These characteristics are easily identifiable in the preparation of ♀_aratus_ from Ambon (Pl. 5, Fig. 253). They are also apparent in a specimen of _J. aratus lunata_ from Sulawesi (CASS).

Hirowatari did not include _J. aetherialis_ in his study because of its more easterly distribution. Genital preparations from 2 ♀_♀_ of _J. aetherialis_ from Kei are shown in Fig. 255. Each shows a broad duc parsae with little or no narrowing. The “arrowhead” processes are smaller and point laterally, while the posterior sheath is much shorter than in _aratus_, Fig. 254 shows the duc parsae and papilla analis of the _Jamides_ ♀ from Gebe. The latter shows no significant variation from that illustrated by Hirowatari for _J. aratus adana_, while the former is waisted and has a long tapering posterior sheath as shown by Hirowatari and the Ambon ♀ of Fig. 253, confirming the Gebe specimen as a subspecies of _aratus_.

_Jamides aratus aratus_ (Stoll, 1781) (Pl. 5, Fig. 141: ♂ Ambon; Fig. 142: ♀ Seram; Fig. 143: ♀ Seram Laut; Fig. 144: ♀ Seram Laut; Fig. 145: ♀ Gorong Islands; Fig. 146: ♀ Watubela Islands; Fig. 147: ♂ Obi; Fig. 148: ♀ Obi; Pl. 8, Fig. 249: ♀ Ambon, genitalia; Fig. 253: ♀ Ambon, genitalia.)

_Papilio aratus_: Stoll. (1781) [in Cramer & Stoll]: 144, pl. 395, figs. A, D]; TL: Ambon.

Range: Obi (see note 1), Seram, Ambon, Saparua (see note 2), Nusa Laut, Geser, Seram Laut, Gorong Islands (Gorong [labelled Gorom Laut] & Manawoka [labelled Manawolka]), Watubela Islands (Kasui [labelled Kisoi]), Misool (7 ♀_♂_ and 8 ♀_♀_ are clearly nominotypical) (BMNH) and new island records from Buru (3 ♀_♂_, 2 ♀_♀_, Bara, 2. ix. 1993; 1 ♀_♂_, 2 ♀_♀_, Ilat, 7. ix. 1993; 2 ♀_♂_, n. 2003), Kelang (1 ♀, vi. 2003) and Haruku (7 ♀_♂_, 2 ♀_♀_, x. 2006) (CARR).

Note 1: Fruhstorfer (1916) described the taxon _pseudarus_ from Obi. The ♀_♂_ and ♀ STs are in the BMNH (Pl. 5, ♀_♂_ Figs. 151–152; ♀_♀_ Figs. 149–150). However, in the BMNH there is a handwritten note signed by Trze saying: “The ♀_♂_ type and the two specimens above are probably wrongly labelled. They do not agree with the series from Obi, and appear to be examples of ssp. _masu_ Doherty from Sumba or Sumbawa. If this is correct the name _pseudarus_ being founded on an error should be sunk.” It is hard to tell if the specimen labelled as the “_pseudarus_” ♀_♂_ in the BMNH matches Fruhstorfer’s somewhat vague description (Fruhstorfer 1916: 22) which translates as: “Male and female with similar pattern, that is a rather characteristic submarginal band on the ups. of the hw and a complete row of black spots. There are also male specimens without this black band. Female with characteristic black fwc. border while hw are without the submarginal band.” We have examined this specimen (Pl. 5, Fig. 151 [specimen], 152 [label]) and agree with Trze’s opinion that it is unlike typical Obi ♀_♀_ (cf. Pl. 5, Fig. 147) but is typical of subspecies _masu_ (Pl. 5, Fig. 153). We have examined a series of Obi specimens in the BMNH (more than 10 pairs with a variety of labels including some from Frost and Doerr) and can see no distinction between them and nominotypical _aratus_ specimens from the central Maluku islands of Ambon, Seram and Buru. The name _pseudarus_ is therefore synonymised with _masu_.

The ♀ “_pseudarus_” “type” is clearly not mass (cf. Sumba _masu_; Pl. 5, Fig. 154), nor is it typical of _Obi aratus_ ♀_♀_. We have illustrated this specimen (Pl. 5, Fig. 149 [specimen], 150 [label]) alongside a typical Obi _aratus_ ♀_♀_ (Pl. 5, Fig. 148). We suggest that the provenance of this specimen is in some doubt, but note that the BMNH Obi _aratus_ series of both sexes all conform to nominotypical _aratus_ specimens from central Maluku, so we are confident in placing Obi populations with nominotypical _aratus_.

Note 2: D’Abera (1971) recorded the range as “Ambon, Serang, Saparua”. We suspect “Saparua” refers to Saparua.

_Jamides aratus_ ssp.?

(Pl. 5, Fig. 155: ♂ Ambelau; Fig. 156: ♀ Ambelau.)

Range: Ambelau.

Note 1: We have examined 3 ♀_♂_ and 1 ♀ from Ambelau Island (xi. 2012). The ♀_♂_ are indistinguishable from nominotypical _aratus_ but the one Ambelau ♀_♀_ we have examined has significantly broader ups. dark borders than nominotypical _aratus_, which occurs on most other islands of central Maluku, including Buru only 17 km or so distant. This specimen more closely resembles the ♀_♀_ of _J. aratus batjanensis_ although the ground colour of the Ambelau ♀ is noticeably bluer (Pl. 5, Fig. 156). This population probably represents a distinct subspecies, but we await examination of further ♀_♀_ to confirm this.

Note 2: Despite its proximity to Buru there are some species and subspecies found on Ambelau that do not occur on Buru, e.g., _Hebomoia glaucippe kazukou Samusawa_, 1991. The species _Hebo­moia glaucippe Linnaeus_, 1758 is absent altogether from Buru and is replaced there by _Hebomoia leucippe leucogynia Wallace_, 1863.

_Jamides aratus ezeon_ (Fruhstorfer, 1916)

(Pl. 5, Fig. 157: ♂ _Band_; Fig. 158: ♀ _Band_.)

_Lamppus aratus ezeon_: Fruhstorfer (1916: 22); TL: Banda Island.


_Jamides aratus sestus_ (Fruhstorfer, 1916)

(Pl. 5, Figs. 159–160: ♀_♂_ HT sestus, “Timor”; Fig. 161: ♂, Taninbar; Pl. 162: ♀, Taninbar; Pl. 8, Fig. 246: ♀_♂_ HT, genitalia.)

_Lamppus aetherialis sestus_: Fruhstorfer (1916: 23); TL: “Tim­or”[?]; see note 1.

Range: Taninbar Islands — Larat, Yamdena (BMNH) and new island records from Molu, Tandula and Sela­ru (CARR).

Note 1: Fruhstorfer gave the locality of _sestus_ as “Timor” and noted that the ♀_♂_ “type” was in the Courvoisier collection in Basel. Cassidy (2013) located this specimen bearing a type label at the NHMB. Additional labels (Pl. 5, Fig. 160) suggested that Fruh-
torfer originally considered it a subspecies of *lucianus*, that it had been obtained by Courvoisier from Staudinger in 1911 and that it came from Timor. This specimen has very fine, thread-like, ups. fw. marginal borders, quite unlike any of the series of 73 aratus ♂♂ from Timor in the BMNH, all of which have a significantly wider black border (typically 1.2 mm). aratus from the Southwest Maluku islands of Homo, Damar, Moa and Babar are similar to Timor specimens. The sestus HT in Basel clearly matches a series of ♂♂ from the Tanimbar islands, which leads us to question Timor as the TL. We consider it much more like Tanimbar and this was confirmed it to be a subspecies of aratus, and this was confirmed by dissection of a modern Tanimbar specimen (Yamdena, Lorolun, 150 m, 21 km NE of Saumlaki, xii. 2006, CSKK).

**Note:** As already discussed (see introduction to aratus sub-group), sestus has been considered a subspecies of *aetherialis* by some authors (following Frustorfer 1916). Dissection of the type confirmed it to be a subspecies of aratus, and this was confirmed by dissection of a modern Tanimbar specimen (Yamdena, Lorolun, 150 m, 21 km NE of Saumlaki, xii. 2006, CSKK).

**Jamides aratus samueli ssp. n.**

(Pl. 5, Figs. 163–164: ♂ HT, Damar; Figs. 165–166: ♂ PT, Damar; Pl. 8, Fig. 250: ♂ Moa, genitalia.)

**Holotype ♂:** Indonesia, Maluku, Dammer [Damar], 30. xi. [18]98, (H. Kühn), Rothscheld bequest B.M. 1939-1 (BMNH).

**Paratypes (1 ♂, 2 ♀):** 1 ♂, as HT except 2. xi. [18]98; 1 ♀, as HT except 1. xi. [18]98; 1 ♀, as HT except 9. xi. [18]98 (all BMNH).

**Etymology:** named for Samuel, son of the fourth author.

**Range:** Timor (see notes following J. aratus sestus, above) and the Southwest Maluku Islands — Watar, Roma, Moa, Damar, Watan, Babar.

**Note:** Dissection of a ♂ from Moa (Kaiwatu, m. 1998, CARR; Pl. 8, genitalia Fig. 250) confirms this to be a subspecies of aratus. This new taxon occurs between the aratus taxa mosu to the west and sestus to the east. The ♂ most obviously differs from both in having considerably wider ups. marginal black borders.

**Diagnosis**

♂ (Pl. 5, Figs. 163–164, genitalia Fig. 250): Fwl. 16 mm, antl. 7 mm (HT). Head grey; labial palpus grey-cream, eye ringed with grey-cream; antenna black, ringed with white. Thorax and legs grey-cream. Abdomen blue-white dorsally, cream ventrally.

Fw. ups. with ground colour very pale blue-white, termen narrowly black, approximately 1 mm in width (much broader than terminal border of J. a. sestus); cilia black; fw. uns. uniform deep grey-brown; adjacent terminal and subterminal bands of similar colouring, each approximately 1 mm wide, widening to 2 mm at inner margin; a postmedian band subparallel to termen approximately 2 mm wide, completely offset towards tornus at vein 3 from costa, edged with white (narrower white edge than in J. a. sestus); an additional band 1.5 mm wide at end of cell, edged white.

Hw. ups. pale blue-white; termen very narrowly grey-brown (hairline width); a row of obscure subterminal grey-brown spots between veins; prominent spots in spaces 1b and 2, the latter irregular and wavy, subparallel to termen; a second row of subterminal grey-brown spots in spaces 1a, 1b and 2 (absent or vestigial in J. a. sestus); cilia black; hw. uns. uniform grey-brown; an adjacent terminal and subterminal band of similar colouring and each approximately 1 mm wide, arrow-shaped inwardly and sharply edged with white; terminal band replaced with large black, rounded tornal spot approximately 1.5 mm diameter in space 2, heavily rimmed with orange except along termen, where it is faintly marked with pale iridescent blue, orange is present on inner side of subterminal band between tornus and midway between veins 3 and 4; between vein 6 and costa the subterminal band is replaced with large dark spots approximately 1.5 to 2 mm in diameter; postmedian band similar to ground colour, approximately 1 mm wide, edged white and distinctly stepped at veins 3, 6 and 7, shifted greatly in a “V” shape towards termen in space 1b (not as exaggerated as in J. a. sestus); a band 1.5 mm wide at end of cell, edged white; an additional irregular band 1 mm wide at base, extending from vein 1b to vein 8.

♀ (Pl. 5, Figs. 165–166): As ♂, but fwl. 14 mm, antl. 6.5 mm. Fw. ups. with ground colour very pale grey, termen broadly grey-brown, up to 6 mm at tornus and apex and 2 mm along centre of termen; cilia grey-brown; uns. uniform grey-brown; adjacent terminal and subterminal bands of similar colouring, each approx. 1 mm wide, broadly edged with white and increasing in width towards inner margin; postmedian band subparallel to termen approx. 1.5 mm wide, completely offset towards base at vein 3 from costa, edged with white (narrower white edge than in J. a. sestus); an additional band 1.5 mm wide at end of cell, edged white.

Hw. ups. very pale blue-grey; costa broadly grey-brown above veins; two rows of conspicuous subterminal and
terminal pale grey spots, former cusp shaped, each between veins, that in space 2 prominent; cilia pale grey, darkened along veins; uns. like ♂.

**Jamides aetherialis** (Butler, 1884)

_Lamptides aetherialis_ Butler (1884: 195); TL: Kei.

Range: Kei, Aru and the New Guinea Region as far east as the Solomon Islands.

Note 1: As discussed previously, Sumba, Sumbawa and Timor have been erroneously included in the range of _J. aetherialis_ (Parsons 1998, Tennyson 2002). It is replaced on those islands by _J. aratus_.

Note 2: Examination of ♂ genitalia of a specimen from Kofiau _J. ara ru ex aetherialis_ (Map 3). We have _aetherialis_ (Par _J. aetherialis_ been erroneously included in the range of

**Note 1:** So Kei, Aru and the New Guinea Region as far east as the Aru, Waigeo, Misool, mainland New Guinea and N.E. Range:

**Jamides aleuas sarsina** (Fruhstorfer, 1916)

(Pl. 6, Fig. 173: ♂ Aru; Fig. 174: ♀ Aru, PT ["allotype"].)

_Lamptides aleuas sarsina_ Fruhstorfer (1916: 31); TL: Aru.

Range: endemic to Aru (BMNH, unspecified islands); new Aru island records from Wamara (1 ♂, Dobo, v. 1997) and Trangan (2 ♂♂, Taberline, iv. 1997) (CARR). K. Nagai (pers. comm.) reported the species on Maikoor, Kobroor and Wokam.

Note: Cassuy (2013: 140) designated and illustrated a ♂ LT of _sarsina_ in NHMB.

**Jamides philatus** (Snellen, 1878)

_Cupido philatus_ Snellen (1878: 21, pl. 1, fig. 5); TL: Sulawesi.


Three subspecies occur in Maluku.

**Jamides philatus philatus** (Snellen, 1878)

(Pl. 6, Fig. 175: ♂ Sanana; Fig. 176: ♀ Sanana.)

_Cupido philatus_ Snellen (1878: 21, pl. 1, fig. 5); TL: Sulawesi.

Range: Sulawesi, Peleng and Sula Islands (Sanana) (BMNH, Vane-Wright & de Jong 2003)

**Jamides philatus emetallicus** (Druce, 1895)

(Pl. 6, Fig. 177: ♂ Bacan; Fig. 178: ♀ Bacan.)

_Lamptides emetallicus_ Druce (1895: 582, pl. 32, fig. 18); TL: Bacan.

Range: Halmahera, Bacan, Obi (5 ♂♂, 1 ♀) (BMNH). We add new island records from Morotai (1 ♂, Buho Buho, 8. xii. 1990; 1 ♀, xi. 2004) and Mandioli (2 ♂♂, 2 ♀♀, Waja, 11. xi. 2006) (CARR).

Note: The occurrence on Obi of _J. philatus emetallicus_ raises an interesting question. As already mentioned (see notes following _J. cyta megdora_, above), provenance of specimens bearing labels “Obi, ex J. Wasserstradt 1904, ex Überthür Coll. Brit Mus. 1927-3” is highly questionable. In the case of _J. philatus emetallicus_, ♂♂ bearing non-Wasserstradt Obi labels (2 ♂♂ “Laiwui, Obi, Sept. 1897, (W. Doherty)”; 1 ♀ “Obi, W.J.C. Frost, 1918”) confirm the presence of the species on Obi, but 2 ♂♂ and the only “Obi” ♀ seen (which matches Bacan & Halmahera ♀♀), bear the suspect “Wasserstradt” labels, and are considered quite likely to be from Bacan. ♂♂ from Bacan appear indistinguishable from those accepted as being from Obi. We have not seen any confirmed Obi ♀♀ so the phenotype of ♀ _philatus_ on Obi is unknown but for now, based on the similarity of _♂_ we include _Obi philatus_ here.

**Jamides philatus stresemanni** (Rothschild, 1915)

(Pl. 6, Fig. 179: ♂ Gorong; Fig. 180: ♀ Gorong; Fig. 181: ♂ Buru; Fig. 182: ♀ Buru.)

_Lamptides stresemanni_ Rothschild (1915: 137); TL: N. Seram.

Range: Buru (see note), Seram, Gorong Island (labelled Goram Laut) (BMNH) and Kelang (new island record: 1 ♂, xii. 2008, CARR).

Note: A series of _J. philatus_ from Buru in the BMNH is associated with a drawer label reading “ssp. _osideis_ Tox.”. We believe this is an unpublished Toxorpus manuscript name (= _nomen nudum_) and we mention _osideis_ here only because it appears in online literature including the “Global Lepidoptera Names Index” (Beccaloni et al. 2014). We cannot discern any consistent differences between these specimens and material from Seram and Gorong and ascribe the Buru population to subspecies _stresemanni_.

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**The aleuas subgroup**

_Hirowatari_ (1992) included seven species within this subgroup; three occur in Maluku.

**Jamides aleuas** (C. & R. Felder, 1865)

_Lycaena aleuas_ C. & R. Felder (1865: 268, pl. 33, figs. 15, 16); TL: Misool.


There are several subspecies, one of which occurs in Maluku.
**Jamides festivus** (Röber, 1886)

Plebeius festivus: Röber (1886: 58, pl. 4, fig. 17); TL: East & South Sulawesi.

Range: Sulawesi and the Banggai Islands (Vane-Wright & de Jong 2003), Mangole in the Sula Islands (BMNH).

**Jamides festivus bangkai** (Ribbe, 1926)

(Pl. 6, Figs. 183-184: ♂ Mangole; Figs. 185-186: ♀ Peleng.)

Lampides festivus bangkai: Ribbe (1926: 90); TL: Banggai Islands.

Range: Banggai Islands (Vane-Wright & de Jong 2003), Mangole in the Sula Islands (BMNH).

There is 1 ♂ in the BMNH with a data label: “Sula Mangoli, Oct. 18[?], (W. Doherty)”. It clearly matches specimens from Peleng in the Banggai Islands and is the first record of the species from Maluku.

The elpis subgroup

Four of the 19 species placed in this subgroup by Hiro-watari (1992), plus one other described after that date, occur in Maluku.

**Jamides schatzi** (Röber, 1886)

Plebeius schatzi: Röber (1886: 53, pl. 4, fig. 1); TL: Bacan.

Range: Philippines (including Palawan), the Sulawesi Region, northern Maluku, Obi (Vane-Wright & de Jong 2003). We discount Obi for reasons discussed below — see note 4 following nominotypical schatzi.

Notes: D’Abrera (1971) recorded J. schatzi (without listing any subspecies) from Bacan and Obi. In his book on the Oriental Region (D’Abrera 1986) he stated: “The nominotypical race flies on Bacan [= Bacan] in the Moluccas.” He also noted and illustrated the subspecies argenterifus from Sulawesi and listed two “other probable races: demetrius Frühstorfer (Sula Is.) and alveus Frühstorfer (Selajak)”.

Frühstorfer (1916) introduced subspecies demetrius, recording the TL as “Sula Islands?”. He stated that the locality was questionable but was probably the Sula Islands or north Sulawesi. On the same page he also described subspecies argenterifus from north Sulawesi. The BMNH contains a series of specimens from Sangir and Talaud which conform to the ♂ demetrius “type” which has also been examined. It bears no locality label. We believe demetrius is restricted to the Sangir and Talaud Islands and does not occur on the Sula Islands. Since the former islands are not part of Maluku, demetrius is excluded from this checklist.

**Jamides schatzi schatzi** (Röber, 1886)

(Pl. 6, Fig. 187: ♂ Bacan; Fig. 188: ♀ Bacan; Fig. 189: ♀ Bacan.)

Plebeius schatzi: Röber (1886: 53, pl. 4, fig. 1); TL: Bacan.

= Plebeius insularis: Röber (1886: 55, pl. 4, fig. 14); TL: Bacan.

Range: endemic to northern Maluku: Halmahera, Ternate, Kayoa, Bacan (BMNH) and new island records from Morotai (1 ♂, iv. 1994; 1 ♂, x. 2002; 1 ♂, x. 2006; all Daeo; 1 ♂, Pilowo, 10. xii. 1990) and Kasiruta (1 ♂, 1 ♀, x. 2007) (CARR).

Note 1: Röber (1886) described insularis from Bacan, Seram, Java, East Sulawesi and the Philippines in the same paper as he described schatzi from Bacan. Takanami (1989: 49) designated a LT for both schatzi and insularis — each from Bacan — and synonymised the latter with the former.

Note 2: The uns. of J. schatzi schatzi and J. alec to batjana (Pl. 7: Figs. 209-210) are almost indistinguishable in both sexes, except that the schatzi uns. has a slightly darker ground colour. Upper surfaces of the ♂♀ are easily separable (schatzi having a creamier lighter blue ground colour as well as much narrower fw. dark marginal borders than alec) but ♀ ups. of the two taxa are very similar, the subtle difference being that the ground colour of J. alec to batjana is slightly more blue than the grey blue of J. schatzi schatzi.

Note 3: The 2 ♀♀ illustrated (Pl. 6, Figs. 188-189) show the degree of variation in the width of the dark ups. marginal and sub-marginal markings. The ♀ form with narrower dark borders (Fig. 189) is more frequent.

Note 4: 3 ♂♂ and 1 ♀ of J. schatzi schatzi in the BMNH labelled “Obi, ex J. Waterstradt 1904, ex Oberthür Coll. Brit Mus. 1927-3” are almost certainly wrongly labelled (see notes following J. cyta megdora and J. philatus emetallicus). The ♀ uns. was illustrated by D’Abrera in his book on the Australian Region (D’Abrera 1971). We have seen other specimens claiming to be from Obi and exclude Obi from the species’ range.

**Jamides aritai Hayashi, 1977**

*Jamides* ‡rothschildi [see note 2] aritai: Hayashi (1977 [see note 1]: 151, figs. 5, 6); TL: Palawan.

Range: Sulawesi (Cassidy 2013), Philippines and northern & central Maluku.

Note 1: This description appeared in the 4th quarterly edition of the 1976 volume of “Tyô to Ga”, but this edition was not actually published until 1977.

Note 2: *Jamides aritai* is a species with a confused history. D’Abrera (1971) figured a pair of *Jamides* from “Serang” (= Seram) under the name “Jamides rothschildi”, despite noting that this was probably an unpublished Toxopœus manuscript name (the Buru ♀ in the BMNH bears a handwritten label stating: “Lampides elpis ‡ rothschildii Tol. Type”). Hayashi (1977) perpetuated use of this name when describing aritai from Palawan as a subspecies of “rothschildi D’Abrera”. Takanami (1990) wrongly considered Hayashi the author of “rothschildi”, which was and remains a nomen nudum (Cassidy 2013, Tennent 2014). The only available species group name for these butterflies is *Jamides aritai Hayashi*, 1977.

Other authors (Takanami & Sere 2014, web-based list since 1997) considered aritai a synonym of (J. espada) sabatus Frühstorfer, 1916. However, Cassidy (2013) recently located the types of both espada (NHMB) and sabatus (ZSM) and demonstrated that these taxa are not conspecific with the aritai type (or with Maluku “rothschildi” material). The specimens previously referred to under the invalid species name “‡rothschildi” all share very similar external and ♂ genitalia characters, and we consider them to be conspecific.

**Jamides aritai aritai** Hayashi, 1977

(Pl. 6, Fig. 190: ♂ Morotai.)

*Jamides* ‡rothschildii aritai: Hayashi (1977: 151, figs. 5, 6); TL: Palawan.

Range: Sulawesi (Cassidy 2013 — see note 2), Philippines and Morotai in northern Maluku.

Note 1: In addition to the specimens of *J. aritai sabina* from central Maluku, we have also examined one ♂ *J. aritai* from Morotai (1 ♂, v. 2005) in northern Maluku (Pl. 6, Fig. 190). This specimen does not conform to sabina, but shares the pattern of uns. fw. striae in spaces 3 and 4 with aritai specimens from the Philippines and Sulawesi. Though it differs in some minor features from the aritai type we retain it provisionally with nominotypical aritai pending examination of further material.

Note 2: Although Sulawesi specimens have the pattern of uns. fw. striae in spaces 3 and 4 typical of the nominotypical subspecies, they differ from Philippine specimens in other respects and may represent an additional undescribed subspecies. Sulawesi is outside the geographical scope of this paper.
Jamides aritai sabina ssp. n.

(Pl. 6, Fig. 191: ♀ HT, Seram, Fig. 192: ♂ PT, Seram.) = Jamides #rothschildi “Toxopeus MS”; D’AUBREYA (1971: 354) (nomen nudum); Seram.


Paratypes: 6 ♀♀, 4 ♂♂, as HT (all BMNH).


Etymology: named for Sabina, the wife of the fourth author.

Range: central Maluku (Buru, Seram, Ambon).

Note: As discussed earlier, specimens from central Maluku were illustrated by D’AUBREYA (1971) and given the name “rothschildi” but not described. HAYASHI noted a number of differences between his Palawan aritai HT and Seram “rothschildi.” In particular, referring to an observation of T. G. HOWARTH, he noted: “uns. fw. post-discal bar in space 3 of the specimens from Ceram [Seram] disjunct or mid-way between those in space 4, but this new subspecies [aritai] has it joined to inner bar.” We have compared a series of central Maluku specimens with the type of aritai and other Philippine specimens (as well as with a series of aritai specimens from Sulawesi) and concur that this is a significant and consistent difference. HAYASHI also described some additional distinguishing characters for aritai but we have not found these to be consistent.

In addition to different marking on the uns., 5 ⇑ we have examined from central Maluku lack the fine dark border extending along the costa to the base of the ups. fw. present in a Philippine ♀ from Leyte photographed by TAKANAMI & SEKI (2014) and in three Sulawesi ⇑ (CASS). We therefore consider the central Maluku population to represent a distinct subspecies which we describe below.

Diagnosis

♀ (Pl. 6, Fig. 191): Fwls. 17 mm, anla. 9 mm (HT). Head grey; labial palpus grey-cream, eye ringed with grey-cream; antenna black, ringed with white. Thorax dorsally grey, with blue scales, thorax beneath and legs grey-cream. Abdomen dorsally blue-grey, beneath grey-cream.

Fw. ups. ground colour sky blue, deeper blue nearer to apex, termen black, approximately 1 mm in width but increasing to 2 mm at apex; cilia black; fw. uns. uniform grey-brown (darker than in nominotypical aritai), an adjacent terminal and subterminal band of similar colouring and each approximately 1 mm wide, widening to 2 mm at inner margin; a postmedian band subparallel to termen approximately 2 mm wide, partly offset towards tornus at vein 3 from costa (completely offset in nominotypical aritai) such that the terminal edge of the band occupying space 3 lies midway between the same band in space 4, edged with white; an additional band 1.5 mm wide at end of cell, edged white.

Hw. ups. with ground colour sky blue, deeper blue towards termen; termen narrowly brown-black; a row of indistinct subterminal round brown-black spots ringed with white on terminal margin, each between veins, more prominent spots each in spaces 1b and 2, the lateral irregular and wavy, subparallel to termen and bordered with white; cilia black; hw. uns. uniform deep grey-brown (darker than in nominotypical aritai); adjacent terminal and subterminal bands of similar colour, each approximately 1 mm wide, sharply edged with white; terminal band replaced with large black, rounded tornal spot approx. 1.5 mm diameter in space 2, heavily rimmed with orange except along termen, where it is faintly marked with pale iridescent blue, orange is also marginally present on inner side of subterminal band between tornus and midway between veins 3 and 4; postmedian band similar to ground colour, approx. 1 mm wide, edged white and distinctly stepped at veins; a band 1.5 mm wide at end of cell, edged white; an additional irregular band 1 mm wide at base, extending from veins 1b to 8, offset at veins.

♂ (Pl. 6, Fig. 192): As ♂♀, but fwl. 15.5 mm, antenna broken and therefore not measured.

Fw. ups., including costa, with ground colour very light sky blue (costa broadly brown-black in nominotypical aritai), termen broadly brown-black, up to 5.5 mm at tornus and apex and 2 mm along centre of termen; cilia grey-brown; fw. uns. uniform deep grey-brown (darker than in nominotypical aritai); adjacent terminal and subterminal bands of similar colouring, each approximately 1 mm wide, very broadly edged with white and increasing in width towards inner margin; postmedian band subparallel to termen approximately 1.5 mm wide, partly offset towards tornus at vein 3 from costa (completely offset in nominotypical aritai) such that the terminal edge of the band occupying space 3 lies midway between those in space 4, but this new sub­species [aritai] has it joined to inner bar.”

Jamides pseudosias (Rothschild, 1915)

*Lampides pseudosias*: Rothschild (1915: 138); TL: Misool.

**Range**: Borneo (1 ♂, Sandakan; 1 ♂, Sarawak; BMNH), Sulawesi, Bacan, Halmahera, Seram, Obi, Misool, mainland New Guinea and certain outlying islands in PNG (PASARNS 1998).

*Jamides pseudosias pseudosias* (Rothschild, 1915)

(Pl. 6, Figs. 193–194: ♂, HT [by monotypy] pseudosias, Misool; Figs. 195–196: ♂, Obi, HT [by monotypy] saunda; Fig. 197: ♀ Seram; Fig. 198: ♀ Seram; Fig. 199: ♀ Halmahera; Fig. 200: ♀ Halmahera; Pl. 7, Fig. 201: ♀ Obi; Figs. 202–203: ♀, HT [by monotypy] sanaya, Obi; Fig. 204: ♀ Bacan.)

*Lampides pseudosias*: Rothschild (1915: 138); TL: Misool.

= *Lampides nemea sanaya*: FRUHSTORFER (1916: 29), syn. n.; see notes 1–3; TL: Obi Island.

=*Lampides kondulana sanunda*: FRUHSTORFER (1916: 11); syn. n.; see note 4; TL: Obi Island.

**Range**: Halmahera, Bacan, Obi, Seram, Misool (BMNH), Ambon (new island record: 1 ♂, Mt. Tuna, xii. 2004, CARR).

**Note 1**: Rothschild described pseudosias from a solitary ♂ from Misool. We have examined this specimen and found it to be indistinguishable from a ♂ from Obi and a series of 23 ♂♂ from Seram. We have also compared FRUHSTORFER’s ♀ sanaya HT from Obi with a series of 15 ♀♀ from central Seram in the BMNH and can see no consistent differences.

**Note 2**: 6 ♂♂ from Halmahera in the BMNH conform to the one Obi and 23 Seram ♂♂ examined. The only Halmahera ♀ (Pl. 6, Fig. 200) in the BMNH is much darker than the Obi ♀ sanaya HT and the series of 15 (“blue form”) Seram ♀♀. The only ♂ from Bacan in the BMNH (Pl. 7, Fig. 204) is also of the paler, “blue form”. We have also seen a “dark form” ♀ from Bacan (Babang, 20. xii. 1990) similar to the Halmahera ♀ ♀♀, at least on Bacan, appear to be dimorphic. No intermediate forms have been seen.

**Note 3**: FRUHSTORFER compared sanaya to echellea, saying: “Hw. submarginal band much less developed than in *echellea*.” However, we note that the width of the dark borders of both fw. and hw. of northern Maluku ♀♀ vary significantly. It is possible that *echellea* is synonymous with *pseudosias*, but we have not been able to examine sufficient material to confirm this.

**Note 4**: FRUHSTORFER described saunda as a subspecies of *Jamides kondulana* Felder, 1862 from Obi. RILEY & CORBET (1938) considered the taxon *kondulana* a subspecies of *alecto* found on the Nicobar Islands, and this view appears to be generally accepted. D’AURREA (1977) and BRIDGES (1988) listed *saunda* as a subspecies of *elpis* GODART, 1824 (TL: Java). We have examined the *saunda* and *pseudosias* ♀ HTs at the BMNH (Pl. 6, Figs. 193–196) and can see no significant differences between them, beyond the fact that the *saunda* HT is smaller. There is one further small ♂ from Obi labelled *saunda* which also conforms to this phenotype, and we consider *saunda* to be a junior synonym of *pseudosias*, as does Y. TAKANAMI (pers. comm.).

*Jamides pseudosias echellea* (FRUHSTORFER, 1916)

(Pl. 7, Fig. 205: ♂ Taliabu.)

*Lampides nemea echellea*: FRUHSTORFER (1916: 29); TL: North Sulawesi. — For spelling, see Note 1.


**Note 1**: The name first appeared in FRUHSTORFER’s paper with the spelling “echellea”, an obvious typographical error; it was spelled “echellea” in the following paragraph, and thereafter. It is noted that BRIDGES (1988) used the spelling “echellea”.

**Note 2**: We have only seen 1 ♂ from Taliabu, which is indistinguishable from *echellea* from Sulawesi. However, ♀♀ of nominotypical *pseudosias* and ssp. *echellea* appear inseparable. We have examined ♀♀ from Sulawesi (2 at BMNH, 4 CASS): all have consistent markings and are very similar to the dark form of ♀♀ from northern Maluku. It is possible that *echellea* and *pseudosias* are synonymous, but without access to further material an objective assessment is difficult. We therefore provisionally include the Taliabu subpopulation with *echellea*, largely for biogeographical reasons.

*Jamides halus* TAKANAMI, 1994

*Jamides halus*: TAKANAMI (1994: 8, figs. 5–8, 11); TL: Sulawesi.

**Range**: South and Central Sulawesi (type series); Buru (new record).

*Jamides halus carnegii* ssp. n.

(Pl. 7, Figs. 206–207: ♂ HT, Buru; Fig. 208: ♀ PT, Buru; Pl. 8, Fig. 248: ♀ PT, genitalia.)

= “Lampides nemea Felder” sensu HOLLAND (1900: 76), see Note 1.

**Holotype**: Indonesia, “Bourou” [Buru], W. DOHERTY, HOLLAND Collection, CMNH.

**Paratypes**: (1 ♂, 1 ♀): 1 ♀, as holotype (CMNH). 1 ♀, Buru, iv. 2002 (CARR).

**Etymology**: Named after the Carnegie Museum, Pittsburgh.

**Range**: Buru.

**Diagnosis**

♂ (Pl. 7, Figs. 206–207): Fwl. 16 mm, antl. 7.5 mm. Ups. of both wings pale sky blue, lighter in colour and with less sheen than the nominotypical subspecies. The black margins on the fw. termen much more distinct below vein 5 and increasing to 1.5 mm at the tornus. Dark brown shading in the costal region of space 12 extending basally anterior to the cell (absent in nominotypical *halus*). Dark marginal and submarginal striae on the hw. as in nominotypical *halus*. Underside ground colour with a slight reddish tint compared to nominotypical *halus*, although this may vary slightly between individuals. Sutiae on both wings as in the nominotypical subspe-
cies, but the blackish submarginal spots and lunules are consistently somewhat narrower on both wings. Genitalia (Pl. 7: Fig. 248) are indistinguishable from those illustrated by Takanami (1994: 9, fig. 11) in his description of the species.

♀ (Pl. 7, Fig. 208): Fwl. 16 mm, antl. 7 mm. Ups. of both wings with extensive caerulean blue areas from the base to well beyond the cell. This contrasts strongly with the nominotypical ♀ which has only a pale grey-blue area in the basal halves of spaces 1 to 3 and the lower half of the cell, as well as a uniformly grey-brown hw. A black marginal region on the fw. increasing from 2 mm wide at the dorsum to 3 mm at the apex, this area inwardly shaded with black scales in spaces 5 to 7 and continued along the costa to the base, at a width of 1 mm or less. Hw. with similar marginal and submarginal striae and lunules to the ♂. On the uns., the ground colour is again richer than in the Sulawesi ♀, and there is the same narrowing of the darker row of submarginal lunules.

Note 1: The 2 ♀♂ in CMNH were listed by Holland (1900) as “Lampides nema”, and Holland’s simple annotation read: “It is with some doubt that I refer the two specimens before me to this species.” This new description is the first record of jamides halus outside Sulawesi, reinforcing a faunistic link between Sulawesi and Central Maluku and suggesting that the species may occur more widely there.

Note 2: The differences between ♂♀ in Sulawesi and Buru are small but consistent. The ♀♀ — albeit only one from each location — show a marked difference in their ups. markings, the Sulawesi ♀ being overall much more brown coloured. This melanic characteristic is also notable in Sulawesi ♀♀ of J. celeno and J. fractilinea.

Jamides alecto (C. Felder, 1860)

Lycaena alecto: C. Felder (1860: 456); TL: Ambon.

Range: Sri Lanka, India, south China, Taiwan, Indochina, Malay Peninsula, Sumatra, Java, Lesser Sunda Islands, Borneo, Palawan, Philippines, Sulawesi Region, northern central Maluku, New Guinea (Waigeo, Irian Jaya) (Vane-Wright & de Jong 2003).

Two subspecies occur in Maluku.

Jamides alecto batjana (Toxopeus, 1930)

(Pl. 7, Fig. 209: ♂ Bacan; Fig. 210: ♀ Bacan.)

Lampides alecto (dromicu[s]): batjana: Toxopeus (1930: 140, pl. 3A, fig. 8); TL: Bacan (see note).

Range: Halmahera (one unusually small ♀), Ternate, Bacan (BMNH).

Notes: Toxopeus (1930) appeared uncertain whether to attribute batjana to alecto (i.e., Jamides alecto) or to dromicus (i.e., Jamides elpis dromicus Friehsroper, 1910, from Taiwan). Biogeographically, the latter makes little sense.

D’Abertra (1971) considered batjana a synonym of alecto. Although we have examined Toxopeus’ (1930) monochrome photograph of the ♂ of batjana, we have been unable to locate the actual specimen. Many alecto subspecies have similarly marked ♂♂ and it is not possible to separate batjana from nominotypical alecto based only on this photograph. However, we have examined a series of specimens from Bacan in the BMNH, which appear consistent in their markings, and can identify clear differences from nominotypical alecto, particularly in the ♀♀ (Pl. 7, Figs. 209–224).

Both sexes of alecto from northern Maluku are generally larger than typical nominotypical alecto and the ♀ ups. fw. dark border is consistently wider, uniformly darker, and lacks the scalloping generally present in nominotypical ♀♀, though it is noted that the latter are prone to individual variation — see note 1, below, following J. alecto alecto.

Jamides alecto alecto (C. Felder, 1860)

(Pl. 7, Figs. 211–212: ♂ HT [see note 5] tertius, Seram; Fig. 213: ♂ Ambon; Figs. 214–215: ♀♀ Ambon; Fig. 216: ♀ Seram; Fig. 217: ♂ LT buruana, Buru; Figs. 218, 224: ♀♀ Buru; Fig. 219: ♀ Gorong Islands; Fig. 220: ♀ Kei; Fig. 221: ♂ Obi; Figs. 222–223: ♀♀ Obi.)

Lycena alecto: C. Felder (1860: 456); TL: Ambon.

= Lampides buruana: Holland (1900: 76), syn. n.; see note 4; TL: Buru.

= Lampides tertius: Rothschild (1915: 138), syn. n.; see note 5; TL: Central Seram.

Range: Obi, Buru, Boano, Seram, Ambon, Geser, Gorong Islands (Goram Laut), Kei (Kei Kecil), Aru (BMNH), Haruku (new island record: 1 ♀, x. 2006, CARR).

Note 1: ♀ ♀ are quite variable particularly with respect to the extent and darkness of the ups. fw. subapical border, and both sexes vary widely in size, see Pl. 7. ♀ ♀ from these localities all match the phenotype of alecto specimens from Ambon, the type locality, and ♀ ♀, although variable, all lie within the range of variation exhibited by specimens from Ambon. We have seen 3 ♀♀ from Buru; two (one of which is illustrated on Pl. 7: Fig. 218) fall within the range of variation of Ambon alecto specimens. The third (Pl. 7: Fig. 224) appears to be an unusually small aberrant specimen with broad ups. fw. black marginal borders.

Note 2: There is only one specimen from Obi, a ♀, in the BMNH and we have also examined a second ♀ and 1 ♂ from that island (see on Pl. 7: Figs. 221–223). The ♀ has narrower ups. hw. submarginal markings than batjana and alecto (Pl. 7: Figs. 209–220) and the ♀ ♀ appear intermediate between the two taxa with regard to the extent of the ups. fw. dark apical markings. However, this is a variable feature in alecto and we provisionally place Obi material with nominotypical alecto.

Note 3: An unverified citation of A BUWI was made after Takanami (1994: 9, fig. 11) in his description of ambonensis tertius. This specimen was not available for examination.

Note 4: Donald’s taxon Lampides buruana has been largely overlooked since its description in 1900. We located a series of STs in CMNH. Whilst Donald mentions 6 examples of each sex, there remain from his collection 9 ♀♀ and 7 ♂♂, all from Buru and with Donald collection labels. The ♀ ♀ are clearly the same as those of nominotypical alecto. The ♀ ♀ differ only in the extent of the brown subapical shading on the ups. of the fw. and we accord this no taxonomic significance. One of the adult ♀ ♀ also has a label handwritten by Holland stating “Burunana sp. n.” and we designate that specimen as the lectotype: Lampides buruana Holland/ Lectotype Cassidy 2013 [typed]/ Buru DOHERTY ♀♀ [handwritten]/ Buruna sp. n. [handwritten]/ Holland Collection (typed). Its fw. is 17 mm. The remainder of this series (8 ♂♂, 7 ♀♀), all of which bear the same labels as the LT (with the exception of the handwritten Holland label) thereby automatically become PLTs. A PLT ♀ ♀ has been dissected and confirms that buruana is conspecific with J. alecto.

Note 5: In his description of Lampides tertius from Seram, Rothschild mistakenly presented the HT [by monotypy] as a ♀ and compared the specimen with the taxon musu, which we place as a subspecies of J. aratus. We have examined the HT (Pl. 7: Figs. 211–212) in the BMNH and can find no significant differences between it and typical ♂♂ of nominotypical alecto from Seram, Ambon and elsewhere in central Maluku, and we place tertius as a
The euchylas subgroup

Hirowatari (1992) included four species in this sub-group; two occur in Maluku.

Jamides euchylas (Hübner, 1819)

Pepilorus euchylas: Hübner (1819: 71); see note 2; TL: Ambon?
= Papilio *hylas*: Stoll (1781 [in Cramer & Stoll]: 142, pl. 363, figs. E, F); nom. praecoc., see note 1; TL: Ambon?
= Jamides gamblea: Swinhoe (1916: 209); see note 3; TL: Seram.
= Pepilorus hylas ab. plumbeus: Rothschild (1915: 138); see note 4; TL: Seram.

Range: endemic to central Maluku.

Note 1: Fruhstorfer (1916) stated that even though the name hylas Esper, 1777 (p. 375, pl. 45, fig. 3 – a synonym of Polymnatus dorylas [Denis & Schiffmüller], 1775) had been transferred to Lycaena, he was replacing “Cramer’s hylas” with Hübner’s name euchylas, in order to avoid any confusion. Due to common usage we also consider it appropriate to continue using the name euchylas.

Note 2: Tite (1960a) observed: “Hübner (1819) used the name euchylas for hylas Cramer [= Stoll] and referred to Cramer’s figure; no mention of a locality is made by either author, but fortunately the figure is sufficiently accurate to leave no doubt that it represents the Ceram- Amboline race.”

Note 3: Tite (1960a) said that the types of gamblea are in the BMNH and pointed out that the ♀ HT is euchylas but the ♀ “allo-type” (= PT) is definitely coritus Guérin-Ménéville (1831: pl. 18, fig. 3). The taxon coritus is one of the four similar species in the euchylas subgroup and occurs in the New Guinea region.

Note 4: Tite (1960a) observed that the unusual colour of the type of “ab. plumbeus” in the BMNH was the result of discolouration due to damp or chemical action.

Jamides euchylas mimetica Tite, 1960

(Pl. 7, Figs. 225–227: ♀ HT; Figs. 228–230: ♀ PT [both specimens labelled as “holotype”, see note].)

Jamides euchylas mimetica: Tite (1960a: 322, pl. 21, figs. 1–4, text-fig. 2); TL: Buru.

Range: Buru (BMNH), Ambelau (new island record: 19 ♀♂, 6 ♀♀, xi. 2012; CARR).

Note: Despite Tite’s inadvertent labelling of both ♀ and ♀ as “holotype”, his text clearly states the ♀ to be the HT and the ♀ to be the allo-type (= PT).

Jamides euchylas euchylas (Hübner, 1819)

Pepilorus euchylas: Hübner (1819: 71); TL: Ambon?

Range: Seram, Ambon, Sabarapu and Geser (BMNH) and new island records from Manipa (1 ♀, 2 ♀♀, Tomalehu Barat, 19. ix. 1993), Kelang (1 ♀, 2 ♀♀, xi. 2003; 1 ♀, xi. 2008) and Haruku (6 ♀♂, 4 ♀♀, vi. 2006) (CARR).

Jamides aruensis (Pagenstecher, 1884)

Cupido euchylas var. aruensis: Pagenstecher (1884: 190); TL: Aru Islands.

Range: Kei, Aru, Waigeo, Misool, Salawati and mainland New Guinea (apparently only south of the Central Divide) (Parsons 1998).

Note: This taxon should not be confused with its junior homonym Jamides aruensis Swinhoe, 1915, a synonym of aruanus Rüer, 1886 (see notes following Jamides cyra aruanus, above).

Three subspecies occur in Maluku.

Jamides aruensis umbriel (Fruhstorfer 1915)

(Pl. 8, Figs. 233–234: ♀ Gebe; Figs. 235–236: ♀ Waigeo)

Lampides aruensis umbriel: Fruhstorfer (1915: 141); TL: Waigeo.

Range: Waigeo, Gebe (BMNH).

Note: Tite (1960a) and D’Arrèria (1971) noted the range as Waigeo, but there is 1 ♀ in the BMNH from Gebe, labelled: “Moliques, Il Gebi, Chasseurs Malais de Waterstraat, 1903”. This specimen is similar to Waigeo ♀♂ and is the only Gebe specimen we are aware of. This is the first published record of this subspecies within the Maluku area.

Jamides aruensis aruensis (Fruhstorfer, 1915)

(Pl. 8, Figs. 237–239: ♀ PT, Kei; Figs. 240–242: ♀ PT, Kei.)

Lampides aruensis aruensis: Fruhstorfer (1915: 141); TL: Kei Islands.

= Lampides euchylas gloriel: Hulstaert (1924: 80); syn. n.; see note; TL: Kei.

Range: Kei (Kei Besar and Kei Kecil) (BMNH).

Note: Both Tite (1960a) and D’Arrèria (1971) stated that gloriel is “probably” a synonym of aruensis. We have not seen Hulstaert’s (1924) type but his description, as also noted by Tite (1960a), was too brief for the formation of any precise opinion. Hulstaert noted that the gloriel ♀ only differs by its greater size, and the only ♀ was described as “Grande, sa bordure noire tres mince, de 1 cm seulement” [large, the black border very narrow, about 1 cm only]. A black border of 1 cm is “hardly conceivable”, as Tite put it, and there must be some mistake. He may have meant 1 mm. There are no known instances of two subspecies of one species occurring within the Kei Islands and we conclude that these two taxa are synonyms.

Jamides aruensis aruensis (Pagenstecher, 1884)  
(Pl. 5, Fig. 243: ♂ Aru; Fig. 244: ♀ Aru.)

_Cupido euhylas_ var. _aruensis_: Pagenstecher (1884: 190); _TL:_ Aru Islands.

**Range:** endemic to the Aru Islands, Wamar, Kobroor (BMNH) and new Aru records from Wokam (1 ♂, ♂♂, 2000) and Maikoor (1 ♂, 2 ♀♀, Fatujuring, 1899) (CARR). In addition, K. Nagai reports (pers. comm.) the species from Trangan Island.

**Taxon of uncertain status not included in checklist**

**Jamides species (BMNH)**

Vane-Wright & De Jong (2003) listed a “[Jamides] species” based on specimen(s) at the BMNH, noting the range as the Sula Islands and the identity uncertain. Vane-Wright (pers. comm.) thinks this listing was based on a series of specimens, possibly ex Rothschild and set aside by Tite. We have been unable to find them in the BMNH and this remains a mystery.

Further, in the BMNH main collection there is 1 ♂ typical of the _euhylas_ subgroup which carries two labels: “Sula ls. Wallace” and “GOEDMAN-SALVIN Coll. 1908-168”. Beneath is a handwritten note saying: “This looks very like _poliamus_ from New Guinea and is probably wrongly labelled as coming from Sula ls.”. We have compared the specimen to a series of _poliamus_ Fruhstorfer, 1915, from Salawati, Misool and New Guinea and can see no appreciable differences. We accept that this is likely to be a mislabelled specimen.

**Note:** Tite (1960a) considered _poliamus_ to be a subspecies of _aruensis_ Pagenstecher and this is now generally agreed.

**Summarised checklist of Maluku Jamides taxa (subspecies) and their ranges within Maluku**

**Jamides bochus phaidon** — Sula Islands (Taliabu).

**Jamides bochus toscius** — northern Maluku (Morotai, Halmahera, Ternate, Baca, Mandioli).

**Jamides bochus pollassar stat. n.** — Obi.

**Jamides bochus astropites** — central Maluku (Buru, Manipa, Kelang, Seram, Kasa, Ambon, Haruku, Nusa Laut, Geser, Seram Laut), Banda Islands (Banda Besar & Naira), Gorong Islands (Gorong, Tawubela Islands, Tayandu Islands (Kur, Tayandu, Taam), Kei Islands (Kei Kecil, Kei Besar), Aru Islands (Wamar).

**Jamides bochus herdonius** — Southwest Maluku (Wetar).

**Jamides bochus grata** — Tanimbar Islands (Larat, Yamdena).

**Jamides seminiger riglah** — Sula Islands (Mangole).

**Jamides seminiger seminiger** — northern Maluku (Morotai, Halmahera, Bacan).

**Jamides seminiger porphyris** — Obi, central Maluku (Buru, Seram, Ambon).

**Jamides seminiger vanilihi** — Watubela Islands (Tioor).

**Jamides seminiger richardi** spp. n. — Kei Islands (Kei Kecil, Kei Besar), Aru Islands.

**Jamides amarauge amandae** spp. n. — Aru Islands (Maikoor, Kobroor, Trangan).

**Jamides cyta hellada** — Sula Islands (Taliabu, Mangole, Sanana).

**Jamides cyta amphissa** — northern Maluku (Morotai, Halmahera, Ternate, Kasiruta, Bacan, Mandioli).

**Jamides cyta megdora** — Obi.

**Jamides cyta nemea** — central Maluku (Seram, Ambon, Haruku, Sarapua), Gorong Islands (Manawoka).

**Jamides cyta madara** — Tayandu Islands (Kur), Kei Islands (Kei Kecil).

**Jamides cyta stevei** spp. n. — Tanimbar Islands (Yamdena).

**Jamides cyta aruans** — Aru Islands (Wamar, Wokam, Maikoor, Kobroor, Trangan).

**Jamides celeno optimus** — Sula Islands (Mangole, Sanana).

**Jamides celeno sandya** — northern Maluku (Morotai, Halmahera, Ternate, Kasiruta, Bacan, Mandioli), Obi, Gebe, central Maluku (Manipa, Seram, Ambon), Aru Islands (Wamar, Maikoor, Kobroor, Trangan).

**Jamides celeno sundara** — central Maluku (Buru), Banda Islands (Banda Besar, Naira), Watubela Islands (Tioor), Tayandu Islands (Kur), Kei Islands (Kei Kecil, Kei Besar), Southwest Maluku (Wetar, Kisar, Roma, Leti, Moa, Damar, Sermata, Wetan, Babar), Tanimbar Islands (Molu, Larat, Yamdena, Tandula, Selaru).

**Jamides butleri** — Sula Islands (Mangoe), Obi, central Maluku (Buru, Ambelau, Manipa, Seram, Ambon, Haruku, Sarapua, Nusa Laut), Gorong Islands (Gorong), Watubela Islands (Tioor).

**Jamides pura spatamenes** — Obi.

**Jamides fractilinea saraharum** spp. n. — Sula Islands (Mangole).

**Jamides aratus aratus** — Obi, central Maluku (Buru, Kelang, Seram, Ambon, Haruku, Sarapua, Nusa Laut, Geser, Seram Laut), Gorong Islands (Manawoka, Gorong), Watubela Islands (Kasiui).

**Jamides aratus ezeon** — Banda Islands (Banda Besar, Naira).

**Jamides aratus sestus** — Tanimbar Islands (Molu, Larat, Yamdena, Tandula, Selaru).

**Jamides aratus samueli** spp. n. — Southwest Maluku (Wetar, Roma, Moa, Damar, Wetan, Babar).

**Jamides aetherialis aetherialis** — Kei Islands (Kei Kecil, Kei Besar).

**Jamides aetherialis caerulina** — Aru Islands (Wamar, Maikoor, Kobroor, Trangan).

**Jamides aetherialis unguis** — Aru Islands (Wamar, Wokam, Maikoor, Kobroor, Trangan).

**Jamides philatus philatus** — Sula Islands (Sanana).

**Jamides philatus emetallus** — northern Maluku (Morotai, Halmahera, Bacan, Mandioli), Obi

**Jamides philatus streissmanni** — central Maluku (Buru, Kelang, Seram), Gorong Islands (Gorong).

**Jamides festivus bangkia** — Sula Islands (Mangole).

**Jamides schatzi schatzi** — northern Maluku (Morotai, Halmahera, Ternate, Kasiruta, Bacan, Mandioli).
Jamides aritai sabina ssp. n. — central Maluku (Buru, Seram, Ambon).

Jamides pseudosia echeilea — Sula Islands (Taliabu).

Jamides pseudosia pseudosia — northern Maluku (Halmahera, Bacaan), Obi, central Maluku (Seram, Ambon).

= Lampides nemea sanya Fruhstorfer, syn. n.
= Lampides kondulana saunda Fruhstorfer, syn. n.

Jamides halus carnegii ssp. n. — central Maluku (Buru).

Jamides alecto bajiana — northern Maluku (Halmahera, Ternate, Bacaan).

Jamides alecto alecto — Obi, central Maluku (Buru, Boano, Seram, Ambon, Haruku, Geser), Gorong Islands (Gorong), Kei Islands (Kei Kecil), Aru Islands

= Lampides bursana Holland, syn. n.
= Lampides tertius Rotschild, syn. n.

Jamides euchylas mimetica — central Maluku (Buru, Ambelau).

Jamides euchylas euchylas — central Maluku (Manipa, Kelang, Seram, Ambon, Haruku, Saparua, Geser).

Jamides aruensis umbriel — Kei Islands (Kei Kecil, Kei Besar).

= Lampides euchylas gloriel Hulstaert, syn. n.

Jamides aruensis aruensis — Aru Islands (Wamar, Wokam, Maikoor, Kobroor, Trangan).

Extra-limital synonymy

Jamides aratus musu Doherty, 1891 — Sumba, Sumbawa.

= Lampides aratus pseudaratus Fruhstorfer, 1915; “Obi”, syn. n.

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