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(Odonata: Euphaeidae)

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Etymology of the scientific names of the extant euphaeid damselflies (Odonata: Euphaeidae)

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Abstract

This publication details the etymology of all available scientific names given to the extant members of the odonate family Euphaeidae. Nine of the 15 available genus-group names are presently considered valid, two names have been rejected as homonyms and four are synonyms. Of the 101 available species-group names, 79 are presently regarded as valid species, one is a subspecies and 21 are synonyms. A synonymic checklist of extant Euphaeidae is presented, with an annotated list of the author names. Where available, information on the primary type of each species-group taxon is given, including type locality, collector and the present type depository. The historical development of knowledge of euphaeid diversity beginning in 1840 is discussed. A grouping of the 116 taxon names according to the meaning of their roots is presented as an appendix.

Key words: dragonflies, history of odonatology, biography, taxonomy, nomenclature

Introduction

In September 2022, the authors published a treatise on the etymology of the scientific genus- and species-group names of the extant taxa of the damselfly family Calopterygidae (Hämäläinen & Fliedner 2022). This was the first attempt of its kind for Odonata. Earlier publications on this topic had covered the odonate taxa within a certain geographical area or the taxa named by individual researchers.

Here, we present a similar treatment of the names of extant taxa in the damselfly family Euphaeidae, which also belongs to the provisionally recognized superfamily Calopterygoidea. In Euphaeidae, the number of known species is less than half that in Calopterygidae, and their distribution is restricted (with one exception) to the Oriental zoogeographic realm. Like calopterygids, euphaeids include also many glorious iridescent-winged, stream-dwelling species. While the first illustrations of some European *Calopteryx* species appeared in Medieval times, and the first scientific observations of them were published in the early 1600's, the first descriptions (and an illustration) of euphaeids did not appear until 1840.

We begin with a short overview of the progress of knowledge of euphaeid diversity (pp. 3-9). A synonymic checklist of all available (by the terms of the International Code of the Zoological Nomenclature) genus-group and species-group names of the known extant members of the family is given on pp. 10-13. This includes 15 genus-group and 101 species-

group names. Genera and species within each genus are listed in alphabetic order. Synonymic names are given using the original binomial or trinomial combinations.

At present, of the 15 genus-group names, 9 are ranked as valid genera, the remaining 6 are considered synonyms or are rejected as homonyms. From the 101 species-group names, 79 are at present listed as valid species, 1 as a subspecies and 21 as synonyms.

Following the checklist, an annotated list in alphabetic order of the authors and co-authors of the available genus- and species-group names is provided (pp. 13-14). The list includes 46 individuals, 9 having named both genera and species.

The main section 'Etymology of the names with notes on the taxa' (pp. 14-74) lists the genus- and species-group names separately in alphabetic order. The heading (in bold) of each taxon entry includes [in square brackets] the status of the name either as a (presently) 'recognized' genus or species, a 'recognized' subspecies, or as a synonym or homonym.

On the second line of each taxon entry follows the citation of the genus name or the binomial with author(s) and year. The way in which the name or binomial was originally introduced is presented in square brackets. The present status of synonymic names is indicated, and the homonyms are noted. The type species of each genus is specified.

The meaning of each name is followed by grammatical information given in braces, i.e. {curly brackets}. Genus names are always nouns in the nominative case differing only in gender (masculine, feminine or neuter). Species names, may be nouns in apposition (nominative case), nouns with genitive affixes or adjectival or participial complements, or pure adjectives. Apart from nouns in apposition or in the genitive case most are "declinable" meaning that the ending of the species name mostly needs to be changed if the species is placed in a genus with a different gender during revision. Where no change is required, the note "declinable" is not added.

At the end of each taxon entry the reference to the original publication is given. For the names introduced in the 'Synopsis des Caloptérygines' (Selys Longchamps 1853), a reference to the 'Monographie des Caloptérygines' (Selys Longchamps & Hagen 1854) is also given, since the synopsis was a forerunner of the monograph, and the descriptions in the latter are more detailed. For two genus-group names introduced by Fraser, two papers are referenced, since the names were first introduced in a key (Fraser 1928) before the proper definition (Fraser 1929). In both publications the genus names were presented as 'gen. nov.'

Other contents of the individual taxon entries vary. When available, an explanation or obvious reason for the choice of the name is presented by direct quotation(s) from the original description or definition of the taxon. An English translation of the quoted text is given [in square brackets] if the text is written in any language other than French.

In all species-group taxon entries, some information on the type specimens (especially of the primary type), including the collecting locality, date and collector (if known), is given. In many cases, part of the information is garnered from sources other than the original description. The museum holding the primary type is specified when known to us.

All names have been treated impartially; the taxonomic status (valid or synonym) of the name has no relevance as regards the contents and the length of the explanation.

The chapter 'Categorisation of the roots of the names' (pp. 82-84) attempts to classify both the genus- and species-group names into different categories.

Within the text we have included two 'additional' notes: 'Notes on the publication dates of Synopsis des Caloptérygines and Monographie des Caloptérygines' (p. 9) and 'Notes on the element *-phaea* in genus names of Coleoptera' (p. 22-23).

Notes on the progress of the knowledge of the euphaeid diversity

Although the euphaeids include many colourful winged damselflies, which equal in splendour their calopterygid counterparts, as far as we know, nothing was written about these insects before the 1840's. Neither are we aware of any illustrations published before 1840.

The first published information on a taxon in this family appeared in March 1840. It was a brief, four line long, definition of the genus *Euphaea*, published in the appendix of Edmond de Selys Longchamps' (1840) 'Monographie des Libellulidées d'Europe' (Fig. 1).

II. EUPHÆA. (DE SELYS.)

Genre exotique. — Diffère des *Calepteryx* en ce que les cellules sont moins nombreuses, les ailes plus étroites à la base et surtout par la présence d'un vrai parastigma oblong. — Exemple : *Calepteryx holosericea*.

Fig. 1. Definition of the genus *Euphaea*, published in Selys Longchamps (1840).

After completing the manuscript of his monograph in late October 1839, Selys received a copy of Hermann Burmeister's (1839) 'Handbuch der Entomologie', which covered nearly all odonate taxa known at that time. Selys decided to add some relevant information to his manuscript, including also definitions of two new exotic genera (*Euphaea* and *Libellago*), species of which Burmeister had placed into the genus *Calopteryx*.

At that time, Selys had already acquired in his collection specimens of several oriental euphaeid species. In 'Revue des Odonates ou Libellules d'Europe' (Selys Longchamps & Hagen 1850: 143), Selys wrote: "J'ai établi ce genre {*Euphaea*} en 1839 pour plusieurs espèces du sud-est de l'Asie, de la Cochinchine, de Java, et de l'Inde." Since at that time none of these species were yet named and described, Selys – obviously in haste – misidentified his Javan specimens as *Calopteryx holosericea*, and then presented this species as an 'example' of his new genus. Burmeister's description was very brief and the species locality was incorrectly labelled. [Actually, *C. holosericea* came from North America and is a synonym of *Calopteryx maculata* (Palisot de Beauvois, 1807); for details see the entry *Euphaea* (pp. 18-20).]

In the same year 1840, but obviously after Selys' book, Toussaint de Charpentier's (1840) description of a new species *Agriion fatime* appeared, based on a single female specimen from Turkey. Charpentier also gave a superb coloured illustration of this specimen (Fig. 2) and erected a new subgenus *Epallage* for the species *fatime*. For details, see entries *Epallage* and *fatime*.

Pierre Rambur (1842: 228-232) pointed out Selys' error of selecting *Calopteryx holosericea* as an 'example' of *Euphaea*, but accepted the use of the genus name *Euphaea* and pro-



Fig. 2. Illustration of *Epallage fatime* female, published in Charpentier (1840).

vided some differentiating characters from *Calopteryx*. However, Rambur's definition was marred by the fact that three of the six species (five of them being new) included in this genus were not euphaeids, belonging to the present families Calopterygidae, Polythoridae and Coenagrionidae! The three genuine euphaeid species were *Euphaea variegata*, *E. dispar* and *E. guerini*, all new species described by Rambur. So, only four euphaeid species had been described before the two major ground-breaking publications: 'Synopsis des Caloptérygines' (Selys 1853) and 'Monographie des Caloptérygines' (Selys & Hagen 1854). The synopsis was actually an outline of the 'Monographie' which included much more detailed definitions and descriptions. In these publications the genus *Euphaea* was divided into four subgenera: *Anisopleura*, *Epallage*, *Euphaea* and *Dysphaea*. In addition, the genus-group name *Bayadera* was introduced for one of the two 'groups' within the subgenus *Epallage*. [*Bayadera* was formally upgraded to subgenus by Selys (1873).] A total of eight new species (all valid) were described; five of them were authored by Selys and three by Hermann A. Hagen. In the 'Synopsis', the genus *Euphaea* was placed as the single genus within the Légion Euphaea (one of the seven legions in the subfamily Caloptérygines), but in 'Monographie' the former Légion Dictérias (including the neotropical genera *Heliocharis* and *Dictérias*) was included in Légion *Euphaea* as its second 'cohort', a change which later proved incorrect.

The later additions to the 'Synopsis des Caloptérygines' (Selys 1859; 1869; 1873; 1879) include a total of 16 new species-group taxa of the 'real' euphaeids in the Légion Euphaea. Ten of them, including one authored by Hagen, are presently recognised as valid species. Later, Selys (1891, 1898) described two more species and Hagen (1880) one species. Other

authors naming new species-group taxa before the end of the 19th century were: Robert McLachlan (1870, 1880, 1898), W. F. Kirby (1893) and Leopold Krüger (1898). In his 'Synonymic catalogue of Odonata', Kirby (1890) upgraded all Selysian subgenera to the rank of a full genus, and he replaced the genus name *Euphaea* with a new name *Pseudophaea* (with *Euphaea variegata* Rambur as its type species); for details, see entry *Pseudophaea*.

By the year 1900, a total of 39 species-group names had been introduced, and of these 25 names are presently ranked as valid species and one name a valid subspecies. Then, during the next four decades the number of valid described species doubled. In the period from 1902 to 1938 a total of 24 new species were described by a total of 11 authors: René



Fig. 3. Illustrations of the holotype male of *Anisopleura furcata* from Burma in Coll. Selys. Artwork by Guillaume Séverin. (© Royal Belgian Institute of Natural Sciences, Brussels).



Fig. 4. Illustration of *Euphaea dispar* male from India in Coll. Selys. Artwork by Guillaume Séverin. (© Royal Belgian Institute of Natural Sciences, Brussels).



Fig. 5. Illustration of *Euphaea subcostalis* male from Borneo in Coll. Selys. Artwork by Guillaume Séverin. (© Royal Belgian Institute of Natural Sciences, Brussels).



Fig. 6. Illustration of *Euphaea splendens* [originally as *Euphaea carissima*] male from Ceylon in Coll. Selys. Artwork by Guillaume Séverin. (© Royal Belgian Institute of Natural Sciences, Brussels).

Martin (1902, 1904), Friedrich Ris (1912, 1930), Kan Oguma (1913a), F. F. Laidlaw (1915, 1920), Herbert Campion (1924), F. C. Fraser (1924, 1927, 1928, 1938), J. G. Needham (1930), Yngve Sjöstedt (1932), John Cowley (1936), D. E. Kimmins (1936a, 1936b) and Douglas St. Quentin (1937). During this period also new genera were established. Martin (1902) erected the genus *Paraphaea* for *P. barbata* from Luzon. [The preoccupied genus name was replaced by *Heterophaea* by Cowley (1934a)]. Ris (1930) erected the genus *Cyclophaea* for *C. cyanifrons* from Palawan. In addition, Fraser (1928) introduced the genus names *Allophaea*, *Indophaea* and *Mesophaea* (preoccupied name, replaced by *Anisophaea* Fraser, 1934), but these genera are now all ranked as synonyms of *Euphaea*.

After 1938, followed a long pause of 28 years until any new extant euphaeids were named. Syoziro Asahina (1964) described *Bayadera ishigakiana* (originally as a subspecies) from Ishigaki Island, in the Ryukyu Islands. In the 1970's Asahina described three more new species; two of them, *Bayadera continentalis* (Asahina 1973) and *Euphaea inouei* (Asahina 1977) were originally treated as subspecies, and *Schmidtphaea schmidi* (Asahina 1978) was given a new genus. In the 1980's two new species were described by Wen-bao Zhou (1982) and Matti Hämäläinen (1985).

In the mid-1990's, an unexpected flow of descriptions of new euphaeid species started. Since 1995, no fewer than 25 new euphaeid species have been described, of which 24 are presently listed as valid species. In addition, one new genus – *Cryptophaea* – was defined.

	All taxa	Species	Subspecies	Synonyms
1840-1849	4	4	0	0
1850-1859	13	11	0	2
1860-1869	2	1	0	1
1870-1879	10	4	0	6
1880-1889	2	2	0	0
1890-1899	8	3	1	4
1900-1909	2	2	0	0
1910-1919	4	4	0	0
1920-1929	9	8	0	1
1930-1939	13	10	0	3
1940-1949	0	0	0	0
1950-1959	0	0	0	0
1960-1969	2	1	0	1
1970-1979	3	3	0	0
1980-1989	4	2	0	2
1990-1999	8	8	0	0
2000-2009	5	4	0	1
2010-2019	10	10	0	0
2020-2023	2	2	0	0
	101	79	1	21

A majority of the new species were found in Vietnam and southern China, an area which has proven to be a hotspot of euphaeid diversity. The opening of those countries (as well as Laos and Cambodia) to visiting foreign entomologists and the emergence of a young generation of local Odonata taxonomists have increased international co-operation, greatly facilitated by the internet. This co-operation is manifested by the fact that a majority of the new species have two or three authors. Information on individual authors' contributions is given on pages 13-14.

Table 1 shows the development of the described species-group taxa by decades.

Table 1. Number of the species-group taxa of Euphaeidae described each decade after 1840.

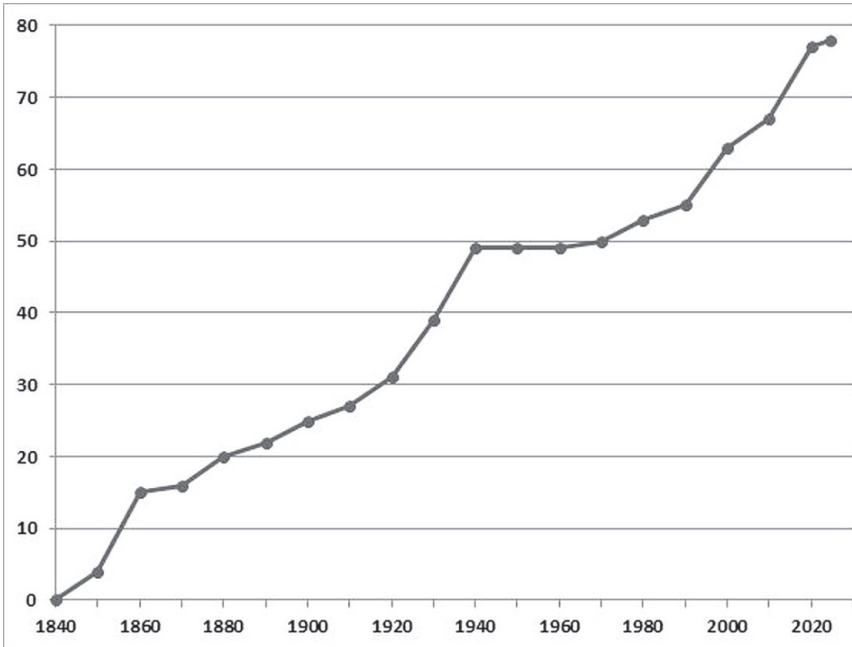


Fig. 7: Cumulative growth of the number of valid Euphaeidae species, described before 1st January of each year indicated.

Fig. 7 shows the cumulative growth of the number of valid species. The rapid increase in new species described since 1995, following a period of 55 years (1939 to 1994) during which only 6 new species were described, is notable.

Euphaeidae versus Epallagidae. As written above, Selys (1853) introduced the group name 'Légion Euphaea' to accommodate a single genus *Euphaea* with four subgenera: *Anisopleura*, *Epallage*, *Euphaea* and *Dysphaea*. The concept 'Légion Euphaea' corresponds to the present 'family Euphaeidae'. However, adherence to the requirements of Article 11.7.1 of the Code of Zoological Nomenclature (ICZN, 1999), rules out Selys as the author of the family name Euphaeidae.

The first correctly formulated family-group name based on the genus name *Euphaea* was 'subfamily Euphaeinae' (in the family Calopterygidae) introduced by Jacobson & Bianchi (1905: 793). However, two years earlier, Needham (1903: 743) had introduced 'subfamily Epallaginae' (in the family Calopterygidae). Later, both Epallagidae and Euphaeidae have been used as the correct name for this family. This dilemma has been addressed differently by Bechly (1999) and Trueman (1999), the former advocating the use of Epallagidae and the latter the use of Euphaeidae. However, this debate has not been resolved. Nearly all recent authors (including Dijkstra & al. 2013 and Bybee & al. 2021) publishing on the extant taxa of this family use the name Euphaeidae, but some authors working on fossil taxa use the name Epallagidae.

Notes on the publication dates of 'Synopsis des Caloptérygines' and 'Monographie des Caloptérygines'. Edmond de Selys Longchamps' manuscript of 'Synopsis des Caloptérygines' was presented to the Belgian Academy of Sciences at its meeting on 29 July 1853. Selys himself did not participate in this meeting, since he was at that time in Germany (from 1 July to 10 August). As pointed out by Cowley (1937), the synopsis was first published as a 'preprint' version, which was on sale for the public. The title page of the synopsis includes statements: "Lu à la séance du 29 juillet 1853" and "Ann. Bull., 1853"; the first date indicates the date when the manuscript was first presented orally. So far, a more detailed publication date has not been discussed in the odonatological literature. The publication must have taken place in the first half of December 1853, since on 15 December 1853, Selys wrote in his diary (Caulier-Mathy & Haesenne-Peremans, 2008) as follows: "J'ai reçu les premiers exemplaires de mon Synopsis des Caloptérygines. J'ai été à Bruxelles. Séance de l'Académie à 12 heures, ..." This diary entry confirms 1853 as the correct publication year of the synopsis, as is generally cited.

The correct publication year of the synopsis has been open to interpretation, since the complete issue of 'Annexe aux Bulletins – 1853-1854', including the synopsis, was published earliest in March 1854. In addition to Selys' work, the Annexe included two other publications on 'Sciences naturelles' and four publications on 'Histoire et économie politique'. The two sections had separate pagination.

The publication date of 'Monographie des Caloptérygines' – June 1854 – is stated on the title page of the volume. In Selys diary there are several notes referring to his work on it:

- 31 October 1853: "J'ai été à Liège, ... Société des Sciences où j'ai présenté mon manuscrit, accepté comme volume Monographie des Caloptérygines."
- 6 December 1853: "J'ai terminé mon manuscrit des caloptérygines."
- 8 December 1853: "J'ai envoyé à M. Dessain mon manuscrit pour les Mémoires de la Société des Sciences (Monographie des Caloptérygines)."
- 25 Mai 1854: "J'ai terminé le manuscrit de la Monographie des Caloptérygines don't M. Dessain imprime les dernières feuilles."
- 24 June 1854: "Corrigé les dernières épreuves tant de la Monographie des Caloptérygines (tome IX des Mémoires de la Société des Sciences de Liège) que du Synopsis des Gomphines (Bulletin de l'Académie de Bruxelles)."
- 29 June 1854: "Société royale des Sciences, distribution de mon volume, Monographie des Caloptérygines avec la collaboration de M. Hagen."

Thus, according to his diary entries, Selys had finished the manuscript of his monograph one week before the 'preprint' of the synopsis was published. So, this clearly shows that the synopsis was a mere outline of the much more extensive monograph. Selys had worked on the monograph, in collaboration with Hagen, since at least 1851. On 7 October 1851 Selys wrote in his diary: "J'ai écrit une longue lettre à M. Hagen résumant la classification des *Calopteryx* [Caloptérygines] que j'ai terminée il y a quelques jours et qui comprend dix-neuf genres et soixante-quinze espèces."

Synonymic checklist of Euphaeidae

In this list, the genera and the species, within each genus, are presented in alphabetic order. Synonymic names are presented using the original binomial or trinomial combinations. The symbol * indicates the type species of the genus.

Family **Euphaeidae** Jakobson & Bianchi, 1905

Anisopleura Selys, 1853

Anisopleura comes Hagen, 1880

Anisopleura furcata Selys, 1891

Anisopleura lestoides Selys, 1853 *

Syn. *Anisopleura kusumi* Sahnii, 1965

Anisopleura pelecyphora Zhang, Hämäläinen & Cai, 2014

Anisopleura qingyuanensis Zhou, 1982

Anisopleura subplatystyla Fraser, 1927

Syn. *Anisopleura lieftincki* Prasad & Ghosh, 1984

Anisopleura trulla Hämäläinen, 2003

Anisopleura valleii St. Quentin, 1937

Anisopleura yunnanensis Zhu & Zhou, 1999

Anisopleura zhengi Yang, 1996

Bayadera Selys, 1853

Bayadera bidentata Needham, 1930

Bayadera brevicauda Fraser, 1928

Bayadera continentalis Asahina, 1973

Bayadera fasciata Sjöstedt, 1932

Bayadera forcipata Needham, 1930

Bayadera hatvan Hämäläinen & Kompier, 2015

Bayadera hyalina Selys, 1879

Bayadera indica (Selys, 1853) *

Bayadera ishigakiana Asahina, 1964

Bayadera kali Cowley, 1936

Bayadera kinnara Hämäläinen, 2013

Bayadera kirbyi Wilson & Reels, 2001

Bayadera longicauda Fraser, 1928

Bayadera melanopteryx Ris, 1912

Syn. *Bayadera melania* Navás, 1934

Bayadera nephelopennis Davies & Yang, 1996

Bayadera serrata Davies & Yang, 1996

Bayadera strigata Davies & Yang, 1996

Cryptophaea Hämäläinen, 2003

Cryptophaea saukra Hämäläinen, 2003 *

Cryptophaea vietnamensis (Van Tol & Rozendaal, 1995)

Cryptophaea yunnanensis (Davies & Yang, 1996)

Cyclophaea Ris, 1930

Cyclophaea cyanifrons Ris, 1930 *

Dysphaea Selys, 1853

Dysphaea basitincta Martin, 1904

Dysphaea dimidiata Selys, 1853 *

Syn. *Dysphaea dimidiata limbata* Selys, 1859

Syn. *Dysphaea (?dimidiata) semilimbata* Selys, 1873

Dysphaea ethela Fraser, 1924

Dysphaea gloriosa Fraser, 1938

Dysphaea haomiao Hämäläinen, 2012

Dysphaea lugens Selys, 1873

Dysphaea ulu Hämäläinen, Dow & Stokvis, 2015

Dysphaea vanida Hämäläinen, Dow & Stokvis, 2015

Dysphaea walli Fraser, 1927

Epallage Charpentier, 1840

Epallage fatime (Charpentier, 1840) *

Syn. *Epallage alma* Selys, 1879

Syn. *Epallage fatime amasina* Selys, 1879

Syn. *Epallage fatime anatolica* Selys, 1869

Euphaea Selys, 1840

Syn. *Allophaea* Fraser, 1928 [* *ochracea*]

Syn. *Anisophaea* Fraser, 1934 [* *decorata*]

Syn. *Indophaea* Fraser, 1928 [* *dispar*]

Syn. *Mesophaea* Fraser, 1928 (preoccupied name) [* *decorata*]

Syn. *Pseudophaea* Kirby, 1890 [* *variegata*]

Euphaea ameeke Van Tol & Norma-Rashid, 1995

Euphaea amphicyana Ris, 1930

Euphaea aspasia Selys, 1853

Euphaea basalis (Laidlaw, 1915)

Euphaea bocki McLachlan, 1880

Euphaea cardinalis (Fraser, 1924)

Euphaea cora Ris, 1930

- Euphaea cyanopogon* Hämäläinen, Kosterin & Kompier, 2019
- Euphaea decorata* Hagen, 1853
- Euphaea dispar* Rambur, 1842
- Euphaea formosa* Hagen, 1869
- Syn. *Euphaea compar* McLachlan, 1870
- Euphaea fraseri* (Laidlaw, 1920)
- Syn. *Pseudophaea fraseri wynaadensis* Fraser, 1922
- Euphaea guerini* Rambur, 1842
- Euphaea hirta* Hämäläinen & Karube, 2001
- Euphaea impar* Selys, 1859
- Syn. *Euphaea inaequipar* Selys, 1859
- Euphaea inouei* Asahina, 1977
- Euphaea lara* Krüger, 1898
- *Euphaea lara lara* Krüger, 1898
- Syn. *Euphaea lara balica* McLachlan, 1898
- *Euphaea lara lombockensis* McLachlan, 1898
- Euphaea masoni* Selys, 1879
- Euphaea modigliani* Selys, 1898
- Euphaea ochracea* Selys, 1859
- Syn. *Euphaea brunnea* Selys, 1879
- Euphaea opaca* Selys, 1853
- Euphaea ornata* (Campion, 1924)
- Euphaea pahyapi* Hämäläinen, 1985
- Syn. *Euphaea khaochongensis* Asahina, 1985
- Euphaea pseudodispar* Sadasivan & Bhakare, 2021
- Euphaea refulgens* Hagen, 1853
- Syn. *Euphaea refulgens* (?) *semperi* Selys, 1879
- Euphaea sanguinea* Kompier & Hayashi, 2018
- Euphaea saola* Phan & Hayashi, 2018
- Euphaea splendens* Hagen, 1853
- Syn. *Pseudophaea carissima* Kirby, 1893
- Syn. *Pseudophaea carissima viridissima* Kirby, 1893
- Euphaea subcostalis* Selys, 1873
- Syn. *Euphaea laidlawi* Kimmins, 1936
- Euphaea subnodalis* (Laidlaw, 1915)
- Euphaea superba* Kimmins, 1936
- Euphaea thosegharensis* Sadasivan & Bhakare, 2021
- Euphaea tricolor* Selys, 1859

Euphaea variegata Rambur, 1842 *

Syn. *Euphaea intermedia* Krüger, 1898

Euphaea yayeyamana Oguma, 1913

Heterophaea Cowley, 1934

Syn. *Paraphaea* Martin, 1902 (preoccupied name) [* *barbata*]

Heterophaea barbata (Martin, 1902) *

Syn. *Paraphaea ruficollis* Ris, 1930

Schmidtphaea Asahina, 1978

Schmidtphaea schmidi Asahina, 1978 *

Syn. *Bayadera chittaranjani* Lahiri, 2003

List of authors of the genus-group names

The first figure following the words **Genus** and **Species** indicates the number of authored or co-authored new taxa. The figure in parentheses indicates the number of those taxa which are presently ranked as a valid genus or a full species, respectively. The persons marked with a slash [/] have named taxa only as a co-author, not as the sole or the first author.

Asahina – Syoziro Asahina (1913-2010). Japan. **Genus** 1 (1); **Species** 5(4). [1964-1985]

/Bhakare – Shriram Dinkar Bhakare (b. 1968). India. **Species** 2 (2). [2021]

/Cai – Qing-hua Cai (b. 1964). China. **Species** 1 (1). [2014]

Campion – Herbert Campion (1869-1924). Great Britain. **Species** 1 (1) [1924]

Charpentier – Toussaint de Charpentier (1779-1847). Germany. **Genus** 1 (1); **Species** 1 (1) [1840]

Cowley – John Cowley (1909-1967). Great Britain. **Genus** 1 (1); **Species** 1 (1). [1934, 1936]

Davies – David Allen Lewis Davies (1923-2003). Great Britain. **Species** 4 (4). [1996]

/Dow – Rory Alisdair Dow (b. 1965). Great Britain. **Species** 2 (2). [2015]

Fraser – Frederic Charles Fraser (1880-1963). Great Britain. **Genus** 4 (-), **Species** 8 (7). [1924-1938]

/Ghosh – S. K. Ghosh. India. **Species** 1 (-). [1984]

Hagen – Hermann August Hagen (1817-1893). Germany/United States. **Species** 5 (5). [1853-1880]

Hämäläinen – Matti Kalevi Hämäläinen (b. 1947). Finland. **Genus** 1 (1); **Species** 12 (12). [1985- 2019]

/Hayashi – Fumio Hayashi (b. 1957). Japan. **Species** 2 (2). [2018]

/Karube – Haruki Karube (b. 1966). Japan. **Species** 2 (2). [2001, 2013]

Kimmins – Douglas Eric Kimmins (1905-1985). Great Britain. **Species** 2 (1). [1936]

Kirby – William Forsell Kirby (1844-1912). Great Britain. **Genus** 1 (-); **Species** 2 (-). [1890, 1893]

Kompier – Thomas [Tom] Maurits Franciscus Kompier (b. 1967). Netherlands. **Species** 3 (3). [2015-2019]

- /Kosterin** – Oleg Engelsovich Kosterin (b. 1963). Russia. **Species** 1 (1). [2019]
- Krüger** – Leopold Karl Wilhelm Krüger (1861-1942). Germany. **Species** 2 (1) [1898]
- Lahiri** – Ashok Ranjan Lahiri (? - 2012). India. **Species** 1 (-) [2003]
- Laidlaw** – Frank Fortescue Laidlaw (1876-1963). Great Britain. **Species** 3 (3) [1915, 1920]
- Martin** – René Martin (1846-1925). France. **Genus** 1 (-); **Species** 2 (2) [1902, 1904]
- McLachlan** – Robert McLachlan (1837-1904). Great Britain. **Species** 4 (1) [1870-1898]
- Navás** – Longinos Navás (1858-1938). Spain. **Species** 1 (-) [1934]
- Needham** – James George Needham (1868-1957). United States. **Species** 2 (2) [1930]
- /Norma-Rashid** – Yusoff Norma-Rashid. Malaysia. **Species** 1 (1) [1995]
- Oguma** – Kan (Mamoru) Oguma (1886-1971). Japan. **Species** 1 (1) [1913]
- Phan** – Quoc Toan Phan (b. 1984). Vietnam. **Species** 1 (1) [2018]
- Prasad** – Mahabir Prasad. India. **Species** 1 (-). [1984]
- Rambur** – Jules Pierre Rambur (1801-1870). France. **Species** 3 (3) [1842]
- /Reels** – Graham Thomas Reels (b. 1964). Great Britain. **Species** 1 (1) [2001]
- Ris** – Friedrich Ris (1867-1931). Switzerland. **Genus** 1 (1); **Species** 5 (4) [1912, 1930]
- /Rozendaal** – Frank Gerard Rozendaal (1957-2013). Netherlands. **Species** 1 (1). [1995]
- Sadasivan** – Kalesh Sadasivan (b. 1982). India. **Species** 2 (2). [2021]
- Sahni** – D. N. Sahni. India. **Species** 1 (-). [1965]
- Selys** – Michel Edmond de Selys Longchamps (1813-1900). Belgium. **Genus** 4 (4); **Species** 22 (14) [1840-1898]
- Sjöstedt** – Bror Yngve Sjöstedt (1866-1948). Sweden. **Species** 1(1) [1932]
- St. Quentin** – Douglas St. Quentin [Douglas von Bigot de Saint-Quentin] (1899-1982). Austria. **Species** 1 (1) [1937]
- /Stokvis** – Frank Robert Stokvis. Netherlands. **Species** 2 (2) [2015]
- Van Tol** – Jan van Tol (b. 1951). Netherlands. **Species** 2 (2) [1995]
- Wilson** – Keith Duncan Peter Wilson (b. 1953). Great Britain. **Species** 1 (1) [2001]
- Yang** – Zude Yang. China. **Species** 1 (1). [1996]
- /Yang** – Bing Yang. China. **Species** 4 (4). [1996]
- Zhang** – Hao-miao Zhang (b. 1982). China. **Species** 1 (1) [2014]
- Zhou** – Wen-bao Zhou. China. **Species** 2 (2) [1982, 1999]
- Zhu** – Hui-qian Zhu. China. **Species** 1 (1) [1999]

Etymology of the names with notes on the taxa

Genus-group names

Allophaea [synonym]

Allophaea Fraser, 1928 [Orig. *Allophaea* gen. nov.]

Present status. Synonym of *Euphaea* Selys, 1840

Type species: *Euphaea ochracea* Selys, 1859

Gr. ἄλλος –η –ον [állos] = other, another; for –*phaea* see *Euphaea* {feminine}

This genus was first introduced in Fraser's (1928) key to the males of the 'subfamily Epallaginae' (= family Euphaeidae). A more detailed definition of the genus was published in Fraser (1929). The key included nine genera, three of which were new: *Allophaea*, *Mesophaea* and *Indophaea*. In the key, the three new genera and the genus *Pseudophaea* (= *Euphaea*) formed a group characterized by having one dorsal spine on the 10th abdominal segment. The genus *Allophaea* was separated from the other genera in this group by having species with "Fore- and hindwings similarly shaped, saffronated in part but without any opaque areas." The other three genera were characterized as follows: "Fore- and hindwings differently shaped, the hind at least with some opaque markings." Thus, the name *Allophaea* means: a different genus of Euphaeids.

Reference. Fraser (1928: 48; 1929: 288).

Anisophaea [synonym]

Anisophaea Fraser, 1934 [Orig. *Anisophæa*, nom. nov.; replacement name for *Mesophaea* Fraser, 1928]

Present status. Synonym of *Euphaea* Selys, 1840

Type species: *Euphaea decorata* Hagen, 1853

Gr. ἄνισος –η –ον [ánisos] = unequal, uneven; for –*phaea* see *Euphaea* {feminine}

In the key mentioned in the previous entry, Fraser (1928) had established a genus *Mesophaea* (see entry) for two species from China: *Euphaea decorata* Hagen, 1853 and *E. ornata* (Campion, 1924). After learning that the genus name was preoccupied, Fraser proposed the replacement name *Anisophaea*. This name refers to a wing character, either to the different shape of fore- and hind wings (see entry *Mesophaea*) or to the fact that fore- and hind wings differ in coloration, fore wings being hyaline and hind wings partly opaque black.

Reference. Fraser (1934: 75).

Anisopleura [genus]

Anisopleura Selys, 1853 [Orig. Sous-genre *Anisopleura*, De Selys]

Type species: *Anisopleura lestoides* Selys, 1853

Latinized feminine form of Gr. ἀνισόπλευρος –ον –ον [anisópleuros] = scalene, with unequal sides {feminine}

This was the first of the four subgenera of the genus *Euphaea* (see entry) which Selys established in his *Synopsis des Caloptérygines* (1853). Neither the brief definition of the subgenus nor the description of its only species (*A. lestoides*) explained why he chose the genus name. The more detailed definition of the genus in *Monographie des Caloptérygines* (1854) includes: "L'espèce jusqu'ici unique de ce groupe (*A. lestoides*), habite l'Inde. Elle est très-singulière par la courbure en dent obtuse que forme la costale aux ailes inférieures du mâle et qui rappelle un peu ce qui se voit chez les Libellulines des genres *Diastatops* et *Palpoplevra*."

The Greek word 'πλευρά [pleurá] = rib, side' is an equivalent of the Latin *costa*, a term which in odonatology means the anterior marginal vein of the wings. Therefore, it can be

concluded that the different shape of *costa* in fore- and hind wings inspired the name *Anisopleura*. Fraser (1928: 48) described the special feature, restricted to the hind wings, as follows: “Costa of hindwing of male with an obtuse projecting angle between base and node.”

Reference. Selys Longchamps (1853: 48); Selys Longchamps & Hagen (1854: 158).

Bayadera [genus]

Bayadera Selys, 1853 [Orig. ... groupe *Bayadera*]

Type species: *Epallage indica* Selys, 1853

Latinised from the Portuguese word ‘bailadeira = female dancer’, forms of which word were used for Indian female temple dancers in European languages from the 18th century evoking an oriental flair and an impression of attractiveness. {feminine}

The name *Bayadera* fits well to the other damselfly genus names established by both Selys and Hagen, conveying the idea of feminine beauty and grace. These include names referring to courtesans from antiquity (such as *Hetaerina*, *Mnais* and *Lais*), or of female deities (such as *Sylphis*). This practice had been initiated by Linnaeus (1758), who named two damselfly species as *virgo* (= virgin) and *puella* (= girl).

In the 19th century the concept of the Bayadere as an oriental erotic temptress was common in European theatre, music and poetry. This notion received further stimulus from the tour of many European countries in 1838 and 1839 by a group of Indian Devadasi-Bayaderes. Another inspiration came from the famous opera-ballet, ‘Le Dieu et la Bayadère ou La Courtisane amoureuse’ (not to be confused with the Pepita and Minkus ballet ‘La Bayadere’, still performed today), based on the ballad ‘Der Gott und die Bajadere’ by Goethe. It was first performed in Paris on 13 October 1830. According to Selys’ diary (Caulier-Mathy & Haesenne-Peremans (2008: 267), Selys watched this opera in Brussels on 4 October 1844. Selys wrote: “J’ai été à Bruxelles avec Sophie; nous avons été voir Mlle Faglioni dans Le Dieu et la bayadère.” This explains Selys’ choice of name, which is very appropriate for an Indian damselfly.

The genus-group name *Bayadera* was originally introduced as a provisional name within the ‘sous-genre *Epallage*’. The subgenus was divided into two groups: ‘1^{er} groupe (*E. indica*) and 2^{me} groupe (*E. fatime*).’ In his definition of the first group Selys (1853: 49) wrote: “J’ai nommé ce groupe *Bayadera*. Lorsque les appendices anals du mâle de la *fatime* seront connus, on pourra plus sûrement décider s’il y a lieu de former un sous-genre pour l’*Indica*.” In Selys & Hagen (1854: 162) it says: “Les appendices anals du mâle de la *fatime* sont inconnus. Il est possible qu’ils diffèrent de ceux de l’*indica* et qu’il faille alors former pour cette dernière un sous-genre particulier. Dans ce cas, je propose le nom de Bayadère (*Bayadera*).”

Thus, *indica* had to remain an *Epallage* species, until the structure of male anal appendages of *E. fatime* became known. However, although Selys (1869: 660) was already able to state that the male appendages of *indica* and *fatime* differ greatly in various parts, he continued to use the binomial *Epallage indica*. The binomial *Bayadera indica* was first used in the species list in Selys (1873: 514). Here *Bayadera* was ranked as a subgenus of the genus *Epallage*. Later, in connection with his description of the second *Bayadera* species, Selys (1879: 374) stated: “La découverté de cette espèce [*Bayadera hyalina*] vient confirmer la creation du sous-genre *Bayadera* démembré des *Epallage* proprement dites.”

Reference. Selys Longchamps (1853: 49); Selys Longchamps & Hagen (1854: 162).

Cryptophaea [genus]

Cryptophaea Hämäläinen, 2003 [Orig. *Cryptophaea* gen. nov.]

Type species: *Cryptophaea saukra* Hämäläinen, 2003

Gr. κρυπτός –ή –οῦ [kryptós] = hidden, secret; for –*phaea* see *Euphaea* {feminine}

The name refers to the behaviour and habitat of the known species in the genus. The published etymology says: “Kryptos (Gr.) = hidden or concealed. *Cryptophaea* are rather retiring insects, inhabitants of shadowy streams in forested mountain slopes.” The genus includes species characterized with slender thorax, narrow hyaline wings and proportionally long abdomen. It was established for three species which were formerly placed in the genera *Schmidtiphaea* (see entries *saukra* and *yunnanensis*) or *Bayadera* (see entry *vietnamensis*).

Reference. Hämäläinen (2003: 442).

Cyclophaea [genus]

Cyclophaea Ris, 1930 [Orig. *Cyclophaea* nov. gen.]

Type species: *Cyclophaea cyanifrons* Ris, 1930

Gr. κύκλος [kýklos] = ring, circle; for –*phaea* see *Euphaea* {feminine}

A structural peculiarity – “die groteske Armatur des zweiten Abdominalsegmentes [the grotesque armature on the second abdominal segment]” – of the male moved Ris to create a new genus for his new species *cyanifrons* (see entry) from Palawan, in which both sexes show “den Habitus einer kleinen und schmalflügeligen *Euphaea* [the habitus of a small and narrow winged *Euphaea*]”. In the species description of *cyanifrons* (p. 81), this special feature was described as follows: “In der Mitte des 2. Tergits, jederseits nahe dem Ventralrande, je ein nach ventral-hinten geneigter, schmaler, zylindrischer Fortsatz, länger als die Segmentbreite, in der Seitenansicht fast gerade, in der Frontalansicht die Fortsätze beider Seiten zu einer fast kreisförmigen Zange zusammengebogen [In the middle of the 2nd tergite on each side near the ventral edge a narrow cylindrical process directed ventrally rearwards, longer than the breadth of the segment, in lateral view almost straight, in frontal view the processes of both sides bent together circularly like a forceps]”.

Reference. Ris (1930: 80).

Dysphaea [genus]

Dysphaea Selys, 1853 [Orig. Sous-genre *Dysphaea*, De Selys]

Type species: *Dysphaea dimidiata* Selys, 1853

Gr. prefix δυσ– [dys–] = un–, mis–, not good (in scientific terms it is used to indicate deviations from a standard); for –*phaea* see *Euphaea* {feminine}

In his Synopsis des Caloptérygines, Selys (1853) established the ‘Légion Euphaea’ with a sole genus of the same name. The genus included four subgenera, among them *Euphaea* and *Dysphaea*. The features distinguishing the new genus from *Euphaea* given in the definitions by Selys (1853) and Selys & Hagen (1854) pertain to morphology, exclusively. Therefore, they are not helpful in understanding how the new genus does not reach the standard of iridescence found in *Euphaea*, to which the name refers. But as the new

genus was based on the sole species *D. dimidiata*, one can guess, that the name refers to the fact, that the opaque part of the wings is limited in extent and also less iridescent than in *Euphaea variegata*. The descriptions of *dimidiata* male wings reads: “La moitié basale des ailes noirâtre; cette couleur finissant subitement en ligne droite; le reste hyalin; l'extrémité limbée de noirâtre après le ptérostigma” (1853) and “Ailes étroites, pointues, à peine pétiolées, la moitié des supérieures et un peu plus de la moitié des inférieures opaques, d'un brun noirâtre luisant, cette couleur s'arrêtant subitement et coupant l'aile en ligne droite, excepté à la côte où elle forme, entre la costale et la médiane, un prolongement qui, aux supérieures, atteint le nodus (la partie basale opaque s'arrête à 4 cellules de ce point) tandis qu'aux inférieures, où la partie basale opaque dépasse de 6 cellules le nodus, le prolongement est moindre. Le reste des ailes hyalin, un peu lavé de jaunâtre sale, surtout le long de la côte, qui devient brunâtre vers le ptérostigma, mais l'extrémité nettement et finement bordée de noirâtre opaque.” (1854).

Reference. Selys Longchamps (1853: 53); Selys Longchamps & Hagen (1854: 185).

Epallage [genus]

Epallage Charpentier, 1840 [Orig. Subgenus *Epallage*]

Type species: *Agrion fatime* Charpentier, 1840

Gr. ἐπαλλαγὴ = change over, interchange {feminine}

Toussaint de Charpentier gave the following explanation for the name *Epallage*: “E Graeco ἐπαλλαγὴ desumptum, cum animalia huius subgeneris videantur efficere transitum seu quasi medium inter Diastatommata et Neuroptera sequentis subgeneris, Calopterygis [Taken from Greek ἐπαλλαγὴ, because the animals of this subgenus seem to form a transition between the Diastatommas (= Gomphids) and the neuropteres of the following subgenus, *Calopteryx*]”.

In Charpentier's classification, *Epallage* was the first of the nine subgenera of his family-group taxon 'Agrionides'. In the species accounts, he used the genus name *Agrion* in all damselfly binomials.

Reference. Charpentier (1840: 16).

Euphaea [genus]

Euphaea Selys, 1840 [Orig. Genre *Euphaea* (De Selys)]

Type species: *Euphaea variegata* Rambur, 1842

Name probably derived from Gr. εὐφαής –ής –ές [*euphaēs*] = very bright, shining {feminine}

This was the first new genus name in Odonata introduced by Selys. The derivation from the Greek word *euphaēs* is most likely, since Selys later established a genus *Dysphaea* (see entry), which is formed to the same word element –φαής [–*phaēs*] = shining, gleaming, beaming, visible. The extensive opaque portions of hind wings of the male specimens of the species [*Euphaea variegata*, see below], available to Selys, are iridescent. The upper side of hind wings reflects a brilliant green or blue sheen, and the lower side reflects rich purple-red. Also, the variable, but often extensive, opaque areas on fore wings are slightly iridescent. Therefore, there is little doubt as to the origin of the name.

Euphaea is not a name from antiquity, but its model might have been the Greek goddess Aphaia from the island of Aegina. Aphaia was well known to the educated people in Central Europe in the 19th century by the figurines from her temple, which had been on display in Munich since their restoration by the famous Danish sculptor Bertel Thorvaldsen (1770-1840) in 1827. We do not know whether the name *Euphaea* was coined by Selys himself, or if he found it in some contemporary novel. Literature in that time was full of such pseudo-ancient names, such as the flower girl Nydia in Bulwer's 'Last days of Pompeji' published in 1834.

The nomenclatorial history of the genus name *Euphaea* has been confusing and subject to different interpretations (see entry *Pseudophaea*). Selys' original diagnosis of the genus *Euphaea* (Fig. 1) was very brief: "Genre exotique. – Diffère des *Calopteryx* en ce que les cellules sont moins nombreuses, les ailes plus étroites à la base et surtout par la présence d'un vrai parastigma oblong. – Example: *Calopteryx holosericea*."

The given 'example' caused a problem. In fact, as later explained in Selys (1898), Selys had based his definition of the genus on the study of male specimen(s) of an undescribed species from Java, later named by Rambur (1842) as *Euphaea variegata*. His error was due to Burmeister's (1839: 828) incorrectly given provenance 'Java' for *Calopteryx holosericea*, as well as the very inadequate description of this species. Later, *C. holosericea* turned out to be synonym of *Calopteryx maculata* (Palisot de Beauvois, 1807) from North America (Selys 1853: 10).

Already Rambur (1842: 229) pointed out that *Calopteryx holosericea* male did not agree with Selys' generic diagnosis, since according to Burmeister's description, the male did



Fig. 8. *Euphaea variegata*, the type species of the genus *Euphaea*. Male. Indonesia, Java Island; 19-ix-2013. Photo: Imam Fadila. Wikimedia Commons.

not have any pterostigma at all. However, Rambur accepted the genus name *Euphaea* with Selys as its author, and gave a more detailed description of the genus. Rambur included six species in this genus, naming four of them himself. However, only three of the listed species (*variegata*, *guerini* and *dispar*) are euphaeid species. Selys (1853) combined these three Asian species, with five new species, into the taxon *Euphaea*, and he redefined it as one of four subgenera of a genus *Euphaea* within the Légion Euphaea. Kirby (1890) rejected the name *Euphaea* and replaced it with *Pseudophaea*, but Cowley (1934b) restored the use of *Euphaea*. For details, see entry *Pseudophaea*.

Reference. Selys Longchamps (1840: 200).

Heterophaea [genus]

Heterophaea Cowley, 1934 [Orig. *Heterophaea* nom. nov.; replacement name for *Paraphaea* Martin, 1902]

Type species: *Paraphaea barbata* Martin, 1902

Gr. ἕτερος –α –ον [heteros] = another, of another kind, different; for –phaea see *Euphaea* {feminine}

Cowley replaced the preoccupied name *Paraphaea* Martin (see entry) with a nearly synonymous name: “*Heterophaea* nom. nov., Genotype *Paraphaea barbata* Martin (1902), for *Paraphaea* Martin (1902) (Bull. Mus. Hist. nat. Paris. 8: 507), preoccupied by *Paraphaea* Bates (1873) (Trans. Ent. Soc., 1873: 312) in Coleoptera.”

Reference. Cowley (1934a: 201).

Indophaea [synonym]

Indophaea Fraser, 1928 [Orig. *Indophaea* gen. nov.]

Present status. Synonym of *Euphaea* Selys, 1840

Type species: *Euphaea dispar* Rambur, 1842

Gr. Ἰνδός –ή –όν [Indos] = Indian, from India; for –phaea see *Euphaea* {feminine}

This is a toponym. The genus was defined in a key (Fraser 1928: 49) from features concerning morphology and coloration. The reason for his choice of name is to be seen from the information on the distribution of the genus in its detailed definition (Fraser 1929: 294): “Distribution: Western Ghats of India, Indo-Malaya and Borneo”. Therefore, the name denotes India in a broad sense.

Including Indo-Malay and Borneo in the range of the *Indophaea* species was undoubtedly based on Laidlaw’s (1924: 299) inclusion of *Pseudophaea impar* (see entry) into the ‘Group *dispar*’ – one of the four groups – within the genus *Pseudophaea*. However, neither Fraser, Laidlaw or anyone else ever used the binomial ‘*Indophaea impar*’ in their publications. All known species, in its time, placed into *Indophaea* are restricted to South India, only.

Reference. Fraser (1928:49; 1929: 293).

Mesophaea [homonym and synonym]

Mesophaea Fraser, 1928 [Orig. *Mesophaea* gen. nov.; homonym of *Mesophaea* Pascoe, 1869 in Coleoptera]

Present status. Synonym of *Euphaea* Selys, 1840

Type species: Euphaea decorata Selys, 1853

Gr. μέσος –ή –όν [mesos] = middle, in the middle; for –phaea see *Euphaea* {feminine}

This taxon was established for two Chinese species (*Euphaea decorata* and *E. ornata*; see entries) in Fraser's (1928) key to the euphaeid genera. The name refers to a feature of the male hind wings: "Hindwings with the middle part abruptly broadened { } the apical portion thereafter narrowing rapidly to a falcate apex; the broadened portion bearing an opaque band." The preoccupied name was replaced with *Anisophaea* (see entry) by Fraser (1934: 75). No detailed definition of this genus was ever published.

Reference. Fraser (1928: 49).

Paraphaea [homonym and synonym]

Paraphaea Martin, 1902 [Orig. Genre *Paraphæa* nov. sp. (sic); homonym of *Paraphaea* Bates, 1873 in Coleoptera]

Present status. Synonym of *Heterophaea* Cowley, 1934

Type species: Paraphaea barbata Martin, 1902

Gr. παρά [para] = beside, near, by; for –phaea see *Euphaea* {feminine}

Martin explains the reason to establish a new genus as follows: "Ce nouveau genre est créé d'après un insecte ♂ unique, de Manille, appartenant au Museum de Paris. Il est de la légion *Euphaea* de M. de Selys." Thus, the name indicates: a new genus beside *Euphaea*.

Reference. Martin (1902: 507).

Pseudophaea [synonym]

Pseudophaea Kirby, 1890 [Orig. Genus *Pseudophæa*; replacement name for *Euphaea* Rambur, 1842]

Present status. Synonym of *Euphaea* Selys, 1840

Type species: Euphaea variegata Rambur, 1842

Gr. ψευδο– [pseudo–] = false, pretended, sham ; for –phaea see *Euphaea* {feminine}

In his 'Synonymic catalogue of Neuroptera Odonata', Kirby (1890: 96) downgraded the genus *Euphaea* Selys, 1840 as a synonym of *Agrion* Fabricius, 1775 [= *Calopteryx* Leach, 1815], because Selys had given *Calopteryx holosericea* as an 'example' of the species in this genus. Furthermore, Kirby (1890: 109) classified *Euphaea* Rambur, 1842 (with *E. variegata* as the type species) as a distinct genus and ranked its name as a homonym of Selys' name. Therefore, it needed a replacement name, for which Kirby introduced *Pseudophaea*.

As in the '*Calopteryx* versus *Agrion*' dispute, initiated by Kirby, only some Odonata taxonomists agreed with this change, and the others continued to use the name *Euphaea*. Ris (1930: 83-84) was the first to formally attempt to restore the use of the name *Euphaea*, but his arguments were based on the misconception that Kirby had rejected the name *Euphaea* as preoccupied with *Eupheus* Risso, 1816 (emended to *Euphaeus* by Agassiz in 1846) in Isopoda. Ris had failed to notice Kirby's (1890: 96) action placing *Euphaea* Selys, 1840 as a junior synonym of *Agrion*. A few years later, Cowley (1934b: 242) restored the name

Euphaea, with Selys as its author, and placed *Pseudophaea* in synonymy. Cowley's reasoning included: "But Selys (1840) only quoted *C. holosericea* as an 'Exemple,' and therefore rigidly construed did not designate the genotype; it was, however, the only species mentioned in the genus, and moreover it was obvious from his generic diagnosis that his *C. holosericea* was not the species of Burmeister; later (1898) he identified *C. holosericea* Selys (nec Burm.) as being *Euphaea variegata* Ramb. Therefore the name *Euphaea* Selys must be restored, with *Pseudophaea* Kirby as a synonym."

Reference. Kirby (1890: 109).

Schmidtphaea [genus]

Schmidtphaea Asahina, 1978 [Orig. *Schmidtphaea* gen. nov.]

Type species: *Schmidtphaea schmidi* Asahina, 1978

Schmid is a German family name; for *-phaea* see *Euphaea* {feminine}

The name is a dedication to Dr Erich Walther Schmidt (1890-1969), a German odonatologist. For him, see Fliedner (2023).

Asahina explains his choice of name as follows: "While examining unidentified materials of Erich Schmidt Collection, I came across a curious slender Zygopteron with extremely long abdomen and narrow wings. I now believe that this is a species of the Euphaeidae, representing an unknown genus and species, although it looks to have some affinity to the Caliphaeinae, a group I recently treated", and "The generic name is dedicated to the late Dr. Erich Schmidt who first studied this specimen."

Reference. Asahina (1978: 43).

Notes on the element *-phaea* in genus names of Coleoptera. Two genus names ending in *-phaea* described in Euphaeidae – *Paraphaea* Martin, 1902 (see Cowley 1934a: 201) and *Mesophaea* Fraser, 1929 (see Fraser 1934: 75) – had to be replaced because of homonymy with genera in Coleoptera.

But the morpheme *-phaea* in Coleoptera has a different meaning from that in the Euphaeidae (see entry *Euphaea*): it is based on the Greek adjective φαίος [phaiós] = grey. That is to be seen from the descriptions of the single species, on which the respective coleopteran genera were based.

The Greek prefix παρα- [para] may mean alongside, beside, which in the genus *Paraphaea*, defined by Henry Walter Bates (1873: 313), finds its explanation in the description of its sole species *P. signifera* (from Japan), where the coloration of the elytra is described as follows: "if we except the pale margins, the elytra might be described as pitchy-black."

The Cerambycid genus *Mesophaea* was established by the British entomologist Francis Polkinghorne Pascoe in 1869 (Pascoe 1864-1869: 581) in his examination of beetles collected by Alfred Russel Wallace from the Malay Archipelago. In this name the element *Meso-* (Gr. μέσος [mesos] = middle, in the middle) refers to the middle part of the elytra of the sole species of the genus, *M. lachrymosa* (from Sarawak), in the description of which it says: "elytra somewhat incurved at the sides, the base and suture behind the scutellum covered with ashy white hairs, which slightly expand behind, and terminate a little before the apex."

The Greek word φαίος [phaiós] = grey, which is the basis for the Coleopteran genus names treated above, cannot be at the base of the name *Euphaea* for two reasons.

First of all, none of the descriptions of the genus or its species by Selys (1840: 200) and Rambur (1842: 328-332) includes any mention of the colour grey, and secondly a name 'well grey-coloured' would not make any sense.

So, it is to be seen, that seemingly similar word elements in entomological nomenclature are not necessarily synonymous.

Species-group names

alma [synonym]

Epallage alma Selys, 1879 [Orig. *Epallage alma*, De Selys]

Present status. Synonym of *Epallage fatime* (Charpentier, 1840)

Lat. *almus*, *-a -um* = nourishing, kind, propitious [especially an epithet of blessing deities] {noun in apposition}

Alma is a female name. It might be of Latin origin, but also come from Hebrew, where Alma (המלע) means a young (especially unmarried) woman. It is likely that Selys selected the species epithet *alma* to follow the feminine theme introduced by de Charpentier with the name *fatime*. In his description Selys compared *Epallage alma* with *E. fatime*: "Stature et dessins comme chez la *fatime*, mais distincte par les ailes d'un brun fuligineux depuis la base jusqu'au nodus."

The species was described from a single female specimen from "Astrabad (Perse). Communiquée par M. Mac Lachlan." The holotype is deposited in the BMNH (London).

Reference. Selys Longchamps (1879: 372).

amasina [synonym]

Epallage fatime amasina Selys, 1879 [Orig. *Epallage fatime*, Charp., 'forme' *amasina*]

Present status. Synonym of *Epallage fatime* (Charpentier, 1840)

Lat. adjectival suffix *-inus -a -um* = from ..., pertaining to ..., concerning {declinable adjective}

A toponym named after the type locality Amasia (a village in the Shirak province of Armenia): "J'ai reçu d'Amasia (Arménie), par le Dr Staudinger, un grand nombre d'exemplaires de forte taille"; "Le Dr Hagen doute qu'ils appartiennent à la vraie *fatime*. On pourrait donner à cette forme le nom d'*amasina*."

The syntypes are deposited in the IRSN (Brussels) and MCZ (Cambridge, Mass.).

Reference. Selys Longchamps (1879: 371).

ameeka [species]

Euphaea ameeka Van Tol & Norma-Rashid, 1995 [Orig. *Euphaea ameeka* sp. n.]

An eponym {noun in apposition} named after Ameeka Louise Thompson (b. 1988), daughter of the collector of the type material David J. Thompson (University of Liverpool). [At present, Dr Ameeka Thompson works as a physician in Bristol.] The given etymology reads: "Named after daughter Ameeka of the first collector of this species, Dr. D. J. Thompson. A noun in apposition." Thompson had collected the holotype male and most of the paratypes (14 ♂, 1 ♀) in Brunei Darussalam in September and October 1992; the holotype along Ingei

River on 12 September 1992. The holotype is deposited in the RMNH (Leiden).

Reference. Van Tol & Norma Rashid (1995: 137).

amphicyana [species] (Fig. 9)

Euphaea amphicyana Ris, 1930 [Orig. *Euphaea amphicyana* nov. spec.]

Latinized from Gr. ἀμφί = on both sides + the feminine form of κυανούς –ῆ –οῦν [kyanūs –ê –ûn] = of the colour of lapis lazuli, dark-blue, glossy {declinable adjective}

Ris placed the new species from Mindanao into the '*Euphaea tricolor*-group' (including four species from Borneo: *tricolor*, *subcostalis*, *subnodalis* and *basalis*). In these species, the darkly coloured areas of the hind wings have zones of blue-green metallic reflections, the arrangement and extent of which varies between the species. For *E. amphicyana* they were characterized as follows: "Die dunkle Farbe beginnt etwa am distalen Ende des Vierecks, oder subhyalin schon an der Basis. Hyalin oder subhyalin 3,5, dunkel 24,5 mm. Darin auf der U{nter}seite blaumetallisch bis zum Nodus an der Costa, 4-5 Zellen weiter distal am analen Rand, schwarz bis zum Pterostigma, blau die Flügelspitze. Auf der O{ber}seite blau bis zur Mitte Nodus-Pterostigma, distal mit diffusem Abschluss, schwarz der Rest ohne blaue Spitze [The dark colour begins about the distal end of the quadrilateral, or partially hyaline at the base. The hyaline or subhyaline areas are 3.5, dark coloured 24.5 mm. Within that {area} on the underside blue metallic to the nodus, at the costa, 4 to 5 cells farther distally at the anal margin, black up to the pterostigma, the apex blue. On the upper side



Fig. 9. *Euphaea amphicyana* male. Philippines, Biliran Island; 13-i-2022. Photo: Stijn De Win.

blue to the middle between nodus and pterostigma, distally terminated diffusely, the remainder black without a blue apex].” The name therefore indicates that in this species blue-metallic zones are found on both sides of the hind wings, a character which also applies to all other species in the ‘*E. tricolor*-group’, although Ris did not point out this in his brief notes on the other species.

The description of this Philippine species was based on two male specimens collected in ‘Surigao, Mindanao’ by Georg Böttcher (1890-1919) on 30 October 1915 and 16 August 1916. The syntypes are deposited in the SMF (Frankfurt am Main).

Reference. Ris (1930: 89).

anatolica [synonym]

Epallage fatime anatolica Selys, 1869 [Orig. *Epallage fatime* ‘race’ *anatolica*]

Present status. Synonym of *Epallage fatime* (Charpentier, 1840)

Mod. Lat. *Anatolicus* –a –um = pertaining to Anatolia (the name of Asia Minor from about the 7th century, derived from Gr. ἀνατολή [anatólē] = the rising above the horizon [of any heavenly body, for instance the sun]) {declinable adjective}

This name of this provisionally named ‘race’ is a toponym referring to Anatolia (Asia Minor), a peninsula in Western Asia, which constitutes the major part of the present Turkey. This taxon was based on an unspecified number of male and female specimens from ‘Davas’: “Chez des exemplaires de Davas (Asia Mineure), le bout des ailes est noirâtre depuis le commencement du ptérostigma. Peut-être forment-ils une race que l’on pourrait nommer *anatolica*.” Also later, Selys (1879: 371) still considered the name as provisional: “de la petite femelle de Davas (Asie-Mineure) à ailes fortement enfumées dès le ptérostigma, que j’ai nommée provisoirement *anatolica*.”

The type locality Davas of the taxon *anatolica* is situated in south-west Turkey, north-east from Muğla. The syntypes are in the IRSN (Brussels) and MCZ (Cambridge, Mass.).

Reference. Selys Longchamps (1869: 659).

aspasia [species]

Euphaea aspasia Selys, 1853 [Orig. *Euphæa aspasia*, De Selys]

Gr. Ἀσπασία (Aspasia) = female name, meaning ‘she who is gladly welcomed’ {noun in apposition}

Selys’ (1854) French name for this species was ‘Euphée Aspasié’. This clearly suggests that the species epithet is an eponym named after Aspasia (in French Aspasié), a woman from the Ancient Greece. This is in accordance of Selys’ feminine theme in naming calopterygoid damselflies.

The most prominent Aspasia from antiquity was born at Miletus (ca 470 BC) and moved to Athens around 450 BC. She must have been highly educated, as in a Platonian dialogue the philosopher Socrates mentions her as his teacher in rhetorics. She became the second wife of the Athenian politician Pericles (ca. 490-429 BC) and they had a son, the younger Pericles. As she was not a citizen of Athens, de jure their marriage was a concubinate, and that may have led to her being described as a hetaira (courtesan, mistress) in Athenian comedy of her time. There is a tradition, that she was accused of godlessness, probably to

damage Pericles politically, and that he had her exonerated only with great difficulty. After his death in 429 she was said to have married another influential politician and to have given birth to a son. That is the last we hear of her.

Selys' description was based on one male specimen from Sumatra (Padang) and on an unspecified number of female specimens from Java. However, as pointed out by Selys (1879: 374), the female specimens were *E. variegata*. The male lectotype, originally at Museum Halle, was given to Hagen by Burmeister. Presently it is in the IRSN (Brussels).

Reference. Selys Longchamps (1853: 52); Selys Longchamps & Hagen (1854: 173).

balica [synonym]

Euphaea lara balica McLachlan, 1898 [Orig. *Euphæa lara*, var. *balica*, var. n.]

Present status. Synonym of *Euphaea lara lara* Krüger, 1898

Mod. Lat. *Balicus* –a –um = pertaining to Bali (an island in Indonesia) {declinable adjective}

A toponym named after the island of Bali. The description was based on a single male specimen claimed to be collected in Bali: "Hab.: Bali (Doherty, 1 adult ♂)." The holotype is deposited in the BMNH (London). The specimen was collected by William Doherty (1857-1901), a prolific American collector of butterflies and birds. According to Hartert (1896: 537-590), Doherty collected in Bali in March and April 1896. He arrived there (on 11 March) from Sumba, where he had been collecting since the end of February.

No other specimen of *balica* has ever been found in Bali. Therefore, it is quite sure that the given locality is incorrect. Obviously, an error had occurred in the labelling of the specimen, and *balica* had been collected by Doherty on Sumba, hence the taxon is just a synonym of *E. lara lara* (see entry). McLachlan wrote: "The principal point in which this [= *balica*] appears to differ from the Sumba type-form is its smaller size." However, the hind wing of *balica* holotype (29 mm) was only 1-2 mm shorter than that of the two male specimens of *E. l. lara* known at that time; subsequently equally small specimens of *lara* were found on Sumba. Lieftinck (1936) pointed out that since the occurrence of the subspecies of *E. lara* in Bali [westwards of the Wallace line] would be of great zoogeographical importance, its occurrence in this island should be confirmed. Later, Lieftinck (1953) doubted the status of *balica*: "In the writer's opinion the occurrence of *E. lara* in Bali is open to much doubt." Then, in his 'Handlist of Malaysian Odonata' Lieftinck (1954) omitted *E. lara balica* from Bali, and he did not discuss its status in any other connection in later publications.

Reference. Mc Lachlan (1898: 272).

barbata [species] (Fig. 10)

Heterophaea barbata (Martin, 1902) [Orig. *Paraphæa barbata* nov. sp.]

Lat. *barbatus* –a –um = bearded, having a beard {declinable adjective}

The species name refers to the dense tufts of setae beneath either side of the 9th segment: "Abdomen long, très mince, rouge, tournant au brun sur les derniers segments, le 10^e segment avec un gros trait noir dorsal, le 9^e avec un fort bouquet de poils au-dessous de chaque côte, le 10^e portant un énorme mamelon noir, élevé, comme fendu en deux et formant par suite une échancrure droite, élevée."

This Philippine species – the largest in its family – was described on basis of a single male specimen from the Manila region in Luzon: “1 ♂ de Manille, pris en juin.” The collector was not specified. The holotype is deposited in the MNHN (Paris).

Reference. Martin (1902: 507).



Fig. 10. *Heterophaea barbata* male. Philippines, Luzon, Aurora prov.; 21-iii-1997. Photo: Roland A. Müller.

basalis [species]

Euphaea basalis (Laidlaw, 1915) [Orig. *Pseudophaea basalis*, sp. n.]

Lat. *basalis* –is –e = concerning the base {declinable adjective}

The name of this species refers to the coloration of the hind wings of male: “Distinguished from its allies especially by the colour-pattern of the hind wings ... The basal four-seventh of the hind wing is of a rich metallic green or blue, excepting the antenodal costal and sub-costal spaces, the median space, the quadrilateral and the submedian space. These are all very deeply tinged with black.” The wing colour pattern differs from the other allied Bornean species of the genus (*tricolor*, *subcostalis* and *subnodalis*), which all have the metallic green or blue area more apicad, the basal third of hind wing being hyaline.

The species was described on basis of two male specimens from Mount Kinabalu in Borneo, collected by John Coney Moulton (1886-1926) on 11 September 1913. The holotype is deposited in the BMNH (London).

Reference. Laidlaw (1915: 32).

basitincta [species] (Fig. 11)

Dysphaea basitincta Martin, 1904 [Orig. *Dysphaea basitincta* nov. sp.]

Lat. *basis* = base (from Gr. βάσις [básis] = step/ that, whereon one stands, pedestal, base) + *tinctus* –a –um = dyed, tinged, coloured {declinable adjective}

Martin chose this name in reference to the conspicuous coloration of the wing base in the male: “♂ Les 4 ailes longues, plutôt étroites, d'un noir brun à la base, cette couleur s'arrêtant 15 ou 20 cellules avant le nodus sup. et 6 à 10 avant le nodus inf., et affectant une forme un peu convexe...” and “Le mâle de cette espèce est absolument reconnaissable à la coloration des ses ailes.” But the wing base of the females also shows some coloration: “Chez la ♀ les ailes sont hyalines, teintées de brunâtre, surtout à la base et au bout.” The species was described from a series of both sexes collected in 'Tonkin'. Martin wrote: “L'espèce semble commune au Tonkin, au moins les mâles. Elle vole sur les eaux en juin et juillet.” The specimens were collected by Hans Fruhstorfer (1866-1926) in 'Than Moi, Tonkin' [Dong Mo, Lang Son province, Vietnam], where he (according to Fruhstorfer 1902) stayed between 11 June and 19 July 1900. The syntype series (at least 7♂, 3♀) is deposited in the MNHN (Paris).

Reference. Martin (1904: 218).



Fig. 11. *Dysphaea basitincta* male. China, Guangxi prov.; 31-v-2018. Photo: Matti Hämäläinen.

bidentata [species]

Bayadera bidentata Needham, 1930 [Orig. *Bayadera bidentata* sp. n.]

Lat. *bi-dentatus* –a –um = with two teeth, two toothed, bidentate {declinable adjective}

The epithet refers to the structure of superior appendages in male. In the key to the *Bayadera* species (p. 216) it says for *B. bidentata*: “Superiors with two internal teeth; inferiors much more than half as long as superiors”. The main description (p. 218) states: “Appendages

black in both sexes. In the male they are as long as the 9th segment, forcipate, depressed at the blunt tip, declined, and with a low basal submedian internal tooth.” In this description, the second ‘internal tooth’ is not mentioned, but a second small tooth is illustrated at the middle of each of the upper appendages on pl. 16 fig. 7. For better illustrations of the appendages of the holotype male, see Davies & Yang (1996: 152).

The species was described from “A pair (numbered 17 and 19) from Kwangsi {Guangxi} by the National Research Institute, and a single male from Zakow, Chekiang {Zhejiang} collected by Y.T. Chu {Professor Yuan-Ting Chu (1897-1963). C.U. Type No. 959}.” The holotype is deposited in the CU (Ithaca).

Reference. Needham (1930: 218).

bipugio [species]

Anisopleura bipugio Hämäläinen & Karube, 2013 [Orig. *Anisopleura bipugio* sp. nov.]

Lat. *bi-* (in compounds) = two + *pugio* = dagger {noun in apposition}

The species epithet refers to the structure of the posterior lobe of the prothorax of the male. The given etymology reads: “*Bipugio*, combination of the Latin words *bi* (= two) and *pugio* (= dagger) indicating the two long, sharp processes on the posterior lobe of the prothorax.” In the description it says: “Prothorax black; anterior lobe prominent; median lobe with large, somewhat angular orange spots, lateral edge of median lobe narrowly yellow, more broadly so anteriorly; lateral edges of anterior lobe narrowly pale. Posterior lobe black, the hind margin bearing two long, thin processes, broadly separate basally and slightly divergent, curving backward near their base so they extend over the synthorax.” The holotype male, and 9 of the 10 paratypes (all males), were collected by the second taxon author (Haruki Karube) in a mountain stream (alt. 1500 m) at Bidoup-Nui Bai, Lam Dong province, Vietnam, on 15 May 2010. The holotype is deposited at the Kanagawa Prefectural Museum of Natural History, Odawara, Japan.

Reference. Hämäläinen & Karube (2013: 51).

bocki [species]

Euphaea bocki McLachlan, 1880 [Orig. *Euphaea bocki*, n. sp.]

An eponym named after Carl Alfred Bock (1849-1932), a Norwegian naturalist, explorer and diplomat, who collected the holotype in Sumatra {noun in the genitive case}

Bock collected the single (mature) male specimen at “Mountains of Paio in the island of Sumatra”. According to Bock (1882: 286-291) Paio was a small village 9 miles east from Solok in West Sumatra, at an altitude of 1500-2000 feet. Bock stayed there from late October to mid-November 1878. The holotype is deposited in the BMNH (London).

Reference. McLachlan (1880: 204).

brevicauda [species]

Bayadera brevicauda Fraser, 1928 [Orig. {*Bayadera*} *brevicauda*]

Lat. *brevis* –*is* –*e* = short + *cauda* = tail (in entomology used for abdomen or appendage) {noun in apposition}

Ris (1912: 51) had identified a series of *Bayadera* specimens from Formosa [Taiwan] as *Bayadera hyalina* Selys, 1879. When Fraser (1928: 51) compared the North Indian specimens of *B. hyalina* with Ris' illustration of the male appendages of the Formosan taxon, he found clear structural differences and concluded that the Formosan specimens represent a distinct new species. Fraser wrote: "The species described by Dr. Ris from Formosa as *hyalina* is certainly not that species of which I possess examples from the type locality. The figure of the appendages given by Dr. Ris shows the superiors to be equal in length to segment 10 and without any sign of a ventral spine. In true *hyalina* there is a well marked spine and the appendages are much longer than segment 10, about twice the length in fact. I have therefore renamed the Formosan species as *brevicauda*." Thus, the name refers to the short superior appendages, equal in length of the 10th abdominal segment.

Fraser himself did not study any specimens of *B. brevicuda* from Taiwan. Therefore, all 18 (13 ♂, 5 ♀) specimens listed by Ris (1912: 51) as '*Bayadera hyalina*' from three locations in 'Formosa' are syntypes of *B. brevicuda*. Most of these specimens were collected by Hans Sauter (1871-1943) in 1910-1911, and they are presently deposited in the SMF (Frankfurt am Main).

Reference. Fraser (1928: 51).

brunnea [synonym]

Euphaea brunnea Selys, 1879 [Orig. *Euphæa brunnea*, De Selys]

Present status. Synonym of *Euphaea ochracea* Selys, 1859.

Late Lat. *brunneus* –a –um = brown (word of Germanic origin) {declinable adjective}

The name refers to the coloration of the wings and the abdomen: "Ailes ...; reticulation brun-jaunâtre, la nervure costale noir. Les quatre notablement lavées de brun-jaunâtre, mais cette couleur disparaissant insensiblement vers le nodus aux supérieurs, un peu avant le ptérostigma aux inférieurs; celui-ci brun, ... Brun-noirâtre ... Abdomen brun bronzé; le bout des 3-6^e noir, le 7^e noir ... N.B. Probablement voisine de l'*ochracea* de Malacca, mais beaucoup plus grande, plus robuste, les ailes lavées de brun plus foncé et cette couleur ne s'étendant pas au bout des supérieurs."

The species was described from a single male specimen, collected in Khasi Hills, Meghalaya, India by Edwin Felix Thomas Atkinson (1840–1890): "Patrie: Khasia Hills (Bengale), par M. Atkinson. (Coll. Selys)." The holotype is deposited in the IRSN (Brussels).

Reference. Selys Longchamps (1879: 374).

cardinalis [species]

Euphaea cardinalis (Fraser, 1924) [Orig. *Pseudophaea cardinalis*, sp. nov.]

Lat. *cardinalis* –is –e = that on which something depends, i.e. principal, chief [from Lat. *cardo* = door hinge] / cardinal (prince of the Catholic church) {noun in apposition (see ICZN, Article 31.2.2.)}

Fraser's description does not explain his choice of name for the species, which he called "this fine new species." However it is almost certainly a reference to the colour of abdomen and legs of the male which recall the bright red robes of the princes of the Catholic church: "Abdomen bright red as far as apical end of segment 6 where it gradually darkens" and "the

legs red instead of yellow {in *E. dispar*} marked with black”.

Confusingly, Fraser did not provide any collecting data of the primary type of this species “confined to the Palni Hills, at elevations from 800 ft. to 6,000 ft.” He only stated: “The type in the British Museum” [BMNH, London]. According to Kimmins (1966: 185) the holotype male originates from “S. India, Shambanagur, Madura.”

Reference. Fraser (1924: 512).

carissima [synonym]

Pseudophaea carissima Kirby, 1893 [Orig. *Pseudophaea carissima*, sp. n.]

Present status. Synonym of *Euphaea splendens* Hagen, 1853

Lat. *carissimus* –a –um = most precious/ most beloved, most esteemed (superlative to *carus* –a –um = precious, valued / dear, beloved / expensive) {declinable adjective}

The name undoubtedly refers to the beauty of the shining wings of the male of this Sri Lankan insect: “Wings not petiolated, with purple, violet, and green reflexions, semihyaline towards the base, half as far as the nodus, but very slightly on the hind wings, and only towards the costa.”

Kirby based his description on at least three male specimens from “Kottawa, April 19, 24, 27, 1892.” According to Kimmins (1969: 306), the lectotype male of *P. carissima*, deposited in the BMNH (London), is labelled: “Ceylon, Yerbury Coll. / Haycock Hill, 27.iv.[18]92 / *carissima*, type [WFK]”. The collector was Lieutenant-Colonel John William Yerbury (1847-1927).

Reference. Kirby (1893: 559).

chittaranjani [synonym]

Bayadera chittaranjani Lahiri, 2003 [Orig. *Bayadera chittaranjani* sp. nov.]

Present status. Synonym of *Schmidtphaea schmidi* Asahina, 1978

Chittaranjan is an Indian male forename, meaning “joy of the inner mind” or “one who pleases the mind” {noun in the genitive case}

An eponym named after Chittaranjan Lahiri, the late father of the author Ashok Ranjan Lahiri: “The species is named in memory of my beloved father Chittaranjan.”

This north-east Indian species was described from a single male specimen collected at “15 km south of Chandil, Chandil District, Manipur” [India] by R.S. Mathew on 18 February 1992. The holotype is deposited in the National Zoological collection (ZSI, Kolkata).

Reference. Lahiri (2003: 39).

comes [species]

Anisopleura comes Hagen, 1880 [Orig. *Anisopleura comes*, Hagen, N. Sp.]

Lat. *comes* = comrade, companion {noun in apposition}

The name *comes* is an allusion to the species’ near connection with *Anisopleura lestoides* Selys, 1853, the only then known species in its genus: “Les deux espèces sont d’ailleurs assez semblables.” Both of these ‘companion’ species are found in northern India.

Anisopleura comes was described on basis of a single male specimen, collected either in Ambala or in the Kooloo range further north in North India: "Un mâle (en alcool) envoyé d'Amballa (Indes orientales) avec d'autres insectes, mais il pourrait aussi provenir de la chaîne méridionale de Kooloo (Himalaya) qui se trouve à 200 milles plus au nord." The holotype male was among the large (over 10 000) number of insects (mostly butterflies), which were gathered by Reverend M. M. Carleton (?-1898) and deposited in the MCZ (Cambridge, Mass.) in 1863.

Reference. Hagen (1880: lxiii).

compar [synonym]

Euphaea compar McLachlan 1870 [Orig. *Euphæa compar*, n. sp.]

Present status. Synonym of *Euphaea formosa* Hagen, 1869

Lat. *compar* = (adj.) equal to, similar, matching / (noun) comrade, fellow {noun in apposition}

The name was obviously chosen because of the new species' similarity to *Euphaea decorata*: "Appears to have some affinity with *E. decorata*, but much larger, and the dark band of the posterior wings much broader. Both the ♂ and ♀ above described seem to be perfectly adult."

The species was described from one male and one female specimen labelled as originating from "Amoy, in China." Amoy (now Xiamen) is a small island off the southeastern part of the Fujian coast. However, as in case of the holotype of the calopterygid species *Psolodesmus mandarinus*, described by McLachlan in the same paper, the given find locality of *E. compar* is undoubtedly incorrect. The specimen must have been collected somewhere in Formosa (= Taiwan), and the obvious collector is Robert Swinhoe (1836-1877), who from 1855 worked as a British consul both in Amoy and Formosa, and became a recognized ornithologist and naturalist (see Hämäläinen & Fliedner 2022: 103). The lectotype male of *E. compar* is deposited in the BMNH (London).

Reference. McLachlan (1870: 167).

continentalis [species] (Fig. 12)

Bayadera continentalis Asahina, 1973 [Orig. *Bayadera brevicauda continentalis* subsp. nov.]

Lat. *continentalis* –is –e = pertaining to the mainland, ... to a continent (adjective derived from L. *continens* = continuous land mass) {declinable adjective}

The name refers to the occurrence of this taxon in the mainland China, where it was, at the time of the description, known only from Fujian. Asahina wrote: "The present form is well differentiated from the known ten species* {species were listed in a footnote} of the genus *Bayadera* by the small body-size, entirely hyaline wings, short and simple male superior caudal appendages and the peculiar pale markings on the side of the pterothorax. Its nearest ally is, however, undoubtedly the Taiwanese *brevicauda brevicauda* Fraser, as well as its insular race *brevicauda ishigakiana* Asahina. I have carefully compared both Fukienese and Taiwanese representatives and on this basis decided to recognize the former to be a continental race of *brevicauda* Fraser, and to adopt {Erich}Schmidt's tentative name '*continentalis*' given by him on the label inserted in the specimen case!"



Fig. 12. *Bayadera continentalis* male. China, Guangxi prov.; 5-vi-2017. Photo: Hao-miao Zhang.

The holotype male was collected in Fujian – “Kuatun, {alt.} 2300 m. Fukien” – by Johann Friedrich Klapperich (1913-1987) on 1 May 1938 [not on 1 May 1946, as stated by Asahina]. Klapperich also collected many (104 ♂, 70 ♀) other specimens from the same location, some of which were listed as paratypes. The holotype is deposited in the NSMT (Tokyo).

Reference. Asahina (1973: 455).

cora [species] (Fig. 13)

Euphaea cora Ris, 1930 [Orig. *Euphaea cora* nov. spec.]

Latinized version of Gr. Κόρη [Korē] = maiden, girl {noun in apposition}

In Greek mythology the name Cora (Kore) refers to Persephone, queen of the underworld; the beautiful daughter of Zeus and the goddess Demeter, the patroness of agriculture. The similarity of this species with some species of the polythorid genus *Cora* suggested this name: “Die kleine Art ist dadurch interessant, dass bei ihrem ♂ die Farbenauszeichnung von den Flügeln weg ganz auf das schwarz-blaue Thoraxmuster verlegt ist, womit sie gewissen *Cora*-Arten (besonders *chirripa* und *irene*) habituell recht ähnlich wird [This small species is interesting because in its ♂ colour markings are shifted away from the wings to the black and blue pattern of the thorax which makes it strongly resemble certain species of *Cora* in its habitus (especially *chirripa* and *irene*)].”

The description was based on two male specimens, collected by Georg Böttcher (1890-1919) in Surigao, Mindanao, on 29 May 1915. The syntypes are in the SMF (Frankfurt am Main).

Reference. Ris (1930: 86).



Fig. 13. *Euphaea cora* male. Philippines, Mindanao, Surigao del Sur prov.; 27-x-2011. Photo: Reagan J.T. Villanueva.

cyanifrons [species] (Fig. 14)

Cyclophaea cyanifrons Ris, 1930 [Orig. *Cyclophaea cyanifrons* nov. spec.]

Lat. *cyanos* = lapis lazuli [borrowed from Gr.] + *-frons* = –fronted {adjective}

The name reflects the coloration of the frons of the male: "Oberlippe, Anteclypeus, Postclypeus, Mandibelbasis, Genae, Stirn bis zur Mitte sehr licht grünlichblau bis seegrün [Labrum, anteclypeus, postclypeus, base of the mandibles, genae, frons up to the middle greenish blue to sea-green]."

The syntype series (in the SMF, Frankfurt am Main) consists of two male and one female specimens from Palawan. Males were collected in Binaluan (northern Palawan) by Georg Böttcher (1890-1919) on 25 November 1913 and 7 January 1914, respectively. The female was collected in an unspecified locality in Palawan by Alfred Hart Everett (1848-1898) in 1894.

Reference. Ris (1930: 81).



Fig. 14. *Cyclophaea cyanifrons* male. Philippines, Palawan Island; 25-x-2023. Photo: Stijn De Win.

cyanopogon [species]

Euphaea cyanopogon Hämäläinen, Kosterin & Kompier, 2019 [Orig. *Euphaea cyanopogon* sp. nov.]

Gr. κύανος [kýanos] = dark-blue enamel; lapis lazuli + πώγων [pōgōn]: beard (the etymology given in the original description would have resulted in the name *cyaneopogon*) {noun in apposition}

The given etymology says: "The specific epithet, a noun in apposition, is a composite of Latinised forms of two Greek words κύανος: dark blue and πώγων: beard, together meaning 'blue beard', referring to the coloration of the lower face in males of the new species." The description of the head of the holotype male includes the following: "Base of mandible gen-

erally dull bluish, with distinct, very dark brown oval spot in anteriodorsal corner... Genae sky blue in upper part and brown in lower part; border between these colours indistinct while upper border between blue and black distinct and jagged, with two blunt projections of blue." Correspondingly for paratype males it says: "With three exceptions (similar to the holotype), male paratypes have the genae sky-blue throughout, not darkened in lower part. In some paratypes, the anterolateral border of the frons adjacent to the gena is narrowly blue. The colour pattern of the labrum is variable: dark brown to black with a pair of either dull yellowish, yellowish blue or distinctly blue spots of variable size and form."

The holotype male (deposited in the RMNH, Leiden) was collected by the taxon co-author Oleg Kosterin in "Cambodia, Preah Sihanouk province, just below Kbal Chhay Waterfall" on 10 March 2017. Paratypes (11 ♂, 2 ♀) originate from Preah Sinanouk province and the nearby Phú Quốc Island of Vietnam.

Reference. Hämäläinen & al. (2019: 29).

decorata [species]

Euphaea decorata Hagen, 1853 [Orig. *Euphæa decorata*, Hagen]

Lat. *decoratus* –a –um = adorned {declinable adjective}

The name is probably based on the colour pattern of the male wings. This may be concluded from Selys' statement (1854): "Espèce facile à distinguer des autres à sa petite taille, à la forme du ptérostigma et à la coloration des ailes du mâle." The original (1853) description of male wings includes: "Ailes hyalines lavées de jaunâtre, surtout à la base; les inférieures avec une large bande traverse noirâtre luisant après le nodus, n'atteignant pas le ptérostigma". Correspondingly, the more detailed description (1854) includes: "Ailes hyalines lavées de jaunâtre sale, surtout à la base; les supérieures étroites, sans taches, les inférieures notablement élargies vers leur milieu, portant une large bande transverse d'un brun noir lustre, entre le nodus et le ptérostigma, mais sans toucher ni l'un ni l'autre; cette bande un peu concave en dedans, convexe en dehors, commence à moitié de l'aile."

The description was based on a single male specimen from Hong Kong: "Patrie. Hong-Kong (Chine), d'après un mâle du Musée de Copenhague, pris à la fin de juin." The holotype is deposited in the ZMC (Copenhagen).

Reference. Selys Longchamps (1853: 51); Selys Longchamps & Hagen (1854: 172).

dimidiata [species]

Dysphaea dimidiata Selys, 1853 [Orig. *Dysphæa dimidiata*, De Selys]

Lat. *dimidiatus* –a –um = divided in half {declinable adjective}

The name refers to the two-part coloration of the male wings, which Selys described as follows: "♂ La moitié basale des ailes noirâtre; cette couleur finissant subitement en ligne droite; le reste hyalin; l'extrémité limbée de noirâtre après le ptérostigma." (1853); "... la moitié des supérieures et un peu plus de moitié des inférieures opaques, d'un brun noirâtre luisant, cette couleur s'arrêtant subitement et coupant l'aile en ligne droite" and "Le mâle, seul connu, est encore remarquable parmi ses congénères par ... la couleur des ailes don't la moitié basale est opaque." (1854).

Described on the basis of at least five male specimens from (western) Java: “Patrie. Java, d’après plusieurs exemplaires, tous mâles.” The lectotype male is deposited in the IRSN (Brussels).

Reference. Selys Longchamps (1853: 54); Selys Longchamps & Hagen (1854: 185).

dispar [species] (Fig. 4)

Euphaea dispar Rambur, 1842 [Orig. *Euphæa dispar*, mihi.]

Lat. *dispar* = unequal, disparate, unlike {adjective}

The name evidently refers to the dissimilarity of the coloration of the fore- and hindwings, especially those of the male: “alis hyalinis ad basim flavidis, anticis apice tenuissime, posticis late nigro-caeruleo-violaceis (mas), viridi-flavidis (femina) [hyaline wings yellowish at the base, the forewings at the apex very slightly, the hindwings broadly dark bluish violet (male), greenish yellow (female)]” and “Ailes étroites, longues, jaunâtres, à la base: les supérieures avec le sommet trèsfinement, les inférieures largement, d’un noir bleuâtre et violet ... Femelle ... Ailes d’un vert jaunâtre.”

The potential alternative explanation for the name, the clear difference of the length of fore- and hindwing – the feature underlying the Selysian names *impar* and *inaequipar* (see entries) – can be ruled out in the case of *dispar*, since Rambur did not describe this feature (typical in most euphaeids) in this species, nor in his other new species *E. guerini* or *E. variegata* (see entries).

As the provenance of this species, Rambur gave only “Des Indes.” According to Selys & Hagen (1854: 171) the type specimens (at least 1 ♂, 1 ♀, deposited in the IRSN, Brussels) came from the Nilgiri Hills: “Patrie. Le plateau de Neelgherries (Inde), d’où elle a été apportée par M. Delessert. Décrite d’après les types qui ont servi à M. Rambur.” The specimens were collected by Adolphe François Delessert (1809-1869) in 1838.

Reference. Rambur (1842: 230).

ethela [species]

Dysphaea ethela Fraser, 1924 [Orig. *Dysphaea ethela*, sp. nov.]

An eponym named after Ethel Grace Fraser (née Varrall) (1881-1960), wife of the author {noun in apposition}

Fraser wrote: “The species is of great interest as being the first of its genus to be taken within Indian limits, the nearest relation coming from Java, Sumatra and Borneo. The insect is named after my wife, the constant companion of my collecting trips.” Fraser did not mention that his wife’s Christian name was Ethel, not Ethela. Therefore, in terms of the Article 31.1. of the Code (ICZN, 1999), the name *ethela* must be treated as a noun in apposition. The spelling *ethela* was an obvious misspelling, since according to Kimmins’ (1966: 191), the holotype male bears a label “*Pseudophaea etheli* ♂ Fras. MS.” and the allotype female, correspondingly, “*Dysphaea ethelae* Cotype ♀”. In spite of this, Kimmins’ emendation *ethelae* did not come into common use, being treated as an incorrect subsequent spelling.

Described on the basis of an unspecified, “good”, number of male specimens and two female specimens from “Coorg only”. According to Kimmins (see above), the holotype male (in the BMNH, London) was collected by taxon author F.C. Fraser in “S. India,

Coorg, Napoklu, Cauvery River” on 22 April 1923.

Reference. Fraser (1924: 480).

fasciata [species]

Bayadera fasciata Sjöstedt, 1932 [Orig. *Bayadera fasciata* n. sp.]

Lat. *fasciatus* –a –um = enveloped or marked with bands {declinable adjective}

The name refers to the colour pattern of the synthorax and abdomen of the female, the only known sex of the species: “Thorax schwarz mit folgender gelben oder etwas rötlich angehauchten gelben Zeichnung: vorn median eine feine Linie, jederseits vorn ein breites, nach innen gerades, scharf begrenztes, nach hinten etwas verjüngtes Band, ... lateral ein breites, schräg gestelltes Mittelband sowie der ganze Hinterteil der Metapleuren; hierdurch entstehen auf den gelben Pleuren zwei scharf markierte schräg gestellte schwarze Bänder, das vordere am breitesten ... Hinterleib schwarz ... längs den Seiten des 2. – 7. Segments eine feine nach hinten allmählich verschwindend rötlich gelbe Linie ... [Thorax black with the following yellow or somewhat reddish markings: in anterior median part fine line, at front on both sides a broad, inwardly straight, sharply defined band somewhat narrowing posteriorly ... laterally a broad, oblique median band as well as the entire posterior part of the metapleura; so forming on the yellow pleura two clearly marked oblique black bands, that at the front being the widest ... abdomen black ... on the 2nd to the 7th segment laterally a fine longitudinal reddish yellow line gradually disappearing distally].”

The species was described on the basis of a single female specimen from Sichuan, China: “N. O. Szechuan, bei Teichen zwischen Ackerfeldern beim Dorf Yen-fe-lo, 700 m ü. d. M. [North-east Sichuan, near ponds between the cultivated areas of the village Yen-fe-lo, 700 metres above sea level.]” The holotype (in the NRS, Stockholm) was collected by David Axelsson Hummel (1893-1984) on 22 May 1930.

Reference. Sjöstedt (1932: 14).

fatime [species] (Figs 2 and 15)

Epallage fatime (Charpentier, 1840) [Orig. *Agrion fatime*]

Fatime is a variant of the Arabic female forename Fatima (= the wise woman). This name is famous in Muslim countries as the name of the favourite daughter of Prophet Muhammad {noun in apposition}

Charpentier kept the new species – member of his subgenus *Epallage* – closest to the species of the subgenus *Calopteryx*, and he compared it with *C. virgo*: “Est *Agrion Fatime* alarum expansione *Agrio Virgini* aequale, abdomine brevior, crassior [in wingspan *Agrion fatime* equals *Agrion virgo*, its abdomen is shorter and thicker].” Apparently, for this reason he selected the feminine theme in naming the new species. In this context, selecting of the name *fatime* for a species from the Near East was particularly appropriate.

The species was described on basis of a single female specimen from Turkey: “E Turcia, ab illustr. Frivaldsky, Budensi, ad me missum est unicum exemplum [The single specimen has been sent to me by the famous {Mr.} Frivaldsky from Budapest].” The holotype (presently in the MCZ, Cambridge, Mass.) was collected by Imre Frivaldsky (1799-1870) in 1838. For the illustrations of holotype and its attached labels, see Garrison & von Ellen-



Fig. 15. *Epallage fatime* tandem pair. Turkey, Adiyaman prov.; 8-vi-2011. Photo: Cor Zonneveld.

rieder (2019: 48).

Reference. Charpentier (1840: 132).

forcipata [species]

Bayadera forcipata Needham, 1930 [Orig. *Bayadera forcipata* sp. n.]

Lat. *forcipatus* –a –um = equipped with pincers {declinable adjective}

The name must refer to the structure of anal appendages of male. However, since Needham's description of the anal appendages does not match with his illustrations (Pl. 16, figs.

6 and 6a), it is not possible to decide whether the shape of superior or inferior appendages is behind the name. In the description it says: “The superior appendages of the male have a huge internal tooth at one third of their length and remarkably dilated tips whose margins are finely serrated inferiorly. Inferiors almost as long, slender; and incurved at the end.” However, in his illustrations, no huge internal tooth on the superior appendages can be seen, and the inferiors are only half as long as the superiors. Moreover, the tips of inferiors are not incurved, whereas the superiors are illustrated as incurved, and therefore could be called pincer-like.

The description was based on a single male specimen, collected in “west of Yachow” [Yachou, Sichuan, China] by David Crockett Graham (1884-1961) on 8 June 1923. The holotype is deposited in the USNM (Washington, DC). No later collected specimens of this species are known.

Reference. Needham (1930: 217).

formosa [species]

Euphaea formosa Hagen, 1869 [Orig. *Euphæa formosa*, Hagen]

There are two possible reasons for Hagen's choice of the name. It may be a toponym referring to “Ile de Formosa”, where the species was found {noun in apposition} or it may be based on the beautiful colour of the hind wing of male {declinable adjective}. In the appendix (p. 84) it is categorized as a toponym.

In former times, Formosa was the name of Taiwan. The name Formosa from one of the Romanic languages, probably Portuguese or Spanish, is derived from Lat. *formosus* –a –um = beautiful, finely formed, handsome. Hagen's possible choice to present a toponymic name as a noun in apposition was unusual. Later, in his odonatological nomenclature, he did this only once (Hagen 1889) by introducing the toponymic name *yakima* (in *Calopteryx*; see Hämäläinen & Fliedner 2022: 151). Usually, in his new toponymic names Hagen chose an adjective derived from the name of the locality, which in this case would have been *formosana*. The original description of *E. formosa* was very brief, but later Hagen (1880) published a detailed description and provided information on the type material: “Une mâle de l'Ile de Formose (China) reçu de M. MacLachlan en 1866.” It is probable that the holotype male (presently in the MCZ, Cambridge, Mass.) was collected by Robert Swinhoe (1836-1877); cf. the entry *compar*.

Reference. Selys Longchamps (1869: 660).

fraseri [species] (Fig. 16)

Euphaea fraseri (Laidlaw, 1920) [Orig. *Pseudophaea fraseri*, sp. n.]

An eponym named after Frederic Charles Fraser (1880-1963), the English military physician and odonatologist {noun in the genitive case}

The author wrote: “This fine new species, which I have much pleasure in dedicating to Major F.C. Fraser, R.A.M.C, belongs to a small section of the genus *Pseudophaea*, which may be called the section *dispar*, after its first described species, named by Rambur.”

Described on the basis of 6 male and 1 female specimens collected at “Castle Rock, N. Kanara Dist.” [Castle Rock, Uttara Kannada District, Karnataka State, India] by Stanley



Fig. 16. *Euphaea fraseri* male. India, Kerala state; 22.vi.2020. Photo: P.K. Girish Mohan. Wikimedia Commons.

Wells Kemp (1882-1945) in October 1916. The holotype male was deposited in the Indian Museum (Kolkata).

Reference. Laidlaw (1920: 23).

furcata [species] (Figs 3 and 17)

Anisopleura furcata Selys, 1891 [Orig. *Anisoplevra furcata*, Selys, n. sp.]

Lat. *furcatus* –a –um = equipped with a two-pronged fork {declinable adjective}

The name refers to the forked structure of the superior anal appendages of the male: “Appendices anals supérieures noirs, un peu plus longs que le dernier segment, écartés épais comprimés fourchus; la branche principale (le bord interne) la plus longue mousse, un peu courbée en dedans; l’autre branche naissant du bord externe vers son second tiers, un peu plus courte penchée en bas, avec un écartement presque à angle droit, de sorte que l’appendice vu de profil est en patte d’écrevisse ouverte. Appendices inférieurs rudimentaires.”

Described on the basis of a single male specimen from “Puepoli”, a village in the Karen Hills in Burma, collected by Leonardo Fea (1852-1903) on 29 June 1888. Selys remarked: “C’est une des plus jolies captures de son voyage.” The holotype is deposited in the MSNG (Genoa).

Reference. Selys Longchamps (1891: 488).



Fig. 17. *Anisopleura furcata* larva. Thailand, Chiang Mai prov.; 13-6-2023. Photographed in an aquarium. Photo: Tosaphol Keetapithchayakul.

gloriosa [species] (Fig. 18)

Dysphaea gloriosa Fraser, 1938 [Orig. *Dysphaea gloriosa* sp. n.]

Lat. *gloriosus* –a –um = famous, renowned / glorious, full of glory {declinable adjective}

Most probably the deep amber tinted wings of the male have led to the name: “Wings a rich golden amber tint, this tint becoming increasingly intensified towards the base of wings from a level slightly distal to nodus. Apices slightly enfumed up to level of pterostigma which latter is long, narrow and black, covering 8-9 cells.” “This new species is very closely related to *D. ethela* Fraser, from which, however, it differs markedly by its deep golden-tinted wings. Otherwise, its size, long narrow wings and body markings are almost identical.”

Described on the basis of 3 male and 1 female specimens from Siam and Laos, all collected by Arthur Francis George Kerr (1877-1942). The holotype male (in the BMNH, London) was collected at “Pak Tawan, Prachaup, Siam” [Pak Tawan, Prachuap Khiri Khan, Thailand] on 31 August 1931.

Reference. Fraser (1938: 197).

guerini [species] (Cover photo and fig. 19)

Euphaea guerini Rambur, 1842 [Orig. *Euphæa guerini*, mihi]

An eponym named after Félix Édouard Guérin-Méneville (1799-1874), a French entomologist {noun in the genitive case}



Fig. 18. *Dysphaea gloriosa* male. China, Yunnan prov.; 29-iv-2010. Photo: Hao-miao Zhang.



Fig. 19. *Euphaea guerini* male. Vietnam, Phu To prov.; 12-vii-2014. Photo: Sébastien De-longlée.

The original description was based on a single male specimen from: "De la Cochinchine. Collection de M. Guérin." The holotype is in the IRSN (Brussels). It was collected by Pierre Médard Diard (1794-1863) in 1826. Selys wrote in his redescription of the species (Selys & Hagen 1854: 181): "Patrie. La Cochinchine; décrite d'après le type de M. Rambur, et d'après un autre semblable pris par M. Diard en 1826."

Reference. Rambur (1842: 229).

haomiao [species]

Dysphaea haomiao Hämäläinen, 2012 [Orig. *Dysphaea haomiao* sp. nov.]

An eponym named after Dr Hao-miao Zhang (b. 1982), a Chinese odonatologist, who collected the type material in Guizhou {noun in apposition}

The given etymology reads: "The new species is named after Dr Haomiao Zhang, an enthusiastic and gifted odonatologist, in recognition of his achievements in the study of Chinese dragonflies and in appreciation of his fruitful collaboration with the author and generosity in sharing specimens and information. The specific epithet *haomiao* is a noun in apposition (in the nominative case)."

The holotype male (deposited in the RMNH, Leiden) was collected in "China, Guizhou, Libo County, Xiaoqikong Scenic Area, Zhangjiang River, alt. c.450 m" by Hao-miao Zhang on 7 May 2007. Paratypes include 9 ♂ and 3 ♀ from the same site.

Reference. Hämäläinen (2012: 305).



Fig. 20. *Bayadera hatvan* male. Vietnam, Yen Bai prov.; 11-v-2014. Photo: Tom Kompier.

hatvan [species] (Fig. 20)

Bayadera hatvan Hämäläinen & Kompier, 2015 [Orig. *Bayadera hatvan* sp. nov.]

The given etymology reads: "The specific epithet *hatvan* (a noun in apposition) is based to {sic} the Vietnamese term 'hát vãn', a contraction of 'hát châu vãn'. It refers to a traditional folk art form in northern Vietnam which combines singing and dancing. This is in accord with the meaning of the genus name *Bayadera*: bayadère is the French version of the Portuguese word bailadeira, which refers to a Hindu dancing girl in Indian temples. Selys (1853) introduced the genus-group name *Bayadera* for his Indian species *Epallage indica*."

The holotype male (deposited in the RMNH, Leiden) was collected in "Vietnam, Yen Bai province, stream crossing the road 'QL 32' at 21.736 N, 104.335 E, altitude 800 m" by the taxon co-author Tom Kompier on 3 July 2014. The paratypes (5 ♂, 3 ♀) originate from three provinces in northern Vietnam.

Reference. Hämäläinen & Kompier (2015: 15).

hirta [species] (Fig. 21)

Euphaea hirta Hämäläinen & Karube, 2001 [Orig. *Euphaea hirta* sp. nov.]

Lat. *hirtus* –a –um = hairy, shaggy, covered with hair {declinable adjective}

The name refers to the profusion of setae on various parts of the body of the male of this species, which makes it to look more 'hairy' than its congeneres *E. guerini* and *E. masoni*. The given etymology reads: "*Hirta*, "hairy", denoting the excessive hairy appearance, when



Fig. 21. *Euphaea hirta* male showing flashes of iridescence on upper (a) and under sides (b) of wings. Vietnam, Lam Dong prov.; 11-xii-2006 (a); 22-xi-2004 (b). Photos: Matti Hämäläinen.

compared with its congeners.” The description of the male (female was unknown) includes: “In general appearance and wing colour pattern closely resembling *E. masoni*, but differing by clear structural details in appendages, 10th segment and in more profound hairiness ... Tibiae, especially in forelegs, densely hairy on the inner surface ... Auricles furnished with long, coarse hairs at tip. Ventral side of abdomen sparsely hairy throughout, but with denser and longer hair tufts at apical ends of S4 and S5 and at base of S9 ... Superior appendages broad and furnished with long hairs on top.”

The holotype male and all paratypes (9 ♂) were collected in “Vietnam, Lam Dong prov., {near} Bao Loc, alt. ca 700 m” by the taxon co-author Haruki Karube. The holotype was collected on 14 June 1996. It is deposited in the Kanagawa Prefectural Museum of Natural History, Odawara, Japan.

Reference. Hämäläinen & Karube (2001: 212).

hyalina [species]

Bayadera hyalina Selys, 1879 [Orig. *Bayadera hyalina*, De Selys]

Lat. *hyalinus* –a –um = made of glass, hyaline {declinable adjective}

The name of this species refers to the hyaline wings. This character differs from that in *hyalina*'s only (that time) known congener *B. indica*, which has darkened wing tips: “Cette espèce diffère notablement de l'*indica* par sa taille petit et grêle ... et le bout des ailes hyalin comme le reste (le bout des ailes noirâtre chez l'*indica*).” Selys concluded: “Le découverte de cette espèce vient confirmer la création du sous-genre *Bayadera* démembré des *Epallage* proprement dites.”

The species was described from a single male specimen, collected in Khasi Hills, [Meghalaya], India by Edwin Felix Thomas Atkinson (1840–1890), possibly in October 1867: “Patrie: Khasia Hills (Bengale), par M. Atkinson, un mâle unique. (Coll. Selys).” The holotype is deposited in the IRSN (Brussels).

Reference. Selys Longchamps (1879: 373).

impar [species]

Euphaea impar Selys, 1859 [Orig. *Euphæa impar*, De Selys]

Lat. *impar* = unequal (size/number/rank/esteem) / uneven, odd {adjective}

The obvious reason for the choice of its name is the discrepancy in the length of fore- and hind wings in the male: “Ailes hyalines un peu jaunâtres; un petit limbe apical aux supérieurs, brun; les inférieures plus courtes, et leur $\frac{3}{8}$ apical subitement noirâtre chatoyant ... Cette espèce, l'*inaequipar* et la *Tricolor* appartiennent au groupe de la *Dispar*.”

The syntype series consists of 5 male specimens from “Le mont Ophir, à Malacca” [Mount Ophir, Johor, Peninsular Malaysia] and of one female specimen from “Singapore”. Of these 3 ♂ and 1 ♀ are deposited in the IRSN (Brussels) and 2 ♂ in the MCZ (Cambridge, Mass.). The specimens were collected by Alfred Russel Wallace (1823-1913), those from Mt Ophir in July-September 1854 and that from Singapore in July-September 1854.

Reference. Selys Longchamps (1859: 441).

inaequipar [synonym]

Euphaea inaequipar Selys, 1859 [Orig. *Euphæa inaequipar*, De Selys]

Present status. Synonym of *Euphaea impar* Selys, 1859

Lat. prefix *in-* = not, un- + *aequipar* = perfectly alike {adjective}

As in the previous species, the name refers to the difference in the length of fore- and hind wings of the male. In *inaequipar*, the difference was stated to be even greater than in *impar*: "Ailes ... les inférieurs beaucoup plus courtes et un peu plus larges." Selys' remark: "M. Hagen doute que l'espèce soit différente d'*E. impar*" indicates that the synonymy was already surmised at that time.

The description was based on a single male specimen collected by Alfred Russel Wallace (1823-1913) in Sarawak (Borneo) between November 1854 and January 1856. The locality name "Saratoga" in the published provenance "Patrie: Saratoga, dans l'île de Bornéo" was a lapse, with the intended word being Sarawak. The holotype is deposited in the IRSN (Brussels).

Reference. Selys Longchamps (1859: 442).

indica [species] (Fig. 22)

Bayadera indica (Selys, 1853) [Orig. *Epallage indica*, De Selys]

Lat. *Indicus* –a –um = of India, Indian {declinable adjective}

A toponym. The species was described from "numerous" male specimens from an unspecified location in India: "Patrie: Inde. Musée britannique; collect. Selys.) (1853)"; "Patrie:



Fig. 22. *Bayadera indica* tandem pair. Nepal, Bokhara; 11-ix-2013. Photo: Karen Conniff.

L'Inde, d'après plusieurs exemplaires dans ma collection et celle du Musée britannique et dans celles de MM. Dale et Saunders." (1854). One of the two male specimens in the IRSN (Brussels) bear a lectotype label added by K.[Karl] Buchholz in 1959.

According to Selys' labels, the *indica* specimens were purchased from Samuel Stevens (1817-1899), a natural history agent in London. On 18 October 1850, Selys wrote in his diary (Caulier-Mathy & Haesenne-Peremans 2008: 397): "J'ai commencé à ramollir les libellules de l'Inde et de l'Amazone vendues par M. Stevens."

Reference. Selys Longchamps (1853: 49); Selys Longchamps & Hagen (1854: 163).

inouei [species]

Euphaea inouei Asahina, 1977 [Orig. *Euphaea guerini inouei* subsp. nov.]

An eponym named after Yasuo Inoue, a Japanese amateur entomologist, who collected the type material in southern Vietnam {noun in the genitive case}

The holotype male (in the NSMT, Tokyo) was collected by Inoue at "Thao Bolba {lapsus pro Thac Bobla} near Dalat, S. Vietnam" on 31 March 1962. In addition, Inoue collected paratypes (9 ♂, 3 ♀) in a few other locations in Lam Dong province. The taxonomic status of *inouei* is uncertain. It is either a good species or a subspecies of *Euphaea masoni*.

Reference. Asahina (1977: 178).

intermedia [synonym]

Euphaea intermedia Krüger, 1898 [Orig. *Euphaea aspasia-variegata* Selys-Rambur. ? *Euphaea intermedia* n. sp.]

Present status. Synonym of *Euphaea variegata* Rambur, 1842

Lat. *intermedius* –a –um = that is between, intermediate {declinable adjective}

Krüger was puzzled concerning the identity of three male specimens of *Euphaea* from north-east Sumatra, for which he introduced a provisional name *intermedia*: "Drei sehr interessante Thiere. Sie stimmen in ihren Merkmalen teils mit *variegata*, teils mit *aspasia* überein. Oberlippe etc. sind wie bei *variegata* glänzend schwarz. Vorder- und Hinterflügel stimmen in der Farbe mit *variegata* überein, aber der Metallfleck der Hinterflügel bleibt vom Hinterrande sehr wenig, aber deutlich entfernt. Die Breite der Flügel entspricht völlig derjenigen von *aspasia*. Der erste, oberflächliche Eindruck deutet auf *aspasia*. Demnach ein vollständiger Uebergang von *variegata* zu *aspasia*. Sollte diese Form als neue Art zu betrachten sein, so wäre dafür die Bezeichnung *Euphaea intermedia* n. sp. zu nehmen [Three very interesting animals. In their characteristics in part they agree with *variegata*, in part with *aspasia*. Labrum etc are shiny black as in *variegata*. Fore- and hindwings match in colour with those of *variegata*, the metal spot however is at a very small, but clear distance from the rear margin. The width of the wings is entirely in accord with that of *aspasia*. So it is a complete transition from *variegata* to *aspasia*. If this taxon has to be classified as a new species, the name *Euphaea intermedia* n. sp. should be adopted]."

Schmidt (1934: 329) ranked *intermedia* as a subspecies of *variegata*, but Lieftinck (1953: 138-139) downgraded it as synonym of *variegata*: "I am deliberately of opinion that Krüger's subspecies *intermedia* from N.E. Sumatra cannot stand, the differences noted falling obviously within the limits of individual variation."

Krüger's description was based on three male specimens (of which one was teneral) from "Soekeranda" [Sukaranda] in northeastern Sumatra (ca 45 km W of Medan), collected by Heinrich Wolfgang Ludwig Dohrn (1838-1913) in 1893-1897. The syntype series is deposited in the MIZPAN (Warsaw).

Reference. Krüger (1898: 76).

ishigakiana [species]

Bayadera ishigakiana Asahina, 1964 [Orig. *Bayadera brevicauda ishigakiana* subsp. nov.]

A toponym referring to the Ishigaki Island in the Ryukyu Islands of Japan, where the species was found {declinable adjective}

The taxon, originally ranked as a subspecies of the Taiwanese *Bayadera brevicauda*, was described on basis of a series of 17 ♂ and 10 ♀ specimens collected by the taxon author Syoziro Asahina at "Omoto-dake, Ishigaki Island" on 14 and 17 April 1962; the holotype male on 14 April. The holotype is deposited in the NSMT (Tokyo).

Reference. Asahina (1964: 1).

kali [species]

Bayadera kali Cowley, 1936 [Orig. *Bayadera kali*, sp. n.]

Sanskrit *kālī* = black {indeclinable}

The name refers to the melanic appearance, especially the black thorax and abdomen of the male: "The specific name from the Sanskrit *Kālī* 'the black'." The author added: "This species, the smallest in the genus, is distinguished from all its congeners by the following combination of characters: hyaline wings, colour-pattern of head, black thorax without pale stripes and with distinctive pruinose patches, black abdomen, and the form of the anal appendages." Consequently, the name is not taken from the Hindu goddess Kali, which is associated with time, doomsday, death and destruction.

The description was based on two male specimens collected in "Khasi Hills, Assam" [Khasi Hills, Meghalaya, India] at an unknown date. The specimens were purchased from N.N. Dunnai. The holotype male is in the BMNH (London).

Reference. Cowley (1936: 447).

khaochongensis [synonym]

Euphaea khaochongensis Asahina, 1985 [Orig. *Euphaea khaochongensis* sp. nov.]

Present status. Synonym of *Euphaea pahyapi* Hämäläinen, 1985

Lat. suffix *-ensis -is -e* = pertaining to (mostly in geographical sense) {declinable adjective}

A toponym referring to Khao Chong Forest (presently Khao Chong Wildlife Sanctuary) in Trang province in southern Thailand, where the taxon author Syoziro Asahina had collected five male specimens on 24 and 26 June 1965; the holotype (in the NSMT, Tokyo) was collected on the latter date.

Reference. Asahina (1985: 27).

kinnara [species]

Bayadera kinnara Hämäläinen, 2013 [Orig. *Bayadera kinnara* sp. nov.]

For Hindi Kinnara, see below {noun in apposition}

The given etymology reads: "The specific epithet *kinnara* (a noun in apposition) refers to the half-human and half-bird character from the Buddhist mythology of many south-east Asian countries. Kinnara are renowned for their skills in dance and song. This is accordance with the meaning of the genus name *Bayadera*: bayadére is the French version of the Portuguese word bailadeira, which refers to a Hindu dancing girl in Indian temples. Selys (1853) introduced the genus-group name *Bayadera* for his Indian species *Epallage indica*."

The description was based on a single male specimen from "Burma (Myanmar), Kachin State, South Kumon Range, Zhan-Phut (Makoutsup-Hill), altitude ca 600 m" collected by Yukio Yamaoka, Shinji Nagai & Hiroshi Miyama on 11-15 May 2000. The holotype is deposited in the Kanagawa Prefectural Museum of Natural History, Odawara, Japan.

Reference. Hämäläinen (2013: 45).

kirbyi [species]

Bayadera kirbyi Wilson & Reels, 2001 [Orig. *Bayadera kirbyi* sp. nov.]

An eponym named after William Forsell Kirby (1844-1912), the English entomologist, linguist and folklorist {noun in the genitive case}

The given etymology reads: "Named in honour of W. F. Kirby who listed this species as *Bayadera* sp. in the first account of the Hainan odonate fauna." Kirby (1900: 536) had studied "a single specimen of a very distinct species" from Hainan. However, since the specimen was much damaged, he did not describe it as a new species, but listed it as '*Bayadera* sp.' Since no other *Bayadera* species are known from Hainan, it must have been the same species.

Holotype male and 3 ♂ paratypes were collected in "Wuzhishan" (Hainan, China) by the taxon co-author Graham Thomas Reels on 9-10 June 1999. The holotype is deposited in the Tai Lung Experimental Station, Agriculture, Fisheries and Conservation Department, Hong Kong, China.

Reference. Wilson & Reels (2001: 159).

kusumi [synonym]

Anisopleura kusumi Sahni, 1965 [Orig. *Anisopleura kusumi* sp. nov.]

Present status. Synonym of *Anisopleura lestoides* Selys, 1853

In Hindi Kusum means a flower. Kusum is quite a popular first name for women and girls in India and Pakistan.

Unfortunately, Sahni did not provide any explanation for his choice of the name. However, one possibility is that the name is an eponym {noun in the genitive case} given after some female relative of the author. In this case the correct form of the name should have been *kusumae*.

The holotype male (possibly in the Kumaun University in Nainital) was collected at "Bhowali, 5600 ft" [Bhowali, Nainital District, Uttarakhand, India] by the taxon author D.N. Sahni on 3 October 1962. Paratypes (6 ♂, 3 ♀) are from the same location.

Reference. Sahni (1965: 213).

laidlawi [synonym]

Euphaea laidlawi Kimmins, 1936 [Orig. *Euphaea laidlawi* sp. n.]

Present status. Synonym of *Euphaea subcostalis* Selys, 1873

An eponym named after Dr Frank Fortescue Laidlaw (1876-1963), the English physician, odonatologist and malacologist {noun in the genitive case}

In the introductory text of the paper it says: "I wish to express my very sincerely thanks to Dr. F.F. Laidlaw, who has done so much work on the Bornean Odonata, for his valuable advice and encouragement."

The holotype male (in the BMNH, London) was collected in "Sarawak, Lawas" by Alfred Hart Everett (1848-1898) in February 1896. Paratypes (2 ♂) came from Sarawak and Palawan.

Reference. Kimmins (1936b: 77).

lara [species]

Euphaea lara Krüger, 1898 [Orig. *Euphaea Lara* n. sp.]

Lat. *Lara* = daughter of the river-god Almo, a nymph who was worshipped in Rome under the name of Tacita [the silent] or Muta [the mute] {noun in apposition}

In naming this species Krüger followed the practice of Selys and Hagen in naming calopterygoid damselfly taxa after attractive women from antiquity and ancient mythology. The Augustean Roman poet Ovid tells in his *Fasti*, that Jupiter cut out Lara's tongue on account of her talkativeness, because she had warned her sister Juturna that the king of the gods had designs on her, and also informed Jupiter's ever jealous wife Juno of her husband's adulterous intentions.

The description was based on a single male from "Sumba" [Sumba Island, in the Lesser Sunda Archipelago, Indonesia]. It was collected by Mr. Grelak (an employee of Hans Fruhstorfer), possibly in 1895-1896. The holotype is preserved in the MIZPAN (Warsaw).

Reference. Krüger (1898: 131).

lestoides [species]

Anisopleura lestoides Selys, 1853 [Orig. *Anisopleura lestoides*, De Selys]

Gr. ληστής [lḗstēs] = robber, pirate (genus name by Leach 1815, see Hämäläinen & Fliedner 2023) + suffix -οῖδης [-oidēs] = like a {adjective}

In the original description (1853) there is nothing to explain the name, but the detailed description in the *Monographie* (1854) gives the rationale: "♂ adulte. Stature de la *Lestes nymphæ* [= *Lestes dryas* Kirby]" and "Son apparence est absolument celle d'une *Lestes*."

The species was described on the basis of several male and one female specimens from India: "Patrie. L' Inde. J'ai reçu plusieurs mâles par M. Samuel Stevens. Le jeune mâle est décrit d'après un exemplaire du Musée de Vienne pris par M. de Huegel, la femelle d'après celle qui existe dans la collection de M. Dale." There are syntypes at least in the IRSN (Brussels) and MCZ (Cambridge, Mass.). The teneral male in the NHMV (Vienna) is a plesiotype. It was collected by Karl Alexander Anselm von Hügel (1795-1870).

Reference. Selys Longchamps (1853: 48); Selys Longchamps & Hagen (1854: 159).

lieftincki [synonym]

Anisopleura lieftincki Prasad & Ghosh, 1984 [Orig. *Anisopleura lieftincki* sp. nov.]

Present status. Synonym of *Anisopleura subplatystyla* Fraser, 1927

An eponym named after Dr Maurits Anne Lieftinck (1904-1985), the Dutch odonatologist and hymenopterologist {noun in the genitive case}

The authors do not provide any explanation for their choice of the name, but in their introduction they include Lieftinck among those who have contributed to the knowledge of the odonate fauna of the Khasi Hills, where the holotype of *A. lieftincki* was found. Lieftinck (1977) had described a new species, *Somatochlora daviesi*, from the Khasi Hills.

The species was described from a single male specimen, collected at “Khasi Hills, along the road from Mawsamai to Shella” [Meghalaya, India] by S. K. Ghosh and G. K. Srivastava on 26 May 1979. The holotype is deposited in the ZSI (Kolkata).

Reference. Prasad & Ghosh (1984: 40).

limbata [synonym]

Dysphaea dimidiata limbata Selys, 1859 [Orig. *Dysphæa dimidiata*, De Selys. Race: *Dysphaea limbata*, De Selys.]

Present status. Synonym of *Dysphaea dimidiata* Selys, 1853

Lat. *limbatus* –a –um = edged, bordered {declinable adjective}

In *limbata* male the upper wing border is opaque throughout the wing length in both wings, thus making the wing border dark-edged. In *dimidiata* the upper border is hyaline between the end of the basal opaque area and the pterostigma. However, in the brief original description this difference (the rationale for the name) was not clearly expressed: “♂ Differe de la *Dimidiata* en ce qui le limbe noir du bout des ailes est plus épais, ayant de 2 à 3 millimètres de diamètre, et coupant le bout de l’aile au niveau au l’extrémité du pterostigma. Le noir, qui occupe le première moitié de l’aile s’étend souvent jusqu’au nodus.” Later, Selys (1869: 660) upgraded the taxon’s status as full species and improved the description: “Je l’ai regardée comme une race de la *dimidiata*. Un nouvel examen me porte à la considérer comme espèce distincte. Chez tous les exemplaires mâles, le noir opaque de la base (les ailes et qui s’étend, en general, jusqu’au pterostigma, est prolongé le long du bord costal (le manière à occuper tout à fait l’ecspace entre la costale et la médiane jusqu’au pterostigma, où il rejoint le limbe noir terminal. Les mêmes dessins (en gris pâle) se retrouvent indiqués chez la femelle.”

Selys had studied specimens of both sexes (at least 5 ♂, 1 ♀) from “Mont Ophir, à Malacca; Singapore; Saratoga {lapsus pro Sarawak}, à Bornéo”, all collected by Alfred Russell Wallace (1823–1913). The lectotype male (in the IRSN, Brussels) was collected at Mt Ophir [Johor, Peninsular Malaysia] in July-September 1854.

Reference. Selys Longchamps (1859: 443).

lombockensis [subspecies]

Euphaea lara lombockensis McLachlan, 1898 [Orig. *Euphæa Lara*, var. *lombockensis*, var. n.]

Lat. suffix –ensis –is –e = pertaining to (mostly in geographical sense) {declinable adjective}

A toponym referring to the island of Lombok, where the type material was collected. Mc-Lachlan wrote: "I have before me 8 males (7 adult and 1 immature), part of a larger number collected by Herr {Hans} Fruhstorfer {{(1866-1922)}} at Sapit, Lombock, in April 1896. These appear to possess more differences than the ♂ from Bali (see, the entry *balica*)." The lectotype male (in the BMNH, London) bears a label "Lombok, Sabit, 2.000 ft., iv. 1896 (H. Fruhstorfer)."

Reference. Mc Lachlan (1898: 272).

longicauda [species]

Bayadera longicauda Fraser, 1928 [Orig. *Bayadera longicauda* sp. nov.]

Lat. *longus* –a –um = long + cauda = tail (in entomology used for abdomen or appendages; in this case referring to the appendages) {noun in apposition}

This species was described in the same paper, in which Fraser had renamed '*B. hyalina* sensu Ris, 1912' from Formosa (Taiwan) as *B. brevicauda* (see entry). Fraser (1928: 51) wrote: "Below I describe another species as *longicauda* in which the superior anal appendages are also of great length but the ventral spine vestigial, it also differs from *hyalina* by having the wings and the abdomen nearly of the same length, the abdomen being {proportionally} markedly longer in *hyalina*." Therefore, the name refers to the length of the male appendages, as compared with those in *B. brevicauda*. The differences of the appendage lengths in the three species in question can be seen on Fraser's (1928) table I, figs. 2, 4 and 5.

The description was based on "a few" male specimens collected in "British Sikkim, Gangtok, 5,000 to 6,000 ft. alt." by Charles McFarlane English (1870-1954) on 29 May 1924. Fraser (1934: 84) wrote: "Type in the Darjeeling Museum." According to Kimmins (1966: 201-202) the type is most likely destroyed. However, in Fraser's former collection in the BMNH (London) there is a male specimen from the type series, also marked as 'type' by Fraser, but it may in fact be a paratype.

Reference. Fraser (1928: 53).

lugens [species]

Dysphaea lugens Selys, 1873 [Orig. *Dysphaea lugens*, De Selys. Race de *dimidiata*?]

Lat. *lugens* = mourning, deploring {present participle}

In entomology, this word is often chosen for species with conspicuous black or dark pattern, as though the taxon were wearing mourning apparel. So, also in this case: "La partie opaque noir chatoyant des ailes plus étendue. Aux supérieures elle dépasse de 5-6 cellules costales le nodus; aux inférieures elle arrive près du pterostigma (5 à 6 cellules auparavant). Aux quatre ailes cette partie noire est un peu convexe en dehors (droite chez les trois autres races ou formes)" and "Elle se sépare en outre de la *dimidiata* par le noir apical des ailes plus étendu, occupant leur pointe à partir du pterostigma, comme chez la *limbata*."

Described on the basis of a single male specimen from "Le sud de Bornéo; communiqué par M. Mc Lachlan (Coll. Selys)." Obviously, the holotype (in the IRSN, Brussels)

was collected in Sintang (in West Kalimantan), for further details on the holotype, see Hämäläinen & al. (2015: 468).

Reference. Selys Longchamps (1873: 486).

masoni [species]

Euphaea masoni Selys, 1879 [Orig. *Euphæa masoni*, De Selys.]

An eponym named after James Wood-Mason (1846-1893), an English zoologist {noun in the genitive case}

Selys described this species on the basis of (at least five) male specimens from Burma: "Patrie: Tenasserim; par le professeur Wood Mason. Plusieurs exemplaires communiqués par M. MacLachlan." The syntypes are deposited in the IRSN (Brussels). The specimens were collected in areas east of Moulmein [Mawlamyine] in the Moulayet Range of the Upper Tenasserim by Ossian Limborg (1849-1908) and Wood-Mason's Burmese collector Motiram in December 1876-April 1877.

Reference. Selys Longchamps (1879: 377).

melania [synonym]

Bayadera melania Navás, 1934 [Orig. *Bayadera melania* sp. nov.]

Present status. Synonym of *Bayadera melanopteryx* Ris, 1912

Melania = female name originating from the Greek, meaning something like 'the black one' (the derivation of the species name from Gr. μελανία [melanía] = blackness is rather improbable) {noun in apposition}

Navás does not give any explicit explanation for his choice of the species name, but it can be concluded from his description, where he enumerates black body parts in addition to the dark brown pattern of the wings: "♂ Caput nigrum, violaceo nitens ... antennis nigris. Thorax niger, superne leviter violaceo nitens, in ♀ metapleura pallidiore. Abdomen totum nigrum, caeruleo-violaceo nitens ... Pedes toti nigro-picei, spinis longis nigris [♂ Head black, violet iridescent ... with black antennae. Thorax black, slight iridescence violet dorsally, in the ♀ the metapleura more pallid. Abdomen totally black, shining blue-violet ... The legs completely pitch black, with long black spines]." He also states that his taxon is "similis *melanopterygidi* Ris [Similar to *melanopteryx* Ris]" (see the following entry).

The description was based on (at least) one male and one female specimen collected in "Chekiang: Tien Mou-chan" [Zhejiang, China] on 6 August 1933. The collector's name was not stated, but it was obviously K.S.F. Chang. The type series is apparently in the IZAS (Beijing or Shanghai).

Reference. Navás (1934: 3).

melanopteryx [species] (Fig. 23)

Bayadera melanopteryx Ris, 1912 [Orig. *Bayadera melanopteryx nova* spec.]

Gr. μελανοπτέρυξ [melanoptéryx] = black-winged (note: Latin and transliterated Greek use of accents differs) {noun in apposition}

The name refers to the coloration of the wings, which Ris described in the key to the *Baya-*

dera species as follows: “Distaler Teil der Flügel tief schwarzbraun, beim ♂ bis 2-3 Zellen distal vom Nodus mit etwas diffusem Abschluss, beim ♀ bis halbwegs vom Nodus zur Basis, ebenfalls diffus abschliessend [Distal part of wings deeply blackish brown, in ♂ reaching 2 to 3 cells distal to nodus with somewhat diffuse ending, in ♀ reaching halfway from nodus to the base, likewise ending diffusely].”

The type series consists of 2 male and 3 female specimens from “Tsa-Yiu-san” [in the northern part of Guangdong Province, China; alt. 1500 m, 25°30'N, 114° E.], collected by Rudolf Emil Mell (1878-1970) on 3-25 July 1910. According to Malte Seehausen (pers. comm.), a male and a female syntype (originally called “Typen” at Mus. Königsberg) are presently in the SMF (Frankfurt-am-Main”).

Reference. Ris (1912: 49).



Fig. 23. *Baydera melanopteryx* tandem pair. China; 12-viii-2012. Photo: Shan-lian Mo.

modigliani [species]

Euphaea modigliani Selys, 1898 [Orig. *Euphæa modigliani* Selys, n. sp.]

An eponym named after Elio Modigliani (1860-1932), an Italian explorer, zoologist and anthropologist, who collected the holotype {noun in apposition}

Selys wrote: “Cette espèce très intéressante a été prise par M. le Dr Elio Modigliani, auquel je m’empresse de la dédier en souvenir des découvertes scientifiques notables qu’il a faites pendant son grand voyage d’exploration.”

Selys gave the type locality as “Ile Metawei, près de Sumatra”. The holotype was collected by Modigliani in Sereinu [Saureinu] area in the central part of Sipora Island

in April–August 1894. The holotype (in the IRSN, Brussels) bears a label with a locality name ‘Bua Wua’.

Reference. Selys Longchamps (1898: 336).

nephelopennis [species]

Bayadera nephelopennis Davies & Yang, 1996 [Orig. *Bayadera nephelopennis* sp. n.]

Gr. νεφέλη [nephelē] = cloud + Lat. *-pennis -is -e* = –winged {declinable adjective}

The given etymology reads: “Greek, nephelos = a cloud; Latin, *penne* = a wing; adjectival description of the most obvious features, ‘the cloudy-winged *Bayadera*’.” Although this explanation is not quite correct philologically, the reason for the choice of the name comes clear from the description: (♂) “Wings with about distal one third hyaline, basal two thirds cloudy light brown”; (♀) “Wings similarly patterned to that of the male.” In the ‘differential diagnosis’ it says: “Unique in *Bayadera* in having most of the wing opaque, light brown in males, slightly darker in females, but the wing-tip area hyaline in both sexes.”

Described on the basis of specimens of both sexes (6 ♂, 6 ♀) collected by the taxon co-author Bing Yang at “Omeishan, Sichuan” [Emeishan (Mount Emei), Sichuan, China]. The holotype male (in the KIZ, Kunming) was collected on 8 June 1992.

Reference. Davies & Yang (1996: 148).

ochracea [species]

Euphaea ochracea Selys, 1859 [Orig. *Euphæa ochracea*, De Selys.]

Late Lat. *ochraceus -a -um* = ochre-coloured {declinable adjective}

The name refers to the tint of the male wings: “Ailes hyalines, notablement lavées de jaune ocracé (moins colorées dans la seconde moitié des supérieures).”

Described on the basis of two male specimens from “Le Mont Ophir, à Malacca” [Mt Ophir, Johor, Peninsular Malaysia], collected by Alfred Russell Wallace (1823–1913) in July–September 1854. The lectotype ♂ is deposited in the IRSN (Brussels).

Reference. Selys Longchamps (1859: 443)

opaca [species]

Euphaea opaca Selys, 1853 [Orig. *Euphæa opaca*, De Selys.]

Lat. *opacus -a -um* = dark, shaded / opaque {declinable adjective}

The name refers to the dark wings and body of the male. The brief original (1853) description states: “Les quatre ailes en entier noirâtre chatoyant, à peine plus clair à leur base et au bout des supérieures. Corps et pieds noirâtres, sans taches.” The more detailed (1854) description includes: “Thorax noirâtre obscur ... Abdomen ... Les cinq premiers segments brun roussâtre terne en dessus, terminés par un large anneau noirâtre, les 4^e et 5^e noirâtres aussi à la base, ces cinq segments ... les cotes et le dessous noirâtres. Les cinq derniers noirâtres ... Les ailes sont entièrement opaques, d’un brun noirâtre luisant, avec quelques reflets un peu violets sur la totalité, ne dessinant aucun espace circonscrit.” Selys also wrote: “Cette espèce qui est avec la *dispar*, la plus grande du genre, diffère de toutes les autres par ses ailes entièrement et presque uniformément colorées, ce qui fait la ressembler à la *Calopteryx atrata* du même pays.”

The description was based on a single male specimen from an unspecified location in China: "Patrie. La Chine, d'après un exemplaire mâle unique, que je dois à la générosité de M. le sénateur Von Heyden, excellent entomologiste de Francfort-sur-le-Mein." The holotype is preserved in the IRSN (Brussels). According to Selys' diary (Caulier-Mathy & Haesenne-Peremans (2008: 468), Selys had met Senator Karl Heinrich Georg von Heyden (1793-1866) in Frankfurt-am-Main on 3 August 1853 and received this damselfly specimen from him. Selys wrote: "Francfort à 9 heures quart, hôtel de Russie. Muséum (voir mes notes), M. von Heyden, bourgmestre pour cette année. Il me donne une *Euphaea* nouvelle de Chine (*Euphaea Heydeni*)." Selys' manuscript of the 'Synopsis des Caloptérygines' had been read (= submitted) at the Academy's meeting a few days earlier (29 July 1853) during Selys' stay in Germany. This explains the very brief 8-line description of *E. opaca*, added at a later date.

Reference. Selys Longchamps (1853: 53); Selys Longchamps & Hagen (1854: 183).

ornata [species] (Fig. 24)

Euphaea ornata (Campion, 1924) [Orig. *Pseudophaea ornata*, sp. n.]

Lat. *ornatus* –a –um = decorated, adorned / honoured (/ equipped) {declinable adjective}

In a paper on Hainanese dragonflies, Kirby (1900: 536) had identified and illustrated a male specimen as '*Pseudophaea decorata* (?)', although he suspected that it might be distinct from *P. decorata*, a species which he had not seen. Campion had studied the same specimen as



Fig. 24. *Euphaea ornata* female. China, Hainan Island; 13-viii-2008. Photo: Graham T. Reels.

Kirby, and “a long series of additional specimens {including 1 ♀} of the same species, from the same locality” [Wu-chi-shan, Hainan], presented by Walter Rothschild in 1911. Campion wrote: “It is at once distinguished from *decorata*, Hagen, of which I have a male before me from Tonkin, by its larger size and more extensively coloured hind wings” and “I propose to call the Hainan species *Pseudophaea ornata*, sp. n., and proceed to give descriptions of both sexes.” Clearly, Campion wanted a name with a similar but stronger meaning than *decorata* (see entry). The name *ornata* undoubtedly refers to the male hind wing, which in this species is more broadly coloured, with its central part more dilated than in *decorata*.

As holotype, Campion selected the same male specimen which had been studied by Kirby: “1 ♂ (holotype), Wu-chi-shan, Hainan, presented by J. T. Thomasson, 1900. Figured by Kirby, Ann. & Mag. Nat. Hist. (7) v. pl. xii. Fig. 2 (1900).” The holotype (in the BMNH, London) was collected by John Whitehead (1860-1899) in March-May 1899. John Thomas Thomason (1869-?), was one of Whitehead’s patrons. A female specimen from “Wu-chi-shan, Hainan, 24. v. 1903” was described as the allotype.

Reference. Campion (1924: 174).



Fig. 25. *Euphaea pahyapi* male. Thailand, Krabi prov.; 20-xii-2006. Photo: Matti Hämäläinen.

pahyapi [species] (Fig. 25)

Euphaea pahyapi Hämäläinen, 1985 [Orig. *Euphaea pahyapi* sp. n.]

An eponym named after Pah-yap (Songphol, since 1991) Kamnerdratana (1932-2016), a Thai forestry entomologist {noun in the genitive case}

The given etymology reads: "The species is named after Mr. Pah-yap Kamnerdratana, Senior lecturer of forest entomology in Kasetsart University, Bangkok. Without his help and excellent guidance to many fine localities, this and a large quantity of the c. 130 species of *Odonata* collected during my trips in different parts of Thailand in 1982 and 1984 would have remained undiscovered."

The holotype male (in the MZH, Helsinki) was collected at Huai To stream in Khao Phanom Bencha, Krabi, Thailand, by the taxon author Matti Hämäläinen on 27 October 1982. Paratypes (5 ♂) included specimens from the type locality and from a nearby stream.

Reference. Hämäläinen (1985: 341).

pelecyphora [species]

Anisopleura pelecyphora Zhang, Hämäläinen & Cai, 2014 [Orig. *Anisopleura pelecyphora* sp. nov.]

Gr. πέλεκυς [pélekys] = axe + -φόρος [-phoros] = bearing {declinable adjective}

The name refers to the shape of the superior anal appendages of the male. The given etymology reads: "The species epithet *pelecyphora* is a feminine adjective derived from the Greek words *pelekýs* and *-phoros*. The word *pelekýs* means any kind of axe, either a battle axe (also a double axe), a sacrificial axe, a carpenter's axe or a meat cleaver. An adjective ending in *-phoros* means 'bearing'. So, literally translated: an *Anisopleura* bearing an axe, referring to the axe-shaped anal appendages of the male."

The holotype male and 2 male paratypes were collected in Ximeng Wa Autonomous County (Pu'er City, Yunnan, China) by the taxon author Hao-miao Zhang on 4 October 2013. The holotype is deposited in the Institute of Hydrobiology, Chinese Academy of Sciences, Wuhan, China.

Reference. Zhang & al. (2014: 44).

pseudodispar [species]

Euphaea pseudodispar Sadasivan & Bhakare, 2021 [Orig. *Euphaea pseudodispar* Sadasivan & Bhakare, sp. nov.]

Gr. ψευδ(ο)- = false, pretending to be + Lat. *dispar* = unlike, dissimilar, different, unequal, ill-matched {adjective}

The given etymology reads: "The species name *pseudodispar* is coined as reminder to the close resemblance to the species *E. dispar* (Rambur, 1842) in coloration."

The holotype male (in the ZSI, Kozhikode) was collected in "Thoseghar, Satara District, Maharashtra, India" by the taxon co-author Shriram Dinkar Bhakare on 26 July 2020. Other specimens studied included 4 ♂ and 4 ♀ from the type locality; from these only 1 ♀ was listed as a paratype.

Reference. Bhakare & al. (2021: 18206).

qingyuanensis [species] (Fig. 26)

Anisopleura qingyuanensis Zhou, 1982 [Orig. *Anisopleura qingyuanensis* sp. n.]
toponym

Lat. suffix *-ensis -is -e* = pertaining to (mostly in geographical sense) {declinable adjective}
A toponym referring to the type locality of the species: Qingyuan County (in Lishui Prefecture-level city, Zhejiang, China). The holotype male (in the ZMNH, Hangzhou) was collected in “Zhejiang (Qingyuan)” on 20 August 1980. The collector’s name was not stated. Paratypes (1♂, 2♀) were collected in three locations in Zhejiang.

Reference. Zhou (1982: 65).



Fig. 26. *Anisopleura qingyuanensis* female. China, Guizhou prov.; 24-viii-2016. Photo: Hao-miao Zhang.

refulgens [species]

Euphaea refulgens Hagen, 1853 [Orig. *Euphæa refulgens*, Hagen.]

Lat. *refulgens* = refulgent, flashing back, glittering, glistening {present participle}

The name refers to the opaque parts of the male wings, which display a vivid green iridescence. In the original (1853) description of male it says: “Ailes noirâtres; plus de la moitié changeant en vert métallique.” The more detailed description in the Monographie (1854) includes: “Ailes arrondies, les inférieures assez élargies (moins que chez la *splendens*). Les quatre d’un brun de suie, avec plus de leur moitié basale changeant en vert foncé métallique très-vif; l’extrémité, surtout celle des supérieures, un peu hyaline ... Le dessous des ailes rappelle le dessus, mais le reflet métallique est d’un bleu violet et beaucoup moins vif, peu visible aux supérieures.” The similarity of *E. refulgens* to *E. splendens* (see entry) from Sri Lanka, the name of which is nearly synonymous in Latin, is emphasised in the Monographie: “La *refulgens*, par sa stature, l’ensemble des ailes et la belle couleur verte métallique des inférieurs, pourrait être confondue au premier abord avec la *splendens*.”

The description was based on a single male specimen from 'Manila' (Luzon Island, the Philippines): "Patrie. Manille, d'après un mâle très adult, pris par le baron Huegel, et communiqué par le Musée de Vienne à M. Hagen." The holotype ♂ (in the NHMV, Vienna) was collected by Karl Alexander Anselm von Hügel (1795-1870) in the surroundings of Manila in December 1834. Based on the information given by Hügel (1860) of his stay in Luzon, the most probable collection site for *E. refulgens* is 'Jalla-Jalla' [Jala-jala] in a peninsula of Laguna de Bay (on 10-11 December), where Hügel reported a diverse fauna of colourful birds, butterflies and beetles in a forest with a waterfall. An other possible collecting site might have been a stream en route to 'Cueba di St. Matteo cave', four miles beyond 'St. Marequina' village [now Marakina city] (on 16 December).

Note. According to St. Quentin (1970: 261), von Hügel's material included 3 ♂ specimens, of which St. Quentin selected a lectotype and considered the other two as paratypes. However, since Hagen had studied only one male, the two others cannot be included in the type series. Garrison & von Ellenrieder (2019: 50) listed 2 ♂ specimens in the MCZ (Cambridge) as paralectotypes of *E. refulgens*. As the collector's name 'Semper' in the attached labels suggest, these specimens do not belong to the type series, but were collected in the 1860's (cf. entry *semper*).

Reference. Selys Longchamps (1853: 53); Selys Longchamps & Hagen (1854: 181).

ruficollis [synonym]

Heterophaea ruficollis (Ris, 1930) [Orig. *Paraphaea ruficollis* nov. spec.]

Present status. Synonym of *Heterophaea barbata* (Martin, 1902)

Lat. *rufus* – *a* – *um* = red, reddish + *collis* – *is* – *e* = –necked {declinable adjective}

The name refers to the red prothorax of the male of this predominantly red bodied species: "Prothorax rot (im Farbenbilde der Art recht auffallend) [Prothorax red (quite striking in the colour scheme of the species)]."

In the first sentence of his description, Ris states that his species is very near *Paraphaea barbata* (see entry *barbata*), but he points out differences between his specimen and Martin's description of *barbata*.

The description was based on a single male specimen from "Inuyan {lapsus pro Imugan}, Luzon", collected by Georg Böttcher (1890-1919) on 26 May 1916. The holotype is deposited in the SMF (Frankfurt am Main).

Reference. Ris (1930: 90).

sanguinea [species]

Euphaea sanguinea Kompier & Hayashi, 2018 [Orig. *Euphaea sanguinea* Kompier & Hayashi, sp. nov.]

Lat. *sanguineus* – *a* – *um* = consisting of blood, bloody / blood-coloured, blood-red {declinable adjective}

The name refers to the colour of the male abdomen. The given etymology reads: "The specific name "*sanguinea*" refers to the clear-cut red coloration of abdomen segments S2–6." In the description, the abdomen of male is characterized as follows: "Abdominal S2–6 bright red, ringed black at posterior margins, progressively more distinctly so distally; S7–10 black."

The holotype male (in the TMUZ, Tokyo) was collected in {the environment of} Bao Loc in Lam Dong Province in southern Vietnam by the taxon author Tom Kompier on 17 June 2016. All paratypes (4 ♂, 1 ♀) were collected in Lam Dong province.

Reference. Phan & al. (2018: 172).

saola [species]

Euphaea saola Phan & Hayashi, 2018 [Orig. *Euphaea saola* Phan & Hayashi, sp. nov.]

The species epithet *saola* {noun in apposition} derives from the common name of the bovid species *Pseudoryx nghetinhensis*, a critically endangered mammal famously discovered in Vietnam in 1992. The reason for this name is explained in the given etymology: "The specific name "saola" of this species is derived from the name of the bovid "Saola" (*Pseudoryx nghetinhensis* Dung, Giao, Chinh, Tuoc, Arctander & MacKinnon, 1993). This is one of the world's rarest large mammals, a forest-dwelling bovine found only in the Truong Son mountain range of Vietnam and Laos. The type locality of *Euphaea saola* sp. nov. is A Luoi Nature Reserve which is a part of the Saola Conservation Area, central Vietnam. The general distribution of the new species largely coincides with that of this extraordinary mammal."

The name 'saola' comes from Tày language spoken in northwestern Vietnam and in north-eastern Laos.

Earlier, specimens of *E. saola* had been confused with those of *E. guerini*, a superficially similar species, the wider distribution of which partly coincides with that of *E. saola*.

The holotype male (in the TMUZ, Tokyo) was collected in A Luoi Nature Reserve in Thua Thien-Hue Province in central Vietnam by the taxon authors Quoc Toan Phan and Fumio Hayashi on 18 September 2015. All paratypes (4 ♂, 1 ♀) were collected at the same location.

Reference. Phan & al. (2018: 179).

saukra [species]

Cryptophaea saukra Hämäläinen, 2003 [Orig. *Cryptophaea saukra* spec. nov.]

Late Gr. σαυκρός-ἄ-όν [saukros] = graceful, delicate, pretty {adjective}

The name refers to the pretty and slender appearance of this damselfly, which the taxon author had been able to observe in nature at the species' type locality in Thailand on 8 June 1991. The given etymology reads: "Saukra (adjective), after the modern Greek word meaning graceful, denoting the attractive appearance of the male damselfly."

The holotype male (in the NSMT, Tokyo) was collected at Doi Suthep in Chiang Mai province of Thailand by Kazuma Kitagawa on 23 May 1987. This specimen was misidentified as *Schmidtiphaea schmidi* by Asahina (1987), who provided detailed illustrations of it. These illustrations, as well as the fact that this specimen was the earliest known *C. saukra* specimen, was the reason for its selection as holotype. All paratypes (10 ♂, 1 ♀) were collected at Doi Suthep.

Reference. Hämäläinen (2003: 443).

schmidi [species] (Fig. 27)

Schmidtiphaea schmidi Asahina, 1978 [Orig. *Schmidtiphaea schmidi* sp. nov.]

An eponym named after Dr Fernand Schmid (1924-1998), a Swiss-Canadian entomologist, who collected the holotype in Manipur, north-east India {noun in the genitive case}

The author wrote: “The specific name is dedicated to the collector, Dr. Fernand Schmid.” The description was based on a single male specimen from “Huiahu, 3800-5000ft., Manipur, Assam”, collected by Schmid on 1 July 1960. The holotype is kept in the NSMT (Tokyo).
Reference. Asahina (1978: 44).



Fig. 27. *Schmidtiphaea schmidi* male. India, Nagaland state; 25-viii-2016. Photo: Dahru Veino.

semilimbata [synonym]

Dysphaea dimidiata (?) *semilimbata* Selys, 1873 [Orig. *Dysphaea semilimbata*, De Selys. Variété ou race de *dimidiata*?]

Present status. Synonym of *Dysphaea dimidiata* Selys, 1853

Lat. *semi-* = half-, demi-, semi- + *limbatus* –a –um = edged, bordered {declinable adjective}

The name refers to a small detail in the colour pattern in male wings. In the hind wing of *semilimbata* male, the upper wing border is opaque throughout the wing length as in *limbata*, whereas in the fore wing the upper border is hyaline between the end of the basal opaque area and the pterostigma as in *dimidiata*; for details see entry *limbata*. Selys wrote: “Elle se sépare de la *limbata* parce que ces mêmes cellules costales aux ailes supérieures restent hyalines comme chez la *dimidiata* et la *lugens*” and “Elle diffère de la *dimidiata* et de la *lugens* parce que le noir opaque basal est prolongé aux ailes inférieures dans la première série de cellules costales jusqu’au ptérostigma comme chez la *limbata*.” Selys was uncertain of the status of this taxon: “C’est probablement un variété intermédiaire entre la *dimidiata* et la *limbata*.”

The description was based on a single male specimen from “Labuan (Borneo)”, without other collecting details in the description and attached labels. As pointed out by Hämäläinen & al. (2015: 460), the real type locality of *semilimbata* in Borneo is uncertain, since it is

likely that 'Labuan' [an island off the west coast of Sabah] just refers to the port from where the specimen was shipped to Europe. The holotype is deposited in the IRSN (Brussels).
Reference. Selys Longchamps (1873: 486).

semperi [synonym]

Euphaea semperi Selys, 1879 [Orig. *Euphæa semperi*, De Selys. (Race de la *refugens*?){sic}]

Present status. Synonym of *Euphaea refulgens* Hagen, 1853

An eponym named after Professor Dr Carl Gottfried Semper (1832-1893), a German zoologist and explorer, who collected the holotype {noun in the genitive case}

Described from a single male specimen from "Manille" [Manila, Luzon, the Philippines] by Carl Semper in 1858-1861 or 1863-1865. The holotype is deposited in the IRSN (Brussels).

Reference. Selys Longchamps (1879: 376).

serrata [species]

Bayadera serrata Davies & Yang, 1996 [Orig. *Bayadera serrata* sp. n.]

Lat. *serratus* –a –um = saw-toothed, serrated [derived from the Latin word *serra* = a saw; the diminutive would be *serrula* = a little saw] {declinable adjective}

The authors explain their choice of name as follows: "Etymology. – *serrata*, Latin *serrule* {sic} = a saw, adjective serrated, referring to the inferior margins of the apices of the superior



Fig. 28. *Bayadera serrata* male. Vietnam, Cao Bang prov.; 23-v-2015. Photo: Tom Kompier.

anal appendages. ‘The serrated *Bayadera*.’” The very detailed description of the superior appendages of male includes: “Anal appendages ... superiors ... in lateral view the apex expanded with the inferior margin minutely serrate and posterior margin smooth, these two margins curling inwards apically.”

Described on the basis of a single male specimen from “Dali, Yunnan”, collected by the taxon co-author Bing Yang on 4 July 1991. The holotype is deposited in the KIZ (Kunming).

Reference. Davies & Yang (1996: 145).

splendens [species] (Fig. 6)

Euphaea splendens Hagen, 1853 [Orig. *Euphæa splendens*, Hagen.]

Lat. *splendens* = shining, bright, gleaming, glittering, glistening {present participle}

This is one of the names in the genus *Euphaea* referring to the glittering iridescent reflections of the wings of the male (1853): “Ailes supérieures noirâtre chatoyant; leur quart basal hyaline, sali ... les inférieures noirâtres; leur extrême base hyaline, brun clair; le milieu à reflets vert et violet métallique.”

The species was described from male specimens from Ceylon: (1853) “Ceylan. (Musée de Vienne; collect. Selys.)”, (1854) “Patrie. L’Inde {sic}, d’après un mâle pris par le baron Huegel et communiqué à M. Hagen par le Musée de Vienne; Ceylan, d’après quatre mâles reçus par M. S. Stevens.” St Quentin (1970) selected a male specimen in the NHMV (Vienna) as lectotype. The specimen was collected by Karl Alexander Anselm von Hügel (1795-1870) during his four month stay in Ceylon in 1833.

Reference. Selys Longchamps (1853: 52); Selys Longchamps & Hagen (1854: 178).

strigata [species]

Bayadera strigata Davies & Yang, 1996 [Orig. *Bayadera strigata* sp. n.]

Lat. *striga* = a row of grain or hay cut down, a swath, windrow; a furrow drawn lengthwise of the field + *-atus-a -um* = marked with, equipped with [there is no Latin word *strigus*] {declinable adjective}

The given etymology reads: “Latin, strigus {}= a furrow or stripe, hence *strigata*, = striped; adjective describing the striped pattern of the pterothorax as seen laterally (fig. 6); especially differing from that of *B. serrata* (fig. 1) and *B. nephelopennis* (fig. 12). Anal appendages distinctive (figs. 7-8); ‘The striped *Bayadera*.’”

Described on the basis of several specimens of both sexes (19 ♂, 11 ♀). The holotype male (held in the KIZ, Kunming) was collected in “Dali, Yunnan” [China] by the taxon author D. Allen L. Davies on 4 July 1991.

Reference. Davies & Yang (1996: 146).

subcostalis [species] (Fig. 5)

Euphaea subcostalis Selys, 1873 [Orig. *Euphæa subcostalis*, De Selys. Race d’*E. tricolor*?]

Late Lat. *subcostalis* –is –e = concerning the subcosta {declinable adjective}

The name goes back to a feature of male wings by which this species is distinguished from *E. tricolor*: “Très-voisine de la *tricolor* ... Elle en diffère: 1° Par l’espace entre les nervures

sous-costale et médiane lavé de brun foncé, de façon à former une raie brune de la base au nodus. Aux ailes inférieures cette raie est plus opaque et envahit à leur base extrême l'espace entre la costale et la sous-costale."

Described on the basis of an unspecified number of male specimens from Borneo: "Labuan (Bornéo), Coll. Selys et Mac Lachlan d'après un grand nombre d'exemplaires reçus par M. Higgins." Probably the locality refers to the port from which they were shipped rather than the precise *terrae typicus*. Syntypes are deposited at least in the IRSN (Brussels) and MCZ (Cambridge, Mass.). According to his diary entries (Caulier-Mathy & Haesenne-Peremans 2008: 833), Selys had purchased the specimens from the natural history agent Edmond Thomas Higgins (successor of Samuel Stevens) in London on 27 June 1871.

Reference. Selys Longchamps (1873: 483).

subnodalis [species]

Euphaea subnodalis (Laidlaw, 1915) [Orig. *Pseudophaea subnodalis*, sp. n.]

Late Lat. *subnodalis* –is –e = concerning the subnodal region {declinable adjective}

Laidlaw wrote: "This species is, I believe, in all probability identical with the "larger examples" spoken of by Selys in his original description of *P{seudophaea} subcostalis*. From examples of both species that I have been able to examine from several localities they differ in certain well-marked and constant characters. *P. subnodalis* is distinctly larger. In none of the series is there a black ray in the subcostal space of the fore wing, and on the hind wing the space between R and M₁₊₂ is always uncoloured up to the level of the nodus." This means that the name refers to the hyaline subnodal space in the hind wings.

Described from a series of 13 ♂ and 1 ♀ specimens from Mt Kinabalu in northern Borneo, collected by John Coney Moulton (1886-1926) on 16 September - 1 October 1913. The holotype male is in the BMNH (London).

Reference. Laidlaw (1915: 31).

subplatystyla [species]

Anisopleura subplatystyla Fraser, 1927 [Orig. *Anisopleura subplatystyla*, sp. nov.]

Lat. prefix *sub*– = somewhat, rather + Gr. πλατύς [platys] = wide, broad + Lat. *stilus* = engraving tool for writing on waxed tablets (medieval orthography with y) (in entomology used for the appendages) {declinable adjective}

The name refers to the shape of male anal appendages: "Superiors broad, roughly triangular and broadly hollowed out as seen from above, the outer border thickened. Conical as seen from the side and with a stout ventral spine which is continued back from near middle of appendage to the base. Inferiors practically obsolete, barely discernible from above or in profile." As can be seen from Fraser's figures, the superior appendages are not as wide as those of *A. comes*. However, in his description, Fraser failed to point out this difference.

Described on the basis of "several specimens of both sexes" collected in "Shillong, Khasia Hills, 5000 ft" [Meghalaya, India] by Thomas Bainbrigge Fletcher (1878-1950) on 28 May and 24 June 1924. The lectotype male is deposited in the BMNH (London).

Reference. Fraser (1927: 81).

superba [species] (Fig. 29)

Euphaea superba Kimmins, 1936 [Orig. *Euphæa superba*, sp. n.]

Lat. *superbus*–*a* –*um* = proud, superior, excellent, distinguished; splendid, magnificent, superb (not in the pejorative sense which prevailed in antiquity: arrogant, insolent, discourteous, uncivil, rude, supercilious) {declinable adjective}

The name is clearly due to the large size and colourful wings of this damselfly, which Kimmins calls a “handsome species”. In the description of the male it reads: “A large golden-brown-winged species, with obscure brown suffusion at the apices of the wings” and “Wings ... hyaline golden-brown, apices with a brownish suffusion, extending in the anterior to about halfway along the pterostigma and in the posterior to a few cells beyond the pterostigma. The colour of the membrane is stronger in the costal and subcostal areas towards the bases of the wings. ... pterostigma dark reddish brown, other veins and cross-veins, particularly when viewed along the plane of the wings, brick red.” The author states: “This species differs from the other yellow-winged species in its greater size, denser reticulation, brownish markings at the wing-apices and the smooth surface of the vesicle.”



Fig. 29. *Euphaea superba* male. China, Guizhou prov.; 19-vi-2018. Photo: Hao-miao Zhang.

The description was based on two male specimens (holotype and paratype), collected by Hans Fruhstorfer (1866-1922) in "Tonkin" in April-October 1900. The specimens, purchased in 1902, are deposited in the BMNH (London).

Reference. Kimmins (1936a: 147).

thosegharensis [species]

Euphaea thosegharensis Sadasivan & Bhakare, 2021 [Orig. *Euphaea thosegharensis* Sadasivan & Bhakare, sp. nov.]

Lat. suffix *-ensis -is -e* = pertaining to (mostly in geographical sense) {declinable adjective}

A toponym. The given etymology reads: "The species name '*thosegharensis*' is a toponym derived from the type locality in Thoseghar, Satara District, Maharashtra, India."

The holotype male (in the ZSI, Kozhikode) was collected in "Thoseghar, Satara District, Maharashtra, India" by the taxon co-author Shriram Dinkar Bhakare on 30 May 2020. Other specimens studied include 4 ♂ and 4 ♀ from the type locality; of these only 1 ♀ was listed as paratype.

Reference. Bhakare & al. (2021: 18202).

tricolor [species] (Fig. 30)

Euphaea tricolor Selys, 1859 [Orig. *Euphæa tricolor*, De Selys.]

Lat. *tricolor* = three-coloured {adjective}

The name 'three-coloured' refers to the colour pattern of the male hind wing, in which the basal half is amber tinged hyaline and the opaque apical half is sharply divided into brilliant iridescent blue- green and black opaque sections: "Ailes hyalines un peu jaun-



Fig. 30. *Euphaea tricolor* male. Malaysia, Sarawak; 5-xii-2005. Photo: Graham T. Reels.

âtres; un fin limbe apical enfumé aux supérieures; les inférieures notablement plus courtes et un peu plus larges; leus moitié apicale subitement opaque, noirâtre, ayant presque la moitié interne de cet espace d'un bleu acier brillant."

The type series consists of (at least) 6 male specimens collected by Alfred Russel Wallace (1823-1913) in Sarawak (Borneo) between November 1854 and January 1856. The locality name 'Saratoga' in the published provenance "Patrie: Saratoga, dans l'île de Bornéo" was an error, with 'Sarawak' intended. Five syntypes are preserved in the IRSN (Brussels) and one syntype in the MCZ (Cambridge, Mass.).

Reference. Selys Longchamps (1859: 442).

trulla [species]

Anisopleura trulla Hämäläinen, 2003 [Orig. *Anisopleura trulla* spec. nov.]

Lat. *trulla* = a small ladle, dipper, scoop {noun in apposition}

The given etymology reads: "Trulla (a noun in apposition) - from the Latin word for scoop or spoon, illustrating the shape of male anal appendages in dorsal view." The male appendages are described as follows: "In dorsal view, superiors broad and flattened; dorsal surface shallowly hollowed forming a spoon shaped structure. In lateral view, the ventral edge conspicuously bifurcated forming a robust fork, directed interiorly. Inferiors rudimentary."

The holotype male (in the RMNH, Leiden) was collected at "Thailand, Phangnga province (near Ranong border), lower slopes of Khao Poh Ta (alt. ca 200 m)" by Somnuk Panpichit on 5 April 1997. Other material studied included 3 ♂ specimens from the same site.

Reference. Hämäläinen (2003: 447).

ulu [species]

Dysphaea ulu Hämäläinen, Dow & Stokvis, 2015 [Orig. *Dysphaea ulu* spec. nov.]

Malayan *ulu* (form of *hulu*) = upstream {noun in apposition}

The habitat is behind the name of this species: "Etymology. The species epithet is based on the word 'ulu', the form generally in use in Borneo of the Bahasa Melaya/Indonesia word 'hulu', which means upstream. The species epithet is used as a noun in apposition. The species typically inhabits 'upstream' habitats."

"The holotype male (in the RMNH, Leiden) was collected in "Borneo, Sarawak, Miri division, Upper Baram, Sungai Pejelai, Ulu Moh" by Mutang Tegong on 24 August 2014. Other material studied included 47 ♂ and 2 ♀ from various locations in Sarawak, Sabah and Brunei.

Reference. Hämäläinen & al. (2015: 472).

vallei [species] (Fig. 31)

Anisopleura vallei St. Quentin, 1937 [Orig. *Anisopleura vallei* n. sp.]

An eponym named after Professor Dr Kaarlo Johannes Valle (1887-1956), a Finnish entomologist and hydrobiologist {noun in the genitive case}

The author wrote: "Nach dem bekannten Odonaten-Spezialisten Professor K. J. Valle in Turku, Finnland [After the noted odonatologist Professor K.J. Valle of Turku, Finland]." Valle and St. Quentin were in correspondence and exchanged reprints and odonate specimens.

Described on the basis of 9 male specimens from “Cherapunji, Khasi Hills, Assam. Juni 1935.”[Khasia Hills, Meghalaya, India]. The holotype is deposited in the NHMV (Vienna).
Reference. St. Quentin (1937: 86).



Fig. 31. *Anisopleura valleii* male. India, Nagaland state; 16-vii-2016. Photo: Dahru Veino.



Fig. 32. *Dysphaea vanida* male. Thailand, Surat Thani prov.; 27-i-2015. Photo: Eugene Karolinskiy.

vanida [species] (Fig. 32)

Dysphaea vanida Hämäläinen, Dow & Stokvis, 2015 [Orig. *Dysphaea vanida* spec. nov.]
Thai *vanida* = girl {noun in apposition}

The given etymology reads: "The species epithet is based on the common Thai girl name Vanida. In Thai the name means 'girl'. The name is a noun in apposition and is not named after any particular person."

The holotype male (in the RMHN, Leiden) was collected at "Thailand, Ranong province, Khlong Nakha, Khlong Bang Man, alt. 20–40 m" by the taxon author Matti Hämäläinen on 12-13 May 1999. Other material studied includes 30 ♂ and 2 ♀ paratype specimens from several sites in southern and western Thailand.

Reference. Hämäläinen & al. (2015: 476).

variegata [species] (Fig. 8)

Euphaea variegata Rambur, 1842 [Orig. *Euphæa variegata*, mihi.]

Lat. *variegatus*–*a* –*um* = of several colours, variegated {declinable adjective}

The French description of the male iridescence lists several colours reflected from the wings: "Ailes d'un noir un peu fuligineux, avec un léger reflet verdâtre; les premières ayant une grande éclaircie qui comprend la base et s'avance postérieurement jusque dans le milieu, un peu tachées de vert près du sommet antérieurement; les postérieures transparentes à la base, avec une très-large tache comprenant plus du tiers presque central de l'aile, d'un vert métallique en dessus, d'un violet rose, très brillant en dessous; ptérostigma noir, comme chez les *Libellula*." The brief Latin description includes: "alis nigro-fuligineis, basi hyalinis, posticis macula magna supra viridi-aenea, subtus pulchre violacea [wings soot black, hyaline at base, hind wings with large patch, green metallic on upper side, beautifully violet beneath]."

Described on the basis of an unspecified number of male specimens from Java, originally in the collection of Jean Guillaume Audinet-Serville (1755-1858). Rambur wrote: "Je n'ai pas vu la femelle. Collection de M. Serville, et indiquée de Java." According to Selys & Hagen (1854: 178), Rambur's types were included in a large number of specimens from Java studied by Selys (presently in the IRSN, Brussels): "Java, d'après un grand nombre d'exemplaires mâles, parmi lesquels se trouvent les types de M. Rambur." According to his diary entry (Caulier-Mathy & Haesenne-Peremans 2008: 274), Selys had received Rambur's odonate collection on 23 March 1845.

Reference. Rambur (1842: 229).

vietnamensis [species] (Fig. 33)

Cryptophaea vietnamensis (Van Tol & Rozendaal, 1995) [Orig. *Bayadera vietnamensis* sp. nov.]

Lat. suffix *–ensis* –*is* –*e* = pertaining to (mostly in geographical sense) {declinable adjective}

A toponym named for Vietnam, where the species was discovered. The given etymology reads: "*Vietnamensis*, after Vietnam, genitive case." Here, the grammatical statement 'genitive case' is erroneous and should be 'declinable adjective'. '*Vietnamensis*' could



Fig. 33. *Cryptophaea vietnamensis* female. Vietnam, Vinh Phuc prov.; 26-vi-2005. Photo: Matti Hämäläinen.

be the genitive case of an adjective, but not in connection with a relational noun such as *Bayadera* in the nominative case, which a genus name always has to be. If the genitive case had been intended it should have been a noun based on the name of the country which would have created the binomial *Bayadera vietnamiae*.

The holotype male (in the RNMH, Leiden) and 2 paratype males were collected in “Vietnam, Nghe Tinh prov., Thang Chuong distr., Doi Khe Lao, several streams through logged forest, alt. ca 100m” by the taxon co-author Frank Gerard Rozendaal (1957-2013) on 11-12 July 1990.

Reference. Van Tol & Rozendaal (1995: 100).

viridissima [synonym]

Pseudophaea carissima var. *viridissima* Kirby, 1893 [Orig. *Pseudophaea carissima*, sp. n. ... Var. *viridissima*.]

Present status. Synonym of *Euphaea splendens* Hagen, 1853

Lat. *viridissimus*–a –um = the greenest, very green {declinable adjective}

The name refers to the wing colour of male: “Var. *viridissima*. – Differs from the type {= *carissima*} in the fore wings, the extremity of the hind wings, and their costal area to the nodus being iridescent green with a slight coppery tinge, and on the hind wings, except at the ex-

tremity, the small hyaline patch at the base, and along the costal area to the nodus being of a brilliant green, as in *P. splendens* ... As the only specimen of this form was taken at the same time and place as the others, which it much resembles, except in colour, I do not feel justified in regarding it as a distinct species."

The male specimen was collected in the same location in Ceylon – "Kottawa, April 19, 1892" – as the lectotype of *Pseudophaea carissima* (see entry *carissima*). Kimmins (1969) obviously ranked *viridissima* as an infrasubspecific name, since he did not include this taxon in the list of the type specimens of Odonata in the BMNH. However, in accordance with Article 45.6.4. of the Code, *viridissima* is an available name.

Reference. Kirby (1893: 560).

walli [species]

Dysphaea walli Fraser, 1927 [Orig. *Dysphaea walli*, sp. nov.]

An eponym named after Colonel Frank Wall (1868-1950), an English physician and herpetologist, who collected the type material in Upper Burma {noun in the genitive case}

Information on the type material was presented as follows: "Maymyo, North Shan States, Upper Burma, collected by Col. F. Wall, I.M.S., 30th May 1924, four males (female unknown). Type in British Museum." According to Kimmins (1966: 218), the type had remained in Fraser's private collection until his death. It was selected as the lectotype (in the BMNH, London); the whereabouts of the remaining three specimens is unknown.

Reference. Fraser (1927: 82).

wynaadensis [synonym]

Pseudophaea fraseri wynaadensis Fraser 1922 [Orig. *Pseudophaea fraseri*, race *wynaadensis*]

Present status. Synonym of *Euphaea fraseri* (Laidlaw, 1920)

Lat. suffix *-ensis -is -e* = pertaining to (mostly in geographical sense) {declinable adjective}

A toponym named after 'Wynaad', an area in the Nilgiris district of the present Tamil Nadu State in South India. Wynaad derives its name from the marshlands (locally called vayals), which are common in the area.

Fraser's type material of *wynaadensis* included "two females and a large number of males, Gudalur, 4000 ft., Nilgiri Wynaad." The specimens were collected by F.C. Fraser himself on 9 July 1921. Kimmins (1966: 219) wrote: "I have been unable to trace any specimens referred to Fraser to this race in his collection, and as he makes no subsequent reference to it, one can only presume that he considered it as a synonym of *fraseri*. Now *Indophaea fraseri* (Laidlaw)."

Reference. Fraser (1922: 8).

yayeyamana [species]

Euphaea yayeyamana Oguma, 1913 [Orig. *Euphaea yayeyamana* Matsumura et Oguma, nov. sp.]

Mod. Lat. *Yayeyamanus -a -um* = pertaining to the Yaeyama islands (south-eastern end of the Ryukyu-islands) {declinable adjective}

The species was described from both sexes from “Yayeyama”. The description was published in two separate papers in 1913; the paper in Japanese was published first (for details, see Hämäläinen & Sasamoto 2021). In the English paper the provenance was given as “Loo-Choo”, which is the old name for all Ryukyu Islands.

In his paper on the odonate type specimens in the Entomological Institute of the Hokkaido University, Asahina (1961: 58) wrote: “There are 8 ♂ 1 ♀ cotypes, among which one of the three male specimens bearing the label “Yayeyama, VIII, 1907” is selected as lectotype.”

Reference. Oguma (1913a: 318); Oguma (1913b: 158).

yunnanensis [species]

Anisopleura yunnanensis Zhu & Zhou, 1999 [Orig. *Anisopleura yunnanensis*, sp. n.]

Lat. suffix *-ensis -is -e* = pertaining to (mostly in geographical sense) {declinable adjective}

A toponym referring to Yunnan province in China, where the species was found.

Described on the basis of holotype male and several female specimens from three locations in Yunnan. The holotype (deposited in the Shanxi University, Taiyuan) was collected by B.Y. Mao in “Cangshan, 1700m, Dali, Yunnan prov.” on 15 May 1987.

Reference. Zhu & Zhou (1999: 34).

yunnanensis [species]

Cryptophaea yunnanensis (Davies & Yang, 1996) [Orig. *Schmidtiphaea yunnanensis* sp. n.]

Lat. suffix *-ensis -is -e* = pertaining to (mostly in geographical sense) {declinable adjective}

A toponym referring to Yunnan province in China, where the species was found. The given etymology reads: “Latin, ensis = adjectival suffix meaning ‘from’; thus ‘the *Schmidtiphaea* from Yunnan’.”

The holotype male (deposited in the KIZ, Kunming) and paratypes (1 ♂, 4 ♀) were collected in “Jiangcheng Co., Yunnan” by the taxon co-author Yang Bing on 26 May 1993.

Reference. Davies & Yang (1996: 149).

zhengi [species]

Anisopleura zhengi Yang, 1996 [Orig. *Anisopleura Zhengi* Yang, sp. nov.]

An eponym named after Professor Dr Zhe-min Zheng (1932-2021), a Chinese entomologist {noun in the genitive case}

The author wrote (translated from Chinese): “To express my reverence for Mr. Zheng, the famous Chinese entomologist.”

The holotype male (deposited in the Hanzhong Teacher’s College, Hanzhong) and 2 ♂ paratypes were collected in “Hongmiao Township (32° 50’N), Nanzheng County, Shaanxi Province [China]” in June 1990 and June 1994, respectively.

Reference. Yang (1996: 143).

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Appendix

Categorisation of roots of the names of genera and species classified.

It is interesting to analyse how the names euphaeid taxa might be classified.

Although the same name may fit into several categories (see Hämäläinen & Fliedner 2022: 172), in this survey each name is listed only once in the category which we consider to be the most appropriate.

No fewer than 12 of the 15 genus-group names, introduced in the family Euphaeidae, end in the element *-phaea*. The only exceptions are the three early names *Epallage* [Charpentier, 1840], *Anisopleura* [Selys, 1853] and *Bayadera* [Selys, 1853], which reflect evolution, morphology and profession, respectively. Nine of the '*-phaea*' names pertain to appearance. Four of these refer to similarity or dissimilarity: *Pseudophaea* [Kirby, 1890], *Paraphaea* [Martin, 1902], *Allophaea* [Fraser, 1929], *Heterophaea* [Cowley, 1934]. The names *Mesophaea* [Fraser, 1929] and *Cyclophaea* [Ris, 1930] refer to morphology, whereas the names *Dysphaea* [Selys, 1853] and *Anisophaea* [Fraser, 1934] refer to pattern, and the name *Euphaea* [Selys, 1840] itself, refers to beauty. From the remaining three '*-phaea*' names, the name *Cryptophaea* [Hämäläinen, 2003] pertains to biotope, whereas *Indophaea* [Fraser, 1929] is a toponym and *Schmidtphaea* [Asahina, 1978] an eponym.

In the textbox on the 116 available species-group names:

{ } braces signify a name which is classified as a subspecies

[] square brackets signify a name which is classified as a synonym or homonym

People (28 = 24.1 %)

from antiquity (2)

aspasia, fatime

from mythology (3)

cora, lara, kinnara

collectors / entomologists / other scientists (17)

Schmidtphaea

bocki, fraseri, guerini, haomiao, inouei, kirbyi, [laidlawi], [lieftincki], masoni, modigliani, pahyapi, schmidi, [semperi], vallei, walli, zhengi

family members (of author or collector of primary type) (3)

ameeka, [chittaranjani], ethela

female names (1)

[alma]

categories of people (2)

Bayadera

vanida

Appearance (65 = 56.0 %)

coloration (16)

amphicyana, [brunnea], cyanifrons, cyanopogon, dimidiata, hyalina, kali, [melania], melanopteryx, nephelopennis, ochracea, refulgens, sanguinea, splendens, tricolor, [viridissima]

pattern (13)

[Anisophaea], Dysphaea

basalis, basitincta, fasciata, [limbata], opaca, [ruficollis], [semilimbata], strigata, subcostalis, subnodalis, variegata

skeletal morphology (15)

Anisopleura, Cyclophaea, [Mesophaea]

barbata, bidentata, bipugio, brevicauda, forcipata, furcata, hirta, longicauda, pelecyphora, serrata, subplatystyla, trulla

similarity (12)

[Allophaea], Heterophaea, [Paraphaea], [Pseudophaea]

comes, [compar], dispar, impar [inaequipar], [intermedia], lestoides, pseudodispar

beauty / wonder (7)

Euphaea

[carissima], decorata, gloriosa, ornata, saukra, superba

figurative (2)

cardinalis, lugens

Places (20 = 17.2 %)

Geographical (17)

Indophaea

[amasina], [anatolica], [balica], continentalis, formosa, indica, ishigakiana, [khaocongensis], [lombockensis], qingyuanensis, thosegarensis, vietnamensis, [wynadensis], yayayamana, yunnanensis, yunnannensis

indirectly (2)

hatvan, saola

habitat (1)

ulu

Evolution (1 = 0,9 %)

Epallage

Behaviour (1 = 0,9 %)

Cryptophaea

Uncertain (1 = 0,9 %)

[kusumi]

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