

On some type specimens of Lycaenidae from South East Asia (Lepidoptera)

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Abstract: The COURVOISIER collection in Naturhistorisches Museum Basel has been overlooked by recent authors, although it contains a number of type specimens of taxa described in the late 19th or early 20th centuries. Examination of these specimens, along with some types in London and Munich, has resolved some taxonomic difficulties evident from more recent literature. No new taxa are described but a new arrangement is proposed for some representatives of the genus *Jamides* HÜBNER, [1919], from Sulawesi, Philippines and Maluku. A total of 4 lectotypes are designated where appropriate, to fix a number of species group names that have hitherto remained ambiguous: *Lampides kondulana espada* FRUHSTORFER, male, NHMB; *Lampides amphissa courvoisieri* FRUHSTORFER, male, BMNH; *Lampides aleuas sarsina* FRUHSTORFER, male, NHMB; *Arhopala ganesa formosana* KATO, male, NHMB. Two taxa which have previously been accorded only subspecific status, *Jamides sabatus* (FRUHSTORFER, 1921) and *Jamides aritai* HAYASHI, 1976, are raised to species status, **stat. n.** The following new combinations are proposed: *Jamides alecto espada* FRUHSTORFER; *Jamides pura spitamenes* FRUHSTORFER; *Jamides aratus sestus* FRUHSTORFER, all **comb. n.** The following new synonymies are suggested: *formosana* KATO = *Arhopala japonica* MURRAY; *pheda* CORBET = *Poritia phama courvoisieri* FRUHSTORFER; *camarines* TAKANAMI = *Jamides sabatus* FRUHSTORFER; all three **syn. n.** The authorship of the genus *Caleta* is reviewed and its attribution revised to HIROWATARI, 1992.

Key words: COURVOISIER, Lycaenidae, *Jamides*, *espada*, *spitamenes*, *sabatus*, *sestus*, *aritai*, *rothschildi*, *sarmice*, *sarsina*, *Caleta*, *Flos*, *Arhopala*, *Poritia*, *Miletus*, *courvoisieri*, Maluku, Sulawesi, Philippines, South East Asia.

Über einige Typusexemplare von Lycaenidae aus Südostasien (Lepidoptera)

Zusammenfassung: Die Sammlung von COURVOISIER im Naturhistorischen Museum Basel wurde von rezenten Autoren weitestgehend übersehen, obwohl dort etliche Typusexemplare von Taxa aus dem späten 19. und frühen 20. Jahrhundert enthalten sind. Die Examinierung dieser Typen, zusammen mit weiteren Exemplaren in London und München, konnte zur Lösung einiger taxonomischer Probleme der letzten Zeit beitragen. Es werden keine neuen Taxa eingeführt, aber eine Teilrevision einiger Taxa der Gattung *Jamides* HÜBNER, [1919] von Sulawesi, den Philippinen und den Molukken wird durchgeführt. Insgesamt 4 Lectotypen werden designiert, wo es notwendig erschien, einige bisher zweifelhafte Artgruppennamen festzulegen (alles Männchen): *Lampides kondulana espada* FRUHSTORFER, NHMB; *Lampides amphissa courvoisieri* FRUHSTORFER, BMNH; *Lampides aleuas sarsina* FRUHSTORFER, NHMB; *Arhopala ganesa formosana* KATO, NHMB. Zwei Taxa, die bisher als Unterarten angesehen wurden, *Jamides sabatus* (FRUHSTORFER, 1921) und *Jamides aritai* HAYASHI, 1976, werden zu vollem Artstatus aufgewertet, **stat. n.** Die folgenden neuen Kombinationen werden vorgeschlagen: *Jamides alecto espada* FRUHSTORFER; *Jamides pura spitamenes* FRUHSTORFER; *Jamides aratus sestus* FRUHSTORFER, alle **comb. n.** Die folgenden 3 neuen Synonymien werden erkannt: *formosana* KATO = *Arhopala japonica* MURRAY; *pheda* CORBET = *Poritia*

phama courvoisieri FRUHSTORFER; *camarines* TAKANAMI = *Jamides sabatus* FRUHSTORFER; alle **syn. n.** Die Autorenschaft des Gattungsnamens *Caleta* wird revidiert; die korrekte Autorenschaft ist HIROWATARI, 1992.

Introduction: Type specimens preserved mainly in Naturhistorisches Museum, Basel

I recently had the opportunity to study the COURVOISIER collection of butterflies held in Naturhistorisches Museum Basel, and I examined some type specimens of South-East Asian Lycaenidae, mainly described by FRUHSTORFER and RÖBER. Additional reference is made to specimens held in the Natural History Museum, London, which have also been examined, and Zoologische Staatssammlungen, Munich.

In this paper I list the type specimens examined in Basel and designate lectotypes when appropriate. The labels from the type specimens are described. The / mark separates data on individual labels, and my notations are in square brackets: [colour of label] or [h] = handwritten and [p] = printed. Then I make further comments on the status and validity of the original names, with nomenclatural modifications as a result of superficial and genitalic examination of the type specimens.

Abbreviations (collections and other), symbols

- ‡ Invalid name (*nomen nudum* or infrasubspecific etc.).
- BMNH The Natural History Museum, London (formerly British Museum [Natural History]).
- f. Forma (infrasubspecific).
- HT Holotype.
- LT Lectotype.
- NHMB Naturhistorisches Museum Basel.
- PLT Paralectotype.
- PT Paratype.
- ZSM Zoologische Staatssammlungen München (Munich).

Genus *Jamides* HÜBNER, [1819]

Lampides kondulana espada FRUHSTORFER, 1915

Lampides kondulana espada: FRUHSTORFER (1915a: 11). Celebes [Sulawesi].

(Figs. 1–3 ♂, Fig. 60 ♂ genit.)

FRUHSTORFER's description refers to two specimens, one of each sex. The ♂ is in Basel, the ♀ in Munich.

Lectotype ♂ here designated: “*kondulana espadus* FRUHST. [h] /Minahassa Celebes 1897 STA. [h] [pink] / TYPUS [p] [pink] /LECTOTYPE ♂ *espada* FRUH. CASSIDY III. 13. [h]”. A ♀ in ZSM with data “S Celebes, Bua-Kraeng, 5000', Feb. 1896 H. FRUHSTORFER.” is considered a paralectotype.

Following external examination and genitalic dissection, *espada* is treated hereinafter as a subspecies of *Jamides alecto* (C. FELDER, 1860): 456 (*Jamides alecto espada* (FRUHSTORFER, 1915), stat. n., comb. n.).

Lampides suidas spitamenes FRUHSTORFER, 1915

Lampides suidas spitamenes: FRUHSTORFER (1915a: 7). Maluku, Obi.

(Figs. 4–6 ♂, 61 ♂ genit.)

FRUHSTORFER's description mentions only one ♂ specimen from Obi, although he does not say where it is stored. The ♂ specimen found in Basel is very likely to be that to which FRUHSTORFER refers in his description.

Holotype ♂ by monotypy: "Obi 1909 FRIED. [h] [red]/Type [p] [pink]/HOLOTYPE ♂ *spitamenes* FRUH. CASSIDY III. 13. [h]".

Following external examination and genitalic dissection, *spitamenes* is treated hereinafter as a subspecies of *J. pura* (MOORE, 1886) (*Jamides pura spitamenes* (FRUHSTORFER, 1915), stat. n., comb. n.).

Plebeius optimus RÖBER, 1886

Plebeius optimus: RÖBER (1886: 56, pl. 4, fig. 16 ♂). E. Sulawesi.

(Figs. 7–9 ♂.)

"Ost-Celebes Tombugu H. KUHN 1885 [p]/Original [p] [mauve]/Ost Celebes 1908 Ri. [h] [pink]" A lectotype of *optimus*, from Senckenberg Naturhistorische Sammlungen (formerly Staatliches Museum für Tierkunde), Dresden, was designated by TAKANAMI (1989: 48). A former syntype ♂ (now paralectotype) from the RIBBE collection is located in NHMB.

Currently treated as a subspecies of *Jamides celeno* (CRA MER, [1775]), following TAKANAMI (1989: 48).

Plebeius lucianus RÖBER, 1886

Plebeius lucianus: RÖBER (1886: 54, pl. 4, fig. 11 ♂; lectotype). Maluku, Bacan.

(Figs. 10–12 ♂.)

"Aru Insel Wamma Dobbo C. RIBBE 1883 [p]/Original [p] [mauve] /Aru Inseln 1906 Ri. [h] [red]". TAKANAMI (1989: 48) designated a lectotype (in Senckenberg Naturhistorische Sammlungen Dresden) for this taxon using a ♂ from Bacan collected by Carl RIBBE in 1885. This former syntype in NHMB also appears to have been collected by RIBBE, but from the island of Aru.

TAKANAMI synonymised *lucianus* with *Jamides aratus batjanensis* (RÖBER, 1886: 54, pl. 4, fig. 10]) (see Figs. 13–14 ♂).

Lampides amphissa courvoisieri FRUHSTORFER, 1915

Lampides amphissa courvoisieri: FRUHSTORFER (1915a: 26).

(Figs. 15–17 ♂ [BMNH], 18–20 ♀ [NHMB].)

FRUHSTORFER's description refers to two specimens, one of each sex. The ♂ from FRUHSTORFER's own collection is in London, the ♀ in Basel.

Lectotype ♂ here designated: "Type [p] [red] /Nias ex coll. FRUHSTORFER [p]/ FRUHSTORFER coll. B.M. 1933-131 [p]/*amphissa courvoisieri* FRUHST. [h] [in FRUHSTORFER's hand], /LECTOTYPE ♂ *courvoisieri* FRUH. CASSIDY IV. 13. [h]", in BMNH.

A ♀ in COURVOISIER collection with data: "*amphissa courvoisieri* FRUHST. [h]/Nias 1907 Ro. [h] [pink] /TYPUS [p] [pink]" is considered a paralectotype.

Currently treated as a subspecies of *Jamides cyta* (BOISDUVAL, [1832]): 87, following RILEY & CORBET (1938: 157).

Lampides aetherialis sestus FRUHSTORFER, 1915

Lampides aetherialis sestus: FRUHSTORFER (1915a: 23). Timor. (Figs. 21–23 ♂.)

FRUHSTORFER describes *sestus* from a single ♂ from the type locality Timor and states it to be in the COURVOISIER collection.

Holotype ♂ by monotypy: "*lucianus sestus* FRUHST. [in FRUHSTORFER's hand] /Timor 1911 STA. [h] [pink] /TYPUS [p] [pink] /HOLOTYPE ♂ *sestus* FRUH. CASSIDY III. 13 [h]". Note that FRUHSTORFER wrote "*lucianus*" on the label but then described *sestus* as a subspecies of *aetherialis*.

Now shown by genitalic dissection to be a subspecies of *J. aratus* (STOLL, [1781]) (*Jamides aratus sestus* (FRUHSTORFER, 1915), stat. n., comb. n.).

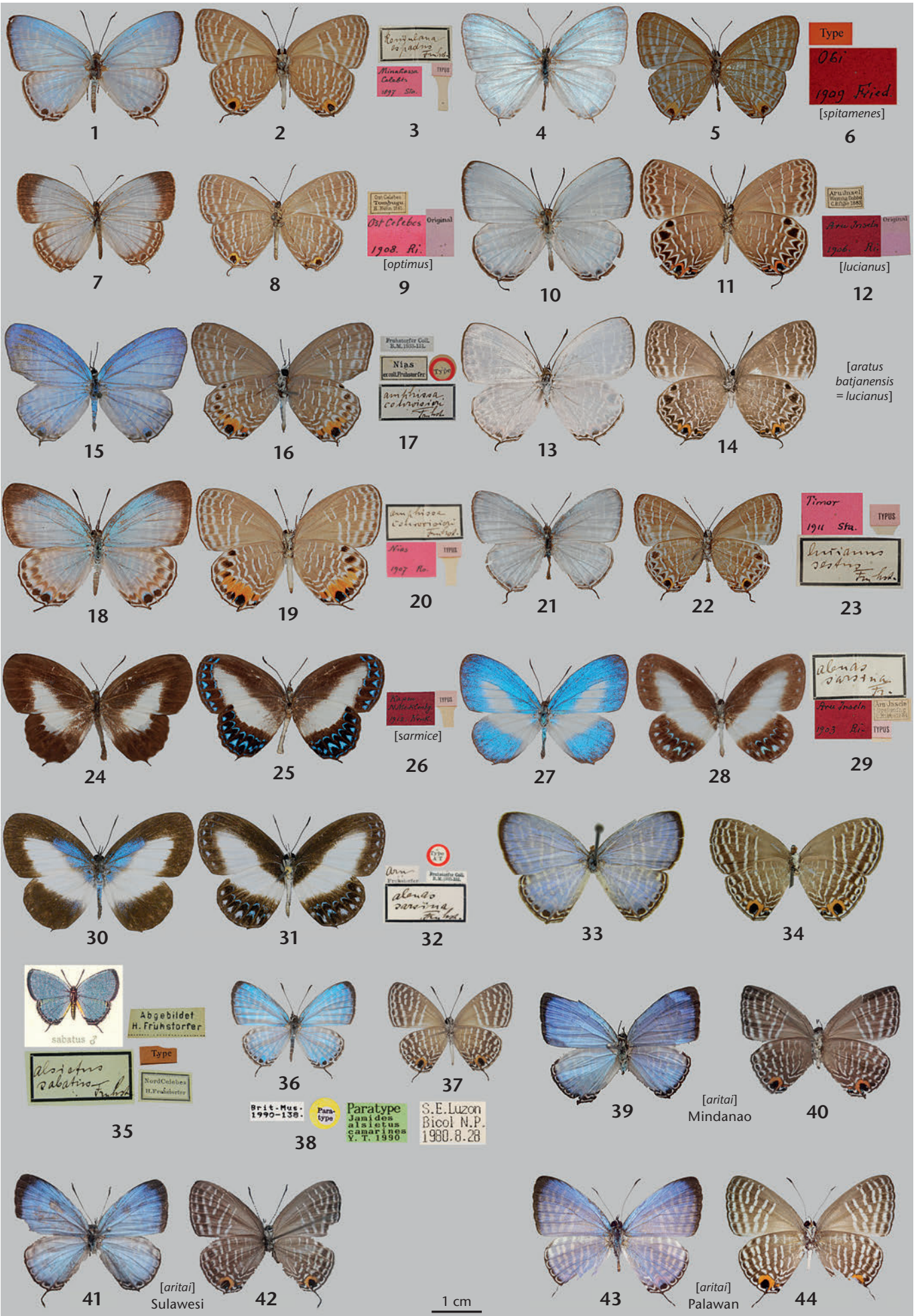
Lampides aleuas sarmice FRUHSTORFER, 1915

Lampides aleuas sarmice: FRUHSTORFER (1915a: 32). Neu-Mecklenburg [= New Ireland].

(Figs. 24–26 ♀.)

FRUHSTORFER mentions only a single ♀ in his description and states it to be in the COURVOISIER collection.

Figs. 1–3: *Lampides kondulana espada* FRUHSTORFER, 1915 [= *Jamides alecto espada* (FRUHSTORFER, 1915)], LT ♂; **Fig. 1:** upperside [Up], **Fig. 2:** underside [Un], **Fig. 3:** labels. — **Figs. 4–6:** *Lampides suidas spitamenes* FRUHSTORFER, 1915 [= *Jamides pura spitamenes* (FRUHSTORFER, 1915)], HT ♂; **Fig. 4:** Up, **Fig. 5:** Un, **Fig. 6:** labels. — **Figs. 7–9:** *Plebeius optimus* RÖBER, 1886 [= *Jamides celeno optimus* (RÖBER, 1886)], PLT ♂; **Fig. 7:** Up, **Fig. 8:** Un, **Fig. 9:** labels. — **Figs. 10–14:** *Jamides aratus batjanensis* RÖBER, 1886. **Figs. 10–12:** *Plebeius lucianus* RÖBER, 1886, PLT ♂, Aru; **Fig. 10:** Up, **Fig. 11:** Un, **Fig. 12:** labels. **Figs. 13–14:** *Jamides aratus batjanensis* from Sulawesi, ♂; **Fig. 13:** Up, **Fig. 14:** Un. — **Figs. 15–20:** *Lampides amphissa courvoisieri* FRUHSTORFER, 1915 [= *Jamides cyta courvoisieri* (FRUHSTORFER, 1915)]. **Figs. 15–17:** LT ♂, **Fig. 15:** Up, **Fig. 16:** Un, **Fig. 17:** labels (BMNH). **Figs. 18–20:** PLT ♀. **Fig. 18:** Up, **Fig. 19:** Un, **Fig. 20:** labels (NHMB). — **Figs. 21–23:** *Lampides aetherialis sestus* FRUHSTORFER, 1915 [= *Jamides aratus sestus* (FRUHSTORFER, 1915)], LT ♂; **Fig. 21:** Up, **Fig. 22:** Un, **Fig. 23:** labels. — **Figs. 24–26:** *Lampides aleuas sarmice* FRUHSTORFER, 1915 [= *Jamides allectus sarmice* (FRUHSTORFER, 1915)], HT ♀; **Fig. 24:** Up, **Fig. 25:** Un, **Fig. 26:** labels. — **Figs. 27–32:** *Lampides aleuas sarsina* FRUHSTORFER, 1915 [= *Jamides aleuas sarsina* (FRUHSTORFER, 1915)]. LT ♂; **Fig. 27:** Up, **Fig. 28:** Un, **Fig. 29:** labels (NHMB). PLT ♀; **Fig. 30:** Up, **Fig. 31:** Un, **Fig. 32:** labels (BMNH). — **Figs. 33–38:** *Lampides alsietus sabatus* FRUHSTORFER, 1915 [= *Jamides sabatus* (FRUHSTORFER, 1915)] **Figs. 33–35:** HT ♂; **Fig. 33:** Up, **Fig. 34:** Un, **Fig. 35:** SEITZ image + labels (ZSM). **Figs. 36–38:** PT ♂ of syn. *camarines* TAKANAMI, 1990; **Fig. 36:** Up, **Fig. 37:** Un, **Fig. 38:** labels (BMNH). — **Figs. 39–44:** *Jamides aritai* HAYASHI, [1977]. **Figs. 39–40:** Mindanao (= syn. *mindanaensis* HAYASHI, 1977), ♂ Up, Un. **Figs. 41–42:** Sulawesi, ♂ Up, Un. **Figs. 43–44:** Palawan, ♂ Up, Un. — Scale bar = 1 cm, valid for all specimens = approximately natural size for all specimens (not valid for labels).



Holotype ♀ by monotypy: “Kapsu NMecklenbg. 1912 KruK. [h] [red] /TYPUS [p] [pink] /HOLOTYPE ♀ *sarsina* FRUH. CASSIDY III. 13 [h]”.

Currently treated as a subspecies of *Jamides allectus* (GROSE-SMITH, 1894[: 576]), following PARSONS (1998: 451).

***Lampides aleuas sarsina* FRUHSTORFER, 1915**

Lampides aleuas sarsina: FRUHSTORFER (1915a: 31). Aru. (Figs. 27–29 ♂ [NHMB], 30–32 ♀ [BMNH].)

FRUHSTORFER described a pair of specimens from Aru.

Lectotype ♂ here designated: “Aru-Inseln Ureiuning C. RIBBE 1884 [p] /Aru Inseln 1903 Bi. [h] [red] /*aleuas sarsina* FR. [in FRUHSTORFER’s hand]/LECTOTYPE ♂ *sarsina* FRUH. CASSIDY III. 13 [h].”

Currently treated as a subspecies of *Jamides aleuas* (C. & R. FELDER, 1865[: 268]), following TITE (1960: 330).

A ♀ in BMNH with data: “Type AT [p] [red]/ Aru [h] FRUHSTORFER [p]/ FRUHSTORFER Coll. B.M. 1933-131 [p]/ *aleuas sarsina* FRUH [h] [in FRUHSTORFER’s hand]” is considered a paralectotype.

***Lampides alsietus sabatus* FRUHSTORFER, 1915**

Lampides alsietus sabatus: FRUHSTORFER (1915a: 16). North Sulawesi? (Figs. 33–35 ♂ [ZSM].)

There is a ♂ specimen marked as type in ZSM (Munich): “*alsietus sabatus* FRUHST. [h] [in FRUHSTORFER’s hand]/ Abgebildet [= figured] H. FRUHSTORFER [p] /Nord Celebes, H. FRUHSTORFER.[p]/Type [p] [red]”. The “Abgebildet” probably refers to the image on Plate 151 in SEITZ (1927) (see inset on Fig. 35). FRUHSTORFER makes no mention of multiple specimens in his description, so this Munich specimen is considered to be the holotype by monotypy. Regarding the type locality of *sabatus*, FRUHSTORFER writes (in translation): “Patria: Of the southern Philippines or North Sulawesi. Bought from STAUDINGER, who was not able to supply data of its origin with certainty.”

The discussion section below expands on the revisionary taxonomic implications of the discovery of the types of *espada* and *sabatus*.

Genus *Caleta* HIROWATARI, 1992

= *Castalius* (*caleta* species-group): FRUHSTORFER (1922: 890).

= †*Pycnophallium*: TOXOPEUS (1929: 228); *nomen nudum*.

Caleta: HIROWATARI (1992: 40)

FRUHSTORFER (1922: 890) grouped together a number of taxa of genus *Castalius* HÜBNER, [1819] (type species *Papilio rosimon* FABRICIUS, 1775[: 523], by selection of SCUDDER 1875: 135), principally from Sulawesi and the Philippines, and called them in the headline “*Caleta*-Artengruppe” (or “*Caleta* Species-Group”). He failed, however, to list any descriptive characters that would distinguish it from other species included in *Castalius* at that time. This action was insufficient to constitute the description of a new genus.

CORBET & PENDLEBURY (1934, 1956) continued to use *Castalius* for the generic name of the Malayan species of *Castalius*, as did LEWIS (1974) for *Castalius* [*sensu lato*].

HEMMING (1967) listed “*Caleta*” as a genus-group taxon and provided both a bibliographic reference to FRUHSTORFER’s earlier work and made the designation of *Lycaena caleta* HEWITSON, [1876] as the type-species of †*Caleta*. These actions would have satisfied the requirements of Articles 13.1.2 and 13.3 of the ICZN (1999), had FRUHSTORFER’s description been adequate, but it was not. Thus †*Caleta* cannot correctly be attributed to HEMMING.

Several authors since HEMMING, notably, ELIOT (1973, 1978), D’ABRERA (1986) and HIROWATARI (1992, 1993), have enlarged the biogeographical concept of the genus †*Caleta* but have erroneously attributed †*Caleta* to FRUHSTORFER (1922), without realising that FRUHSTORFER’s actions had not been sufficient to establish genus-group status for his “*Caleta* species group”.

Of these authors, however, only HIROWATARI (1992: 40) described very well the distinctive characteristics of those species which he listed as belonging to *Caleta*, rather than to *Castalius* [*sensu stricto*]. He also confirmed the type species of *Caleta* as *Lycaena caleta* by monotypy. This action of HIROWATARI is thus the first adequately to fulfil the requirements of the ICZN (1999) for the proper fixation of the genus *Caleta*, which should henceforth take his name.

TOXOPEUS (1929: 228) listed two species of *Castalius* under a new genus name †*Pycnophallium*, and HEMMING (1964) designated *Polyommatus roxus* GODART, [1814], as the type species of †*Pycnophallium*. However, HEMMING also made clear that †*Pycnophallium* had never actually been published with a description, and so was invalid, and he also synonymised it with *Castalius*.

***Castalius elna* forma †*elina* FRUHSTORFER, 1918**

Castalius elna forma †*elina* FRUHSTORFER (1918: 37); infra-subspecific. India, Sikkim.

(Figs. 45–47 ♂.)

FRUHSTORFER described *elina* from an indeterminate number of specimens and included locations of “Sikkim, Bhutan, Assam and Birma”. One of these original specimens (no type material, as being an infrasubspecific for ma) is deposited in NHMB and has the following labels: “Sikkim 1913 Ween [h] [pink] /TYPUS” [p] [pink] [in fact this is no type at all].

Nominate *Caleta elna* (HEWITSON, [1876]): pl. 35, fig. 8, is from Java. The taxon †*elina* is currently treated as an infrasubspecific denotation for the dry-season form of *Caleta elna nolitaeta* (FRUHSTORFER, 1918[: 37]).

Genus *Arhopala* BOISDUVAL, 1832

***Arhopala ganesa formosana* KATO, 1930**

Arhopala ganesa formosana: KATO (1930: 206).

(Figs. 48–50 ♂.)

Lectotype ♂ here designated: “Tainan [sic] Formosa 1911 H.S. [h] [pink] /TYPUS [p] [pink] /LECTOTYPE *formosana* KATO CASSIDY III. 2013 [h]”. Described by KATO and listed by EVANS (1957: 128) as a subspecies of *A. ganesa*, although he also states “none in BM” and so had probably not seen a specimen and certainly not this type. Following external examination, it is better regarded as a synonym of *Arhopala japonica* (MURRAY, 1874): 169, **syn. n.**

Genus *Flos* DOHERTY, 1889

Amblypodia kuehni RÖBER, 1887

Amblypodia kuehni: RÖBER (1887: 200, pl. 9, figs 5 ♂, 8 ♀).

(Figs. 51–53 ♂.)

“Bangkei H. KÜHN 1885 [p]/ Original [p] [mauve] /Bangkei 1908 Ri [h] [red]”. EVANS (1957: 131) lists this taxon as *Flos kuehni* [sic] and notes that the type of *kuehni* is held in the BMNH, while D’ABRERA (1986: 584) lists *Flos kuhni* [sic] and illustrates a ♂ with a red “type” label alongside. This specimen appears to have been collected by H. KÜHN in Bangkei in 1885 and acquired by COURVOISIER from RIBBE in 1908. Whilst previously considered a syntype of the ♂ in BMNH, it currently has no taxonomic status. In accordance with the ICZN (1999: Article 32.5.2.1.), the correct spelling of this taxon is *Flos kuehni*.

Genus *Poritia* MOORE, [1866]

Poritia pleurata courvoisieri FRUHSTORFER, 1917

Poritia pleurata courvoisieri: FRUHSTORFER (1917: 40).

(Figs. 54–56 ♀.)

FRUHSTORFER described this taxon from a single ♀ and stated it to be in the COURVOISIER collection. Holotype ♀ by monotypy: “*pleurata courvoisieri* FRUHST. [in FRUHSTORFER’s hand] /Ost-Java Coll. H. ROLLE [p] /Ost Java 1905 Ro [h] [pink] /Type [p] [tan] /TYPUS [p] [pink] /HOLOTYPE *courvoisieri* FRUH. CASSIDY III. 2013 [h]”.

Currently treated as *Poritia phama courvoisieri* following CORBET (1940: 343). CORBET’s taxon *pheda* from West Java is considered a synonym of *courvoisieri*, **syn. n.**

Genus *Miletus* HÜBNER, [1819]

Gerydus courvoisieri FRUHSTORFER, 1915

Gerydus courvoisieri: FRUHSTORFER (1915b: 268 ♂). Java.

(Figs. 57–59 ♂.)

FRUHSTORFER described this taxon from a single ♂ and stated it to be in the COURVOISIER collection. Holotype ♂ by monotypy: “Buitenzorg Java 1911 G [h] [pink] /TYPUS [p] [pink] /HOLOTYPE *courvoisieri* FRUH. CASSIDY III. 2013 [h]”.

Currently treated as a synonym of *Miletus boisduvali boisduvali* (MOORE, 1858[: 19, pl. 1a, fig. 1]), of which the Javanese ♀ holotype is held in BMNH, following ELIOT (1961: 166).

Discussion

The positions of *espada* and *sabatus* within *Jamides* have not been stable. FRUHSTORFER described *espada* under *kondulana*, which has itself been considered as a subspecies of *alecto* following RILEY & CORBET (1938: 154). FRUHSTORFER described *sabatus*, of uncertain location, under *alsietus* which is from Bazilan (= Basilan). This position for *sabatus* was retained in the 1990s by authors dealing with the Philippine Islands (TAKANAMI 1990, TREADAWAY 1995).

Also in 1990, TAKANAMI described a new subspecies, *J. alsietus camarines*, from Marinduque and several more Philippine locations. More recently authors (TAKANAMI & SEKI 1997, TREADAWAY & SCHRÖDER 2012) have given *camarines* species status on its own and placed *sabatus* as a subspecies of *J. espada*.

The discovery and examination of the type of *espada* has confirmed its synonymy with *alecto*, making the combination of *sabatus* with *espada* inappropriate. Comparison of the images of the type of *sabatus* (Munich) with paratypes of *camarines* (London) suggests that their conspecificity is highly probable. Therefore I propose the following arrangement:

Jamides alecto espada FRUHSTORFER, 1915, **stat. n.**

Jamides sabatus FRUHSTORFER, 1915, **stat. n.**

= *camarines* TAKANAMI, 1990, **syn. n.**

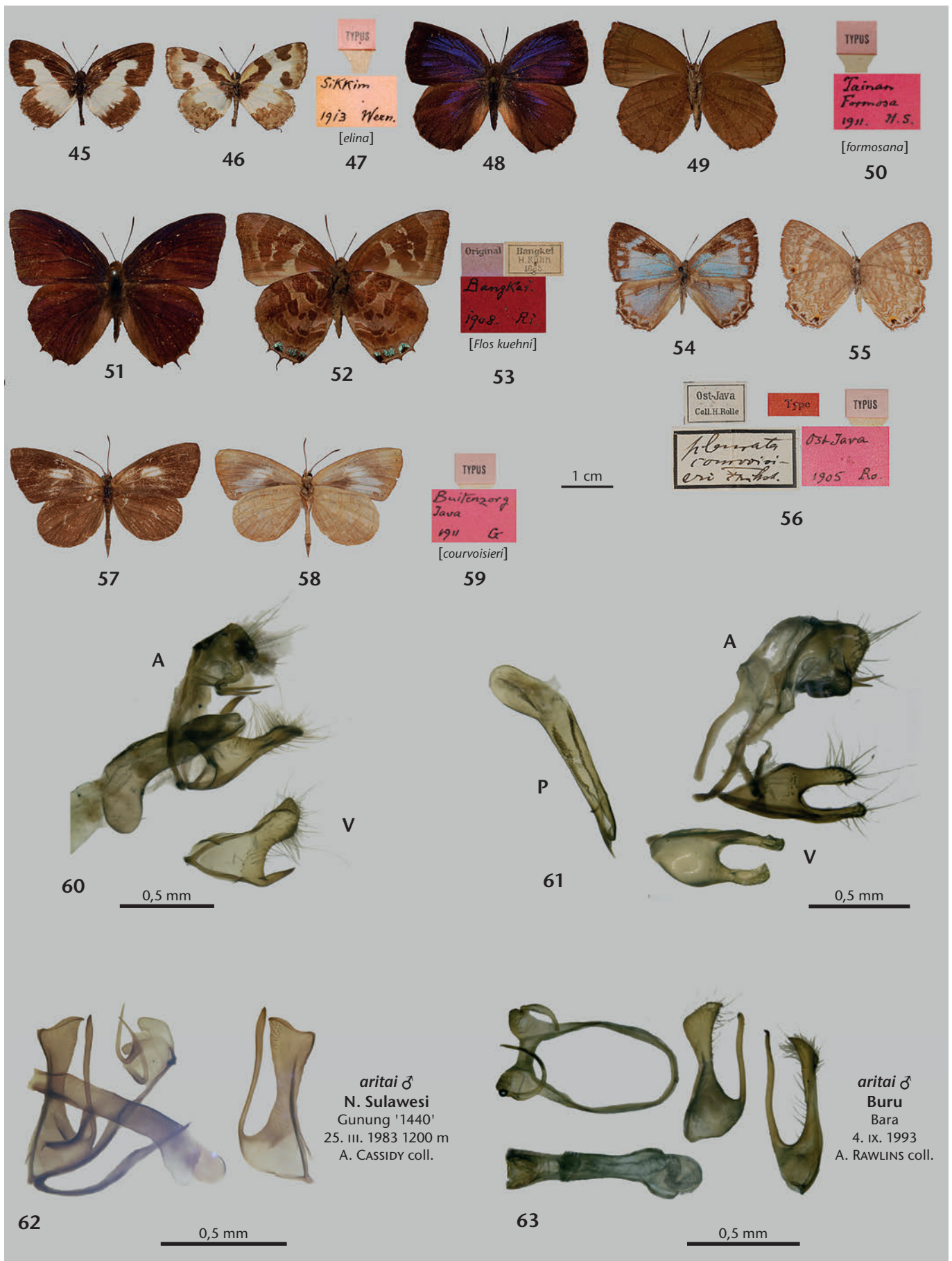
(Figs. 36–38 [paratype in BMNH].)

This new status of *espada* also raises further problems relating to the *Jamides* fauna of Sulawesi, Maluku and the Philippines: the status of “*Jamides rothschildi*” auctt. and its putative subspecies *aritai* HAYASHI, [1977a][: 151] and *mindanensis* HAYASHI, 1977b[: 167].

Jamides †*rothschildi* is a *nomen nudum* and is invalid. It was first attributed to “TOXOPEUS (M.S.)” by D’ABRERA (1971) and perpetuated in Edition 2 (D’ABRERA 1977: 354). Although it was accompanied by an illustration of two butterflies from Seram, Maluku Province, Indonesia, it contained no written description. D’ABRERA suggested that “It is likely that TOXOPEUS never actually published this name”, and indeed no such publication has been discovered. Subsequently, HAYASHI ([1977]a, 1977b) published his descriptions of two subordinate taxa, but this action still did not properly describe or fix a type specimen for †*rothschildi*, which remains an invalid name.

TAKANAMI (1990: 71) wrongly attributed †*rothschildi* to HAYASHI, but helpfully included drawings of the ♂ genitalia of the taxon *mindanensis* and has subsequently confirmed (pers. comm.) that those of *aritai* are of the same form. More recently, dissections by the author of ♂♂ from North Sulawesi and Buru have confirmed the conspecificity of those specimens with *aritai* and *mindanensis*.

As *aritai* is the earliest published available name for the species, with ♂ genitalia of the form shown in Figs. 62–63,



Figs. 45–47: *Castalius elna* forma \ddot{z} *elina* ♂; Up, Un, labels. — Figs. 48–50: *Arhopala ganesa formosana* [= *Arhopala japonica*] ♂; Up, Un, labels. — Figs. 51–53: *Flos kuehni* ♂; Up, Un, labels. — Figs. 54–56: *Poritia phama courvoisieri* ♀; Up, Un, labels. — Figs. 57–59: *Miletus boisduvali boisduvali* [= *courvoisieri*] ♂; Up, Un, labels. — Scale bar = 1 cm, valid for all specimens = approximately natural size for all specimens (not valid for labels). — Figs. 60–63: ♂ genitalia (A = armature, V = valva, P = phallus [or aedeagus]). Fig 60: *Jamides alecto espada*. — Fig 61: *Jamides pura spitamenes*. — Fig 62: *Jamides aritai*, Sulawesi. Fig 63: *Jamides aritai*, Buru. — Scales see in pictures.

with type locality Palawan and a range that includes Sulawesi, Seram and Buru, I propose the following arrangement:

Jamides aritai HAYASHI, [1977a] **stat. n.**

Range: Sulawesi, Maluku, Philippines.

(Figs. 39–40 Mindanao, Figs. 41–42 Sulawesi, Figs. 43–44 Palawan.)

= *†rothschildi* auctorum, *nomen nudum*

= *mindanensis* HAYASHI, 1977b; synonymised by TAKANAMI & SEKI (1997).

More detailed examination of longer series of insects from this wide variety of locations might lead to the proposal of further subspecific names subordinate to *aritai*, but none is proposed here.

Notes on methods used

All genitalic preparations were initiated by maceration in 0.1N KOH before the parts were separated in 70% iso-propanol. After study, elements of the genitalia were dried in absolute iso-propanol and then stored in glycerol in nested polypropylene vials. Microphotography was undertaken in glycerol, to inhibit movement, using an Aigo GE-5 digital microscope. Multiple images were combined using Helicon Focus 5.3.7 X64 software from Helicon Soft Ltd to provide enhanced depth of field. Photographs of adult specimens were taken using a Nikon D80 digital SLR camera, usually with multiple flash illumination. Images were post-processed, including colour balancing for different lighting conditions, using Photoshop Elements 6.0 from Adobe. Image backgrounds have been flattened in Photoshop to remove distracting shadow and reflection effects from mounting materials. All images are scaled to show adult specimens represented at life size.

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References

- BOISDUVAL, J. B. (1832): Voyage de découvertes de l'Astrolabe (etc). Faune entomologique de l'Océan Pacifique (etc). — Paris (J. Tastu), 716 pp.
- CORBET, A. S. (1940): A revision of the Malayan species of Poritinae (Lepidoptera: Lycaenidae). — Transactions of the Royal Entomological Society of London, London, **90**: 337–350, 1 pl., 21 figs.
- , & PENDLEBURY, H. M. (1934): The butterflies of the Malay Peninsula, Edition 1. — Kuala Lumpur (Kyle, Palmer & Co), xxiv + 252 pp., 15 pls., 2 maps.
- , & — (1956, edited by N. D. RILEY): The butterflies of the Malay Peninsula, Edition 2. — Edinburgh (Oliver & Boyd), xi + 537 pp., 159 figs, 55 pls.
- CRAMER, P. (1775–1780): De Uitlandsche Kapellen, voorkomende in de drie Waereld-Deelen Asia, Afrika en America (etc). 4 vols (252 pp. 400 pls.) and Supplement (184 pp. 42 pls.). — Amsterdam, Baalde & Utrecht (Barthelemey Wild).
- D'ABRERA, B. (1971): Butterflies of the Australian region, edn. 1. — Melbourne (Lansdowne Press), 415 pp.
- (1977): Butterflies of the Australian region, edn. 2. — Melbourne (Lansdowne Press), 415 pp.
- (1986): Butterflies of the Oriental region, Part III, Lycaenidae & Riodinidae. — Melbourne (Hill House), pp. 536–672.
- ELIOT, J. N. (1961): An analysis of the genus *Miletus* HÜBNER (Lepidoptera: Lycaenidae). — Bulletin of the Raffles Museum, Singapore, **26**: 154–177, 24 figs.
- (1973): The higher classification of the Lycaenidae (Lepidoptera): a tentative arrangement. — Bulletin of the British Museum (Natural History), Entomology, **28**: 371–505.
- (1978), in CORBET & PENDLEBURY, The butterflies of the Malay Peninsula, Edition 3. — Kuala Lumpur (Malayan Nature Society), xiv + 578 pp., 35 pls., 438 genitalia figs.
- EVANS, W. H. (1957): A revision of the *Arhopala* group of oriental Lycaenidae (Lepidoptera: Rhopalocera). — Bulletin of the British Museum (Natural History), London, Entomology, **5** (3): 85–141.
- FABRICIUS, J. C. (1775): Systema Entomologiae, sistens insectorum classes, ordines, genera, species, [etc.]. — Flensburg, Leipzig (Officina Libraria Kortii), 832 pp.
- FELDER, C. (1860): Lepidopterorum Amboinensium species novae diagnosis. — Sitzungsberichte der Akademie der Wissenschaften Wien, Vienna, **40**: 449–462.
- , & FELDER, R. ([1860]): Lepidopterologische Fragmente. Parts 4 & 5. — Wiener Entomologische Monatsschrift, Vienna, **4**: 225–251, 2 pls., 394–402, 2 pls.

- , & — (1865–75): Rhopalocera. — *In*: Reise der Österreichischen Fregatte Novara um die Erde in den Jahren 1857, 1858, 1859 unter den Befehlen des Commodore B. von WÜLKERSTORF-URBAIR. Zoologischer Theil. Zweiter Band, Zweite Abtheilung, Lepidoptera. — Vienna (k.k. Hof- und Staatsdruckerei), 549 pp., 140 pls.
- FRUHSTORFER, H. (1915a): Revision der Gattung *Lampides* auf Grund anatomischer Untersuchungen. — *Archiv für Naturgeschichte*, Berlin, (A) **81** (6): 1–46, 4 pls.
- (1915b): Übersicht der Gerydinae und Diagnosen neuer oder verkannter Formen (Lep., Lyc.). — *Zeitschrift für Wissenschaftliche Insektenbiologie*, Berlin, **11** (9/10): 267–269, 4 figs.
- (1917): Neue *Poritia*-Rassen. — *Societas Entomologica*, Stuttgart, **32** (10): 39–40.
- (1918): Revision der Gattung *Castalius* auf Grund der Morphologie der Generationsorgane. — *Tijdschrift voor Entomologie*, Amsterdam, **61**: 17–44, pls. 4, 5.
- (1922): *Caleta*-Artengruppe [= Genus *Castalius*, species-group of *C. caleta*]. — P. 890–891 *in*: SEITZ, A. (1908–1928) (ed.), *Die Gross-Schmetterlinge der Erde*, Vol. **9**. — Stuttgart (A. Kernen), viii + 1197 pp., pls. 1–175.
- GROSE-SMITH, H. (1894): An account of a collection of diurnal Lepidoptera made by Mr. DOHERTY at Humboldt Bay in Dutch New Guinea and in neighbouring islands (part iii). — *Novitates zoologicae*, Tring, **1** (3): 571–583.
- HAYASHI, H. ([1977]a): New subspecies of *Jamides* and *Udara* from Palawan (Lepidoptera: Lycaenidae). — *Tyô to Ga*, Tokyo, **27** (4): 151–155, 20 figs.
- (1977b): New subspecies of *Jamides* and *Charana* from Mindanao (Lepidoptera: Lycaenidae). — *Tyô to Ga*, Tokyo, **28** (4): 167–168, 6 figs.
- HEMMING, F. (1964): Selection of type species for five nominal genera of the family Lycaenidae. — *Annotationes Lepidopterologicae*, Part **4**: 132–134.
- (1967): The generic names of the butterflies and their type species (Lepidoptera, Lycaenidae). — *Bulletin of the British Museum (Natural History)*, Entomology, **Supplement 9**: 509 pp.
- HEWITSON, W. C. (1872–1877): Illustrations of new species of exotic butterflies, selected chiefly from the collections of SAUNDERS & HEWITSON, vol. 5. — London (van Voorst), 127 pp., pls. 1–60.
- HIROWATARI, T. (1992): A generic classification of the tribe Polyommataini of the Oriental and Australian regions (Lepidoptera, Lycaenidae, Polyommatainae). — *Bulletin of the University of Osaka Prefecture (B)*, **44** (Supplement): 1–102.
- (1993): Biogeography of the genus *Caleta* FRUHSTORFER (Lepidoptera, Lycaenidae). — *Japanese Journal of Entomology*, Tokyo, **61** (4): 771–782, 21 figs.
- HÜBNER, J. (1816–1826): Verzeichniss bekannter Schmettlinge [sic] (5). — Augsburg (the author), 516 pp.
- ICZN [INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE, ed.] (1999): International Code of Zoological Nomenclature, fourth edition, adopted by the International Union of Biological Sciences. — London (International Trust for Zoological Nomenclature, BMNH), xxix + 306 pp. — The Code can also be found in the WWW under iczn.org.
- LEWIS, H. L. (1974): *Butterflies of the world*. — London (Harrap), xvi + 104 pp., 208 pls.
- MOORE, F. ([1858]): [no separate title; HORSFIELD's preface acknowledges that all new descriptions were by MOORE, the plates by WESTWOOD], *in*: HORSFIELD, T., & MOORE, F. (eds.), *Catalogue of the lepidopterous insects in the museum of the honourable East India Company*. — Vol. **1** (Rhopalocera): i–v, 1–14, 17–278, i–iv, 1–11, 18 pls. [1–12, 1a–6a], London (Wm. H. Allen).
- ([1866]): On the lepidopterous insects of Bengal. — *Proceedings of the Zoological Society of London*, **1865** (3): 755–823, pls. 41–43.
- (1886): List of the Lepidoptera of Mergui and its Archipelago, collected for the trustees of the Indian Museum, Calcutta, by Dr. John ANDERSON. — *Journal of the Linnean Society*, London, **21** (126): 29–60, pls. 3, 4.
- MURRAY, R. P. (1874): Some notes on Japanese butterflies with descriptions of new genera and species. — *Entomologist's Monthly Magazine*, London, **11**: 166–172.
- PARSONS, M. (1998): *The butterflies of Papua New Guinea*. — London (Academic Press), 736 pp., 162 pls.
- RILEY, N. D., & CORBET, A. S. (1938): A revision of the Malayan species of *Jamides* HÜBNER (Lepidoptera: Lycaenidae). — *Transactions of the Royal Entomological Society of London*, London, **87** (5): 147–159.
- RÖBER, J. (1886): Neue Tagschmetterlinge der Indo-Australischen Fauna. — *Correspondenzblatt des Entomologischen Vereins "Iris" zu Dresden*, Dresden, **1** (3): 45–72, pls. 2–5.
- (1887): Neue Schmetterlinge aus Indien. — *Correspondenzblatt des Entomologischen Vereins "Iris" zu Dresden*, Dresden, **1** (4): 185–202, pls. 7–9.
- SCUDDER, S. H. (1875): Historical sketch of the generic names proposed for butterflies. — *Proceedings of the American Society of Arts and Sciences*, Cambridge (Mass.), **10**: 91–293.
- SEITZ, A. (1914–1927): 8. Familie: Lycaenidae (Einleitung [799–802]; 20. Gattung: *Jamides* HBN. [901–903]; Theclini [942–1007], [Poritiini] [1007–1010]). — Pp. 799–1026, pls. 138–175 *in*: SEITZ, A. (1908–1928) (ed.), *Die Indo-Australischen Tagfalter*. — Stuttgart (A. Kernen), viii + 1197 pp., pls. 1–175.
- TAKANAMI, Y. (1989): On some type specimens of Lycaenidae from South East Asia. — *Tyô to Ga*, Tokyo, **40** (1): 23–80.
- (1990): Miscellaneous notes on Lycaenidae (Lepidoptera) from South-East Asia (I). — *Tyô to Ga*, Tokyo, **41** (2): 67–78.
- , & SEKI, Y. (1997–2013): A synonymic list of Lycaenidae (Lepidoptera) from the Philippines. Edition 12. — URL: www.asahi-net.or.jp/~EY4Y-TKNM/philframe.html (last visit: 17. v. 2013).
- TITE, G. E. (1960): The *Jamides euechylas* complex (Lepidoptera: Lycaenidae). — *Bulletin of the British Museum of Natural History*, Entomology, London, **9** (5): 321–332.
- TREADAWAY, C. G. (1995): Checklist of the butterflies of the Philippine Islands (Lepidoptera: Rhopalocera). — *Nachrichten des Entomologischen Vereins Apollo*, Frankfurt am Main, **Supplementum 14**: 7–118.
- , & SCHROEDER, H. G. (2012): Revised checklist of the butterflies of the Philippine Islands (Lepidoptera: Rhopalocera). — *Nachrichten des Entomologischen Vereins Apollo*, Frankfurt am Main, **Supplementum 20**: 64 pp.

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