

# 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

Andrew RAWLINS, 392 Maidstone Road, Rainham, Kent, ME8 0JA, England; acrawlins@hotmail.com (corresponding author)

Alan CASSIDY, 18 Woodhurst Road, Maidenhead, Berkshire, SL6 8TF, England; accassidy@aol.com

Chris J. MÜLLER, Honorary Associate, Australian Museum, 6 College Street, Sydney, NSW 2010, Australia; chris-muller@mail.com

Stefan SCHRÖDER, Auf dem Rosenhügel 15, D-50997 Köln, Germany; ste.schroeder@gmx.net

W. John TENNENT, Scientific Associate, Department of Life Sciences, Division of Terrestrial Invertebrates, the Natural History Museum, London, SW7 5BD, England; johntennent@hotmail.co.uk

**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. aritai sabina* ssp. n. (HT male, BMNH). A lectotype is designated for *Lampides buruana* HOLLAND, 1900 (male, in CMNH), a junior synonym of *Lycaena alecto* 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.

## Illustrierte und kommentierte Checkliste von Taxa der Gattung *Jamides* HÜBNER, 1819, die in den indonesischen Provinzen Nordmaluku und Maluku vorkommen (Lepidoptera: Lycaenidae)

**Zusammenfassung:** In der vorliegenden Arbeit werden 55 Taxa von 21 Arten der polyommatischen Lycaeniden-Gattung *Jamides* HÜBNER, 1819 behandelt, die auf den Inseln der indonesischen Provinzen Maluku und Nord-Maluku vorkommen. Neun neue Unterarten werden beschrieben: *Jamides seminiger richardi* ssp. n. (Holotypus = HT Männchen = M. in BMNH), *J. amarauge amandae* ssp. n. (HT M. in BMNH), *J. cyta stevei* ssp. n. (HT Weibchen = W. in BMNH), *J. fractilinea saraharum* ssp. n. (HT M. in BMNH), *J. aratus vignei* ssp. n. (HT M. in BMNH), *J. aratus roberti* ssp. n. (HT W. in BMNH), *J. aratus samueli* ssp. n. (HT M. in BMNH), *J. halus carnegii* ssp. n. (HT M. in CMNH), und *J. aritai sabina* ssp. n. (HT M. in BMNH). Ein Lectotypus wird designiert für *Lampides buruana* HOLLAND, 1900 (M., im CMNH), ein jüngeres Synonym von *Lycaena alecto* C. FELDER, 1860. Es werden zahlreiche neue Inselnachweise aufgeführt, neue Synonymien (siehe hinten im Text in der Checkliste) vorgeschlagen und einige Fehler beziehungsweise Unklarheiten der bisherigen Literatur diskutiert und soweit als möglich behoben. Alle bekannten Taxa werden farbig abgebildet. Beigefügte Karten zeigen alle im Text genannten Inseln.

## 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):

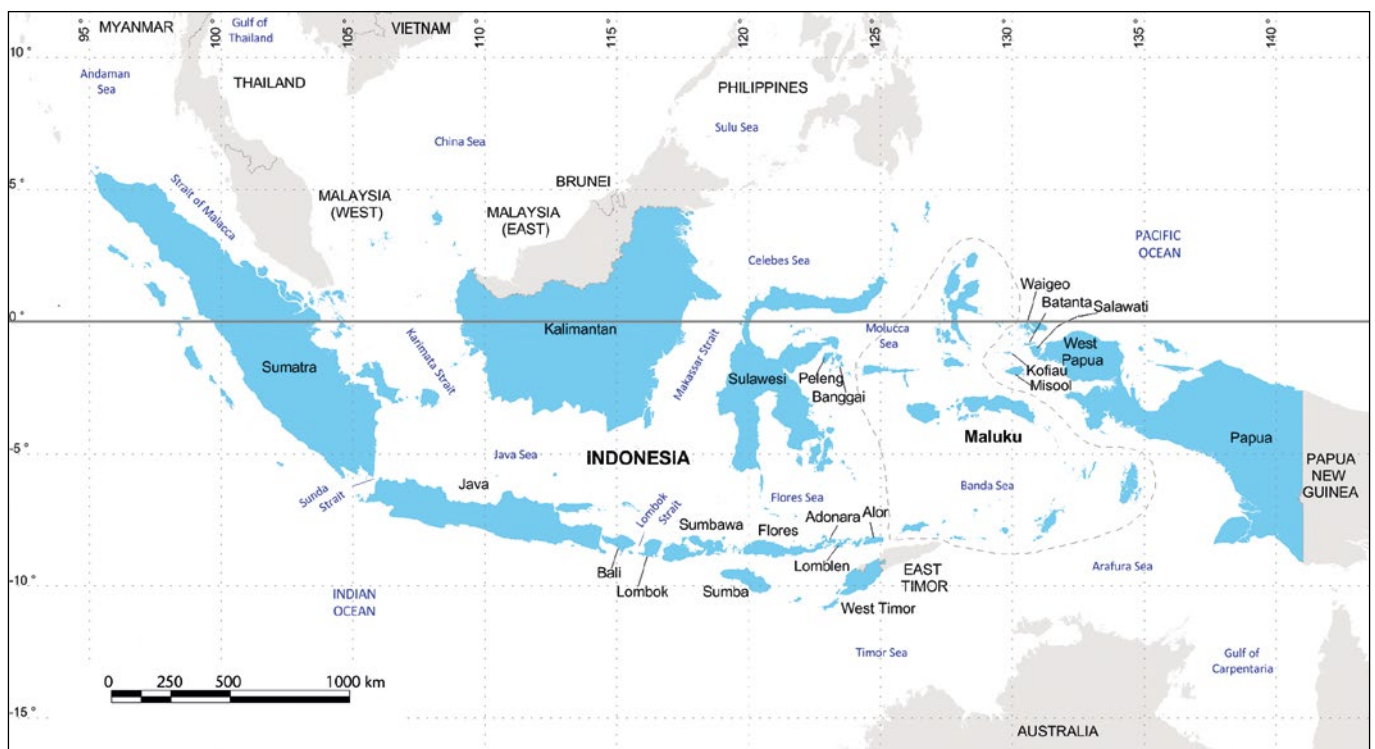
The political province of **North Maluku (Maluku Utara)** comprises:

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 gabia* (BOISDUVAL, 1832), *Neptis brebissonii* (BOISDUVAL, 1832), and *Ornithoptera priamus* (LINNAEUS, 1758) [in northern Maluku this is replaced by *Orni-*

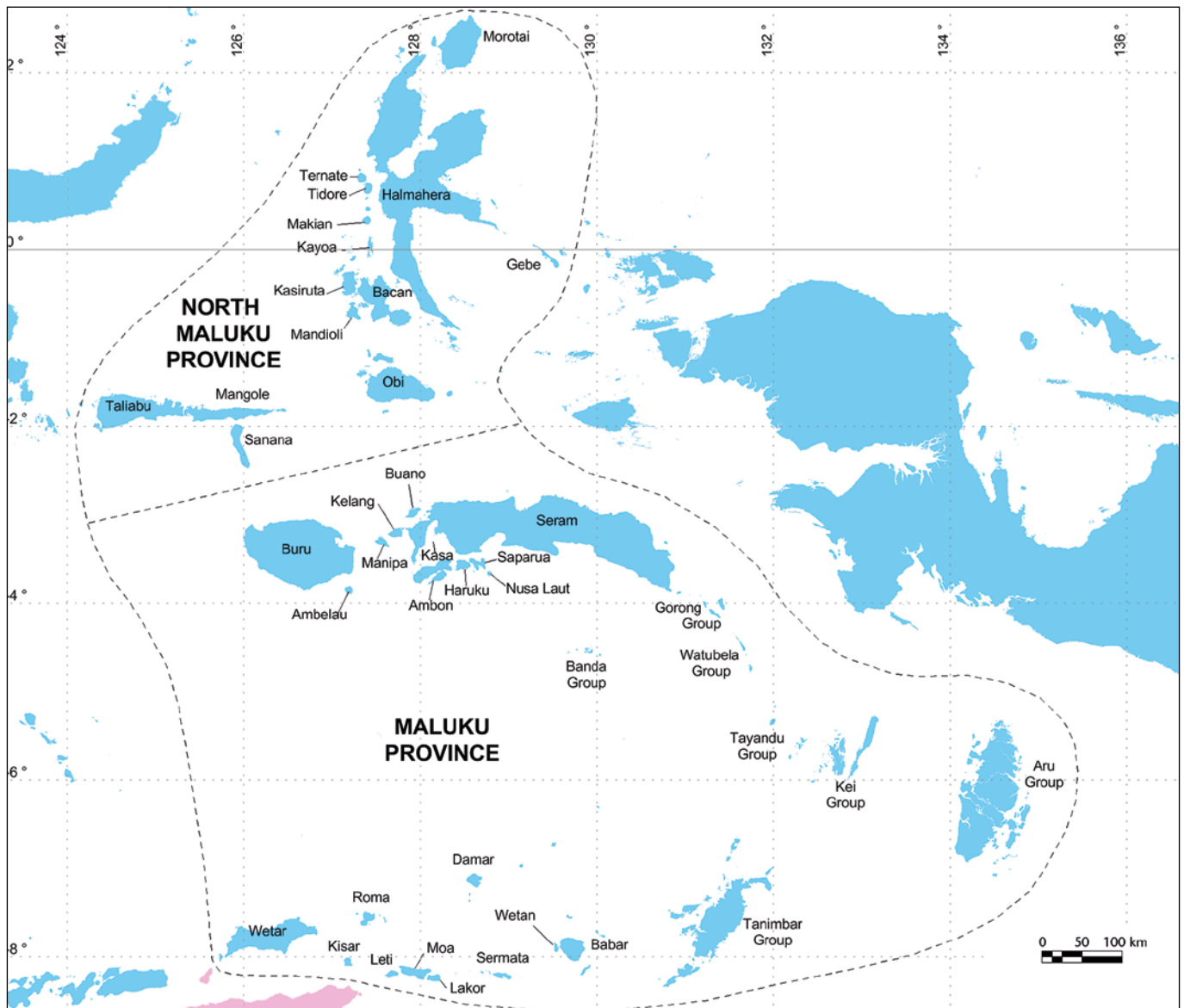
*thoptera croesus* (WALLACE, 1859)]), suggesting a closer affinity with New Guinea than with northern Maluku. Very few species occur both on Gebe and in northern Maluku but not in the New Guinea Region. Those that do so include *Appias placidia* (STOLL, 1790) (hitherto unpublished record for Gebe), *Parantica 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’ABRERA 1990), and the change in colour pattern and mimicry complex centred on *Euploea leucostictus* (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 (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



Map 1: Indonesia, showing the combined provinces comprising “Maluku” *sensu lato*.



Map 2a: Provinces of North Maluku and Maluku — island names used in the text.



Map 2b: Island details in eastern Maluku province.

consider them separately as they lie approximately 120 km south of Seram and have a distinct geological history. Seram, together with Ambon and Buru, lies within the Banda Arc, one of the most geologically complex parts of the planet, and the tectonic history

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 km<sup>2</sup> 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), *Mynes 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 liris* 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 extension 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 endemism 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

antl.	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 CASSIDY, 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 *astraptus* FELDER, 1860, but that the ♀ of *pulchrior* had the ups. blue area more restricted than the *astraptus* ♀ (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* (FRUHSTORFER, 1916)

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

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

**Range:** Sulawesi, Talaud and Peleng in the Banggai Islands (VANE-WRIGHT & DE JONG 2003), Taliabu (new island record: i. 2005, CARR).

**Note:** This is the first record of *J. bochus* from the Sula Islands.

#### *Jamides bochus toscius* (FRUHSTORFER, 1916)

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

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

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

#### *Jamides bochus polassar* (FRUHSTORFER, 1916), **stat. rev.**

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

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

**Range:** Obi (BMNH).

**Note:** FRUHSTORFER described only the ♂ of *polassar* but a ♀ bearing a FRUHSTORFER collection label is illustrated here (Pl. 1, Fig. 11). He compared the ♂ to *astraptus* 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 FRUHSTORFER in treating *polassar* as a valid subspecies of *bochus*.

D'ABRERA (1971 [*et seq.*]) listed *polassar* as a synonym of *astraptus* without explanation. There is little to separate the ♂ HTs of each taxon, but the ♀ *polassar* clearly differs from both *toscius* and *astraptus*, 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 *astraptus* and *toscius*. We therefore follow FRUHSTORFER and retain *polassar* as the subspecific name for *J. bochus* from Obi, **stat. rev.**

#### *Jamides bochus astraptus* (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 astraptus*: C. FELDER (1860: 456); TL: Ambon.

= *Lampides bochus soarchad*: FRUHSTORFER (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 ♂, Tomalehu Barat, 18. ix. 1993), Kelang (5 ♂♂, xi. 2003; 1 ♂, viii. 2008), Kasa Island, off Seram (3 ♂♂, xii. 2004), Haruku (4 ♂♂, 1 ♀, x. 2006) and Banda Islands (1 ♂, Banda Besar, 30. v. 1998; 1 ♀, Naira, 4. i. 1991, see note 3) (CARR).

**Note 1:** FRUHSTORFER (1916), in describing *soarchad*, wrote: "The ♂ differs from *grata* [GROSE SMITH, 1895] and *herdonius* [FRUHSTORFER, 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 *astraptus*. D'ABRERA (1971) listed "*J. bochus soarchad*" (*sic*) and recorded the range as "Kai (Ewab) I." 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 astraptus* from central Maluku (Ambon, Seram).

**Note 2:** Neither D'ABRERA (1971) nor PARSONS (1998) mentioned Aru in the range of *bochus*. However there are 2 ♂♂ and 3 ♀♀ from Aru in the BMNH. FRUHSTORFER (1916) listed specimens from Aru as "*L. bochus* subsp. 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 *candrena* HERRICH-SCHÄFFER 1869 (TL: Fiji) (HIROWATARI 1992, TENNENT 2006).

We have examined specimens from Aru and find them clearly different from Fiji *candrena* material. They are also unlike *J. bochus grata* from Tanimbar and easily separable from specimens from Fakfak (= Kapaur) 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 *astraptus*, 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. NAGAI, 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 astraptus* from central Maluku (♂ wingspan usually 2.5–3 cm). In addition we have one faded ♀ (Naira Island, 4. i. 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 *astraptus*. It is otherwise similar. On the basis of these two specimens we provisionally place *bochus* from Banda with *J. bochus astraptus*.

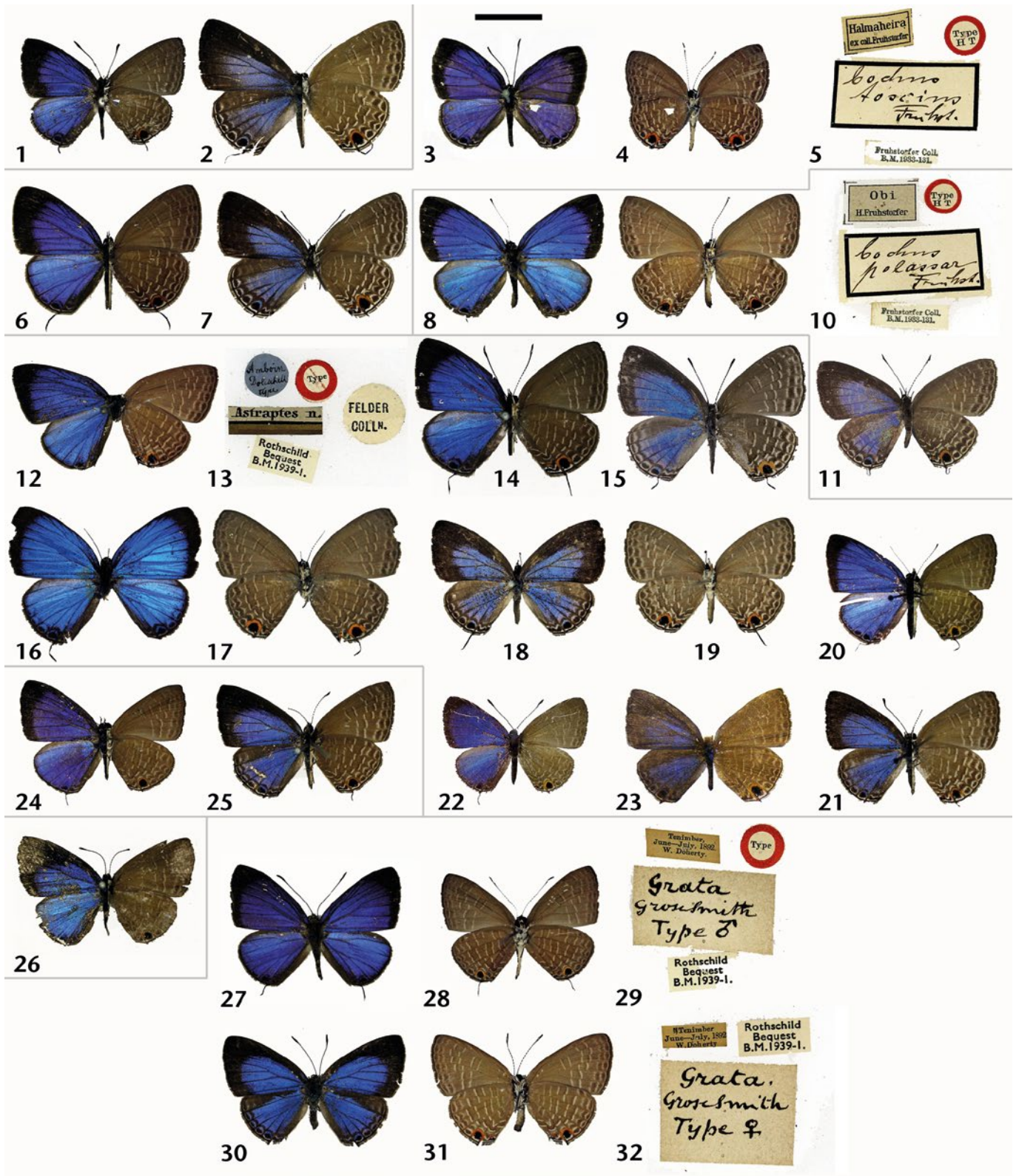


Plate 1, Figs. 1–32: Subspecies of *Jamides bochus*. — Figs. 1–2: *J. bochus phaidon*; 1: ♂, ups./uns., Taliabu (i. 2005; CARR); 2: ♀, ups./uns., Sulawesi (Makassar, 1896, W. DOHERTY). — Figs. 3–7: *J. bochus toscius*. Figs. 3–5: ♂ "type", Halmahera; 3: ups.; 4: uns.; 5: label. Fig. 6: ♂, ups./uns., Halmahera (VIII. 1892, W. DOHERTY). Fig. 7: ♀, ups./uns., Bacan (VIII. 1897, W. DOHERTY). — Figs. 8–11: *J. bochus polassar*. Figs. 8–10: ♂ HT, Obi; 8: ups., 9: uns., 10: label. Fig. 11: ♀, ups./uns., Obi (FRUHSTORFER coll.; BMNH Accessions). — Figs. 12–23: *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 (III. 2009; CARR). Figs. 16–17: ♂, Aru (IV.–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 astraptes* (formerly *soarchad*). Fig. 20: ♂, ups./uns., Kur (13. VII. 1898, H. KÜHN). Fig. 21: ♀, ups./uns., Kur (29. VI. 1898, H. KÜHN). Fig. 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 herdonius*. 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. FORBES). — 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*, Tanimbar; Figs. 30–32: ♀ ST, Tanimbar.)*Jamides grata*: GROSE SMITH (1895: 510); TL: Tanimbar.

Range: endemic to the Tanimbar 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*. HIROWATARI (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 ♂♂, Daeco, 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, Teoer"; 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 col-

lection data in Dutch language. At the time of his publication CASSIDY assumed that "Teoer" 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 Teoor 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. The label reads "Teoor, 6. XI. [18]99, (H. KÜHN)".

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. KÜHN, ROTHSCHILD bequest B.M. 1939-1. GP: Rhopalocera vial number 8969 (BMNH).

Paratypes (in total 4 ♂♂): 2 ♂♂, Gr. Kei [Kei Besar], iv. [18]96, WEBSTER; 1 ♂, Ké Id., HEWITSON Coll.; 1 ♂, Aru Is., ix. 1900, (H. KÜHN), ROTHSCHILD bequest B.M. 1939-1. GP: Rhopalocera vial number 8970 (all BMNH).

Etymology: named for Richard GIBBS, friend of the first author.

Range: Kei (Kei Kecil, Kei Besar) and Aru Islands (BMNH).

**Diagnosis**

♂ (Pl. 2, Figs. 43–44): Fwl. 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 subterminal 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 *J. s. vanlithi*), edged white, strongly oblique to termen; an additional band 1 mm wide at base, subparallel to termen.

♂ **genitalia** (Pl. 2, Figs. 46, 48) (BMNH Rhopalocera vial number 8969): The ♂ genitalia are typical of *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 phallus of nominotypical *seminiger* from Bacan, as drawn by HIROWATARI, in Figs. 45, 47 (Pl. 2). The equivalent structures of *richardi* from Little Kei and Aru are shown in Figs. 46 and 48.

♀: unknown.

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

### *Jamides amarauge* DRUCE, 1891

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

**Range:** mainland New Guinea, Bismarcks, many of the Solomon Islands and Darnley Island in Torres Strait (PARSONS 1998, TENNENT 2006) and Aru and other islands off West Papua – see notes.

**Notes:** DRUCE (1891) described *amarauge* from Alu Island in the west of the Solomons Archipelago; *J. a. heppworthi* TENNENT, 2001 was subsequently described from Nendo and Vanikoro in the north of the New Hebrides Archipelago.

Neither PARSONS (1998) nor D'ABRERA (1971) included Aru in the species range. However HIROWATARI (1992: 45) misquoted DRUCE stating Aru instead of Alu. A single ♂ from Aru in the BMNH, together with additional Aru specimens received from K. NAGAI, represent the first published record of *J. amarauge* from Maluku.

A note in G. E. TITE's handwriting accompanies *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 *amarauge* from the Solomons." We have examined these specimens and agree with TITE 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 ♂♂ is a paler shade of blue (TITE calls it green), verging on blue-green and is more lustrous, and secondly, Solomons ♂♂ and ♀♀ 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.

### *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.)

**Holotype** ♂: Indonesia, Aru, HEWITSON Coll. 79-69. "*Lycaena pavana*.1." (BMNH).

**Paratypes** (in total: 6 ♂♂, 6 ♀♀): 1 ♂, Aru, Trangan, Taberfane, 1. xi. 1994. 1 ♀, Aru, Trangan, Taberfane, 18. xi. 1994. 2 ♀♀, Aru, Maikoor, Fatujuring, 4. iv. 2001 (all CARR). 2 ♂♂, 1 ♀, Papua, Humboldt Bay [= Yos Sudarso Bay, Jayapura area], Sept.–Oct. 1892, W. DOHERTY, ROTHSCHILD bequest B.M. 1939-1. 1 ♂, 2 ♀♀, Humboldt Bay, Sept.–Oct. 1892, W. DOHERTY, ex. coll. BETHUNE-BAKER, B.M. 1927-360. 1 ♂, Humboldt Bay, Sept.–Oct. 1892, W. DOHERTY, ex. Coll. H. DRUCE 1919, JOICEY Bequest, Brit. Mus., 1934-120. 1 ♂, Humboldt Bay, Sept.–Oct. 1892, W. DOHERTY, GODMAN-SALVIN coll., 1908-168 (all BMNH).

**Etymology:** named for Amanda, the sister of the second author.

**Range:** Misool, Waigeo, Supiori, Aru, and widespread in mainland New Guinea (BMNH). Within Aru new island records from Maikoor (2 ♀♀, Fatujuring, 4. iv. 2001) and Trangan (1 ♂, Taberfane, 1. xi. 1994; 1 ♀, Taberfane, 18. xi. 1994) (CARR). K. NAGAI (pers. comm.) also reports the species from Kobroor Island.

### 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 *amarauge*); termen broadly black (narrower than nominotypical *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 end of cell, 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 *amarauge*), increasing in width from 3 mm at tornus to 6 mm at apex and 2 mm along costa; boundary between border and ground colour diffuse; cilia black; fw. uns. uniformly 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* (BOISDUVAL, 1832)

*Catachrysops cyta*: BOISDUVAL (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 “Solomons” in the distribution of *J. cyta* (as *J. cytus*). *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: ♂ Mangole; Fig. 66: ♀ Sanana.)

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

**Range:** endemic to the Sula Islands: Mangole, Sanana (VANE-WRIGHT & DE JONG 2003), Taliabu (new island record: 1 ♀, I. 2005; 1 ♀, II. 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 ♀, VII. 2003; 1 ♂, 1 ♀, XI. 2004; 1 ♀, I. 2006; 3 ♂♂, Daeco, 17. VIII. 1995, X. 2002, XI. 2004), Kasiruta (4 ♂♂, 1 ♀, III. 2003) and Mandioli (1 ♂, 2 ♀♀, 11. XI. 2006) (CARR).

**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 FROST. There is also a series of 5 ♂♂ and 1 ♀ of *J. cyta amphissa*, each bearing the same typed labels: “Obi, ex J. WATERSTRADT 1904, ex OBERTHÜR Coll. Brit Mus. 1927-3”. These, and other similar labels concerning other taxa in this paper, are believed to be erroneous, as TENNENT & RAWLINS (2012) explained. A drawer label in the BMNH questions the accuracy of these WATERSTRADT labels associated with *J. cyta amphissa* and, in researching the present paper, the authors encountered identical labels on specimens of *J. titei pseudocyta* and *J. schatzi schatzi*, 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 emetallicus*.

### *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: 455); 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 Manovolka) (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 highly 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 ♀♀ mentioned 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 basad 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 callinicus*. 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 new island records from Wokam (1 ♀, iv. 2002), Maikoor (1 ♀, Gardekau, 30. III. 1995) and Kobroor (1 ♂, Gulila, v. 1997) (CARR). In addition, K. NAGAI (pers. comm.) collected specimens on Trangan.

**Note:** SWINHOE (1915), in describing *Jamides aruensis*, presumably overlooked *Cupido euechylas* var. *aruensis* PAGENSTECHER, 1884, a quite different *Jamides* taxon. (See *J. aruensis* PAGENSTECHER, below.) In 1916, SWINHOE described *Zizera aruensis* (= *Zizina otis aruensis*). BRIDGES (1988) erroneously did not list *Jamides aruensis* SWINHOE, 1915, but he did mistakenly include *aruensis* SWINHOE, 1916, as a species of *Jamides* and noted that it “could be a primary homonym”, we presume of PAGENSTECHER’s *aruensis*. BRIDGES reference was to “*Zizera* (?*Zizeeria*) *aruensis*” (= *Zizina otis aruensis*) and not SWINHOE’s *Jamides aruensis* of 1915, which has been generally overlooked in the literature.

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 cyta stevei* ssp. n.

(Pl. 3, Figs. 87–88: ♀ HT, Tanimbar.)

**Holotype** ♀: Indonesia, Tanimbar, Yamdena Island, 20 miles N of Saumlaki, XII. 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, antl. 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; cilia 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* BOISDUVAL, 1832, and that the male genitalia also appeared typical of the *cyta* subgroup.

**Plate 2, Figs. 33–48: *Jamides seminiger*.** — Figs. 33–36: *J. seminiger tiglath*. Figs. 33–34: ♂ HT, Mangole (x.–xi., DOHERTY); 33: ups./uns.; 34: label. Fig. 35: ♂, ups./uns., Mangole (x. 1897, W. DOHERTY). Fig. 36: ♀, ups./uns., Mangole (x. 1897, W. DOHERTY; BMNH accessions). — Figs. 37–38: *J. seminiger seminiger*. Fig. 37: ♂, ups./uns., Bacan. Fig. 38: ♀, ups./uns., Bacan (III. 1892, W. DOHERTY). — Figs. 39–40: *J. seminiger porphyris*. Fig. 39: ♂, ups./uns., Buru (North Coast, xi. 1897, W. DOHERTY). Fig. 40: ♂, ups./uns., Obi (Laiwui, ix. 1897, W. DOHERTY). — Figs. 41–42: *J. seminiger vanlithi*, Ti oor (Teoor, 6. xi. 1899, H. KÜHN). Fig. 41: ♂, ups./uns. Fig. 42: ♀, ups./uns. (BMNH accessions). — Figs. 43–44: *J. seminiger richardi* ssp. n., ♂ HT, Kei (Little Kei, H. KÜHN); 43: ups., 44: uns. — Figs. 45–48: ♂ genitalia. Figs. 45 + 47: *J. seminiger seminiger*, ♂, Bacan; 45: armature + valva, from HIROWATARI (1992: figs. 20A, B); 47: phallus, from HIROWATARI (1992: figs. 20C, D). Figs. 46 + 48: *J. seminiger richardi* ssp. n., ♂ HT, Kei (Little Kei, H. KÜHN) and other specimen, Aru; 46: lateral view of armature; 48: phallus. — Figs. 49–56: *Jamides soemias*. — Figs. 49–52: *J. soemias purpurata*. Figs. 49–51: ♂ HT, Humboldt Bay, Papua (ix.–x. 1892, W. DOHERTY); 49: ups.; 50: uns.; 51: label. Fig. 52: ♀ PT, ups./uns., Simbang, PNG. — Figs. 53–56: *J. soemias soemias*, Solomon Islands (NW Bay, Malaita Island). Figs. 53–55: ♂ HT; 53: ups.; 54: uns.; 55: label. Fig. 56: ♀ PT, ups./uns. — Figs. 57–64: *Jamides amaraugae*. — Figs. 57–62: *Jamides amaraugae amandae* ssp. n. Figs. 57–58: ♂ HT, Aru (HEWITSON coll. 79–69); 57: ups.; 58: uns. Figs. 59–60: ♀ PT, Aru (Trangan Island, Taberfane, 18. xi. 1994, K. NAGAI; CARR); 59: ups.; 60: uns. Figs. 61–62: Humboldt Bay, Papua (ix.–x. 1892, W. DOHERTY); 61: ♂ PT, ups./uns.; 62: ♀ PT, ups./uns. — Figs. 63–64: *J. amaraugae amaraugae*, Solomon Islands; 63: ♂, ups./uns. (Guadalcanal, v. 1901, A. S. MEEK); 64: ♀, ups./uns. (ex coll. OBERTHÜR coll. Brit. Mus. 1927–3). — Figs. 65–88: *Jamides cyta*. — Figs. 65–66: *J. cyta hellada*. Fig. 65: ♂, ups./uns., Mangole (x. 1897, W. DOHERTY). Fig. 66: ♀, ups./uns., Sanana (x. 1897, W. DOHERTY). — Figs. 67–68: *J. cyta amphissa*, Bacan (ex J. WATERSTADT, 1904). Fig. 67: ♂, ups./uns. Fig. 68: ♀, ups./uns. — Figs. 69–70: *J. cyta megdora*. Fig. 69: ♂, ups./uns., Obi (ex coll. Hamilton DRUCE, 1919). Fig. 70: ♀, ups./uns., Obi (Laiwui, ix. 1897, W. DOHERTY). — Figs. 71–72: *J. cyta madara*. Fig. 71: ♂, ups./uns., Kei (Tual, i.–III. 1896, H. C. WEBSTER). Fig. 72: ♀, ups./uns., Kei (WALLACE). — All specimens deposited in BMNH, if not indicated otherwise. — Scale bar (top centre) for all specimens = 1 cm.



***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 pseudocyta* TENNENT & RAWLINS, 2012**

(Pl. 3, Figs. 93–94: ♂ HT, Bacan; Figs. 95–96: ♀ PT, Bacan.)

*Jamides titei pseudocyta*: TENNENT & RAWLINS (2012: 140, figs. 8–11); TL: Bacan.

Range: Bacan and Mandioli.

Note: A pair of *J. titei pseudocyta* 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*).

**The *celeno* subgroup**

HIROWATARI (1992) included three species, *celeno* CRAMER, 1775, *fractilinea* TITE, 1960 and *pura* MOORE, 1886, in this subgroup. The status of the taxon *butleri* ROTH-SCHILD, 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 ssp. 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 Sula 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*: RIBBE (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*: RIBBE (1926: 90), syn. n.; TL: Kalawara, Sulawesi – see note 5.

= “*Lampides minisculus* RIBBE, *nomen nudum*”: TAKANAMI (1989: 50, *nomen nudum*; see note 7).

= “*Lampides flavomaculata* RIBBE, *nomen nudum*”: TAKANAMI (1989: 50, *nomen nudum*; see note 7).

Range: Talaud, Sulawesi, Tukangbesi and Peleng (VANE-WRIGHT & DE JONG 2003, see note 1), Sula Islands (Mangole and Sanana) (BMNH), see note 5.

Note 1: VANE-WRIGHT & DE JONG (2003) included the Philippines in the distribution of *J. celeno optimus*, but TREADAWAY & SCHROEDER (2012) and TAKANAMI & SEKI (2014) treat the Philippines population as *J. celeno lydanus* FRUHSTORFER, 1916.

Note 2: RÖBER (1886) described *Plebeius optimus* and gave the type locality as: “Malacca (Perak) und Ost-Celebes (Tomboegoe)”. Malacca is in West Malaysia where *J. celeno aelianus* FABRICIUS, 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 undeclared number of ♀♀, giving the type locality as “Ost-Celebes (Tomboegoe)”. 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 “*grisea* RÖB.” 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 transcribed 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 RIBBE (1926) named “*Lampides kalawarus punctatus* (n. subsp.)”, referring to it as “ab. *punctatus*” later in the same paragraph. TAKANAMI (1989) synonymised *punctatus* with *kalawarus*.

RIBBE (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 con-

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 *kalawarus*), 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 *kalawarus* 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 *sandy*, Halmahera; Fig. 108: ♀ ST, Halmahera; Fig. 109: ♂ Aru; Fig. 110: ♀ Aru.)

*Lampides celeno sandya*: FRUHSTORFER (1916: 6); TL: Halmahera.

**Range:** Halmahera, Ternate, Bacan, Obi, Seram, Ambon (see notes following *J. butleri*), Aru (Wamar, Kobroor; see note) (BMNH) and new island records from Morotai (5 ♂♂, 3 ♀♀, vi. 2006; 1 ♂, Daao, 20. viii. 1995; 1 ♂, Buho Buho, 8. xii. 1990), Kasiruta (1 ♂, xi. 2007), Mandioli (4 ♂♂, 2 ♀♀, Waya, 11. xi. 2006), Gebe (4 ♂♂, 1 ♀, 20. i. 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 *sandy* 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* [sic, 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*, Banda; Fig. 116: ♀ ST, Banda.)

*Lampides celeno sundara*: FRUHSTORFER (1916: 6); TL: Banda.

**Range:** Buru (see note 1), Banda (Banda Besar, labelled Greater Banda), Watubela Islands (Tioor, see note 2), Tayandu group (Kur, labelled Koer), Kei, Alor, Sema, Timor, Southwest Maluku Islands (Wetar, Kisar, Roma, Leti, Moa, Damar, Sermata, Wetan, Babar), Tanimbar (Selaru, Yamdena, Larat), New Guinea, Bismarck and Solomon Islands (RAWLINS 2007; BMNH). New island records from Naira (1 ♂, 1 ♀, 2. i. 1991; 2 ♂♂, 11. xi. 1998) in the Banda group, Kei Kecil (1 ♂, Tual, x. 2001; 1 ♂, viii. 2010) and Kei Besar (1 ♂, Yamtimur, 7. i. 1991; 1 ♂, 1 ♀, Yamtimur, v. 2002) in the Kei Islands and Tandula (5 ♂♂, 1 ♀, iv. 2008) and Molu (3 ♂♂, 3 ♀♀, x. 2008) in the Tanimbar Islands (CARR).

**Note 1:** The ♂ and ♀ syntypes of ssp. *sundara* (wrongly referred to as "*sundana*" by D'ABRERA throughout his work) at the BMNH bear handwritten labels stating "Banda". FRUHSTORFER gave the distribution of *sundara* as Banda and Buru, and the 11 ♂♂ and 2 ♀♀ from Buru in the BMNH have been included with subspe-

cies *sandy*. However, although ♂♂ of both subspecies are indistinguishable, the respective ♀ STs of *sandy* and *sundara* are clearly different, with the main distinguishing feature being the extent of brown colouration on the ups. hw. anterior margin. In the *sundara* ♀ ST this is restricted to space 6 (unfortunately the ♀ ST photograph in Pl. 4, Fig. 116 does not show this as the fw. is set overlapping hw. space 6) whereas in the *sandy* ST it extends also to include space 7. The two small Buru ♀♀ lack the brown shading in both spaces 6 and 7 and quite possibly represent a distinct subspecies, but for now we provisionally include the Buru *celeno* population with *sundara*. TENNENT (2002: 99) erroneously gave the TL of *sundara* as Buru.

**Note 2:** As mentioned earlier, ♂♂ of *sandy* and *sundara* are difficult or impossible to separate. There are 3 ♂♂ and 1 ♀ in the BMNH from Tioor Island within the Watubela Group. The only ♀ available appears intermediate between the two taxa but is more typical of *sundara*, with which it is provisionally included here.

### *Jamides butleri* (ROTHSCHILD, 1915)

(Pl. 4, Figs. 117–118: ♂ ST *butleri*, Seram; Fig. 119: ♂ Tioor; Fig. 120: ♀ Seram.)

*Lampides butleri*: ROTHSCCHILD (1915: 138); TL: Central Seram.

**Range:** Obi, Buru, Seram, Ambon, Haruku, Saparua, Nusa Laut, Gorong Islands (Gorong, labelled Goram Laut) and Watubela Islands (Tioor, labelled Teoor), Misool, New Guinea (BMNH) and new island records from Mangole (1 ♀, iv. 2005), Ambelau (1 ♂, 1 ♀, xi. 2012) and Manipa (5 ♂♂, ix. 1993; 1 ♂, iv. 2009) (CARR).

**Note 1:** ROTHSCCHILD described *butleri* from 1 ♂ and 2 ♀♀. In describing the sole ♂, ROTHSCCHILD gave "Hw. without marginal spots" as a diagnostic feature, but whilst this is true of the ♂ ST (Pl. 4, Fig. 117), many *butleri* ♂♂ do have hw. black marginal spots (Pl. 4, Fig. 119).

**Note 2:** The status of the taxon *butleri* remains uncertain. ROTHSCCHILD (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 (1982) both considered *butleri* to be a distinct species whereas BRIDGES (1988) listed it as a subspecies of *celeno*. HIROWATARI (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 *sandy* 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. SCHRÖDER purportedly from Manipa

(between Buru and Seram). We also have recent records of *butleri* from Mania. However, there are a number of historical specimens of *celeno sandya* 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 *J. 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 Watubela 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 Mania 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 *J. celeno*. Perhaps molecular analysis of fresh specimens will resolve this issue in the future.

### *Jamides pura* (MOORE, 1886)

*Lampides pura*: MOORE (1886: 41); TL: Mergui.

**Range:** India, Burma (Myanmar), Thailand, Laos, S. China, Malay Peninsula, Singapore, Palawan, Balabac, Borneo, Indonesia (including Sumatra and some offshore islands, Java, Obi) (D'ABRERA 1977, 1986, SEKI et al. 1991).

### *Jamides pura spitamenes* (FRUHSTORFER, 1916)

(Pl. 3, Fig. 97: ♂ HT, Obi; Pl. 8, Fig. 256: genitalia.)

*Lampides suidas spitamenes*: FRUHSTORFER (1916: 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 of the upper surface with 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 much 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 tenuis* FRUHSTORFER, 1916, from Borneo and *J. pura eordaea* FRUHSTORFER, 1916, from Palawan. In external appearance, *spitamenes* differs from *tenuis* 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, Balabac and eastern Indonesia. It appears to be unknown from the Sulawesi Region and, with the 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* TITE, 1960

*Jamides fractilinea*: TITE (1960b: 335, figs. C, F, G); TL: Sulawesi.

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

### *Jamides fractilinea fractilinea* TITE, 1960

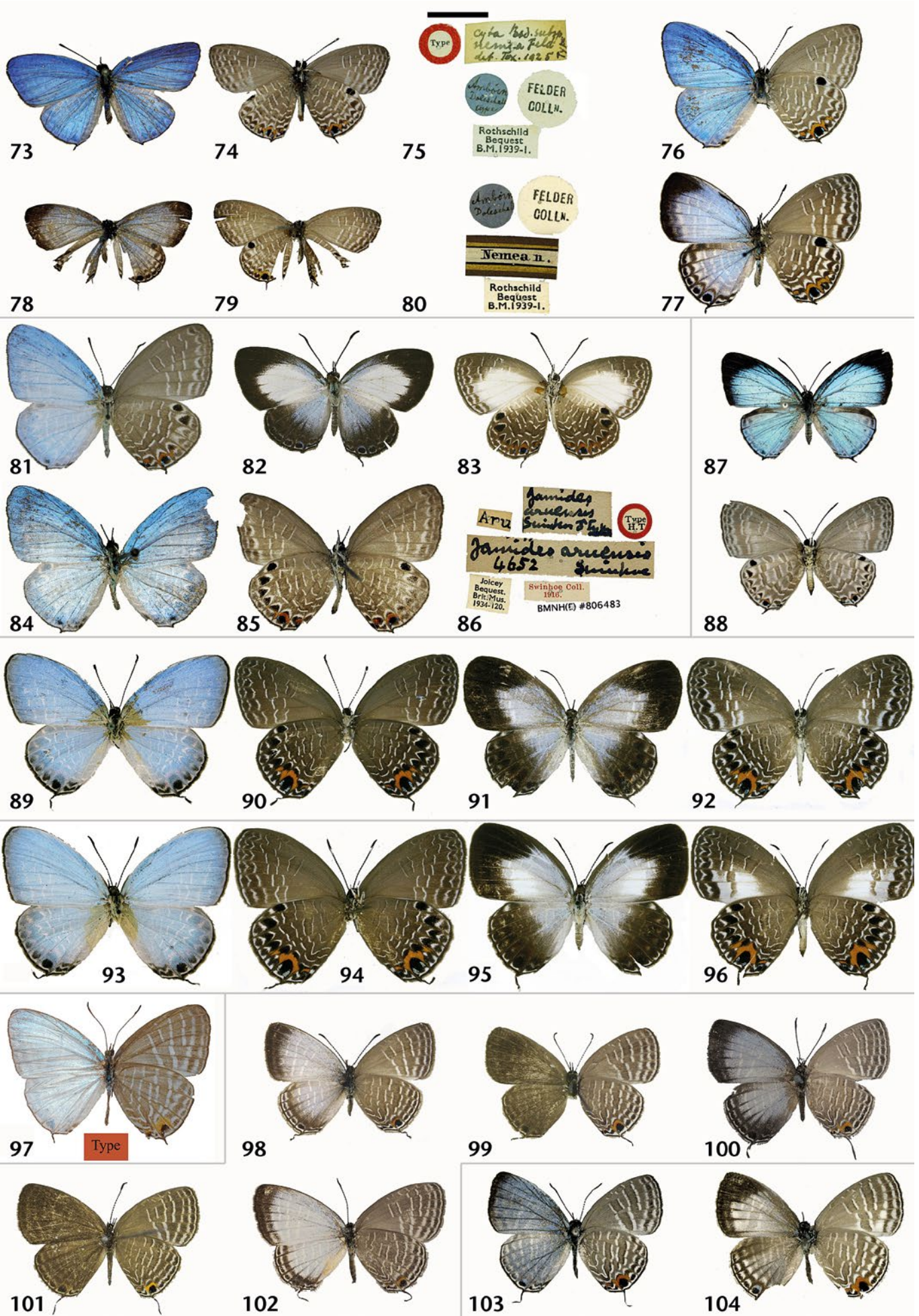
(Pl. 4, Figs. 121–123: ♂ HT, Sulawesi; Figs. 124–126: ♀ PT, Sulawesi.)

**Range:** Sulawesi (BMNH).

**Notes:** In his original description, TITE (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 a ♂ HT and ♀ allotype (*i.e.*, PT), both from Macassar, Celebes (Sulawesi), and included a ♂ from Mangole (Sula Islands) in a list of “Other material examined”.

TITE (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 Sula-

**Plate 3, Figs. 73–88: *Jamides cyta*. — Figs. 73–80: *J. cyta nemea*. Figs. 73–75: ♂ HT, Ambon; 73: ups.; 74: uns.; 75: label. Fig. 76: ♂, ups./uns., Ambon (1900, REY). Fig. 77: ♀, ups./uns., Ambon (ii. 1892, W. DOHERTY). Figs. 78–80: ♀ PT, Ambon; 78: ups.; 79: uns.; 80: label. — Figs. 81–86: *J. cyta aruanus*. Fig. 81: ♂, ups./uns., Aru (iv.–vi. 1896, WEBSTER). Figs. 82–83: ♀, Aru (HEWITSON coll.); 82: ups.; 83: uns. Figs. 84–86: ♂ (SWINHOLE 1915 “*aruensis*” HT), Aru; 84: ups.; 85: uns.; 86: label. — Figs. 87–88: *J. cyta stevei* ssp. n., ♀ HT, Tanimbar (20 m N of Saumlaki, Yamdena Island, xii. 2006; BMNH); 87: ups.; 88: uns. — Figs. 89–96: *Jamides titei*. — Figs. 89–92: *J. titei titei*. Figs. 89–90: ♂ HT, Halmahera (Patani, SE Halmahera, xii. 1929, F. SHAW-MEYER); 89: ups.; 90: uns. Figs. 91–92: ♀ PT, Halmahera (JOICEY Bequest); 91: ups.; 92: uns. — Figs. 93–96: *J. titei psudocyta*. Figs. 93–94: ♂ HT, Bacan (iii. 1892, W. DOHERTY); 93: ups.; 94: uns. Figs. 95–96: ♀ PT, Bacan (iii. 1892, W. DOHERTY); 95: ups.; 96: uns. — Fig. 97: *Jamides pura spitamenes*, ♂ HT, ups./uns., Obi (1909, FRIED.; NHMB). — Figs. 98–116: *Jamides celeno*. — Figs. 98–102: *J. celeno optimus*. Figs. 98–99: ups./uns., Sanana (“Sula Besi” = Sanana, x. 1897, W. DOHERTY); 98: ♂; 99: ♀. Figs. 100–102: ups./uns., North Sulawesi (Toli Toli, xi.–xii. 1895, H. FRUHSTORFER); 100: ♂, darker form; 101: ♀; 102: ♂, lighter form. — Figs. 103–110: *J. celeno sandya*. Figs. 103–104: ups./uns., Gebe (20. i. 2010; CARR); 103: ♂; 104: ♀. — All specimens deposited in BMNH, if not indicated otherwise. — Scale bar (top centre) for all specimens = 1 cm.**



wesi *fractilinea* series. We have examined this GP at the BMNH (slide number 28145) and confirm that it matches his *fractilinea* genitalia drawings (TITE 1960b: 334). However, the Mangole ♂, and a second ♂ in the BMNH from an unspecified island in the Sula group are sufficiently different from Sulawesi *fractilinea* to warrant recognition as a distinct subspecies.

***Jamides fractilinea saraharum* ssp. n.**

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

**Holotype** ♂: Indonesia, Sula Islands, Sula Mangoli, [Mangole], Oct. [18]97, (W. DOHERTY), ROTHSCHILD Bequest B.M. 1939-1, GP 1959, G.E.T., Slide No. [28]145 (BMNH).

**Paratype**: 1 ♂, Soela Is. [Sula Islands], W. J. C. FROST. 1918. June, July, Sept., 1918, JOICEY Bequest. Brit. Mus. 1934-20 (BMNH).

**Eymology**: 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* FRUHSTORFER, 1916 (TL: Timor; but see notes under *J. aratus sestus*) belonged. HIROWATARI further stated that FRUHSTORFER (1916) “treated these species correctly.” However, FRUHSTORFER placed *sestus* with *aetherialis*, whereas RAWLINS (2007) included *sestus* as a subspecies of *aratus*. Genitalic dissection of the *sestus* 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 *sestus* 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 *sestus*; 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 FRUHSTORFER 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 *sestus* as a subspecies of *aetherialis* from Timor claiming, by implication, sympatry with *aratus masu*. It is noted that SEITZ accepted FRUHSTORFER’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. FRUHSTORFER (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 FRUHSTORFER’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 recognising *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 Amboina”, 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 Lomblen 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*.

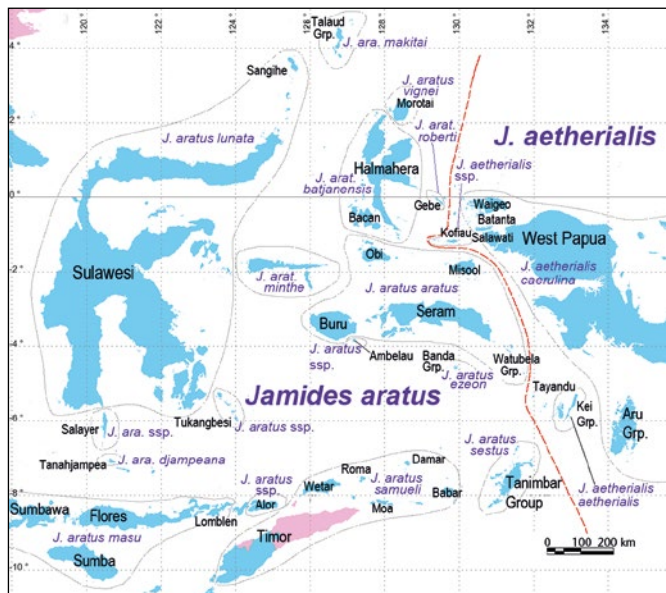
As might be predicted the same taxon occurs on Geser and Seram Laut as on Seram and it seems that *aratus* occurs through the Gorong Islands at least as far south-east as the Watubela Islands. Although we have not seen any *aratus/aetherialis* from the Tayandu group, these islands almost always share the same taxa with the Kei Islands (a notable exception being the presence of *Cethosia lamarcki* 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 Lomblen. It is not a synonym of nominotypical *aratus*.
- The taxon *sestus* is a subspecies of *aratus*, not of *aetherialis*.



Map 3: Allopatric distribution (boundary in red) of *J. aratus* and *J. aetherialis*.

### *Jamides aratus* (STOLL, 1781)

*Papilio aratus*: STOLL (1781 [in CRAMER & STOLL]: 144, pl. 395, figs. A, D); TL: Ambon.

**Range:** Malay Peninsula, Sumatra, Java, Lesser Sunda Islands, Borneo, Sibutu, Palawan, Balabac, Sulawesi Region, northern & central Maluku (VANE-WRIGHT & DE JONG 2003).

**Note:** D'ABRERA (1971), as discussed above, included all *aetherialis* taxa within *aratus* and therefore mistakenly included Kei, New Britain, Duke of York and Solomons(?), and "West Irian" 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 additional new ssp., 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, Daeco, vii. 2003 (BMNH).

**Paratypes** (7 ♂♂, 4 ♀♀): 1 ♀, Morotai, Pilowo, 10. xii. 1990 (BMNH); 1 ♂, 1 ♀, Buho Buho, 8. xii. 1990; 1 ♂, Daeco, iii. 1994; 1 ♂, Daeco, x. 2002; 1 ♂, x. 2002; 1 ♀, viii. 2003; 1 ♂, i. 2006; 1 ♂, 1 ♀, i. 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, Mandioli and Kasiruta, but differed in the notably wider ups. fw. marginal black borders. The overall darkness 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 typical *batjanensis* specimen seen from the rest of northern Maluku. Genital 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.

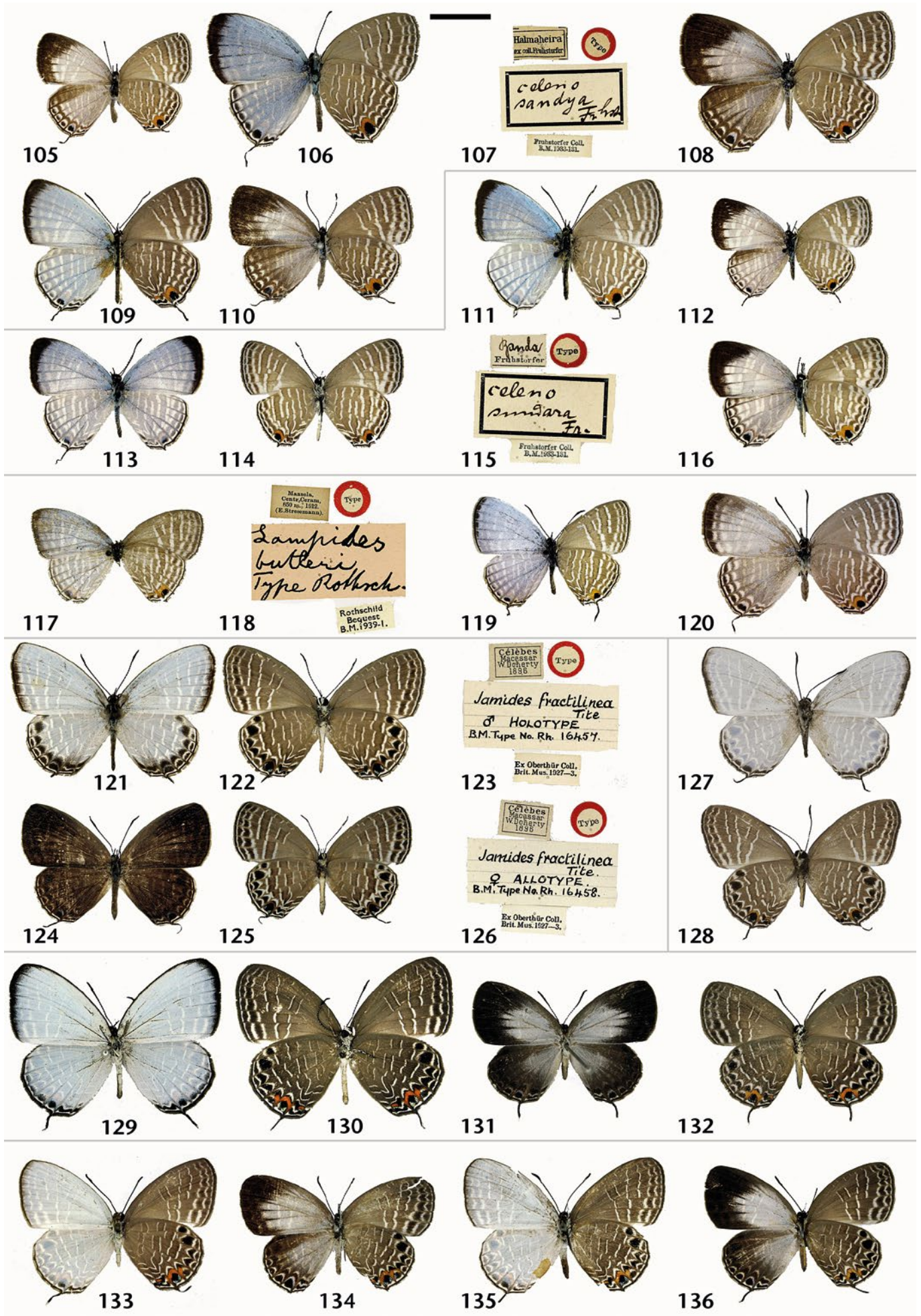
### Diagnosis

♂ (Pl. 4, Figs. 129–130): Fwl. 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. batjanensis*); cilia black; fw. uns. 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 subterminal grey-brown spots between veins; prominent spots in spaces 1b and 2; the latter irregular and wavy, subparallel to termen; cilia black; hw. uns. uniform grey-brown; adjacent terminal and subterminal bands 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 present on inner side of subterminal band between tornus and halfway 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): Fwl. 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. celeno sandya*. Fig. 105: ♀, ups./uns., Ambon (ix., H. FRUHSTORFER). Figs. 106–107: ♂ ST, Halmahera (ex coll. FRUHSTORFER); 106: ups./uns.; 107: label. Fig. 108: ♀ ST, ups./uns., Halmahera (ex coll. FRUHSTORFER). Fig. 109: ♂, ups./uns., Aru (iv.–vi. 1896, WEBSTER). Fig. 110: ♀, ups./uns., Aru (Dobo, 4. iii. 1911, C. B. KLOSS). — Figs. 111–116: *J. celeno sundara*. Figs. 111–112: ups./uns., Tanimbar (vi.–vii. 1892, W. DOHERTY); 111: ♂; 112: ♀. Figs. 113–116: Banda (FRUHSTORFER); 113–115: ♂ ST, ups., uns., label; 116: ♀ ST, ups./uns. — Figs. 117–120: *Jamides butleri*. — Fig. 117–118: ♂ ST, 117: ups./uns., 118: label, Seram (Manusela, 650 m, 1912, E. STRESEMANN). Fig. 119: ♂, ups./uns., Tioor (17. x. 1899, H. KÜHN). Fig. 120: ♀, ups./uns., Seram (Kairatu, 11. ii. 1892, Exp. MARTIN). — Figs. 121–128: *Jamides fractilinea*. — Figs. 121–126: *J. fractilinea fractilinea*. Figs. 121–123: ♂, HT, Sulawesi (Makassar, 1896, W. DOHERTY); 121: ups.; 122: uns.; 123: label. Figs. 124–126: ♀ PT, Sulawesi (Makassar, 1896, W. DOHERTY); 124: ups.; 125: uns.; 126: label. — Figs. 127–128: *J. fractilinea saraharum* ssp. n. ♂, HT, Mangole (x. 1897, W. DOHERTY); 127: ups.; 128: uns. — Figs. 129–166: *Jamides aratus*. — Figs. 129–132: *J. aratus vignei* ssp. n. Figs. 129–130: ♂ HT, Morotai (Daeco, vii. 2003); 129: ups.; 130: uns. Figs. 131–132: ♀ PT, Morotai (Pilowo, 10. xii. 1990); 131: ups.; 132: uns. — Figs. 133–136: *J. aratus batjanensis*. Fig. 133: ♂, ups./uns., Bacan (viii. 1897, W. DOHERTY). Fig. 134: ♀, ups./uns., Bacan (KÜHN, SEMPER coll. 1897). Fig. 135–136: (formerly *vuniya* syn. n.) ups./uns., Halmahera (Patani, SE Halmahera, xii. 1929, F. SHAW-MAYER); 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*: FRUHSTORFER (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 (2 ♂♂, 1 ♀, 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 and wrote: "The STs of *lucianus* found in SMT [= Staatliches Museum für Tierkunde, Dresden, Germany; now Senckenberg Naturhistorische Sammlungen Dresden] include a ♂ from 'Batjan', which is figured in the original description, and a ♀ from Aru though both are the same species as *aratus*. The locality of *lucianus* was given as 'Aru Is.', but RÖBER figured a ♂ from 'Batjan', and only attached a name label to that specimen." D'ABRERA (1971) mistakenly assigned *lucianus* to *J. celeno*, stating that it occurred in Aru.

**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 FRUHSTORFER, see

below). FRUHSTORFER (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* (FRUHSTORFER, 1916)

(Pl. 5, Fig. 137: ♂ Sula; Fig. 138: ♀ Sanana.)

*Lampides aratus minthe*: FRUHSTORFER (1916: 22); TL: Sula Islands.

**Range:** restricted to the Sula Islands (Mangole, Taliabu and Sanana) (VANE-WRIGHT & DE JONG 2003).

#### *Jamides aratus roberti* ssp. n.

(Pl. 5, Figs. 139–140: ♀ HT, Gebe; Pl. 8: ♀ HT, Gebe, genitalia, Fig. 254.)

**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 SMITH, 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 caeruleina* 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. 253–254). 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 ternal 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 ductus bursae and genital plate of *J. aratus adana* DRUCE, 1873. They show that the ductus bursae is strongly waisted near the junction with the ductus seminalis. Posterior to this narrowing, there are two relatively large, anteriorly-angled, laterally disposed “arrowhead” processes. Further in the posterior direction the ductus 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. 8, 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 ductus bursae 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 ductus bursae 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 Goram Laut] & Manawoka [labelled Manovolka]), Watubela Islands (Kasiui [labelled Kisoiei]), 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 ♂♂, II. 2003), Kelang (1 ♂, VI. 2003) and Haruku (7 ♂♂, 2 ♀♀, X. 2006) (CARR).

**Note 1:** FRUHSTORFER (1916) described the taxon *pseudaratus* 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 TITE 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 *pseudaratus* being founded on an error should be sunk.”

It is hard to tell if the specimen labelled as the “*pseudaratus*” ♂ ST 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 fw. border while hw are without the submarginal band.” We have examined this specimen (Pl. 5, Fig. 151 [specimen], 152 [label]) and agree with TITE’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 DOHERTY) and can see no distinction between them and nominotypical *aratus* specimens from the central Maluku islands of Ambon, Seram and Buru. The name *pseudaratus* is therefore synonymised with *masu*.

The ♀ “*pseudaratus*” “type” is clearly not *masu* (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’ABRERA (1971) recorded the range as “Ambon, Serang, Sapania”. We suspect “Sapania” 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 kazukoae* 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: ♂ Banda; Fig. 158: ♀ Banda.)

*Lampides aratus ezeon*: FRUHSTORFER (1916: 22); TL: Banda Island.

**Range:** Banda Islands: Banda Besar (= Lontar Island) (BMNH), Naira Island (new island record: 1 ♂, 2. I. 1991; 2 ♀♀, 4. I. 1991; 2 ♀♀, 12. II. 1998; 1 ♀, 9. XI. 1998; CARR).

### *Jamides aratus sestus* (FRUHSTORFER, 1916)

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

*Lampides aetherialis sestus*: FRUHSTORFER (1916: 23); TL: “Timor”[?]; see note 1.

**Range:** Tanimbar 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 FRUHS-

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 23 *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 Roma, 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 likely that the true TL of *sestus* is Tanimbar, and hereby restrict the distribution of *J. aratus sestus* to that group of islands (see above). ♀♀ from Tanimbar are very similar to those from Timor and Southwest Maluku but the ups. ground colour has a slightly bluer sheen. The distinctive *aratus* population on Timor and the Southwest Maluku Islands are described below.

**Note 2:** As already discussed (see introduction to *aratus* subgroup), *sestus* has been considered a subspecies of *aetherialis* by some authors (following FRUHSTORFER 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, CSSK).

### *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, Damar [Damar], 30. XI. [18]98, (H. KÜHN), ROTHSCHILD bequest B.M. 1939-1 (BMNH).

**Paratypes** (1 ♂, 2 ♀♀): 1 ♂, as HT except 2. XI. [18]98; 1 ♀, as HT except 1. XII. [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 — Wetar, Roma, Moa, Damar, Wetan, Babar.

**Note:** Dissection of a ♂ from Moa (Kaiwatu, III. 1998, CARR; Pl. 8, genitalia Fig. 250) confirms this to be a subspecies of *aratus*. This new taxon occurs between the *aratus* taxa *masu* 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.

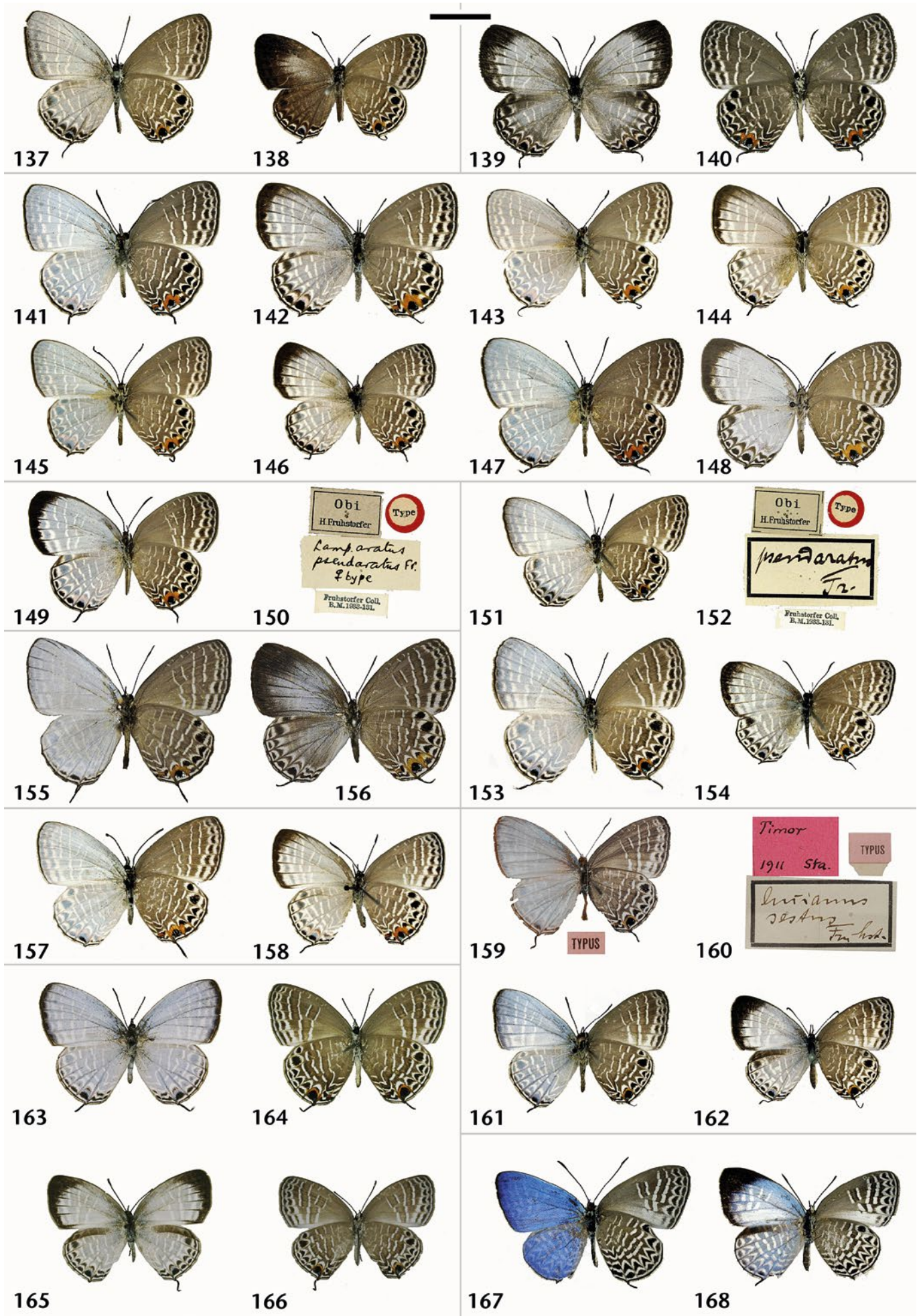
Hw. ups. pale blue-white; termen very narrowly grey-brown (hairline width); a row of obscure subterminal grey-brown spots between veins; prominent spots in spa-

ces 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

**Plate 5, Figs. 137–166: *Jamides aratus*.** — **Figs. 137–138:** *J. aratus minthe*. **Fig. 137:** ♂, ups./uns., Sula (VI.–IX. 1918, W. J. C. FROST). **Fig. 138:** ♀, ups./uns., Sanana (label “Besi Sulla”, 10. X. 1897). — **Figs. 139–140:** *J. aratus roberti* ssp. n., ♀ HT, Gebe (X. 2010; to be deposited in BMNH); **139:** ups., **140:** uns. — **Figs. 141–148:** *J. aratus aratus*. **Fig. 141:** ♂, ups./uns., Ambon (Hila, XI. 1923, C. J. Brooks coll.). **Fig. 142:** ♀, ups./uns., Seram (Bomfia, 1893, C. LE COCQ D’ARMANDVILLE). **Figs. 143–144:** ups./uns., Seram Laut (12. XII. 1899, H. KÜHN); **143:** ♂; **144:** ♀. **Fig. 145:** ♂, ups./uns., Gorong Islands (“Goram Laut”, 26. II. 1900, H. KÜHN). **Fig. 146:** ♀, ups./uns., Watubela Islands (Kissoei [Kasiui], KÜHN). **Figs. 147–148:** ups./uns., Obi; **147:** ♂ (H. FRUHSTORFER); **148:** ♀ (Laiwui, IX. 1897, W. DOHERTY). — **Figs. 149–150:** *J. aratus “pseudaratus”* (= ssp.?) ♀, “type” (“Obi?”); **149:** ups./uns.; **150:** label. — **Figs. 151–154:** *J. aratus masu*. **Figs. 151–152:** “type” of “*pseudaratus*” (= *masu*) ♂, (“Obi” [mistaken locality]); **151:** ups./uns.; **152:** label. **Figs. 153–154:** ups./uns., Sumba (XII. 1896, FRUHSTORFER); not Maluku taxon; for comparison with ♂ “*pseudaratus*” “type”; **153:** ♂; **154:** ♀. — **Figs. 155–156:** *J. aratus* ssp., ups./uns., Ambelau (XI. 2012, CARR); **155:** ♂; **156:** ♀. — **Figs. 157–158:** *J. aratus ezeon*, ups./uns., Banda (Gr. Banda [Banda Besar]); **157:** ♂ (19. XI. 1898, H. KÜHN); **158:** ♀ (29. XI. 1898, H. KÜHN). — **Figs. 159–162:** *J. aratus sestus*. **Figs. 159–160:** ♂, HT *sestus*, “Timor” [?, see notes], (NHMB); **159:** ups./uns.; **160:** labels. **Figs. 161–162:** ups./uns., Tanimbar (VI.–VI. 1892, W. DOHERTY); **161:** ♂; **162:** ♀. — **Figs. 163–166:** *J. aratus samueli* ssp. n., Damar (30. XI. 1898, H. KÜHN). **Figs. 163–164:** ♂ HT; **163:** ups., **164:** uns. **Figs. 165–166:** ♀ PT; **165:** ups., **166:** uns. — **Figs. 167–168:** *Jamides anops*; not Maluku taxon. **Fig. 167:** ♂, ups./uns., Sumba (XII. 1898). **Fig. 168:** ♀, ups./uns., Sumba (IV. 1896, EVERETT). — All specimens deposited in BMNH, if not indicated otherwise. — Scale bar (top centre) for all specimens = 1 cm.



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)

*Lampides 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, TENNENT 2002). It is replaced on those islands by *J. aratus*.

**Note 2:** Examination of ♂ genitalia of a specimen from Kofiau Island (6. ix. 1991, collector RASMAN) establishes this population to be *aetherialis* (Pl. 8, Fig. 252) and enables us to further clarify the boundary between *aratus* and *aetherialis* (Map 3). We have examined 3 ♂♂ and 2 ♀♀ from Kofiau that clearly differ from *caerulina* (see below) and we consider they represent an undescribed subspecies. However, as Kofiau falls outside the boundary of Maluku we do not describe it here.

Two subspecies occur in Maluku.

### *Jamides aetherialis aetherialis* (BUTLER, 1884)

(Pl. 6, Fig. 169: ♂ Kei; Fig. 170: ♀ Kei; Pl. 8: ♂ Kei, genitalia, Fig. 251, ♀ Kei, genitalia, Fig. 255.)

*Lampides aetherialis*: BUTLER (1884: 195); TL: Kei.

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

**Note:** D'ABRERA (1971) mistakenly placed *aetherialis* as a subspecies of *aratus* and recorded the range as "Kai (Ewab) I."

### *Jamides aetherialis caerulina* (MATHEW, 1887)

(Pl. 6, Fig. 171: ♂ Aru; Fig. 172: ♀ Aru.)

*Lampides caerulina*: MATHEW (1887: 46); TL: Ugi, Solomon Islands.

**Range:** Aru, Waigeo (dissected ♂ genitalia confirms *aetherialis*), Batanta, Biak, New Guinea mainland, outlying islands in PNG, the Bismarcks and the Solomon Islands. New Aru Island records from Wamar (1 ♂, Dobo, v. 1997) and Maikoor (1 ♀, Fatujuring, 22. viii. 1999) (CARR). K. NAGAI (pers. comm.) also found the species on Kobroor and Trangan.

**Notes:** PARSONS (1998) synonymised *ayrus* FRUHSTORFER, 1916 (TL: Triton Bay, Fak-Fak, Schneegebirge) and *duvana* FRUHSTORFER, 1916 (TL: Dampier) with *caerulina*, giving the extended distribution of *caerulina* as above. He did not include Aru. D'ABRERA (1971) considered *caerulina* and *aetherialis* as subspecies of *aratus*, and also made no mention of Aru. FRUHSTORFER (1916) noted the occurrence of *caerulina* on Aru and correctly believed that it belonged to *aetherialis* and not *aratus* with which RIBBE had placed it. As already indicated, RÖBER (1886) described *lucianus*, giving the locality as the Aru Islands and Bacan. TAKANAMI (1989: 48, 65) synonymised *lucianus* with *batjanensis* to which Aru material actually bears little resemblance. Examination of specimens from Aru suggests they are clearly referable to *caerulina*.

### 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.

**Range:** Aru, Waigeo, Misool, mainland New Guinea and N.E. Australia (PARSONS 1998).

There are several subspecies, one of which occurs in Maluku.

### *Jamides aleuas sarsina* (FRUHSTORFER, 1916)

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

*Lampides aleuas sarsina*: FRUHSTORFER (1916: 31); TL: Aru.

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

**Note:** CASSIDY (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.

**Range:** India, Burma (= Myanmar), Thailand, Malay Peninsula, Sumatra, Java, Borneo, Palawan, Philippines, Sulawesi Region, northern and central Maluku, New Guinea, Nias and Enggano (VANE-WRIGHT & DE JONG 2003, D'ABRERA 1986).

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.)

*Lampides 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 ♀♀, Waya, 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. WATERSTRADT 1904, ex OBERTHÜR Coll. Brit Mus. 1927-3" is highly questionable. In the case of *J. philatus emetallicus*, ♂♂ bearing non-WATERSTRADT Obi labels (2 ♂♂ "Laiwui, Obi, Sept. [18]97, (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 "WATERSTRADT" 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.)

*Lampides stresemanni*: ROTHSCCHILD (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. *osiades* Tox.". We believe this is an unpublished TOXOPEUS manuscript name (= *nomen nudum*) and we mention *osiades* 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*.



***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 bangkaia* (RIBBE, 1926)**

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

*Lampides festivus bangkaia*: 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]97, (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 Bachan [= Bacan] in the Moluccas.” He also noted and illustrated the subspecies *argentiferus* from Sulawesi and listed two “other probable races: *demetrius* FRUHSTORFER (Sula Is.) and *alvenus* FRUHSTORFER (Selajar)”.

FRUHSTORFER (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 *argentiferus* 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 ♂, xi. 2006; all Daeco; 1 ♂, Pilowo, 10. xii. 1990) and Kasiruta (1 ♂, 1 ♀, xi. 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. alecto 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 *alecto*) but ♀ ups. of the two taxa are very similar, the subtle difference being that the ground colour of *J. alecto 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 no other specimens claiming to be from Obi and exclude Obi from the species' range.

***Jamides aritai* HAYASHI, 1977**

*Jamides frothschildi* [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 TOXOPEUS manuscript name (the Buru ♀ in the BMNH bears a handwritten label stating: “*Lampides elpis* ♀ *rothschildi* Tox. 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 & SEKI 2014, web-based list since 1997) considered *aritai* a synonym of (*J. espada*) *sabatus* FRUHSTORFER, 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 ♂ genitalic characters, and we consider them to be conspecific.

***Jamides aritai aritai* HAYASHI, 1977**

(Pl. 6, Fig. 190: ♂ Morotai.)

*Jamides frothschildi 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'ABRERA (1971: 354) (*nomen nudum*); Seram.**Holotype** ♂: Indonesia, Seram, Manusela, 6000 ft, x.–xi. 1919, C. F. & J. PRATT, JOICEY Bequest. Brit. Mus. 1934-120 (BMNH).**Paratypes**: 6 ♂♂, 4 ♀♀, as HT (all BMNH).**Additional material examined** (no paratypes): **Buru**: 1 ♀, Buru, Kayeli, III. [18]97, DOHERTY (BMNH). 1 ♂, Buru, Bara, 4. IX. 1993 (CARR). — **Ambon**: 2 ♂♂, Ambon, Mt. Tuna, VIII. 2002. 1 ♂, Ambon, IV. 2003 (CARR).**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'ABRERA (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 &amp; 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): Fwl. 17 mm, antl. 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 deep 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.

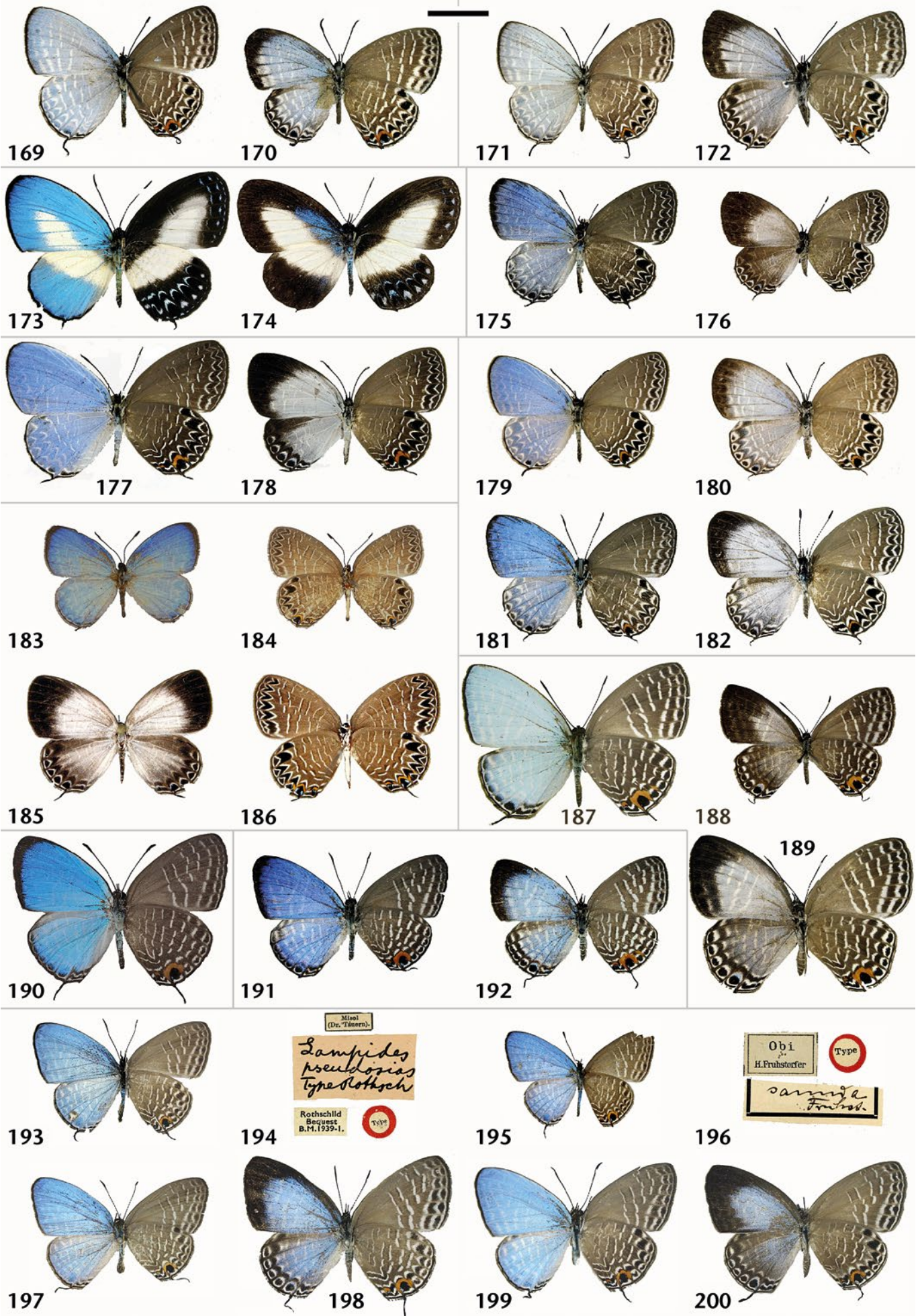
Hw. ups. with ground colour sky blue, deeper blue towards termen; termen narrowly brown-black; a row of indistinct subterminal round brown-black spots ringed with white on terminal margin, each between veins, more prominent spots each in spaces 1b and 2, the lat-

ter 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

**Plaste 6, Figs. 169–172: *Jamides aetherialis*.** — **Figs. 169–170: *J. aetherialis aetherialis*.** Fig. 169: ♂, ups./uns., Kei (Kei Kecil, H. KÜHN). Fig. 170: ♀, ups./uns., Kei (Kei Besar, v. 1896, WEBSTER). — **Figs. 171–172: *J. aetherialis caeruleina*.** Fig. 171: ♂, ups./uns., Aru (Dobo, Wamar Island, v. 1997; CARR). Fig. 172: ♀, ups./uns., Aru (Fatujuring, Maikoor, 22. VIII. 1999, M. NAGAI; CARR). — **Figs. 173–174: *Jamides aleuas*.** — **Figs. 173–174: *J. aleuas sarsina*.** Fig. 173: ♂, ups./uns., Aru (IV.–VI. 1896, WEBSTER). Fig. 174: ♀ PT ("allotype"), ups./uns., Aru (FRUHSTORFER). — **Figs. 175–182: *Jamides philatus*.** — **Figs. 175–176: *J. philatus philatus*.** Fig. 175: ♂, ups./uns., Sanana (Bega, 6. XI. 1998; CARR). Fig. 176: ♀, ups./uns., Sanana (Sula Besi [Sanana], x. 1897, W. DOHERTY). — **Figs. 177–178: *J. philatus emetallicus*,** Bacan (VIII. 1897, W. DOHERTY). Fig. 177: ♂, ups./uns. Fig. 178: ♀, ups./uns. — **Figs. 179–182: *J. philatus stresemanni*.** **Figs. 179–180:** Gorong Island (Goram Laut [Gorong], H. KÜHN); **179:** ♂, ups./uns., 1. III. 1900; **180:** ♀, ups./uns., 25. II. 1900. **Figs. 181–182:** Buru (Leksula; CARR); **181:** ♂, ups./uns., v. 1993; **182:** ♀, ups./uns., Buru (Leksula, VII. 1993). — **Figs. 183–186: *Jamides festivus bangkaia*.** — **Fig. 183–184:** ♂, ups./uns., Mangole (x. 1897, W. DOHERTY). Fig. **185–186:** ♀, ups./uns., Peleng (Tamiban, IX. 2009; CSSK). — **Figs. 187–189: *Jamides schatzi schatzi*.** — **Fig. 187:** ♂, ups./uns., Bacan (1904, ex J. WATERSTRADT). Fig. **188:** ♀, ups./uns., Bacan (III. 1892, W. DOHERTY). Fig. **189:** ♀, ups./uns., Bacan (label reads "Obi, ex J. WATERSTRADT, 1904", see text). — **Figs. 190–192: *Jamides aritai*.** — **Fig. 190:** *J. aritai aritai* ♂, ups./uns., Morotai (v. 2005; CARR). — **Figs. 191–192: *J. aritai sabina* ssp. n.,** Seram (Manusela, 6000ft, x.–xi. 1919, C. F. & J. PRATT). Fig. **191:** ♂ HT, ups./uns. Fig. **192:** ♀ PT, ups./uns. — **Figs. 193–205: *Jamides pseudosias*.** — **Fig. 193–204: *J. pseudosias pseudosias*.** Figs. **193–194:** ♂ HT, Misool (Dr. TAUBERN); **193:** ups./uns.; **194:** labels. Figs. **195–196:** ♂, HT *sabina*, Obi; **195:** ups./uns.; **196:** labels. Figs. **197–198:** ups./uns., Seram (Manusela, 6000 ft., x.–xi. 1919, C. F. & J. PRATT); **197:** ♂; **198:** ♀. Figs. **199–200:** ups./uns., Halmahera (JOICEY Bequest); **199:** ♂; **200:** ♀. — All specimens deposited in BMNH, if not indicated otherwise. — Scale bar (top centre) for all specimens = 1 cm.



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. very pale sky blue; termen broadly grey-brown; row of conspicuous cusp-shaped subterminal pale blue-white spots, each between veins, that near tornus more prominent; cilia light grey; hw. uns. uniform deep grey-brown (darker than in nominotypical *aritai*); adjacent terminal and subterminal bands of similar colouring, each approximately 1 mm wide, 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; additional small black spot at tornus, similarly bordered with orange and blue; postmedian band similar to ground colour, approximately 1 mm wide, edged white and distinctly stepped at veins 3, 6 and 7; a band 1.5 mm wide at end of cell, edged white; additional irregular band 1 mm wide at base, extending from vein 1b to vein 8, offset at veins.

### *Jamides pseudosias* (ROTHSCHILD, 1915)

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

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

= *Lampides kondulana saunda*: 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:** ROTHSCCHILD 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 *echeilea*, saying: “Hw. submarginal band much less developed than in *echeilea*.” However, we note that the width of the dark borders of both fw. and hw. of northern Maluku ♀♀ vary significantly. It is possible that *echeilea* 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'ABRERA (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 echeilea* (FRUHSTORFER, 1916)

(Pl. 7, Fig. 205: ♂ Taliabu.)

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

**Range:** Sulawesi (VANE-WRIGHT & DE JONG 2003) and the Sula islands (new island record: Taliabu, 1 ♂, I. 2005, CARR).

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

**Note 2:** We have only seen 1 ♂ from Taliabu, which is indistinguishable from *echeilea* from Sulawesi. However, ♂♂ of nominotypical *pseudosias* and ssp. *echeilea* appear inseparable. We have examined 6 ♀♀ from Sulawesi (2 at BMNH, 4 CASS): all have consistent markings and are very similar to the dark form of *pseudosias* ♀♀ from northern Maluku. It is possible that *echeilea* and *pseudosias* are synonymous, but without access to further material an objective assessment is difficult. We therefore provisionally include the Taliabu subpopulation with *echeilea*, 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. Striae 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 nemea*”, 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* (*drom[icus]*) *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* FRUHSTORFER, 1910, from Taiwan). Biogeographically, the latter makes little sense.

D’ABRERA (1971) considered *batjana* a synonym of *alecto*. Although we have examined TOXOPEUS’ (1930) monochrome photograph of the ♂ type 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.)

*Lycaena 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. fw. 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:** Aru is included in the range of nominotypical *alecto* on the basis of a solitary ♀ in the BMNH, labelled “Arow”. The specimen is ex coll. BOISDUVAL and ex coll. OBERTHÜR and is similar in appearance, although significantly larger, to a ♀ from Kei (Pl. 7: Fig. 220). “Arow” is historically an alternative name for “Aru”, and we have no reason to question the provenance of the specimen.

**Note 4:** HOLLAND’s taxon *Lampides buruana* has been largely overlooked since its description in 1900. We located a series of STs in CMNH. Whilst HOLLAND mentions 6 examples of each sex, there remain from his collection 9 ♂♂ and 7 ♀♀, all from Buru and with HOLLAND 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 “*Buruana* sp. n.” and we designate that specimen as the lectotype: *Lampides buruana* HOLLAND/ Lectotype CASSIDY 2013 [typed]/ Buru DOHERTY ♂ [handwritten]/ *Buruana* sp. n. [handwritten]/ HOLLAND Collection (typed). Its fwl. 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 *masu*, 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

synonym of *alecto*. CASSIDY ([anonymous, on Wikispecies website] 2010) suggested the synonymy of *tertius* with *alecto*. We confirm this here formally.

### The *euchylas* subgroup

HIROWATARI (1992) included four species in this subgroup; two occur in Maluku.

#### *Jamides euchylas* (HÜBNER, 1819)

*Pepliphorus euchylas*: HÜBNER (1819: 71); see note 2; TL: Ambon?

= *Papilio hylas*: STOLL (1781 [in CRAMER & STOLL]: 142, pl. 363, figs. E, F); *nom. praeocc.*, see note 1; TL: Ambon?

= *Jamides gamblea*: SWINHOE (1916: 209); see note 3; TL: Seram.

= *Pepliphorus 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 *Polyommatus dorylas* [DENIS & SCHIFFERMÜLLER], 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-Amboina 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 ♀ “allotype” (= 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 allotype (= PT).

#### *Jamides euchylas euchylas* (HÜBNER, 1819)

(Pl. 7, Fig. 231: ♂ Seram; Fig. 232: ♀ Seram.)

*Pepliphorus euchylas*: HÜBNER (1819: 71); TL: Ambon?

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

#### *Jamides aruensis* (PAGENSTECHE, 1884)

*Cupido euchylas* var. *aruensis*: PAGENSTECHE (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* RÖBER, 1886 (see notes following *Jamides cyta 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’ABRERA (1971) noted the range as Waigeo, but there is 1 ♂ in the BMNH from Gebe, labelled: “Molukues, Ile Gebi, Chasseurs Malais de WATERSTRADT, 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 ariel* (FRUHSTORFER, 1915)

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

*Lampides aruensis ariel*: 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’ABRERA (1971) stated that *gloriel* is “probably” a synonym of *ariel*. 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 synonymous.

**Plate 7, Figs. 201–205: *Jamides pseudosias*.** — Fig. 201–204: *J. pseudosias pseudosias*. Fig. 201: ♂, ups./uns., Obi (vii.–ix. 1918, W. J. C. FROST). Figs. 202–203: ♀, HT *sanaya*, Obi (FRUHSTORFER label); 202: ups./uns.; 203: labels. Fig. 204: ♀, ups./uns., Bacan (iii. 1892, W. DOHERTY). — Fig. 205: *J. pseudosias echeilea*, ♂, ups./uns., Taliabu (i. 2005; CARR). — Figs. 206–208: *Jamides halus carnegii* ssp. n. — Figs. 206–207: ♂, HT, Buru (DOHERTY, HOLLAND collection; CMNH); 206: ups.; 207: uns. Fig. 208: ♀, ups./uns., PT, Buru (iv. 2002; CARR). — Figs. 209–224: *Jamides alecto*. — Figs. 209–210: *J. alecto batjana*, ups./uns., Bacan (iii. 1892, W. DOHERTY); 209: ♂; 210: ♀. — Figs. 211–224: *J. alecto alecto*. Figs. 211–212: ♂, HT *tertius*, Seram (Manusela, Central Seram, 650 m, 1912, E. STRESEMANN); 211: ups./uns.; 212: labels. Figs. 213–215: Ambon; 213: ♂, ups./uns. (Hila, 1923, C. J. BROOKS); 214–215: ♀, ups./uns., Ambon (vii. 2011; CARR). Fig. 216: ♀, ups./uns., Seram (Salemon, ix. 2001; CARR). Figs. 217–218: Buru; 217: ♂, ups./uns., Buru (LT *L. buruana*, DOHERTY, HOLLAND collection; CMNH); 218: ♀, ups./uns., Buru (Bara, 2. ix. 1993; CARR). Fig. 219: ♀, ups./uns., Gorong Islands (Goram Laut, 25. ii. 1900, H. KÜHN). Fig. 220: ♀, ups./uns., Kei (Tual, i.–iii. 1895, H. C. WEBSTER). Figs. 221–223: Obi; 221: ♂, ups./uns., Obi (i. 2003; CARR); 222: ♀, ups./uns., Obi (FRUHSTORFER label); 223: ♀, ups./uns., Obi (Tapaya, south coast, vi. 2008; CSSK). Fig. 224: ♀, ups./uns., Buru (Bara, 2000 ft., 4. ix. 1993; CARR). — Figs. 225–232: *Jamides euchylas*. — Figs. 225–230: *J. euchylas mimetica*. Figs. 225–227: ♂ HT, *mimetica*, Buru (North coast, xi. 1897, W. DOHERTY); 225: ups.; 226: uns.; 227: labels. Figs. 228–230: ♀ PT, *mimetica*, Buru (Kayeli, iii. 1897, DOHERTY); 228: ups.; 229: uns.; 230: labels. — Figs. 231–232: *J. euchylas euchylas*; ups./uns., Seram (Bomfia, 1893, C. LE COCQ D’ARMANDVILLE); 231: ♂; 232: ♀. — All specimens deposited in BMNH, if not indicated otherwise. — Scale bar (top centre) for all specimens = 1 cm.



***Jamides aruensis aruensis* (PAGENSTECHE, 1884)**

(Pl. 8, Fig. 243: ♂ Aru; Fig. 244: ♀ Aru.)

*Cupido euchylas* var. *aruensis*: PAGENSTECHE (1884: 190); TL: Aru Islands.**Range:** endemic to the Aru Islands, Wamar, Kobroor (BMNH) and new Aru records from Wokam (1 ♂, III. 2000) and Maikoor (1 ♂, 2 ♀♀, Fatujuring, VIII. 1999) (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 “*J[amides]* 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 *euchylas* subgroup which carries two labels: “Sula Is. Wallace” and “GODMAN-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 I.” 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* PAGENSTECHE 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, Bacan, Mandioli).*Jamides bochus polassar* stat. n. – Obi.*Jamides bochus astraptus* – central Maluku (Buru, Manipa, Kelang, Seram, Kasa, Ambon, Haruku, Nusa Laut, Geser, Seram Laut), Banda Islands (Banda Besar & Naira), Gorong Islands (Gorong), Watubela 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 tiglath* – Sula Islands (Mangole).*Jamides seminiger seminiger* – northern Maluku (Morotai, Halmahera, Bacan).*Jamides seminiger porphyris* – Obi, central Maluku (Buru, Seram, Ambon).*Jamides seminiger vanlithi* – Watubela Islands (Tioor).*Jamides seminiger richardi* ssp. n. – Kei Islands (Kei Kecil, Kei Besar), Aru Islands.*Jamides amarauge amandae* ssp. 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, Saparua), Gorong Islands (Manawoka).= *Plebeius callinicus* RÖBER, syn. n.*Jamides cyta madara* – Tayandu Islands (Kur), Kei Islands (Kei Kecil).*Jamides cyta stevei* ssp. n. – Tanimbar Islands (Yamdena).*Jamides cyta aruanus* – Aru Islands (Wamar, Wokam, Maikoor, Kobroor, Trangan).= *Jamides aruensis* SWINHOE, syn. n.*Jamides titei titei* – northern Maluku (Morotai, Halmahera).*Jamides titei pseudocyta* – northern Maluku (Bacan, Mandioli).*Jamides celeno optimus* – Sula Islands (Mangole, Sanana).= *Plebeius griseus* RÖBER, syn. n.= *Lampides griseus kalawarus* RIBBE, syn. n.*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 (Mangole), Obi, central Maluku (Buru, Ambelau, Manipa, Seram, Ambon, Haruku, Saparua, Nusa Laut), Gorong Islands (Gorong), Watubela Islands (Tioor).*Jamides pura spitamenes* – Obi.*Jamides fractilinea saraharum* ssp. n. – Sula Islands (Mangole).*Jamides aratus minthe* – Sula Islands (Taliabu, Mangole, Sanana).*Jamides aratus vignei* ssp. n. – northern Maluku (Morotai).*Jamides aratus batjanensis* – northern Maluku (Halmahera, Ternate, Kasiruta, Bacan, Mandioli).= *Lampides aetherialis vuniya* FRUHSTORFER, syn. n.*Jamides aratus roberti* ssp. n. – Gebe.*Jamides aratus aratus* – Obi, central Maluku (Buru, Kelang, Seram, Ambon, Haruku, Saparua, 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* ssp. n. – Southwest Maluku (Wetar, Roma, Moa, Damar, Wetan, Babar).*Jamides aetherialis aetherialis* – Kei Islands (Kei Kecil, Kei Besar).*Jamides aetherialis caerulea* – Aru Islands (Wamar, Maikoor, Kobroor, Trangan).*Jamides aleuas sarsina* – Aru Islands (Wamar, Wokam, Maikoor, Kobroor, Trangan).*Jamides philatus philatus* – Sula Islands (Sanana).*Jamides philatus emetallicus* – northern Maluku (Morotai, Halmahera, Bacan, Mandioli), Obi*Jamides philatus stresemanni* – central Maluku (Buru, Kelang, Seram), Gorong Islands (Gorong).*Jamides festivus bangkaia* – Sula Islands (Mangole).*Jamides schatzi schatzi* – northern Maluku (Morotai, Halmahera, Ternate, Kayoa, Kasiruta, Bacan).*Jamides aritai aritai* – northern Maluku (Morotai).



*Jamides aritai sabina* ssp. n. – central Maluku (Buru, Seram, Ambon).

*Jamides pseudosias echeilea* – Sula Islands (Taliabu).

*Jamides pseudosias pseudosias* – northern Maluku (Halmahera, Bacan), Obi, central Maluku (Seram, Ambon).

= *Lampides nemea sanaya* FRUHSTORFER, syn. n.

= *Lampides kondulana saunda* FRUHSTORFER, syn. n.

*Jamides halus carnegii* ssp. n. – central Maluku (Buru).

*Jamides alecto batjana* – northern Maluku (Halmahera, Ternate, Bacan).

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

= *Lampides buruana* HOLLAND, syn. n.

= *Lampides tertius* ROTHSCHILD, syn. n.

*Jamides euchylas mimetica* – central Maluku (Buru, Ambelau).

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

*Jamides aruensis umbriel* – Gebe.

*Jamides aruensis ariel* – Kei Islands (Kei Kecil, Kei Besar).

= *Lampides euchylas gloriel* HULSTAERT, syn. n.

*Jamides aruensis aruensis* – Aru Islands (Wamar, Wokam, Mai-koor, Kobroor, Trangan).

## Extra-limital synonymy

*Jamides aratus masu* DOHERTY, 1891 – Sumba, Sumbawa.

*Lampides aratus pseudaratus* FRUHSTORFER, 1915; “Obi”, syn. n.

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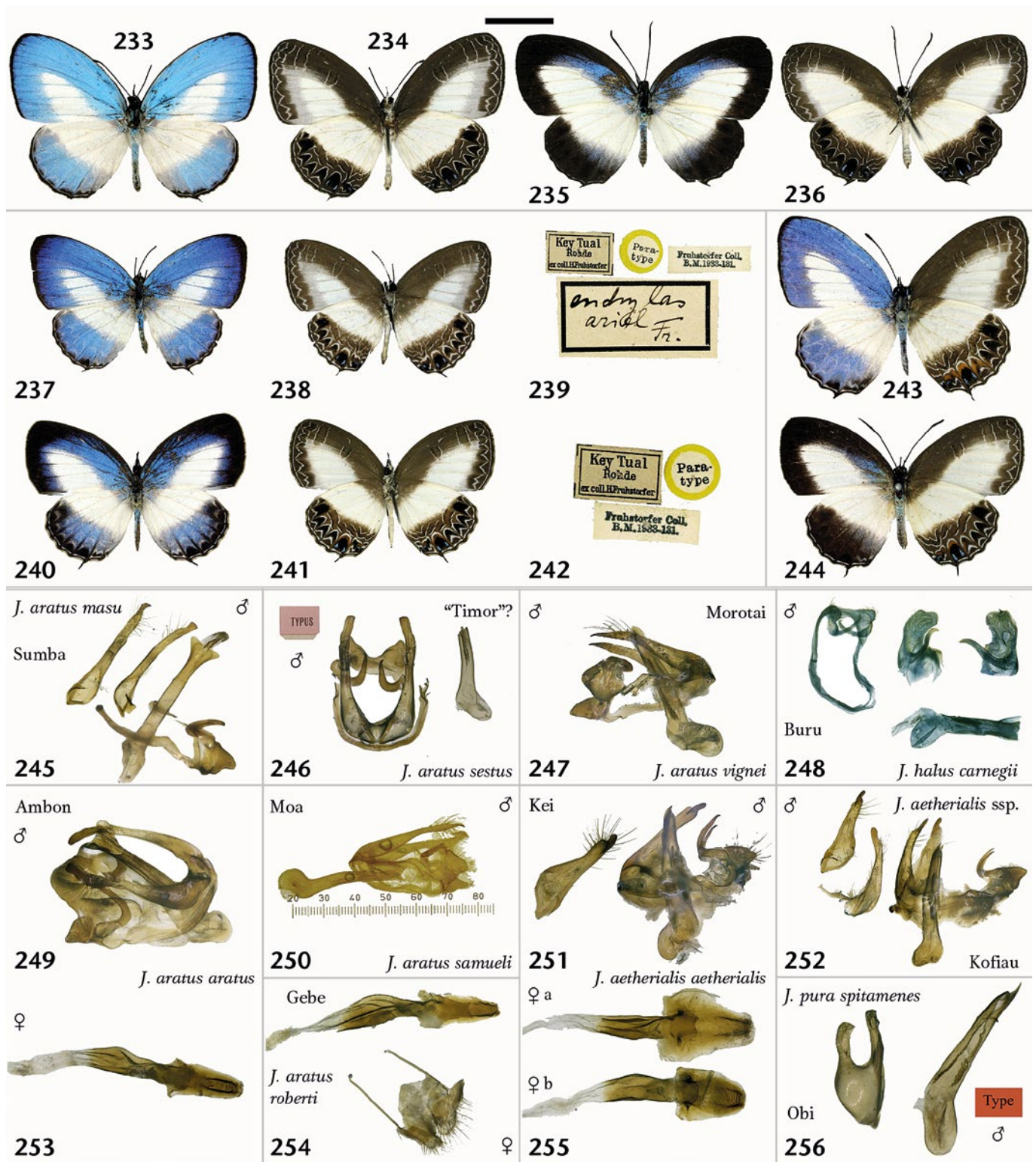


Plate 8, Figs. 233–244: *Jamides aruensis*. — Figs. 233–236: *J. aruensis umbriel*. Figs. 233–234: ♂, Gebe (1903, Chasseurs Malais de WATERSTRADT); 233: ups.; 234: uns. Figs. 235–236: ♀, Waigeo (H. FRUHSTORFER); 235: ups.; 236: uns. — Figs. 237–242: *J. aruensis ariel*, PTs, Kei (Tual, ROHDE). Figs. 237–239: ♂ PT; 237: ups., 238: uns.; 239: labels. Figs. 240–242: ♀ PT; 240: ups., 241: uns.; 242: labels. — Figs. 243–244: *J. aruensis aruensis*, ups./uns.; 243: ♂, Aru (1907, C. PRATT); 244: ♀, Aru (Dobo, Wamar Island, 1883, C. RIBBE). — All specimens deposited in BMNH, if not indicated otherwise. — Scale bar (top centre) for all specimens = 1 cm; not valid for genitalia. — Figs. 245–256: various *Jamides* genitalia. — Fig. 245: *J. aratus masu* ♂, GP, Sumba (near Tarimbang, 9. viii. 2011; CARR). Fig. 246: *J. aratus sestus* ♂, HT, GP, “Timor”?; see notes (1911, STA[UDINGER]; NHMB). Fig. 247: *J. aratus vignei* ♂, PT, GP, Morotai (Daed, x. 2002; CARR). Fig. 248: *J. halus carnegii* ♂, PT, GP, Buru (DOHERTY, HOLLAND coll.; CMNH). Fig. 249: *J. aratus aratus* ♂, GP, Ambon (Laha, 30. xii. 1990; CARR). Fig. 250: *J. aratus samueli* ♂, GP, Moa (Kaiwatu, 25. iii. 1998; CARR). Fig. 251: *J. aetherialis aetherialis* ♂, GP, Kei (Ohoililir, 3. iv. 1995; CARR). Fig. 252: *J. aetherialis* ssp. ♂, GP, Kofiau (6. ix. 1991; CARR). Fig. 253: *J. aratus aratus* ♀, GP, Ambon (Hila, 25. xii. 1990; CARR). Fig. 254: *J. aratus roberti* ♀, GP, Gebe (x. 2010; BMNH). Fig. 255: *J. aetherialis aetherialis* ♀♀, GP, Kei (Ohoililir, 3. iv. 1995 & Tual, 9. i. 1991; both CARR). Fig. 256: *J. pura spitamenes* ♂, HT, GP, Obi (1909, FRIED.; NHMB).

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